

# Cottam Solar Project

## Environmental Statement

### Appendix 9.4: Cable Route Preliminary Ecological Assessment

Prepared by: Clarkson & Woods Ltd.  
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**PRELIMINARY ECOLOGICAL APPRAISAL**  
**CABLE ROUTE**

**COTTAM SOLAR PROJECT**

carried out by



commissioned by

**COTTAM SOLAR PROJECT LTD.**

**NOVEMBER 2022**



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	Tom Clarkson	Harry Fox	
	Managing Director	Principal Ecologist	

The information, data and advice which has been prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions. This report and its contents remain the property of Clarkson and Woods Ltd. until payment has been made in full.





## KEY ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

Item	Key Constraints	Key Opportunities
<p>Local Policy: Central Lincolnshire Local Plan (Adopted 2017)</p> <p>Bassetlaw Core Strategy (adopted 2011)</p>	<ul style="list-style-type: none"> <li>Policy LP20: Green Infrastructure Network. <i>Protection, integration, enhancement and creation of GI wherever possible.</i></li> <li>Policy LP21: Protecting Biodiversity and Geodiversity. <i>Protection, management and delivery of net gain for biodiversity, focusing on Habitats and Species of Principal Importance.</i></li> </ul> <ul style="list-style-type: none"> <li>Policy DM9: Green Infrastructure; Biodiversity &amp; Geodiversity; Landscape; Open Space &amp; Sports Facilities</li> </ul>	<p>Policy compliance achievable through:</p> <ul style="list-style-type: none"> <li>Avoidance of sensitive and notable habitats or key ecological features through micro-siting where possible.</li> <li>Avoidance of the most important habitats that span the cable route corridor such as rivers and woodland through directional drilling.</li> <li>Adoption of good practice methods during the construction phase to be detailed within a Construction Environmental Management Plan</li> <li>Restoration of habitats following completion of the installation works to a condition the same or higher than the baseline.</li> <li>Implementation of measures to avoid significant impacts on notable and protected species.</li> </ul>
<p>Lincolnshire and Nottinghamshire Local Biodiversity Action Plans:</p> <p>Key habitats and species</p>	<ul style="list-style-type: none"> <li>Arable field margins</li> <li>Grazing marsh</li> <li>Hedgerows and hedgerow trees</li> <li>Lowland meadows</li> <li>Ponds, lakes and reservoirs</li> <li>Rivers, canals and drains</li> <li>Lowland mixed deciduous woodland</li> <li>Bats</li> <li>Farmland birds</li> <li>Freshwater fish</li> <li>Greater water-parsnip</li> <li>Newts</li> <li>Water vole</li> <li>White-clawed crayfish</li> <li>Invasive non-native species</li> </ul>	<p>No long term significant effects likely on key features due to:</p> <ul style="list-style-type: none"> <li>Avoidance of key habitats where possible</li> <li>Adoption of good practice methods during the construction phase to be detailed within a Construction Environmental Management Plan</li> <li>Restoration of habitats following completion of the installation works to a condition the same or higher than the baseline.</li> <li>Implementation of measures to avoid significant impacts on notable and protected species.</li> </ul>
<p>Biodiversity Net Gain</p>	<ul style="list-style-type: none"> <li>Recent amendments to the Environment Bill will extend obligation to deliver 10% net gain to NSIPs.</li> </ul>	<p>High confidence in overall deliverability of BNG due to:</p> <ul style="list-style-type: none"> <li>The cable installation works will result in temporary effects on habitats which will be restored on completion of the installation works.</li> </ul> <p>Within the array sites:</p> <ul style="list-style-type: none"> <li>Large scale reversion of arable to grassland within the array sites.</li> <li>Cost-effective positive management of field margin buffers.</li> <li>Hedgerow enhancements and tree planting.</li> <li>Discrete grassland habitat creation options.</li> </ul> <p>Will require habitat mapping (pre-construction state mapping complete) and completion of Habitat Unit change using Defra Metric 3.0 using iterations of landscape proposals and habitat management plans.</p>



Item	Key Constraints	Key Opportunities
Designated Sites	<p>Potential The following Local Wildlife Sites are located within the Cable Route Study Area and have the potential to be impacted by the works:</p> <ul style="list-style-type: none"> <li>• Cow Pasture Lane Drains LWS</li> <li>• Upton Grange Road Verges LWS &amp; Priority Habitat</li> <li>• Willingham to Fillingham Road Verges LWS</li> </ul>	<ul style="list-style-type: none"> <li>• Local Wildlife Sites and habitats of higher ecological value will be avoided where possible</li> <li>• Where LWSs require crossing, consideration will be given to directional drilling to avoid impacts</li> <li>• Where open cut methodology is necessary good practice methods will be implemented to be detailed within a Construction Environmental Management Plan</li> <li>• Restoration of habitats following completion of the installation works to a condition the same or higher than the baseline.</li> <li>• Implementation of measures to avoid significant impacts on notable and protected species.</li> <li>• Potential impacts are temporary and reversible</li> </ul>
Arable fields	<ul style="list-style-type: none"> <li>• Listed on Notts BAP</li> <li>• Only constraints relate to ground nesting birds.</li> </ul>	<ul style="list-style-type: none"> <li>• Restoration of habitats following completion of the installation works to a condition the same or higher than the baseline.</li> <li>• Best practice methods will be implemented to be detailed within a Construction Environmental Management Plan</li> </ul>
Grassland and Field Margins	<ul style="list-style-type: none"> <li>• Arable field margins are a Habitat of Principal Importance (HPI) and on Lincs &amp; Notts BAP some of which were recorded as species rich within the CRSA.</li> <li>• One field of floodplain grazing marsh priority habitat and on Lincs BAP recorded within the CRSA.</li> <li>• Grassland was predominantly improved and species poor but more distinctive other neutral grassland listed on the Notts BAP was also recorded.</li> </ul>	<ul style="list-style-type: none"> <li>• Good practice methods will be implemented to be detailed within a Construction Environmental Management Plan</li> <li>• Restoration of habitats following completion of the installation works to a condition the same or higher than the baseline.</li> <li>• Implementation of measures to avoid significant impacts on notable and protected species.</li> <li>• Potential impacts are temporary and reversible</li> </ul>
Hedgerows	<ul style="list-style-type: none"> <li>• HPI and on Lincs and Notts BAP.</li> <li>• Most contain at least occasional mature trees.</li> <li>• Abundant nesting birds – constraint to removal.</li> <li>• Key habitat for foraging bats, potential for roosts within mature trees.</li> </ul>	<ul style="list-style-type: none"> <li>• Sections of hedgerow will be removed to allow cable installation and subsequently replanted.</li> <li>• Extent and duration of loss will be minimised</li> <li>• Best practice methods will be implemented to be detailed within a Construction Environmental Management Plan</li> <li>• Restoration of habitats following completion of the installation works to a condition the same or higher than the baseline.</li> <li>• Implementation of measures to avoid significant impacts on notable and protected species.</li> <li>• Potential impacts are temporary and reversible</li> </ul>
Ditches and Watercourses	<ul style="list-style-type: none"> <li>• HPI (rivers) and on Lincs BAP (rivers and drains) &amp; Notts BAP (rivers, streams and ditches).</li> <li>• Major rivers River Trent and River Till will be crossed cable route</li> <li>• River Trent has connectivity to Humber Estuary SAC downstream</li> <li>• Numerous minor streams and drainage ditches to be crossed by cable route</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts on River Trent and River Till to be avoided by directional drilling beneath rivers.</li> <li>• Best practice methods will be implemented for all watercourse crossings to reduce risk of pollution of watercourses to be detailed within a Construction Environmental Management Plan</li> <li>• Restoration of habitats following completion of the installation works to a condition the same or higher than the baseline.</li> <li>• Implementation of measures to avoid significant impacts on notable and protected species.</li> <li>• Potential impacts are temporary and reversible</li> </ul>



Item	Key Constraints	Key Opportunities
Bats	<ul style="list-style-type: none"> <li>Hedgerows, woodland edge, watercourses the habitats of highest value to bats.</li> <li>Potential for roosts recorded within hedgerow trees and buildings within the CRSA.</li> <li>Potential for fragmentation of foraging / commuting habitat with hedgerow removal.</li> <li>Potential for roosts to be disturbed or destroyed if mature trees or buildings affected.</li> </ul>	<ul style="list-style-type: none"> <li>Mature trees and buildings to be avoided where possible.</li> <li>Further inspections required if mature trees or buildings to be impacted.</li> <li>Hedgerow gaps to be minimized and replanted on completion of the installation.</li> </ul>
Otters and water voles	<ul style="list-style-type: none"> <li>Rivers, streams and ditches within the CRSA provide suitable habitat for otter and water vole.</li> <li>Potential for disturbance and habitat damage during watercourse crossings.</li> </ul>	<ul style="list-style-type: none"> <li>Rivers to be crossed using directional drilling methodology to avoid impacts.</li> <li>Where directional drilling not possible for watercourse crossings, preconstruction surveys for otter holts and water vole burrows to be carried out.</li> <li>If evidence of any holt/burrows is discovered works may require a licence from Natural England in order to proceed.</li> <li>In the absence of water voles signs, the potential for minor disturbance or damage to habitat should be mitigated for by carrying works out under an Ecological Watching Brief attended by an experienced ecologist.</li> <li>Watercourse and ditch habitats will be restored on completion of the installation works.</li> <li>The detail of all protective measures to safeguard the suitability of habitats on Site for water voles will be set out in the CEMP.</li> </ul>
Amphibians (incl. GCN) and Reptiles	<ul style="list-style-type: none"> <li>A total of seven waterbodies within 250m of the Cottam Cable Route were subject to eDNA survey for GCN; all were returned as negative for GCN.</li> <li>As a number of ponds were not subject to eDNA survey for GCN, efforts should be made to survey these ponds in 2023 prior to the cable installation works.</li> </ul>	<ul style="list-style-type: none"> <li>Selective deepening of on Site ponds to enhance their value.</li> <li>Construction of new ponds in locations suitable for linking known populations.</li> </ul>
Birds	<ul style="list-style-type: none"> <li>Significant numbers of skylark and other ground nesting birds within the CRSA.</li> <li>Loss of short sections of hedgerow has the potential to disturb / destroy bird nests.</li> <li>Avoidance of disturbance and damage to nests during breeding season.</li> </ul>	<ul style="list-style-type: none"> <li>Avoidance of vegetation clearance during breeding season where possible.</li> <li>When carried out in breeding season, works to be preceded by a breeding bird survey. Nests to be avoided until birds have fledged.</li> </ul>
Invertebrates	<ul style="list-style-type: none"> <li>Areas of highest suitability for invertebrates include field margins, hedgerows, woodland and ditches/watercourses within the CRSA</li> </ul>	<ul style="list-style-type: none"> <li>Restoration of habitats following completion of the installation works to a condition the same or higher than the baseline.</li> </ul>



## 1 INTRODUCTION

- 1.1.1 Clarkson and Woods Ltd. was commissioned by Cottam Solar Project Ltd. to carry out a Preliminary Ecological Appraisal of the proposed cable route which links the four Sites known as Cottam 1, 2 and 3a and 3b located within the West Lindsey District of Central Lincolnshire and connects them to the point of connection (POC) at Cottam Power Station situated in the Bassetlaw District of Nottinghamshire. Further short sections of cable will link up the disparate parcels of land which make up Cottam 1.
- 1.1.2 At the time of writing the cable route proposals are in the design stage but are understood to comprise the laying of subterranean cables linking the parcels of land which will house large scale solar parks. More detailed and up-to-date proposals will be contained within the eventual Environmental Statement for the project.
- 1.1.3 This Preliminary Ecological Appraisal discusses the results collected during a UKHAB/Extended Phase 1 Habitats Survey carried out between May and November 2022 by Clarkson and Woods Ltd, supplemented by datasets from breeding bird surveys and great crested newt eDNA surveys carried out in spring and summer 2022.

### 1.2 Report Aims

- 1.2.1 The aims of this report are:
- To describe the habitats present within the cable route and its potential to support protected or otherwise notable species and habitats capable of being material considerations within the planning process.
  - To set out the results of a desk study based on third party ecological records from the Site and its surroundings supplied by the Lincolnshire Environmental Records Centre (LERC) and Nottinghamshire Biological and Geological Records Centre (NBGRC) in the context of Local Planning Policy.
  - To outline any key potential ecological constraints to development of the cable route.
  - To broadly discuss avoidance, mitigation or compensation measures likely to be required to minimise potential ecological impacts.
  - To identify where further surveys to establish baseline conditions or develop mitigation or compensatory measures may be required.
  - To identify where further consultation with statutory bodies, planning authorities or other key consultees would be advantageous to determine a robust and acceptable assessment scope.
  - To outline options for ecological enhancement and Biodiversity Net Gain and how they may be secured, managed and monitored.

### 1.3 Scheme Description and Appraisal Scope

- 1.3.1 This Preliminary Ecological Appraisal (PEA) presents the baseline information collected from within the CRSA and an overview of the sensitivity of the receptors to impacts and the manner in which they may be affected, and might be mitigated for, during the works. Where appropriate this assessment will also identify requirements for additional survey work which may be necessary to characterise impacts, design mitigation or obtain necessary consents and licences from the SNCOs (Natural England).
- 1.3.2 The study area comprised what is hereafter referred to as the Cable Route Study Area (CRSA) which is made up of a 100m corridor connecting the four array sites to the Cottam Power Station and covers a total of 458.44ha (see Figure 1 overleaf). Due to the ongoing design iterations of the cabling works at the time of survey, the CRSA is wider than the eventual cable route corridor to be contained within the DCO submission. The eventual, refined corridor is hereafter referred to as the Cable Route Corridor (CRC). The CRC will be the final redline boundary for the cable route corridor and will comprise a narrow swathe of land which fits wholly within the CRSA. This Preliminary Ecological Appraisal is concerned with the CRSA, while the impact assessment within the Environmental Statement Chapter 9 will assess the potential ecological effects of the development on the CRC alone.
- 1.3.3 The appraisal recorded habitat information from within the CRSA only and did not include sections where the cable route passes through land within the solar Sites as this had already been subject to survey, as detailed within the separate PEA for the Sites. In addition, a desk-based general assessment of the surrounding landscape was made, supported by extensive visual appraisal from public rights of way in the land immediately surrounding the Sites. This information has been factored into the appraisal of habitat suitability for certain species.

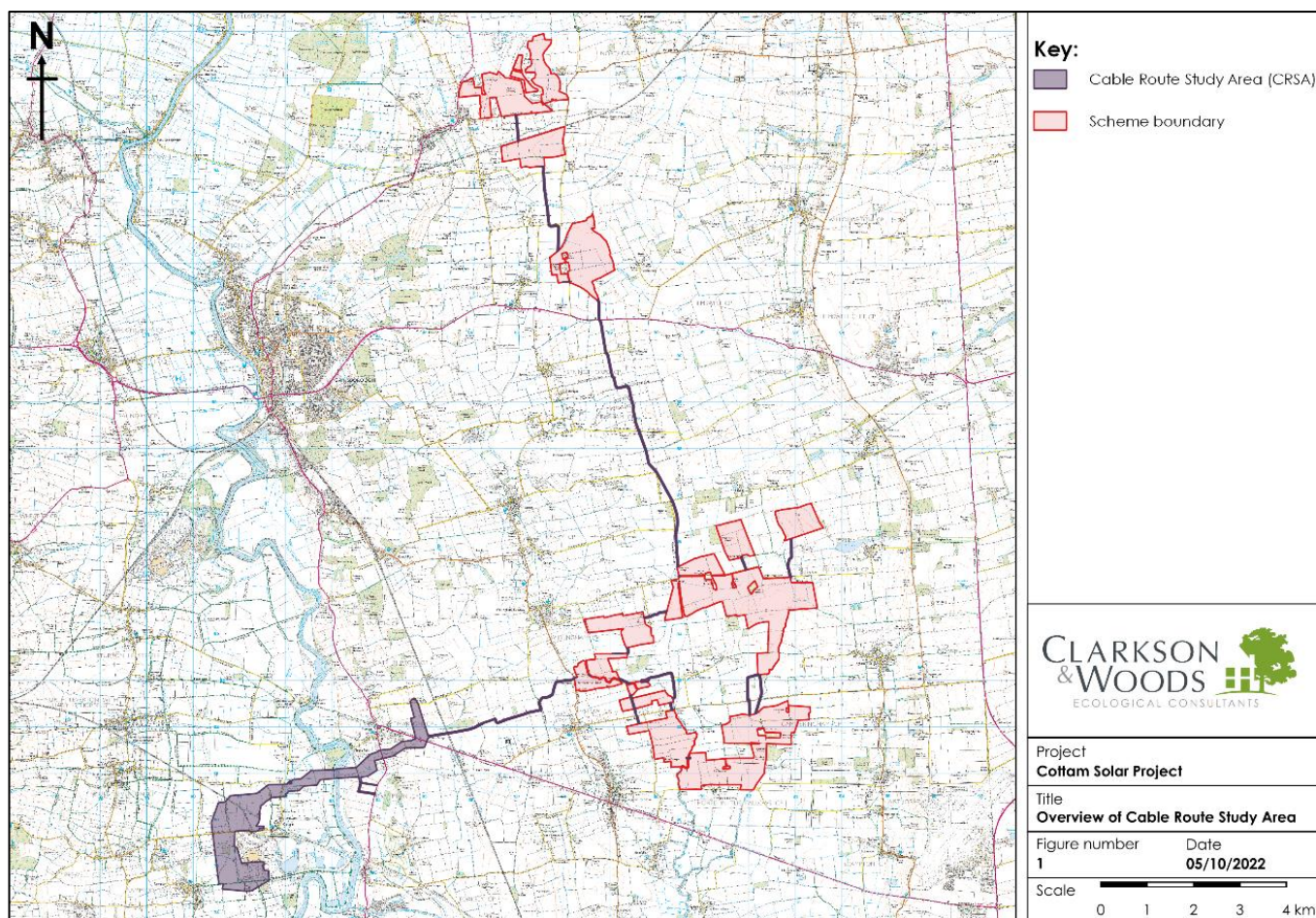


- 1.3.4 In general terms, the cabling works will comprise the setout of a haul route with several intermediate construction compounds, which will involve the temporary clearance of ground-layer vegetation, laying of hardcore (compounds) and track surfacing (access). A trench will be dug within which cable conduits will be laid. Regularly spaced jointing bays will be installed which enable the pulling and subsequent connection of lengths of cables. The haul route and installation of trench(es) will also require the cutting of new accesses in hedgerows and, potentially, overbridging of watercourses at several locations, although efforts have been made to identify and use existing field access points where possible (this is not fully determined yet, but we will likely need to make this statement fairly generic for submission). Any incursion into boundary habitats for the trench are understood to measure approximately 1-3m wide (in order to accommodate the trenching bucket and cable conduit only), while new access gaps will measure c.5m wide. Horizontal Directional Drilling will be used in particularly sensitive locations such as to cross rivers or habitats of significant conservation value. Upon completion, all disturbed habitat will be reinstated through replanting/reseeding with appropriate aftercare, thereby the proposed works will have a temporary impact only.
- 1.3.5 Where accessible surveyors also collected information from approximately 30m beyond the CRSA.
- 1.3.6 The survey scope and approach to mitigation for the cable installation works was consulted on with local authorities, their nature conservation consultees and Natural England at an early stage. The details and outcome of the consultation is presented in Section 1.5 below.
- 1.3.7 The appraisal has been prepared by Tom Clarkson, an experienced ecologist, who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). The report has been subject to quality assurance review by appropriately experienced senior consultants who are full members of CIEEM.
- 1.3.8 Unless the client indicates to the contrary, information on the presence of species collected during the surveys will be passed on to the Lincolnshire Environmental Records Centre following submission of a planning application in order to augment their records for the area. This is in line with the CIEEM code of professional conduct<sup>1</sup>.

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<sup>1</sup> Code of Professional Conduct. CIEEM, January 2019.





## 1.4 Limitations

- 1.4.1 Under CIEEM guidelines, PEA reports are not considered suitable on their own for inclusion with an eventual DCO application. However, information has been provided below with a view to support and enhance the design process.
- 1.4.2 Records obtained from LERC and NBGRC are not exhaustive or complete and an absence of records for a species does not preclude their possible presence.
- 1.4.3 The assessment of the CRSA has been completed across a number of weeks and therefore represents a snapshot of the nature of habitats at the time of survey. Given that much of the habitat within the CRSA is managed agriculturally the habitats present within certain areas are inherently transient and may be modified depending upon the ongoing agricultural management in those areas. Similarly, the absence of a particular species during the survey does not necessarily mean it does not occur within the CRSA.
- 1.4.4 Bird surveys completed of the cable route have sought to characterise the general species present along the route. Given the nature of the proposals and the temporary nature of work a reduced scope of bird survey work has been completed generally comprising three surveys. This was judged to be sufficient to assess the species present within the CRSA. Further, due to access restrictions a short section of the CRSA was only subject to a single survey. This is detailed further within the relevant section below.
- 1.4.5 Further limitations regarding the survey and assessment of particular protected species are detailed as relevant within the baseline section below.

## 1.5 Consultation

- 1.5.1 Table 1 below details the consultees contacted in order to discuss and agree the appropriate survey scope and outline approaches to mitigation with regard to the cable installation works.

**Table 1. Consultation Responses with regard to Cottam Cable Installation Works**

Consultee	Details	Response
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<p>Natural England</p>	<p>An advisor was assigned at the onset of consultation and the Discretionary Advice Service was utilised outside of statutory consultation process. Natural England raised no concerns after discussing the survey scope and outline approaches to mitigation with regard to the cable installation works and made the following comments within the DAS letter dated 5th May 2022.</p>	<p><u>Survey Scope</u></p> <p>With regard to nationally/internationally designated sites, the survey area and scope for the Cottam cable route appears acceptable. We have assessed the Ecological Desk Study and are satisfied that the resultant survey area is precautionary with regards to designated sites. We note that the northern area of the route lies within the surface water catchment of Loughton Common SSSI, however, where a CEMP is implemented, the likelihood of any impacts to the site is likely to be negligible.</p> <p>Natural England do not hold information regarding Priority Habitats or Local Wildlife Sites, so would not wish to comment on this at this time.</p> <p><u>Outline Approaches to Mitigation</u></p> <p><i>Nationally/Internationally Designated Sites:</i></p> <p>Generally, the approach to mitigation for designated sites is welcomed, with the use of the mitigation hierarchy evident throughout.</p> <p>3.2.1 of Cottam EIA Scoping states that pollution may be an impact during the construction phase; we welcome this recognition. This applies for both the main Array Sites and Cable Route.</p> <p>As previously noted, 8.4.4 of Cottam EIA Scoping states that a CEMP will be implemented to ensure no pollution events impact Designated sites. We recommend measures to avoid excessive sediment mobilisation should be included within the CEMP, especially where the site/cable route lies within Loughton Common SSSI surface water catchment area. Although we do note that the likelihood of adverse impacts at this site is low.</p> <p><i>Priority Habitats &amp; Local Wildlife Sites (LWS):</i></p> <p>Natural England do not hold information regarding Priority Habitats or LWS, however, we are happy to provide a general comment in the interest of protecting and enhancing wider biodiversity. The recommendations within the Ecological desk study with regard to avoiding impacts to LWS/Priority Habitats appear to be suitable, with a combination of avoidance, sensitive working times and directional drilling likely to mitigate most of the potential impacts.</p> <p>Where priority habitats lie adjacent to the cable route works, there is potential for impacts during construction i.e. via machinery/compaction, dust &amp; sediment mobilisation etc. The appropriate use of a CEMP would successfully mitigate many of these impacts, and where air quality sensitive habitats are present within 200m, we would also encourage the inclusion of dust reduction measures within the CEMP.</p> <p>There is a possibility to extend/enhance nearby Priority Habitat features/LWS through the development and we would encourage this wherever possible. Paragraph 8.4.8 of the Cottam EIA Scoping document states that some areas of priority habitat (i.e. hedgerows) may be lost. Where this is the case, we would encourage any compensatory habitat to be implemented as close to the impact as possible.</p> <p>Lastly, we recommend that the cable route should be included within the Biodiversity Net Gain calculations for the development; enhancements along the cable route may be able to provide useful BNG credits, as well as contributing to a connected habitat network along the route.</p>
<p>Lincolnshire Wildlife Trust</p>	<p>The LWT is the principal adviser to West Lindsey District Council on ecological matters and were consulted in relation to the scheme. The LWT did not raise any concerns regarding the survey scope and outline approaches to mitigation with regard to the</p>	<p>We note that neither PEA contains an appraisal of proposed cable routes although the Cable Route Search Corridors can be inferred roughly from the Phase One Consultation Site Area Maps. We understand that Extended Phase 1 Habitats Survey of cable route corridors are planned for Q1 2022.</p> <p>We understand that Extended Phase 1 Habitats Survey of cable route corridors are planned for Q1 2022. However, a superficial examination of the cable route search corridors as illustrated in the Cottam and West Burton Phase 1 Consultation Site Area Maps has prompted us to make the following comments.</p>



	cable installation works and made the following comments within their consultation letter dated 15 <sup>th</sup> December 2021.	Cable routes under investigation between Cottam 1 and Cottam 2 could cross Upton Grange Road Verges LWS, Upton Grange Roadside Nature Reserve and Willingham to Fillingham Road Verges LWS. Potential cable routes between Cottam 1 and Cottam Power Station appear to pass closely to or cross Willingham Parish Fields LWS just to the east of Willingham by Stow, Burton Wood Ancient Woodland just to the north of Marton and Trent Port Wetland LWS.
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## 1.6 Survey Area Description Summary

1.6.1 The CRSA measures approximately 25km in length and links the four proposed solar array sites known as Cottam 1, 2 and 3a and 3b located within the West Lindsey District of Central Lincolnshire and connects them to the POC at Cottam Power Station situated in the Bassetlaw District of Nottinghamshire, as shown in Figure 1. The CRSA begins at its most northerly point at the southern boundary of Cottam 3a and continues south connecting Cottam 3b, Cottam 2 and Cottam 1 with shorter sections of the route connecting the composite sections of Cottam 1 North, South and West. From Cottam 1 the route heads in a south-west direction, crosses the River Trent and approaches the Cottam Power Station from the north, travelling down the western boundary of the power station to the POC at the southern boundary.

## 1.7 Surveys Carried out to Date

- 1.7.1 To date, the following surveys have been carried out within the CRSA in 2022:
- A UKHAB and Extended Phase 1 Habitats Survey to characterise habitats present and potential for protected species (May – October 2022);
  - Three breeding bird survey visits (early June to early July);
  - Ground based inspection of all trees with regards their potential suitability for roosting bats (May – October 2022);
  - Assessment of the suitability of all ditches, water courses and water bodies within the CRSA for their potential to support water vole and otter (May – October 2022);
  - Water testing for presence of great crested newt (GCN) DNA from all accessible ponds within the CRSA and adjacent land within 250m under same ownership (May – June 2022). This information is reported separately in the Great Crested Newt Technical Appendix to the Environmental Statement – Appendix 9.7.





## 2 DESK STUDY

### 2.1 Local Planning Policy

2.1.1 The following nature conservation-related policies taken from the Central Lincolnshire Local Plan are considered pertinent to the Sites and the proposals. The text of each policy is given in turn in Appendix E at the end of this report.

#### Central Lincolnshire Local Plan (Adopted April 2017)

- Policy LP19: Renewable Energy Proposals
- Policy LP20: Green Infrastructure Network
- Policy LP21: Biodiversity and Geodiversity

#### Central Lincolnshire Local Plan (Proposed Submission Draft March 2022 (Under Examination by the Planning Inspectorate – Hearing in November 2022))

- Policy S14: Renewable Energy
- Policy S59: Green and Blue Infrastructure Network
- Policy S60: Protecting Biodiversity and Geodiversity
- Policy S61: Biodiversity Opportunity and Delivering Measurable Net Gains
- Policy S66: Trees, Woodland and Hedgerows

#### Bassetlaw Core Strategy (adopted 2011)

- Policy DM9: Green Infrastructure; Biodiversity & Geodiversity; Landscape; Open Space & Sports Facilities

2.1.2 The Draft Bassetlaw Local Plan (emerging), once adopted, will replace the Bassetlaw Core Strategy (2011) and will set out the Council's development strategy, planning policies and proposals, including site allocations, to guide land use and planning decisions in the District up to 2037. The following nature conservation-related policies taken from the Draft Bassetlaw Local Plan (2011) are considered pertinent to West Burton 4 and the proposals.

#### Draft Bassetlaw Local Plan (emerging)

- Policy ST40: Green Gaps
- Policy ST41: Green and Blue Infrastructure
- Policy ST42: Biodiversity and Geodiversity
- Policy ST43: Trees, Woodlands and Hedgerows
- Policy ST53: Renewable and Low Carbon Energy Generation Local Biodiversity Action Plan

2.1.3 The CRSA bisects a number of Neighborhood Areas that have been designated for the purposes of creating Neighborhood Plans.

#### Corringham Neighbourhood Plan

- CNP1: Sustainable Development Principles
- CNP5: Local character and the design of new development
- CNP12: Countryside management
- CNP13: Nature conservation and biodiversity

#### Glentworth Neighbourhood Plan

- Policy 2: Local Green Space
- Policy 5: Green Infrastructure

#### Sturton by Stow and Stow Neighbourhood Plan

- Policy 10: Local Green Space
- Policy 11: Green Infrastructure



- Policy 12: Environmental Protection

Rampton & Woodbeck Neighbourhood Plan

- Policy 7: Local Green Space

Treswell and Cottam Neighbourhood Plan

- Policy 4: Local Green Space
- Policy 5: Lee Beck – Green Corridor

## 2.2 Local Biodiversity Action Plan

2.2.1 The following habitats and species have been identified within Lincolnshire Biodiversity Action Plan (BAP) 2011-2020 (3<sup>rd</sup> Edition) and are considered relevant to the cable installation works. As mentioned above, it is anticipated that alongside the re-drafting and eventual adoption of the new Central Lincolnshire Local Plan, the Lincolnshire BAP will be replaced by a Local Nature Recovery Strategy.

<u>Habitats</u>	<u>Species</u>
<ul style="list-style-type: none"><li>• Arable field margins</li><li>• Grazing marsh</li><li>• Hedgerows and hedgerow trees</li><li>• Lowland calcareous grassland</li><li>• Lowland meadows</li><li>• Lowland dry acid grassland</li><li>• Ponds, lakes and reservoirs</li><li>• Rivers, canals and drains</li><li>• Lowland mixed deciduous woodland</li><li>• Wet woodland</li></ul>	<ul style="list-style-type: none"><li>• Bats</li><li>• Farmland birds</li><li>• Freshwater fish</li><li>• Greater water-parsnip</li><li>• Newts</li><li>• Water vole</li><li>• White-clawed crayfish</li><li>• Invasive non-native species</li></ul>

2.2.2 The following habitats and species have been identified within Nottinghamshire Biodiversity Action Plan (BAP) 2011-2020 (3<sup>rd</sup> Edition) and are considered relevant to the cable installation works.

<u>Habitats</u>	<u>Species</u>
<ul style="list-style-type: none"><li>• Hedgerows: Including ancient and/or species-rich hedgerows</li><li>• Mixed ash-dominated woodland</li><li>• Oak-birch woodland</li><li>• Parkland and wood pasture</li><li>• Planted coniferous woodland</li><li>• Wet broadleaved woodland</li><li>• Ditches</li><li>• Eutrophic and Mesotrophic standing waters</li><li>• Rivers and streams</li><li>• Farmland: arable farmland, arable field margins and improved grassland</li><li>• Lowland calcareous grassland</li><li>• Lowland dry acid grassland</li><li>• Lowland neutral grassland</li><li>• Lowland wet grassland</li></ul>	<ul style="list-style-type: none"><li>• Black Poplar</li><li>• Depford Pink</li><li>• Nottingham autumn crocus and Nottingham spring crocus</li><li>• Dingy Skipper</li><li>• Green Hairstreak</li><li>• Grizzled Skipper</li><li>• Hazel Pot Beetle</li><li>• White-clawed Crayfish</li><li>• Barn Owl</li><li>• Bats</li><li>• Harvest mouse</li><li>• Hedgehog</li><li>• Nightjar</li><li>• Otter</li><li>• Slow-worm</li><li>• Water vole</li><li>• Willow Tit</li></ul>



## **2.3 Protected and Designated Sites**

- 2.3.1 Statutory and non-statutory sites designated for nature conservation were identified within the desk study and are summarised for the CRSA in Table 2 below. Figures 1 and 2 in Appendix C at the end of this document provide maps showing the relationship between the designated sites and the CRSA.
- 2.3.2 Many of these sites present potential ecological opportunities for the enhancement of local biodiversity and ecological connectivity.
- 2.3.3 'International' designated sites are statutory sites designated in response to international law or conventions, including Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar wetland sites. The search radius from each Site for these sites used was 30km
- 2.3.4 National sites are statutorily protected sites which include Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs). The search radius from each Site for these sites used was 5Km. Local Nature Reserves (LNRs) are statutorily protected local sites and thus are searched for within 5Km.
- 2.3.5 Local sites are predominantly non-statutory sites designated by Local Planning Authorities (in this case West Lindsey in collaboration with the Greater Lincolnshire Nature Partnership), including Sites of Nature Conservation Interest (SNCIs) and Local Wildlife Sites (LWSs). The search radius from each Site for these sites used was 2Km.
- 2.3.6 Local Wildlife Sites (LWSs) are wildlife-rich sites selected for their local nature conservation value. They vary in shape and size and can contain important, distinctive and threatened habitats and species. In many parts of the UK, they are the principal wildlife resource but their designation is non-statutory and their only protection comes via the planning system.
- 2.3.7 They are not protected by law like SSSIs or National Nature Reserves. Whilst SSSIs meet national criteria, LWSs meet local selection criteria. Many are owned by private individuals.
- 2.3.8 Care should be taken to avoid direct impacts on LWSs. However, depending on the circumstances and presence of other constraints, it may be justifiable that impacts proceed if accompanied by sufficient mitigation, compensation and aftercare. If direct impacts are probable, a detailed inspection of the habitat should be undertaken by an ecologist to determine its current condition. In many cases, LWSs have lost condition since designation through poor management. In this situation, impacts may be more justifiable and corresponding opportunities for restoration and net gain are likely to be welcomed. The cost and achievability of any restoration and mitigation would differ according to the complexity, condition and replicability of the habitats present.



**Table 2: Designated Sites in Proximity to CRSA – (See Figures 1 - 5 in Appendix C for Map of Locations)**

Site Name and Map Reference	Distance and Direction from Site	Reason for Designation
<b>International Sites</b>		
1. Humber Estuary SAC, SPA & RAMSAR	SAC & RAMSAR 16km north; SPA 26km north. Potential hydrological connectivity with the works as River Trent to be crossed which forms part of the Humber Estuary SAC & RAMSAR ca 40km downstream and SPA 53km downstream of proposed crossing point.	The Humber is the second-largest coastal plain estuary in the UK, and the largest coastal plain estuary on the east coast of Britain. It is a muddy, macro-tidal estuary, fed by the Rivers Ouse, Trent and Hull, Ancholme and Graveney. Suspended sediment concentrations are high, and are derived from a variety of sources, including marine sediments and eroding boulder clay along the Holderness coast. The estuary supports important breeding populations of bittern, marsh harrier, avocet and little tern during summer as well as important number of overwintering geese, ducks and waders. The SAC is also designated for its populations of sea lamprey <i>Petromyzon marinus</i> , river lamprey <i>Lampetra fluviatilis</i> and grey seal <i>Halichoerus grypus</i> .
2. Birklands & Bilhaugh SAC	19km south-west	This site is a remnant of the historic Sherwood Forest on freely-draining, acidic, sandy soils and contains the best remaining examples of oak-birch woodland in Nottinghamshire. Birklands and Bilhaugh is notable for its rich invertebrate fauna, particularly spiders, and for a diverse fungal assemblage, including <i>Grifola sulphurea</i> and <i>Fistulina hepatica</i> .  Due to the distance and lack of any ecological impact pathway connecting the proposed works to this Designated Site, the potential for any significant effects arising from the cable installation works has been ruled out and this SAC is not considered further within this report.
3. Hatfield Moor SAC & SPA	SAC 16km north-west; SPA 17km north-west	Hatfield moor consists of raised bog and lies within the former floodplain of the rivers feeding the Humber estuary (Humberhead Levels). The site is designated for its breeding populations of nightjar.  Due to the distance and lack of any ecological impact pathway connecting the proposed works to this Designated Site, the potential for any significant effects arising from the cable installation works has been ruled out and this SAC & SPA is not considered further within this report.
4. Thorne Moor SAC & SPA	22km north-west	Thorne Moor is England's largest area of raised bog and lies within the former floodplain of the rivers feeding the Humber estuary (Humberhead Levels). The site is designated for its breeding populations of nightjar.  Due to the distance and lack of any ecological impact pathway connecting the proposed works to this Designated Site, the potential for any significant effects arising from the cable installation works has been ruled out and this SAC & SPA is not considered further within this report.
<b>National Sites</b>		
5. Ashton's Meadow SSSI	1.6km west	A traditionally managed ancient meadow surrounded by species rich hedgerows.
6. Laughton Common SSSI	3km north-west	Lowland acid grassland, dune and heath.
7. Owlet LNR	23.46km west	Birch, oak and pine woodland interspersed among open heathland. Supports important diversity of invertebrates.
8. Scotton and Laughton Forest Ponds SSSI	3.9km north	Peaty heathland pools with open acid grassland and botanically important mire habitats.



9. Scotton Beck Fields SSSI	3.3km north	Unimproved acidic grassland and heathland botanical communities.
10. Scotton Common SSSI	3km north	Rare example of lowland heathland in Lincolnshire, supporting common lizard, adder, scarce plants and rare moths.
11. Treswell Wood SSSI	3.8km west	A well maintained woodland comprised of oak, ash and maple with many flowering plants indicative of ancient woodland.
<b>County Sites</b>		
12. Burton Wood LWS	460m north	Broadleaved woodland approximately 11.5ha in area.
13. Coates Wetland LWS	0m north (Partially within CRSA)  See Appendix C Figure 4 for location of the LWS in relation to the CRC.	Site comprising a mosaic of habitats including wetland, developing woodland and grassland enclosed within a flood bank
14. Cottam Wetlands LWS	500m east	<p>This large wetland mosaic, adjacent to and including a stretch of the River Trent, comprises a number of lakes and lagoons, ditches, damp cattle-grazed grassland, swamp and marshland. It is botanically very rich supporting a diverse flora. The Local Wildlife Site boundary encompasses part of the Cottam Power Station site and a connected disused mineral railway, which is now wooded.</p> <p>The wetlands support an interesting and varied selection of plants including Purple Loosestrife <i>Lythrum salicaria</i>, Fine-leaved Water-dropwort <i>Oenanthe aquatica</i>, Water Horsetail <i>Equisetum fluviatile</i>, Yellow Iris <i>Iris pseudacorus</i>, Pink Water-speedwell <i>Veronica catenata</i>, Slender Tufted-sedge <i>Carex acuta</i>, Water Mint <i>Mentha aquatica</i> and Skullcap <i>Scutellaria galericulata</i>. They provide breeding habitat for amphibians, odonata and many other insect species and are an important site for birds providing nesting sites and habitat for both breeding birds and wintering wildfowl and feeding opportunities for passage migrants in spring and autumn.</p>
15. Cow Pasture Lane Drains LWS	0m north (Partially within CRSA)  See Appendix C Figure 3 for location of the LWS in relation to the CRC.	Roadside drain which runs alongside Broad Lane and southwards beside Cow Pasture Lane. Meadowsweet <i>Filipendula ulmaria</i> grows abundantly in the ditch, while a defunct, rich hedgerow behind supports mature Ash trees. The drain is deeper and wider along Cow Pasture Lane containing a variety of plants.
16. Littleborough Lagoons LWS	1.9km north	This lagoon, surrounded by sheep-grazed pasture, is situated beside the River Trent near the historic hamlet of Littleborough. The relatively shallow water contain an array interesting aquatic flora. The site is of ornithological importance for wintering wildfowl and passage migrants such as Common Sandpiper <i>Actitis hypoleucos</i> .
17. North Leys Road Ditch LWS	970m north-west	Silty vegetated ditch, designated for presence of near threatened / nationally scarce water beetles
18. Thornhill Lane Drain LWS	1.7km north	Linear watercourse feature designated for presence of near threatened / nationally scarce water beetles
19. Torksey Common to Sykes Junction Disused Railway LWS	2.1km south	A section of disused railway line which supports a diverse array of plant life.



20. Torksey Disused Railway LWS	1.4km south	This embanked part of the railway extends from the old bridge across the A156 in the west, to the no longer bridged drain in the east. Only the western end retains a significant amount of sparse acidic grassland, supporting characteristic species such as hare's-foot clover, mouse-ear-hawkweed, sheep's sorrel, harebell, field wood-rush, early hair-grass and silver hair-grass. Red fescue and sweet vernal-grass are widespread, whereas sheep's fescue is rare. Scrub and coarser grassland are slowly taking over, including broom, bramble, hogweed, rough chervil, rosebay willowherb, Yorkshire fog and false oat-grass.
21. Torksey Ferry Road Ditch LWS	990m east	Trackside ditch with waterlogged decomposing grasses including <i>Phalaris arundinacea</i> (Reed canary-grass) and <i>Juncus</i> sp (Rush sp), supporting the near threatened water beetle <i>Agabus uliginosus</i> . 3 Local BAP water beetle species <i>Cercyon convexiusculus</i> , <i>Cymbiodyta marginellus</i> and <i>Ilybius montanus</i> also recorded.
22. Torksey Marsh LWS	1.7km south	An interesting site supporting a lot of bare ground, colonising vegetation and three ponds, as well as short stretch of disused railway line. The habitats, particularly the ponds are of interest to local wildlife and support a wide range of plants, insects, birds and other fauna.
23. Torksey Road Verge LWS	1.9km south	This 100 m stretch of un-managed verge on the north side of the road is mostly damp, supporting plants such as angelica, bulrush and a range of common neutral grassland species.
24. Trent Port Wetland LWS	0m north (Partially within CRSA) See Appendix C Figure 4 for location of the LWS in relation to the CRC..	Unmanaged triangular area of floodplain to east of River Trent. Comprises coarse neutral grassland and scattered scrub surrounding a large expanse of shallow water and wetland vegetation.  Current condition of this LWS is unknown.
25. Upton Grange Road Verges LWS & Priority Habitat	0m north (Partially within CRSA) See Appendix C Figure 5 for location of the LWS in relation to the CRC.	Species rich neutral grassland. Additional habitats include calcareous grassland & species-poor hedges. N+E verges are exceptionally species-rich and notable due to isolation.
26. Willingham Parish Fields	1km north	These are two adjacent fields beside Stone Pit Lane that together support a good range of neutral grassland plants, as well as a botanically-rich pond, some woody vegetation and an interesting fauna.
27. Willingham to Fillingham Road Verges LWS	0m north (Partially within CRSA) See Appendix C Figure 5 for location of the LWS in relation to the CRC.	3-3.5m wide roadside verges. Main habitats are calcareous and neutral grassland (unimproved / semi-improved). Additional habitats include coarse grassland, species-rich hedgerow and ditch.  Current condition of this LWS appears to be somewhat degraded. Therefore, an opportunity for restoration exists.

## 2.4 Priority Habitats

- 2.4.1 This is a UK habitat classification prepared by the UK Biodiversity Group that classifies all terrestrial and freshwater habitats in the UK into 37 broad habitat types. The list of Priority Habitats has been used to help draw up statutory lists of Habitats of Principal Importance for the conservation of biodiversity in England, Scotland, Wales and Northern Ireland. UK Priority Habitats are a range of semi-natural habitat types that were identified as being the most threatened and requiring conservation action.
- 2.4.2 These habitats do not receive statutory protection but are capable of being material considerations within the planning process.



- 2.4.3 As with LWSs, impacts on Priority Habitats should be avoided, although detailed inspections may prove helpful in determining current condition should impacts be probable. Again, mitigation and compensation in the form of a habitat restoration plan may be acceptable and welcomed, especially if determined to be in poor condition. Likewise, not all habitats are easily restored or replaced (e.g. some grasslands are more readily restored whereas ancient woodland or heathland is irreplaceable).
- 2.4.4 Table 3, below, summarises which Priority Habitats were recorded within the CRSA and these are mapped in Appendix D.

**Table 3. Priority Habitats Located within the CRSA**

Priority Habitat	Reason for Designation
Lowland Mixed Deciduous Woodland	Five sites were identified as lowland mixed deciduous woodland was located within the CRSA. Two sites were located near to the Cottam Power Station, two more were situated near the village of Coates and the remaining site overlapped with the search area near to the village of Stow. The Site comprise a diverse mix of woodlands that are intrinsically valuable natural assets and are important for a range of wildlife, which includes rare and threatened species. Woodland is a highly distinctive habitat that take a long time to establish and any removal should be avoided.
River	This habitat type includes a very wide range of types, encompassing all natural and near-natural running waters in the UK. There is one instance of this habitat which has been identified within the search area, the River Trent, which bisects the search area.
Lowland Meadows	A highly distinctive habitat that takes a long time to establish and is difficult to re-create. This habitat has been identified in one location within the search area and is associated with Upton Grange Road Verges LWS.
Floodplain Grazing Marsh	This habitat has been identified in one location within the search area, occurring on the western back of the River Trent. Grazing marsh is defined as periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing brackish or fresh water. Grazing marshes can be particularly important for the number of breeding waders such as snipe, lapwing and curlew they support. Internationally important populations of wintering wildfowl can also occur including Bewick swans and whooper swans.

### 3 HABITAT SURVEY

- 3.1.1 The findings of the habitat survey are discussed in this section. An overview of habitats common to the CRSA is provided together with a discussion of mitigation options and general opportunities for Biodiversity Net Gain.
- 3.1.2 UKHAB/Phase 1 habitat maps of the CRSA are given in Appendix F (supplied as a separate volume) and referred to in the text, along with target notes relating to specific habitat features. Each boundary is given a reference code (D# for ditch and H# for hedgerow), however hedgerows with ditches are referred to with an H# code only.

#### 3.2 Overview of habitat types

- 3.2.1 The habitats recorded within the CRSA are dominated by large, open and generally flat arable fields characterised by winter-sown cereal crops, bounded by a network of managed hedgerows and ditches with narrow field margins, where present. Permanent grassland was also recorded and was more frequent within the floodplain of the River Trent and surrounding Cottam Power Station. The majority of the grassland was characterised as species-poor, improved pasture although grassland of higher distinctiveness was also recorded occasionally within fields less intensively managed, arable field boundaries and road verges. Isolated patches of managed and unmanaged woodland were occasionally recorded within the CRSA some of which were more mature, contained higher species richness and were categorised as Habitats of Principal Importance although the majority were less distinctive and likely the result of historical game management.
- 3.2.2 The CRSA crosses the River Trent and River Till and a number of their tributaries. The River Trent forms part of the Humber Estuary SAC c.40km downstream of proposed crossing point. In addition, many smaller streams and agricultural drainage ditches are crossed. Standing water was occasionally present within the CRSA in the form of isolated agricultural pools/pits, decoy ponds or managed recreational fisheries.





### **3.3 Arable Fields**

- 3.3.1 Arable fields are listed on the Nottinghamshire BAP.
- 3.3.2 Arable fields occupied 285.47ha of the CRSA accounting for 62.3% of the surveyed land. The arable fields were intensively farmed monocultures focussing on wheat, barley, linseed and some oilseed which are likely to receive periodic fertiliser and pesticide treatments. Vegetated field boundaries were sparse and historical field boundaries can be expected to have been progressively removed over preceding years since the industrialisation of farming. The arable fields across the CRSA are therefore generally botanically poor and contained little particular ecological interest, save for their value to a relatively small number of ground-nesting bird species and arable specialists including hunting raptors (several of which are notable species of conservation concern) and brown hare, as described later in this document.

#### Likely Impacts, Opportunities for Enhancement and Biodiversity Net Gain

- 3.3.3 The temporary impacts of installation of the cable on arable fields is unlikely to result in any intrinsic loss of ecological importance, particularly given the local abundance of this habitat. The arrays into which the CRC will connect will involve the creation of grassland (through arable reversion) which will help to promote local ecological diversity.
- 3.3.4 Impacts associated with installation are largely anticipated to be temporary in nature with the habitat previously present restored upon installation of the subterranean cable. As such specific mitigation measures are unlikely to be merited within this habitat.
- 3.3.5 Construction methods should seek to separate top soils and sub soils to allow effective habitat restoration.
- 3.3.6 It seems likely that gains in biodiversity derived within the operational array will help to off-set the short term and reversible impacts

### **3.4 Hedgerows**

- 3.4.1 Hedgerows and Hedgerow Trees are a Habitat of Principal Importance and listed on the Lincolnshire and Nottinghamshire BAP.
- 3.4.2 The hedgerow network is extensive across the length of the CRSA and is generally well-managed and species-poor, with only 16% being recorded as species-rich (see Habitat Maps included in Appendix F). The hedgerows are also generally intact, with few gaps (although given the numbers of intersected and parallel hedgerows within the CRSA some defunct hedgerows are present).
- 3.4.3 Approximately 55% of the hedgerows were accompanied by drainage ditches or streams, most of which were dry or partially wetted and were relatively narrow features.
- 3.4.4 Approximately 59% of the hedgerows contained at least sporadic mature and semi-mature trees. Trees were predominantly restricted to outer boundary hedgerows, while minor internal hedgerows were normally devoid of trees. Typical tree species recorded included ash (showing extensive signs of dieback), field maple, oak, rowan, holly, elder and grey willow. Woody shrub species most frequently recorded in hedgerows were hawthorn, blackthorn, and field rose.

#### Likely Impacts, Opportunities for Enhancement and Biodiversity Net Gain

- 3.4.5 It is understood that short (under 5m, typically 1-3m) sections of hedgerows will be removed to allow cable installation and will be subsequently replanted. It is estimated that approximately 57 hedgerows will be crossed, although this has not yet been quantified accurately, of which 49 were species poor and 9 were species rich. As such the development is likely to give rise to short-term temporary impacts. Effort should be made in designing construction methods to minimise the loss of hedgerows required both in terms of the extent of loss (i.e. a narrow gap) and the time and which the hedgerow will be removed for (duration). The route is understood to be micro-sited to avoid mature trees wherever possible.
- 3.4.6 Where replacement sections of hedgerow are replanted after construction work is complete the opportunity exists to diversify the hedgerow by incorporating locally appropriate native species. Further, where the intersected hedgerow is an existing defunct or gappy hedgerow the opportunity exists to enhance or extend adjacent hedgerows to ensure that the affected hedgerow network is enhanced. This may help to





compensate for some of the short-term adverse effects likely to be result from the hedgerow removal during construction.

- 3.4.7 Consideration may be given to the temporary translocation of hedgerow trees/shrubs into temporary receptor trenches which may then be relocated back into the original hedgerow. This approach should be reserved for hedgerows with particularly mature shrubs and/or evidence of historic management such as hedge laying.

### **3.5 Grasslands and Field Margins**

- 3.5.1 Arable field margins are a Habitat of Principal Importance and listed on the Lincolnshire and Nottinghamshire BAP. Floodplain grazing marsh is listed as a priority habitat.

- 3.5.2 Approximately 108ha of grassland was recorded along the CRSA which predominantly comprised pasture grassland fields, arable field margins, road and track verges and amenity grassland. The grassland recorded within the CRSA was defined as either Modified Grassland or Other Neutral Grassland. No grassland of high distinctiveness was recorded within the CRSA.

#### *Modified grassland*

- 3.5.3 Modified grassland is typically a highly managed, species poor sward that occurs on fertile, neutral soils and is frequently characterised by an abundance of rye-grasses and white clover. Modified grassland made up 13% of the total CRSA, 59% of the recorded grassland habitat and occurred within heavily managed pasture grassland, arable field margins and amenity grassland. This habitat is common and widespread in the local landscape and is of low distinctiveness.

#### *Other Neutral Grassland*

- 3.5.4 Other neutral grassland occurs on neutral soils in areas where the grassland is less intensively managed and is generally more species rich than Modified Grassland, with typically between 9 – 15 species per m<sup>2</sup> present. Other neutral grassland made up 9.6% of the total CRSA, 41% of the grassland habitat and generally occurred on less intensively managed pasture fields, road and track verges and a proportion of the arable field margins. This grassland type is common and widespread within the local landscape and is of medium distinctiveness.

- 3.5.5 Other neutral grassland was occasionally further subdivided into specific subcategories such as Arrhenatherum neutral grassland (dominated by false oat grass), Deschampsia neutral grassland (dominated by tufted hair-grass and Yorkshire fog) and Lolium – Cynosurus neutral grassland (other neutral grassland with a mix of species including perennial ryegrass, crested dogs tail and sweet vernal grass) which all fall within the Other Neutral Grassland broad habitat type.

- 3.5.6 A field within the CRSA recorded as Other Neutral Grassland on the western bank of the River Trent has been designated Floodplain Grazing Marsh Priority Habitat and covered an area 3.47ha in size (see Appendix D of Map showing Priority Habitats).

#### Likely Impacts, Opportunities for Enhancement and Biodiversity Net Gain

- 3.5.7 The CRC will cross areas of grassland habitat of low to medium distinctiveness with one field on the western bank of the River Trent having been designated Floodplain Grazing Marsh Priority Habitat. The impacts are anticipated to be short-term and reversible and will not result in any permanent loss or long term reduction of condition of grassland habitat. The arrays into which the CRC will connect will involve the creation of grassland which will result in a significant increase in grassland habitat within the local landscape.

- 3.5.8 Impacts associated with installation are largely anticipated to be temporary in nature with the grassland habitat previously present restored upon installation of the subterranean cable. Construction methods should seek to retain the turf and separate top soils and sub soils to allow effective habitat restoration. If the retained turf is damaged when stripped, stored or reinstated, the grassland could be seeded with an appropriate diverse grass and wildflower seed mix of local provenance.

- 3.5.9 Cost-effective opportunities for the enhancement of restored strips of affected grassland in areas outside of cultivation are present. Diversification of grassland management maximises the available niches for invertebrates to lay eggs, overwinter and feed and in turn drive opportunities for diversification up the food chain. This in turn increases the interconnectedness of habitats within the site and within the neighbouring landscape, a key tenet of the NPPF and local planning policy



### **3.6 Ditches and Watercourses**

- 3.6.1 Rivers are a Habitat of Principal Importance while Rivers, Canals and Drains are listed on the Lincolnshire and Nottinghamshire BAP.
- 3.6.2 The River Trent is a major watercourse of significant ecological importance and impacts upon this watercourse should be avoided as far as possible.
- 3.6.3 The River Till and tributaries, the Corringham and Yawthorpe Beck were small but relatively significant watercourses associated with the Sites and were fed by various drainage ditches present at field boundaries. Most of the wetted ditches and becks/streams held emergent vegetation and grassy banks, some of which were relatively diverse. The River Trent, River Till and the larger watercourses featured wide grassy margins which formed large field headlands and were seen to be relatively diverse and provide key habitat for birds, small mammals and invertebrates.
- 3.6.4 The extent of linear river habitat recorded within the CRSA measured approximately 0.18km. The total length of ditch that was not associated with a hedgerow measured 1.1km, of which 43% likely to be predominately dry throughout the year, 16% was likely to be seasonally wet and 41% was permanently wet.

