



SUNNICA ENERGY FARM

EN010106

Environmental Statement

Volume 6

6.7 Biodiversity Net Gain Assessment

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009



Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms and
Procedure) Regulations 2009**

Sunnica Energy Farm

Environmental Statement

6.7 Biodiversity Net Gain Assessment

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1 Introduction

- 1.1.1 AECOM Ltd was commissioned by Sunnica Limited to undertake a Biodiversity Net Gain (BNG) assessment for Sunnica Energy Farm (hereafter referred to as the Scheme). This report has been prepared as part of the Development Consent Order (DCO) Application for the Scheme.
- 1.1.2 This BNG assessment has been undertaken using Defra's Biodiversity Metric 3.1 (Ref 1 and Ref 2) to quantify the overall effect of the Scheme on biodiversity and to be a factor in informing habitat design as part of the Scheme. The report sets out the results of the BNG assessment that have been updated following discussions with stakeholders. It also accounts for changes made to the Scheme, including the proposed changes submitted at Deadline 5 of the Examination. Relevant legislation and policy, pertinent to BNG are presented in Section 2, the method for the assessment is outlined in Section 3, the results in Section 4, and the conclusions are provided in Section 5.

1.2 Supporting Documents

- 1.2.1 The following documents have been used to inform the BNG assessment, reported in this document:
- a. **Chapter 8: Ecology and Nature Conservation** of the Environmental Statement [EN010106/APP/6.1];
 - b. **Appendix 10I Outline Landscape and Ecology Management Plan (OLEMP)** of the Environmental Statement [EN010106/APP/6.2];
 - c. **Works Plans** [EN010106/APP/2.2]
 - d. **Figure 3-1: Sunnica East Site A and B Parameter Plan** and **Figure 3-2: Sunnica West A and B Parameter Plan** of the Environmental Statement [EN010106/APP/6.3];
 - e. **Appendix 8B: Preliminary Ecological Appraisal report** of the Environmental Statement [EN010106/APP/6.2];
 - f. **Appendix 8C: Terrestrial habitats and flora report** of the Environmental Statement [EN010106/APP/6.2]; and
 - g. **Appendix 8E: Aquatic Ecology report** of the Environmental Statement [EN010106/APP/6.2].

1.3 The Scheme

- 1.3.1 The Scheme is a new solar energy farm proposal that will deliver electricity to the national electricity transmission network. Sunnica Limited is proposing to install ground mounted solar photovoltaic (PV) panel arrays to generate electrical energy from the sun and combine these with a Battery Energy Storage System (BESS) which will connect to Burwell National Grid Substation in Cambridgeshire.
- 1.3.2 Electricity will be generated at Sunnica East Site A, near Isleham in Cambridgeshire; Sunnica East Site B, near Worlington and Freckenham in Suffolk; and Sunnica West Site A near Chippenham and Kennett in

Cambridgeshire. All locations will comprise ground mounted solar PV panel arrays, supporting electrical infrastructure and a BESS.

- 1.3.3 Supporting electrical infrastructure will include on-site substations on Sunnica East Site A and Sunnica East Site B and Sunnica West Site A, and on-site cabling between the different electrical elements across the Scheme. The generating equipment of the Scheme will be fenced and protected via security measures such as Closed-Circuit Television. Inside the fenced areas, in addition to the generating equipment will be, internal access tracks, and drainage. It is not proposed for any area to be continuously lit.
- 1.3.4 Visual, ecological, and archaeological mitigation is proposed which includes proposed grassland planting and new woodland; retention of existing woodland, wetlands, and other vegetation; provision of replacement habitat; and offsetting areas, where there will be no development. The BESS' will consist of a compound and battery array to allow for the importation, storage, and exportation of energy to the National Grid. There will also be areas at Sunnica East Site A and Sunnica East Site B for office and storage facilities for use during the Scheme's operation.
- 1.3.5 The Scheme will be connected to the existing Burwell National Grid Substation, using cables buried underground, of 400 kilovolt (kV) capacity. The cables will run between Sunnica East Site A, Sunnica East Site B and Sunnica West Site A (Grid Connection Route A), and then from Sunnica West Site A onwards to the Burwell National Grid Substation (Grid Connection Route B).
- 1.3.6 The Scheme will have two main access points, one north of Elms Road at Sunnica East Site B and one south of La Hogue Road at Sunnica West Site A. The main access route to Sunnica West Site A will be via the Chippenham junction of the A11, to the north of junction 38 of the A14. Sunnica East Site B will be accessed via the A11 and B1085. A number of secondary access points are proposed to access the individual land parcels through construction, operation, and decommissioning phases.
- 1.3.7 The Scheme is defined as a Nationally Significant Infrastructure Project (NSIP) and will require a Development Consent Order (DCO) from the Secretary of State for Business, Energy, and Industrial Strategy (Secretary of State), due to its generating capacity exceeding 50 megawatts (MW).
- 1.3.8 The Scheme comprises the following key areas:
 - a. solar farm sites:
 - i. East Site A;
 - ii. East Site B; and
 - iii. West Site A
 - b. associated electrical infrastructure for connection to the national transmission system, and for the purposes of this BNG assessment, Grid Connection Routes A and B have each been split in to two sections which comprise:
 - i. Grid Connection Route A ('A1' - connecting East Site A with East Site B and then 'A2' connecting East Site B to West Site A); and

- ii. Grid Connection Route B ('B1' - connecting West Site A to the existing Burwell National Grid Substation.

1.3.9 **Figure 1** in Appendix A shows the locations of these key areas.

1.4 Site description

- 1.4.1 The area of the Order limits area is 1,057.57 ha and the land use dominated by arable fields. There are mature trees and hedges, small, wooded copses, ponds, rivers and ditches present within the Site. The surrounding habitat is also mainly arable with small areas of mature broadleaved woodland (plantation, semi-natural). There are individual and clusters of residential properties located within and adjacent to the Order Limits
- 1.4.2 Several Water Framework Directive (WFD) waterbodies are present within the Order limits area including the Kennett-Lee Brook, Lee Brook, River Snail (Soham Lode), New River and Burwell Lode. Intrusive works are to be undertaken on four ditches within the Order limits, including tributaries of the River Snail, River Lark and in the New River catchment.

2 Relevant Legislation and Policy for BNG

- 2.1.1 It is government policy that planning decisions should minimise impacts on and provide net gain for biodiversity (National Planning Policy Framework 2021). In addition, the Environment Act 2021 includes provisions to make biodiversity net gain (BNG) a mandatory requirement within the town and country planning system in England.
- 2.1.2 As a Nationally Significant Infrastructure Project (NSIP), the Scheme will require consent via a Development Consent Order (DCO) which is not currently subject to any mandatory biodiversity net gain requirements. It is however anticipated that secondary legislation mandating the need for NSIP's to provide a minimum of 10% net gain in biodiversity through development will become mandatory in the mid-2020s.
- 2.1.3 It is government policy that planning decisions should minimise impacts on and provide net gains for biodiversity (National Planning Policy Framework (NPPF) 2021) (Ref 3).
- 2.1.4 Paragraph 174, where specific to BNG, of the NPPF states that: *“planning policies and decisions should contribute to and enhance the natural and local environment by: 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.... Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures”*.
- 2.1.5 Section 4.5 of the draft Overarching National Policy Statement for Energy (EN-1) states: *“Although achieving biodiversity net gain is not an obligation for projects under the Planning Act 2008, energy NSIP proposals should seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity where possible”*.
- 2.1.6 Relevant policies and summary sections on BNG, taken from local policy documents, are presented in **Table 2-1**.

Table 2-1: Relevant BNG sections within local policies

Relevant Document	Relevant policies on BNG	Policy Summary on BNG
East Cambridgeshire District Council Local Plan Adopted April 2015 (Ref 4)	Policy ENV7: Biodiversity and Geology	<p><i>All development proposals will be required to:</i></p> <ul style="list-style-type: none"> <i>Protect the biodiversity and geological value of land and buildings and minimise harm to or loss of environmental features, such as trees, hedgerows, woodland, wetland and ponds.</i> <i>Provide appropriate mitigation measures, reinstatement or replacement of features and/ or compensatory work that will enhance or recreate habitats on or off site where harm to environmental features and habitat is unavoidable; and</i>

Relevant Document	Relevant policies on BNG	Policy Summary on BNG
		<ul style="list-style-type: none"> • <i>Maximise opportunities for creation, restoration, enhancement and connection of natural habitats as an integral part of development proposals.</i>
East Cambridgeshire District Council Supplementary Planning Document Natural Environment September 2020 (Ref 5)	Policy SPD.NE6 Biodiversity Net Gain	<p><i>In addition to the provisions set out in the Local Plan, all development proposals should contribute to and enhance the natural and local environment by firstly avoiding impacts where possible, where avoidance isn't possible minimising impacts on biodiversity and providing measurable net gains for biodiversity. If and when a nationally mandated mechanism to secure 'net gains' is introduced, then the following policy will not be implemented. In the absence of any nationally mandated mechanism to secure such 'net gains', the following policy applies: All development proposals (except householder applications – see below) must provide clear and robust evidence setting out: (a) information about the steps taken, or to be taken, to avoid and minimise the adverse effect of the development on the biodiversity of the onsite habitat and any other habitat, (b) the pre-development biodiversity value of the onsite habitat based on an up to date survey and ideally using the Defra metric, (c) the post-development biodiversity value of the onsite habitat ideally using the Defra metric; and (d) the ongoing management strategy for any proposals. Proposals which do not demonstrate that the post-development biodiversity value of the onsite habitat will not significantly exceed the pre-development biodiversity value of the onsite habitat will be refused.</i></p>
East Cambridgeshire District Council: Biodiversity Net Gain: East Cambridgeshire November 2022 (Ref 6)	<p>In late 2022 East Cambridgeshire District Council (ECDC) published "Biodiversity Net Gain: East Cambridgeshire". The document provides interim guidance on the application of BNG prior to it becoming mandatory.</p> <p>The guidance builds upon Net Gain policies set out in ECDC's 2020 Natural Environment SPD. The guidance sets out the approach ECDC expects developers to take to delivering BNG locally and establishes when the delivery of 10% BNG is expected and instances when developments will be exempt.</p>	

Relevant Document	Relevant policies on BNG	Policy Summary on BNG
East Cambridgeshire District Council Supplementary Planning Documents Renewable Energy Development (Commercial Scale) October 2014 (Ref 7)	Section 5: Biodiversity and geology	<i>Biodiversity enhancement: Applicants for renewable energy development will be expected to provide robust evidence as part of their planning application to demonstrate that the proposal will result in a net biodiversity gain as outlined in the National Planning Policy Framework. Opportunities to create or improve existing biodiversity should form part of renewable energy proposals. Biodiversity enhancement can include habitat restoration, improved links between sites and the inclusion of new environmental features within the development. For example, there is the potential to create new grasslands and hedgerows on the area around solar panels. Where environmental features are removed appropriate compensation measures will be required by the District Council. Applicants should have regard to the best practice guidance for renewable energy developments and biodiversity enhancement measures which has been produced by Natural England, the RSPB and the Solar Trade Association.</i>
Forest Heath District Council Core Strategy Adopted 2010 (Ref 8)	Policy CS2: Natural Environment	<i>Areas of landscape, biodiversity and geodiversity interest and local distinctiveness within the District will be protected from harm and their restoration, enhancement and expansion will be encouraged and sought through a variety of measures.</i>
Forest Heath and St Edmundsbury Local Plan: Joint Development Management Policies Document (last updated February 2015) (Ref 9)	Policy DM12: Mitigation, Enhancement, Management and Monitoring of Biodiversity	<i>In addition to, or as part of the requirements of other policies in this Development Policy Document measures should be included, as necessary and where appropriate, in the design for all developments for the protection of biodiversity and the mitigation of any adverse impacts. Additionally, enhancement for biodiversity should be included in all proposals, commensurate with the scale of the development. For example, such enhancement could include watercourse improvements to benefit biodiversity and improve water quality, habitat creation, wildlife links (including as part of green or blue infrastructure) and building design which creates wildlife habitat (e.g., green roofs, bird and/or bat boxes).</i>
Fordham Neighbourhood Plan (made December 2018) (Ref 10)	Policy 8: Wildlife and Habitats	<i>Development proposals should, wherever possible, seek to enhance connectivity of green networks through the inclusion of strong landscaping schemes that include trees, shrubs, hedgerows, green roofs and green walls, for example. Wherever possible, development proposals should avoid the loss of wildlife habitats or natural features such as trees, hedgerows, watercourses or ponds. Where the loss of a feature is unavoidable, mitigation may be acceptable through the introduction of new features that will result in at least a neutral impact on the wildlife. Overall, a net gain in biodiversity should be achieved, demonstrated by appropriate evidence prepared by a suitably qualified person on behalf of the applicant.</i>