#### Likely Impacts, Opportunities for Enhancement and Biodiversity Net Gain

- 3.6.5 It is estimated that approximately 21 will require crossing, of which 8 were recorded as wet, 5 were recorded as seasonally wet and 8 recorded as dry. It is not anticipated that water quality within ditches and watercourses will be significantly affected by the proposed cable installation works save for the potential for localised short term impacts where ditches have to be crossed perpendicularly and where the cable route does not follow a directionally-drilled conduit. This impact will likely need to be managed through a suitable drafted CEMP and appropriate buffer zones should be established from ditches to protect these features from accidental damage during construction work. Given the temporary nature of the work an 8m offset from water courses and ditches is recommended.
- 3.6.6 Where ditches and other water courses intersect with the CRS temporary damage of these features is likely to occur (in the absence of directional drilling). It is strongly recommended and assumed, given the size of certain watercourses, that rivers such as the Trent and the Till are avoided by directional drilling or similar. For other ditches and water courses avoidance of adverse effects may be less critical given the temporary and short-term nature of the construction work and the potential to fully restore habitats post-construction.
- 3.6.7 Wetted ditches and watercourses are likely also to be key habitats for otter and water vole, both being legally protected species recorded near to or within all Sites. This will need to be considered when carrying out any engineering works close to or within ditches or river corridors. Wherever possible impacts and damage to habitat supporting water vole will need to be avoided.
- 3.6.8 Buffer zones along wet ditches and watercourses may need to be wider than many other simpler boundaries (such as defunct hedgerows or fences) owing to their elevated greater value to wildlife and the pollutant/sediment-attenuating properties of dense grassland vegetation and rich soils. Appropriate buffer widths from feature to working area should be at least 8m although larger buffers of up to 30m may be appropriate, depending on the significance of the watercourse and associated protected species habitat value (e.g. bats, otters, water voles). 8, or in certain regions, 9m as a minimum offset from watercourses (including drainage ditches) is a standard Environment Agency and Internal Drainage Board requirement in order to preserve maintenance access and limit risk of pollution events. Significant watercourses clearly attract a wider buffer.
- 3.6.9 The Green Infrastructure value of these features would be maximised through the creation of a wide buffering grassland habitat swathe, contributing to local policy aims and strengthening the value of the watercourse corridor. Habitat management options as listed for arable field margins could be implemented, as well as scattered tree planting.

### **3.7 Ponds and Standing Water**

- 3.7.1 Ponds are a Habitat of Principal Importance and listed on the Lincolnshire and Nottinghamshire BAP.
- 3.7.2 8 ponds, or locations where ponds are present within mapping are located within the CRSA. (see Habitats Maps – Appendix F)



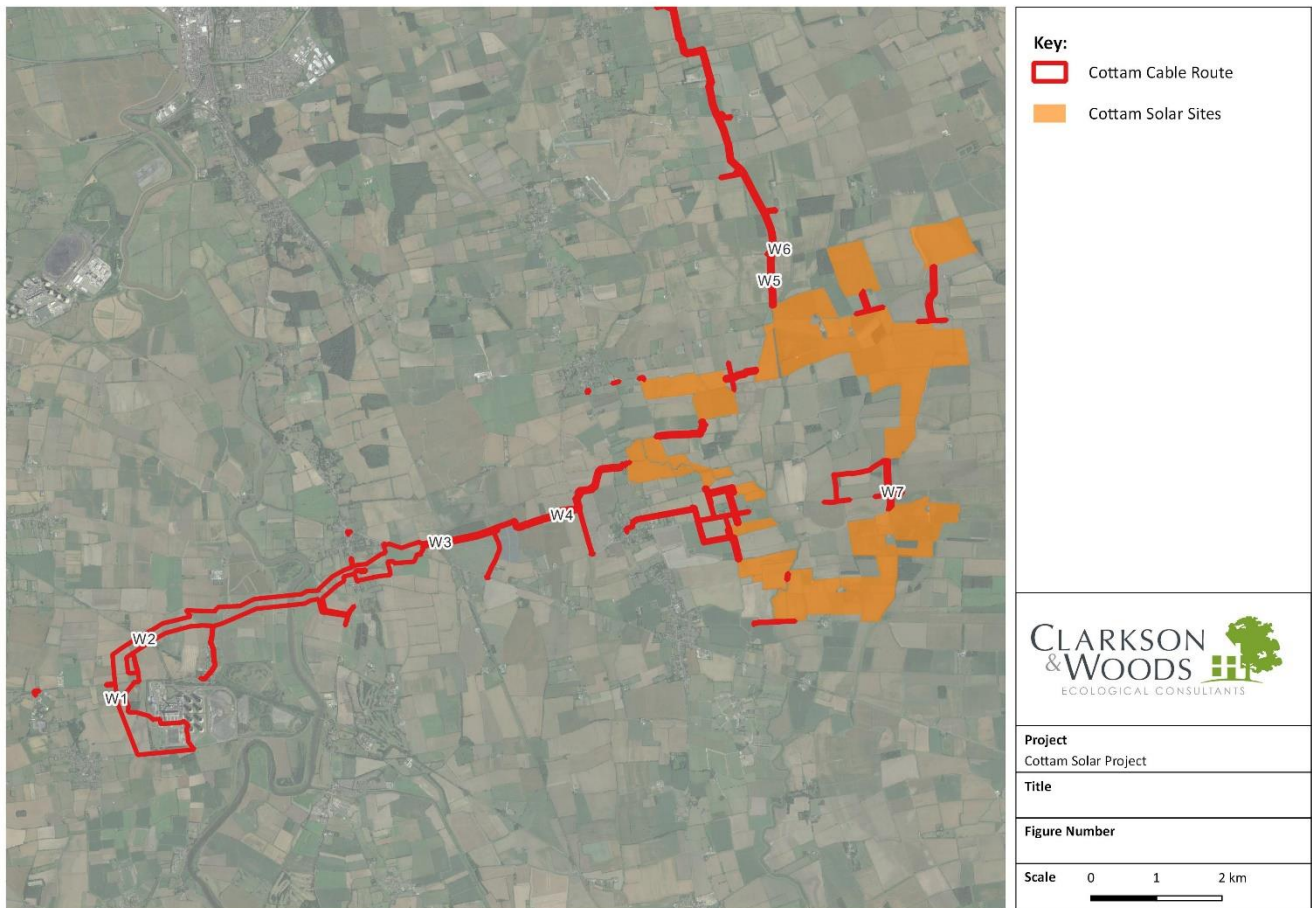
- 3.7.3 As a Habitat of Principal Importance, the cable route should seek to avoid direct damage to any area of ponds and standing water. Failure to avoid impacts upon ponds may place specific requirements on the scheme in terms of habitat creation measures to compensate for the loss of a priority habitat.
- 3.7.4 Given the width of the CRSA it is anticipated that all ponds present within the search area will likely be avoided through appropriate micro-siting of the CRC.
- 3.7.5 Protection measures will be required during construction to avoid accidental damage or pollutant release to these habitats.
- 3.7.6 Ponds also have the potential to support breeding great crested newts, a legally protected species, and other amphibians. Surveys to confirm presence or likely absence of great crested newts have been undertaken and are presented within Section 4 below. GCN presence was not recorded within any ponds which were accessible and eDNA surveyed within the CRSA (see Appendix 9.7 of the Environmental Statement). A buffer of 50m should be maintained from ponds where access for GCN survey could not be obtained and where GCN presence could not be determined.

#### Opportunities for Enhancement and Biodiversity Net Gain

- 3.7.7 Ponds are of significant ecological value, and as a strong, high-quality pond network is absent within the local landscape, any creation of such features would be beneficial and likely to be favourably received by the LPA.
- 3.7.8 Opportunities for enhancement of existing field ponds within the CRSA may exist. The potential opportunity exists to deepen existing ponds, removing sediment, rubbish and undesirable material.

### **3.8 Woodland**

- 3.8.1 Woodland habitat covers 10.6ha of the CRSA accounting for 2.3% of the total area. The woodland recorded within the CRSA was either categorised as Other Lowland Mixed Deciduous Woodland or Other Woodland; Broadleaved. Other Lowland Mixed Deciduous Woodland is a subset of Lowland Mixed Deciduous Woodland which is a Habitat of Principal Importance, listed on the Lincolnshire BAP and is of high distinctiveness while Other Woodland; Broadleaved is of medium distinctiveness.
- 3.8.2 Other Woodland; Broadleaved covered 7.8ha of the CRSA and 73.7% of the recorded woodland and Other Lowland Mixed Deciduous Woodland covered 2.8ha of the CRSA and 26.3% of the recorded woodland.
- 3.8.3 Woodland within the CRSA was sparse and largely limited to occasional and isolated copses, spinnies and shelter belts within a landscape dominated by arable agriculture. Relatively larger stands of woodland occur in within the CRSA, to the west and south of Cottam Power Station, although these are still discontinuous and linked only by the local hedgerow network. The majority of woodland stands will be avoided by the CRC but woodland spans the CRSA in two locations (W2 and W3 within Figure 2 below) and will need to be crossed. Where this occurs, the woodland has been categorised as Other Woodland; Broadleaved and no Habitat of Principal Importance will need to be crossed. It is recommended that where woodland needs to be crossed, impacts are avoided by directional drilling or similar.



**Figure 2: Map Showing Woodland Habitats recorded within the CRC**

Likely Impacts, Opportunities for Enhancement and Biodiversity Net Gain

- 3.8.4 A protective development-free buffer of 20m from all woodland has been designed into the scheme and will be demarcated by protective fencing prior to commencement of construction as part of the CEMP so that accidental damage can be avoided.
- 3.8.5 Woodland in close proximity to the cable installation works would remain sensitive to degradation through accidental pollution events, dust deposition and vehicle over-run. In the absence of mitigation the severity of these impacts would be minor due to the short duration of the works.
- 3.8.6 Construction activities could lead to a small amount of noise and possibly light disturbance to the species within the woodland. However, this would be temporary and would only affect the margins of the woodland. It should be noted that a certain amount of noise disturbance, dust deposition and run off would be anticipated as a result of routine agricultural activities, and as such impacts are likely to be similar to the current baseline conditions.

**3.9 Scrub**

- 3.9.1 A small amount of scrub habitat was recorded within the CRSA, totalling 1.8ha. Scrub was mainly restricted to unmanaged field margins and small areas of set aside within arable fields, although some larger areas of pasture grassland on the eastern side of the River Trent had been left unmanaged and were succeeding to dense scrub.

Likely Impacts, Opportunities for Enhancement and Biodiversity Net Gain

- 3.9.2 It is likely that areas of scrub will be removed to facilitate the cable installation. Scrub provides suitable habitat for reptiles, amphibians and nesting birds and measures to protect species detailed within the Species Section below will need to be implemented. Scrub habitats regenerate quickly and no long term impacts are anticipated.



### 3.10 Habitat Map and Target Notes

3.10.1 Please see Appendix F for individual extended Phase 1 habitat survey maps for the CRSA. Table 4, below, gives a description of the features referred to on the map by numbered Target Notes.

**Table 4: Target Notes For CRSA (Constraints and Opportunities)**

No.	Description
TN4 (x2)	Barn owl box
TN5 (x3)	Barn owl pellets
TN6	Bird box in tree
TN7 (x3)	Bird nest
TN8 (x7)	Brown hare observation
TN9	Building with low or negligible bat potential
TN10	Common lizard observation
TN11	Dead or fallen tree/branch
TN12	Dunnock observation
TN13	Empty bat box in tree
TN14	Felled tree
TN15 (x5)	Strong mammal path
TN16	Otter spraint
TN17 (x5)	Rabbit warren
TN18	Raven observation
TN19 (x7)	Skylark observation
TN20	Yellowhammer observation





## 4 SPECIES SURVEY RESULTS

4.1.1 This section sets out an appraisal of the CRSA's value to various protected and notable species. It also gives recommendations and suggestions for mitigation of potential impacts and opportunities for biodiversity net gain.

### 4.2 Badgers

#### **Field Survey Results**

4.2.1 The CRSA contains significant extents of habitat suitable for foraging by badgers, across the arable fields and the field margins. Badgers predominantly feed on soil invertebrates, particularly earthworms, but will take a wide variety of plant and animal prey items depending on availability. Arable fields have a lower earthworm abundance than grassland fields, therefore the uncultivated margins, woodlands/hedgerows and gardens are likely to be more productive for badgers.

#### **Potential Constraints, Mitigation and Further Work**

##### Protection and Avoidance of Setts

4.2.2 The works associated with installation of the cable will have a temporary and reversible impact on badger foraging habitat. Habitats will be reinstated on completion of the installation works and so no impact on the extent of badger foraging habitat is anticipated.

4.2.3 Badgers and their setts are legally protected from disturbance and damage when active (likely to be occupied).

4.2.4 As badgers are liable to dig new setts at any time, a pre-construction survey (approximately 3-6 months prior) of woodland edges and hedgerows within approximately 30m of the CRC is recommended to ensure any new setts can be mitigated for in advance of commencement. Any setts capable of being impacted should be examined to determine whether they are active or disused. Disused setts generally do not pose a constraint. Such investigation work may require monitoring using cameras over a (minimum) three-week period.

4.2.5 To ensure that cable installation works do not cause unlawful impacts on badgers and setts, a 10-30m buffer zone should be established from the perimeter of any active sett. The size of the buffer zone should reflect the status and activity levels within the sett and the nature of the local topography and the direction of tunnels associated with the sett entrances. Within this buffer zone, there should be no movement of plant, excavations or storage of materials during the construction phase of the installation. Protective fencing and signage should be installed at the beginning of the construction phase.

4.2.6 If it is not possible to retain an active sett within the proposals, or maintain adequate buffer zones, it is likely to be possible to close (either temporarily or permanently) them under a licence from Natural England. For any main setts, it is probable that an alternative badger sett will need to be constructed in a suitable nearby location in order to ensure sufficient alternative shelter. The artificial sett will also need to be created well in advance of closure operations and uptake by the badgers will need to have been demonstrated by means of video surveillance or similar. It is therefore advisable to undertake artificial sett creation at least six months in advance of sett closure. Sett closure under licence can only take place between the months of July and November inclusive so as to avoid impacts on dependent young underground.

4.2.7 During construction works, if deep trenches are left open overnight or high voltage machinery is present, there may be potential for incidental injury or mortality to badgers exploring the site during the night. The CEMP will detail measures to be taken to reduce the probability of incidental mortality of badgers, especially in situations where open excavations are made and in respect of site speed limits.

#### **Opportunities for Enhancement and Biodiversity Net Gain**

4.2.8 Whilst there are limited opportunities to enhance habitat for badgers as part of the cable installation works, badgers are likely to benefit from improved abundance of favoured food items within the grassland under the array sites as permanent pasture grassland has been shown to contain a greater abundance of earthworms and soil invertebrates than arable soils.



## 4.3 Bats

### **Desk Study Information**

- 4.3.1 The data search revealed 39 records of bats within the study area, including 7 records of common pipistrelle within the CRSA to the north of the village of Cottam. Other recorded species include brown long-eared, Daubenton's bat, Nathusius's pipistrelle, soprano pipistrelle and Natterer's. This represents a relatively low diversity of species, all of which can be expected to roost within buildings and/or trees in the local area.
- 4.3.2 Bats are Species of Principal Importance under the NERC Act (2006) and are listed on the Lincolnshire and Nottinghamshire BAP.

### **Field Survey Results**

#### Habitat Appraisal

- 4.3.3 The baseline survey determined that the suitability of habitats for bats across the CRSA was generally low, being dominated by monoculture arable and a simple network of managed hedgerows. The arable and relatively small proportion of pasture are intensively farmed environments, receiving pesticide treatments, and would be expected to support a lower abundance and diversity of prey items upon which bats feed.
- 4.3.4 The hedgerows, woodland edges and the ditches and watercourses were considered to be the habitats of highest value for foraging and commuting bats, particularly those features containing mature trees, and are likely to support high levels of bat activity from a range of different species found within Lincolnshire. Automated bat surveys were carried out of the solar array sites, which comprise habitats largely similar to those found within the CRSA, and at least 8 bat species were recorded with activity levels ranging from low to moderate.
- 4.3.5 The linear hedgerow features along which bats tend to navigate and disperse, as well as forage in preference to monoculture arable, were variable in size and structure, with 59% containing mature trees. Historical hedgerow clearance within the local landscape as part of a move to intensive agriculture has meant that hedgerows are relatively sparse and heavily managed.
- 4.3.6 Woodland stands were occasionally present within the CRSA and generally poorly interlinked, however, several larger areas of more mature woodland were recorded, particularly surrounding Cottam Power Station and provided optimal habitat for foraging bats.
- 4.3.7 The river corridors of the River Trent and River Till are likely to provide good foraging habitat for bats, although trees are largely absent from the banks which reduced their suitability for foraging and commuting for most bat species.

#### Roost Assessments

- 4.3.8 Surveys of trees within the CRSA were carried out to assess their potential to support roosting bats and were categorised as having high, moderate, low or negligible bat roost potential. All trees within hedgerows and in-field trees were surveyed, recorded and mapped although only a selection of trees at the edges of woodland were assessed. A total of 4 high bat roost potential trees, 72 moderate bat roost potential trees, 119 low bat roost potential and 35 negligible bat roost potential trees were recorded within the CRSA (see Habitat Maps within Appendix F). It is likely that a substantial number of bat roosts are present within trees that are located within the CRSA from a range of different species.
- 4.3.9 A relatively small number of agricultural buildings and farm dwellings (of varying levels of use and disuse) were present within the CRSA but were not assessed for their suitability to support roosting bats as they will be unaffected by the installation works.

### **Potential Constraints, Mitigation and Further Work**

- 4.3.10 It is anticipated that losses of short (1-5m) sections of hedgerow will be required in most cases where the CRC crosses hedgerows, which are to be subsequently replanted. Pending the final allocation and length of new gaps, they are unlikely to significantly fragment foraging or commuting routes. The species recorded on the Site during surveys for the array sites are considered able to overcome hedgerow gaps of 3-5m (as per existing agricultural field access gaps) when dispersing.



- 4.3.11 Trees will be retained wherever possible. Any trees for which removal is unavoidable will be re-investigated closely through a climbing inspection and the use of video endoscopes to determine the presence or likely absence of roosts. The loss of any roost will need to be covered under a licence from Natural England, but all alternatives will be explored beforehand. The remaining trees will be retained and so no further loss of potential roosting sites will occur.
- 4.3.12 Any loss of trees capable of supporting roosting bats, could result in direct harm, population fragmentation and habitat degradation, and construction activities could cause disturbance through noise and vibration, although this is unlikely to far exceed baseline levels originating from agricultural activity. The adoption of a buffers from woodland and trees where possible, will reduce the potential for disturbance impacts upon any roosts present in trees, as well as the potential for accidental damage.
- 4.3.13 It is understood that no buildings will be affected as part of the installation works and any roosts within buildings recorded within the CRSA will be unaffected.
- 4.3.14 Lighting can act as a significant barrier to the movement of bats, potentially also causing unlawful obstruction of roost accesses within trees or adjacent buildings. Any construction phase lighting should be carefully considered and positioned. Details of, and the need for, construction phase lighting should be reviewed by Clarkson and Woods as early as possible.

#### ***Opportunities for Enhancement and Biodiversity Net Gain***

- 4.3.15 Whilst there are limited opportunities to enhance habitat for badgers as part of the cable installation works, the planting of new hedgerows and the conversion of arable land to permanent grassland within the array sites will likely benefit bat populations through an increased number of roosting opportunities and increases in foraging capacity respectively.

## **4.4 Otters**

### ***Desk Study Information***

- 4.4.1 Three records of otters were present within the desk study search area, all of which were associated with the River Trent. All observations were located 20m-200m north of the CRSA and were recorded either in 2015 or 2018.
- 4.4.2 Otters are a Species of Principal Importance under the NERC Act (2006) and listed on the Nottinghamshire BAP.

### ***Field Survey Results***

- 4.4.3 Habitat for otters conducive to forming part of a core territory or sustaining a population was restricted to river corridors and the larger wet ditches and streams present within the CRSA. A total of 26 watercourses were assessed as having some suitability for otters. It is considered that otters may use poor or unsuitable habitat, such as dry ditches and terrestrial habitats for sporadic dispersal, especially where adjacent to more suitable habitat.
- 4.4.4 An evaluation of all watercourses within the CRSA was carried out to determine the habitat suitability for otter, the results of which are presented within Appendix G. A total of 115 watercourses and wet ditches were evaluated. Of these, only three were assessed as providing optimal habitat for otter, including the River Trent and River Till, along with Seymour Drain, a tributary of the River Trent which runs north of Cottam Power Station. 13 watercourses were assessed as providing good habitat suitability for otter, 10 were assessed as being suitable but poor and 89 provided negligible habitat suitability.

### ***Potential Constraints, Mitigation and Further Work***

- 4.4.5 Where ditches and other watercourses intersect with the CRC temporary damage of these features is likely to occur. It is strongly recommended and assumed, given the size of certain watercourses, that rivers such as the Trent and the Till, which provide optimal habitat for otters, are avoided by directional drilling or similar. Considering the extent of this habitat and cost of drilling, open cut trenching is likely to be implemented for other ditch and watercourse crossings which will have temporary and short-term impacts on suitable otter habitat.





- 4.4.6 The potential for pollution events and discharge of sediments and excess agricultural and soil runoff during construction should be avoided through best practice construction measures. These will include measures to ensure no impacts on water quality as a result of directional drilling beneath major rivers which can occur from dewatering of drive and reception pits and measures to reduce the risk of frack-outs.
- 4.4.7 Otters, as well as their resting places, are legally protected. Where the CRC crosses a ditch or watercourse, a prior survey of the affected area for signs of otters and its suitability should be undertaken. In the event that evidence of any otter shelter is discovered (either in advance through a specific otter survey or during supervised works), works may require a licence from Natural England in order to proceed. In the absence of evidence of a holt or other shelter, the potential for disturbance or damage to habitat should be mitigated for by carrying works out under an Ecological Watching Brief attended by an experienced ecologist.
- 4.4.8 Otters are able to range over considerable distances and use small streams and ditches occasionally for dispersal and reaching inland waterbodies for hunting. Consequently, while the potential for otters within field boundary features should not be entirely ruled out the short term and temporary impacts on suitable otter habitat is not anticipated to have a significant effect on otters.
- 4.4.9 Watercourse and ditch habitats will be restored on completion of the installation works. The detail of all protective measures to safeguard the suitability of habitats on Site for otters will be set out in the CEMP.

## **4.5 Water Voles**

### ***Desk Study Information***

- 4.5.1 In the last 10 years, 62 observations of water voles were recorded within 2km of the CRSA. Four of these were located within the extent of the proposed cable route, with two recorded being observed within ditches around Cottam Power Station and the other two being located south of the village of Marton.
- 4.5.2 Water voles are a Species of Principal Importance under the NERC Act (2006) and listed on the Lincolnshire and Nottinghamshire BAP.

### ***Field Survey Results***

- 4.5.3 As with otters, suitable habitat for water vole was restricted to river corridors, wet ditches and streams present on or adjacent to the CRSA. Habitat requirements for water voles are simpler than for otter, just requiring shelter (diggable earth banks), aquatic vegetation and reliable access to water.
- 4.5.4 An evaluation of all watercourses within the CRSA was carried out to determine the habitat suitability for water voles, the results of which are present within Appendix H. A total of 115 watercourses and wet ditches were evaluated. Of these 10 were assessed as providing optimal habitat for water vole, including the River Till, 8 were assessed as providing good habitat, 21 were assessed as suitable but poor and 76 provided negligible suitability.
- 4.5.5 No field signs of water voles were recorded during the survey, although specific water vole surveys were not undertaken.
- 4.5.6 It is concluded that water voles have the potential to be present within the wetter ditches and watercourses within the CRSA at least sporadically through the year.

### ***Potential Constraints, Mitigation and Further Work***

- 4.5.7 Water voles are legally protected from harm as well as disturbance while within burrows. As with otters, where the CRC crosses ditches or watercourses, or if any habitat clearance, excavation or engineering works is required within 5m of any ditch and 10m of any watercourse, a prior survey of the affected area for signs of water voles and its suitability should be undertaken. In the event that evidence of any burrows is discovered (either in advance through a specific water vole survey or during supervised works), works may require a licence from Natural England in order to proceed. In the absence of water voles signs, the potential for minor disturbance or damage to habitat should be mitigated for by carrying works out under an Ecological Watching Brief attended by an experienced ecologist.
- 4.5.8 Watercourse and ditch habitats will be restored on completion of the installation works. The detail of all protective measures to safeguard the suitability of habitats on Site for water voles will be set out in the CEMP.



- 4.5.9 The potential for pollution events and discharge of sediments and excess agricultural and soil runoff during construction should be avoided through best practice construction measures to be included within the CEMP. These will include measures to ensure no impacts on water quality as a result of directional drilling beneath major rivers which can occur from dewatering of drive and reception pits and measures to reduce the risk of frack-outs.

#### ***Opportunities for Enhancement and Biodiversity Net Gain***

- 4.5.10 Enhancements for water voles are similar to those given for otters and revolve around the preservation of stream and river banks, protection from disturbance and damage by buffering and avoidance of pollution events.

#### **4.6 Dormouse**

- 4.6.1 Dormice are not known to be present in the Lincoln to Gainsborough area and are only very locally distributed in Lincolnshire at all. In Nottinghamshire, dormice have been reintroduced to three woodlands over the last 10 years, the closest of which is 3.8km west of the CRSA. It is considered highly unlikely that dormice would have colonised the area of the CRSA within Nottinghamshire in that time due to the distance and poor connectivity of suitable habitat. No records for dormice were revealed by the desk study. Habitats within the CRSA were considered largely poor for dormice, being restricted to managed simple hedgerow networks alone, with the exception of occasional areas of woodland. It is highly unlikely that the Sites could be functionally linked to any populations of dormice, therefore this species is not considered a potential constraint to development.

#### **4.7 Great Crested Newts and Other Amphibians**

##### ***Desk Study Information***

- 4.7.1 A total of 62 great crested newt records were returned from the data search. The closest record was 430m east of the cable route where the route passes near to the village of Sturgate. However, the majority of great crested newt records (32) were located in the land east of Cottam Power Station.
- 4.7.2 The data search returned a further 26 records of common frog and five records of common toad. The closest records to the cable route were 340m north and 20m north respectively for each species.
- 4.7.3 Great crested newt and common toad are Species of Principal Importance under the NERC Act (2006) and newts are listed on the Lincolnshire BAP.

##### ***Field Survey Results***

- 4.7.4 A desk study indicated that 8 waterbodies were present within the CRSA, with a further 20 within 250m of it. Of the 28 waterbodies, 20 (71%) were found to exist, were given access and were visited during the 2021 and/or 2022 survey seasons. 13 of these waterbodies held water, of which seven waterbodies were suitable for eDNA survey for GCN; all were returned as negative for GCN. See Appendix 9.7 to Chapter 9 of the Environmental Statement for further detail.
- 4.7.5 As a number of ponds were not able to be subject to eDNA survey for GCN, efforts should be made to survey these ponds in 2023 prior to the cable installation works. If surveys cannot be undertaken a precautionary approach should be adopted, with GCN presence assumed for ponds not surveyed.
- 4.7.6 Several waterbodies were found to be dry. This is considered partly as a result of the fact that many of the mapped waterbodies were in actual fact ephemeral field ponds or are subject to regular drying. Drying out in three or more years in every ten is considered to significantly reduce the suitability of a pond for GCN.
- 4.7.7 GCN records are very sparsely distributed within the West Lindsey district, reflecting the fact that the intensive agricultural land-use which characterises the landscape provides generally poor habitat for this species. Nevertheless, the CRSA is considered to be consistently sub-optimal for GCN in terms of intrinsic habitat value and local population densities.

##### ***Potential Constraints and Mitigation***

- 4.7.8 Legal protection afforded to GCN extends to their habitat (breeding and resting places), which includes both aquatic and terrestrial types. Arable and actively cut grassland or grazed pasture, which make up the vast majority of the CRSA, are considered sub-optimal habitats. Scrub, tussocky or uncultivated grassland,



woodland and hedgerows are all optimal (as well as wetland and other aquatic habitat). These habitats typically occur within field margins and boundaries and at field headlands, or in a relatively low number of uncultivated fields

- 4.7.9 It is anticipated that short sections of hedgerow and field margins will be temporarily removed to facilitate the cable installation. Habitats will be restored on completion of the installation works and impacts associated with the installation works are considered to be short term and reversible.
- 4.7.10 Although no positive records of GCN were returned from the eDNA surveys, a small number of ponds could not be surveyed during the designated survey season. In light of this, further survey should be carried out of these ponds if access allows. Should surveys continue to not be possible, each unsurveyed pond should be subject to a desk based assessment of their likelihood of supporting GCN, including proximity to other ponds, GCN records and presence of connecting suitable habitat. Where an ecologist determines that there is a reasonable likelihood of GCN presence, a zoned approach to the risk of unlawful habitat clearance or direct disturbance to GCN should be adopted, in accordance best practice guidance. This recognises the fact that the likelihood of encountering newts within potentially suitable habitat decreases with distance from ponds known to support them. Table 5 provides general constraints during the construction phase and working methods recommended for all Sites containing or adjacent to positive GCN ponds.
- 4.7.11 Pending the start date of construction, it may be possible to obtain a GCN district licence from the relevant authority to proceed with the works. At present Lincolnshire is not covered under district licensing, however this is being rolled out across England and is likely to be in place before construction. District level licensing will allow construction to proceed without timing or mitigation constraints (pending the zoning of the Site); however, in all cases it is recommended that the best practice guidance is followed.
- 4.7.12 Best practice would include a toolbox talk to contractors prior to construction to outline identification of GCN and steps to take in the unlikely event that they are encountered during construction.
- 4.7.13 In the absence of a district licence and where winter working is unavoidable, it may be possible to proceed works under a non-licensable Risk Avoidance Method Statement (RAMS). This Method Statement would be detailed within a Construction Environmental Management Plan (CEMP) prepared for the construction phase of the development.

**Table 5. Summary of Constraints and Working Methods in Proximity to GCN Breeding Ponds**

Zone (Distance from perimeter of nearest known breeding or unsurveyed pond)	Temporary or Permanent Loss of, or Disturbance to:	
	Optimal Habitat	Sub-Optimal Habitat
0-100m	<ul style="list-style-type: none"> <li>Licence from Natural England likely to be required – <i>see further information below</i>.</li> <li>Newt exclusion exercise likely required, involving installation of partially buried fencing and pitfall traps, to be checked daily for 30+ days to declare habitat clear of GCN in advance of works commencing.</li> </ul> <p><i>Additional constraints:</i></p> <ul style="list-style-type: none"> <li>Constrained to <b>active season</b> (March to October inclusive, weather depending) in order to avoid impacts on hibernating individuals.</li> <li>Ecological Clerk of Works (ECoW) required to supervise.</li> <li>Destructive Search methodology to precede works – consists of a staged cutting (mowing or strimming) of vegetation before being methodically removed using an excavator.</li> </ul>	<ul style="list-style-type: none"> <li>Licence from Natural England potentially required, but unlikely. To be informed through pre-application consultation with LPA and NE.</li> <li>Due to negligible hibernation potential within these habitats, works likely to be constrained to <b>winter period</b> (November to February inclusive, weather depending).</li> <li>Ecological Clerk of Works (EcoW) required to give tool-box talk to contractors.</li> </ul>
101-250m	<ul style="list-style-type: none"> <li>Licence only required where approx. 5000m<sup>2</sup> (0.5ha) impacted.</li> <li>'Additional constraints' as above.</li> </ul>	<ul style="list-style-type: none"> <li>Licensing constraints <b>unlikely</b> - to be informed through pre-application consultation with LPA and NE.</li> </ul>



		<ul style="list-style-type: none"> <li>• Potential for restriction to winter working methodology.</li> </ul>
251m +	<ul style="list-style-type: none"> <li>• Licence only required where approx. 50,000m<sup>2</sup> (5ha) impacted.</li> <li>• 'Additional constraints' as above.</li> </ul>	<ul style="list-style-type: none"> <li>• Licensing constraints highly unlikely.</li> </ul>

- 4.7.14 The above construction phase constraints will be the subject of discussion with LPA consultees and Natural England. An acceptable approach to construction during the DCO process will need to be established, therefore the information given in Table 5 above is indicative at this stage subject to amendment. The final, agreed approach to construction and licensing will be detailed within an eventual EIA (and its great crested newt survey report technical appendix) and Construction Ecological Management Plan, or similar document.
- 4.7.15 Currently, licensing for great crested newts in this region generally involves recourse to a traditional mitigation licence. This typically requires the need for an exclusion, trapping and translocation exercise where suitable habitats in close proximity to breeding ponds are to be lost or temporarily affected. This is seasonally constrained and may require 30 or more days to undertake prior to construction commencement. Licence determination post-construction also takes a statutory 30-day period.
- 4.7.16 An alternative option exists, known as the Low Impact Class Licence, which is applicable for developments where impacts in proximity to breeding ponds are considered to be small, and do not affect the ponds themselves. These licences are streamlined and far less onerous to apply for and have determined. Should the scheme be designed to minimise impacts to suitable habitats within 100m as far as possible, this licence type may be available. Further consultation will be necessary to determine this.

#### **Opportunities for Enhancement and Biodiversity Net Gain**

- 4.7.17 Construction of new waterbodies within 250m of known breeding ponds would improve the long-term viability of currently sparse and poorly connected local populations. This would contribute substantially to local and national green infrastructure policy and the restoration of local biodiversity.
- 4.7.18 Planting of new hedgerows, woodland strips and scrub/shrub vegetation in locations strategic to improving corridors for dispersal between existing (and any new) ponds would serve to improve green infrastructure for amphibians and long-term population sustainability.
- 4.7.19 Management of field edges, hedgerow/woodland/ditch/watercourse buffer zones, wayleaves and easements within 250m of known breeding ponds to create coarse, tussocky grassland or meadow habitat would also contribute to the above aims.

## **4.8 Reptiles**

### **Desk Study Information**

- 4.8.1 The data search returned six records of grass snake and a single record of common lizard. All observation were located within the vicinity of the village of Marton and were between 25m and 600m from the CRSA.
- 4.8.2 Reptiles are Species of Principal Importance under the NERC Act (2006) and slow worm are listed on the Nottinghamshire BAP.

### **Field Survey Results**

- 4.8.3 Habitats for reptiles are generally limited in quality and extent across the CRSA, being restricted to hedgerow bases, ditches, tussocky field margins, occasional less intensively managed grassland fields and woodland edges only. It is likely that populations of widespread reptile species are occasionally present within the above suitable habitats within the CRSA.
- 4.8.4 A common lizard was observed during the baseline survey at the northern end of the CRSA, within an arable field margin.



### **Potential Constraints, Mitigation and Further Work**

- 4.8.5 Reptiles are legally protected from reckless and intentional harm, therefore it is recommended that all field margins and hedgerows, as well as target noted locations of discrete reptile habitat are retained and protected wherever possible.
- 4.8.6 It is anticipated that short sections of suitable reptile habitat will require removal to facilitate the cable installation through, tussocky field margins, road verges and hedgerows. A best practice approach to habitat clearance and management is considered appropriate. Where habitat suitable for reptiles (all field margins, hedgerows, tussocky grassland and river corridors) is proposed for clearance, a Reasonable Avoidance Method Statement should be followed to be set out within the Construction Environmental Management Plan. Depending on the amount of land affected, this is likely to involve the phased removal of vegetation in order to dissuade reptiles from that area, followed by a destructive search supervised by an ecologist. Should particularly large areas of habitat be earmarked for removal, a survey and translocation exercise may be a last resort, although considered unlikely.
- 4.8.7 All habitat will be restored on completion of the installation works to ensure there will be no long term impacts on reptiles.

### **Opportunities for Enhancement and Biodiversity Net Gain**

- 4.8.8 Optimal reptile habitat includes tussocky grassland, scattered scrub and ruderal vegetation interspersed with physical features conducive to basking on and hibernating in. Considerable net gains for
- 4.8.9 The local area is unlikely to support significant populations of reptile species and therefore enhancements specifically for these species are of a low priority, however the following basic measures are suggested.
- 4.8.10 The creation of a number of appropriately located reptile hibernaculum would improve the Sites' habitat suitability by providing features within which to hibernate during the winter and to bask during the summer. The construction of these habitat piles using partially buried dead wood, earth and stone would also provide invertebrate prey items. Further advice on numbers and locations can be given as the proposals evolve.
- 4.8.11 The reversion of intensive agriculture to diverse grassland is encouraged as this would improve the plant species diversity and habitat structure within the Sites. In turn, this would provide improved foraging and hibernation habitat for reptiles. Advice on the favourable management of the grasslands on Site for the benefit of reptiles and other wildlife would be agreed with you and provided within a Landscape Environmental Management Plan.

## **4.9 Birds**

### **Desk Study Information**

- 4.9.1 Numerous records of 54 species of notable birds, or birds of conservation concern, were revealed by the Desk Study. These are detailed in Appendix D. The closest record to the CRSA (40m west) is for the observation of a swift in the village of Stow. However, the majority of these species' records comprise farmland birds such as yellowhammer, quail, barn owl and turtle dove as well as waders and raptors.
- 4.9.2 Many species of bird are Species of Principal Importance under the NERC Act (2006), farmland birds are listed on the Lincolnshire BAP and species including barn owl, nightjar and willow tit are listed on the Nottinghamshire BAP.

### **Field Survey Results**

- 4.9.3 Three breeding bird surveys have been carried out of the CRSA.
- 4.9.4 In general, considering the broad similarities in habitat arrangement, topography, field size and agricultural management, the breeding bird species assemblage is consistent across the CRSA. Results can be broadly divided into those for ground-nesting birds, birds of hedgerows and boundaries and other bird species.



## Ground-nesting Birds

### *Skylark*

- 4.9.5 This is a red-listed species on account of its declining population trend as a result of agricultural intensification and land-use change. It is also a Species of Principal Importance (SPI) under the NERC Act 2006. Skylark are a resident species whose numbers swell each winter from an influx of visitors from northern Europe. Skylark require long, unbroken sightlines in grassland (including arable or set-aside up to 40cm high) of at least approximately 200m for predator avoidance.
- 4.9.6 Skylark were recorded all along the CRSA and was recorded within most arable fields that were surveyed. The CRSA supports significant populations of skylark, although this would be expected to be in line with population densities in the local landscape.
- 4.9.7 Winter-sown wheat - as is ubiquitous across most of the CRSA - is considered to be a suitable but sub-optimal habitat for skylark on account of its growth above 40cm at a time when skylark are looking to have second or third broods in the mid-late summer.
- 4.9.8 If cable installation works take place during the breeding season, there is the potential for temporary disturbance and destruction of skylark nesting sites along the CRC.

### *Yellow wagtail*

- 4.9.9 For the same reasons as skylark, yellow wagtail are also red listed, and a SPI. Yellow wagtail migrate to the UK from Africa each spring. Yellow wagtail are a far less numerous bird than skylark and were recorded along the length of the CRSA although at significantly lower rates than skylark. As for skylark, there is the potential for temporary disturbance and destruction of yellow wagtail nesting sites along the CRC, during the breeding season.

### *Grey Partridge*

- 4.9.10 This is a red listed species and an SPI, typical of lowland arable farmland although having suffered marked recent declines. Grey partridge were recorded all along the CRSA but in relatively low numbers. Higher densities were recorded within sections of the CRSA surrounding the proposed Cottam 1 array site, where many pairs have been introduced and specifically managed for the game shoot there. There is the potential for temporary disturbance and destruction of grey partridge nesting sites along the CRC when installation works are carried out during the breeding season.

### *Quail*

- 4.9.11 This is an amber-listed species for which population and conservation research in the UK is limited on account of its cryptic nature and difficulty of survey. Quail are a summer migrant from Africa and the Mediterranean and closely associated with arable habitats. Quail were recorded on one occasion within the CRSA, within the section of the route that connects Cottam 1 North to Cottam 1 South. There is the potential for temporary disturbance and destruction of quail nesting sites where they occur within the CRC when installation works are carried out during the breeding season.

### *Curlew*

- 4.9.12 Curlew are red listed species and also a Species of Principal Importance. Curlew predominantly breed in upland moorland in the UK but do also nest in lowland wet, unimproved or rough pasture and occasionally arable cropland, although lowland breeding populations have declined significantly in the last 25 years. Nine curlew were recorded during the surveys in several locations within the CRSA with concentrations of calling birds within pasture grassland halfway between Cottam 1 North and Cottam 2 and to the west of the River Trent, above Cottam Power Station. Single sightings were also recorded between Cottam 1 North and South and to the west of Cottam 1 West. The cable installation works has the potential to disturb or destroy curlew nesting sites if works take place during the breeding season.

### *Lapwing*

- 4.9.13 Lapwing are red listed species and also a Species of Principal Importance. Lapwing generally nest on spring-tilled arable land or on short grassland with a low stocking rate. Three sightings of lapwing were recorded within





the CRSA including one singing individual immediately north of Cottam 2 array site. The other sightings were located 1.7km south of Cottam 2 and on the eastern bank of the River Trent. The cable installation works has the potential to disturb or destroy lapwing nesting sites if works take place during the breeding season.

#### Birds of Field Boundary Habitats

- 4.9.14 Populations of birds typical of hedgerows, woodland edges, scrub and river corridors in a lowland agricultural setting were recorded throughout the CRSA in reasonably high numbers, although considered proportionate to the surrounding habitats. These species principally included yellowhammer, linnet, common whitethroat, lesser whitethroat, tree sparrow, reed bunting and great spotted woodpecker.
- 4.9.15 Many of these birds will forage within arable field edges or nest in ditches, hedgerow bases or grassy margins as well as the hedgerows themselves. It is anticipated that short sections of hedgerows, ditches and field margins will be impacted by the cable installation works which, when carried out within the breeding season (March – August) could disturb or destroy nests of species that breed within field boundary habitat.

#### Other Birds

- 4.9.16 Barn owl was recorded relatively frequently within the CRSA with a particular concentration being recorded within rough grassland to the east of the River Trent. No nest sites were confirmed during the survey but it is likely that a number of nest sites are present within the CRSA within cavities in mature trees and unused buildings. There is potential for disturbance or destruction of nest sites during the cable installation works.
- 4.9.17 Buzzard, peregrine, hobby, kestrel, and red kite were all observed during the bird surveys. Nesting buzzard were recorded within woodland edges and peregrine was recorded nesting within Cottam Power Station. Hobby, kestrel and red kite will nest in either mature trees or building / man-made structures and nests of these species were likely present within the CRSA. There is potential for disturbance or destruction of nest sites of these species during the cable installation works.

#### **Potential Constraints and Options for Mitigation**

- 4.9.18 On account of their status as birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) nests of hobby, peregrine, barn owl, quail and red kite will need to be protected from disturbance during any development activity. Consequently, pre-commencement precautionary survey work is likely to be required to establish risks immediately prior to the construction phase.
- 4.9.19 Similarly, all nests for other species are protected from harm, therefore any potential nesting habitat clearance will need to be carried out either during the period September to February inclusive, under the supervision of an ecologist, or following further survey to confirm absence.
- 4.9.20 The CRC should be micro sited to avoid mature trees and buildings where possible as these features are of highest value to nesting birds.
- 4.9.21 The impacts resulting for the cable installation works are considered to be short-term and reversible with habitats to be restored on completion of the works. No long term effect on bird nesting habitat will result from the cable installation.
- 4.9.22 As part of the array sites mitigation strategy for ground nesting birds, substantial areas of suitable breeding habitat will be created which will also mitigate the short term loss of suitable breeding habitat resulting from the cable installation.

#### **Opportunities for Enhancement and Biodiversity Net Gain**

- ~~4.9.23~~ There is opportunity to restore hedgerow habitats in a way that provides increased suitability for foraging and nesting birds. Replanting with a diverse mix of native species including fruit bearing shrubs / trees will provide an increased foraging resource for birds within hedgerows that are currently largely dominated by blackthorn and hawthorn.



## 4.10 Invertebrates

### **Desk Study Information**

- 4.10.1 Numerous records of 23 species of notable invertebrate species (two beetle, one butterfly and 20 moth species), were revealed by the Desk Study. These are detailed in Appendix D. All species were recorded beyond 2km of the cable route.
- 4.10.2 Many invertebrates are Species of Principal Importance under the NERC Act (2006), white clawed crayfish are listed on the Lincolnshire BAP and Dingy Skipper, Green Hairstreak, Grizzled Skipper, Hazel Pot Beetle and White-clawed Crayfish are listed on the Nottinghamshire BAP.

### **Field Survey Results**

- 4.10.3 Habitat quality for invertebrates within the CRSA is generally low, owing to the intensive agricultural land use and regularity of pesticide use. Boundary habitats provided the most suitable habitat within these intensively farmed areas including wider tussocky field margins, hedgerows, river corridors, the drainage ditch network and waterbodies. The blocks of woodland and less intensively managed agricultural grassland also provided good habitat for a range of invertebrates. It is anticipated that the CRC will pass through habitats of good suitability for invertebrates but, due to the short term and reversible nature of the impacts, no significant long term effects are anticipated provided suitable mitigation is adopted.
- 4.10.4 The River Trent and River Till catchments are not known to support white clawed crayfish and no records were returned in the data search.

### **Potential Constraints, Mitigation and Further Work**

- 4.10.5 The CRC will pass through areas of habitat that is of good suitability for invertebrates, see Habitat Maps included in Appendix F. All habitats affected by the works will be restored on completion and any effects will therefore be short term and reversible. Restoration should be targeted and tailored to the specifics of each parcel of habitat of higher value to invertebrates and turves should be stacked and re-laid wherever possible under the guidance of an Ecological Clerk of Works and under an agreed method statement. In this way, no significant long term impacts on invertebrates are anticipated.

## 4.11 Other Protected Species and Species of Conservation Concern

### **Desk Study Information**

- 4.11.1 57 records of brown hare were present, with ten records being located within the CRSA.
- 4.11.2 One record of stoat was present 900m south of the CRSA. A single record was also returned of weasel, 700m east of the CRSA.
- 4.11.3 54 records of hedgehog were returned, the closest of which was less than 10m from the CRSA at a point where it crosses the village of Marton.
- 4.11.4 Eight records of European eel were recorded within 2km of the site, including one record within the CRSA. Most records were predominantly associated with ditches branching off the River Trent and the others were located near to the River Till. Similarly, two spined loach records in the same locations were recorded.
- 4.11.5 Fifteen species of flowering plant were recorded, all of which were only recorded once. Green nightshade was the only species present within the CRSA.
- 4.11.6 Freshwater fish are listed on the Lincolnshire BAP and harvest mouse and hedgehog are listed on the Nottinghamshire BAP.

### **Field Survey Results**

- 4.11.7 All along the CRSA large numbers of brown hare were noted within the fields. The habitats within the CRSA were also conducive to the presence of species such as hedgehog, polecat and other small mammals within hedgerows, field margins and blocks of woodland. Harvest mice are assumed to be present to some degree within cereal crops and field margins. The larger watercourses are likely to support several species of fish and other aquatic life.





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**Potential Constraints, Mitigation and Further Work**

- 4.11.8 The main impacts will arise from field boundary, ditch and watercourse crossings. During field boundary crossings, there is the potential for habitats suitable for the above species, including breeding sites, to be disturbed or destroyed during the cable installation. All habitats will be restored on completion of the works and, as such, any impacts will be temporary and reversible.
- 4.11.9 It is anticipated that larger watercourses will be crossed by directional drilling beneath the watercourses, thereby limiting potential for negative impacts on aquatic species. The CEMP will include measures to reduce the potential for impacts on water quality which may arise during directional drilling.
- 4.11.10 Temporary fencing to demarcate the CRC is not considered likely to impede movement by these species as long as the mesh size is large enough for species to pass through or underneath.



## 5 FURTHER WORK AND NEXT STEPS

### 5.1 Recommended and Optional Further Surveys

5.1.1 As derived from the above species and habitats discussions, the following further surveys are recommended prior to the cable installation works.

Further Survey for Cable Installation Works			
Species/Item	Survey Type	Timing	Comments
Badger	Preconstruction Survey	2 weeks prior to works commencing, any time of year.	A search for badger setts within the finalised CRC two weeks prior to construction to inform any mitigation / licencing where necessary.
Great Crested Newts	Water sampling	Mid-April and end-June 2023	Further efforts to survey ponds not accessed during 2021 / 2022 surveys and within 250m of CRC.
Birds	Preconstruction breeding bird surveys	March to August, 48hrs prior to vegetation clearance.	Surveys of suitable nesting habitat no more than 48 hours prior to vegetation clearance.
Bats	Tree and building inspection	Preconstruction, any time of year.	Buildings or trees with bat roosting potential to be potentially disturbed or removed will be inspected at height for roosting bats. Subsequent emergence surveys may be required to inform licences where necessary.
Otters and Water Voles	Watercourse inspection	Preconstruction, any time of year	Detailed search of CRC watercourse / ditch crossing points for resting places / holts / burrows of otter and water vole.

### 5.2 Cable Installation Landscape and Ecological Mitigation Plan (CableLEMP)

5.2.1 The works will likely need to be supported by a document setting out how cable installation impacts upon sensitive ecological receptors will be avoided and minimised.

5.2.2 This document would set out the following:

- Details of protective and permanent fencing including distances from habitat features etc.
- Working methods adopted to avoid accidental damage (including root compaction, contamination and pollution) to retained features such as trees, hedgerows and watercourses.
- Examples of and a plan to show where signage will be installed.
- The roles of different site personnel in protecting and maintaining retained habitat during construction.
- The role of an Ecological Clerk of Works to ensure inspections are carried out and that activities carrying a risk of harm to protected and notable species and habitats can be appropriately planned and carried out.
- Steps taken to prevent the spread of invasive non-native species potentially present.
- Considerations for the minimisation of damage to the ground during the winter months.



## APPENDIX A: WILDLIFE LEGISLATION SUMMARY

### BADGERS

Badgers and their setts are protected under the Protection of Badgers Act 1992 (as amended) against damage or destruction of a sett, or disturbance, death or injury to the badgers. The Act defines a sett as “any structure or place which displays signs indicating current use by a badger”. The definition of current use is subject to considerable debate. Natural England have produced guidance on the definition of current use. (*Badgers and Development – A guide to best practice and development. Natural England 2011*). Given the ambiguity surrounding the definition in all circumstances we would recommend an assessment of current use is always undertaken by a qualified ecologist. Natural Resources Wales (NRW) have a slightly different definition of current use. Please see the NRW website for further information. Penalties for offences against badgers or their setts include fines of up to £5,000 and/or up to six months in prison.

Disturbance of badgers could be caused by any digging activity or scrub clearance within 30 metres of an occupied sett and therefore every case needs to be assessed individually. Felling of trees close to a badger sett may also cause disturbance in some situations. Some activities such as pile driving may cause disturbance at even greater distances, and should be discussed with Natural England or NRW.

Licences are issued by Natural England (or NRW in Wales) to allow the disturbance of badgers, and the destruction of their setts in certain circumstances, in relation to development. Full planning permission must be obtained before a licence application will be considered. Although licences can be applied for at any time of year, disturbance of badgers or exclusion of badgers from a sett can only take place between 1 July and 30 November, to avoid the breeding season when dependant young may be underground. This restriction may be relaxed in some cases where a sett is seasonal and badgers can be shown to be absent from a sett at that time of year.

This report contains information of a confidential nature relating to the location of badger setts. Public access to this data should be restricted to those who have a legitimate need to assess the information and to know the exact situation of the setts rather than simply that badgers are present.

### BATS

All 17 species of bat known to breed in England and Wales, and their roost sites, are protected under the Conservation of Habitats and Species Regulations 2017, known as the ‘Habitats Regulations’. This makes it an offence to deliberately kill or injure a bat, or to deliberately disturb a bat such that its ability to hibernate, breed or rear young, or such that the species’ distribution, were significantly affected. It is also an offence to damage or destroy any breeding site or resting place. Intentional or reckless disturbance of bats in their resting places, and damage to or obstruction of resting places are also offences under the Wildlife and Countryside Act 1981 (as amended). Under UK law a bat roost is “any structure or place which any wild [bat]...uses for shelter or protection”. As bats tend to reuse the same roosts, legal opinion is that the roost is protected whether or not the bats are present at the time. Penalties for offences against bats or their roosts include fines of up to £5,000 and/or up to six months in prison.

As a result, development works which are likely to involve the loss of or alteration to roost sites, or which could result in killing of or injury to bats, need to take place under licence. Works which could disturb bats may also be licensable, though this needs to be assessed on a case by case basis, as bats’ sensitivity to disturbance varies depending on normal background levels, and the definition of disturbance offences under the Habitats Regulations is complex. In practice this means that works involving modification or loss of roosts (typically in buildings, trees or underground sites) or significant disturbance to bats in roosts are likely to be licensable.

Licences can be obtained from Natural England or the Welsh Government to permit works that would otherwise be illegal, provided it can be demonstrated that the proposed works are needed to protect public health or safety, or for other reasons of overriding public interest including social and economic reasons. It is also necessary to demonstrate that there is no satisfactory alternative to the proposed works, and that the conservation status of bats in the area will be maintained. Appropriate mitigation and post-construction monitoring are therefore a requirement of all licences.

### AMPHIBIANS

Great Britain supports seven native amphibian species. The four most widespread species; smooth and palmate newts, common frog, and common toad, receive partial protection under the Wildlife and Countryside Act 1981 (as amended) which prohibits sale, barter, exchange, transporting for sale and advertising to sell or to buy. The great crested newt, pool frog and natterjack toad are also fully protected in England and Wales under the Conservation of Habitats and Species Regulations 2017. Penalties for offences against amphibian species include fines of up to £5,000 and/or up to six months in prison.

Four amphibian species (great crested newt, pool frog, common toad, natterjack toad) are listed as priority species under the UK Biodiversity Action Plan, and are therefore considered to be Species of Principal Importance in England and Wales (excluding the pool frog, which does not occur in Wales) under the Natural Environment and Rural Communities (NERC) Act 2006. All public bodies including local and regional authorities have a duty under this legislation to have regard for the conservation of biodiversity.



## GREAT CRESTED NEWTS

Great crested newts are protected in England and Wales under the Conservation of Habitats and Species Regulations 2017, known as the 'Habitats Regulations'. This makes it an offence to deliberately kill or injure a great crested newt, or to deliberately disturb a great crested newt such that its ability to hibernate, breed or rear young, or such that the species' distribution, were significantly affected. It is also an offence to damage or destroy any breeding site or resting place for great crested newts. Intentional or reckless disturbance of great crested newts in places of shelter (ponds or terrestrial refuges), and damage to or obstruction of places of shelter are also offences under the Wildlife and Countryside Act 1981 (as amended). Penalties for offences against great crested newts include fines of up to £5,000 and/or up to six months in prison.

As a result, development works which are likely to involve the loss of ponds or terrestrial habitat, or which could result in killing of or injury to great crested newts, need to take place under licence. Works which could disturb great crested newts may also be licensable, though this is rarely the case unless loss of great crested newt habitat is also proposed, and should be assessed on a case by case basis. In practice this means that works involving any removal of or significant modification to ponds or terrestrial habitats (typically rough grassland, scrub, hedgerow bases and woodland) supporting great crested newts are likely to be licensable.

Licences can be obtained from Natural England or the Welsh Government to permit works that would otherwise be illegal, provided it can be demonstrated that the proposed works are needed to protect public health or safety, or for other reasons of overriding public interest including social and economic reasons. It is also necessary to demonstrate that there is no satisfactory alternative to the proposed works, and that the conservation status of great crested newts in the area will be maintained. Appropriate mitigation and post-construction monitoring are therefore a requirement of all licences.

## REPTILES

All six native reptile species receive protection under the Wildlife and Countryside Act 1981 (as amended). The four more common species (common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix natrix*) receive partial protection which makes it an offence to intentionally kill or injure a reptile. The two other reptile species (smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*), both of which are rare with very restricted UK ranges receive full protection under the Conservation of Habitats and Species Regulations 2017. Penalties for offences against reptile species include fines of up to £5,000 and/or up to six months in prison.