3 Methods

3.1.1 This report has been produced in accordance with the methods set out in the following guidance documents:

- a. Biodiversity Metric 3.1 User Guide (Ref 1); and
- b. Biodiversity Metric 3.1 – Technical Supplement (Ref 2).

3.1.2 Calculations for BNG within the following sections were made using the 'Biodiversity Metric 3.1 - Calculation Tool'.

3.2 Biodiversity Metric 3.1

3.2.1 A BNG assessment involves making a comparison between the biodiversity value of habitats present within the Order Limits prior to development (*i.e.*, the 'baseline') and the predicted biodiversity value of habitats following the completion of the development (*i.e.*, 'post-development'). The comparison is made in terms of 'biodiversity units', with a 'biodiversity metric' providing the mechanism to allow biodiversity values to be calculated and compared.

3.2.2 Biodiversity Metric 3.1 calculates the overall loss or gain of biodiversity of development projects by assessing the distinctiveness (*i.e.*, type of habitat and its value), condition, extent, and strategic significance of habitats on site pre- and post-development. To achieve biodiversity net gain, the biodiversity unit score must have a post-development score higher than the baseline score. When calculating the post-development biodiversity units, the metric includes a series of standard risk multipliers to account for the inherent risk of creating and restoring habitats, the time taken to establish habitats and the location of the mitigation in relation to the habitats lost on site. The risk multipliers have the effect of reducing the value of the proposed habitats, which means larger areas, habitats of higher distinctiveness, and/or condition are required to achieve net gain.

3.2.3 The metric assesses and generates separate outputs for area-based habitats (measured in habitat units) and linear based habitats, including hedgerows (measured in hedgerow units) and rivers (measured in river units).

3.2.4 The information required to undertake the calculation is described below.

3.3 Baseline Data

3.3.1 All baseline and post-development habitats within the Order Limits have been included within the calculation to provide the baseline and post-development biodiversity values.

3.3.2 Phase 1 habitat data collected in November 2018 and updated throughout 2019, 2020 and 2022 (hereafter referred to as the 'baseline') have been utilised to determine the extent of baseline area-based and linear habitats. All baseline habitats defined within the Order limits were assigned a condition, using criteria outlined in the Biodiversity Metric 3.1 – Technical Supplement (Ref 2).

3.3.3 The Baseline Phase 1 Habitat Map (Appendix A) was digitised in Geographic Information System (GIS) to provide area and length measurements of each

habitat type. The habitats recorded during the Phase 1 habitat survey (see **Appendix 8B: Preliminary Ecological Appraisal report** of the Environmental Statement [EN010106/APP/6.2] and **Chapter 8: Ecology and Nature Conservation** of the Environmental Statement [EN010106/APP/6.1]) were converted into UK Habitat Classification (UKHab) categories, for the purposes of the BNG Assessment. These data were then combined and entered into the metric to calculate the baseline biodiversity units.

3.4 River Habitats

- 3.4.1 Habitat categories, associated distinctiveness, and condition scores are approached differently for watercourses. In line with current guidance (Ref 1), a desk study was undertaken to identify all watercourse habitats present within the Order Limits using the 'Discovering Priority Habitat in England' river data map (Ref 11). If the riparian zone is within the Order Limits boundary, the watercourse is assessed in Metric 3.1. Following this, watercourse habitats were assigned a habitat category (according to the criteria: Priority Habitat, Other Rivers and Streams, Ditches, Canals, Culvert) and distinctiveness using Section 41 of the NERC Act's Priority Habitat descriptions (Ref 12).
- 3.4.2 All aquatic habitats to be directly impacted by the Scheme, i.e., through intrusive crossing along the cable corridor or culverting, in this instance were considered to be ditches. Ditches are assessed separately to rivers and streams and are defined for Biodiversity Metric 3.1 as *"artificially-created, linear water-conveyancing features that are less than 5m wide and are likely to hold water for more than four months of the year. Their hydraulic function is primarily for land drainage and although partially or fully connected to a river system, they would not have been present without human intervention"* (Ref 2).
- 3.4.3 Any watercourses that have been scoped into the assessment as ditches under this definition are therefore subjected to a Ditch Condition Assessment, which involves conducting a survey in the field that uses eight criteria to assess condition, which was undertaken. These criteria include water quality and levels, macrophyte abundance and morphotype diversity, presence of marginal vegetation, physical damage, shading and presence of invasive non-native species. The greater the number of criteria the ditch achieves, the better the condition score attributed to it.
- 3.4.4 Several watercourses within the Order limits that are not being impacted by the Scheme, were scoped in as potential areas of enhancement. These were surveyed in August 2022 and include both river and ditch habitats.
- 3.4.5 To assess condition of rivers and streams, Modular River Physical (MoRPh) surveys were undertaken in line with Natural England Guidance. The survey utilises the MoRPh5 survey methodology (Ref 2), to record the physical and vegetation structural features across the river bed, bank face and riparian zone (up to 10 m from the bank top). Using an online tool, the results of the field survey are combined with a desk-based assessment of the indicative geomorphic type of the river to generate a watercourse condition.
- 3.4.6 Habitat classification, length measurement values, strategic significance, condition data and watercourse and riparian encroachment information were then

inputted to the metric to determine the baseline biodiversity units for river habitats within the Order Limits boundary.

3.5 Post-development Data

- 3.5.1 The proposed landscape and habitat planting for the Scheme (shown in **Figure 3-1: Sunnica East Site A and B Parameter Plan** and **Figure 3-2: Sunnica West A and B Parameter Plan** of the Environmental Statement [EN010106/APP/6.3] and in the Outline Landscape Environmental Management Plan (OLEMP) were digitised in GIS to create the post-development habitat data, which were used to provide the measurements of the habitats to be retained and created within the Scheme.
- 3.5.2 The post-development habitat data were utilised to determine the post-development biodiversity units. Target conditions have been selected in accordance with the Natural England Biodiversity Metric 3.1 User Guide and Technical Supplement.
- 3.5.3 On receipt of the DCO, long-term ecological management and maintenance for the Order limits will be implemented through detailed Landscape and Ecological Management Plans (LEMP) in accordance with the OLEMP. Therefore, target condition scores for the proposed habitats have been predicted in accordance with Biodiversity Metric 3.1 User Guide and Technical Supplement (Ref 2) and using professional judgement to ensure the condition scores selected were realistic and achievable.

3.6 Strategic Significance

- 3.6.1 Metric 3.1 requires that the strategic significance of all baseline and post-development habitats be defined. Strategic significance refers to areas of local priority for biodiversity and nature improvement, identified within local planning policies. As part of this assessment, the relevant local planning policy documents (see Table 2-1) were reviewed to determine the strategic significance of the habitats on Site. In this instance the application of strategic significance has been guided by the habitats presence within the East Cambridgeshire Nature Recovery Network (ECNRN). Table 2-2 sets out the habitats present within and outside the East Cambridgeshire Nature Recovery Network and the rationale for assigning Strategic Significance values.

2-2 Strategic Significance (ECNRN = East Cambridgeshire Nature Recovery Network)

Habitats	Within NRN	Rationale	Outside NRN	Rationale
Lowland mixed deciduous woodland	High	Contributes to ECNRN	Medium	Mapped as priority habitat but not mapped in local strategy
Lowland calcareous grassland	None Present	NA	Medium	Mapped as priority habitat but not mapped in local strategy

Habitats	Within NRN	Rationale	Outside NRN	Rationale
Lowland dry acid grassland	None Present	NA	Medium	Mapped as priority habitat but not mapped in local strategy
Mixed scrub	High	Contributes to ECNRN	Low	Not in local strategy/ no local strategy
Other coniferous woodland	High	Contributes to ECNRN	Low	Not in local strategy/ no local strategy
Other lowland acid grassland	High	Contributes to ECNRN	Low	Not in local strategy/ no local strategy
Other neutral grassland	High	Contributes to ECNRN	Low	Not in local strategy/ no local strategy
Other woodland; broadleaved	High	Contributes to ECNRN	Low	Not in local strategy/ no local strategy
Other woodland; mixed	High	Contributes to ECNRN	Low	Not in local strategy/ no local strategy
Ponds (Priority Habitat)	None Present	NA	Medium	Mapped as priority habitat but not mapped in local strategy
Cereal crops	Low	Does not contribute to the ECNRN	Low	Not in local strategy/ no local strategy
Developed land; sealed surface	Low	Does not contribute to the ECNRN	Low	Not in local strategy/ no local strategy
Modified grassland	Low	Does not contribute to the ECNRN	Low	Not in local strategy/ no local strategy
Ruderal/Ephemeral	Low	Does not contribute to the ECNRN	Low	Not in local strategy/ no local strategy
Vacant/derelict land/ bare ground	Low	Does not contribute to the ECNRN	Low	Not in local strategy/ no local strategy

3.7 Assumptions and limitations

- 3.7.1 All habitat areas and lengths have been measured manually using ArcGIS based on the Phase 1 Habitat Plan (shown in Figure 8-3 of Chapter 8 of the Environmental Statement [EN010106/APP/6.1]) and the proposed landscape and habitat planting for the Scheme shown in **Figures 3-1** and **3-2** of the Environmental Statement [EN010106/APP/6.3] and the OLEMP. Habitat areas are therefore considered to be approximations only.
- 3.7.2 The total areas of the baseline and post-development plans may vary slightly within the metric calculation. This difference is caused by the rounding of areas of individual habitats within the dataset to two decimal places and the merging of third-party spatial datasets. This has a negligible impact on the BNG Assessment as a whole.
- 3.7.3 It is acknowledged that future changes to the metric will occur during the pre-construction iteration of the BNG calculation. These changes may include elements such as refining advanced or delayed habitat creation timings and the accounting for the creation of potential sustainable drainage features.
- 3.7.4 It is understood that habitats created and enhanced as part of the Scheme will be subject to appropriate ongoing management and monitored to enable correct establishment and growth, and that remedial action will be taken if this does not proceed as expected, otherwise the target conditions used in the calculations may not be met. The OLEMP will be the mechanism for delivering this monitoring and management.