Works such as site clearance or topsoil stripping which could result in killing or injury of reptiles could be considered result in an offence unless measures are taken to minimise the risk of this occurring. Any inadvertent impacts on common reptile species despite these mitigation measures being in place would be considered an 'incidental result of an otherwise lawful operation' which 'could not reasonably have been avoided' and therefore not an offence. Works which could affect smooth snakes or sand lizards, or their habitats, would need to take place under licence from Natural England or Natural Resources Wales. However sites supporting smooth snakes or sand lizards are very rarely affected by development proposals.

In practice, mitigation for impacts of development on common reptiles generally comprise one or more of the following techniques: displacement, in which reptiles are encouraged to move to suitable retained habitat by changing the management of areas affected by development; exclusion, where reptile-resistant fencing is provided between a development site and suitable retained habitat allowing reptiles to be trapped from the development footprint and released elsewhere on the site; and translocation, where animals are trapped from a development site and released on another suitable site nearby. Reptile mitigation proposals, particularly those involving translocation of animals, should be agreed in advance with the local planning authority.

## BIRDS

All British birds, their nests and eggs (with certain exceptions) are protected under the Wildlife & Countryside Act 1981 (as amended) which makes it an offence to: intentionally kill, injure or take a wild bird; intentionally take, damage or destroy nests which are in use or being built; intentionally take or destroy birds' eggs; or possess live or dead wild birds or eggs. A number of species receive additional protection through inclusion on Schedule 1 of the Wildlife and Countryside Act; for these it is also an offence to intentionally or recklessly disturb birds while nest building, or at a nest containing eggs or young, or to disturb the dependant young of such a bird. Penalties for offences against bird species include fines of up to £5,000 and/or up to six months in prison.

General licences for control of some bird species are issued by Natural England and Natural Resources Wales in order to prevent damage or disease, or to preserve public health or public safety, but it is not possible to obtain a licence for control of birds or removal of eggs/nests for development purposes. Consequently if nesting birds are present on a development site when works are programmed to start it is usually necessary to delay works, at least in the areas supporting nests, until any chicks have fledged and left the nest. It is usually possible, once chicks have hatched, for an experienced ecologist to predict approximately when they are likely to fledge, in order to inform programming of works on site.

## OTTERS

Otters and their holts are protected in England and Wales under the Conservation of Habitats and Species Regulations 2017, known as the 'Habitats Regulations'. This makes it an offence to deliberately kill or injure an otter, or to deliberately disturb an otter such that its ability to breed or rear young, or such that the species' distribution, were significantly affected. It is also an offence to damage or destroy any breeding site or resting place. Intentional or reckless disturbance of otters in their holts, and damage to or obstruction of



holts are also offences under the Wildlife and Countryside Act 1981 (as amended). Penalties for offences against otters or their holts include fines of up to £5,000 and/or up to six months in prison.

Any development works which are likely to involve the loss of holts, or which could result in killing of or injury to otters (which are only likely to occur extremely rarely), need to take place under licence. Works which could disturb otters may also be licensable, though this is also rarely the case as the majority of developments on watercourses and coastal areas where otters are present can be carried out in a way which avoids significant disturbance.

Where it is necessary, licences can be obtained from Natural England or the Welsh Government to permit works that would otherwise be illegal, provided it can be demonstrated that the proposed works are needed to protect public health or safety, or for other reasons of overriding public interest including social and economic reasons. It is also necessary to demonstrate that there is no satisfactory alternative to the proposed works, and that the conservation status of otters in the area will be maintained. Appropriate mitigation and post-construction monitoring are therefore a requirement of all licences.

## WATER VOLES

Water voles *Arvicola amphibius* receive protection under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to: intentionally kill, injure, or take a water vole; intentionally or recklessly disturb a water vole whilst in its place of shelter; intentionally or recklessly damage, obstruct or destroy a water vole's place of shelter; or intentionally or recklessly obstruct access to a place of shelter. Penalties for offences against water voles include fines of up to £5,000 and/or up to six months in prison.

Works such as watercourse re-profiling, installing culverts, or topsoil stripping close to watercourses and ponds which could result in destruction or obstruction of burrows could be considered reckless, and/or could be considered intentional if water voles are killed or injured, unless measures are taken to minimise the risk of this occurring. Any inadvertent impacts on water voles despite these mitigation measures being in place would be considered an 'incidental result of an otherwise lawful operation' which 'could not reasonably have been avoided' and therefore not an offence.

In practice, mitigation for impacts of development on water voles generally comprise one or more of the following techniques: displacement, in which water voles are encouraged to move to suitable retained habitat by changing the management of areas affected by development; exclusion, where water vole-resistant fencing is provided between a development site and suitable retained habitat allowing animals to be trapped from the development footprint and released elsewhere on the site; and translocation, where animals are trapped from a development site and released on another suitable site nearby. Water vole mitigation proposals, particularly those involving translocation of animals, should be agreed in advance with Natural England or Natural Resources Wales.

## PLANNING POLICY IN RELATION TO BIODIVERSITY

The National Planning Policy Framework (NPPF), was published in March 2012 and revised in July 2021. Additional guidance can be found online at <http://planningguidance.planningportal.gov.uk/blog/guidance/>. The NPPF simplifies and collates a number of previous planning documents and outlines the government's objective towards biodiversity.

The NPPF identifies ways in which the planning system should contribute to and enhance the natural and local environment (Paragraph 174), including:

- (a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- (b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- (d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- (e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- (f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate. protecting and enhancing valued landscapes, geological conservation interests and soils;

It also emphasises the importance of conserving biodiversity and areas covered by landscape designations (Paragraph 176):

Great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to landscape and scenic beauty. The conservation of wildlife and cultural heritage are important considerations in all these areas, and should be given great weight in National Parks and the Broads. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.

When determining planning applications, the NPPF states that local planning authorities should aim to conserve and enhance biodiversity (Paragraph 175) by applying principles including:

- (a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;



- (b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- (c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons<sup>6</sup> and a suitable compensation strategy exists; and
- (d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate..

The following should be given the same protection as habitats sites:

- (a) potential Special Protection Areas and possible Special Areas of Conservation;
- (b) listed or proposed Ramsar sites<sup>7</sup>; and
- (c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

There is a general presumption in favour of sustainable development within the NPPF. It is noted in Paragraph 182 that this presumption does not apply where the plan or project is likely to have a significant effect on a habitat site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

The Natural Environment and Rural Communities Act (2006) states that a public authority must, "in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity; Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat". DEFRA issued further guidance on implementation of this act in the document; Guidance for Local Authorities on Implementing the Biodiversity Duty (May 2007), which notes that "Conserving biodiversity includes restoring and enhancing species populations and habitats, as well as protecting them".

## ECOLOGICAL ENHANCEMENTS

The Natural Environment and Rural Communities Act (2006) states that a public authority must, "in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity; Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat". DEFRA issued further guidance on implementation of this act in the document; Guidance for Local Authorities on Implementing the Biodiversity Duty (May 2007), which notes that "Conserving biodiversity can include restoring or enhancing a population or habitat".

In England, the National Planning Policy Framework (NPPF), issued in July 2021, states that the planning system should contribute to "minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;. It also states that "opportunities to incorporate biodiversity in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity".

## UK BIODIVERSITY ACTION PLANS

The UK Biodiversity Action Plan (UK BAP) 2011 is a policy first published in 1994 to protect biodiversity and stems from the 1992 Rio Biodiversity Earth Summit. The policy is continuously revised to combine new and existing conservation initiatives to conserve and enhance species and habitats, promote public awareness and contribute to international conservation efforts. Each plan details the status, threats and unique conservation strategies for the species or habitat concerned, to encourage spread and promote population numbers.

Species or habitats identified as priorities under the UK Biodiversity Action Plan receive some status in the planning process through their identification as Species/Habitats of Principal Importance in England and Wales, under the Natural Environment and Rural Communities (NERC) Act 2006 (as amended).

Current planning guidance in England, the National Planning Policy Framework, does not specifically refer to Species or Habitats of Principal Importance, though it includes guidance for conservation of biodiversity in general. Supplementary guidance is available online at <http://planningguidance.planningportal.gov.uk/blog/guidance/> and this guidance indicates that it is 'useful to consider' the potential effects of a development on the habitats or species on the Natural Environment and Rural Communities Act 2006 section 41 list.

## PROTECTED PLANTS

All wild plants receive some protection under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence for any unauthorised person to intentionally uproot any wild plant. Additionally, certain rare species of plants listed on Schedule 8 of the Act are given greater protection. For these species, it is an offence to intentionally pick, uproot or destroy them, or to possess or sell them (live or dead), or anything derived from them. Penalties for offences under this legislation include fines of up to £5,000 and/or up to six months in prison.





Schedule 8 of the Act is reviewed every 5 years, but currently it includes 185 species or sub-species of vascular plants, bryophytes (mosses, liverworts and hornworts), lichens and stoneworts (see [www.jncc.gov.uk](http://www.jncc.gov.uk) for current list), all protected due to their rarity and/or restricted distributions.

Works which could result in uprooting or destruction of plants listed on Schedule 8 of the Act could result in an offence being committed, unless measures are taken to minimise the risk of this occurring. Any inadvertent impacts on Schedule 8 plants despite these mitigation measures being in place, and impacts on other plant species during development works, would be considered an 'incidental result of an otherwise lawful operation' which 'could not reasonably have been avoided' and therefore not an offence.

In practice, the mitigation measures required on the very rare occasions when Schedule 8 plants are affected by development proposals will be determined by the ecological requirements of the species concerned, and any mitigation strategy should be agreed in advance with Natural England or Natural Resources Wales.

## THE HEDGEROWS REGULATIONS

In England and Wales the Hedgerows Regulations (1997) as amended confer a level of protection on hedgerows (though hedgerows within or bordering domestic gardens are excluded), particularly those hedgerows classified as 'Important' under the legislation. The Regulations require those wishing to remove hedgerows to submit a Hedgerow Removal Notice to the Local Planning Authority (LPA), which will then determine whether the hedgerow affected is classified as 'Important' under the Regulations. If it is, the LPA will either approve the proposed hedgerow removal, or issue a retention notice. It is an offence to remove or destroy a hedgerow which is subject to a retention notice, or to remove one without a removal notice.

Routine management of hedgerows, removal of hedgerows for development which has been granted planning consent, and certain other situations are allowed under the Regulations, which also specifically exclude hedgerows within or bordering domestic gardens. Determination of whether a hedgerow should be classified as 'Important' is based on a number of criteria including assessment of its likely historic value (e.g. old parish boundary or part of an ancient monument), ecological value (e.g. presence of protected species, and/or diversity of tree/shrub species in the hedgerow), and landscape value (e.g. associated with a public footpath, or being associated with hedgebanks, ditches, hedgerow trees etc).

Ancient and species-rich hedgerows are listed as a priority habitat in the UK Biodiversity Action Plan (2011)

## JAPANESE KNOTWEED

Japanese knotweed *Fallopia japonica* is a non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This Act states that it is an offence to plant or otherwise cause this species to grow in the wild. Penalties for offences under this legislation include fines of up to £25,000 and/or up to six months in prison.

In addition to this legislation, all parts of the plant and soil contaminated with plant fragments, is classified as contaminated waste under the Environmental Protection Act 1990, and will require a special waste licence and/or waste transfer note under the Environmental Protection (Duty of Care) Regulations 1991 (as amended).

The Environment Agency has produced a 'Code of Practice for the Management, Destruction and Disposal of Japanese Knotweed' (2001), which provides guidance for developers.

## HIMALAYAN BALSAM

Himalayan balsam *Impatiens glandulifera* is a non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This Act states that it is an offence to plant or otherwise cause this species to grow in the wild. Penalties for offences under this legislation include fines of up to £25,000 and/or up to six months in prison.

Advice on management and control of Himalayan balsam is provided in the Environment Agency's leaflet 'Managing Invasive Non-native Plants' (2010).



## APPENDIX B – SUMMARY OF METHODOLOGIES

### Desk Study Methodology

Statutory designated sites for nature conservation were identified using the Natural England/DEFRA web-based MAGIC map database ([www.MAGIC.gov.uk](http://www.MAGIC.gov.uk)). International-level sites such as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) within 30km from the Site were searched for. National-level sites such as National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSIs) within 5km of the Site were searched for.

The Lincolnshire Environmental/ Biological Records Centre (LERC) and Nottinghamshire Biological and Geological Records Centre (NBGRC) was consulted for records of protected species and species of conservation concern within 2km of the Site as well as details of locally-designated and non-statutory sites for nature conservation within 2km of the Site.

Ordnance Survey maps (1:25,000) and aerial images of the Site were examined online ([bing.com/maps](http://bing.com/maps) and [maps.google.co.uk](http://maps.google.co.uk)) to allow a better understanding of the context of the Site and its connections to potentially important habitats, known species records and protected sites.

The data presented within this report constitutes a summary of the data obtained from the local records centre. Should additional detail be required on any of the records described within this report Clarkson and Woods Ltd. should be contacted.

Species of Conservation Concern are defined as those appearing in any of the following; Priority Habitats and Species under Section 41 of the Natural Environment and Rural Communities Act (2006); red or amber-listed birds within the British Trust for Ornithology's Birds of Conservation Concern (2015); and any specific local conservation priority species such as those listed in Red Data Books.

### Habitat Survey Methodology

A habitat survey was carried out based on standard field methodology set out in the *Handbook for Phase 1 Habitat Survey* (2010 edition)<sup>2</sup>. The survey was co-ordinated and led by Harry Fox BSc MCIEEM, Principal Ecologist. Harry has 13 years' experience undertaking ecological surveys and has a BSc in ecology. Harry was assisted by the following personnel in completing the Phase 1 surveys:

- Henry Sturgess BSc MCIEEM – Senior Ecologist
- Andrew Ross BSc MSc MCIEEM – Senior Ecologist
- Adèle Remazeilles BSc MSc ACIEEM – Senior Ecologist
- Bex Sandey BSc MSc ACIEEM - Ecologist
- Richard Anderton MSc MCIEEM (Anderton Associates (Ecology & Arboriculture) Ltd.)
- James Gilbert BSc MSc CEnv MCIEEM (JPG Ecology Ltd.)

Botanical names follow Stace (1997)<sup>3</sup> for higher plants and Edwards (1999)<sup>4</sup> for bryophytes.

### Badgers

A search was made for badger *Meles meles* setts, and any sett entrances found were checked for signs of use by badgers or other mammals. Setts were classified into the following categories; Main, Subsidiary, Annexe or Outlying<sup>5</sup>. Sett entrances found were counted and mapped to record tunnel direction and their relative level of usage.

Field signs such as 'snuffle holes' (holes dug by badgers when searching for invertebrates), pathways through vegetation, 'latrines' (small pits in which badgers deposit their faeces) and 'day nests' (nests of bedding material made by badgers for sleeping above ground) were also mapped, if found.

Areas with dense ground cover (hedges, scrub, woodland etc. were examined closely. If impenetrable vegetation prevented entry then the perimeter was examined in order to detect badger paths suggesting a hidden sett within the area. It cannot be guaranteed that all the entrances have been located, especially if a small sett is currently inactive or used seasonally and concealed in an area of thick scrub. Badgers may dig new holes and create new setts in a very short space of time.

### Bats

The assessment of the suitability of the site for foraging and roosting bats was based on current guidance set out by the Bat Conservation Trust<sup>6</sup>.

The habitats within the sites were appraised for their suitability for use by foraging and commuting bats. In particular, the connectivity of the habitats on site to those lying beyond was taken into account. Vegetated linear features are typically important for many species to navigate around the landscape, while the presence of woodland, scrub, gardens, grassland and wetland features increases a site's foraging resource value to bats. The potential for noise or lighting disturbance which may affect commuting links was also recorded.

<sup>2</sup> Nature Conservancy Council. (1990 - 2010 edition). *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit*, Joint Nature Conservation Committee

<sup>3</sup> Stace, C. (1997). *New Flora of the British Isles Second Edition*. Cambridge University Press

<sup>4</sup> Edwards, S.R. (1999). *English Names for British Bryophytes*. BBS, Cardiff

<sup>5</sup> Lewns, P., Clarkson, T. & Lewns, D. (2019). *Badger Survey and Mitigation Guidelines (The Mammal Society Mitigation Guidance Series)*. Eds. Fiona Mathews and Paul Chanin. The Mammal Society, London. (as yet unpublished)

<sup>6</sup> Collins, J. (ed) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> edn)*. The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1.



An inspection of all trees within the Survey Area was carried out from the ground, using binoculars, to record any signs of use of the tree by bat species. Features such as frost cracks, rot cavities, flush cuts, split or decaying limbs (including hazard beams), loose bark and dense plates of ivy were inspected and recorded using the methodology set out within the Bat Tree Habitat Key. Any signs of staining (from urine or fur rubbing) and scratch marks below potential access points were noted, and a search was made for droppings underneath these features.

All trees were categorised as having either high, moderate, low or negligible bat roost potential according to the Bat Surveys Good Practice Guidelines (Bat Conservation Trust, 2016).

## Otter

Surveys followed good practice guidelines contained within Natural England Guidance. Experienced surveyors assessed watercourses and areas of wetland on Site for their suitability for otters. This included an assessment of water depth, flow-rate, prey availability, water quality, vegetation cover and sheltering opportunities. A brief search was made along the banks of water courses and water bodies and their adjacent habitats for otter *Lutra lutra* signs including spraints, tracks, castling, and rolling. The banks of any water courses were searched for the presence or potential for holts or other sheltering areas.

## Water Vole

Surveys followed good practice guidelines contained within Dean et al 2016 in accordance with criteria developed by Strachan et al (2011). Experienced surveyors assessed watercourses and areas of wetland on Site for their suitability for water voles. This included an assessment of water depth, flow-rate, foraging availability, water quality, vegetation cover and sheltering opportunities.

## GCN and Toads

All waterbodies within 250m / 500m of the Sites were identified using Ordnance Survey maps and aerial imagery. Waterbodies within the site ownership were assessed during the field survey for their suitability to support amphibian species where access was possible.

Where suitable water bodies were identified on accessible land a Habitat Suitability Index (HSI) score was calculated for each one following the methodology described by Oldham et al<sup>7</sup>. HSI scores give a relative indication of the likelihood that a water body would support breeding great crested newts. Factors which increase these scores include the presence of other ponds nearby, water quality, pond size, absence of fish/waterfowl, vegetation cover and shading.

Terrestrial habitats were also assessed for their suitability for foraging and sheltering great crested newts. This species requires habitats such as grassland, scrub, woodland and hedgerows for dispersal and hibernation. Further hibernation features include buried rubble and logs, or mammal burrows.

Where eDNA surveys were taken, a standard methodology was followed according to Natural England best practice guidance and ADAS' laboratory requirements, carried out between the period of 15<sup>th</sup> April and 30<sup>th</sup> June.

## Reptiles

Features on the Sites were assessed for their potential to provide suitable habitats for use by reptile species. These include rough, tussocky grassland, scrub, disturbed land or refugia such as wood piles, rubble or compost heaps. Where present, suitable existing refugia were inspected for sheltering reptiles, and the ground was scanned whilst walking to look for basking species.

## Birds

Any buildings and vegetation were surveyed for signs of use by nesting birds and any birds seen or heard during the survey were noted. The site's potential to support bird species of particular conservation concern (i.e. Schedule 1, NERC S41 and Red List species) was assessed, taking into consideration the bird species assemblage observed during the survey, the habitats present on and around the site, the context of the site in the wider landscape and the results of the desk study.

To provide a reasonable level of accuracy for determining the breeding status of bird species and relative use of each habitat recorded across Survey Area during the breeding season, each Site was surveyed for breeding bird activity a total of three visits. Surveys were carried out between June and July 2022.

All surveys were conducted in accordance with good practice guidelines. Surveys commenced within approx. 60 minutes following sunrise with a target of being completed within approx. three to five hours to record the peak of breeding bird activity. All surveys were only carried out in favourable weather conditions avoiding strong winds (Beaufort 5 and above), persistent rain more than a light drizzle or where visibility was compromised by low cloud/foggy conditions.

The field methodology broadly followed BTO Common Birds Census guidance and Bird Survey Guidelines. A line was walked along the centre of the CRSA aiming to reach within approx. 50m of all points of the CRSA. Each part of the CRSA was walked by an experienced bird surveyor once per survey visit. Surveyors would periodically stop to scan habitats of particular interest, such as trees, field margins or ditches, as well as opportunistically throughout each field.

The standard methodology was modified to account for the large area of the CRSA in order to ensure focus on the activity of conservation priority species, i.e. amber- and red-listed BoCC and Schedule 1 species. Therefore, rather than individual registrations being made, the eight most common and widespread species were tallied and summarised within a separate table, including presence, abundance and breeding status. This included wood pigeon, herring gull, blackbird, blue tit, chaffinch, great tit, robin and wren (NB, the BoCC protection status of wren changed from green to amber during completion of surveys).

The location, activity/behaviour of birds was recorded on large-scale survey maps following standard BTO Common Bird Census (CBC) codes. Particular attention was paid to birds exhibiting breeding behaviour, for instance birds in full song, exhibiting antagonistic behaviour/calling, carrying nest material, carrying food, and returning to nesting sites. Individual maps were created for

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<sup>7</sup> Oldham, R.S., Keeble L., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.



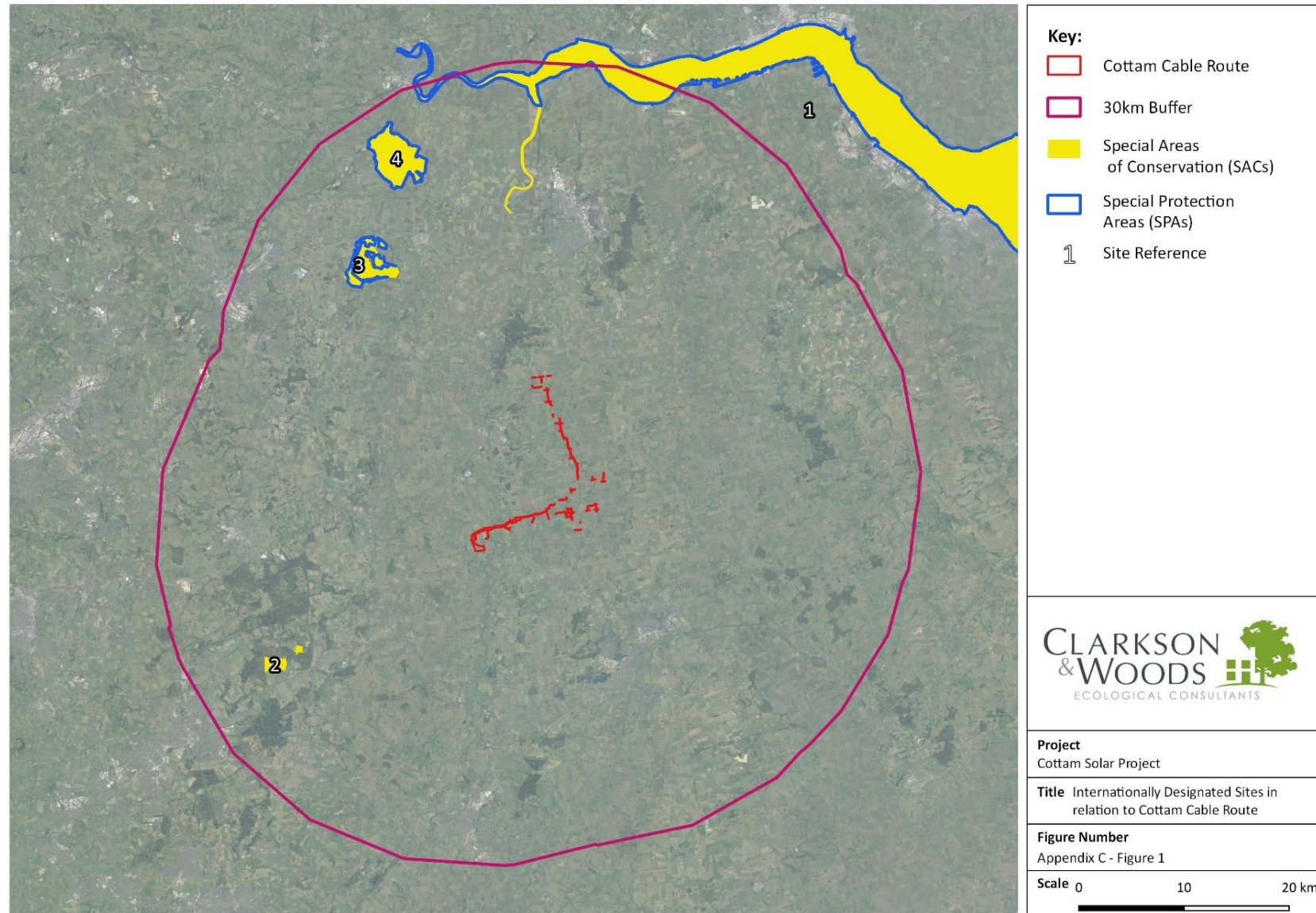
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each survey visit (Figure 2 below provides an example) with data recorded onto QGIS mapping software to illustrate distribution/territories of particular species. Data recorded within QGIS was exported for use and interpretation in table form.

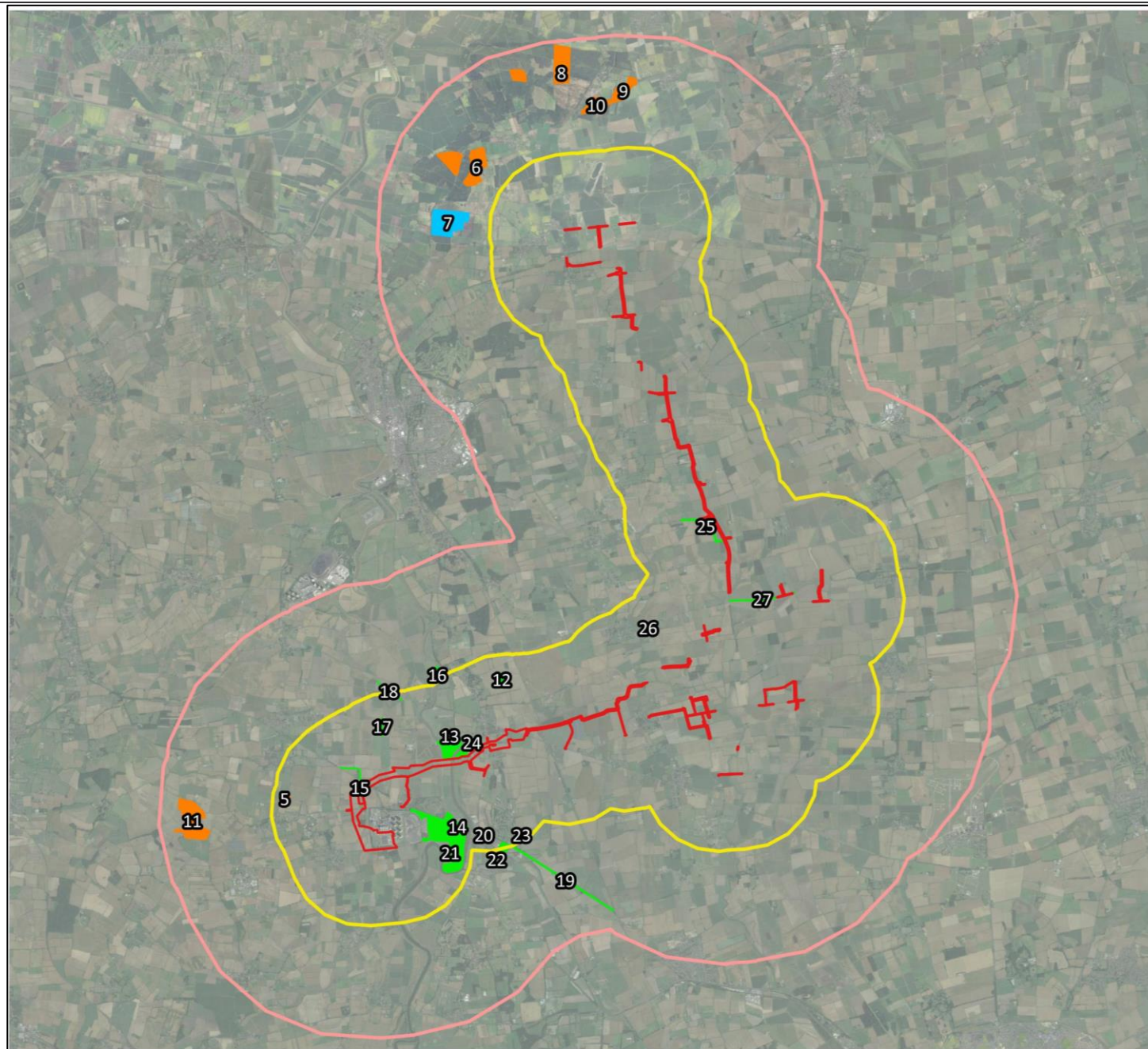










## APPENDIX C – DESIGNATED SITES MAPS AND PRIORITY HABITATS MAPS








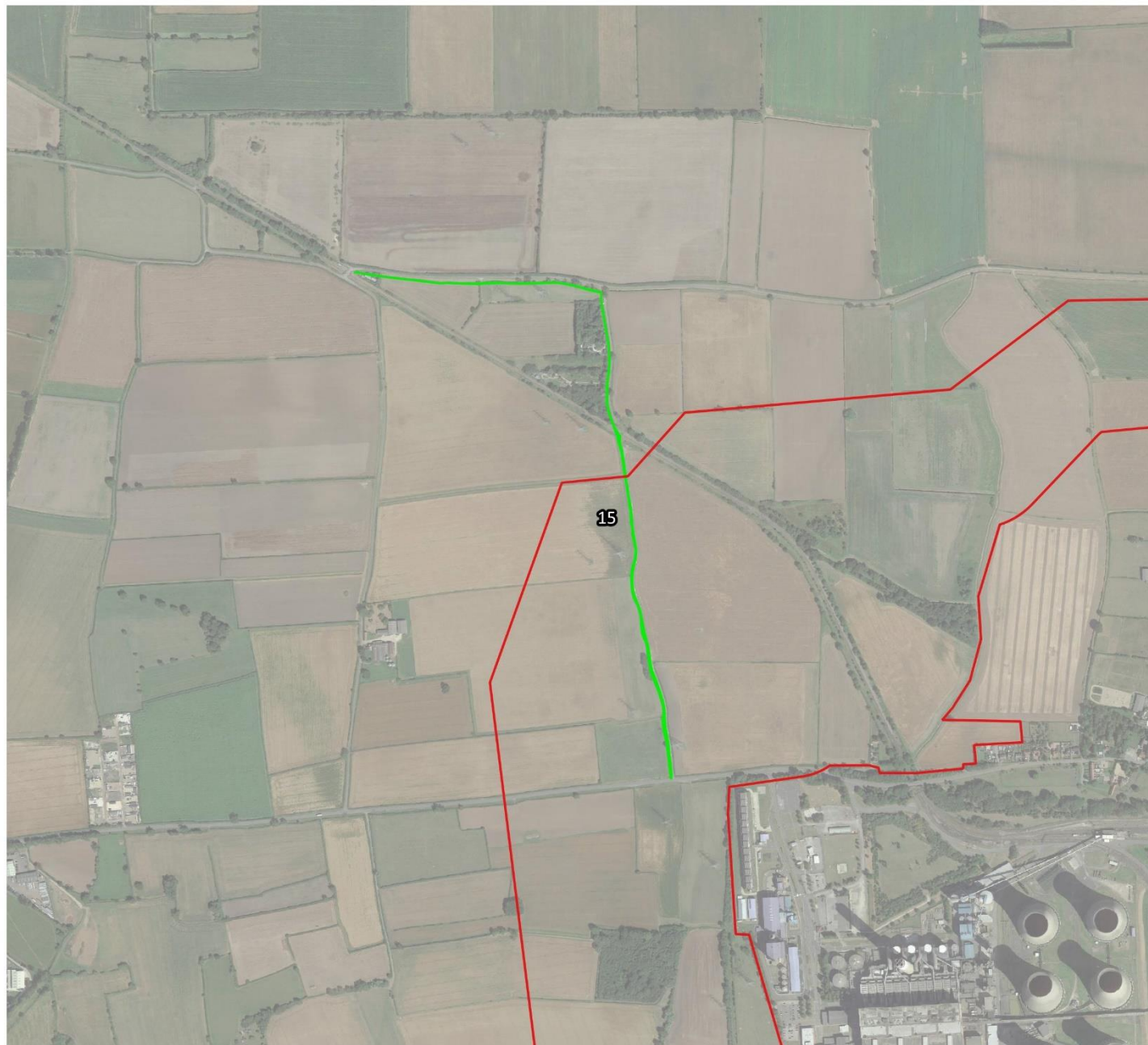
**Key:**

-  Cottam Cable Route
-  2km Buffer
-  5km Buffer
-  Local Nature Reserves (LNRs)
-  Local Wildlife Sites (LWSs)
-  Sites of Special Scientific Interest (SSSIs)
-  Site Reference



<b>Project</b> Cottam Solar Project
<b>Title</b> Nationally and Locally Designated Sites in relation to Cottam Cable Route
<b>Figure Number</b> Appendix C - Figure 2
<b>Scale</b> 0 2 4 km 





**Key:**

 Cable Route Study Area

 Local Wildlife Site



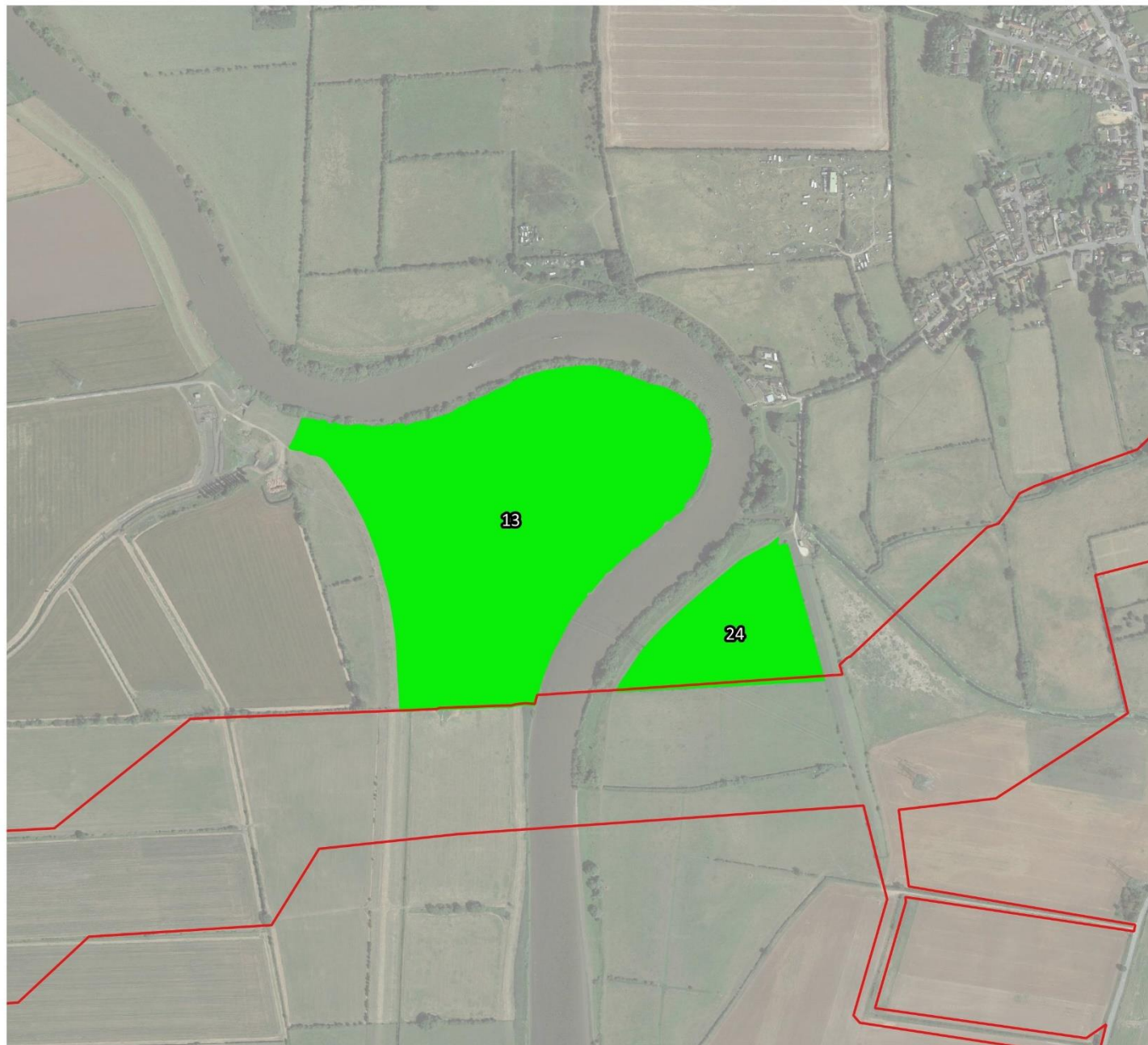
**Project**  
Cottam Solar Project

**Title** Designated sites overlapping with the  
Cottam Cable Search Area (A)

**Figure Number**  
Appendix C - Figure 3

**Scale** 0 250 500 m





**Key:**

 Cable Route Study Area

 Local Wildlife Site



**Project**  
Cottam Solar Project

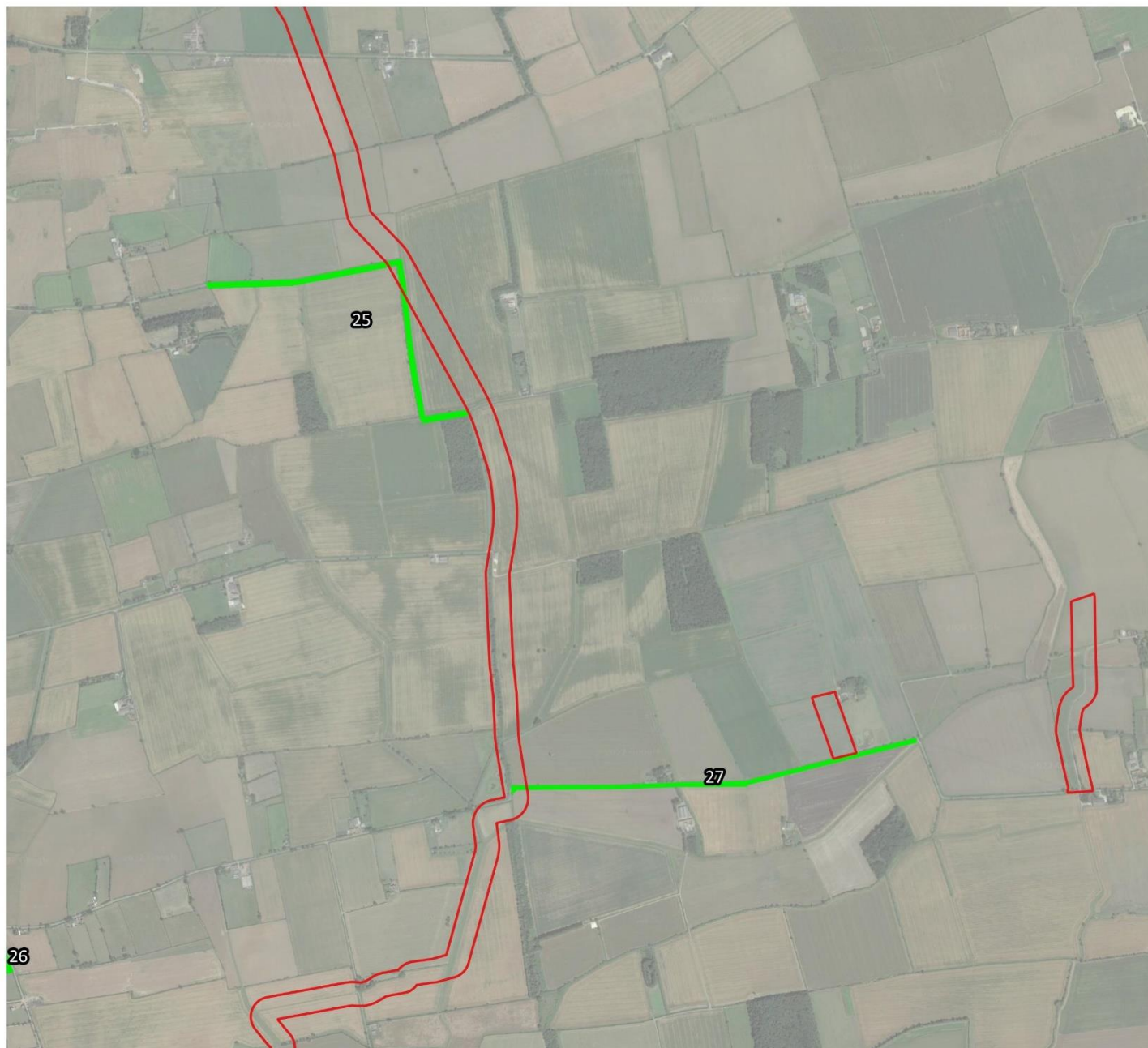
**Title** Designated sites overlapping with the  
Cottam Cable Search Area (B)

**Figure Number**  
Appendix C - Figure 4

**Scale** 0 100 200 m







**Key:**

 Cable Route Study Area

 Local Wildlife Site



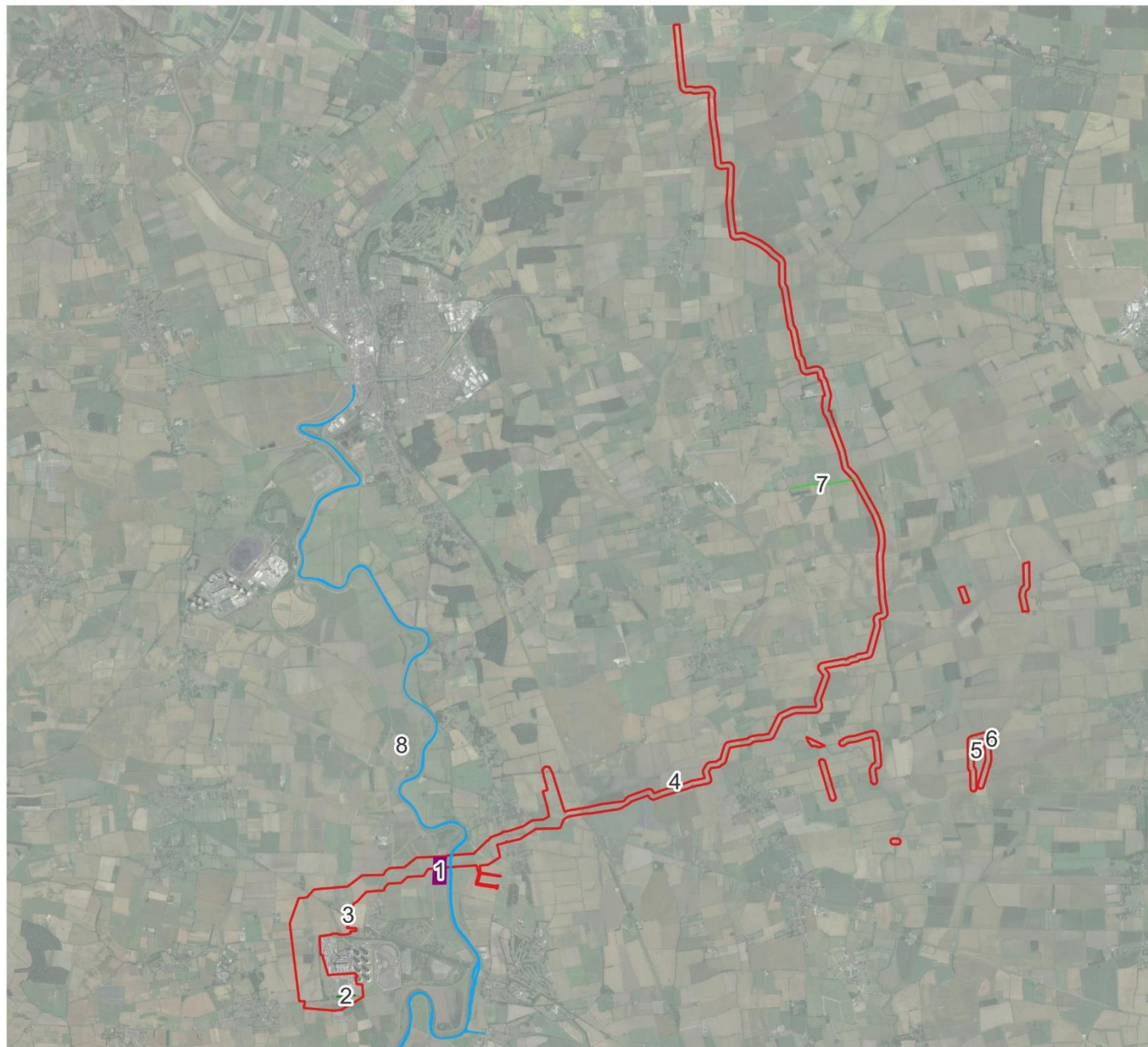
**Project**  
Cottam Solar Project

**Title** Designated sites overlapping with the  
Cottam Cable Search Area (C)

**Figure Number**  
Appendix C - Figure 5

**Scale** 0 250 500 m





**Key:**

-  Cable Route Study Area
-  1. Floodplain grazing marsh
-  2-6 - Lowland mixed deciduous woodland
-  7 - Lowland meadow
-  8 - River



**Project**  
Cottam Solar Project

**Title** Priority Habitats in relation to the Cottam Cable Search Area

**Figure Number**

**Scale** 0 2 4 km





## APPENDIX D – SPECIES RECORDS WITHIN 2KM OF CRSA

### Records of Protected and Notable Species Derived from the Desk Study Data Search

Group	Scientific Name	Common Name	Records	Location	Date
Amphibian	Bufo bufo	Common Toad	6 records within 2km	The nearest record is located 18m from the cable route.	11/07/2012 - 09/05/2021
Amphibian	Rana temporaria	Common Frog	26 records within 2km	The nearest record is located 340m from the cable route.	11/07/2012 - 17/11/2019
Amphibian	Triturus cristatus	Great Crested Newt	62 records within 2km	The nearest record is located 130m from the cable route.	29/04/2014 - 03/06/2019
Bat	Myotis daubentonii	Daubenton's Bat	2 records within 2km	The nearest record is located 540m from the cable route.	01/08/2013 - 30/07/2018
Bat	Myotis nattereri	Natterer's	1 record within 2km	The record is located 850m west of the cable route.	01/11/2017
Bat	N/A	Unidentified bat species	10 records within 2km	The nearest record is located 20m from the cable route.	01/01/2013 – 01/01/2019
Bat	Nyctalus noctula	Noctule Bat	3 records within 2km	The nearest record is located 340m from the cable route.	19/05/2014 - 21/10/2015
Bat	Pipistrellus sp.	Pipistrelle Bat species	1 record within 2km	The record is located 360m north of the cable route.	21/09/2013
Bat	Pipistrellus nathusii	Nathusius's Pipistrelle	1 record within 2km	The record is located 1.5km south of the cable route.	25/05/2014
Bat	Pipistrellus pipistrellus	Common Pipistrelle	19 records within 2km	Seven records are located within the cable route search area.	06/06/2013 - 03/10/2018
Bat	Pipistrellus pygmaeus	Soprano Pipistrelle	2 records within 2km	The nearest record is located 540m from the cable route.	19/05/2014 - 30/07/2018
Bat	Plecotus auritus	Brown Long-eared Bat	2 records within 2km	The nearest record is located 245m from the cable route.	06/05/2014 - 07/04/2018
Bird	Actitis hypoleucos	Common Sandpiper	1 record within 2km	The record is located 1.6km north of the cable route.	16/08/2012
Bird	Alcedo atthis	Kingfisher	1 record within 2km	The record is located 1.9km south of the cable route.	27/07/2016
Bird	Anas acuta	Pintail	1 record within 2km	The record is located 760m west of the cable route.	24/02/2014
Bird	Anas crecca	Eurasian Teal	16 records within 2km	The nearest record is located 225m from the cable route.	10/01/2012 - 21/10/2016
Bird	Anas penelope	Eurasian Wigeon	5 records within 2km	The nearest record is located 225m from the cable route.	05/02/2013 - 03/11/2018
Bird	Anas platyrhynchos	Mallard	3 records within 2km	The nearest record is located 225m from the cable route.	01/06/2013 - 01/06/2015
Bird	Anas querquedula	Garganey	1 record within 2km	The record is located 1.6km north of the cable route.	09/09/2014





Bird	Anas strepera	Gadwall	13 records within 2km	The nearest record is located 225m from the cable route.	11/12/2012 - 14/07/2018
Bird	Anser albifrons	Greater White-fronted Goose	2 records within 2km	The nearest record is located 225m from the cable route.	13/11/2012 - 27/11/2012
Bird	Anser anser	Greylag Goose	5 records within 2km	The nearest record is located 225m from the cable route.	01/06/2013 - 28/01/2016
Bird	Anser brachyrhynchus	Pink-footed Goose	2 records within 2km	The nearest record is located 655m from the cable route.	24/02/2014 - 28/10/2015
Bird	Anthus pratensis	Meadow Pipit	2 records within 2km	The nearest record is located 225m from the cable route.	12/07/2012 - 01/01/2018
Bird	Apus apus	Swift	4 records within 2km	The nearest record is located 195m from the cable route.	01/08/2012 - 29/05/2019
Bird	Ardea alba	Great White Egret	2 records within 2km	The nearest record is located 225m from the cable route.	03/04/2019 - 10/04/2019
Bird	Asio flammeus	Short-eared Owl	2 records within 2km	The nearest record is located 225m from the cable route.	14/11/2018 - 11/02/2019
Bird	Botaurus stellaris	Eurasian Bittern	7 records within 2km	The nearest record is located 225m from the cable route.	30/04/2012 - 01/02/2014
Bird	Bubulcus ibis	Cattle Egret	1 record within 2km	The record is located 225m south of the cable route.	04/01/2018
Bird	Calidris alpina	Dunlin	1 record within 2km	The record is located 1.6km north of the cable route.	24/02/2014
Bird	Calidris pugnax	Ruff	1 record within 2km	The record is located 660m south of the cable route.	16/07/2019
Bird	Circus aeruginosus	Marsh Harrier	3 records within 2km	The nearest record is located 225m from the cable route.	30/04/2017 - 09/07/2017
Bird	Circus pygargus	Montagu's Harrier	1 record within 2km	The record is located 225m south of the cable route.	23/05/2012
Bird	Columba oenas	Stock Dove	2 records within 2km	The nearest record is located 225m from the cable route.	01/06/2013 - 01/06/2014
Bird	Coturnix coturnix	Quail	1 record within 2km	The record is located 225m south of the cable route.	01/06/2012
Bird	Cuculus canorus	Common Cuckoo	1 record within 2km	The record is located 225m south of the cable route.	01/06/2013
Bird	Cygnus cygnus	Whooper Swan	2 records within 2km	The nearest record is located 1.6km from the cable route.	24/02/2014 - 11/02/2019
Bird	Dryobates minor	Lesser Spotted Woodpecker	1 record within 2km	The record is located 225m south of the cable route.	13/11/2012
Bird	Emberiza citrinella	Yellowhammer	1 record within 2km	The record is located 270m north of the cable route.	05/02/2021
Bird	Emberiza schoeniclus	Reed Bunting	2 records within 2km	The nearest record is located 360m from the cable route.	07/12/2014 - 01/02/2015
Bird	Falco tinnunculus	Kestrel	6 records within 2km	The nearest record is located 225m from the cable route.	12/11/2012 - 18/11/2018
Bird	Gallinago gallinago	Common Snipe	7 records within 2km	The nearest record is located 225m from the cable route.	24/04/2012 - 30/12/2014
Bird	Haematopus ostralegus	Oystercatcher	1 record within 2km	The record is located 225m south of the cable route.	01/06/2013





Bird	Larus cachinnans	Caspian Gull	2 records within 2km	The nearest record is located 225m from the cable route.	19/10/2018 - 04/09/2019
Bird	Larus marinus	Great Black-backed Gull	1 record within 2km	The record is located 660m east of the cable route.	19/10/2015
Bird	Numenius arquata	Eurasian Curlew	3 records within 2km	The nearest record is located 225m from the cable route.	19/01/2012 - 11/08/2018
Bird	Passer domesticus	House Sparrow	28 records within 2km	The nearest record is located 360m from the cable route.	21/09/2014 - 10/05/2019
Bird	Passer montanus	Tree Sparrow	1 record within 2km	The record is located 360m north of the cable route.	08/02/2015
Bird	Perdix perdix	Grey Partridge	3 records within 2km	The nearest record is located 655m from the cable route.	12/07/2012 - 09/07/2017
Bird	Phasianus colchicus	Pheasant	2 records within 2km	The nearest record is located 360m from the cable route.	02/11/2014 - 22/02/2015
Bird	Phylloscopus trochilus	Willow Warbler	1 record within 2km	The record is located 660m north of the cable route.	14/06/2019
Bird	Platalea leucorodia	Spoonbill	1 record within 2km	The record is located 225m south of the cable route.	13/08/2012
Bird	Pluvialis squatarola	Grey Plover	1 record within 2km	The record is located 225m south of the cable route.	01/01/2018
Bird	Pyrrhula pyrrhula	Bullfinch	3 records within 2km	The nearest record is located 360m from the cable route.	04/01/2015 - 04/07/2019
Bird	Recurvirostra avosetta	Avocet	1 record within 2km	The record is located 225m south of the cable route.	02/10/2012
Bird	Sterna paradisaea	Arctic Tern	1 record within 2km	The record is located 225m south of the cable route.	13/03/2018
Bird	Streptopelia decaocto	Collared Dove	52 records within 2km	The nearest record is located 360m from the cable route.	22/09/2013 - 15/03/2015
Bird	Streptopelia turtur	Turtle Dove	4 records within 2km	The nearest record is located 225m from the cable route.	01/06/2013 - 01/06/2016
Bird	Strix aluco	Tawny Owl	1 record within 2km	The record is located 225m from the cable route.	01/06/2015
Bird	Sturnus vulgaris	Starling	28 records within 2km	The nearest record is located 360m from the cable route.	21/09/2014 - 11/01/2018
Bird	Tadorna tadorna	Common Shelduck	8 records within 2km	The nearest record is located 225m from the cable route.	10/01/2012 - 16/05/2016
Bird	Tringa nebularia	Greenshank	1 record within 2km	The record is located 1.6km from the cable route.	16/08/2012
Bird	Tringa ochropus	Green Sandpiper	1 record within 2km	The record is located 225m from the cable route.	09/08/2016
Bird	Turdus iliacus	Redwing	3 records within 2km	The nearest record is located 225m from the cable route.	20/02/2015 - 21/11/2018
Bird	Turdus philomelos	Song Thrush	2 records within 2km	The nearest record is located 360m from the cable route.	25/01/2015 - 01/02/2015
Bird	Turdus torquatus	Ring Ouzel	2 records within 2km	The nearest record is located 565m from the cable route.	13/04/2015 - 14/04/2015
Bird	Tyto alba	Barn Owl	5 records within 2km	The nearest record is located 65m from the cable route.	17/09/2014 - 26/10/2016
Bird	Vanellus vanellus	Northern Lapwing	7 records within 2km	The nearest record is located 225m from the cable route.	01/06/2013 - 01/06/2016