The treatment of under panel grassland

- 3.7.5 Guidance published by BRE (Ref 13) recognises that on average 95% of a site used for solar farm development is “still accessible for plant growth and potentially for wildlife enhancements and complementary agricultural activities such as conservation grazing”. As such 95% of the solar array footprint has been categorised as ‘modified grassland’ in ‘Moderate’ condition with the remaining 5% allocated within the metric as ‘developed land - sealed surface’ to consider array infrastructure.
- 3.7.6 Seed mixes specified for these areas within any long-term management and monitoring plan should favour nectar and pollen rich species that are both stress and shade tolerant. This approach is supported by RSPB (Ref 14) which states “biodiversity gains are possible where intensively cultivated arable or grassland is converted to extensive grassland and/or wildflower meadows between and/or beneath solar panels and in field margins”.
- 3.7.7 Areas of modified grassland under panels have been assigned a post-development target condition of ‘moderate’ to acknowledge both the prolonged levels of shading these areas will receive over the lifetime of the Scheme and the seed mixes and management prescriptions as specified in the OLEMP.

The approach to woodland loss

3.7.8 This assessment considered all habitat losses, including those during construction from the temporary location of compounds, access routes and other activities associated with the Scheme. It is recognised that the Arboricultural Impact Assessment (AIA) [EN010106/APP/8.46] identifies, that in a worse-case scenario, 15,650m² of tree canopy cover will potentially be lost to facilitate construction of the Scheme, e.g., to widen existing access points and internal roads. However, at Gate 5 the position presented in the Ecological Impact Assessment and version 003 of the BNG report, considered that there was sufficient flexibility in the Works Plans to avoid woodland loss at the detailed design stage and that the level of impact will not be realised.

3.7.9 However, at Gate 7 woodland loss has been incorporated into the BNG calculations.

The approach to Stone Curlew mitigation

3.7.10 Provisional locations of 10 Stone Curlew Mitigation plots have been proposed within ECO1 (3 plots), ECO2 (3 plots) and ECO3 (4 plots). These areas will be 'micro-sited' within these areas in response to each plots archaeological features. Within the metric calculation it has therefore been assumed that 20ha of ephemeral habitats are present across these three field units.

3.7.11 To ensure transparency between the mitigation provided for Stone Curlew and the additionality of wider habitat enhancements intended to ensure the delivery of BNG the scheme has sought to ensure that at least 10% of the BNG delivered is delivered through habitat retention, enhancement or creation activities that is not required to mitigate or compensate for protected species impacts. Defra, when summarising their feedback on the recent BNG consultation, have provided the following example (Ref 15):

"If a development has a baseline score of 10 biodiversity units and needs to achieve a score of 11 units, at least 1 unit should come from separate, non-species mitigation, activities".

3.7.12 Therefore, as Sunnica has a baseline score of 2997.92 biodiversity units it would need to achieve a unit value of 3297.71 units to deliver a 10% net gain of which at least 299.79 units would need to be delivered by non-mitigation related habitat enhancement, mitigation or creation to demonstrate the required approach to additionality.

The approach to temporary impacts

3.7.13 Where temporary access points or visibility splays are proposed, hedgerows have been assumed to be temporarily lost and subsequently reinstated.

3.7.14 Where permanent access points or visibility splays are proposed, permanent hedgerow loss has been assumed.

The approach to created grassland types

3.7.15 The post-development plan assumes the creation and retention of grassland of varying condition and type. This variation is a reflection of the varying soil types

across the 1,057 ha site. Where grassland is proposed to be created over soils with a calcareous influence 'Poor' condition 'Lowland calcareous grassland' has been selected as a target habitat for creation. Similarly, where underlying soils display an acid influence 'Moderate' condition 'Other lowland acid grassland' is the target habitat for creation. This variation in condition has been included in the metric to take into account the lack of an 'other calcareous grassland' option within the metric.

The approach to Arable Flora

- 3.7.16 The BNG technical note (Ref 2) states: "Where field margins meet the definition of a 'better' or higher distinctiveness habitat they should be mapped as such within the metric".
- 3.7.17 As such in the baseline and post development calculations all high value arable margins have been captured within their associated grassland habitat categories.
- 3.7.18 The environmental masterplan also illustrates 1.13 of indicative arable margin. As these are mapped indicatively these have been captured as the lower distinctiveness "Cropland - Arable field margins game bird mix" with its associated condition score of 1 (Condition Assessment N/A).

Assumptions relating to river and stream habitats

- 3.7.19 The Scheme will only result in those impacts to the watercourses as described in this report within the post-development section below.
- 3.7.20 There are some watercourses and ditches within the Order limits that are not included within this BNG assessment as there will be no impacts to these watercourses or their riparian zones (10 m) from the bank-top either side, or ditches. However, these are assessed in the WFD assessment presented in Appendix 9B of this Environmental Statement [EN010106/APP/6.2].
- 3.7.21 The MoRPh and ditch condition assessment surveys assess watercourse condition based on physical and morphological features, not biological elements of watercourse condition. These are assessed in Appendix 8E of this Environmental Statement [EN010106/APP/6.2].
- 3.7.22 Some ditches were scoped out of the river metric based on the assessment that they likely do not hold water for four months of the year (Ref 2), and therefore they are assessed as part of the adjacent terrestrial area-based habitats or associated features.
- 3.7.23 Enhancements to the impacted wet ditches will consist of soft engineering techniques and improvements to the riparian corridor to improve channel diversity and biodiversity. These measures will be defined at detailed design stage, following grant of the DCO and prior to construction.
- 3.7.24 Reinstatement of watercourses and ditches after intrusive works (culverting or open trenching) will aim to provide an improved channel form with enhancement works to be carried out (where relevant and appropriate to do so) up to 10 m upstream and downstream of the open trench or culvert. The River Metric

assessment assumes ("a best-case scenario") that 10 m upstream and 10 m downstream of the works will be enhanced.

- 3.7.25 Lee Brook (WFD water body ID: GB105033042970), which runs alongside the Order limits boundary at West Site A, was identified as an area of potential enhancement. However, at the time of survey, the watercourse was dry with terrestrial vegetation growing in the channel following a long period of extreme dry weather in summer 2022. As a result, a MoRPh survey could not be completed, and Lee Brook was scoped out of the river metric.
- 3.7.26 MoRPh and ditch condition assessment surveys for areas of potential enhancement were undertaken in August 2022 during a period of extreme dry weather in the United Kingdom, resulting in very low flows. Therefore, suggested enhancement measures are tailored to the prevailing habitat conditions, which are likely to become more normal as such extreme weather events increase in frequency. Therefore, this is not considered to have had an adverse effect on the watercourse condition generated, or the enhancement measures recommended as a result.

4 Results

4.1 On-site baseline habitats

- 4.1.1 The Order limits covers an area of 1,057.57 ha and the land use is dominated by arable fields. There are mature trees, small, wooded copses, and ponds. In addition, there are approximately 30.82 km of hedgerows and 2.47 km of river and ditch habitats within the Order Limits.

Area-based habitats

- 4.1.2 A description of the area-based habitats present within the Order limits is provided below. The habitats listed in the following sections are presented in their UKHab classification.

Woodland and forest – other woodland; broadleaved

- 4.1.3 Small areas of newly planted broad-leaved woodland are present in the Sunnica East sites A and B and mostly consisted of Field Maple *Acer campestre*, Cherry *Prunus avium* and Ash *Fraxinus excelsior*. Many of the plantation woodlands found scattered along the Grid Connection Routes consisted of mixed broad-leaved and coniferous species.

Woodland and forest - other coniferous woodlands

- 4.1.4 This habitat was predominantly found within the Sunnica East Site B, with larger blocks present in the eastern section. These areas of woodland either solely consisted of or were dominated by Scots Pine *Pinus sylvestris*. In the western section of the Sunnica East Site, strips of mature Scots Pine formed field boundaries; planted as wind breaks and typical of the Breckland landscape. Dominant species of the ground flora in these areas were Chickweed *Stellaria media*, Common Nettle *Urtica dioica* and Dog's Mercury *Mercurialis perennis*. A few small areas of young conifer plantation woodland were present within the

Sunnica West Sites and along the Grid Connection Routes, which either solely consisted of, or were dominated, by Scots Pine.

Woodland and forest – lowland mixed deciduous woodland

- 4.1.5 A number of mature semi-natural broad-leaved woodland blocks are present across the Sunnica West A and along the Grid Connection Routes. These woodland blocks typically included species such as Oak *Quercus robur*, Silver Birch *Betula pendula*, Field Maple, Beech *Fagus sylvatica*, Walnut *Juglans regia* and Ash with an understory of Privet *Ligustrum vulgare* and Hawthorn *Crataegus monogyna*.

- 4.1.6 A few areas of semi-natural broad-leaved woodland are present across the Sunnica East Sites A and B. These typically included species such as Beech and Ash with an understory of Snowberry *Symphoricarpos alba*, Privet and Hawthorn.

Heathland and shrub – mixed scrub

- 4.1.7 Pockets of dense and scattered scrub are throughout the Order Limits, consisting predominantly of Hawthorn and Blackthorn *Prunus spinosa*.

Woodland and forest – other woodland: mixed

- 4.1.8 Many of the woodlands found scattered across the Sunnica East Sites A and B consisted of mixed mature broad-leaved and coniferous specimens. Coniferous species were predominantly planted Scot's Pine, but a wide variety of broad-leaved species were present, including Field Maple, Cherry, Buckthorn *Rhamnus cathartica*, Oak, Sycamore *Acer pseudoplatanus*, Beech and Ash. Many of the woodlands found scattered across the Sunnica West Site A consisted of mixed mature broad-leaved and coniferous specimens. Coniferous species were predominantly planted Scots Pine, but a wide variety of broad-leaved species were present, Field Maple, Cherry, Buckthorn, Oak, Sycamore, Beech and Ash.

Acid Grassland – lowland dry acid grassland

- 4.1.9 Approximately 6.41 ha of the site is categorised as U1 *Festuca ovina-Agrostis capillaris-Rumex acetosa* grassland or categorised as SD10 *Carex arenaria* dune community. All are examples of lowland dry acid grassland Priority Habitat.

Acid Grassland – other lowland acid grassland

- 4.1.10 Approximately 5.77 ha, two small areas within Sunnica East Site B, of the site is categorised as 'other lowland acid grassland'. These areas include a semi-improved grassland strip 10-20 m wide between a conifer woodland and arable fields of light acidic sandy soil with some calcareous influence: and a small area of unmanaged grassland and ephemeral/short perennial vegetation outside a corner of a livestock field.

Grassland – lowland calcareous grassland

- 4.1.11 This habitat is found around an irrigation reservoir on the Sunnica East Site B and is surrounded by arable fields. It comprises tall unmanaged grassland and ruderal herbs with calcareous influences (from chalk exposed through creation of

the reservoir). The flora has frequent to abundant Wild Marjoram *Origanum vulgare*, Lady's Bedstraw *Galium verum*, False-oat Grass *Arrhenatherum elatius*, Mugwort *Artemisia vulgaris*, Common Nettle and Bramble *Rubus fruticosus*, with rare to occasional Clustered Bellflower *Campanula glomerata*, Greater Knapweed *Centaurea scabiosa*, Dropwort *Filipendula vulgaris* and Small Scabious *Scabiosa columbaria*.

Grassland – other neutral grassland

- 4.1.12 Small areas of semi-improved neutral grassland, marshy grassland and semi-improved grassland are found across the Order Limits.

Grassland – modified grassland

- 4.1.13 A number of agricultural fields across the Order Limits consisted of Perennial Ryegrass *Lolium perenne* dominated improved grasslands. Isolated areas of semi-improved grassland are also present across Sunnica West A including clearings within mixed woodland in Sunnica West Site A, with dominant Cock's-foot *Dactylis glomerata*, False Oat-grass and Yorkshire-fog *Holcus lanatus*, along with Knapweed *Centaurea* sp. and frequent Tormenitil *Potentilla erecta* and Agrimony *Agrimonia eupatoria*.