Bony fish (Actinopterygii)	<i>Anguilla anguilla</i>	European Eel	9 records within 2km	One record is located within the cable route search area.	23/04/2013 - 19/11/2019
Bony fish (Actinopterygii)	<i>Cobitis taenia</i>	Spined Loach	2 records within 2km	The nearest record is located 205m from the cable route.	23/04/2013 - 02/05/2014
Crustacean	<i>Crangonyx pseudogracilis</i>	<i>Crangonyx pseudogracilis</i>	3 records within 2km	The nearest record is located 30m from the cable route.	13/03/2013 - 01/10/2013
Crustacean	<i>Eriocheir sinensis</i>	Chinese Mitten Crab	2 records within 2km	The nearest record is located 65m from the cable route.	19/11/2019 - 20/09/2020
Flowering plant	<i>Aegopodium podagraria</i>	Ground-elder	1 record within 2km	The record is located 1.1km from the cable route search area.	08/04/2015
Flowering plant	<i>Bromus sterilis</i>	Barren Brome	1 record within 2km	The record is located 1.1km from the cable route search area.	08/04/2015
Flowering plant	<i>Chelidonium majus</i>	Greater Celandine	1 record within 2km	The record is located 1.1km from the cable route search area.	08/04/2015
Flowering plant	<i>Chenopodium polyspermum</i>	Many-seeded Goosefoot	1 record within 2km	The record is located 185m from the cable route search area.	18/09/2013
Flowering plant	<i>Conium maculatum</i>	Hemlock	1 record within 2km	The record is located 1.1km from the cable route search area.	08/04/2015
Flowering plant	<i>Eranthis hyemalis</i>	Winter Aconite	1 record within 2km	The record is located 1.1km from the cable route search area.	08/04/2015
Flowering plant	<i>Euphorbia peplus</i>	Petty Spurge	1 record within 2km	The record is located 385m from the cable route search area.	18/09/2012
Flowering plant	<i>Galanthus nivalis</i>	Snowdrop	1 record within 2km	The record is located 1.1km from the cable route search area.	08/04/2015
Flowering plant	<i>Hordeum murinum</i>	Wall Barley	1 record within 2km	The record is located 385m from the cable route search area.	18/09/2012
Flowering plant	<i>Lamium album</i>	White Dead-nettle	1 record within 2km	The record is located 1.1km from the cable route search area.	08/04/2015
Flowering plant	<i>Lamium purpureum</i>	Red Dead-nettle	1 record within 2km	The record is located 1.1km from the cable route search area.	08/04/2015
Flowering plant	<i>Oxalis exilis</i>	Least Yellow-sorrel	1 record within 2km	The record is located 1.1km from the cable route search area.	08/04/2015
Flowering plant	<i>Pentaglottis sempervirens</i>	Green Alkanet	1 record within 2km	The record is located 1.1km from the cable route search area.	08/04/2015
Flowering plant	<i>Solanum physalifolium</i>	Green Nightshade	1 record within 2km	The record is located within the cable route search area.	16/09/2015
Flowering plant	<i>Veronica filiformis</i>	Slender Speedwell	1 record within 2km	The record is located 1.1km from the cable route search area.	08/04/2015
Insect - beetle (Coleoptera)	<i>Bruchus rufimanus</i>	Bean Seed Beetle	2 records within 2km	The nearest record is located 340m from the cable route.	09/04/2012 - 28/10/2016
Insect - beetle (Coleoptera)	<i>Harmonia axyridis</i>	Harlequin Ladybird	2 records within 2km	The nearest record is located 360m from the cable route.	27/10/2013 - 19/03/2019
Insect - butterfly	<i>Lasiommata megera</i>	Wall	1 record within 2km	The record is located 355m from the cable route.	25/07/2014
Insect - moth	<i>Acronicta rumicis</i>	Knot Grass	6 records within 2km	The nearest record is located 360m from the cable route.	20/05/2013 - 21/09/2020
Insect - moth	<i>Agrochola lychnidis</i>	Beaded Chestnut	10 records within 2km	The nearest record is located 360m from the cable route.	28/09/2016 - 29/10/2020



Insect - moth	<i>Allophyes oxyacanthae</i>	Green-brindled Crescent	5 records within 2km	The nearest record is located 360m from the cable route.	28/09/2016 - 29/10/2020
Insect - moth	<i>Amphipyra tragopoginis</i>	Mouse Moth	4 records within 2km	The nearest record is located 360m from the cable route.	24/07/2020 - 04/09/2020
Insect - moth	<i>Atethmia centrago</i>	Centre-barred Sallow	1 record within 2km	The record is located 360m from the cable route.	11/09/2020
Insect - moth	<i>Caradrina morpheus</i>	Mottled Rustic	7 records within 2km	The nearest record is located 360m from the cable route.	29/05/2020 - 09/07/2021
Insect - moth	<i>Diarsia rubi</i>	Small Square-spot	1 record within 2km	The record is located 360m from the cable route.	21/09/2020
Insect - moth	<i>Ecliptopera silaceata</i>	Small Phoenix	2 records within 2km	The nearest record is located 360m from the cable route.	31/07/2020 - 07/08/2020
Insect - moth	<i>Ennomos fuscantaria</i>	Dusky Thorn	3 records within 2km	The nearest record is located 360m from the cable route.	07/08/2020 - 21/09/2020
Insect - moth	<i>Epiphyas postvittana</i>	Light Brown Apple Moth	21 records within 2km	The nearest record is located 360m from the cable route.	31/03/2020 - 09/07/2021
Insect - moth	<i>Hadena compta</i>	Varied Coronet	1 record within 2km	The record is located 360m from the cable route.	07/06/2020
Insect - moth	<i>Hoplodrina blanda</i>	Rustic	12 records within 2km	The nearest record is located 360m from the cable route.	27/05/2020 - 09/07/2021
Insect - moth	<i>Hydraecia micacea</i>	Rosy Rustic	2 records within 2km	The nearest record is located 360m from the cable route.	24/07/2020 - 18/09/2020
Insect - moth	<i>Lithophane leautieri</i>	Blair's Shoulder-knot	1 record within 2km	The record is located 490m from the cable route.	28/09/2016
Insect - moth	<i>Orthosia gracilis</i>	Powdered Quaker	3 records within 2km	The nearest record is located 360m from the cable route.	20/05/2013 - 16/04/2020
Insect - moth	<i>Scotopteryx chenopodiata</i>	Shaded Broad-bar	2 records within 2km	The nearest record is located 360m from the cable route.	24/07/2020 - 31/07/2020
Insect - moth	<i>Spilosoma lubricipeda</i>	White Ermine	5 records within 2km	The nearest record is located 360m from the cable route.	07/05/2020 - 24/06/2020
Insect - moth	<i>Stigmella speciosa</i>	Barred Sycamore Pigmy	1 record within 2km	The record is located 720m from the cable route.	24/09/2020
Insect - moth	<i>Thera britannica</i>	Spruce Carpet	3 records within 2km	The nearest record is located 360m from the cable route.	20/05/2020 - 11/10/2020
Insect - moth	<i>Tyria jacobaeae</i>	Cinnabar	7 records within 2km	The nearest record is located 360m from the cable route.	03/06/2018 - 24/06/2020
Marine mammal	<i>Phocoena phocoena</i>	Common Porpoise	1 record within 2km	The record is located 1.2km from the cable route.	16/09/2014
Mollusc	<i>Limacus maculatus</i>	Green Cellar Slug	1 record within 2km	The record is located 790m from the cable route.	07/04/2020
Mollusc	<i>Potamopyrgus antipodarum</i>	Jenkins' Spire Snail	3 records within 2km	The nearest record is located 30m from the cable route.	13/03/2013 - 01/10/2013
Reptile	<i>Natrix helvetica</i>	Grass Snake	6 records within 2km	The nearest record is located 30m from the cable route.	24/03/2015 - 06/06/2019
Reptile	<i>Zootoca vivipara</i>	Common Lizard	1 record within 2km	The record is located 490m from the cable route.	08/10/2012
Terrestrial mammal	<i>Arvicola amphibius</i>	European water vole	68 records within 2km	Four records are located within the cable route search area.	26/07/2012 - 26/04/2021
Terrestrial mammal	<i>Erinaceus europaeus</i>	Western European hedgehog	54 records within 2km	The nearest record is located 10m from the cable route.	29/06/2012 - 16/07/2021
Terrestrial mammal	<i>Lepus europaeus</i>	Brown Hare	58 records within 2km	Ten records are located within the cable route search area.	19/06/2012 - 24/04/2021



Terrestrial mammal	Lutra lutra	Eurasian Otter	5 records within 2km	The nearest record is located 20m from the cable route.	08/03/2015 - 16/09/2018
Terrestrial mammal	Meles meles	Eurasian Badger	72 records within 2km	Fifteen records are located within the cable route search area.	11/04/2012 - 20/10/2020
Terrestrial mammal	Muntiacus reevesi	Chinese Muntjac	1 record within 2km	The record is located 280m from the cable route.	24/05/2020
Terrestrial mammal	Mus musculus	House Mouse	1 record within 2km	The record is located 360m from the cable route.	22/01/2021
Terrestrial mammal	Mustela erminea	Stoat	1 record within 2km	The record is located 890m from the cable route.	19/09/2017
Terrestrial mammal	Mustela nivalis	Weasel	1 record within 2km	The record is located 690m from the cable route.	24/03/2015
Terrestrial mammal	Mustela putorius	Feral Ferret	2 records within 2km	The nearest record is located 255m from the cable route.	08/05/2012 - 18/05/2014
Terrestrial mammal	Neovison vison	American Mink	3 records within 2km	The nearest record is located 200m from the cable route.	16/07/2013 - 16/09/2018
Terrestrial mammal	Oryctolagus cuniculus	European Rabbit	2 records within 2km	The nearest record is located 340m from the cable route.	14/05/2012 - 11/02/2018
Terrestrial mammal	Rattus norvegicus	Brown Rat	3 records within 2km	The nearest record is located 220m from the cable route.	03/01/2015 - 11/02/2018
Terrestrial mammal	Sciurus carolinensis	Eastern Grey Squirrel	4 records within 2km	The nearest record is located 3600m from the cable route.	22/09/2012 - 29/12/2018



## APPENDIX E - LOCAL PLANNING POLICY

Policy Reference	Key Policy Text
<b>Central Lincolnshire Local Plan (Adopted April 2017)</b>	
Policy LP19: Renewable Energy Proposals	<p>Proposals for non-wind renewable technology will be assessed on their merits, with the impacts, both individual and cumulative, considered against the benefits of the scheme, taking account of the following:</p> <p>The surrounding landscape and townscape;</p> <ul style="list-style-type: none"> <li>• Heritage assets;</li> <li>• Ecology and diversity;</li> <li>• Residential and visual amenity;</li> <li>• Safety, including ensuring no adverse highway impact;</li> <li>• MoD operations, including having no unacceptable impact on the operation of aircraft</li> <li>• movement or operational radar; and</li> <li>• Agricultural Land Classification (including a presumption against photovoltaic solar farm proposals on the best and most versatile agricultural land).</li> </ul> <p>Proposals will be supported where the benefit of the development outweighs the harm caused and it is demonstrated that any harm will be mitigated as far as is reasonably possible.</p> <p>Renewable energy proposals which will directly benefit a local community, have the support of the local community and / or are targeted at residents experiencing fuel poverty, will be particularly supported.</p>
Policy LP20: Green Infrastructure Network	<p>The Central Lincolnshire Authorities will aim to maintain and improve the green infrastructure network in Central Lincolnshire by enhancing, creating and managing multifunctional green space within and around settlements that are well connected to each other and the wider countryside.</p> <p>Development proposals which are consistent with and help deliver the opportunities, priorities and initiatives identified in the latest Central Lincolnshire Green Infrastructure Study and Biodiversity Opportunity Mapping Study, will be supported. Proposals that cause loss or harm to this network will not be permitted unless the need for and benefits of the development demonstrably outweigh any adverse impacts. Where adverse impacts on green infrastructure are unavoidable, development will only be permitted if suitable mitigation measures for the network are provided.</p> <p>Development proposals should ensure that existing and new green infrastructure is considered and integrated into the scheme design from the outset. Where new green infrastructure is proposed, the design should maximise the delivery of ecosystem services and support healthy and active lifestyles.</p> <p>Development proposals must protect the linear features of the green infrastructure network that provide connectivity between green infrastructure assets, including public rights of way, bridleways, cycleways and waterways, and take opportunities to improve such features.</p> <p>Development will be expected to make contributions proportionate to their scale towards the establishment, enhancement and on-going management of green infrastructure by contributing to the development of the strategic green infrastructure network within Central Lincolnshire, in line with guidance set out in LP12.</p>
Policy LP21: Biodiversity and Geodiversity	<p>All development should:</p> <ul style="list-style-type: none"> <li>• protect, manage and enhance the network of habitats, species and sites of international, national and local importance (statutory and non-statutory), including sites that meet the criteria for selection as a Local Site;</li> <li>• minimise impacts on biodiversity and geodiversity; and</li> <li>• seek to deliver a net gain in biodiversity and geodiversity.</li> </ul> <p>Development proposals that will have an adverse impact on a European Site or cause significant harm to a Site of Special Scientific Interest, located within or outside Central Lincolnshire, will not be permitted, in accordance with the NPPF.</p>



Policy Reference	Key Policy Text
	<p>Planning permission will be refused for development resulting in the loss, deterioration or fragmentation of irreplaceable habitats, including ancient woodland and aged or veteran trees, unless the need for, and benefits of, the development in that location clearly outweigh the loss or harm.</p> <p>Proposals for major development should adopt an ecosystem services approach, and for large scale major development schemes (such as Sustainable Urban Extensions) also a landscape scale approach, to biodiversity and geodiversity protection and enhancement identified in the Central Lincolnshire Biodiversity Opportunity Mapping Study.</p> <p>Development proposals should create new habitats, and links between habitats, in line with Biodiversity Opportunity Mapping evidence to maintain a network of wildlife sites and corridors to minimise habitat fragmentation and provide opportunities for species to respond and adapt to climate change. Development should seek to preserve, restore and re-create priority habitats, ecological networks and the protection and recovery of priority species set out in the Lincolnshire Biodiversity Action Plan and Geodiversity Action Plan.</p> <p>Where development is within a Nature Improvement Area (NIA), it should contribute to the aims and aspirations of the NIA.</p> <p>Development proposals should ensure opportunities are taken to retain, protect and enhance biodiversity and geodiversity features proportionate to their scale, through site layout, design of new buildings and proposals for existing buildings.</p> <p>Mitigation</p> <p>Any development which could have an adverse effect on sites with designated features and / or protected species, either individually or cumulatively, will require an assessment as required by the relevant legislation or national planning guidance.</p> <p>Where any potential adverse effects to the biodiversity or geodiversity value of designated sites are identified, the proposal will not normally be permitted. Development proposals will only be supported if the benefits of the development clearly outweigh the harm to the habitat and/or species.</p> <p>In exceptional circumstances, where adverse impacts are demonstrated to be unavoidable, developers will be required to ensure that impacts are appropriately mitigated, with compensation measures towards loss of habitat used only as a last resort where there is no alternative. Where any mitigation and compensation measures are required, they should be in place before development activities start that may disturb protected or important habitats and species.</p>
Policy LP22: Green Wedges	<p>Green Wedges, as identified on the Policies Map, have been identified to fulfil one or more of the following functions and policy aims:</p> <ul style="list-style-type: none"> <li>• Prevention of the physical merging of settlements, preserving their separate identity, local character and historic character;</li> <li>• Creation of a multi-functional 'green lung' to offer communities a direct and continuous link to the open countryside beyond the urban area;</li> <li>• Provision of an accessible recreational resource, with both formal and informal opportunities, close to where people live, where public access is maximised without compromising the integrity of the Green Wedge;</li> <li>• Conservation and enhancement of local wildlife and protection of links between wildlife sites to support wildlife corridors.</li> </ul> <p>Within the Green Wedges planning permission will not be granted for any form of development, including changes of use, unless:</p> <ol style="list-style-type: none"> <li>a) it can be demonstrated that the development is not contrary or detrimental to the above functions and aims; or</li> <li>b) it is essential for the proposed development to be located within the Green Wedge, and the benefits of which override the potential impact on the Green Wedge.</li> </ol> <p>Development proposals within a Green Wedge will be expected to have regard to:</p> <ol style="list-style-type: none"> <li>c) the need to retain the open and undeveloped character of the Green Wedge, physical separation between settlements, historic environment character and green infrastructure value;</li> </ol>





Policy Reference	Key Policy Text
	<p>d) the maintenance and enhancement of the network of footpaths, cycleways and bridleways, and their links to the countryside, to retain and enhance public access, where appropriate to the role and function of the Green Wedge;</p> <p>e) opportunities to improve the quality and function of green infrastructure within the Green Wedge with regard to the Central Lincolnshire Green Infrastructure network and Biodiversity Opportunity Mapping.</p> <p>Development proposals adjacent to the Green Wedges will be expected to demonstrate that:</p> <p>f) they do not adversely impact on the function of the Green Wedge, taking into account scale, siting, design, materials and landscape treatment;</p> <p>g) They have considered linkages to and enhancements of the adjacent Green Wedge.</p>
<p>Policy LP23: Local Green Space and other Important Open Space</p>	<p>An area identified as a Local Green Space on the Policies Map will be protected from development in line with the NPPF, which rules out development on these sites other than in very special circumstances.</p> <p>An area identified as an Important Open Space on the Policies Map is safeguarded from development unless it can be demonstrated that:</p> <p>a) In the case of publicly accessible open space, there is an identified over provision of that particular type of open space in the community area and the site is not required for alternative recreational uses or suitable alternative open space can be provided on a replacement site or by enhancing existing open space serving the community area; and</p> <p>b) In the case of all Important Open Spaces, there are no significant detrimental impacts on the character and appearance of the surrounding area, ecology and any heritage assets.</p>
<p>Central Lincolnshire Local Plan Review – Consultation Draft (Proposed Submission Draft March 2022 (Under Examination by the Planning Inspectorate – Hearing in November 2022))</p>	
<p>Policy S13: Renewable Energy</p>	<p>The Central Lincolnshire Joint Strategic Planning Committee is committed to supporting the transition to a net zero carbon future and will seek to maximise appropriately located renewable energy generated in Central Lincolnshire (such energy likely being wind and solar based).</p> <p>Proposals for renewable energy schemes, including ancillary development, will be supported where the direct, indirect, individual and cumulative impacts on the following considerations are, or will be made, acceptable:</p> <p>i. As a result of its scale, siting or design, the impacts on the following issues are satisfactorily addressed: landscape character; visual amenity; biodiversity; geodiversity; flood risk; townscape; historic assets; and highway safety...</p> <p>Testing compliance with part (i) above will be via applicable policies elsewhere in a development plan document for the area (i.e. this Local Plan; a Neighbourhood Plan, if one exists; any applicable policies in a Minerals or Waste Local Plan; and any further guidance set out in a Supplementary Planning Document).</p> <p>For all matters in (i)-(iii), the applicable local planning authority may commission its own independent assessment of the proposals, to ensure it is satisfied what the degree of harm may be and whether reasonable mitigation opportunities are being taken.</p> <p>Where significant adverse effects are concluded by the local planning authority following consideration of the above assessment(s), such effects will be weighed against the wider environmental, economic, social and community benefits provided by the proposal. In this regard, and as part of the planning balance, significant additional weight in favour of the proposal will arise for any proposal which is community-led for the benefit of that community.</p> <p>In areas that have been designated for their national importance, as identified in the National Planning Policy Framework, renewable energy infrastructure will only be permitted where it can be demonstrated that it would be appropriate in scale, located in areas that do not contribute positively to the objectives of the designation, is sympathetically designed and includes any necessary mitigation measures.</p> <p>Additional matters for solar based energy proposals for solar thermal or photovoltaics panels to be installed on existing property will be under a presumption in favour of permission unless there is clear and demonstrable significant harm arising.</p> <p>Proposals for ground based photovoltaics, including commercial large scale proposals, will be under a presumption in favour unless:</p>



Policy Reference	Key Policy Text
	<ul style="list-style-type: none"> <li>• there is clear and demonstrable significant harm arising; or</li> <li>• the proposal is (following a site specific soil assessment) to take place on Best and Most Versatile (BMV) agricultural land, unless such land is peat based and the proposal is part of a wider scheme to protect or enhance the carbon sink of such land; or</li> <li>• the land is allocated for another purpose in this Local Plan or other statutory based document (such as a nature recovery strategy or a Local Transport Plan), and the proposal is not compatible with such other allocation.</li> </ul> <p>Decommissioning renewable energy infrastructure</p> <p>Permitted proposals will be subject to a condition that will require the facility to be removed and the site fully restored to its original condition (or as near as reasonably practical to its original condition) within one year of that facility becoming non-operational.</p>
Policy S58: Green Infrastructure Network	<p>The Central Lincolnshire Authorities will safeguard green infrastructure in Central Lincolnshire from inappropriate development and work actively with partners to maintain and improve the quantity, quality, accessibility and management of the green infrastructure network.</p> <p>Proposals that cause loss or harm to the green infrastructure network will not be supported unless the need for and benefits of the development demonstrably outweigh any adverse impacts. Where adverse impacts on green infrastructure are unavoidable, development will only be supported if suitable mitigation measures for the network are provided.</p> <p>Development proposals should ensure that existing and new green infrastructure is considered and integrated into the scheme design from the outset. Where new green infrastructure is proposed, the design and layout should take opportunities to incorporate a range of green infrastructure to maximise the delivery of multi-functionality and ecosystem services, support climate change adaptation and encourage healthy and active lifestyles.</p> <p>Development proposals must protect the linear features of the green infrastructure network that provide connectivity between green infrastructure assets, including public rights of way, bridleways, cycleways and waterways, and take opportunities to improve and expand such features.</p> <p>Development will be expected to make a contribution proportionate to their scale towards the establishment, enhancement and on-going management of green infrastructure by contributing to the development of the strategic green infrastructure network within Central Lincolnshire, in accordance with the Developer Contributions SPD.</p>
Policy S59: Protecting Biodiversity and Geodiversity	<p>All development should:</p> <ul style="list-style-type: none"> <li>a) protect, manage and enhance the ecological network of habitats, species and sites of international, national and local importance (statutory and non-statutory), including sites that meet the criteria for selection as a Local Site;</li> <li>b) minimise impacts on biodiversity and features of geodiversity value;</li> <li>c) deliver measurable and proportionate net gains in biodiversity; and</li> <li>d) protect and enhance the aquatic environment within or adjoining the site, including water quality and habitat.</li> </ul> <p>Part One: Designated Sites</p> <p>The following hierarchy of sites will apply in the consideration of development proposals:</p> <p>1. International Sites</p> <p>The highest level of protection will be afforded to internationally protected sites. Development proposals that will have an adverse impact on the integrity of such areas, will not be supported other than in exceptional circumstances, in accordance with the NPPF.</p> <p>Development proposals that are likely to result in a significant adverse effect, either alone or in combination, on any internationally designated site, must satisfy the requirements of the Habitats Regulations (or any superseding similar UK legislation). Development requiring Appropriate Assessment will only be allowed where it can be determined, taking into account mitigation, that the proposal would not result in significant adverse effects on the site's integrity.</p> <p>2. National Sites (NNRs and SSSIs as shown on the Policies Map)</p>



Policy Reference	Key Policy Text
	<p>Development proposals should avoid impact on these nationally protected sites. Development proposals within or outside a national site, likely to have an adverse effect, either individually or in combination with other developments, will not normally be supported unless the benefits of the development, at this site clearly outweigh both the adverse impacts on the features of the site and any adverse impacts on the wider network of nationally protected sites.</p> <p>3. Irreplaceable Habitats</p> <p>Planning permission will be refused for development resulting in the loss, deterioration or fragmentation of irreplaceable habitats, including ancient woodland and aged or veteran trees, unless there are wholly exceptional reasons and a suitable compensation strategy will be delivered.</p> <p>4. Local Sites (LNR, LWS and LGS as shown on the Policies Map)</p> <p>Development likely to have an adverse effect on locally designated sites, their features or their function as part of the ecological network, will only be supported where the need and benefits of the development clearly outweigh the loss, and the coherence of the local ecological network is maintained. Where significant harm cannot be avoided, the mitigation hierarchy should be followed.</p> <p>Part Two: Species and Habitats of Principal Importance</p> <p>All development proposals will be considered in the context of the relevant Local Authority's duty to promote the protection and recovery of priority species and habitats.</p> <p>Development should seek to preserve, restore and re-create priority habitats, ecological networks and the protection and recovery of priority species set out in the Natural Environment and Rural Communities Act 2006, Lincolnshire Biodiversity Action Plan, Lincolnshire Geodiversity Strategy and Local Nature Recovery Strategy.</p> <p>Where adverse impacts are likely, development will only be supported where the need for and benefits of the development clearly outweigh these impacts. In such cases, appropriate mitigation or compensatory measures will be required.</p> <p>Part Three: Mitigation of Potential Adverse Impacts</p> <p>Development should avoid adverse impact on existing biodiversity and geodiversity features as a first principle, in line with the mitigation hierarchy. Where adverse impacts are unavoidable they must be adequately and proportionately mitigated. If full mitigation cannot be provided, compensation will be required as a last resort where there is no alternative.</p> <p>Development will only be supported where the proposed measures for mitigation and/or compensation along with details of net gain are acceptable to the Local Planning Authority in terms of design and location, and are secured for the lifetime of the development with appropriate funding mechanisms that are capable of being secured by condition and/or legal agreement.</p> <p>If significant harm to biodiversity resulting from development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission will be refused.</p>
<p>Policy S60: Biodiversity Opportunity and Delivering Measurable Net Gains</p>	<p>Following application of the mitigation hierarchy, development proposals should ensure opportunities are taken to retain, protect and enhance biodiversity and geodiversity features proportionate to their scale, through site layout, design of new buildings and proposals for existing buildings.</p> <p>Development proposals should create new habitats, and links between habitats, in line with Central Lincolnshire Biodiversity Opportunity and Green Infrastructure Mapping evidence, the biodiversity opportunity area principles set out in Appendix 4 to this Plan and the Local Nature Recovery Strategy, to maintain a network of wildlife sites and corridors, to minimise habitat fragmentation and provide opportunities for species to respond and adapt to climate change.</p> <p>Proposals for major and large scale development should seek to deliver wider environmental net gains where feasible.</p> <p>All development proposals must deliver, as a minimum, a 10% measurable biodiversity net gain attributable to the development. The net gain for biodiversity should be calculated using DEFRA's biodiversity metric.</p> <p>Appendix 4: Principles for Development within Biodiversity</p> <p>Opportunity Areas</p> <p>The following guidance provides a set of development principles which should be used when considering site allocations and determining planning applications in the context of the Central Lincolnshire Biodiversity</p>



Policy Reference	Key Policy Text
	<p>Opportunity Mapping (BOM) and the ecological network it alludes to. These principles are to be used in conjunction with policy S60 within this Local Plan. Ecological networks are key to creating a more robust natural environment which will be resilient to future pressures<sup>25</sup>. They will play an integral role in the creation of Nature Recovery Networks and likely act as the basis of any local work towards a national strategy, for example Local Nature Recovery Strategies.</p> <p>Central Lincolnshire Biodiversity Opportunity Mapping Categories</p> <p>Dark Green: Ecological network - high quality</p> <p>Consists of Priority habitat, these are the core areas of an ecological network and are of high value in terms of distinctiveness. These may require management to either maintain or improve their current condition.</p> <p>Light Green: Ecological network - opportunity for management</p> <p>These areas are not currently Priority habitat, but are important for biodiversity and the functionality of the ecological network of which they are part. They provide an opportunity for their quality to be improved through management, with positive results for biodiversity.</p> <p>Dark Brown: Opportunity for creation - more joined up</p> <p>These are not currently part of an ecological network, but provide opportunities to connect together two or more ecological networks through habitat creation.</p> <p>Light Brown: Opportunity for creation</p> <p>These areas are not currently part of an ecological network, but provide opportunities for increasing the size of an ecological network through habitat creation. Guidance regarding site allocations and planning permission applications in a</p> <p>Biodiversity Opportunity Mapping context.</p> <p>Biodiversity opportunity mapping developed by the Greater Lincolnshire Nature Partnership highlights both the existing ecological network and where the best opportunities lie for improvement in regards to the extent of habitat in the network, the condition or distinctiveness of said habitat and overall connectivity of the network. All policy and decisions should take into account the impact of development to these networks and where possible avoid permitting proposals which may negatively affect the existing network. Where this is not possible, or where development is planned on areas identified as an opportunity for creation, principles should call for quality design which will protect and enhance the existing network.</p> <p>Biodiversity net gain should prioritise onsite habitat creation and management over offsite. Where land earmarked for development contains, either partially or entirely, any areas highlighted by the BOM, these should be seen as opportunities to contribute to onsite biodiversity net gain requirements in a way that will also conserve, restore and enhance ecological connectivity. However, it should be recognised that Ecological network - opportunity for management areas and Opportunity for creation areas identified by the BOM, which are not part of a development area, are well placed as locations for habitat creation or management. Doing so contributes towards any required offsite biodiversity net gain commitments for development. Additionally, habitat created in an ecologically desirable location or in an area identified for biodiversity by a <b>local strategy</b> are valued more highly by Defra's biodiversity net gain metric. Any sites recognised by the BOM which apply to be included on the register of biodiversity gain sites should be given due regard in planning for their importance to enhancing ecological networks.</p> <p>Notes on Development Principles</p> <p>For the purpose of ecological networks "habitat creation" refers to semi natural or natural habitats. Any habitat created should fit with the existing ecological network and be either the same habitat type or related habitat. A related habitat refers to habitats often found in association as part of a dynamic complex. Ecological advice should be sought in the preservation and enhancement of ecological networks and achievement of biodiversity net gain.</p> <p>Development Principles</p> <p>Where allocated sites or sites submitted for planning permission contain or overlap with any <b>Ecological network – high quality area</b>, the following principles should apply:</p> <ol style="list-style-type: none"> <li>1. <b>High quality ecological network areas</b> consist of Priority habitat and contain the most valuable habitats. It should not be built on and should be buffered against impacts of development. Where development is permitted on land containing areas of <b>high quality ecological network</b>, the development layout should use the principles of the Mitigation Hierarchy and be designed in such a way as to avoid damage to these areas.</li> </ol>



Policy Reference	Key Policy Text
	<p>2. <b>High quality ecological network areas</b> should be recognised as a potential opportunity to achieve biodiversity net gain requirements by improving condition through sensitive management. Where allocated sites or sites submitted for planning permission contain or overlap with any</p> <p>Ecological network – opportunity for management area, the following development principles should apply:</p> <ol style="list-style-type: none"> <li>1. Proposals should avoid development on <b>Ecological network – opportunity for management areas</b> where possible.</li> <li>2. Where this is not possible, the development layout should ensure that connectivity of the network is maintained. This can be achieved through quality design, for example by leaving strategically important habitat in place to create wildlife corridors or the use of green/brown roofing to act as stepping stones between larger areas of habitat; or through the effective creation of new habitat as part of a landscaping scheme which allows for the migration and dispersal of species.</li> <li>3. Proposals should fulfil onsite net gain requirements through creation and sensitive management of habitats, in a way that will enhance the ecological network either by ensuring connectivity or improving condition.</li> </ol> <p>Where allocated sites or sites submitted for planning permission contain or overlap with any mapped <b>Opportunity for creation areas</b>, the following development principles should apply:</p> <ol style="list-style-type: none"> <li>1. Where development takes place on <b>Opportunity for creation areas</b>, applications should include information clearly demonstrating how opportunities to maintain or enhance the ecological network (in regards to the extent of habitat in the network, the condition or distinctiveness of said habitat) and overall connectivity in the network, have or will be taken. It should include aspects of quality design; for example, by leaving strategically important habitat in place where possible to create wildlife corridors or the use of green/brown roofing to act as stepping stones between larger areas of habitat. It should also take any opportunities for effective habitat creation as part of a landscaping scheme which ensures connectivity between habitats for the species which utilise them.</li> <li>2. Proposals should prioritise any <b>Opportunity for creation areas</b> within the development site for habitat creation. This will ensure that requirements for both biodiversity net gain and the enhancement of ecological networks are achieved in an effective way. Habitat creation onsite should maximise the potential for the ecological network in regards to: the extent of habitat in the network, the condition or distinctiveness of said habitat and the overall connectivity of the network. Additionally, habitat created onsite in an ecologically desirable location or in an area identified by a local strategy, are valued more highly by Defra's biodiversity net gain metric.</li> </ol>
<p>Policy S65: Trees, Woodland and Hedgerows</p>	<p>Development proposals should be prepared based on the overriding principle that:</p> <ul style="list-style-type: none"> <li>• the existing tree and woodland cover is maintained, improved and expanded; and</li> <li>• opportunities for expanding woodland are actively considered, and implemented where practical and appropriate to do so.</li> </ul> <p>Existing Trees and Woodland</p> <p>Planning permission will only be granted if the proposal provides evidence that it has been subject to adequate consideration of the impact of the development on any existing trees and woodland found on-site (and off-site, if there are any trees near the site, with 'near' defined as the distance comprising 12 times the stem diameter of the off-site tree). If any trees exist on or near the development site, 'adequate consideration' is likely to mean the completion of a British Standard 5837 Tree Survey and, if applicable, an Arboricultural Method Statement.</p> <p>Where the proposal will result in the loss or deterioration of:</p> <ol style="list-style-type: none"> <li>a) ancient woodland; and/or</li> <li>b) the loss of aged or veteran trees found outside ancient woodland,</li> </ol> <p>permission will be refused, unless and on an exceptional basis the need for, and benefits of, the development in that location clearly outweigh the loss.</p> <p>Where the proposal will result in the loss or deterioration of a tree protected by a Tree Preservation Order or a tree within a Conservation Area, then permission will be refused unless:</p> <ol style="list-style-type: none"> <li>c) there is no net loss of amenity value which arises as a result of the development; or</li> <li>d) the need for, and benefits of, the development in that location clearly outweigh the loss.</li> </ol>



Policy Reference	Key Policy Text														
	<p>Where the proposal will result in the loss of any other tree or woodland not covered by the above, then the Council will expect the proposal to retain those trees that make a significant contribution to the landscape or biodiversity value of the area, provided this can be done without compromising the achievement of good design for the site.</p> <p>Mitigating for loss of Trees and Woodland</p> <p>Where it is appropriate for higher value tree(s) (category A or B trees (BS5837)) and/or woodland to be lost as part of a development proposal, then appropriate mitigation, via compensatory tree planting, will be required. Such tree planting should be on-site wherever possible and should:</p> <ul style="list-style-type: none"> <li>e) take all opportunities to meet the five Tree Planting Principles (see supporting text); and</li> <li>f) unless demonstrably impractical or inappropriate, provide the following specific quantity of compensatory trees:</li> </ul> <table border="1" data-bbox="555 658 1066 1191"> <thead> <tr> <th data-bbox="555 658 817 810">Trunk diameter(mm) at 1.5m above ground of tree lost to development</th> <th data-bbox="817 658 1066 810">Number of replacement trees required, per tree lost*</th> </tr> </thead> <tbody> <tr> <td data-bbox="555 810 817 875">75-200</td> <td data-bbox="817 810 1066 875">1</td> </tr> <tr> <td data-bbox="555 875 817 940">210-400</td> <td data-bbox="817 875 1066 940">4</td> </tr> <tr> <td data-bbox="555 940 817 1005">410-600</td> <td data-bbox="817 940 1066 1005">6</td> </tr> <tr> <td data-bbox="555 1005 817 1070">610-800</td> <td data-bbox="817 1005 1066 1070">9</td> </tr> <tr> <td data-bbox="555 1070 817 1135">810-1000</td> <td data-bbox="817 1070 1066 1135">10</td> </tr> <tr> <td data-bbox="555 1135 817 1191">1000+</td> <td data-bbox="817 1135 1066 1191">11</td> </tr> </tbody> </table> <p>* replacement based on selected standards 10/12 cm girth at 1m</p> <p>New Trees and Woodland</p> <p>Where appropriate and practical, opportunities for new tree planting should be explored as part of all development proposals (in addition to, if applicable, any necessary compensatory tree provision). Where new trees are proposed, they should be done so on the basis of the five Tree Planting Principles. Proposals which fail to provide practical opportunities for new tree planting will be refused.</p> <p>Planting schemes should include provision to replace any plant failures within five years after the date of planting. Planting of trees must be considered in the context of wider plans for nature recovery which seeks to increase biodiversity and green infrastructure generally, not simply planting of trees, and protecting / enhancing soils, particularly peat soils. Tree planting should only be carried out in appropriate locations that will not impact on existing ecology or opportunities to create alternative habitats that could deliver better enhancements for people and wildlife, including carbon storage. Where woodland habitat creation is appropriate, consideration should be given to the economic and ecological benefits that can be achieved through natural regeneration. Any tree planting should use native and local provenance tree species suitable for the location.</p> <p>Management and Maintenance</p> <p>In instances where new trees and/or woodlands are proposed, it may be necessary for the council to require appropriate developer contributions to be provided, to ensure provision is made for appropriate management and maintenance of the new trees and/or woodland.</p> <p>Hedgerows</p> <p>Proposals for new development will be expected to retain existing hedgerows where appropriate and integrate them fully into the design having regard to their management requirements.</p> <p>Proposals for new development will not be supported that would result in the loss of hedges of high landscape, heritage, amenity or biodiversity value unless the need for, and benefits of, the development clearly outweigh the loss and this loss can be clearly demonstrated to be unavoidable.</p>	Trunk diameter(mm) at 1.5m above ground of tree lost to development	Number of replacement trees required, per tree lost*	75-200	1	210-400	4	410-600	6	610-800	9	810-1000	10	1000+	11
Trunk diameter(mm) at 1.5m above ground of tree lost to development	Number of replacement trees required, per tree lost*														
75-200	1														
210-400	4														
410-600	6														
610-800	9														
810-1000	10														
1000+	11														





Policy Reference	Key Policy Text
	<p>Development requiring the loss of a hedgerow protected under The Hedgerow Regulations will only be supported where it would allow for a substantially improved overall approach to the design and landscaping of the development that would outweigh the loss of the hedgerow. Where any hedges are lost, suitable replacement planting or restoration of existing hedges, will be required within the</p>
Bassetlaw Core Strategy (adopted 2011)	
<p>Policy DM9: Green Infrastructure; Biodiversity &amp; Geodiversity; Landscape; Open Space &amp; Sports Facilities</p>	<p>A. Green Infrastructure</p> <p>Development proposals will be expected to support the Council's strategic approach to the delivery, protection and enhancement of multi-functional Green Infrastructure, to be achieved through the establishment of a network of green corridors and assets (please refer to the Council's Green Infrastructure work for a full list of Green Corridors and Nodes within, and running beyond, the District) at local, sub-regional and regional levels. Particular support will be given to proposals that will further the development of:</p> <ul style="list-style-type: none"> <li>• The Idle Valley Project;</li> <li>• The Trent Vale Partnership;</li> <li>• Sherwood Forest Regional Park.</li> </ul> <p>Development proposals will be expected to demonstrate, in line with the Council's Green Infrastructure work, that:</p> <ol style="list-style-type: none"> <li>i. they protect and enhance green infrastructure assets affected by the development and take opportunities to improve linkages between green corridors;</li> <li>ii. where they overlap with or will affect existing green infrastructure nodes or corridors, such assets are protected and enhanced to improve public access and use;</li> <li>iii. where opportunities exist, development proposals provide improvements to the green infrastructure network that benefit biodiversity through the incorporation of retained habitats and by the creation of new areas of habitat; and</li> <li>iv. they provide robust delivery mechanisms for, and means of ensuring the long-term management of, green infrastructure.</li> </ol> <p>Development that will result in the loss of existing green infrastructure may be supported where replacement provision is made that is considered to be of equal or greater value than that which will be lost. Where new development may have an adverse impact on green infrastructure, alternative scheme designs that minimise impact must be presented to the Council for consideration before the use of mitigation measures (e.g. off-site or through financial contributions for improvements elsewhere) is considered.</p> <p>B. Biodiversity and Geodiversity</p> <p>Development proposals will be expected to take opportunities to restore or enhance habitats and species' populations and to demonstrate that they will not adversely affect or result in the loss of features of recognised importance, including:</p> <ol style="list-style-type: none"> <li>i. Protected trees and hedgerows;</li> <li>ii. Ancient woodlands;</li> <li>iii. Sites of Special Scientific Interest (SSSI);</li> <li>iv. Regionally Important Geodiversity Sites; Bassetlaw Core Strategy &amp; Development Management Policies DPD 66</li> <li>v. Local Wildlife Sites (Sites of Importance for Nature Conservation (SINC));</li> <li>vi. Local and UK Biodiversity Action Plan Habitats (including Open Mosaic Habitats on Previously Developed Land); and</li> <li>vii. Protected Species<sup>43</sup>.</li> </ol> <p>Development that will result in the loss of such features may be supported where replacement provision is made that is considered to be of equal or greater value than that which will be lost and which is likely to result in a net gain in biodiversity. Where new development may have an adverse impact on such features, alternative scheme designs that minimise impact must be presented to the Council for consideration before the use of mitigation measures is considered. Where sufficient mitigation measures cannot be delivered, compensation measures must be provided as a last resort.</p>
Draff Bassetlaw Local Plan (emerging)	



Policy Reference	Key Policy Text
POLICY ST40: Green Gaps	<p>1. To promote the local character and distinctiveness of the Main Towns and nearby Large and Small Rural Settlements, and to reflect the sensitivity of the adjoining landscape quality and character, the following Green Gaps are designated, as shown on the Policies Map:</p> <p>Green Gap 1: Land around Harworth and Bircotes</p> <p>Green Gap 2: Land between Oldcotes, Langold and Carlton in Lindrick</p> <p>Green Gap 3: Land between Carlton in Lindrick and Worksop North</p> <p>Green Gap 4: Land between Worksop West, Shireoaks and Rhodesia</p> <p>Green Gap 5: Land between Retford, Clarbrough and Welham</p> <p>Green Gap 6: Land around Retford East</p> <p>Green Gap 7: Land around Retford South</p> <p>Green Gap 8: Land around Retford West</p> <p>2. Proposals for the development, including the intensification of land, within a Green Gap will only be supported where it can be demonstrated that:</p> <p>a) there are no suitable sites outside of a Green Gap that can meet the needs of the development; or</p> <p>b) it is for critical utilities, highways or flood management infrastructure;</p> <p>and,</p> <p>c) individually or cumulatively with other existing or planned development, the proposal will have a positive impact on the character, appearance, openness and function of the landscape characteristics of the relevant Green Gap. Evidenced by a landscape statement, proposals should:</p> <p>i. deliver a high standard of design that positively reflects the landscape qualities of the location and/or settlement involved in accordance with Policy ST37;</p> <p>ii. maintain the separation between relevant existing settlements;</p> <p>iii. create a positive interface between the urban and rural environments;</p> <p>iv. maintain and where practicable enhance recreation and public access opportunities;</p> <p>v. protect and contribute to the enhancement of the District's green/blue infrastructure network and Nature Recovery Network in accordance with Policy ST39 and Policy ST41 respectively.</p>
POLICY ST41: Green and Blue Infrastructure	<p>1. The connectivity, quality, multifunctionality, biodiversity and amenity value of the green and blue infrastructure network will be enhanced, extended and managed through:</p> <p>a) protecting and enhancing the landscape character and the distinctiveness of Green Gaps, Registered Parks and Gardens and ornamental parklands, registered Common Lands and Village Greens, and Local Green Spaces;</p> <p>b) protecting, enhancing and restoring watercourses, ponds, lakes and water dependent habitats where appropriate;</p> <p>c) providing for biodiversity net gain, including reconnecting vulnerable and priority habitats (see policy ST41);</p> <p>d) protecting and enhancing ancient and mature woodland and hedgerows, and providing for tree planting to secure recreational benefits and/or to aid carbon offsetting;</p> <p>e) making appropriate provision for new green/blue infrastructure in new development including open space, allotments, playing fields and outdoor sports facilities, and natural and semi natural greenspace and bluespace; and/or incorporating and where practicable facilitating the improvement of existing provision through the design of development;</p> <p>f) applying climate change mitigation and adaptation measures through new development, including flood risk and watercourse management;</p> <p>g) linking walking and cycling routes, bridleways and public rights of way to and through development, where appropriate;</p>



Policy Reference	Key Policy Text
	<p>2. The function, setting, and biodiversity, landscape, access and recreational value of the following main and minor green corridors, as identified on the Policies Map will be protected and enhanced:</p> <p>a) Main green corridors</p> <p>i. Chesterfield Canal</p> <p>ii. River Idle</p> <p>iii. River Ryton</p> <p>iv. River Trent</p> <p>b) Minor green corridors</p> <p>i. Trent Valley Way</p> <p>ii. Cuckoo Way</p> <p>iii. National Cycle Route 6</p> <p>iv. River Maun</p> <p>v. Robin Hood Way</p> <p>vi. River Meden</p> <p>vii. River Poulter</p> <p>c) All proposals wholly or partly within the minimum buffer zone of a main green corridor (30m width), or a minor green corridor (15m width) should be supported by an Ecological Impact Assessment and landscape statement. This should confirm the extent of the buffer zone in that location and demonstrate how the design and layout of the scheme will positively respond to its green/blue infrastructure location.</p> <p>3. All new green and blue infrastructure should be accompanied by appropriate management and maintenance arrangements.</p>
<p>POLICY ST42: Biodiversity and Geodiversity</p>	<p>1. The Council will seek to protect and enhance the biodiversity and geodiversity of Bassetlaw, including:</p> <p>International Sites</p> <p>a) a proposal that may impact on a Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar site and/or the Sherwood Forest ppSPA will only be supported where it can be demonstrated that there will be no likely significant effects on their integrity, unless there are no alternative solutions and it is justified by an 'imperative reasons of overriding public interest' assessment under the Habitats Directives.</p> <p>National Designations</p> <p>b) a proposal that may either directly or indirectly adversely impact a Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR) or ancient woodland and their buffer zones will be refused other than in wholly exceptional circumstances. All proposals should seek to protect and enhance these features wherever possible.</p> <p>c) where it can be demonstrated that housing development within the identified zones of influence of Clumber Park SSSI, the Birklands and Bilhaugh SAC, and Sherwood Forest ppSPA will create adverse recreational impacts on the integrity of these designated sites the development will make provision for appropriate mitigation measures including on the development site, and/or as a financial contribution towards mitigation, management and monitoring at the designated asset.</p> <p>Local Designations and Locally Important Ecological Features</p> <p>d) proposals having a direct or indirect adverse effect on a Local Nature Reserve, Local Wildlife Site or Local Geological Site and their buffer zones or other biodiversity/geodiversity asset, will only be supported where there are no reasonable alternatives; and the case for development clearly outweighs the need to safeguard the ecological, recreational and/or educational value of the site.</p> <p>2. In all cases, where the principle of development is considered appropriate the mitigation hierarchy must be applied so that:</p> <p>a) firstly harm is avoided wherever possible; then</p>



Policy Reference	Key Policy Text
	<p>b) appropriate mitigation is provided to ensure no net loss or a net gain of priority habitat and local populations of priority species;</p> <p>c) as a last resort, compensation is delivered to offset any residual damage to biodiversity;</p> <p>d) they protect, restore, enhance and provide appropriate buffers around wildlife and geological features at a local and wider landscape-scale to deliver robust ecological networks, to help deliver priorities in the Nottinghamshire Biodiversity Opportunity Model for Bassetlaw and Idle Valley;</p> <p>e) they establish additional ecological links to the Nature Recovery Network.</p> <p>Biodiversity Net Gain</p> <p>3. All new development should make provision for at least 10% net biodiversity gain on site, or where it can be demonstrated that for design reasons this is not practicable, off site through an equivalent financial contribution.</p> <p>4. A commuted sum equivalent to 30 years maintenance will be sought to manage the biodiversity assets in the long term.</p>
<p>POLICY 43: Trees, woodlands and hedgerows</p>	<p>1. The Council will protect existing trees, woodland and hedgerows and secure additional planting that increases canopy cover in the interests of biodiversity, amenity and climate change adaptation by:</p> <p>a) retaining, protecting and improving woodland and trees subject to Tree Preservation Orders (TPOs), trees within conservation areas, and 'important' hedgerows as defined by the Hedgerows Regulations 1997;</p> <p>b) making Tree Preservation Orders;</p> <p>c) giving consideration to trees and hedgerows both on individual merit as well as their contribution to amenity and interaction as part of a group within the broader landscape setting;</p> <p>d) resisting the loss or deterioration of ancient woodland and ancient or veteran trees unless there are wholly exceptional reasons and a suitable compensation strategy exists;</p> <p>e) seeking contributions to the national tree planting target to contribute to net zero emissions in accordance with Policy ST50.</p> <p>2. Where development would adversely affect trees or hedgerows the application must be accompanied by:</p> <p>a) an accurate tree survey and arboriculture assessment, undertaken by an experienced arboriculturist, of all existing trees and hedgerows on site in accordance with BS5837 (Trees in relation to design, demolition and construction);</p> <p>b) details of protective measures to be put in place during the development to ensure the health and safety of each specimen and hedgerow to be retained;</p> <p>c) an avoidance and mitigation strategy to include replacement planting for specimens of at least equal amenity and ecological value of a local provenance; and</p> <p>d) a detailed management plan providing details of maintenance arrangements for 10 years.</p>
<p>POLICY ST51: Renewable and Low Carbon Energy Generation</p>	<p>1. Development that generates, shares, transmits and/or stores renewable and low carbon energy, including community energy schemes, will be supported subject to the provision of details of expected power generation based upon yield or local selfconsumption of electricity and by demonstrating the satisfactory resolution of all relevant wider impacts (including cumulative impacts) upon:</p> <p>a) location, setting and position in the wider landscape, resulting from its siting and scale;</p> <p>b) the historic environment and natural environment, the most versatile agricultural land, air and water quality resulting from its location, scale, design, height or construction;</p> <p>c) affected existing dwellings and communities from its scale, noise, light, glare, smell, dust, emissions or flicker;</p> <p>d) existing highway capacity and highway safety.</p> <p>2. Development should address the cumulative impact that the scheme could have on the area, taking into account operational and approved developments, as well as any extensions to operational or approved proposals. An assessment should address cumulative visual and landscape impacts, as well as heritage, hydrology, hydrogeology, ecology, traffic and transport, noise, recreation and local amenity impacts.</p>



Policy Reference	Key Policy Text
	<p>3. Community engagement proportionate to the type and scale of the proposal will be required for all commercial scale renewable energy and low carbon energy proposals to demonstrate how they will deliver environmental, social and economic benefits.</p> <p>4. A decommissioning programme will be required to demonstrate the effective restoration of land and/or buildings to their original use (such as agriculture) and condition three years after cessation of operations.</p>





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## APPENDIX F – UKHAB SURVEY MAPS



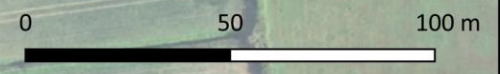
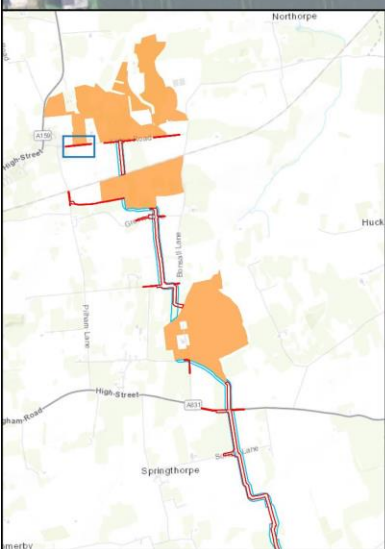
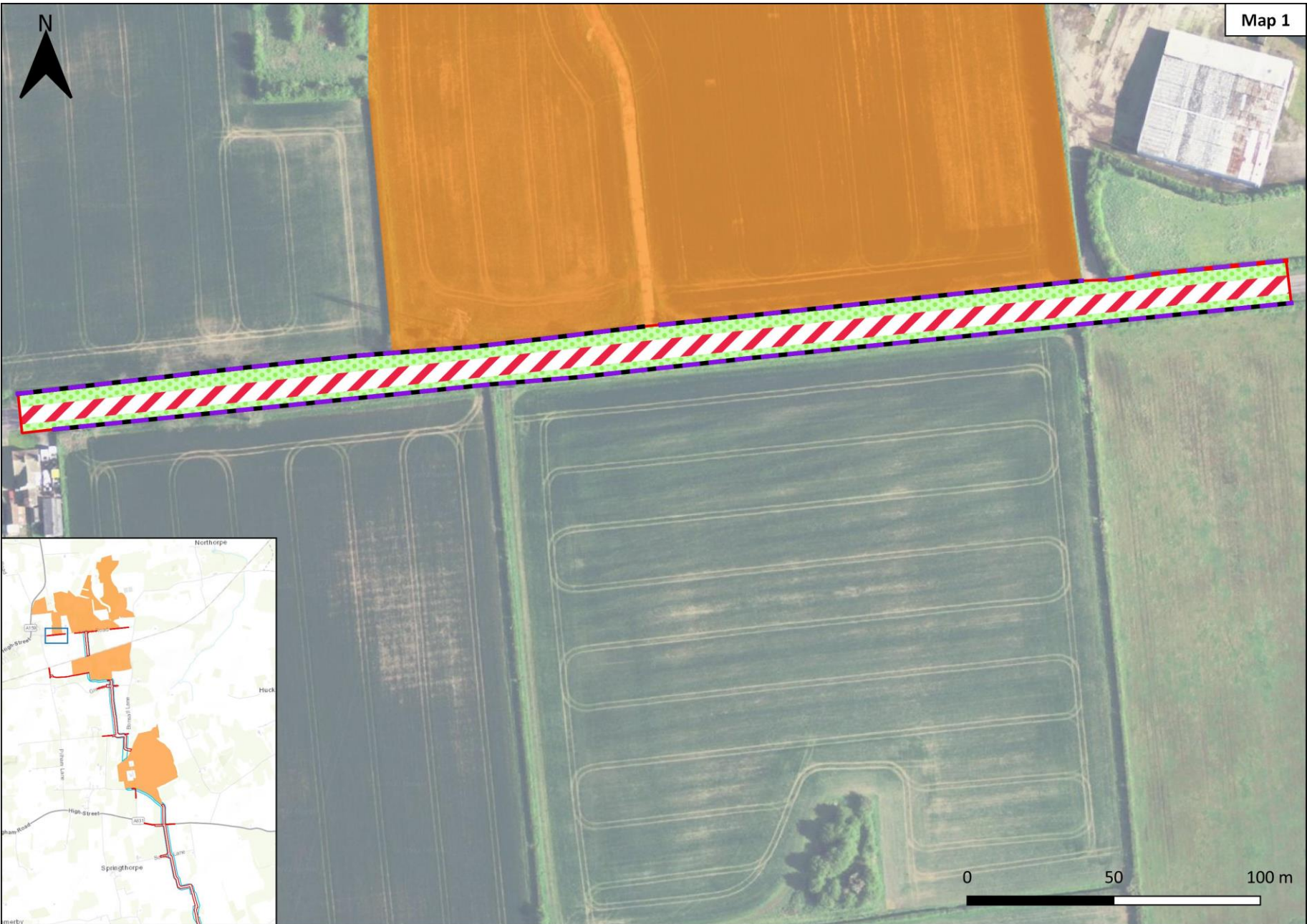
**Project** Cottam Solar Project