Sparsely Vegetated Land – ruderal / ephemeral

- 4.1.14 Small areas of tall ruderal and ephemeral habitat are present throughout the Order Limits and a number of the areas of hardstanding present across the Sunnica West Site A have ephemeral vegetation and bryophyte communities, including Silver Moss *Bryum argenteum*.

Cropland – cereal crops

- 4.1.15 The majority of the Order Limits consists of arable land with bordering grassland and hedgerows.

Ponds – Non-priority habitat

- 4.1.16 Several ponds located throughout the Order Limits, associated with woodland and scrub along arable boundaries.

Urban – vacant / derelict land / bare ground

- 4.1.17 Areas of bare ground can be found throughout the Order Limits, with larger areas of bare ground on the Sunnica East Sites A and B, with disturbed ground, which forms a pig farm on both sites.

Urban – developed land: sealed surface

- 4.1.18 Small areas of hardstanding are scattered throughout the Order Limits, consisting mainly of roads and access tracks. A small building is also present on Sunnica East Site B.

Linear-based habitats (hedgerows and trees)

- 4.1.19 A description of hedgerows and trees present within the Order Limits, summarised below. The habitats listed in the following sections are presented in their UKHab classification.

Line of trees

- 4.1.20 Individual trees are present across the Order Limits. Individual trees have been categorised in UK Habitats as 'Line of Trees'.

Native hedgerow

- 4.1.21 Native species-poor hedgerows can be found at field boundaries across the Order Limits. These species-poor hedgerows have been categorised in UKHab as 'Native Hedgerow'.

Native species-rich hedgerow with trees

- 4.1.22 One native species-rich hedgerow with trees includes Elm sp., Field Rose *Rosa arvensis*, Beech, Common Hawthorn, Wild Privet *Ligustrum vulgare* and Blackthorn.

Native hedgerow with trees

- 4.1.23 Native species-poor hedgerows with trees can be found at field boundaries across the Order Limits. These species-poor hedgerows have been categorised in UK Habitats as 'Native Hedgerow with Trees'.

Linear-based habitats (rivers and ditches)

- 4.1.24 A total of 2.47 km of river/ditch habitats were scoped in and assessed within the baseline habitats, consisting of 0.03 km of culvert impacted by the Scheme and 1.03 km of ditch habitat and 1.41 km of Priority Habitat Stream.

- 4.1.25 The directly impacted habitats are comprised of:

- i. 393 m of a tributary ditch of the River Lark at TL 66870 74570 (between E01 and E02, as shown in **Figure 3-1** of the Environmental Statement **[EN010106/APP/6.3]**);
- ii. 96 m of a tributary ditch of the River Snail at TL 63328 69099 (W7); and
- iii. 66 m of a tributary ditch in the New River catchment at TL 60273 68642 (W13).

- 4.1.26 Habitats identified as areas of potential enhancement are comprised of:

- i. 1,414 m of the Kennett – Lee Brook (Lee Brook) between TL 66465 74887 and TL 66396 72945; and
- i. 500 m of a tributary ditch of the River Lark at TL 66431 74677 (referred to as Ditch 02 in **Appendix 8E** of the Environmental Statement **[EN010106/APP/6.2]**).

Impacted ditches

- 4.1.27 The tributary of the River Lark (E01-E02) is a linear drainage ditch bordered by pasture fields in The Fen. It held approximately 20 to 30 cm of clear water at the

time of survey. A mixture of emergent, submerged, and floating macrophytes were present in the tributary and it was generally unshaded and dominated by silt substrate. No non-native plant species were recorded along the stretch surveyed. It is culverted for 11 m under a track between fields. This culverted section is automatically assigned 'Poor' condition within the metric. The tributary fits the definition of a ditch and is therefore not a Priority River habitat and is not mentioned in the Local Plan, River Basin Management Plan or Catchment Plans. It is therefore classed as 'Low potential/action not identified in any plan' within the metric, which equates to a low strategic significance. The ditch condition assessment showed that the remaining 382 m of ditch was in moderate condition within the Scheme boundary and is therefore included within the baseline habitats metric calculation as such.

4.1.28 The tributary of the River Snail (W7) is a ditch that drains from the Fordham Woods Nature Reserve, although in the stretch surveyed it was bordered by pasture fields. Access was limited to a small stretch of this tributary, however the water that was observed was clear, heavily shaded by trees and the bed was dominated by leaf litter and silt. No non-native plant species were recorded along the stretch surveyed. It was culverted for 6 m under a track between fields. This culverted section is automatically assigned 'Poor' condition within the metric. The tributary fits the definition of a ditch and is therefore not a Priority River habitat and is not mentioned in the Local Plan, River Basin Management Plan or Catchment Plans. It is therefore classed as 'Low potential/action not identified in any plan' within the metric, which equates to a low strategic significance. The ditch condition assessment on the remaining open section of the tributary showed that it was in poor condition. A total of 90 m of this ditch was present within the Scheme boundary. This is therefore included within the baseline habitats metric calculation.

4.1.29 The tributary of the New River (W13) runs parallel to the B1102 Ness Road and is bordered by pasture fields to the right. At the time of survey, it was mostly dry and unshaded, although some wetted areas were dominated by bulrush. It has steep banks, likely due to historic dredging and its bank tops had been recently cut back at the time of survey. No non-native plant species were recorded along the stretch surveyed. It is culverted for 8 m under a track. This culverted section is automatically assigned 'Poor' condition within the metric. The tributary fits the definition of a ditch and is therefore not a Priority River habitat and is not mentioned in the Local Plan, River Basin Management Plan or Catchment Plans. It is therefore classed as 'Low potential/action not identified in any plan' within the metric, which equates to a low strategic significance. The ditch condition assessment showed that the remaining open section of the tributary is in poor condition and a total of 58 m of this is present within the Order Limits and was therefore included within the baseline habitats metric calculation.