**Title** Habitat Survey Maps

**Figure Number** Appendix F

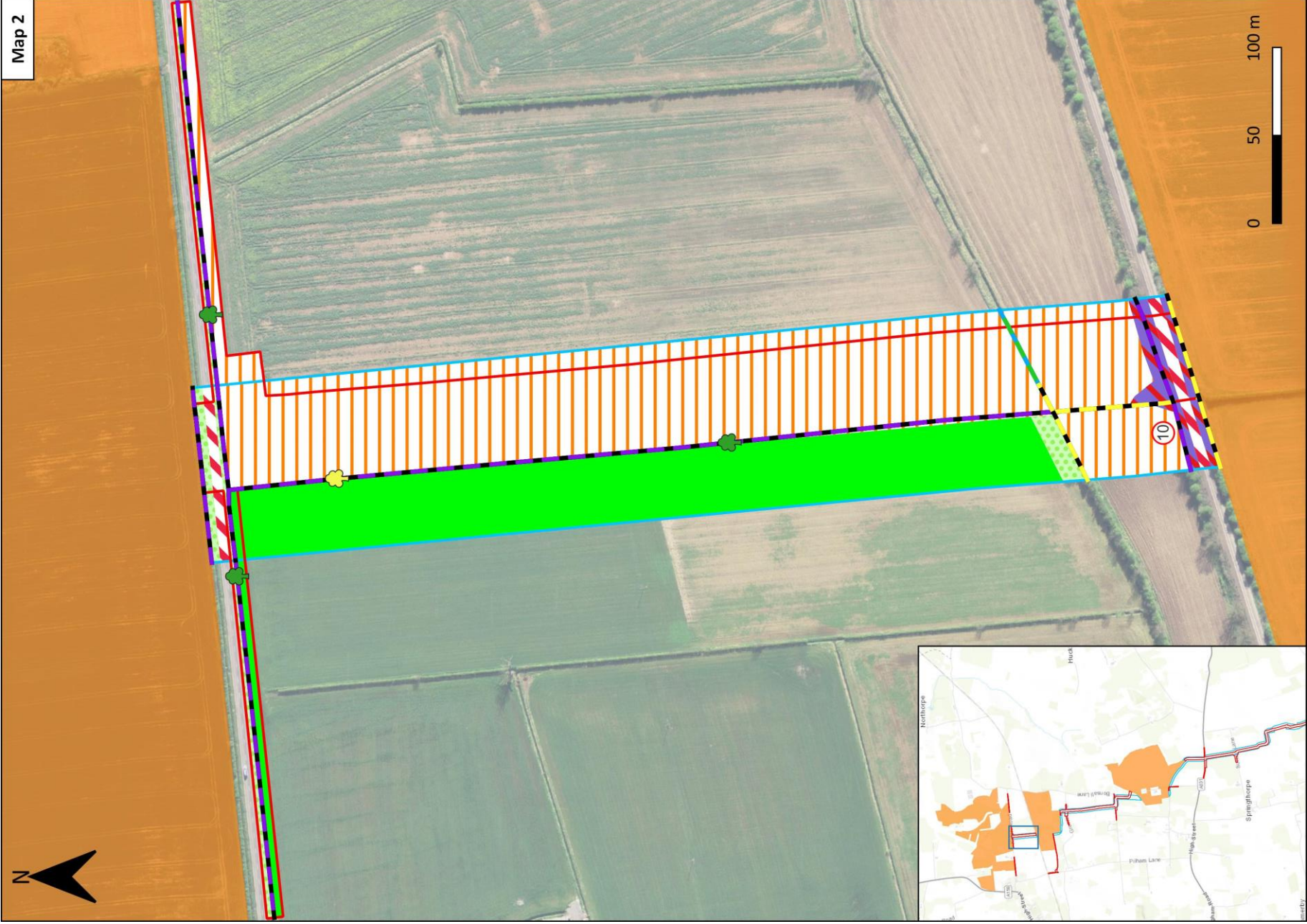
**Key:**

 Arable and horticulture	 Other neutral grassland	 Line of trees	 Cable Route Corridor (Order Limits)
 Arable field margins	 Modified grassland	 Native hedgerow	 Cable Route Search Area
 Cereal crops	 Lowland mixed deciduous woodland	 Native species rich hedgerow	 Cottam solar site
 Non-cereal crops	 Other woodland-broadleaved	 Non-native ornamental hedge	 West Burton solar site
 Temporary grass and clover leys	 Dense scrub	 Dry ditch	 Target note
 Arrhenatherum neutral grassland	 Built-up areas and gardens	 Seasonally wet ditch	 Tree with high roosting bat potential
 Deschampsia neutral grassland	 Sparsely vegetated land	 Wet ditch	 Tree with moderate roosting bat potential
 Lolium-Cynosurus neutral grassland	 Rivers and lakes	 River	 Tree with low roosting bat potential
			 Tree with negligible roosting bat potential

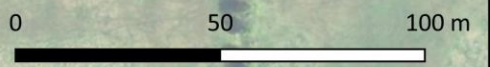
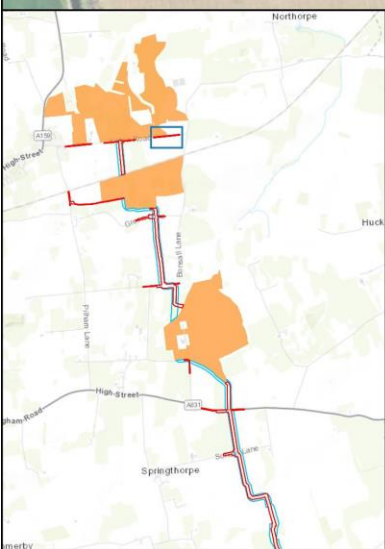




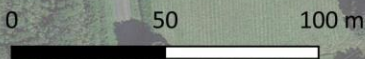
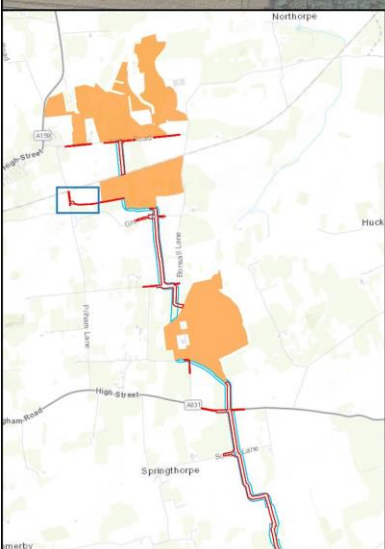
Map 2



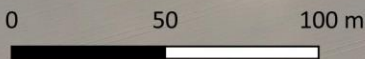
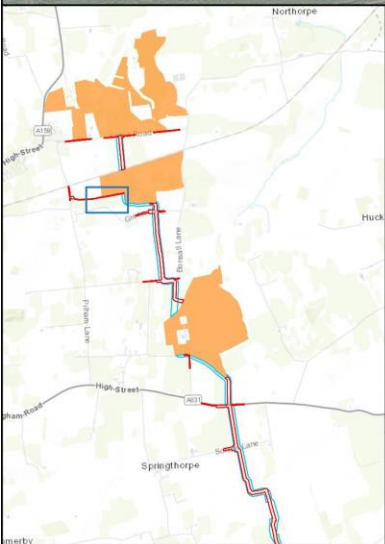




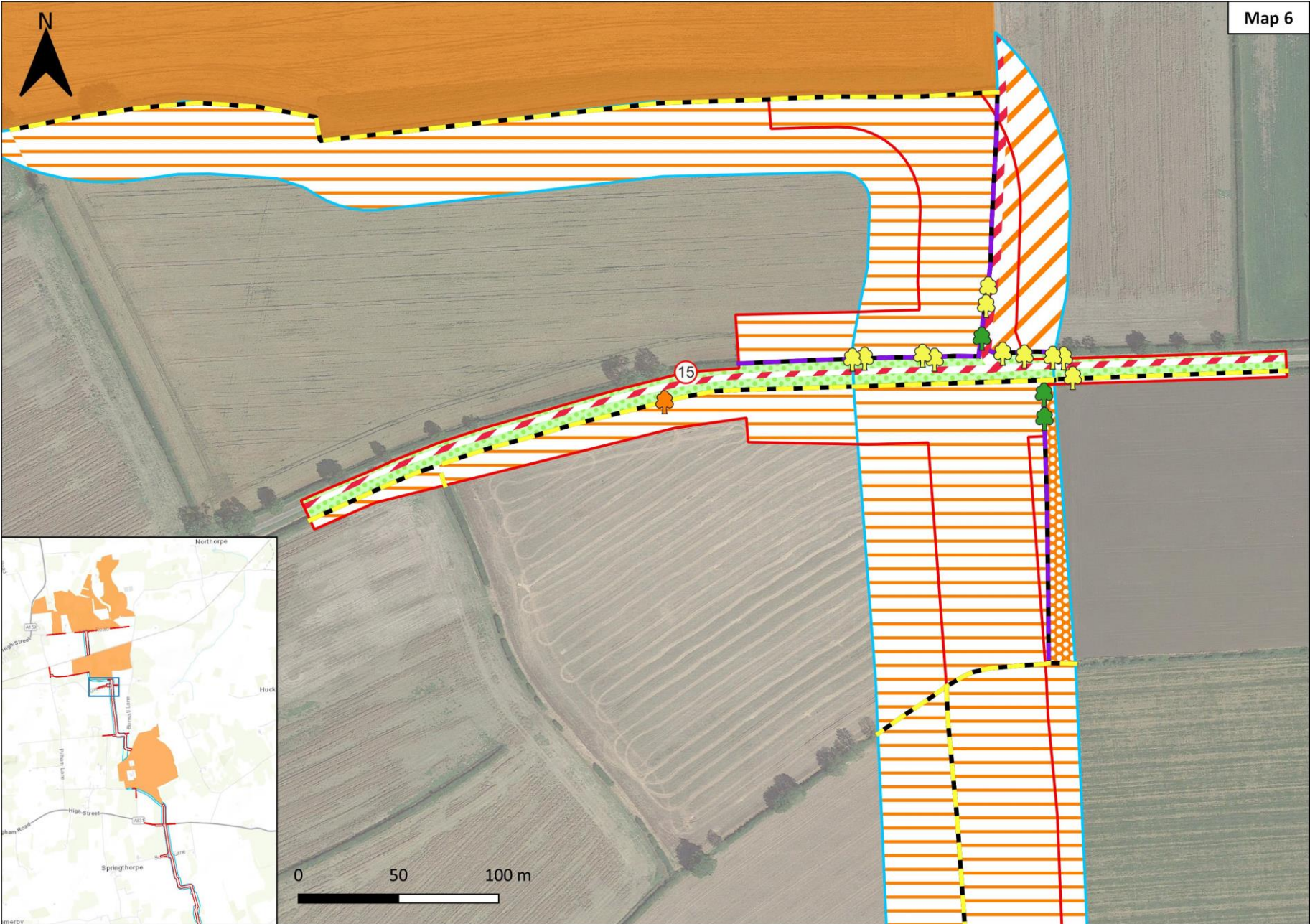






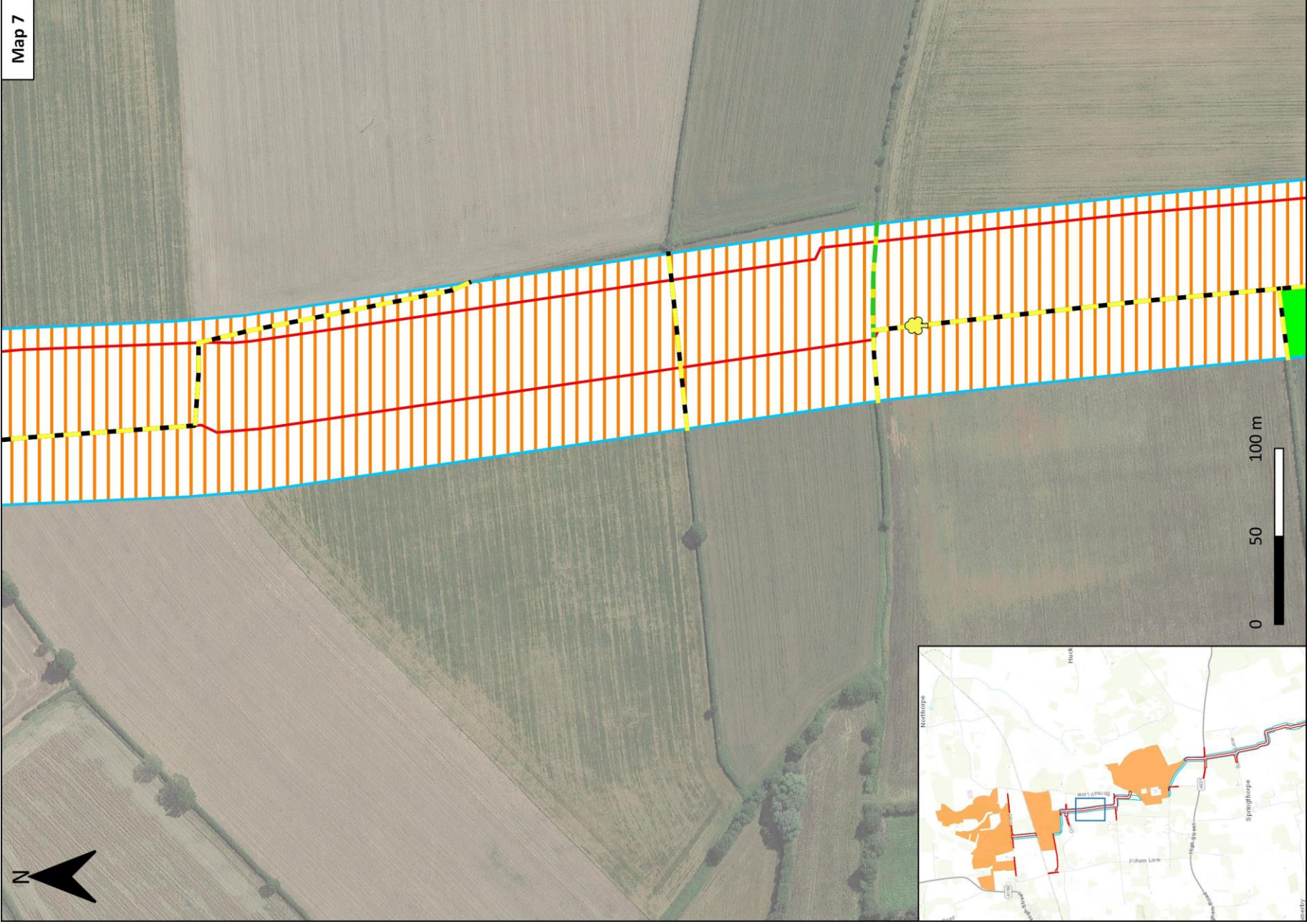




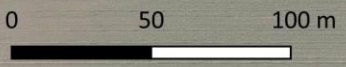
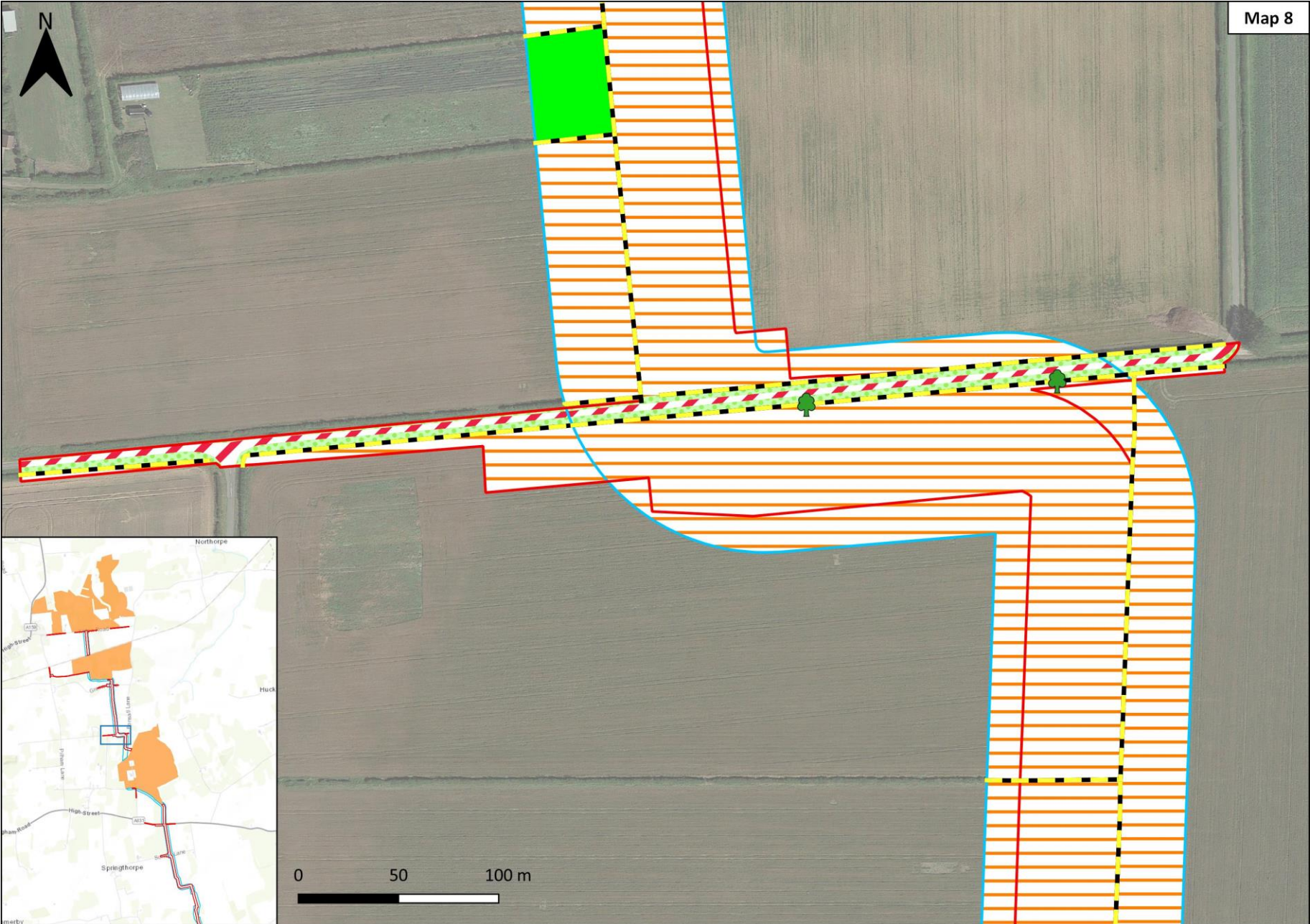




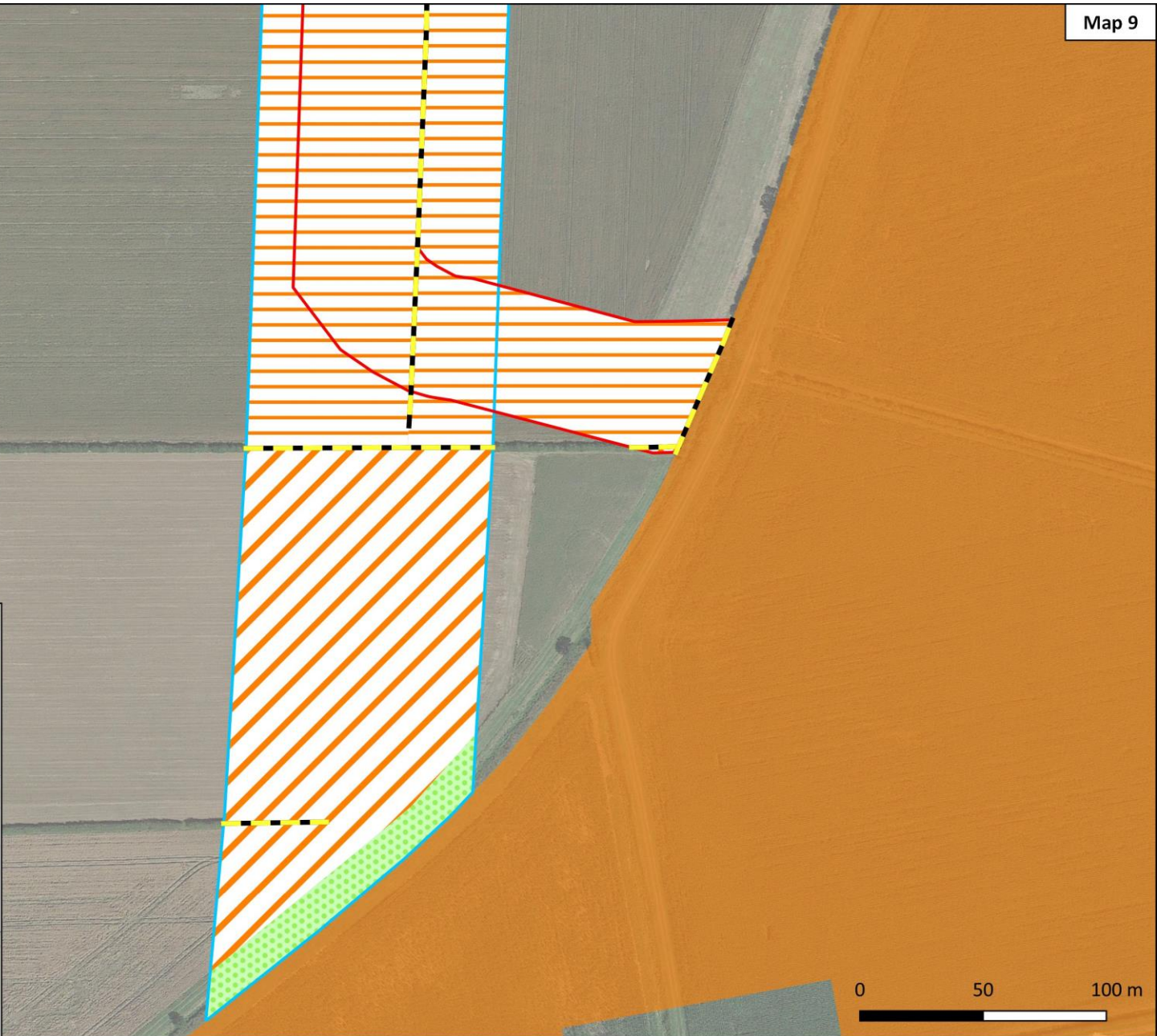
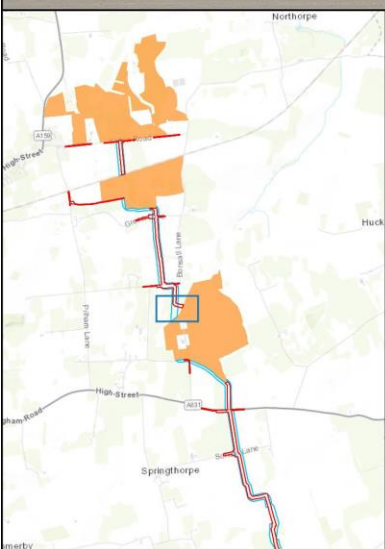
Map 7



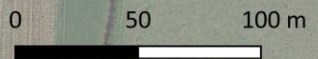
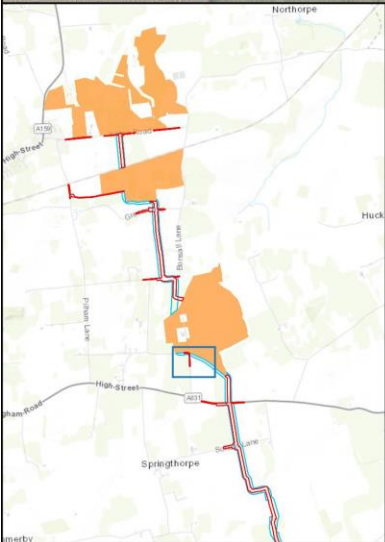
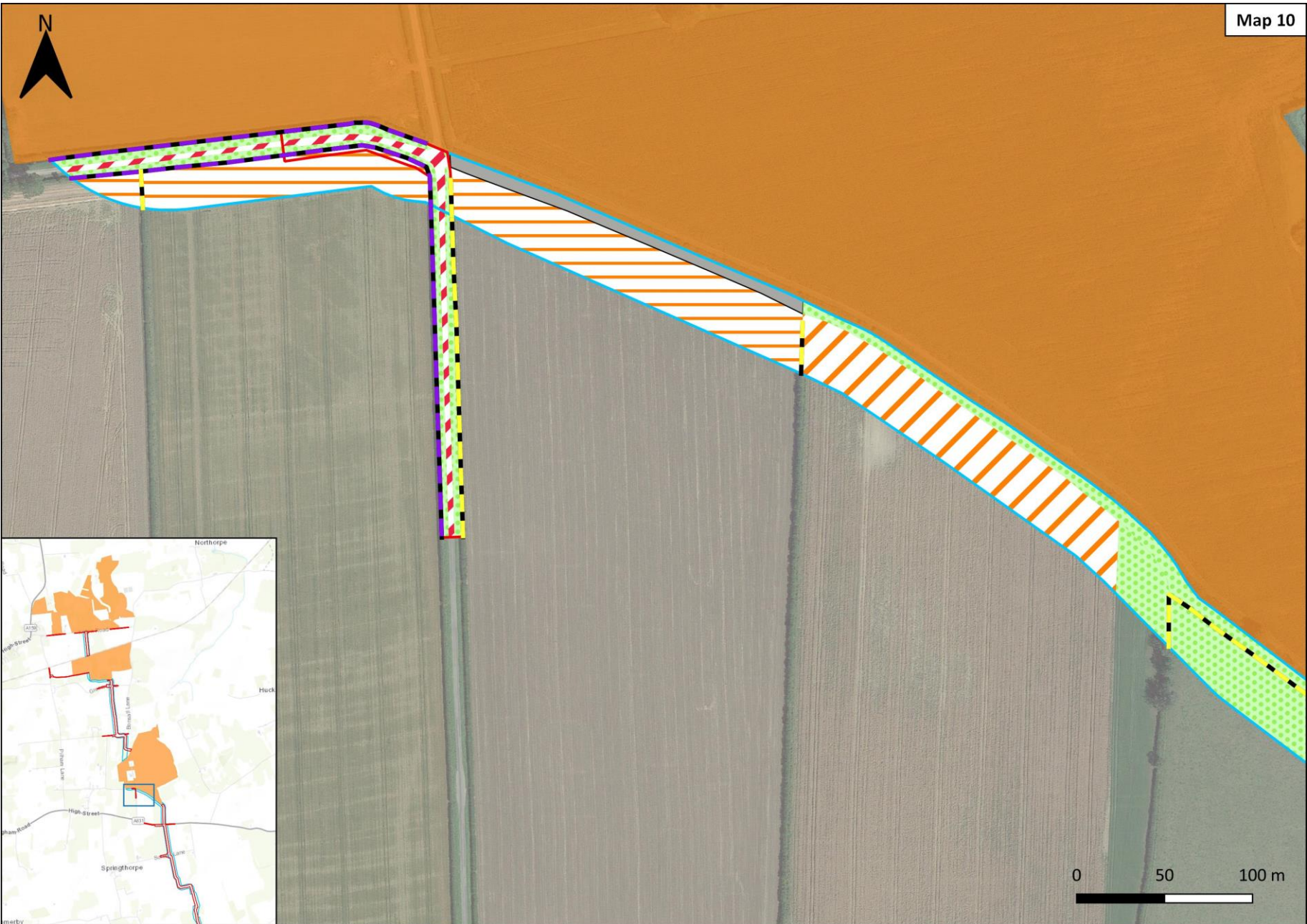




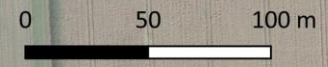
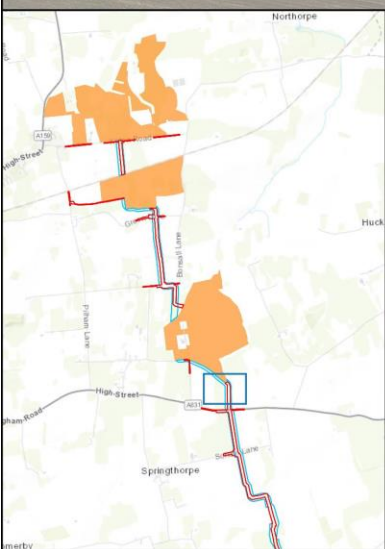
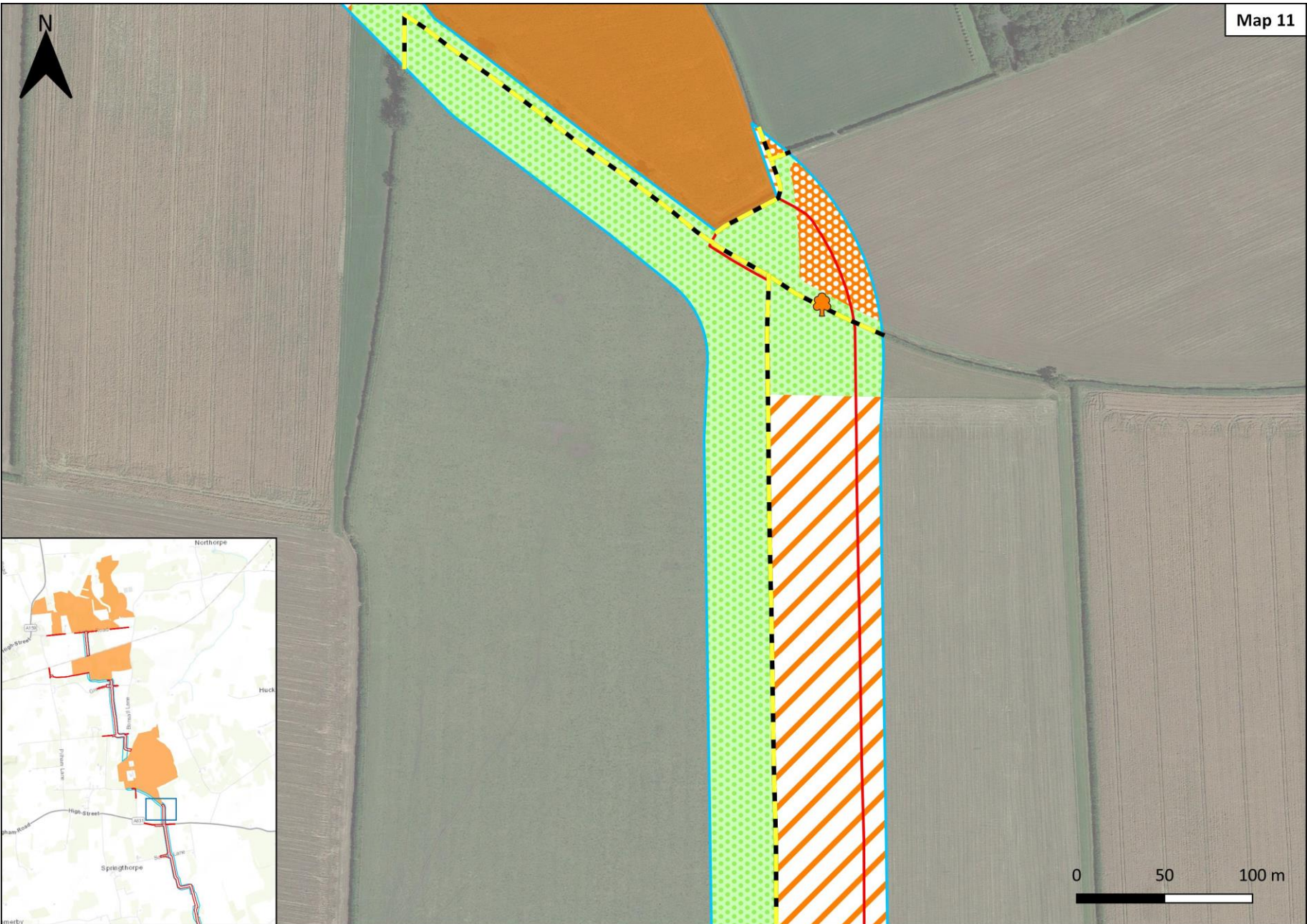




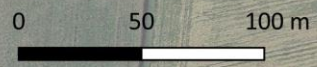
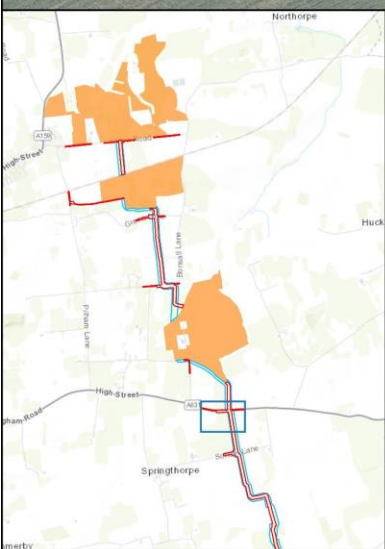








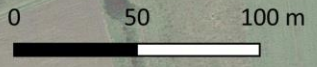
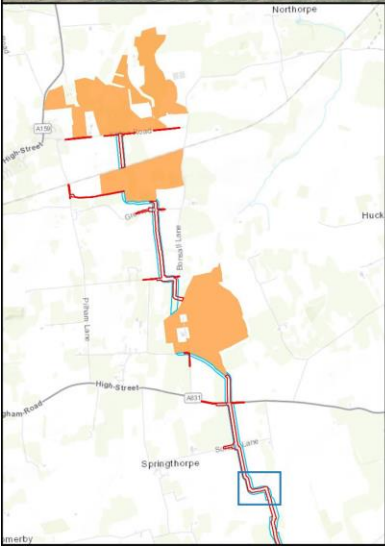
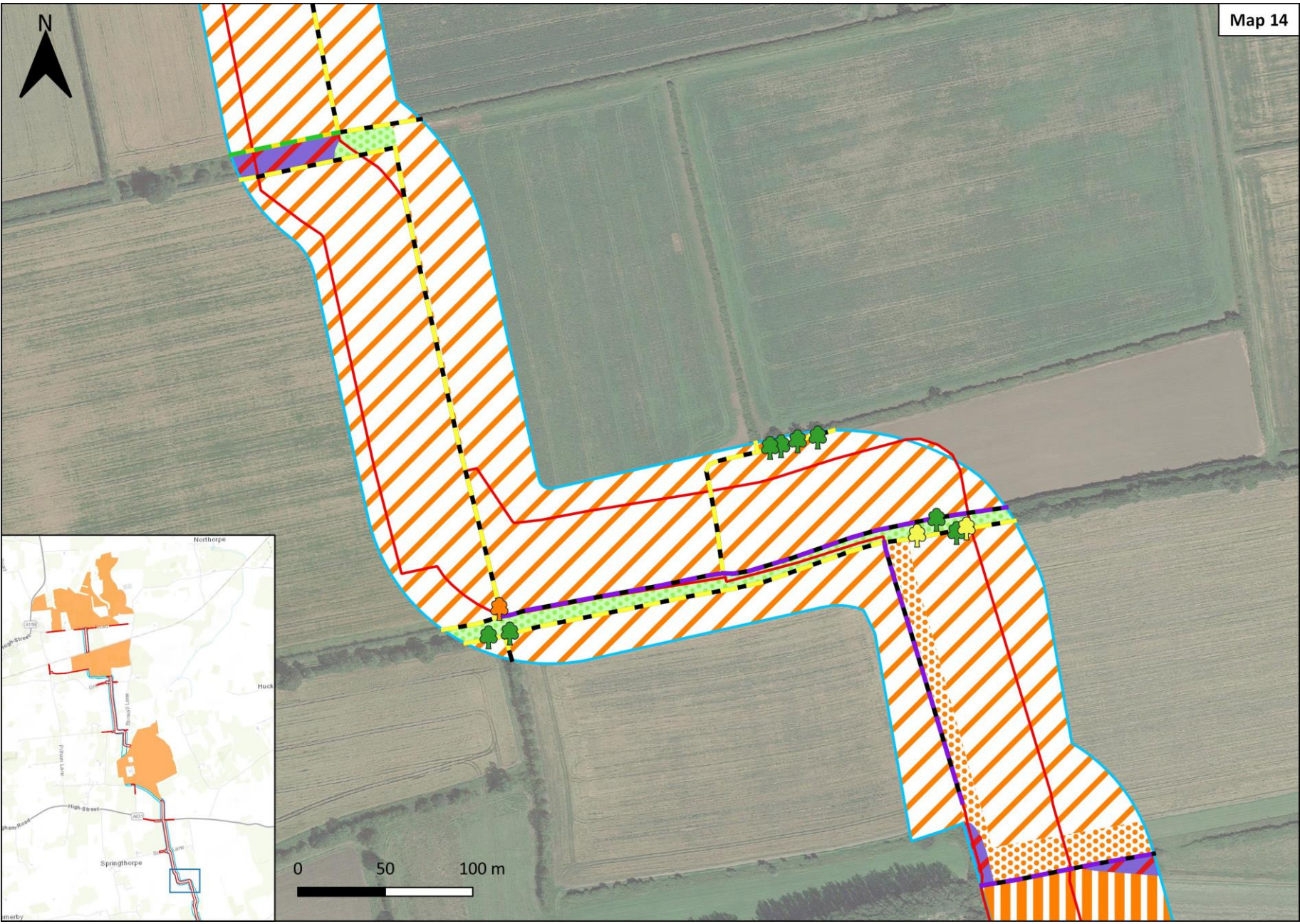






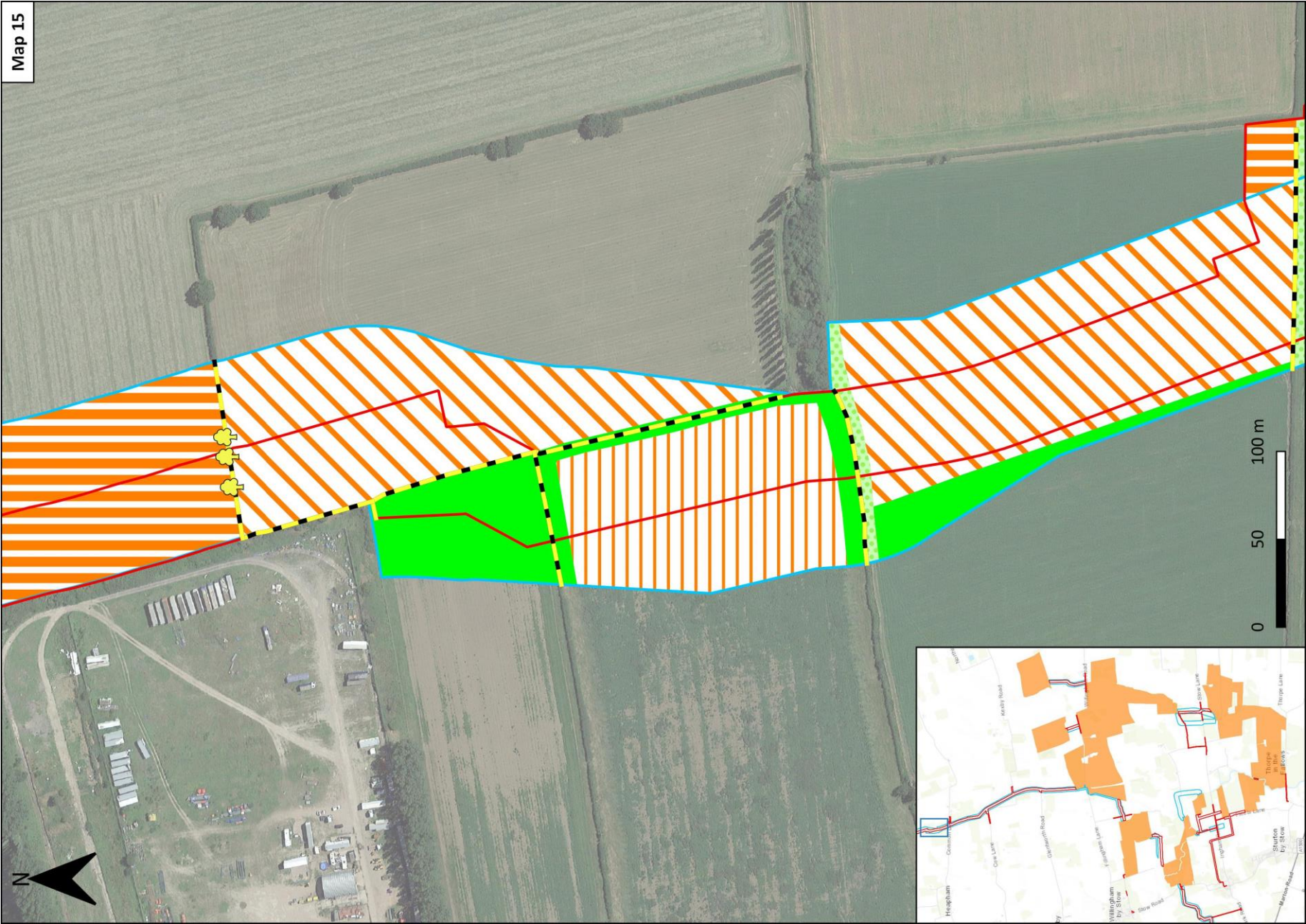




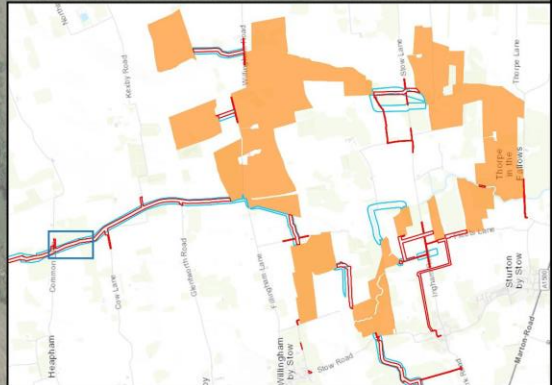




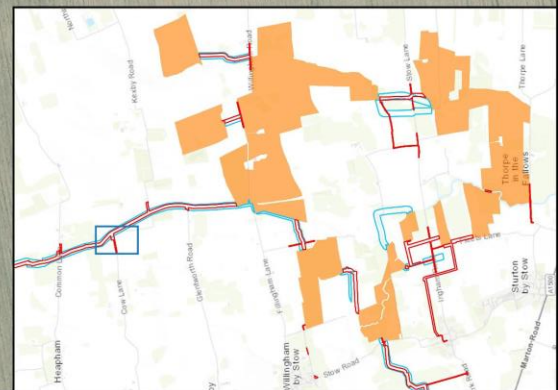
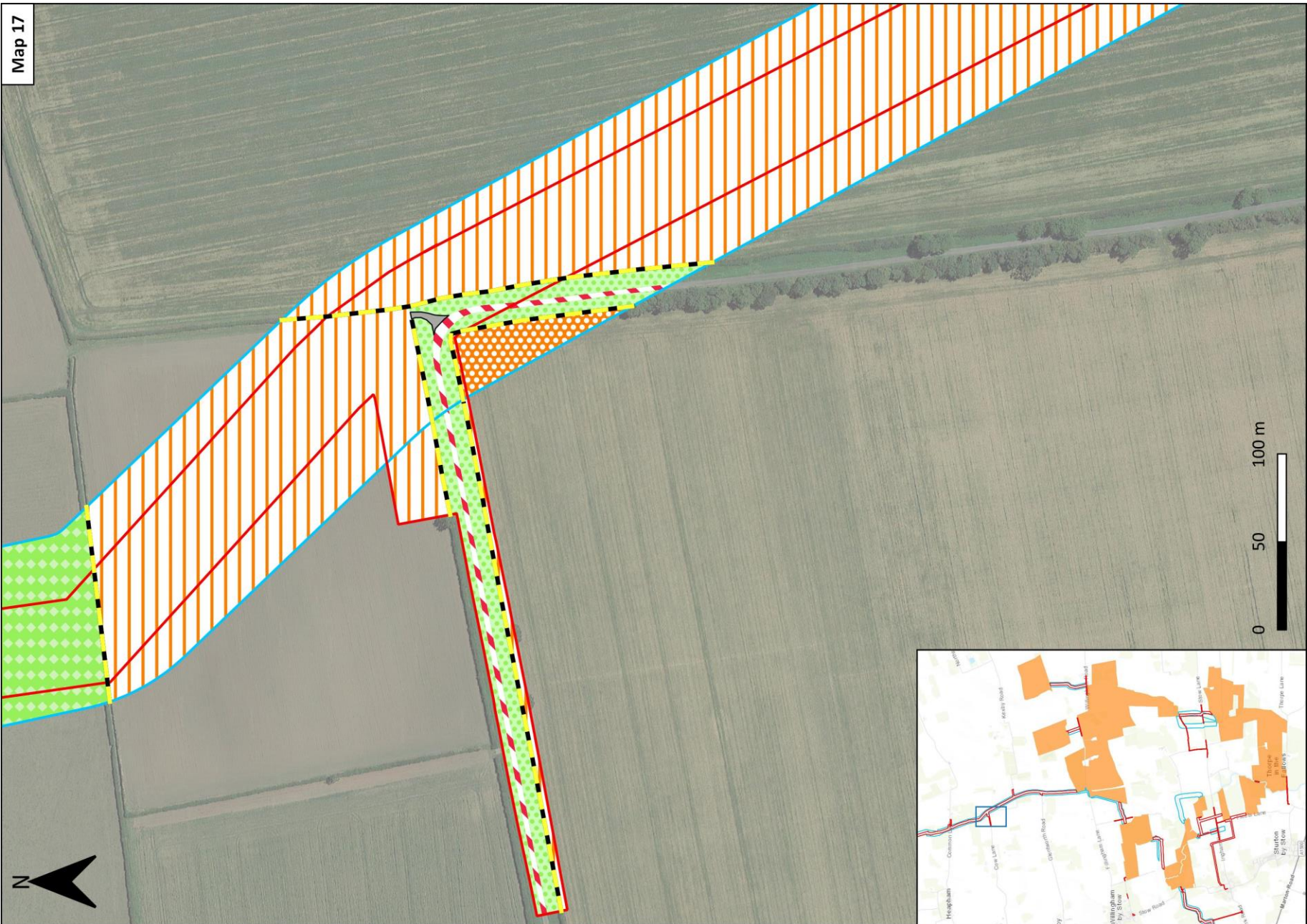
Map 15









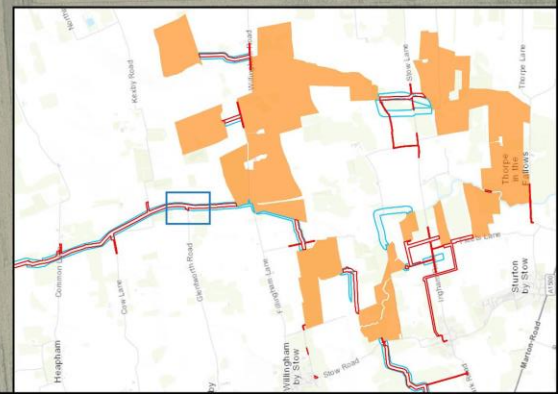






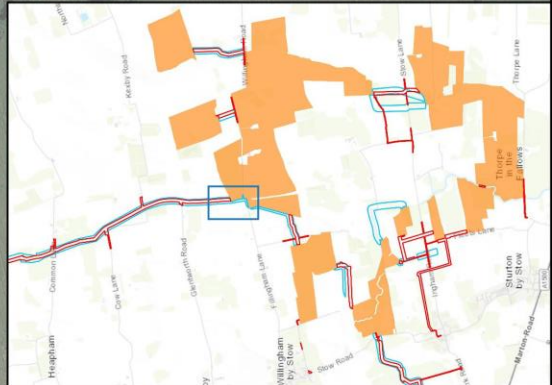


Map 19





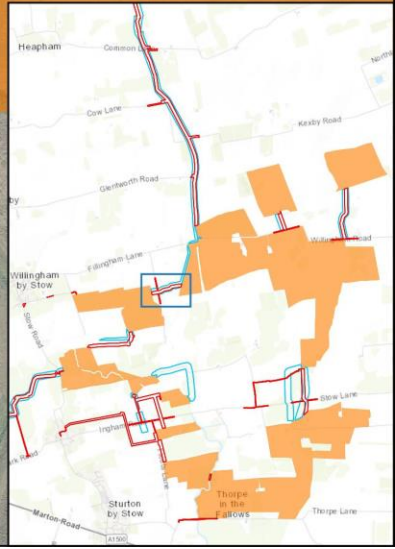
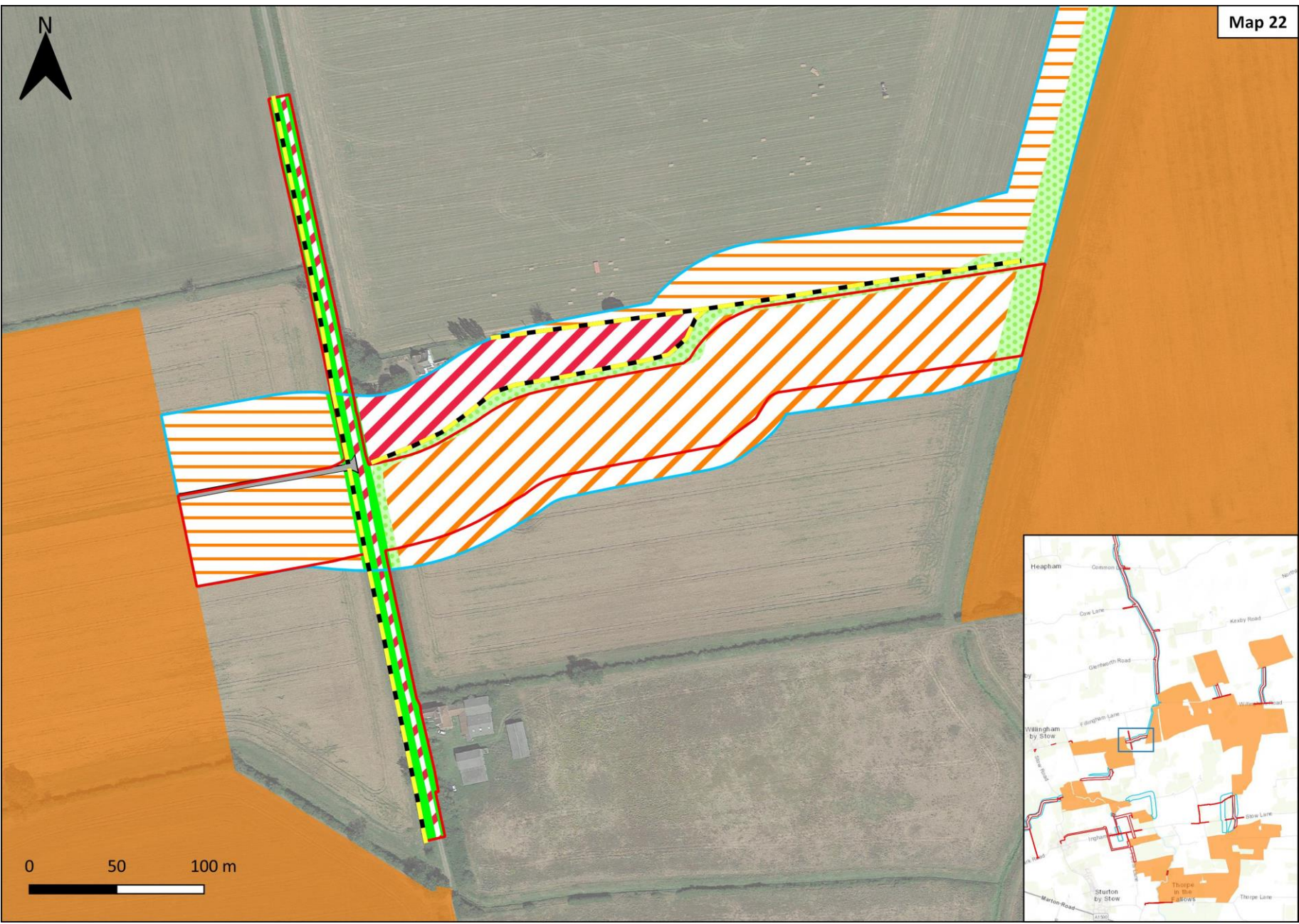
Map 20



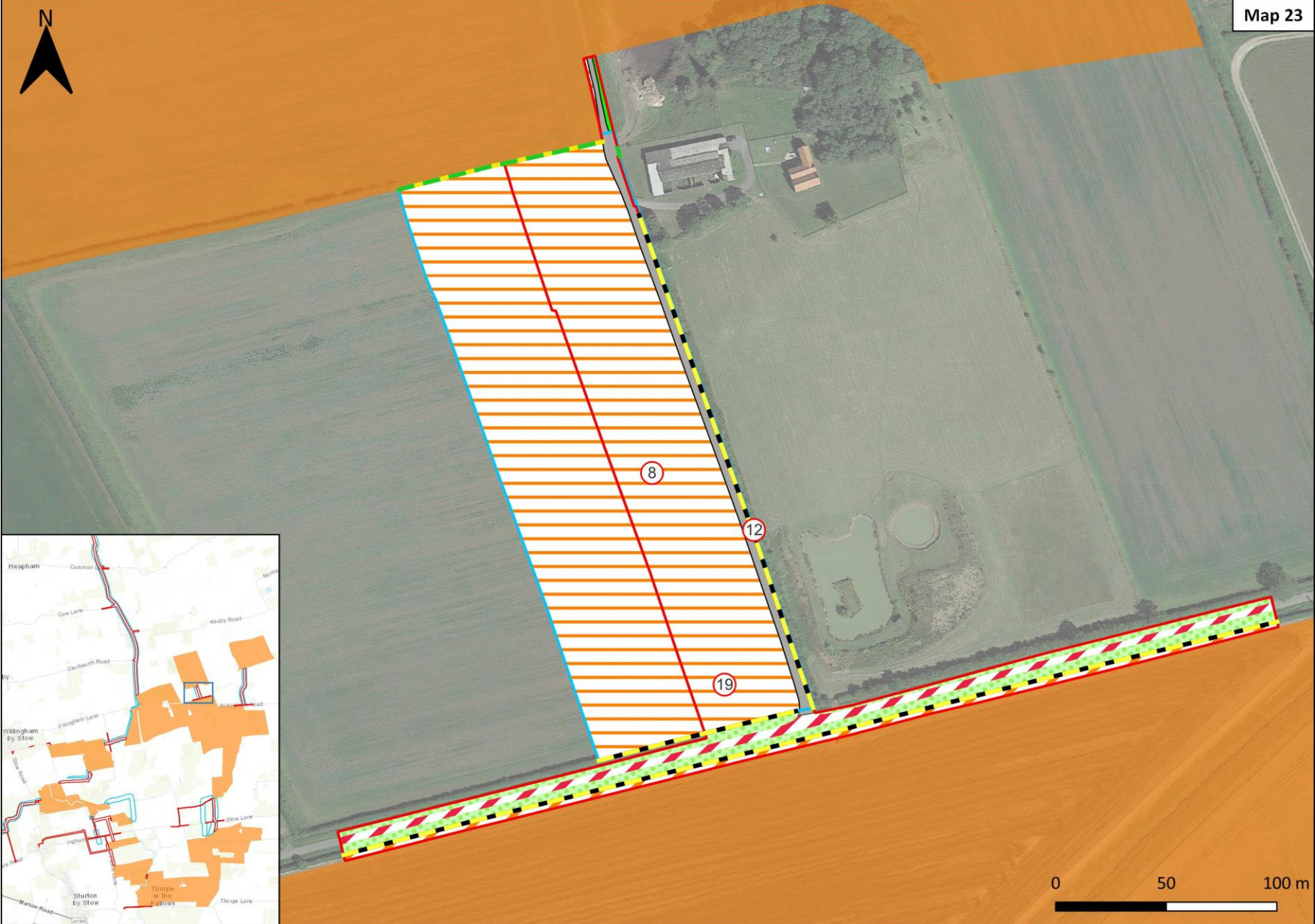








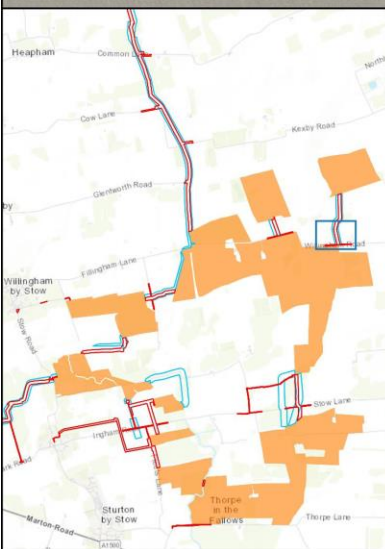




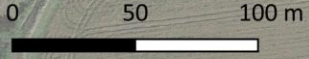
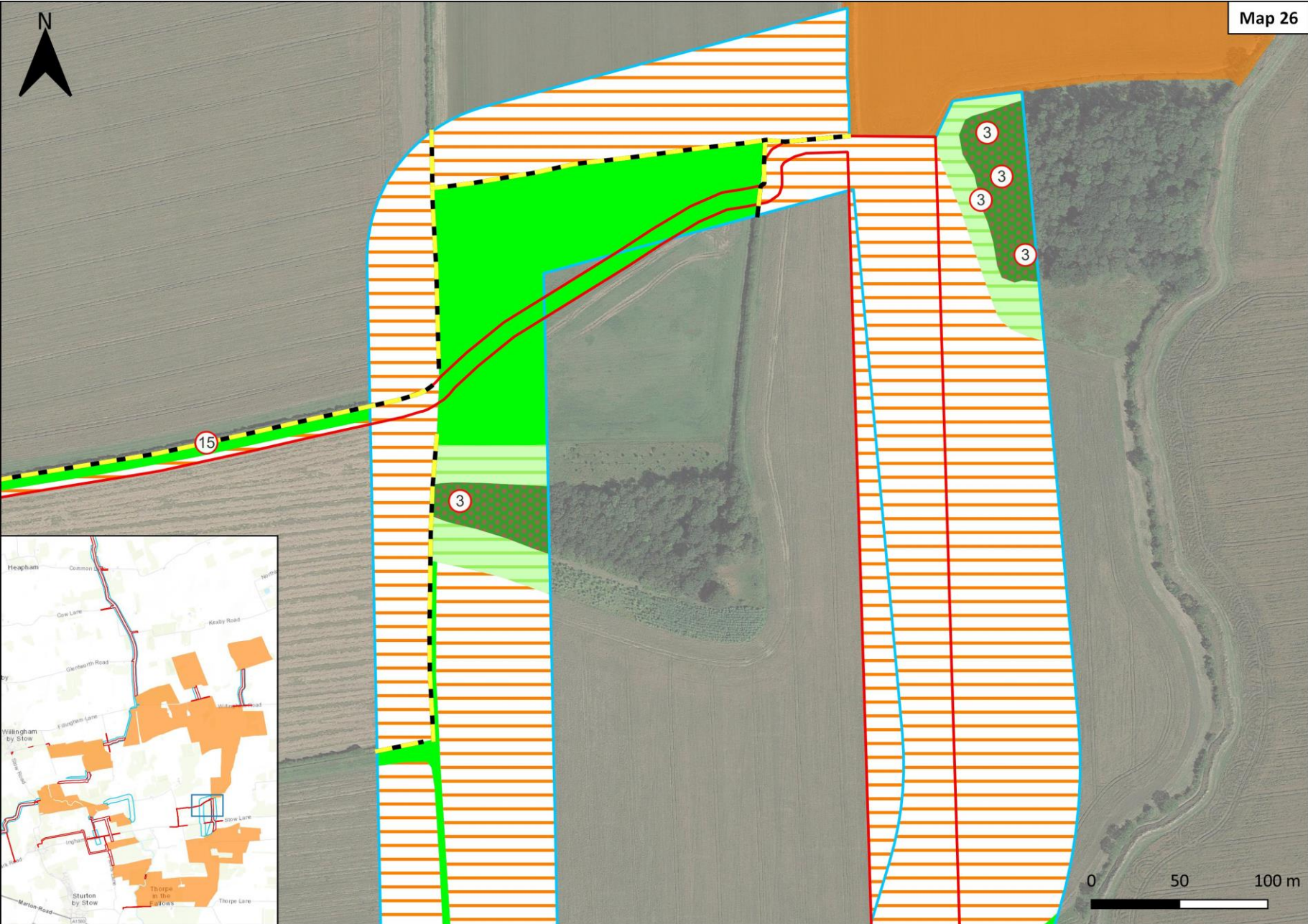








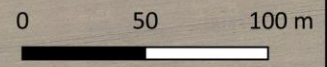




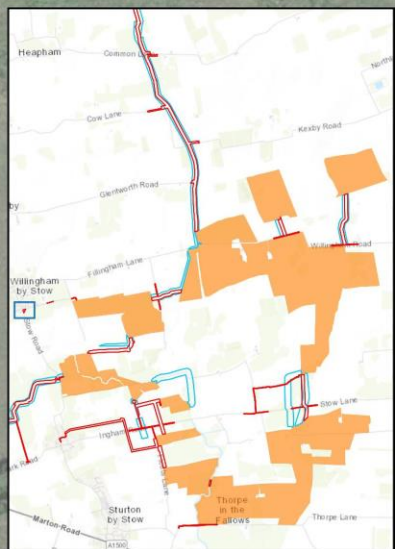




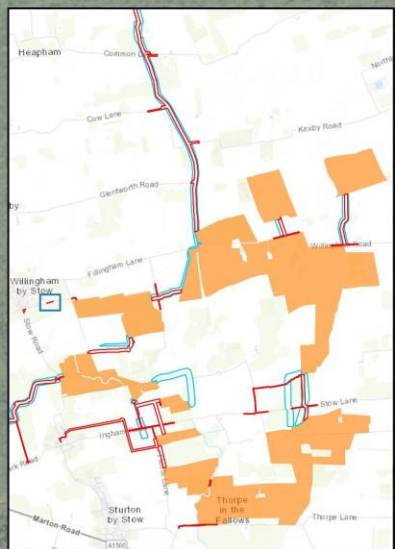
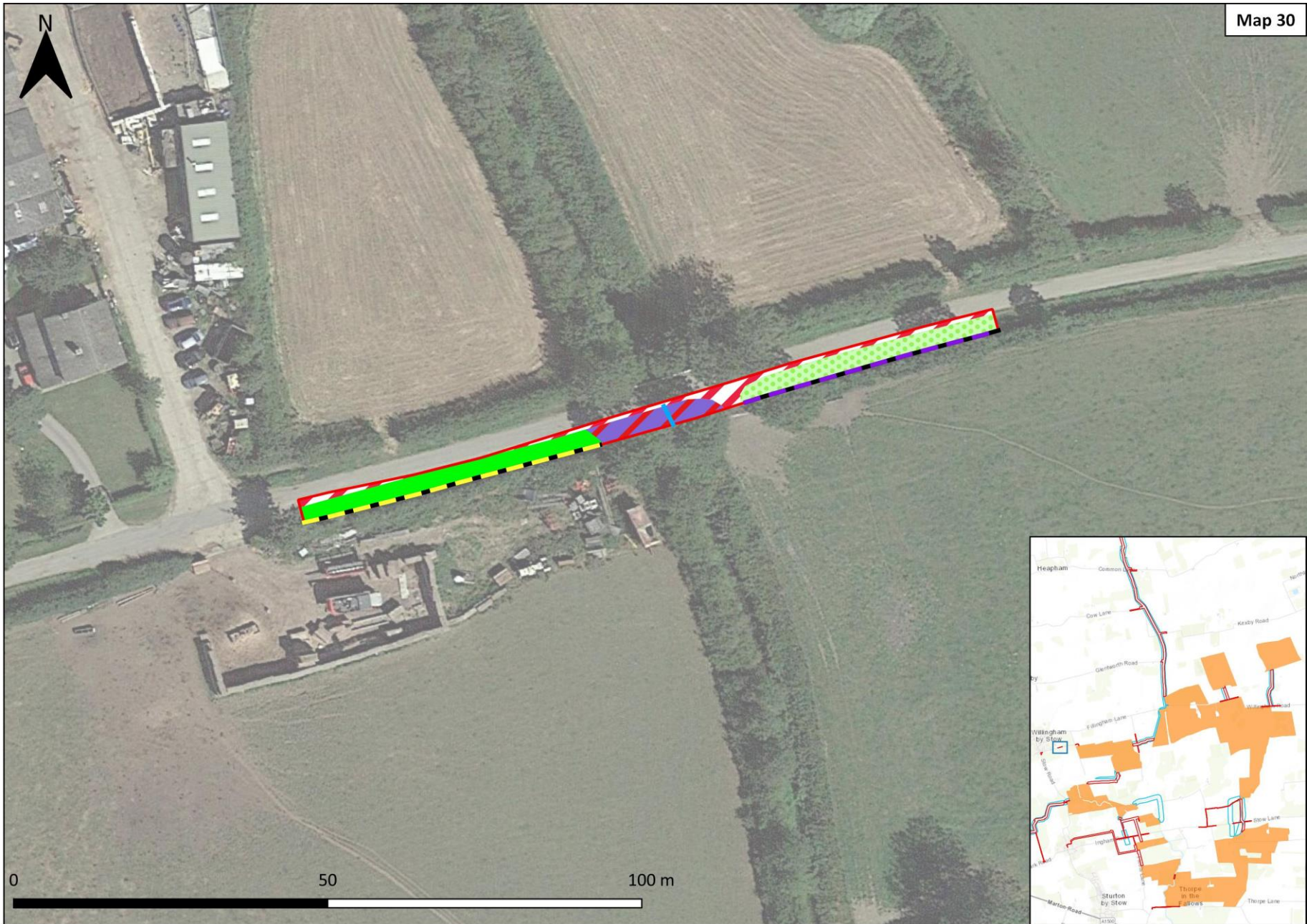




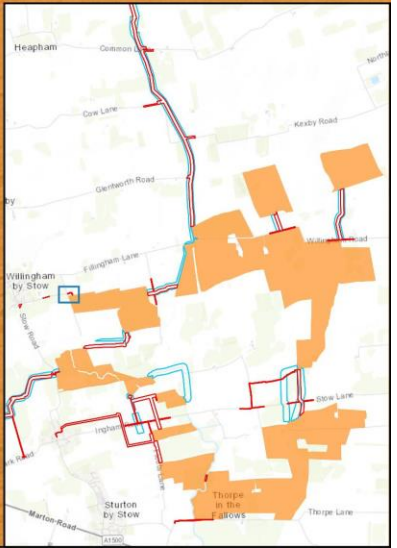




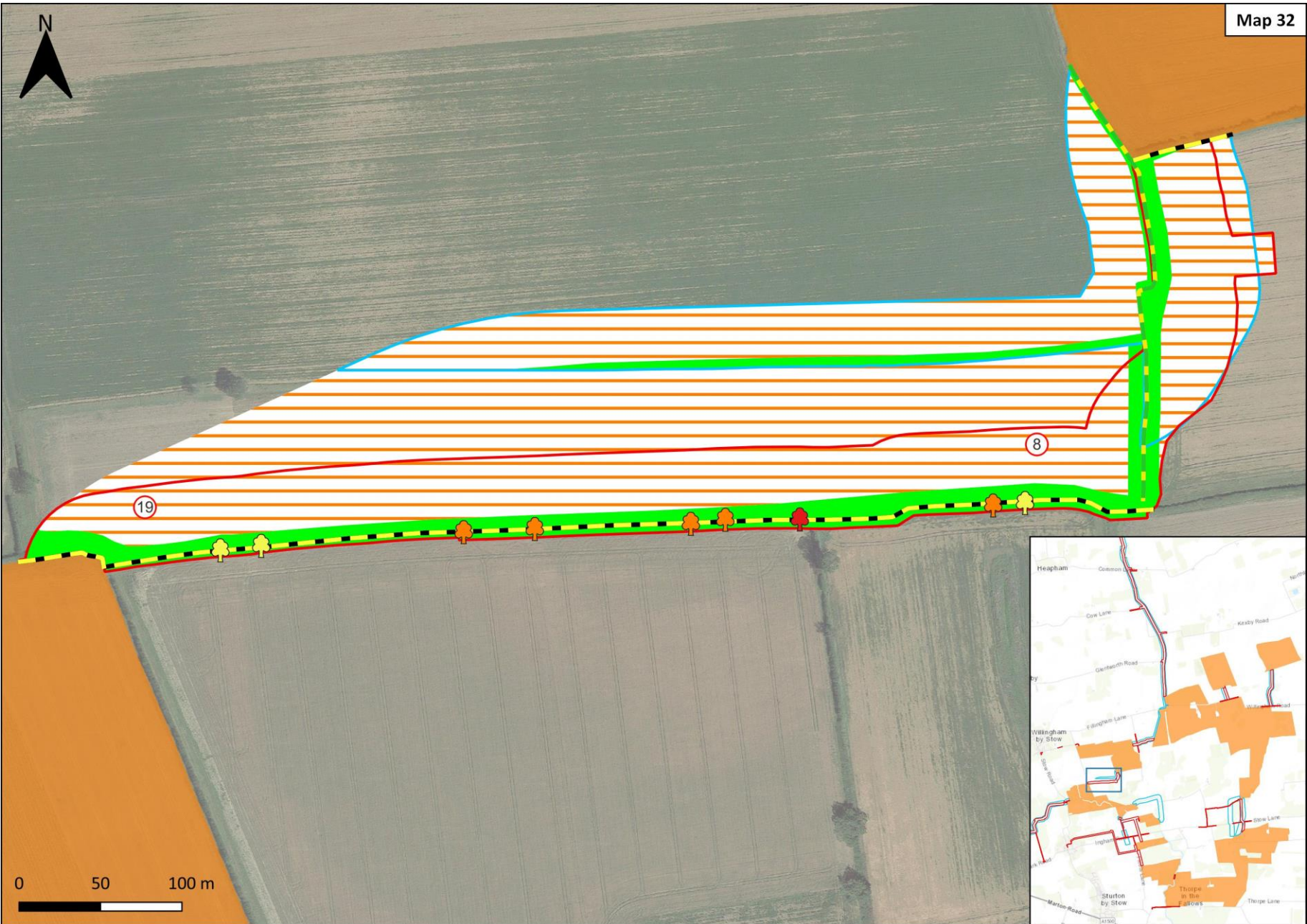








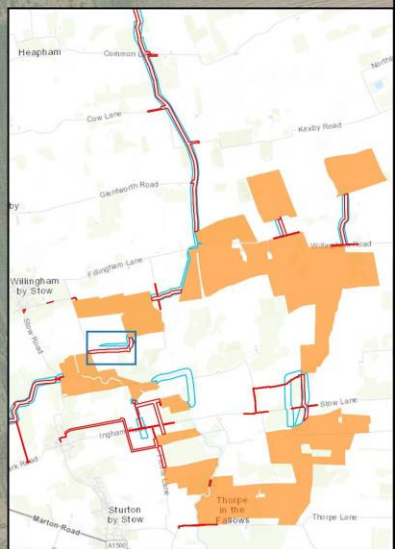




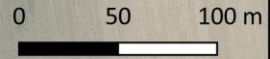
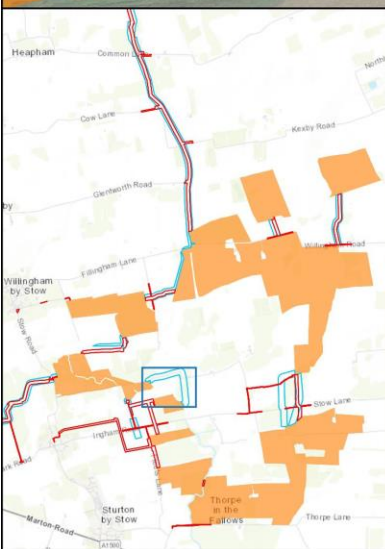
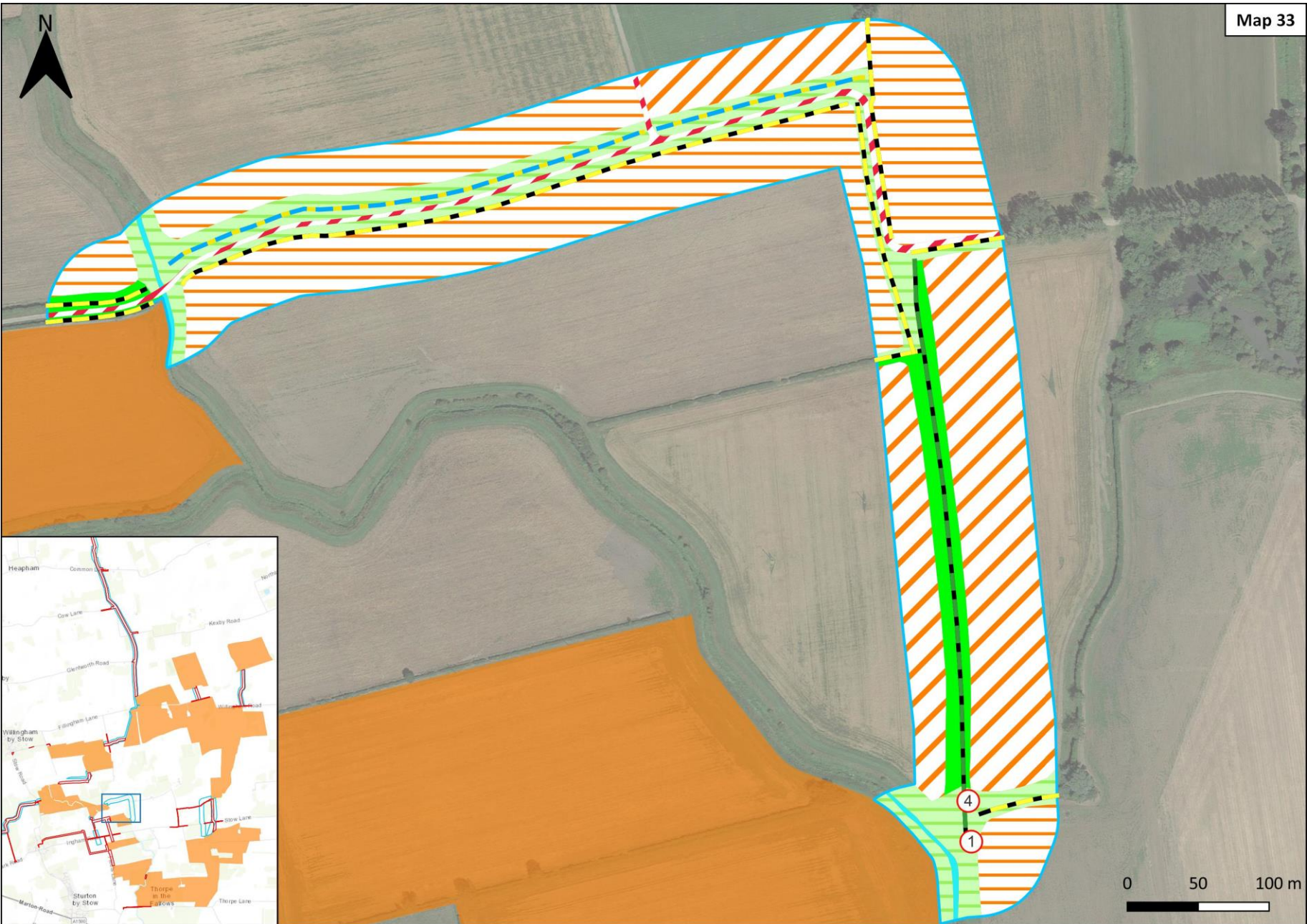
19

8

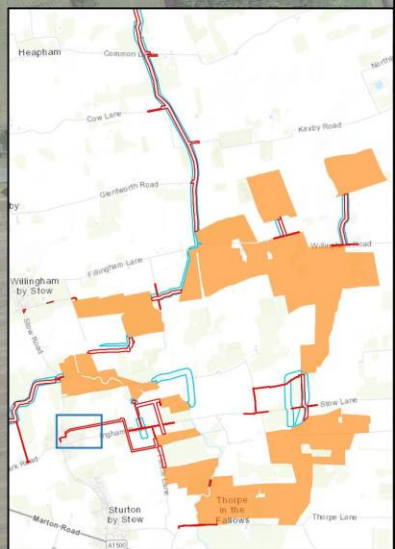
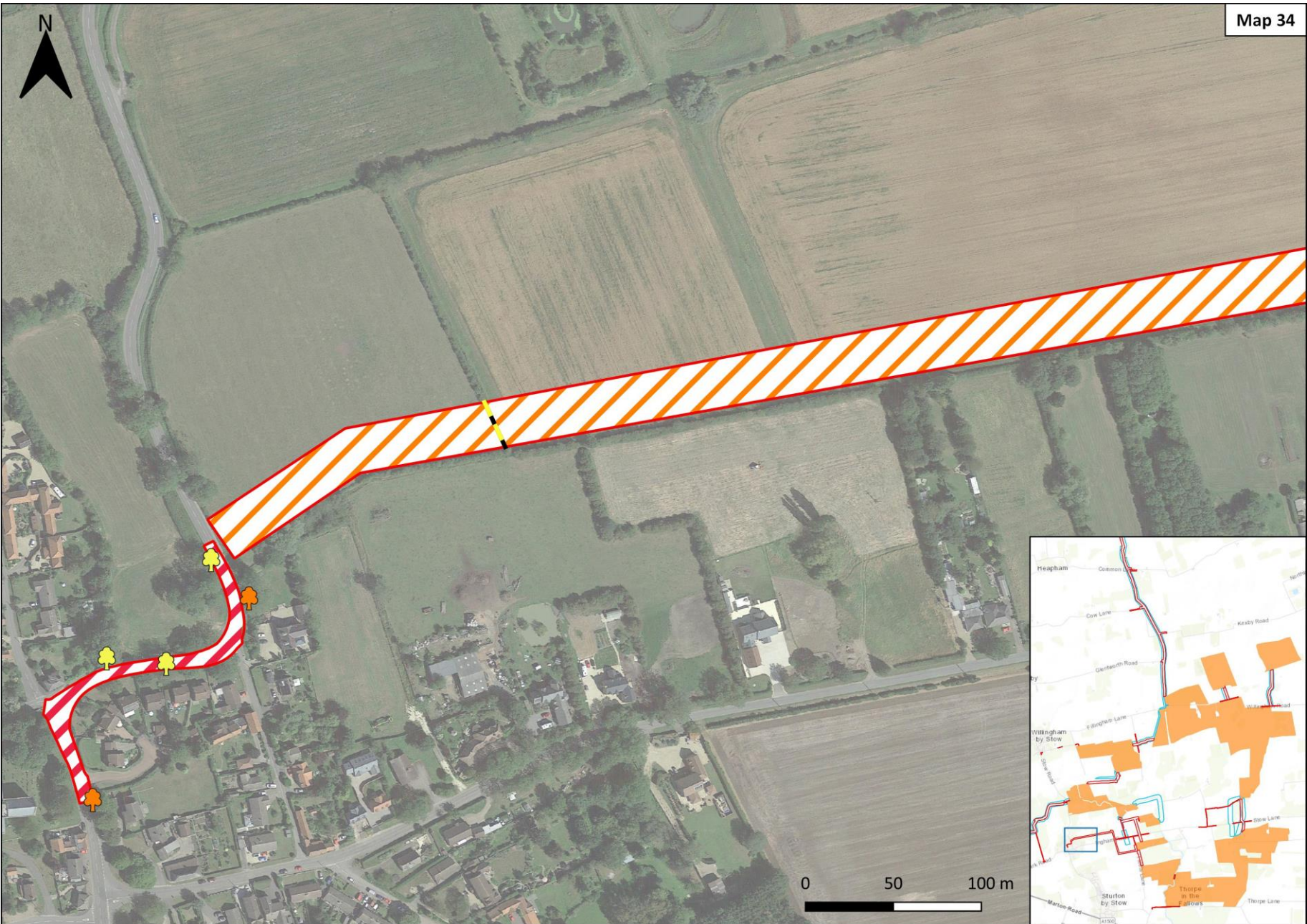
0 50 100 m





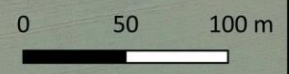
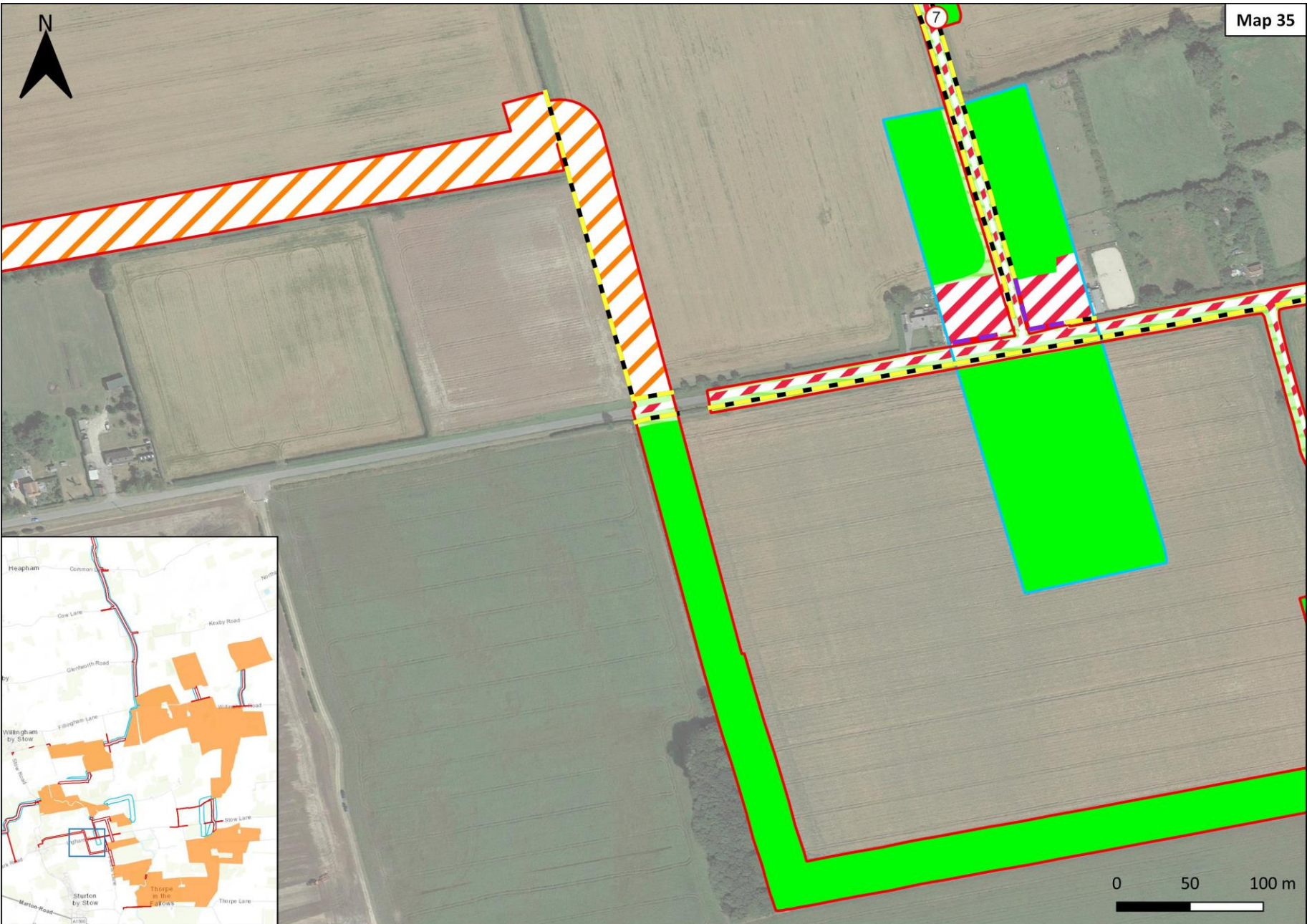






0 50 100 m

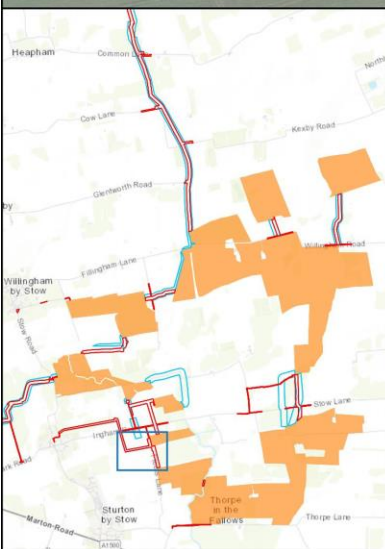


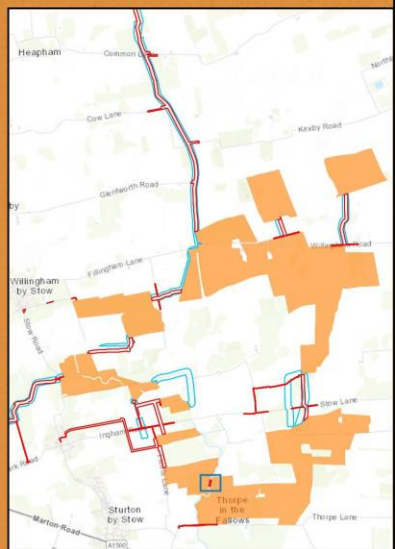
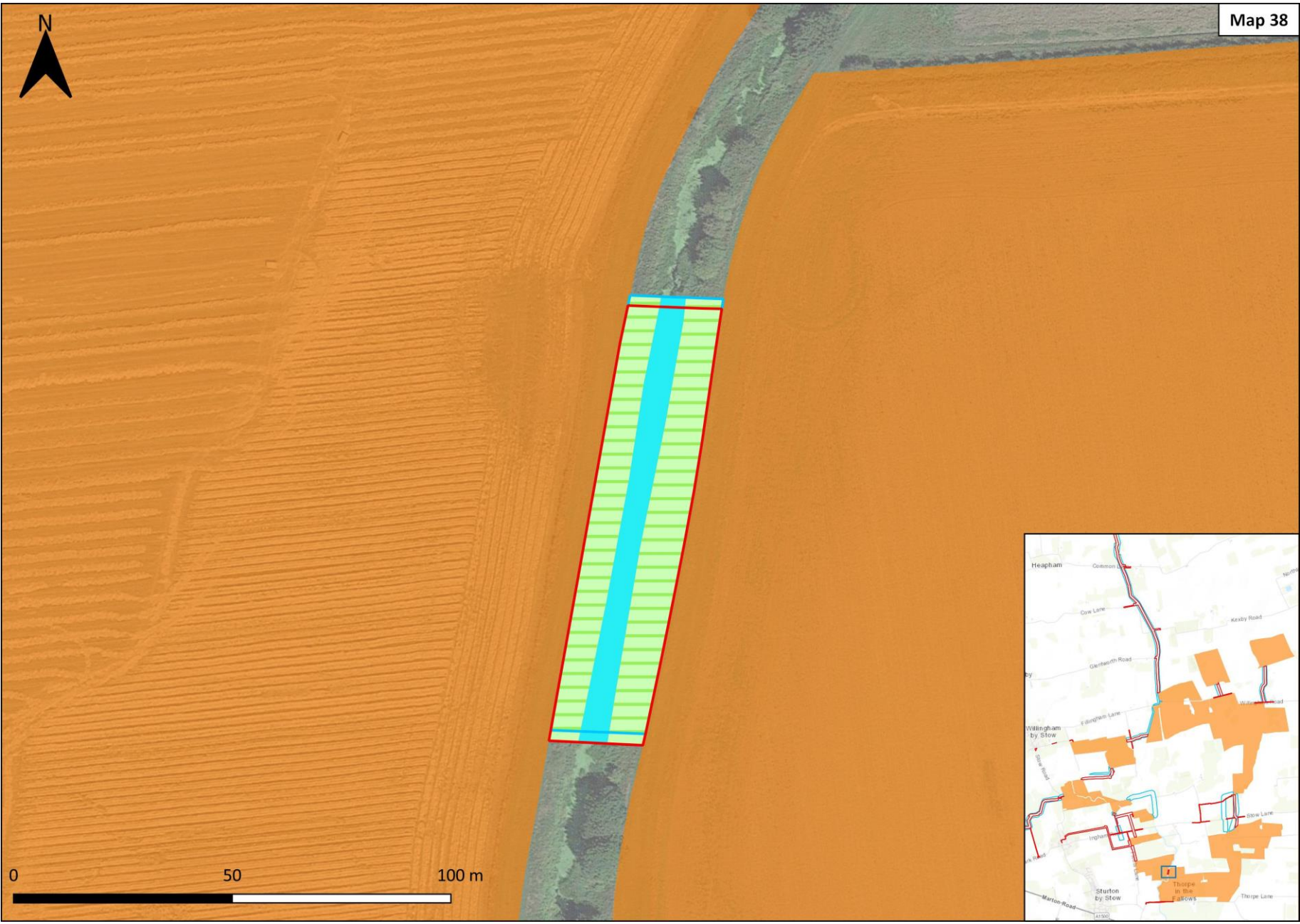




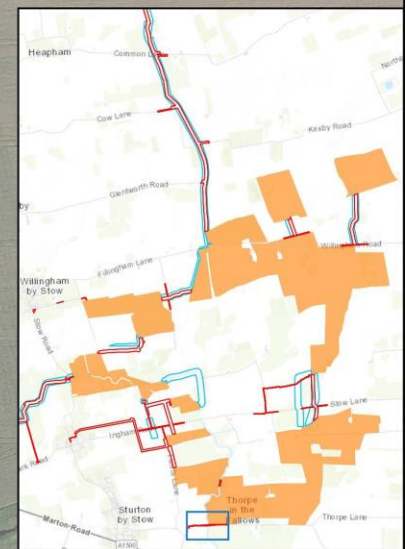
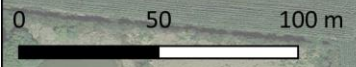




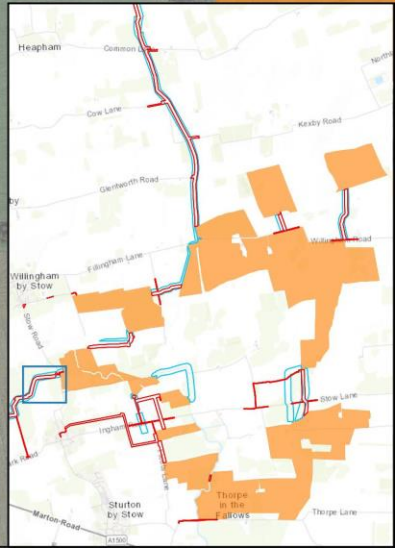
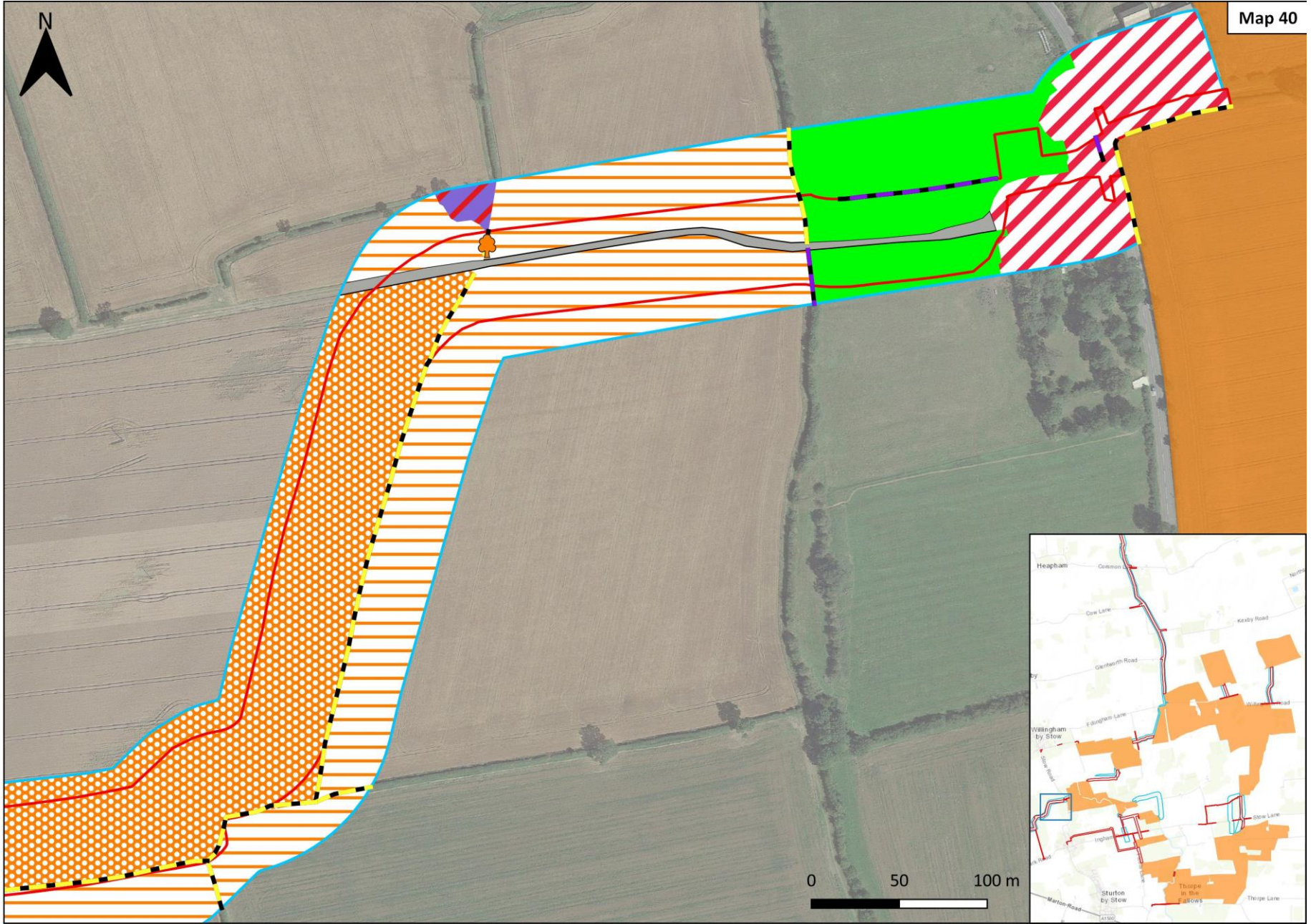




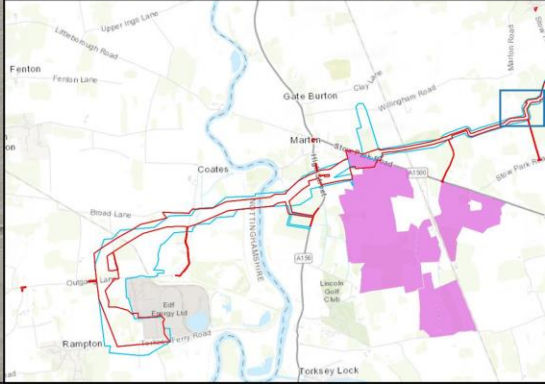
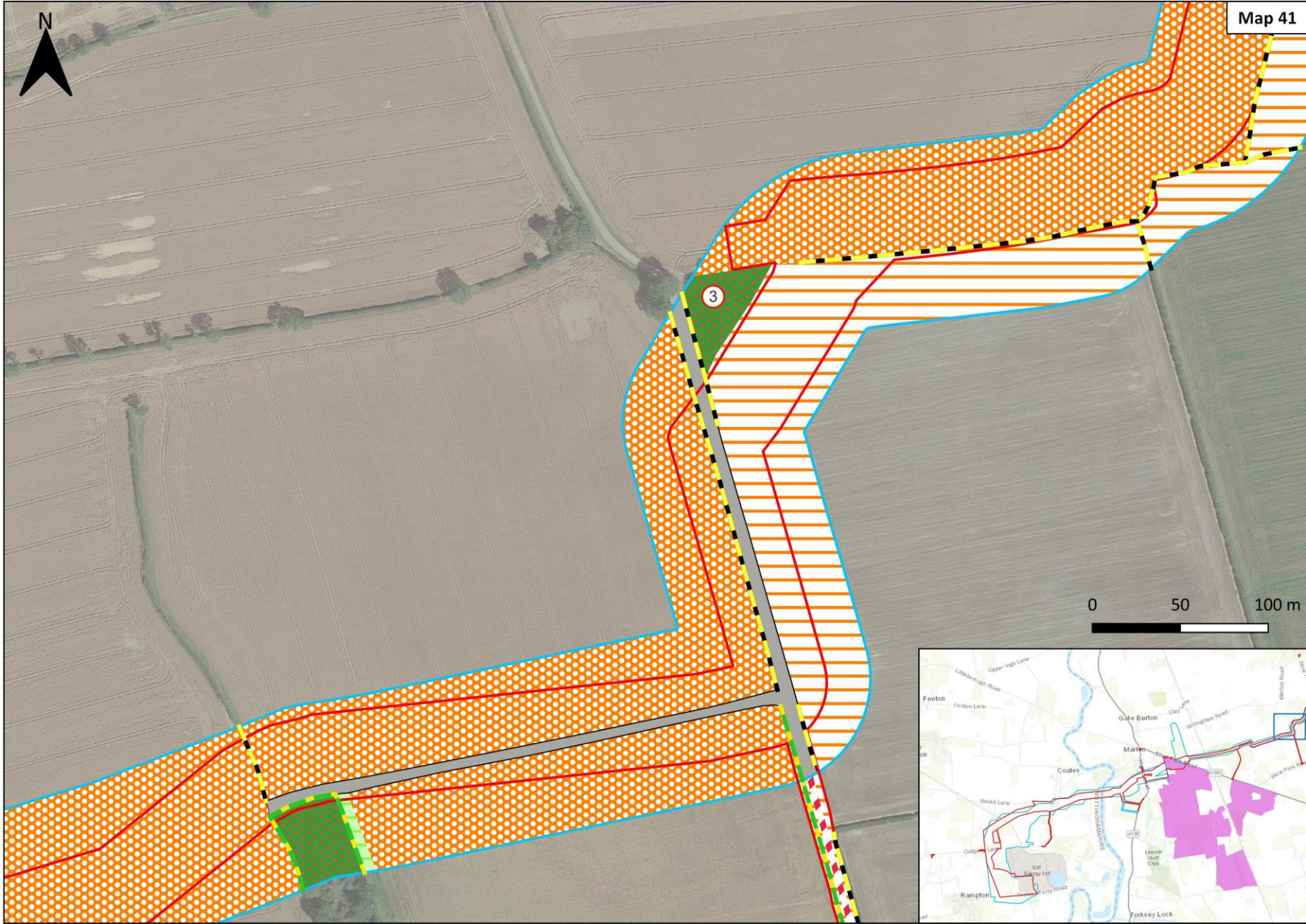








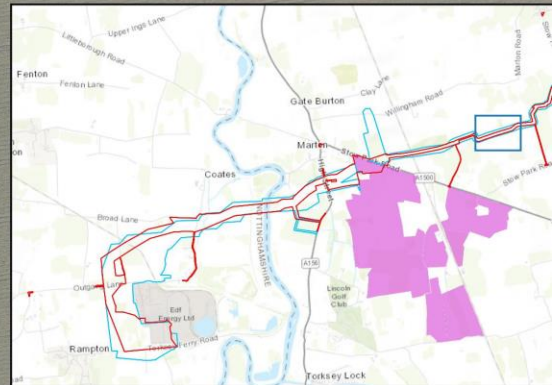




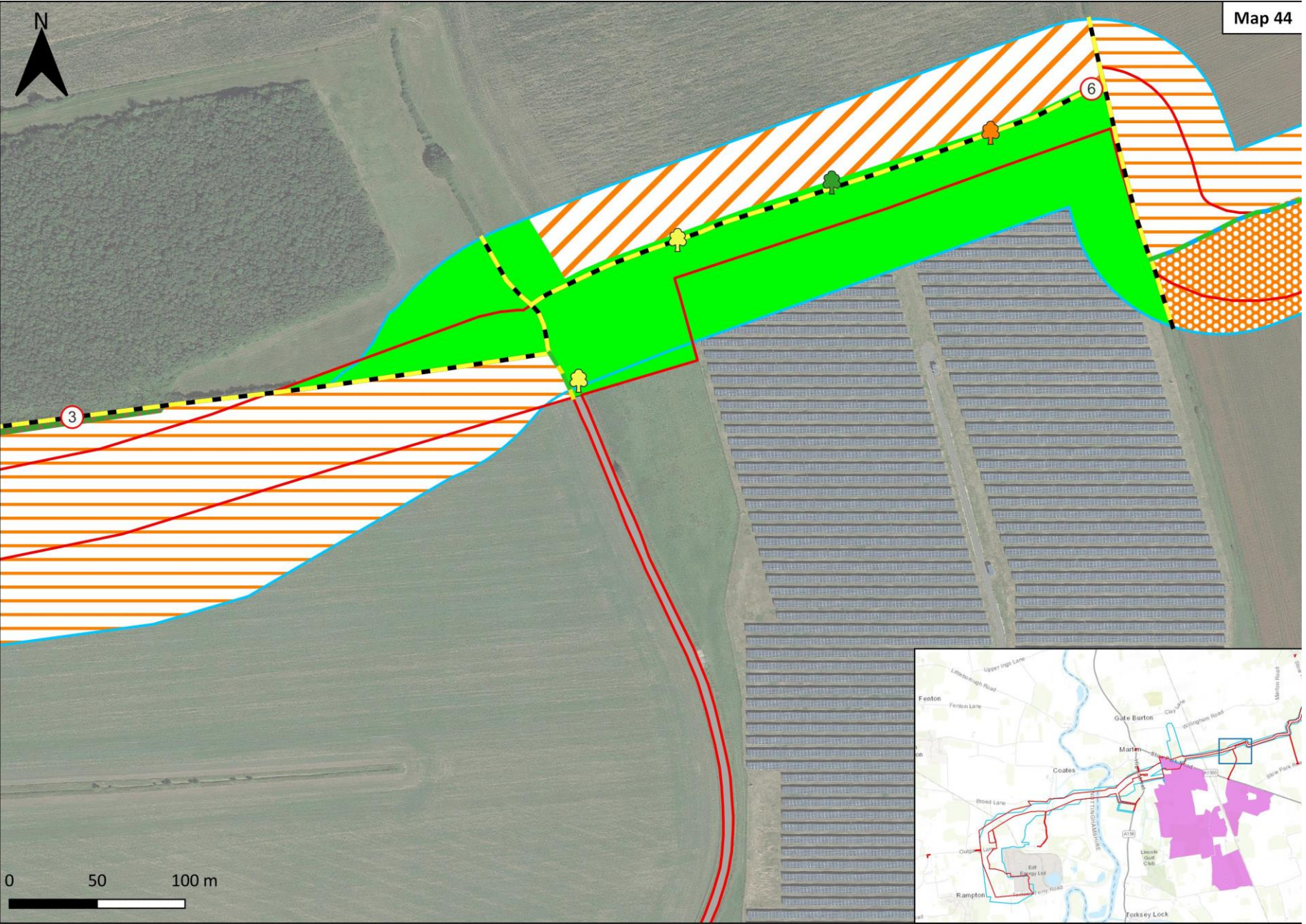




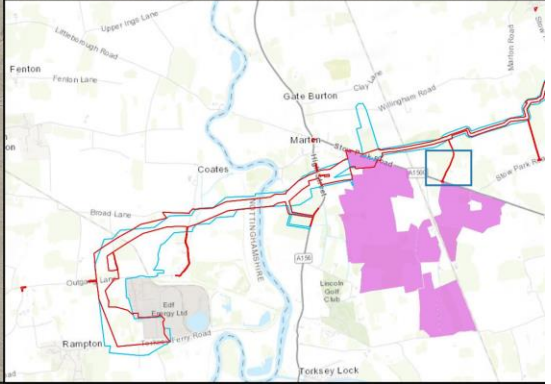




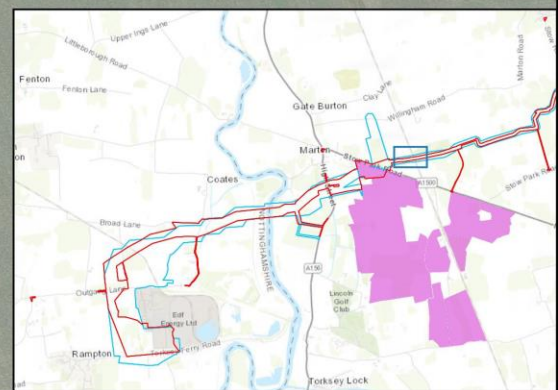
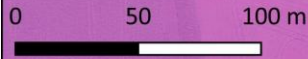
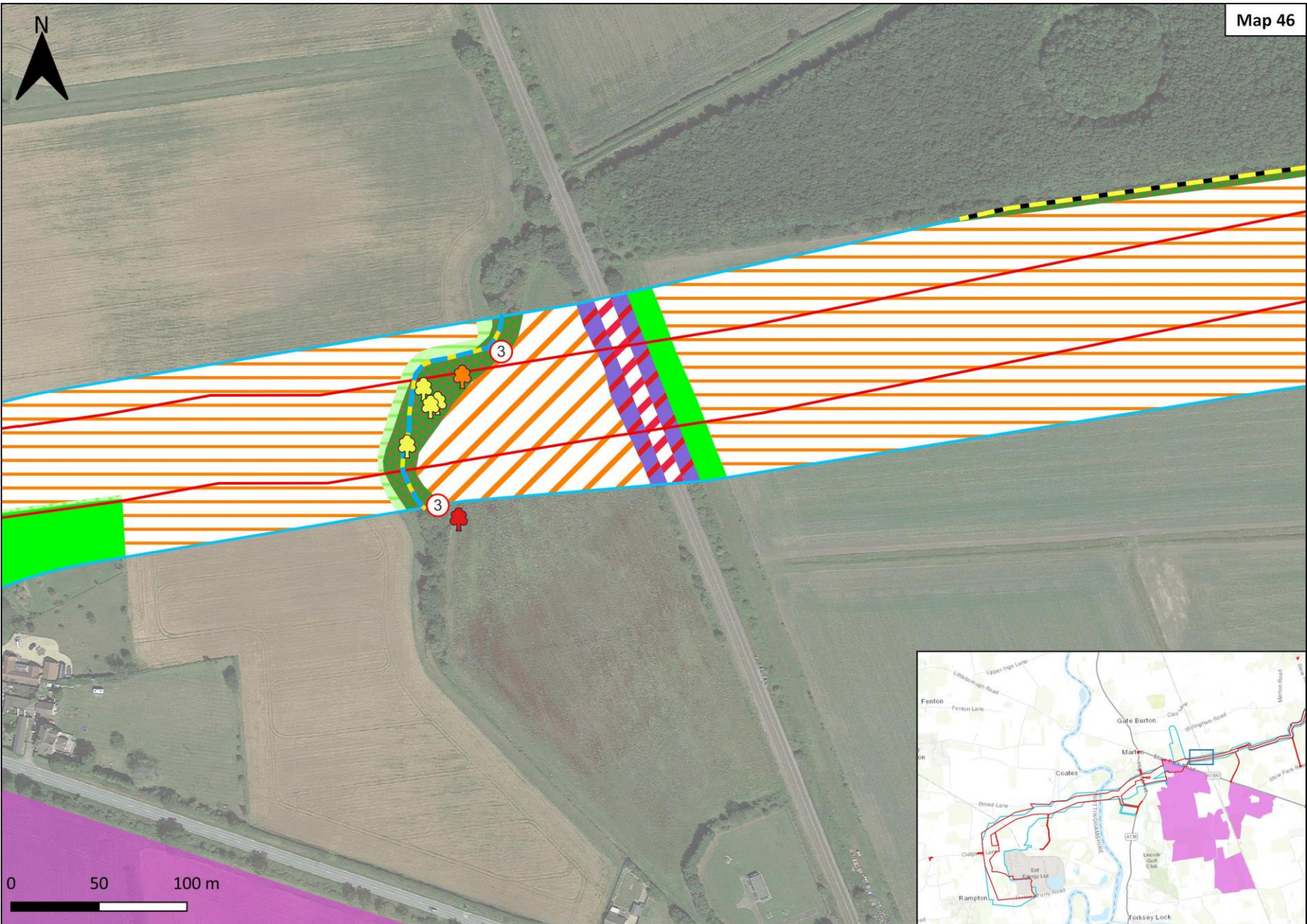








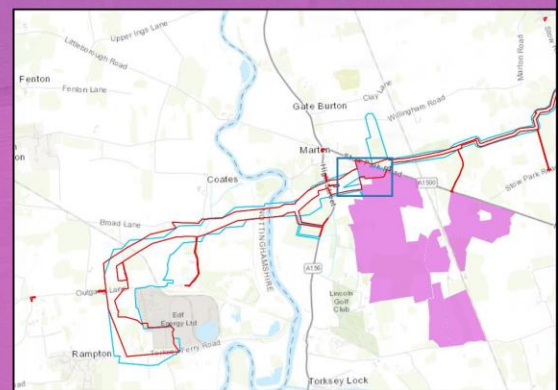




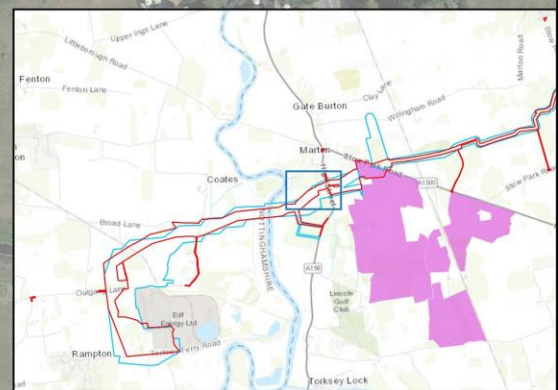
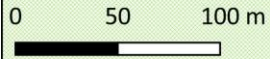
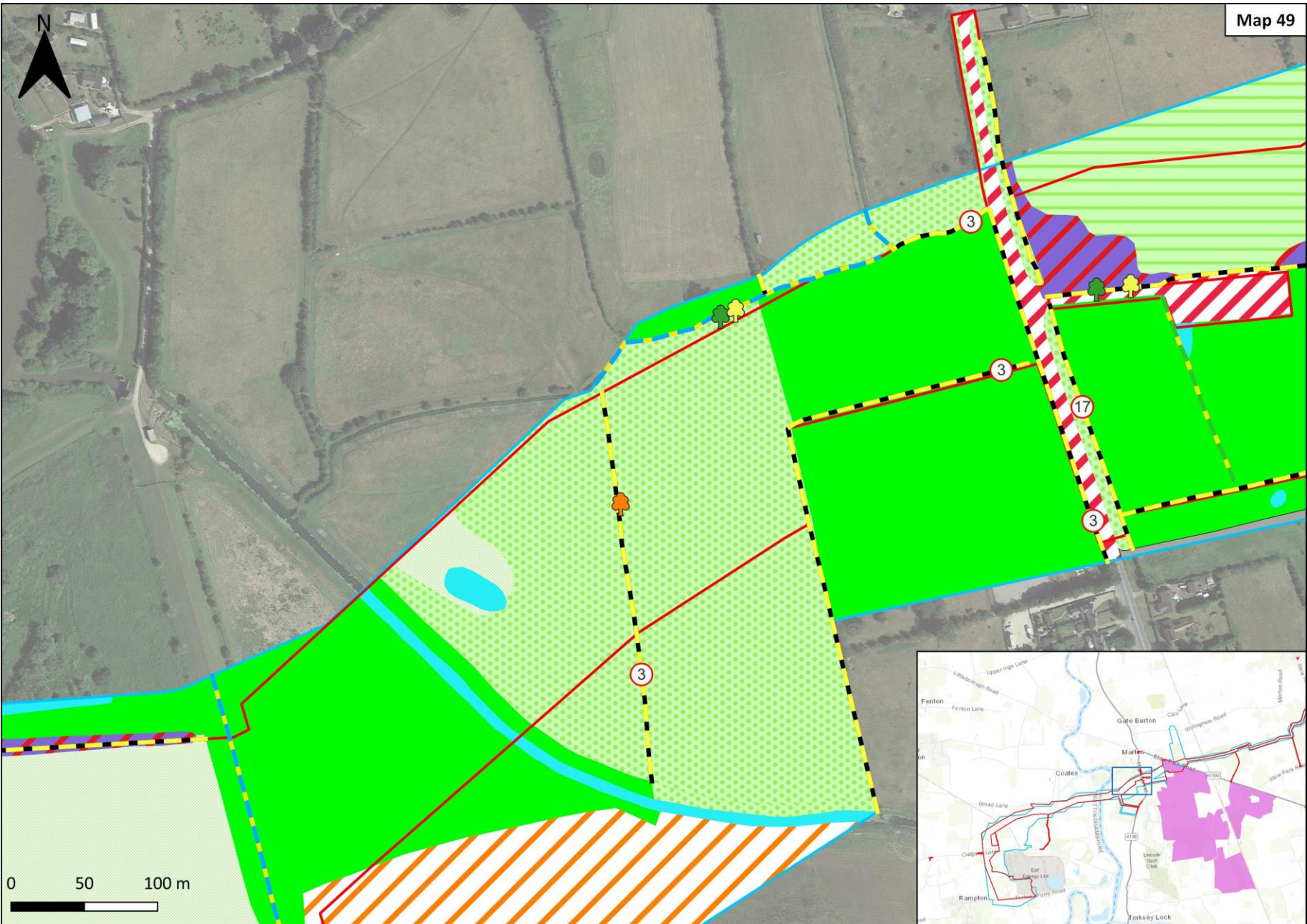




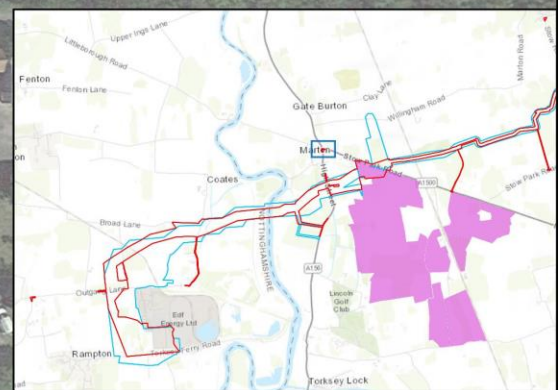




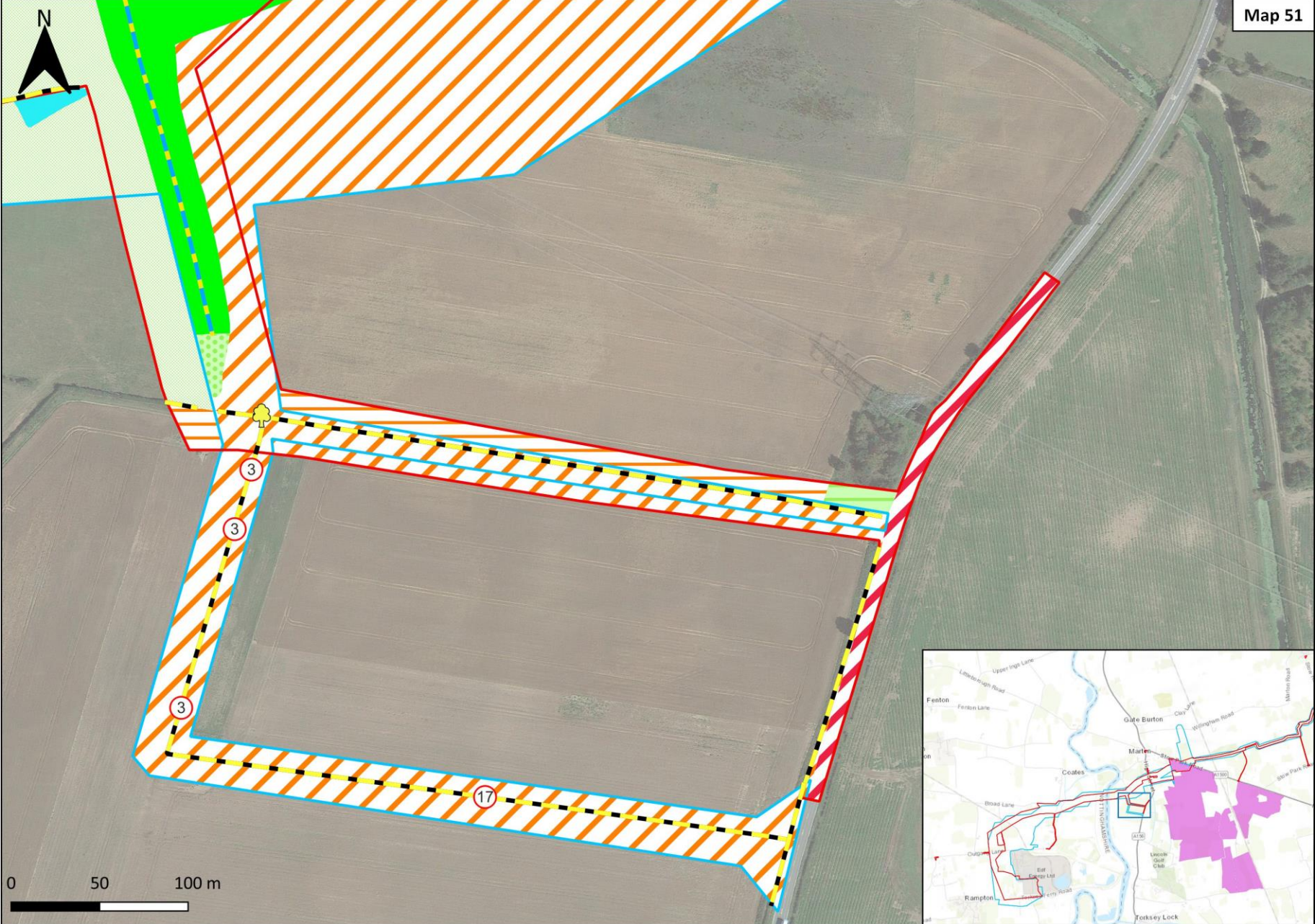




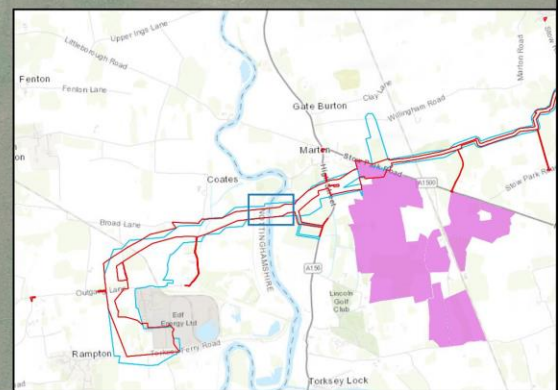
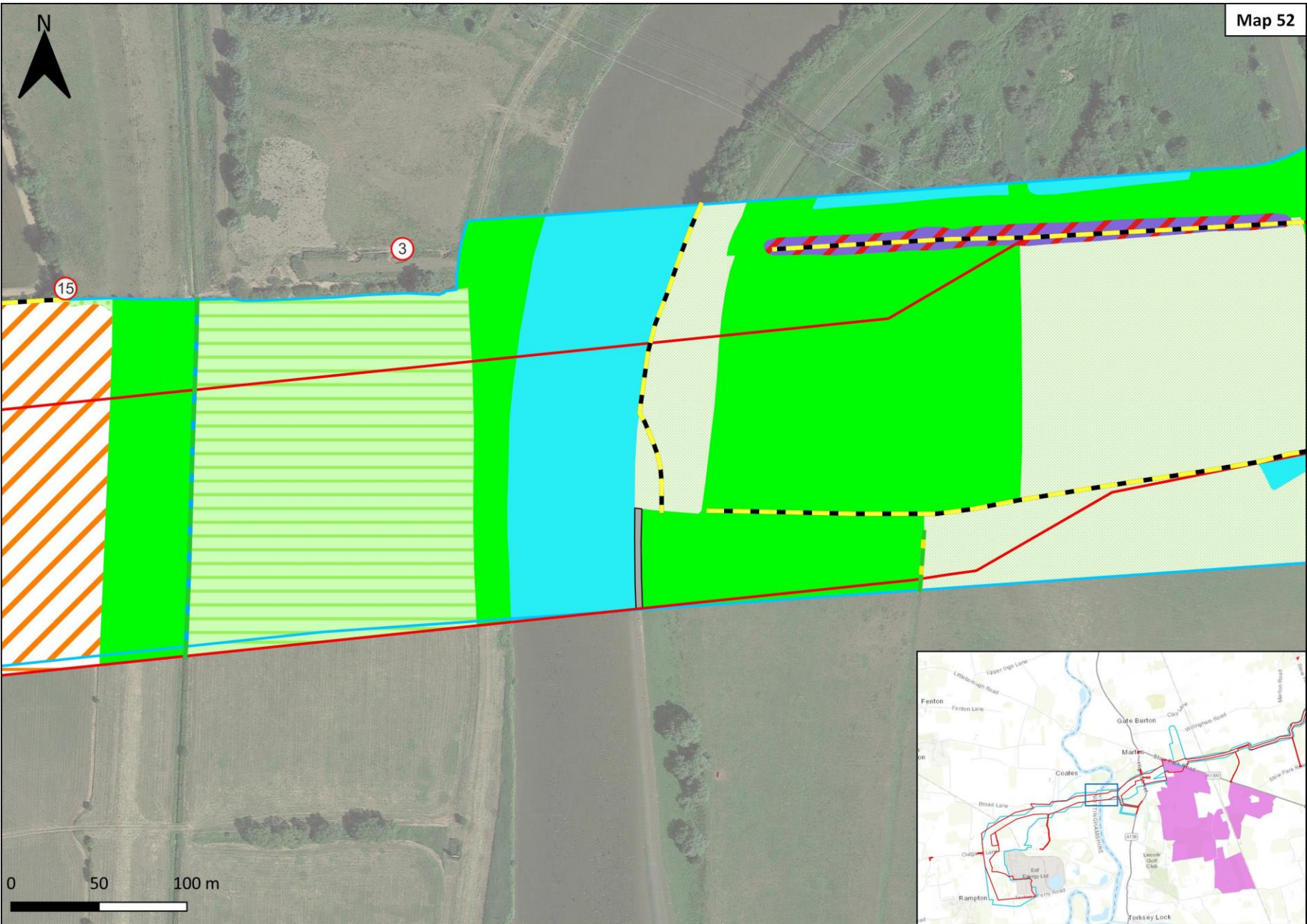




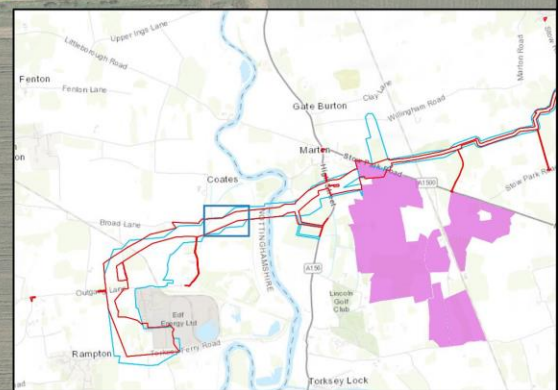
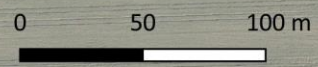




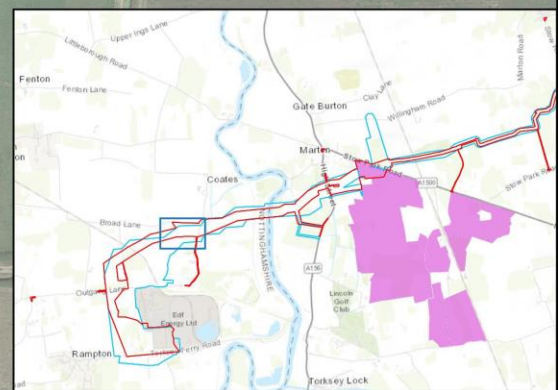
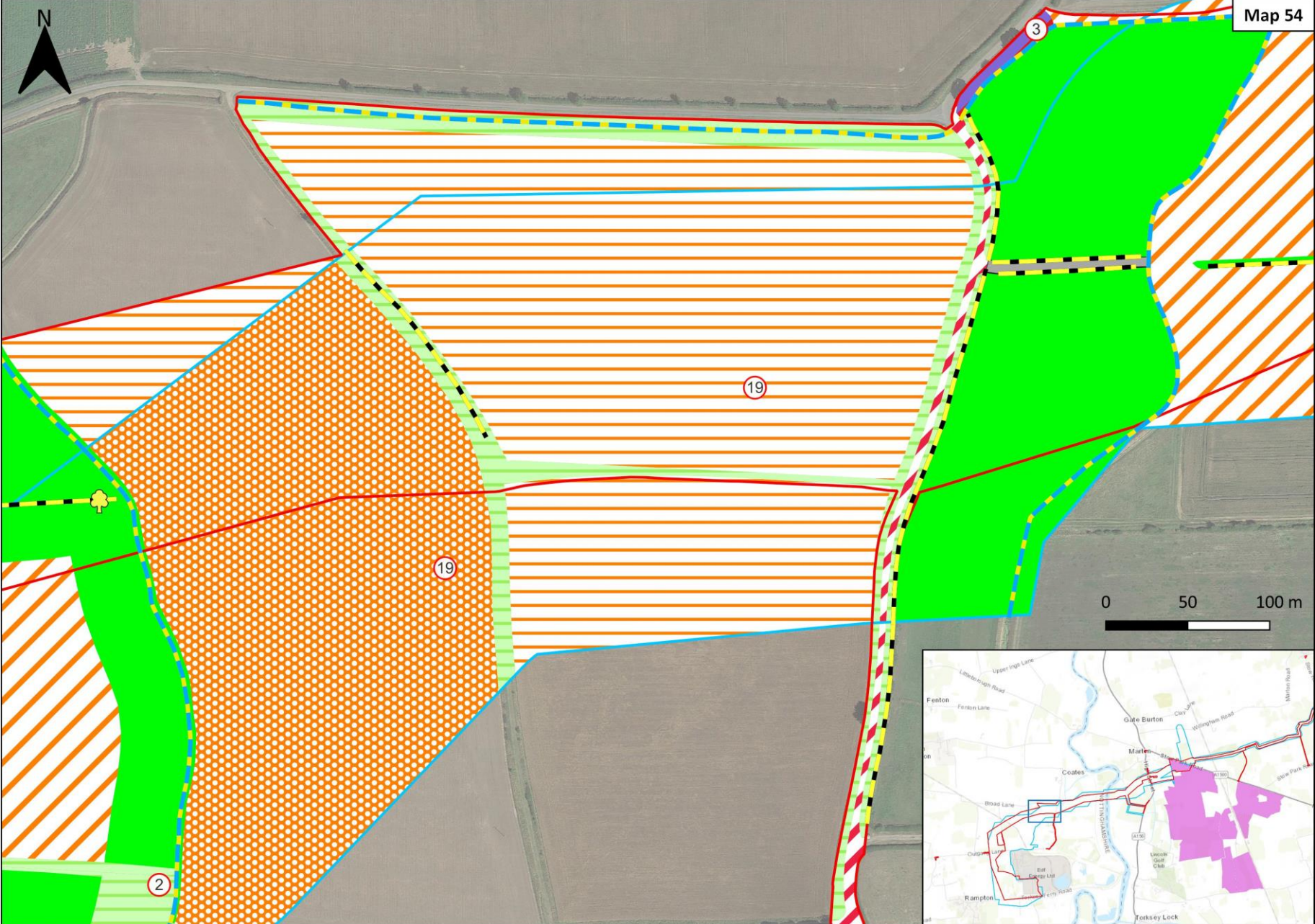




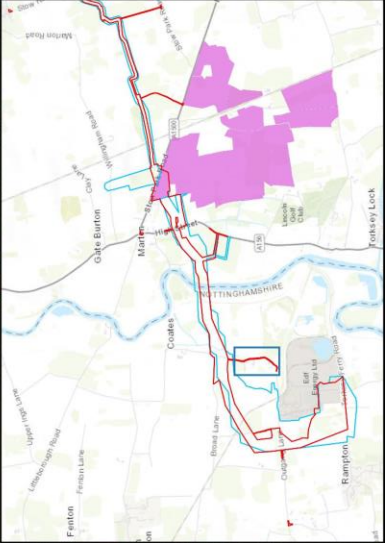
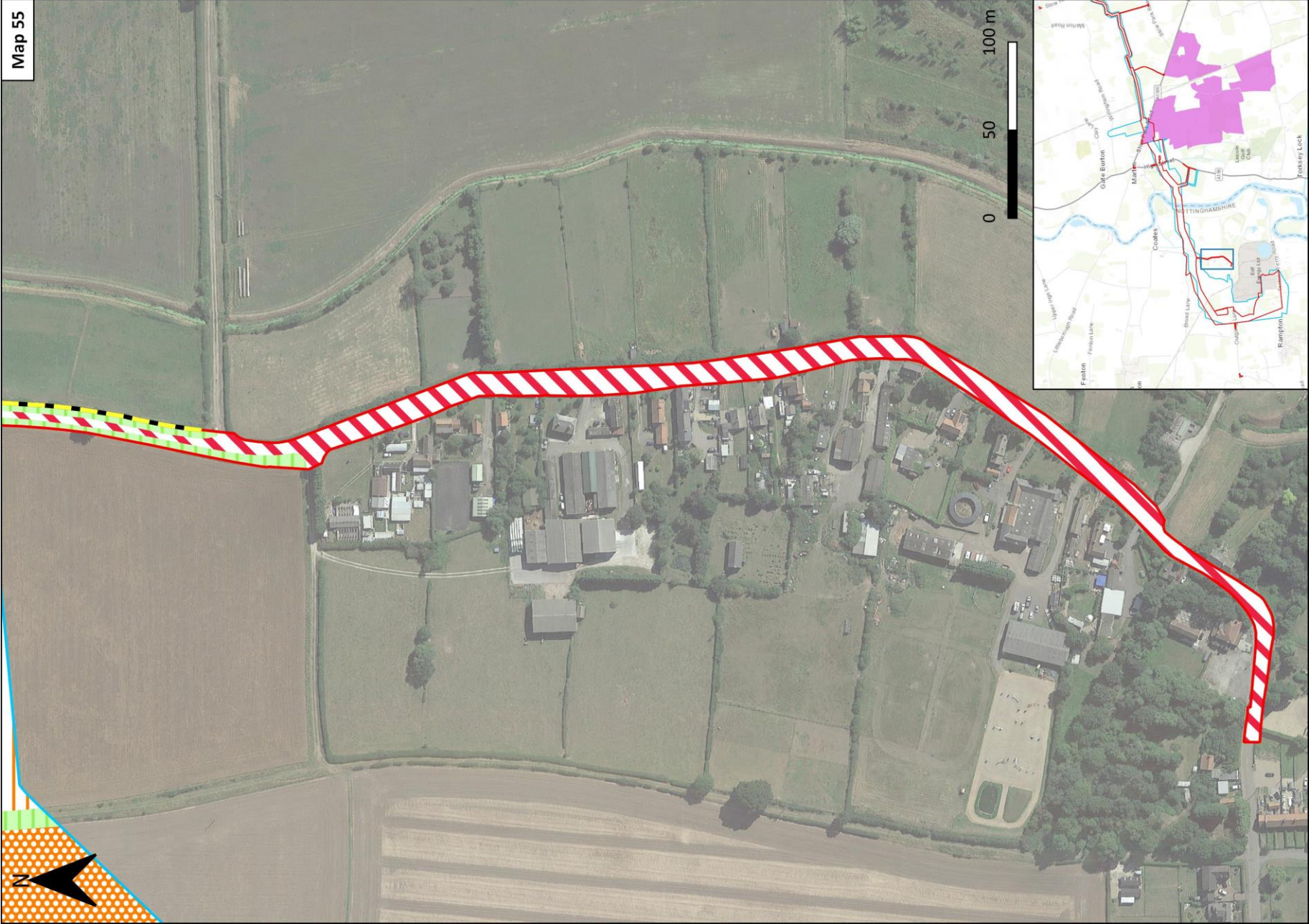








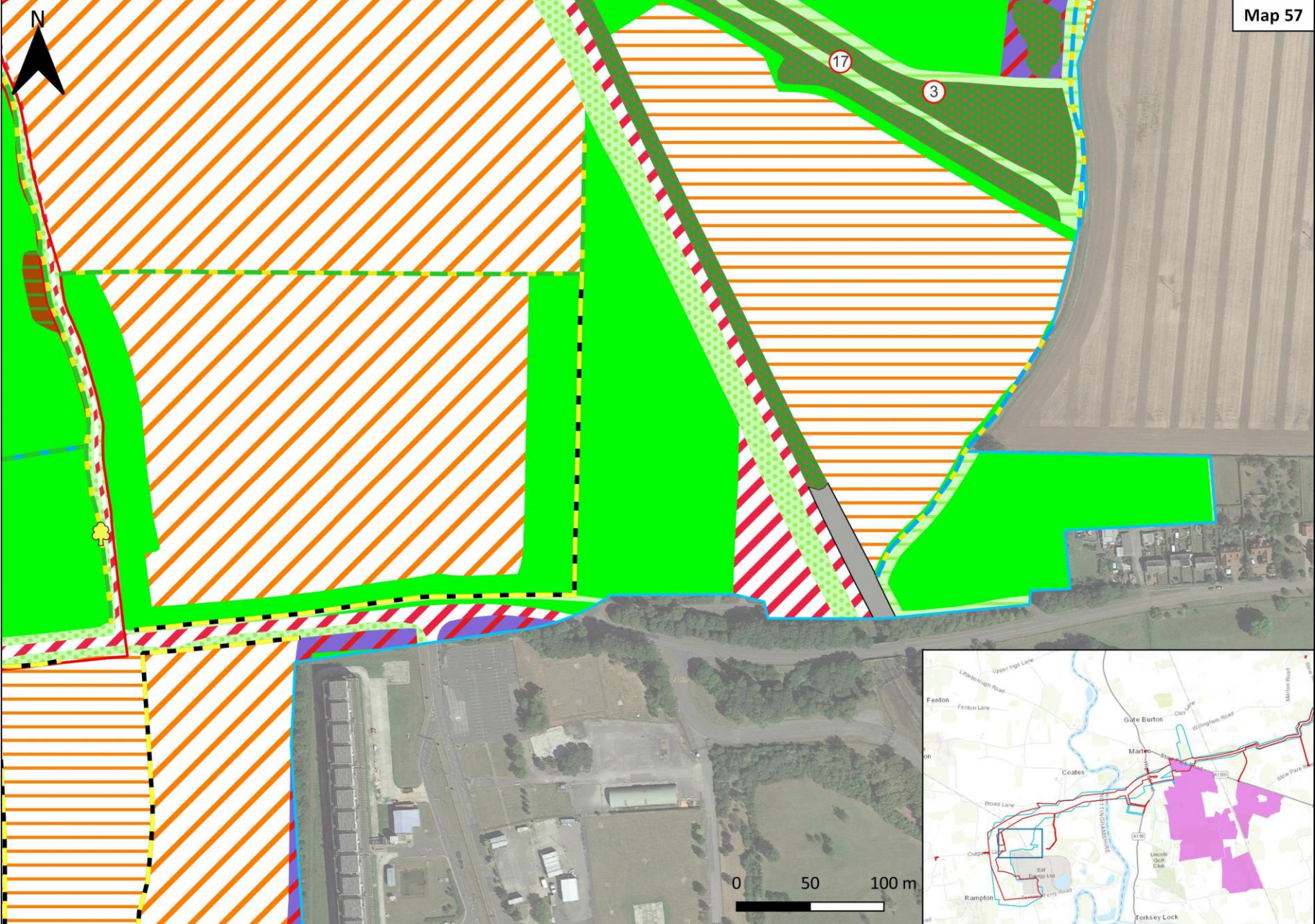




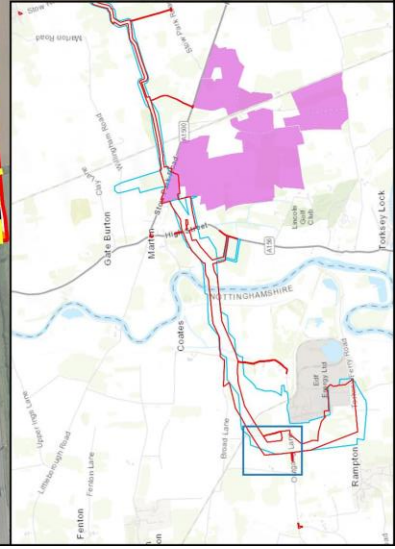




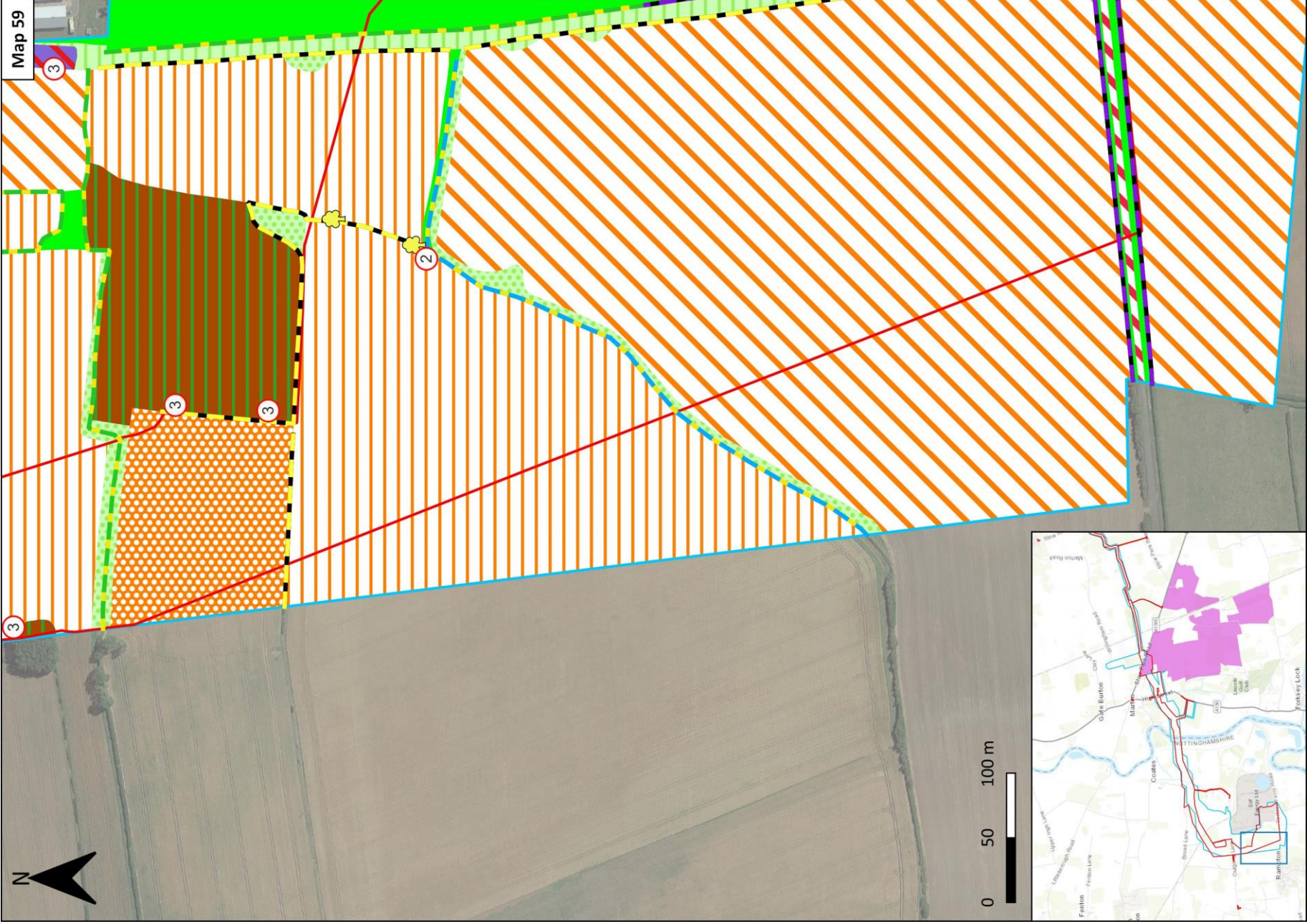






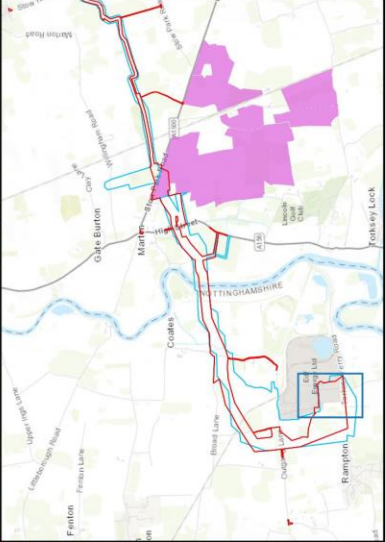
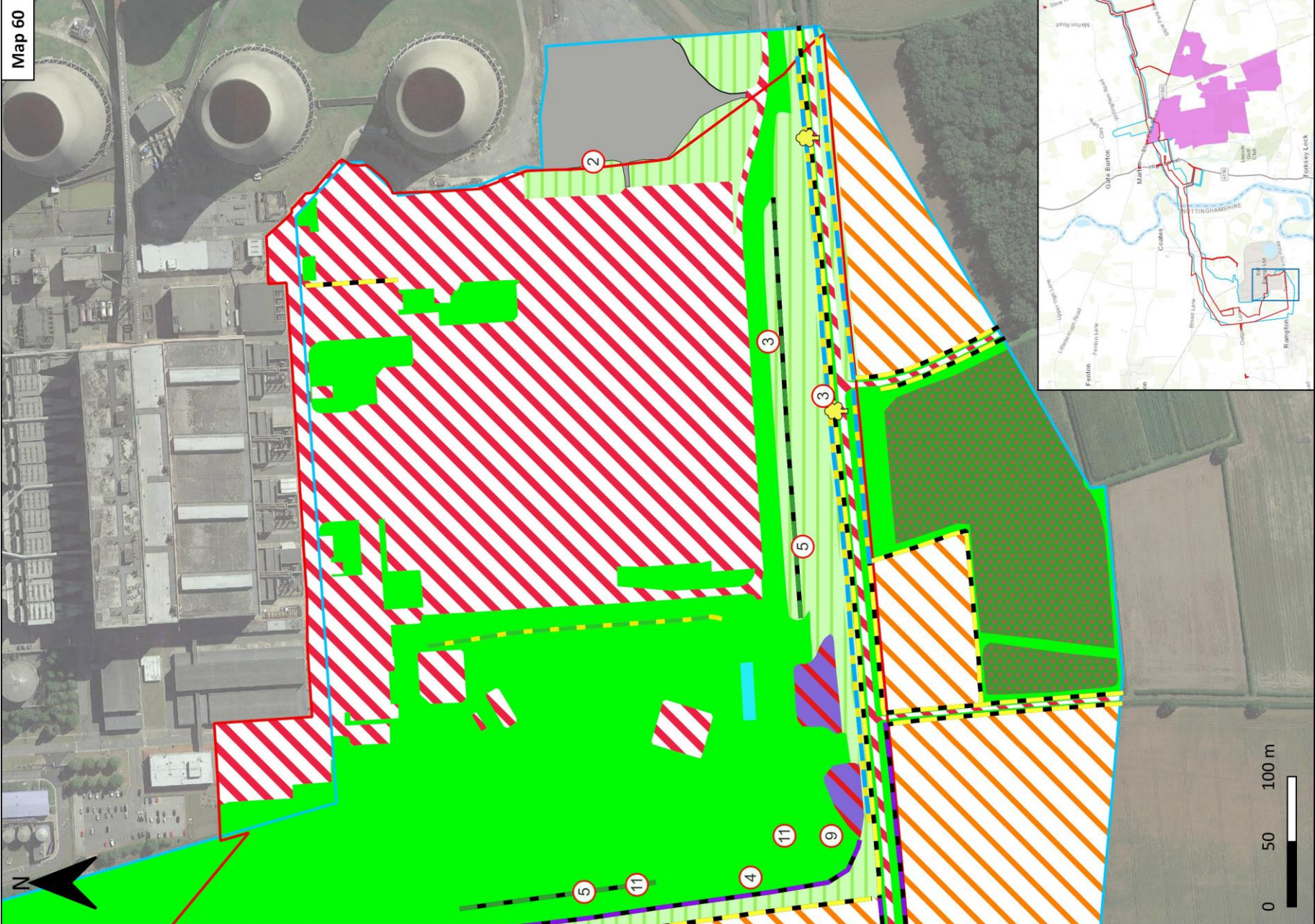






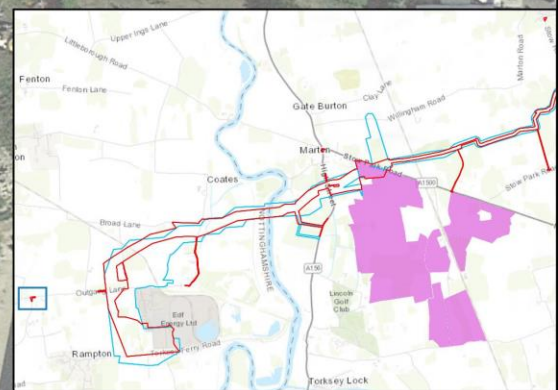
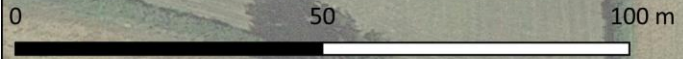
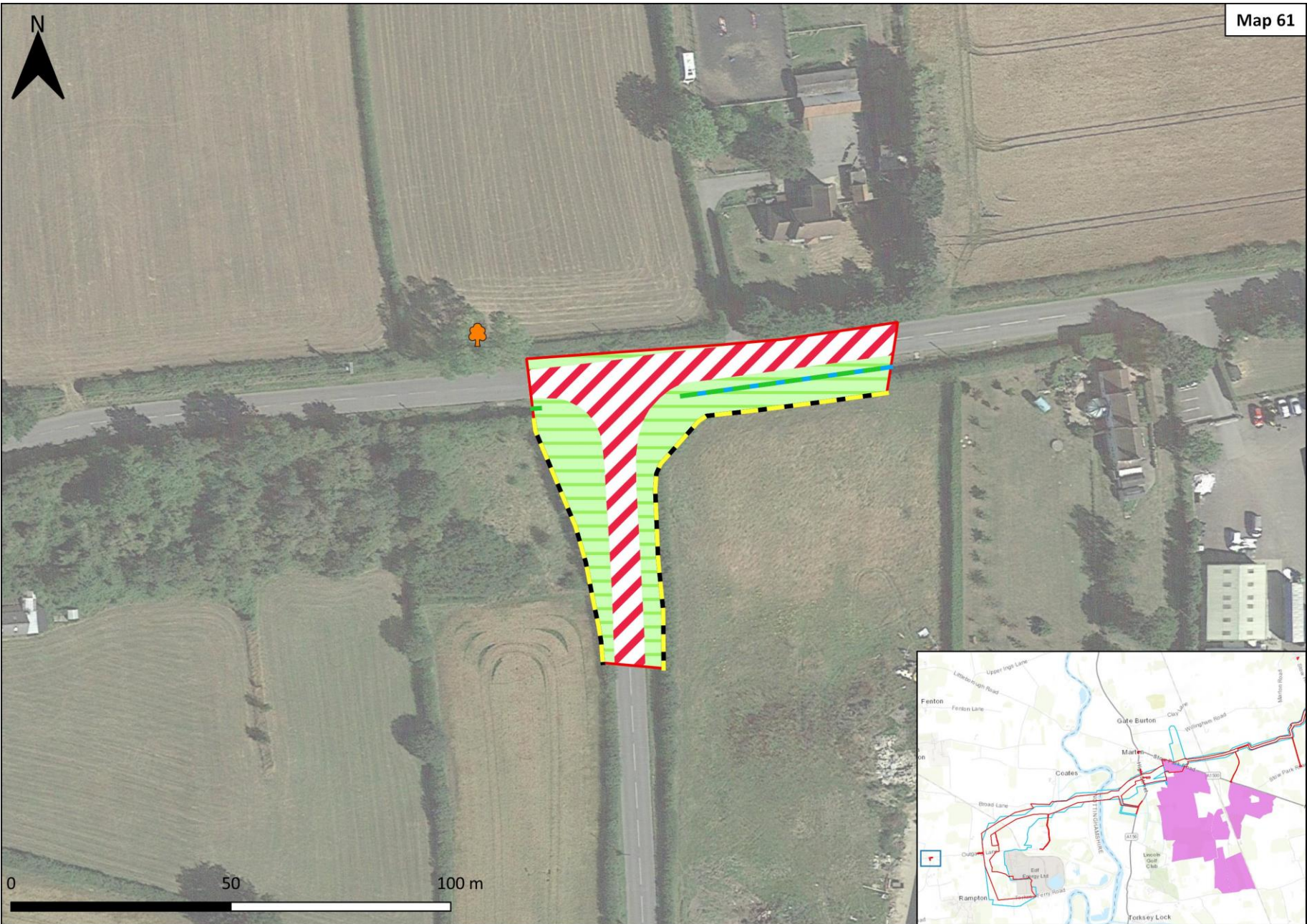


Map 60



0 50 100 m








## **APPENDIX G – SUITABILITY OF WATERCOURSES FOR OTTERS**





<b>Project</b>	Cottam Solar Project
<b>Title</b>	Cable Route Otter Survey Results
<b>Figure Number</b>	Appendix G

**Key:**


 Cable Route Corridor  
(Order Limits)

 Cottam solar site

Suitability of watercourses for otter

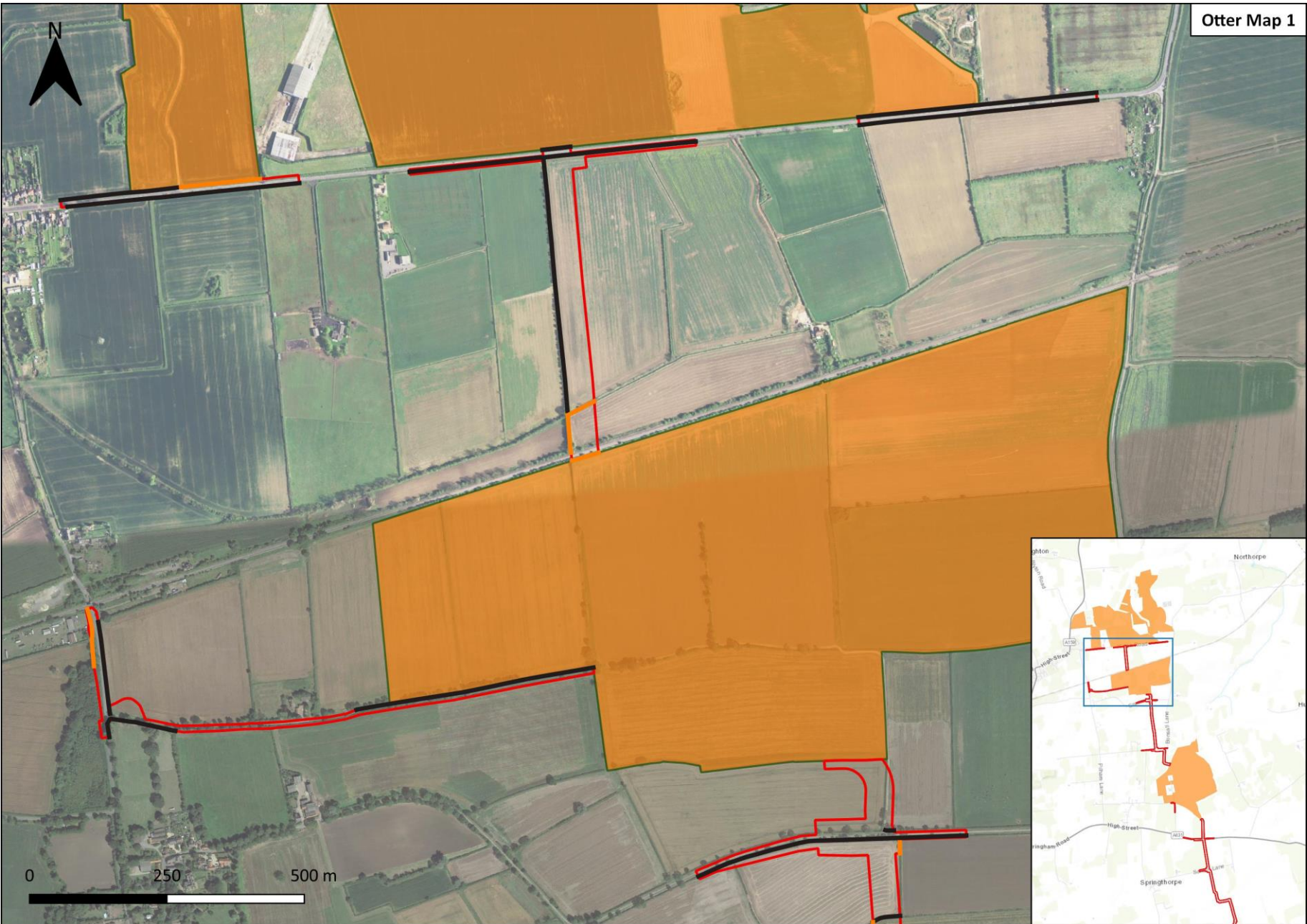
 Optimal

 Good

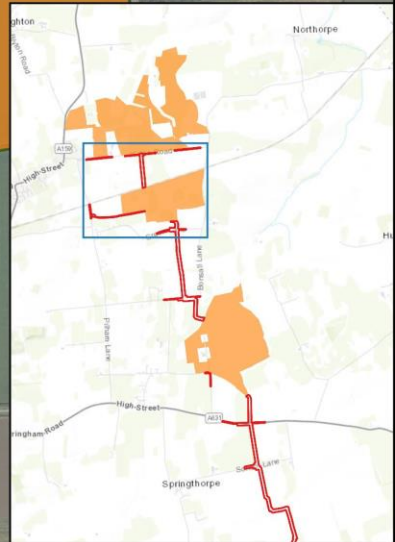
 Suitable but poor

 Negligible

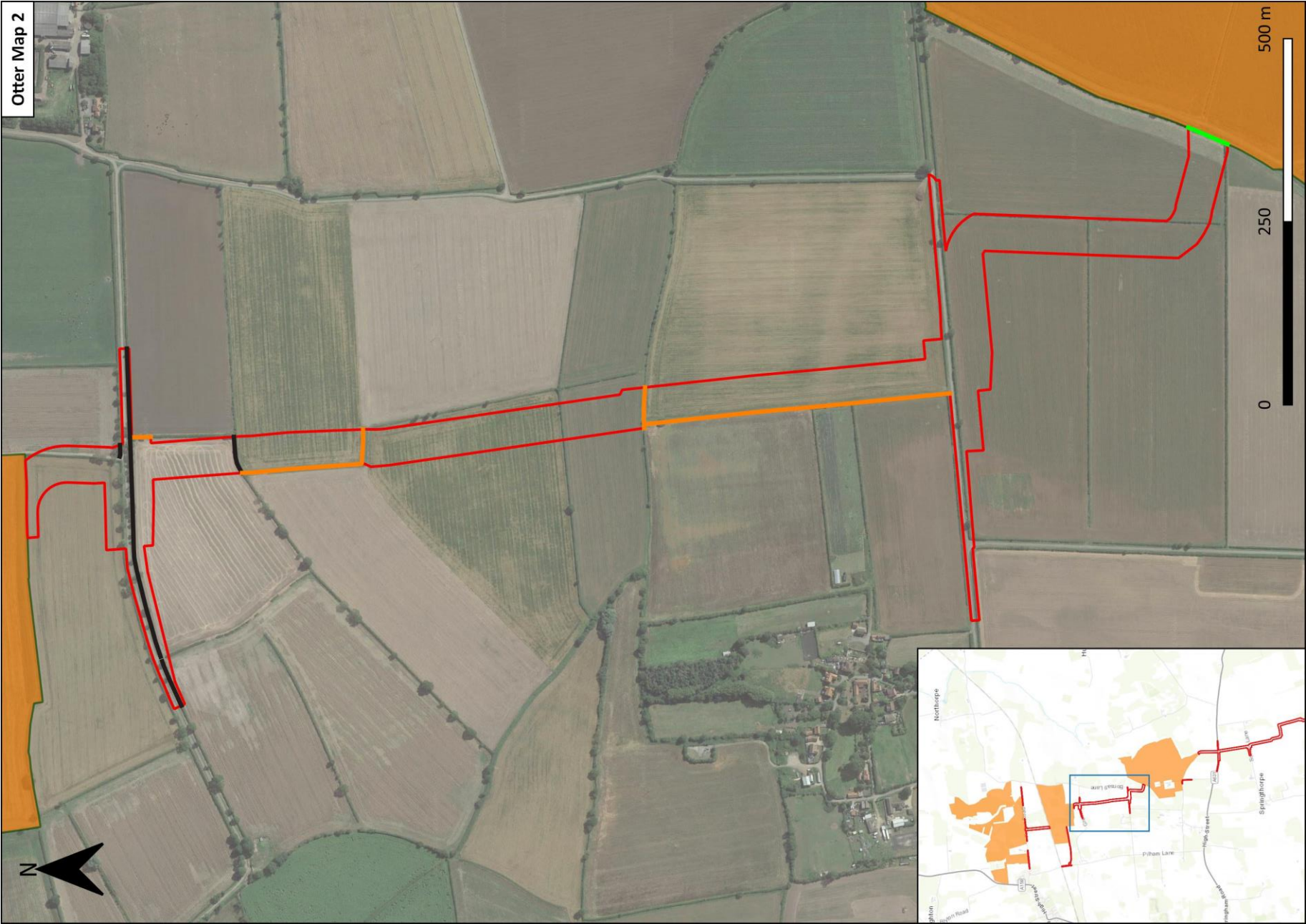
 Usually dry



0 250 500 m







Otter Map 3



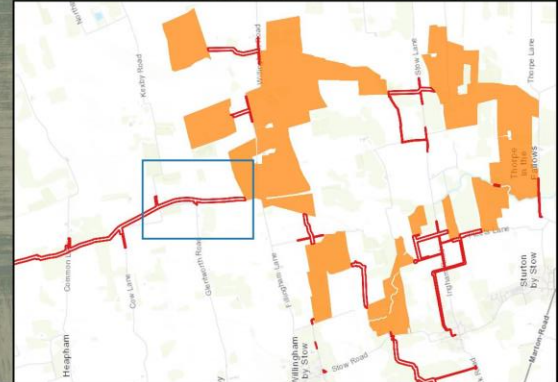
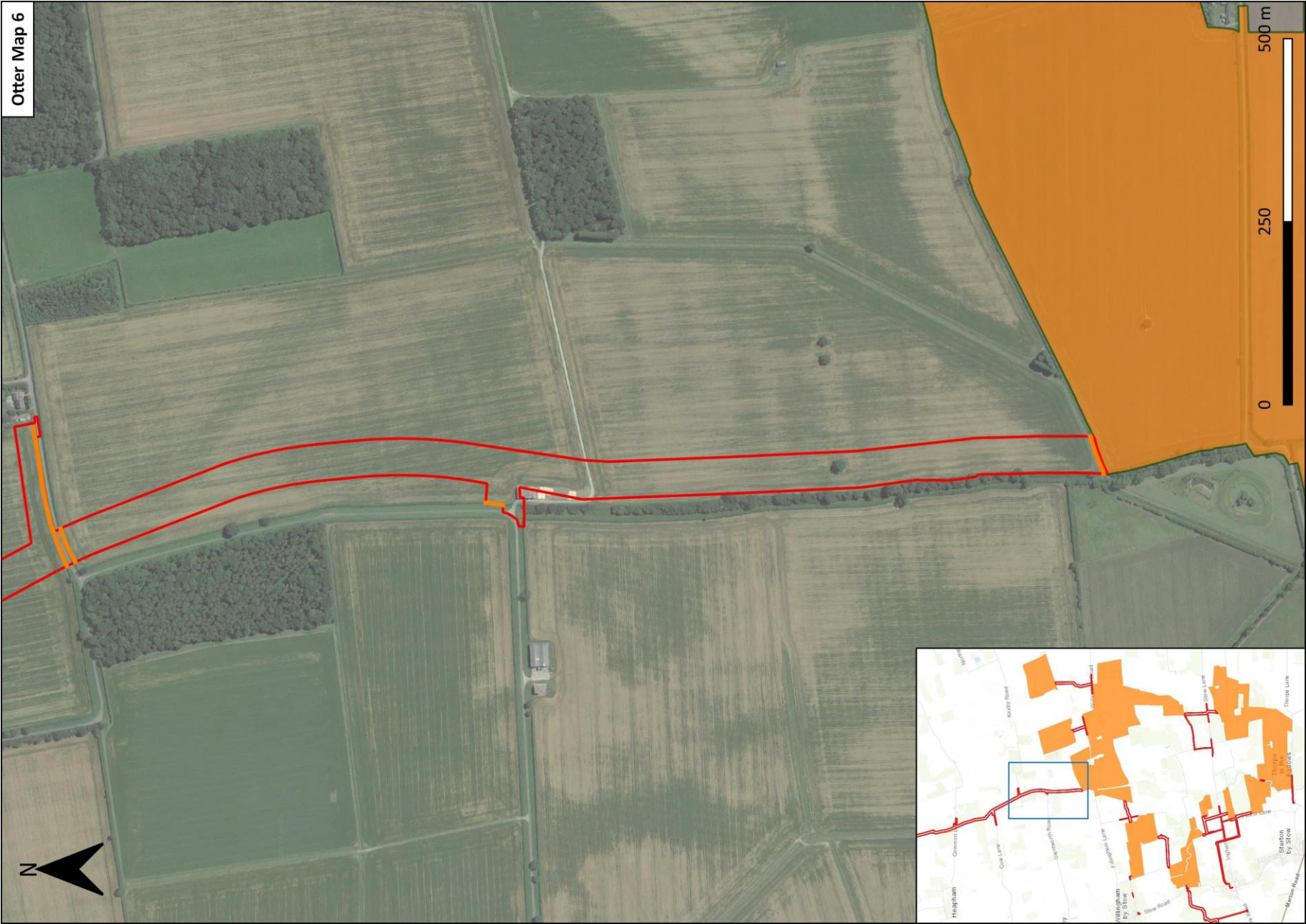


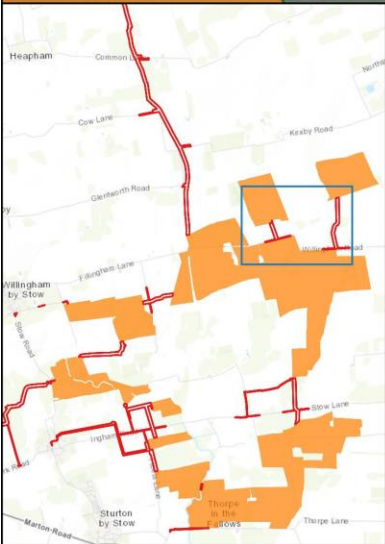












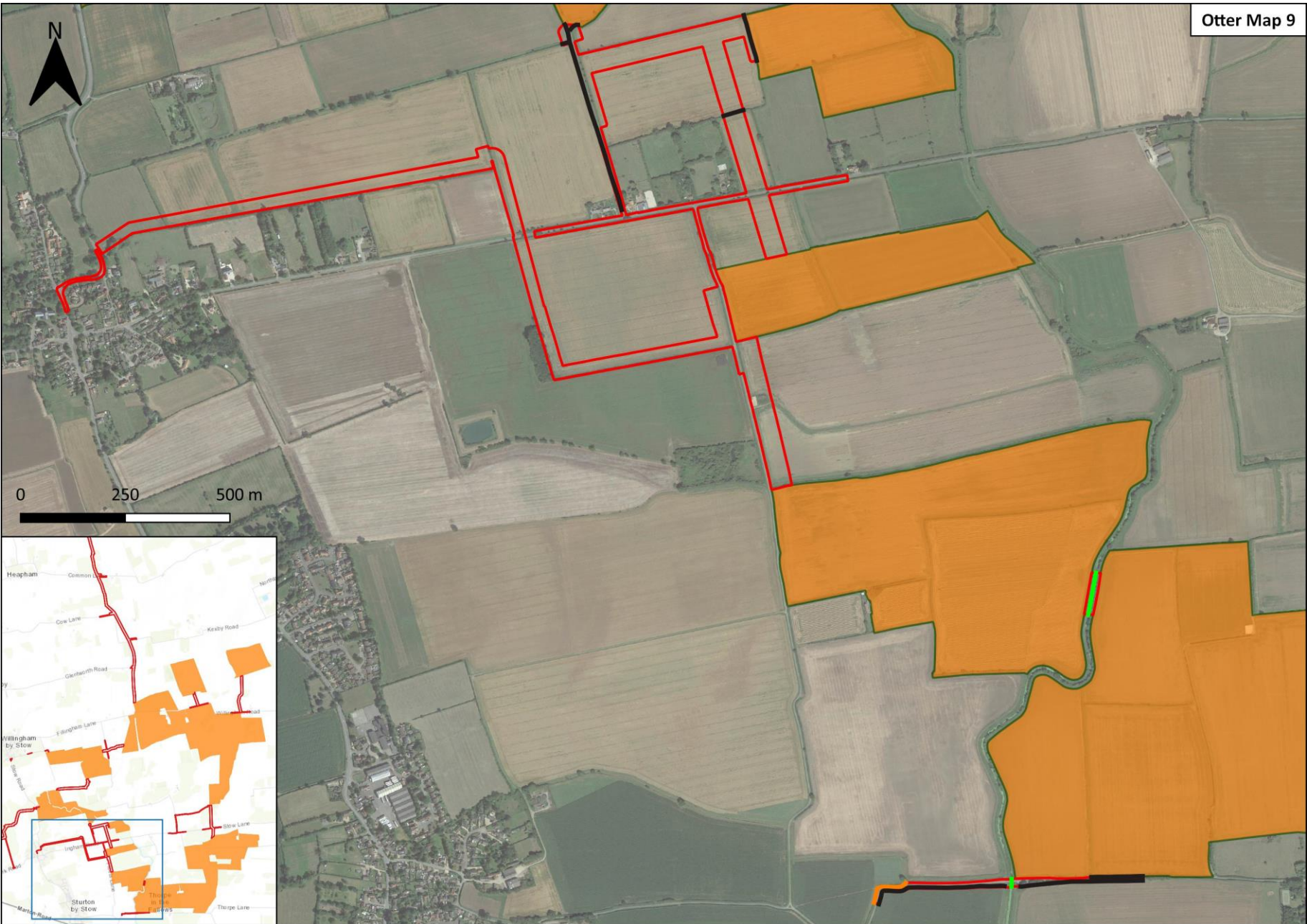
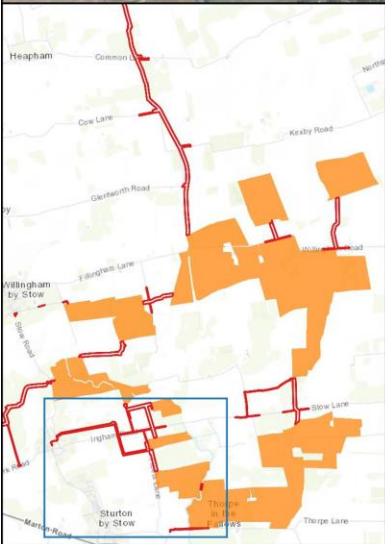




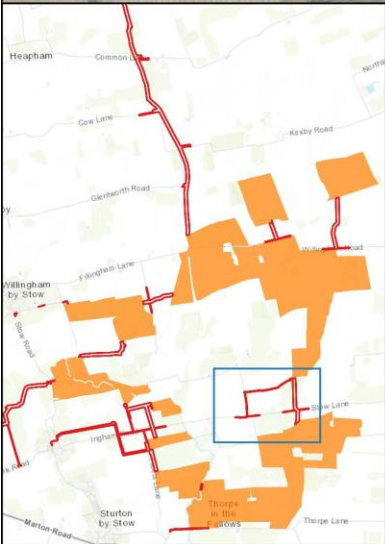


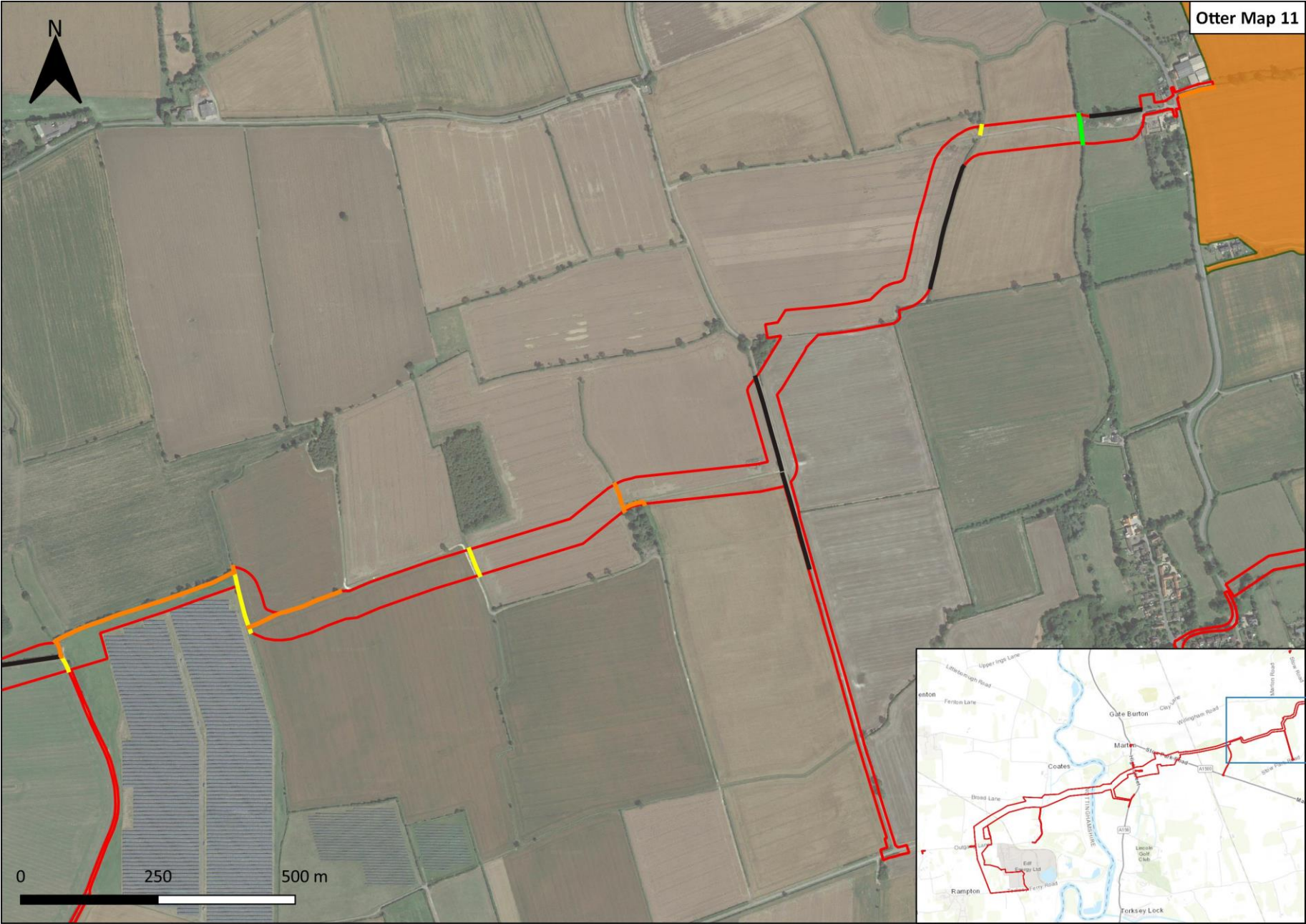


0 250 500 m

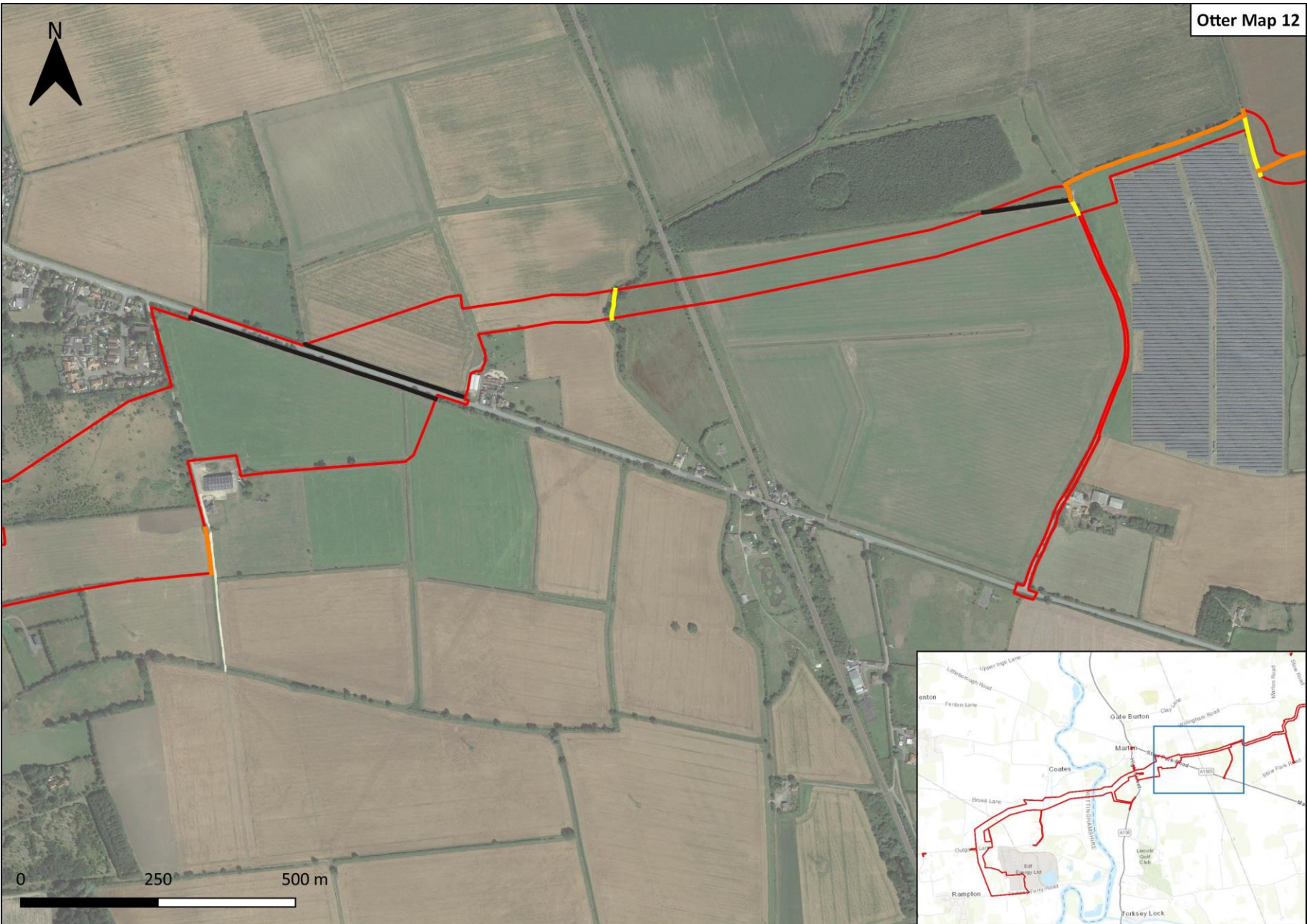




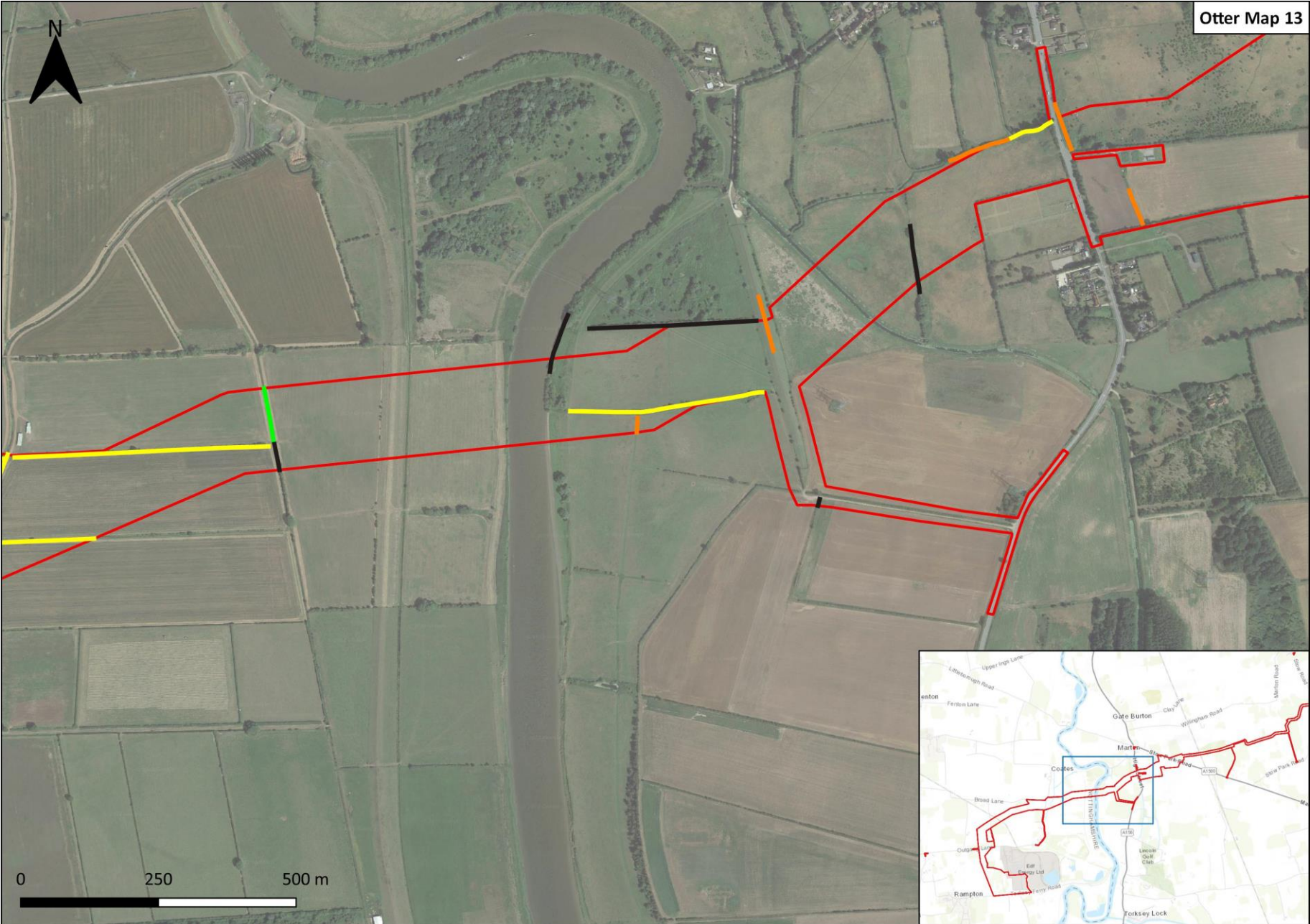




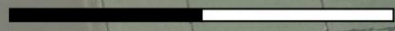




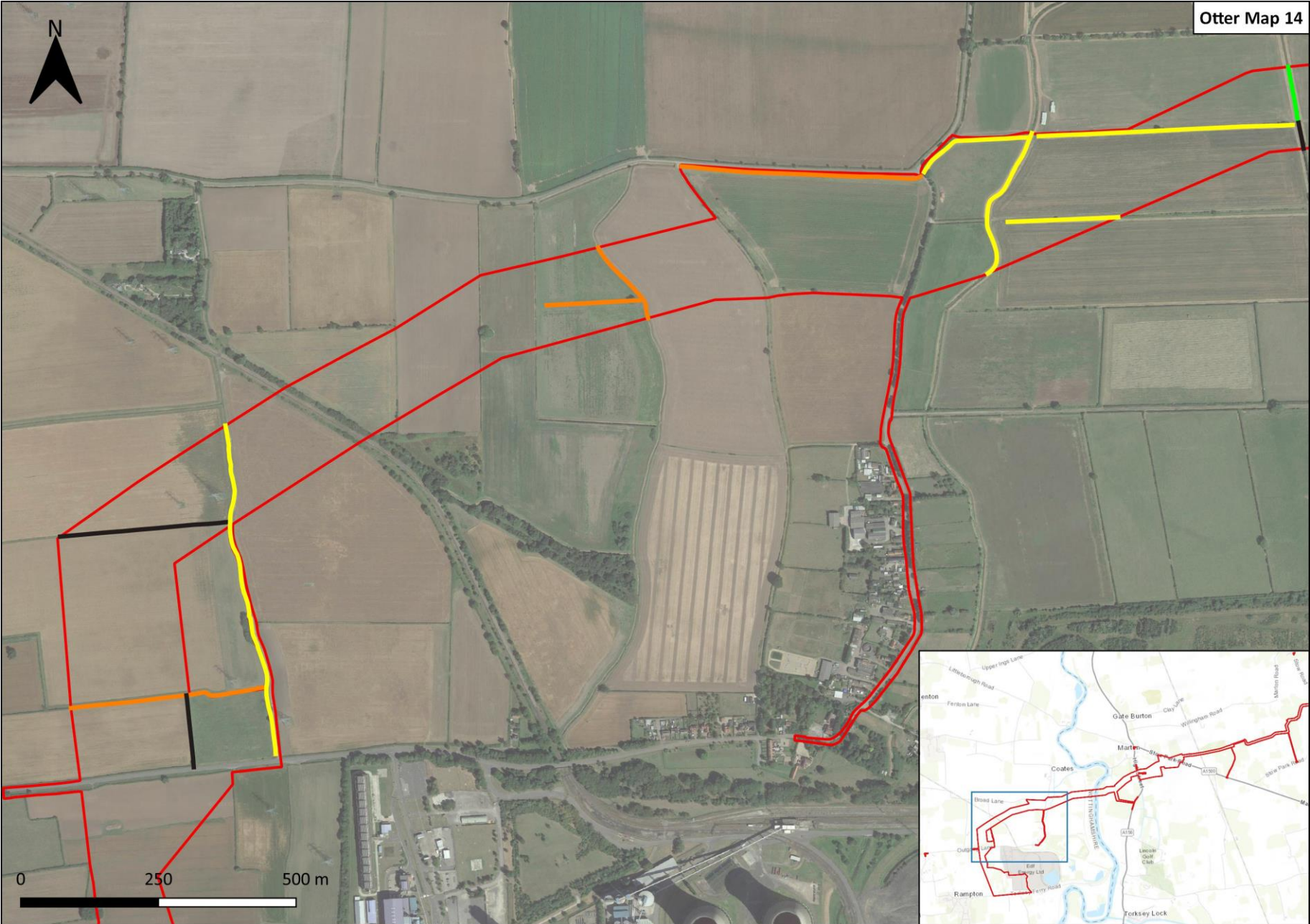




0 250 500 m

















## APPENDIX H – SUITABILITY OF WATERCOURSES FOR WATER VOLES



<b>Project</b>	Cottam Solar Project
<b>Title</b>	Cable Route Water Vole Survey Results
<b>Figure Number</b>	Appendix H

**Key:**


 Cable Route Corridor  
(Order Limits)

 Cottam solar site

Suitability of watercourses for water vole

 Optimal

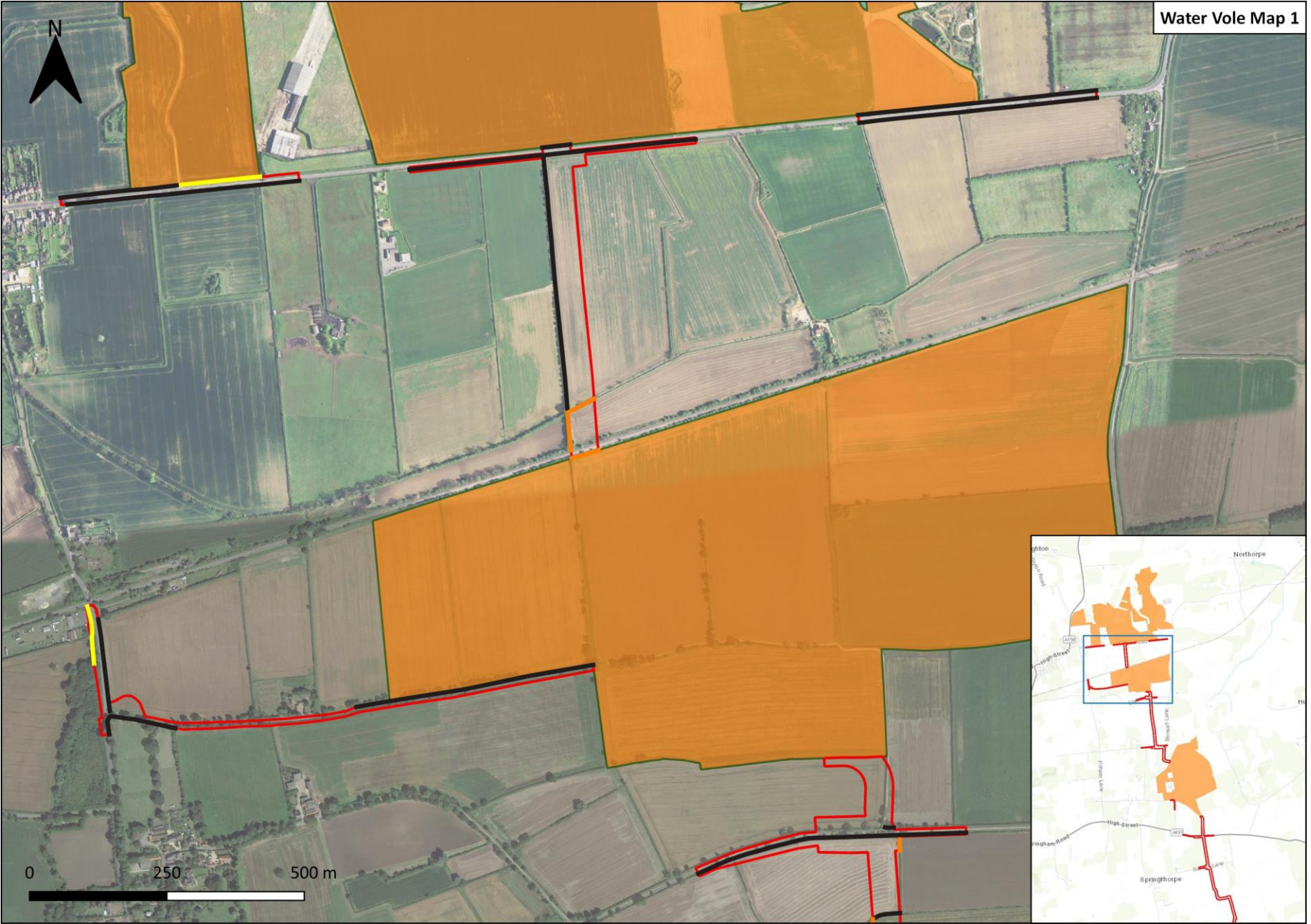
 Good

 Suitable but poor

 Negligible

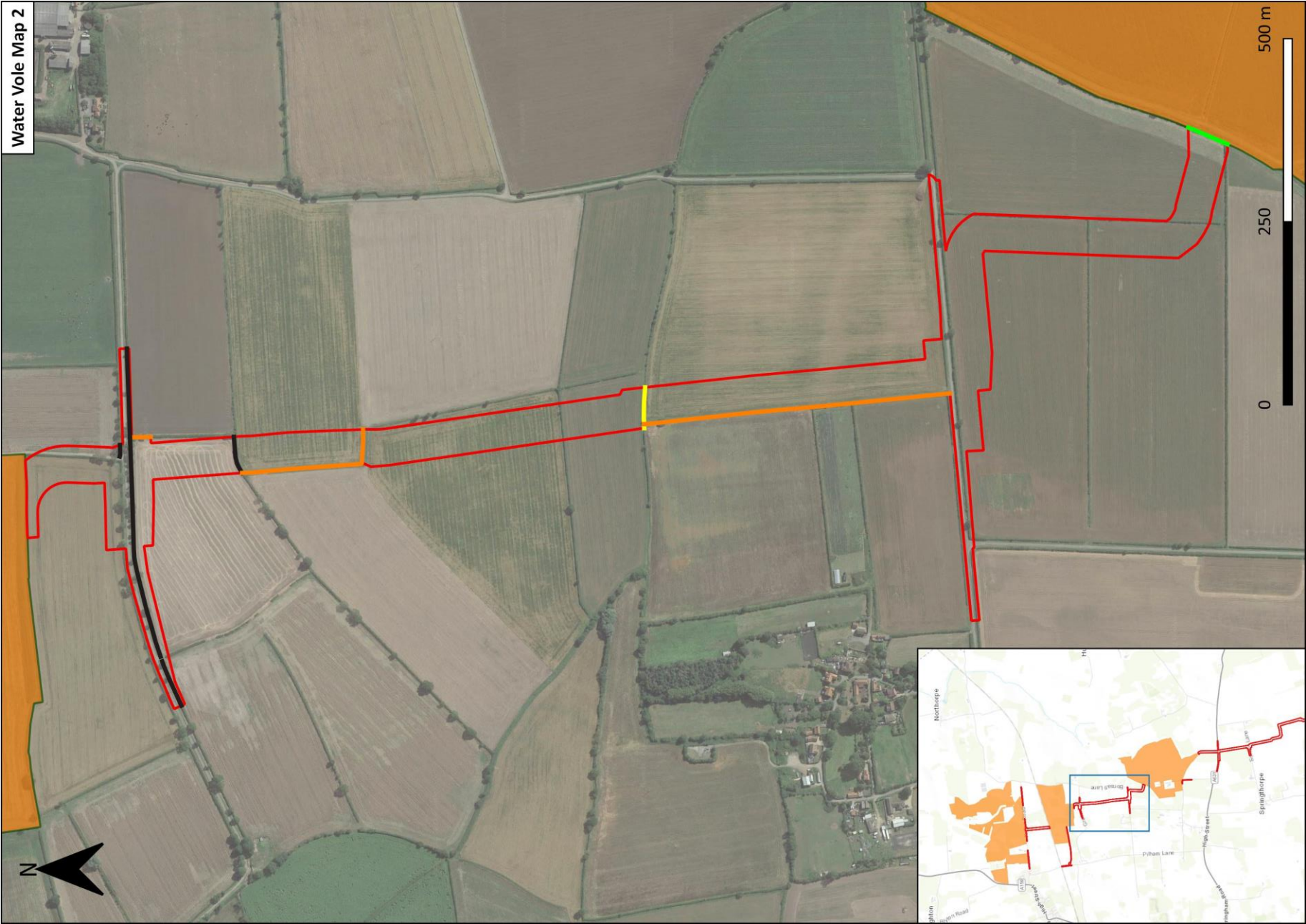
 Usually dry







Water Vole Map 2





Water Vole Map 3

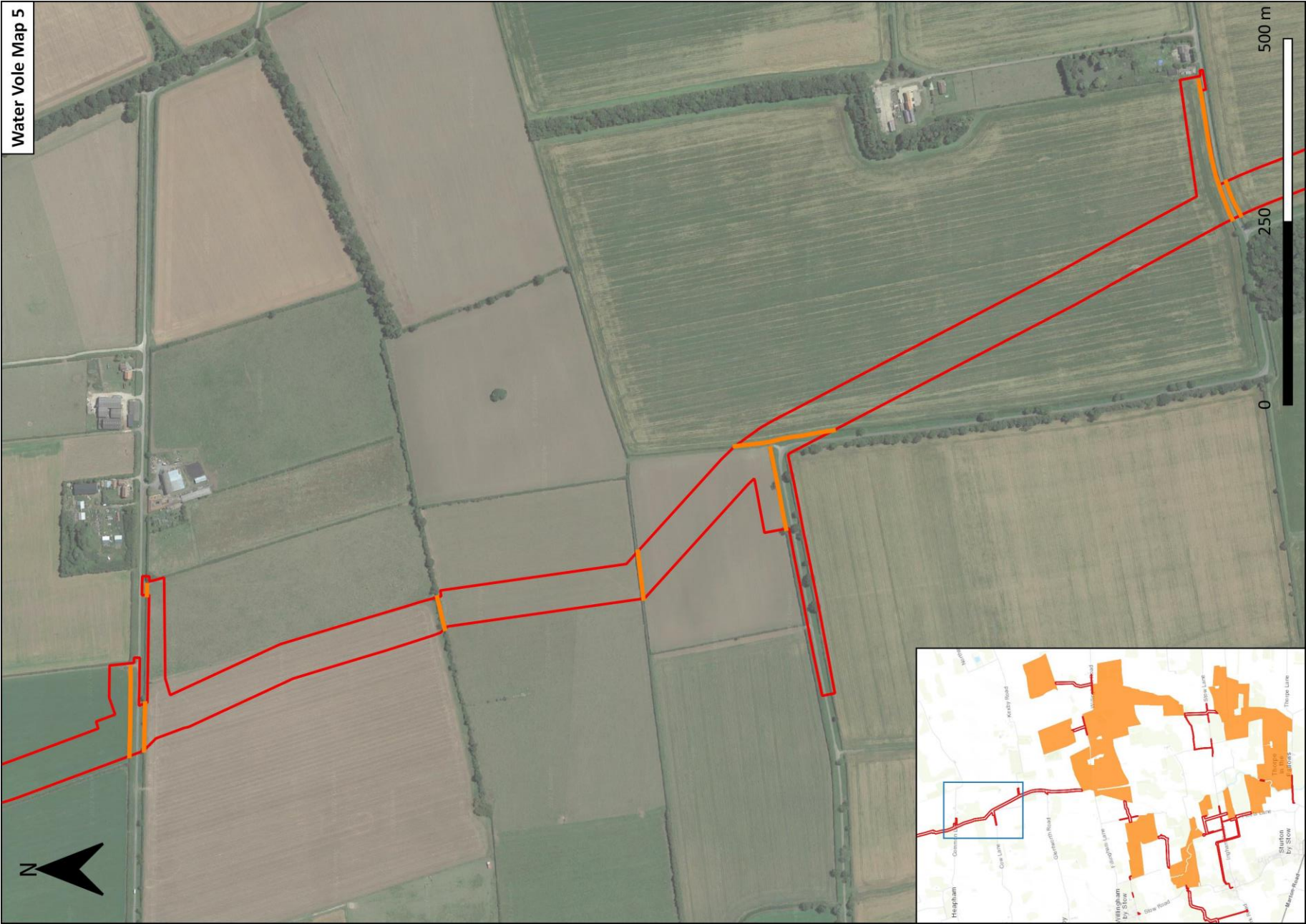




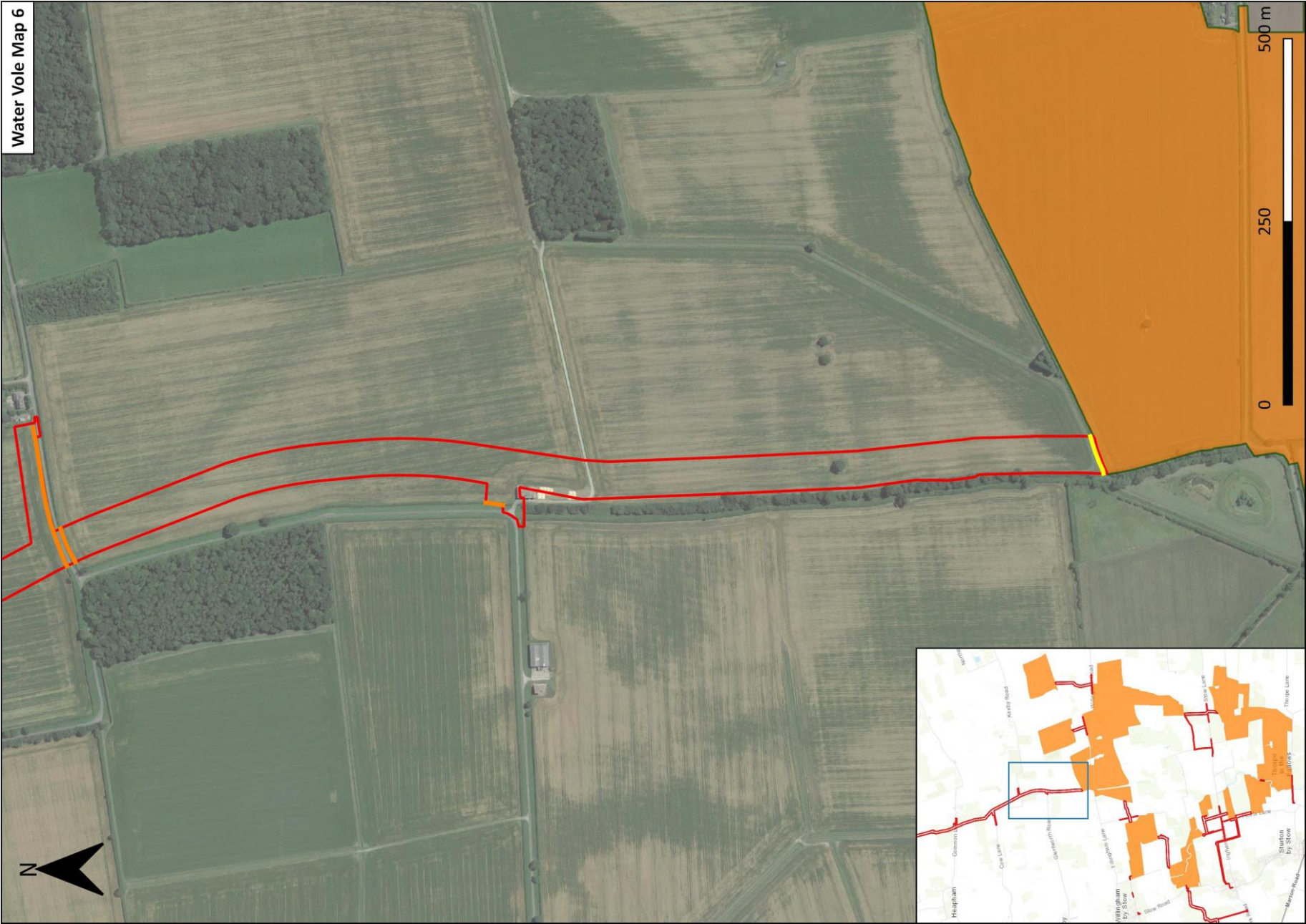




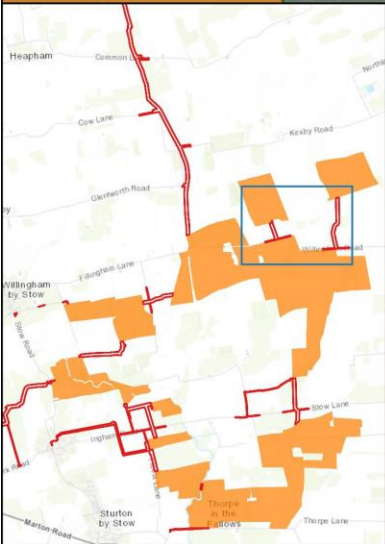
Water Vole Map 5





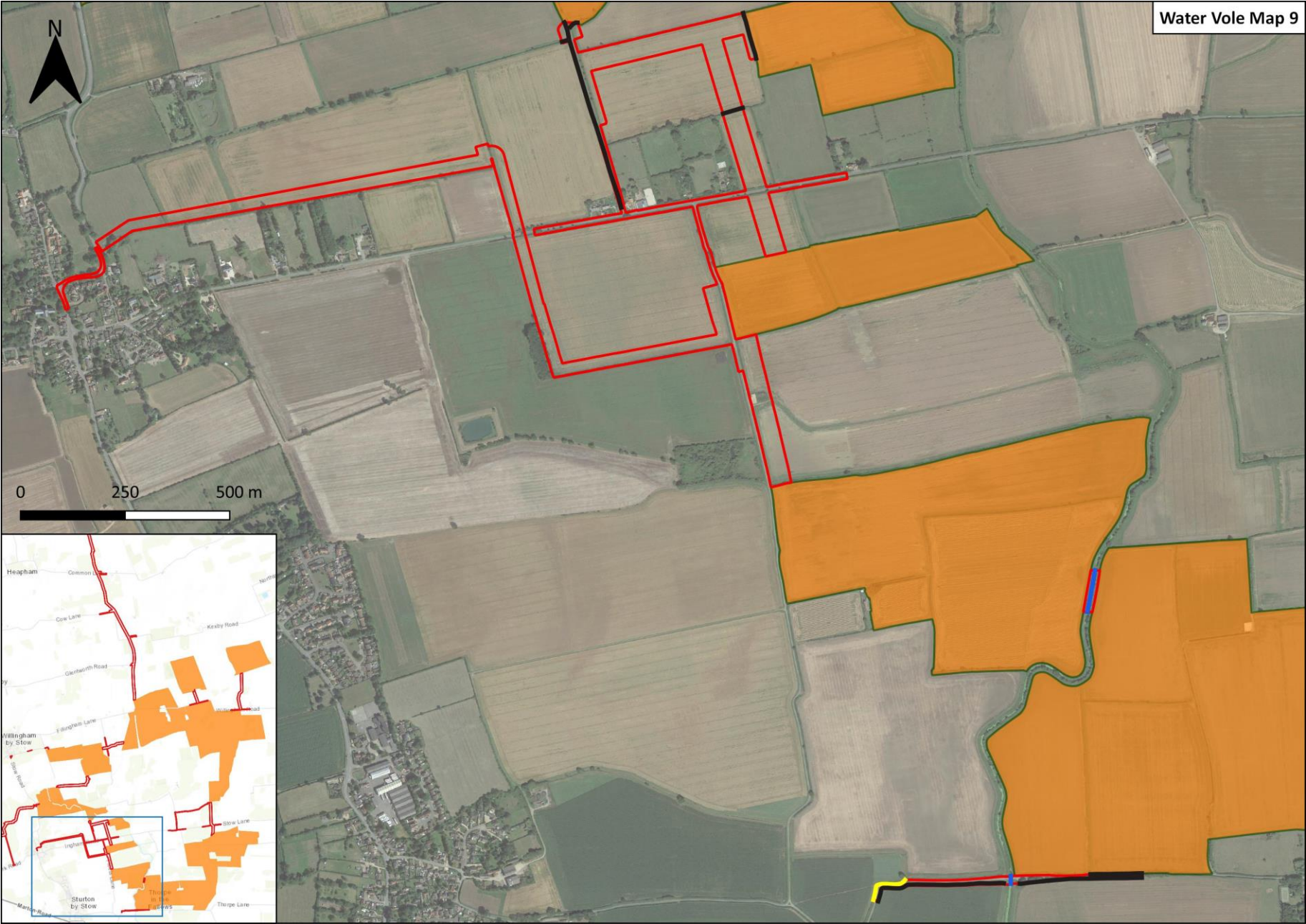


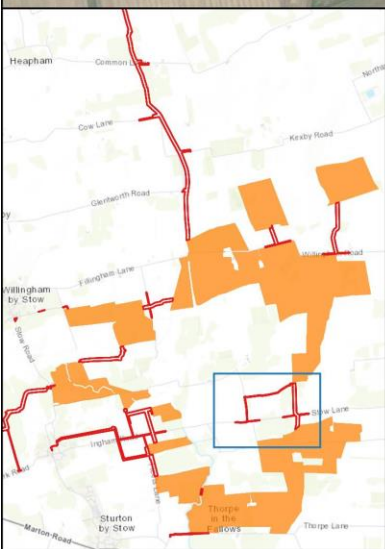




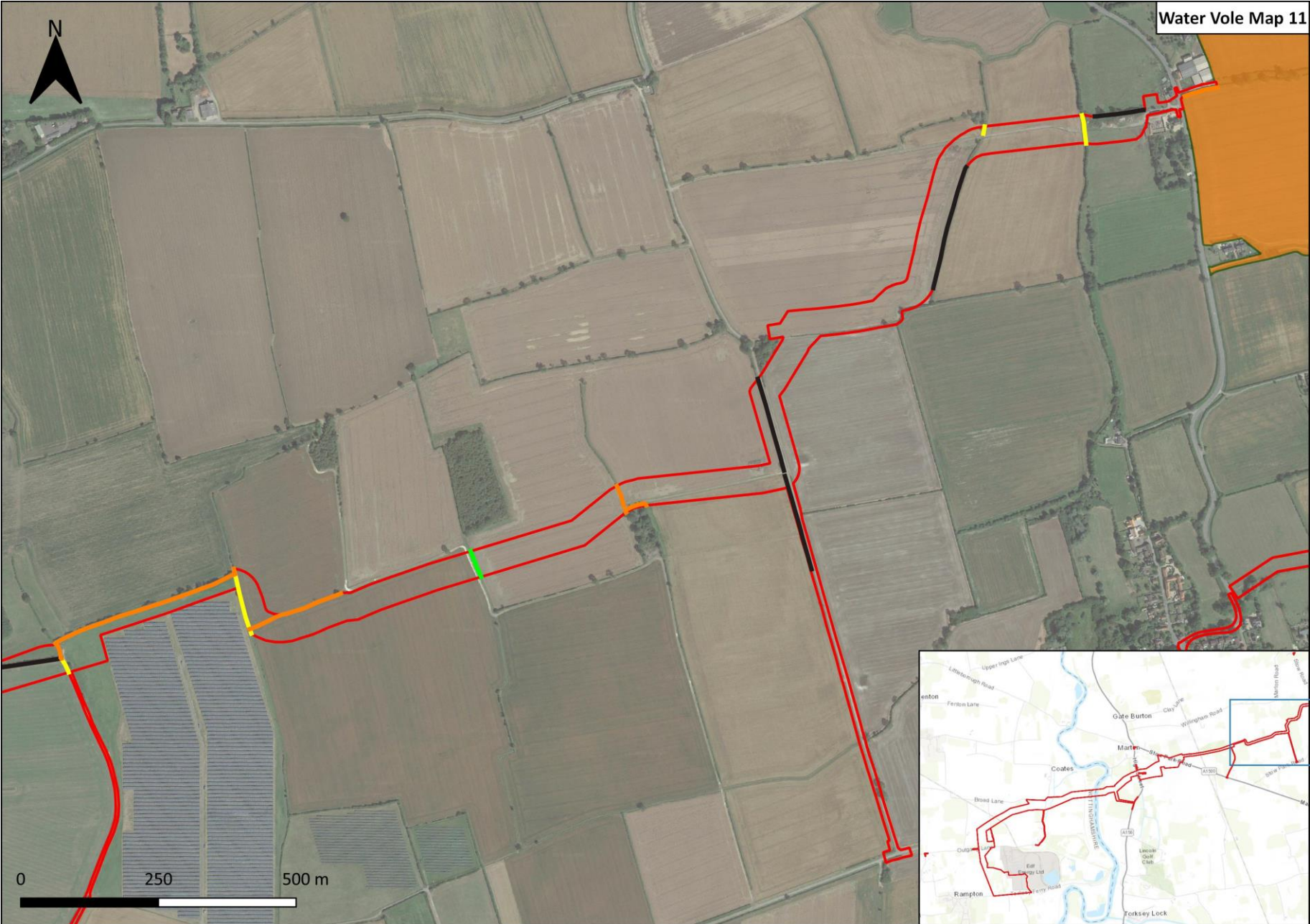




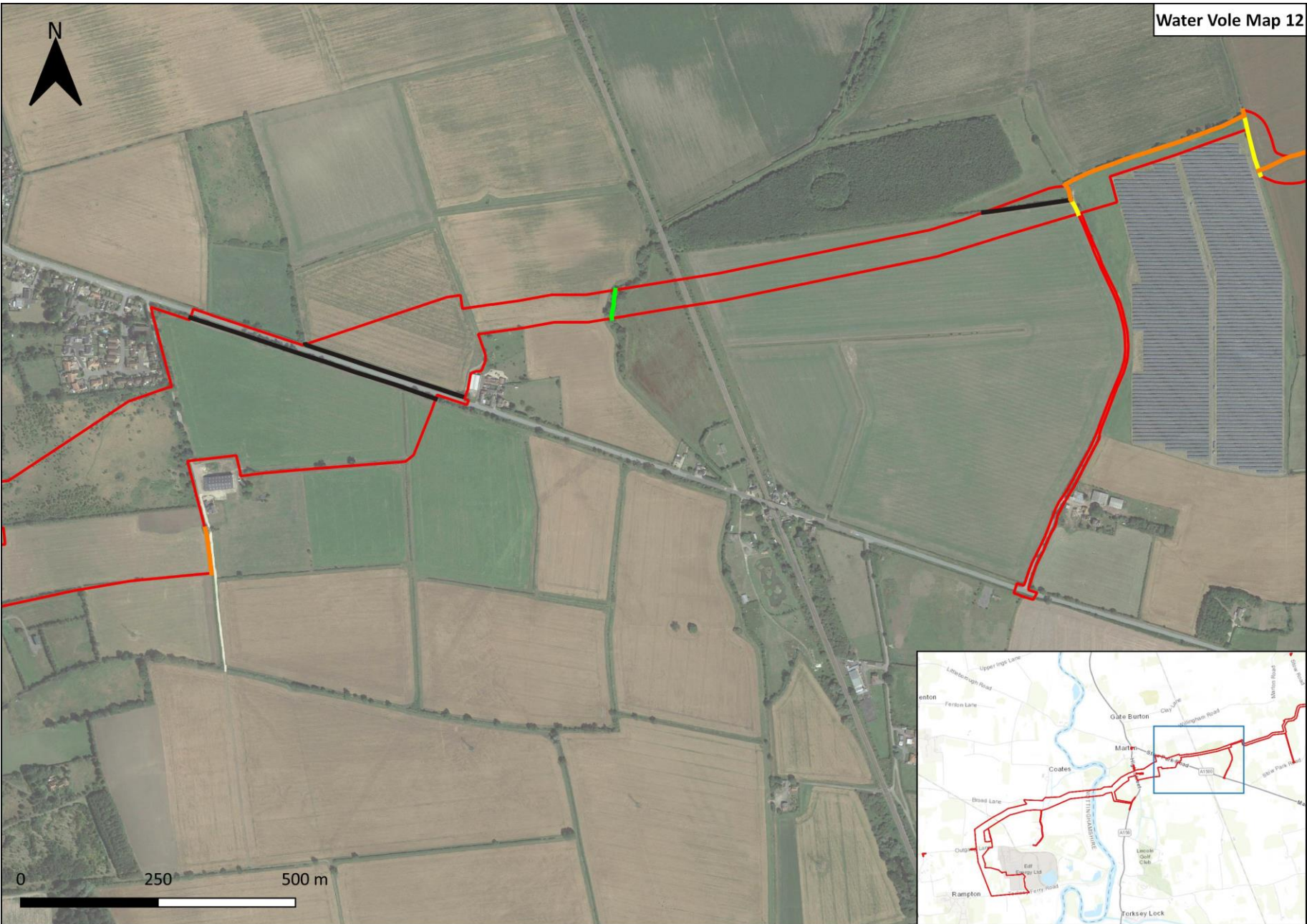








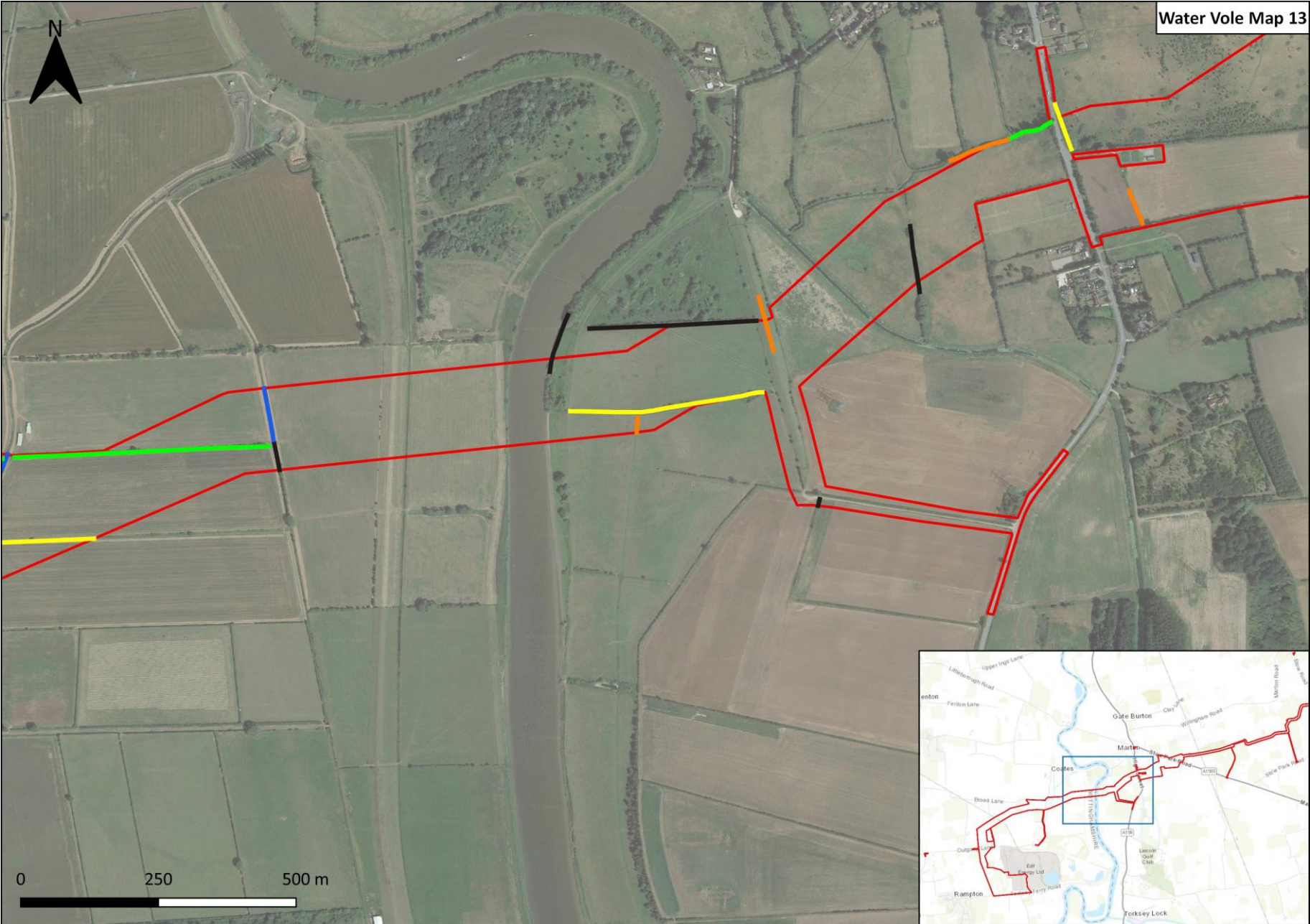




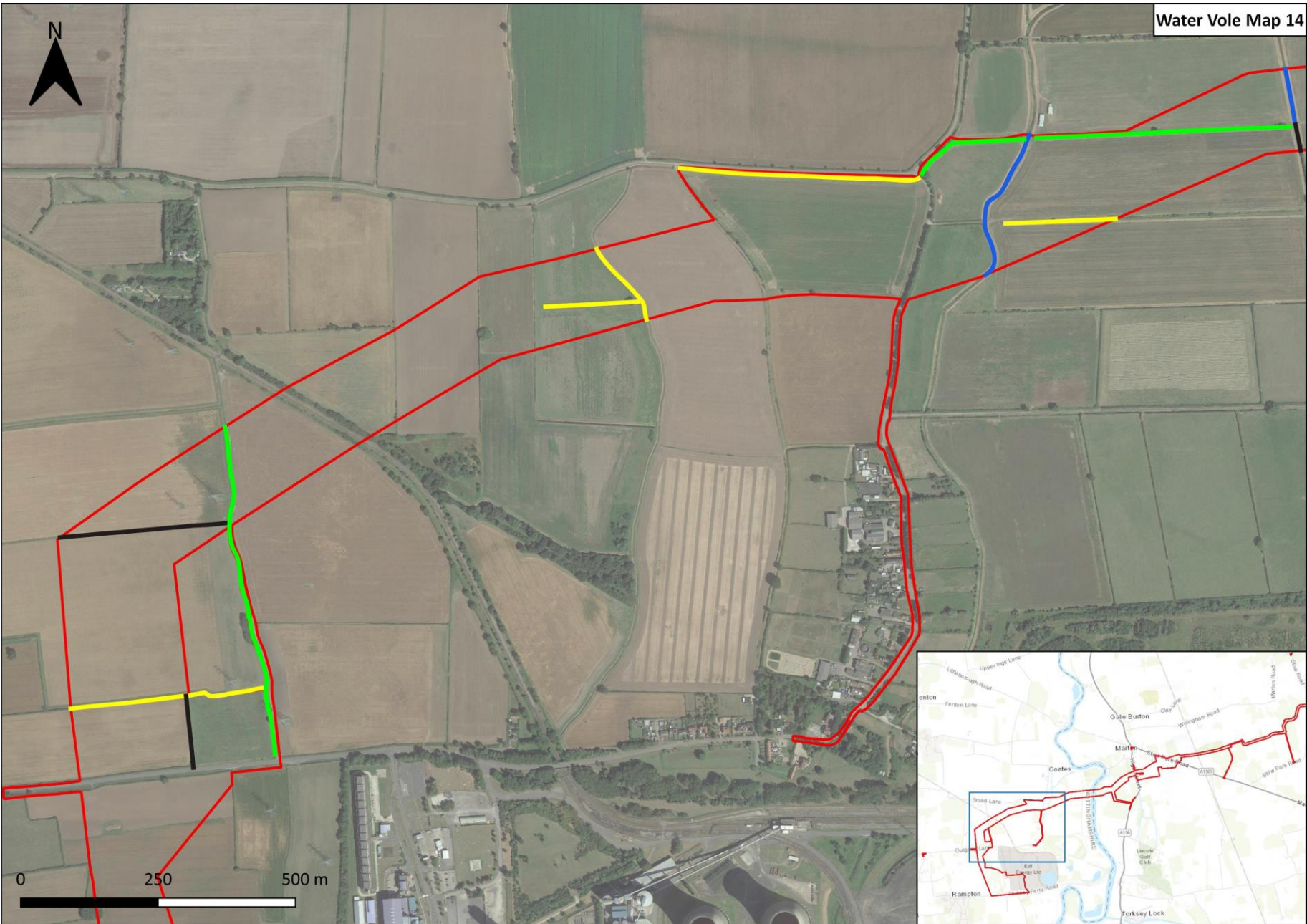
0 250 500 m



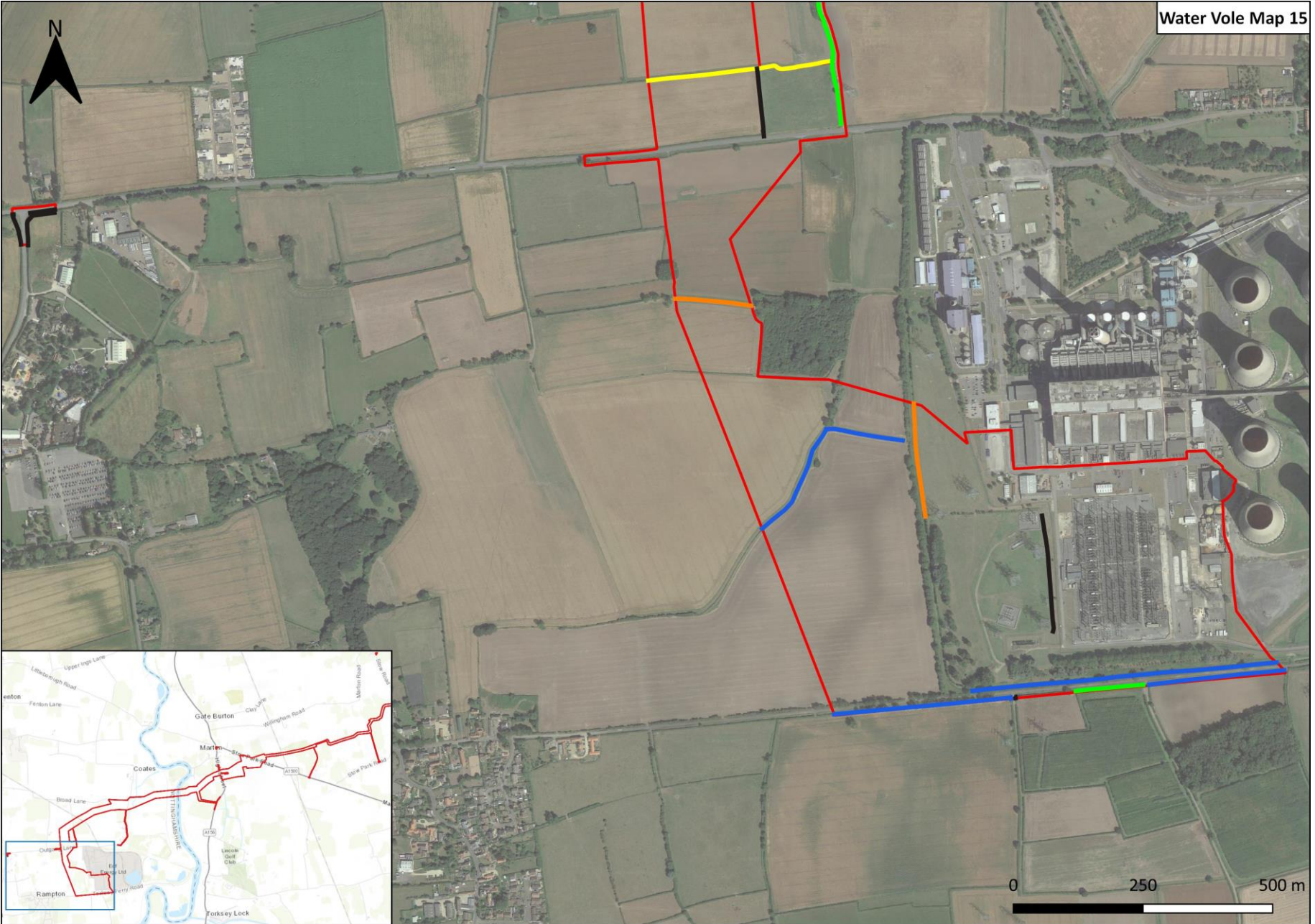














CLARKSON & WOODS

**Clarkson and Woods Ltd.**

Overbrook Business Centre,  
Poolbridge Road, Blackford,  
Somerset BS28 4PA

t: 01934 712500

e: [info@clarksonwoods.co.uk](mailto:info@clarksonwoods.co.uk)