Watercourses and ditches identified for enhancement opportunities

4.1.30 The following watercourses were scoped in as potential enhancement opportunities with the aim of achieving a 10% net gain in the river metric.

4.1.31 The Kennett – Lee Brook (Lee Brook) (WFD water body ID: GB105033043020) flows north from Freckenham through Lee Farm until it joins the River Lark; 240 m of the river lies within the Order Limits, plus an additional 1,174 m² of its riparian

zone. At the southern end of the reach near Beck Road, substrate consisted of a gravel and sand bed with areas of fine silt deposits. At the northern end of the reach there was no perceived flow and a layer of floating macrophytes covering the whole width of the river. Substrate here consisted of silt and leaf litter. The river is bordered by arable fields for most of its length and its riparian zone consists mainly of grassy banks and short reaches of trees. An area of marshy reedbed is present towards the northern end of the reach. The Kennett – Lee Brook (Lee Brook) is assigned as having major watercourse encroachment, due to the presence of a weir directly upstream of the bridge at Beck Road. Based on the MoRPh survey, the river is considered to be in “Moderate” condition. The section of the Kennett – Lee Brook (Lee Brook) within the Order Limits is a Priority River habitat and is mentioned within the Chalk Stream Restoration Strategy (Ref 16). The Kennett – Lee Brook (Lee Brook) has been recorded in the metric as “Within River Basin Management Plans” and is therefore classed as being of high strategic significance.

- 4.1.32 The tributary to the River Lark (Ditch 02) runs parallel to the Kennett – Lee Brook (Lee Brook) and is bordered by arable fields and marshy grassland. At the time of survey, the water was clear, heavily shaded by bankside vegetation and the bed was dominated by leaf litter and silt. The ditch has steep banks, likely due to historic dredging, with un-managed bank tops. No non-native plant species were recorded in the reach surveyed. The tributary fits the definition of a ditch and is therefore not a Priority River habitat and is not mentioned in the Local Plan, River Basin Management Plan or Catchment Plans. It is therefore classed as ‘Low potential/action not identified in any plan’ within the metric, which equates to a low strategic significance.

4.2 Summary of BNG Results

- 4.2.1 The site totals 1057.57 ha and for ease of assessment has been subdivided into 50 individual field compartments.
- 4.2.2 Capturing the occupancy and extent of habitats within each field compartment has resulted in metric calculations with over 670 individual data points.
- 4.2.3 Therefore, data is not reproduced within this report in full but within the following annotated BNG metric calculator excel files:
- Sunnica BNG Metric 1: All field parcels within the East Cambs Nature Recovery Network
 - Sunnica BNG Metric 2: All field parcels outside the East Cambs Nature Recovery Network
 - Sunnica BNG Metric 3: Hedgerows and individual trees
 - Sunnica BNG Metric 4: River Metric
- 4.2.4 A summary of the results is shown in **Tables 4-3 to 4-6**. Based on the current Post-Development Plan, the Scheme would result in an estimated net gain of 40.25% in habitats, a net gain of 28.09% in hedgerows, and a net gain of 11.37% rivers.

Table 4-3: Summary Habitat Area Changes

Habitats	Baseline Area	Area Retained	Area Enhanced	Area Created
Arable field margins game bird mix	na	na	na	1.13
Cereal crops	818.08	98.17	na	na
Developed land; sealed surface	12.46	11.80	na	77.45
Lowland calcareous grassland	0.91	0.91	na	93.77
Lowland dry acid grassland	6.41	6.41	na	na
Lowland mixed deciduous woodland	10.53	na	9.68	12.97
Mixed scrub	4.68	3.48	na	2.24
Modified grassland	53.92	15.22	na	444.95

Habitats	Baseline Area	Area Retained	Area Enhanced	Area Created
Other coniferous woodland	5.76	5.71	na	na
Other lowland acid grassland	5.77	4.54	na	150.39
Other neutral grassland	45.50	15.07	na	20.91
Other woodland; broadleaved	3.40	3.26	na	31.53
Other woodland; mixed	16.13	16.06	na	na
Ponds (Priority habitat)	1.58	1.58	na	na
Purple moor grass and rush pastures	na	na	na	4.83
Ruderal/Ephemeral	4.14	0.63	na	20.00
Vacant/derelict land/ bare ground	68.28	4.88	na	na
Urban Trees*	0.77	0.77	na	1.25
Total	1,057.57	187.73	9.68	860.17

* Urban tree areas are excluded from total area to prevent double counting of area; however, the unit contributions are included within the habitat unit total.

Table 4-4: Summary Hedgerow Length Changes (km)

Habitats	Baseline Area	Area Retained	Area Enhanced	Area Created
Line of trees	5.15	4.91	na	na
Line of Trees - Associated with bank or ditch	0.04	0.04	na	na
Native hedgerow	21.41	20.07	na	0.38
Native Hedgerow - Associated with bank or ditch	1.08	0.98	na	0.09
Native Hedgerow with trees	2.60	2.56	na	0.03

Habitats	Baseline Area	Area Retained	Area Enhanced	Area Created
Native Hedgerow with trees - Associated with bank or ditch	0.54	0.51	na	0.03
Native Species Rich Hedgerow	na	na	na	5.56
Total	30.82	29.08	0.00	6.09

Table 4-5: Summary River Length Changes (km)

Habitats	Baseline Area	Area Retained	Area Enhanced	Area Created
Culvert	0.03	0.03	0.00	0.01
Ditches	1.03	0.96	0.06	na
Priority Habitat	1.41	0.00	1.41	na
Total	2.47	0.99	1.47	0.01

Table 4-6: Summary Biodiversity Unit Changes

Area / Linear Units	On-Site Baseline	On-Site Post-Intervention	Total Unit Net Change	Total Net % Change
Habitat Units	2,997.92	4,204.51	1,258.61	40.25%
Hedgerow Units	153.57	196.71	43.14	28.09%
River Units	18.71	20.83	2.13	11.37%

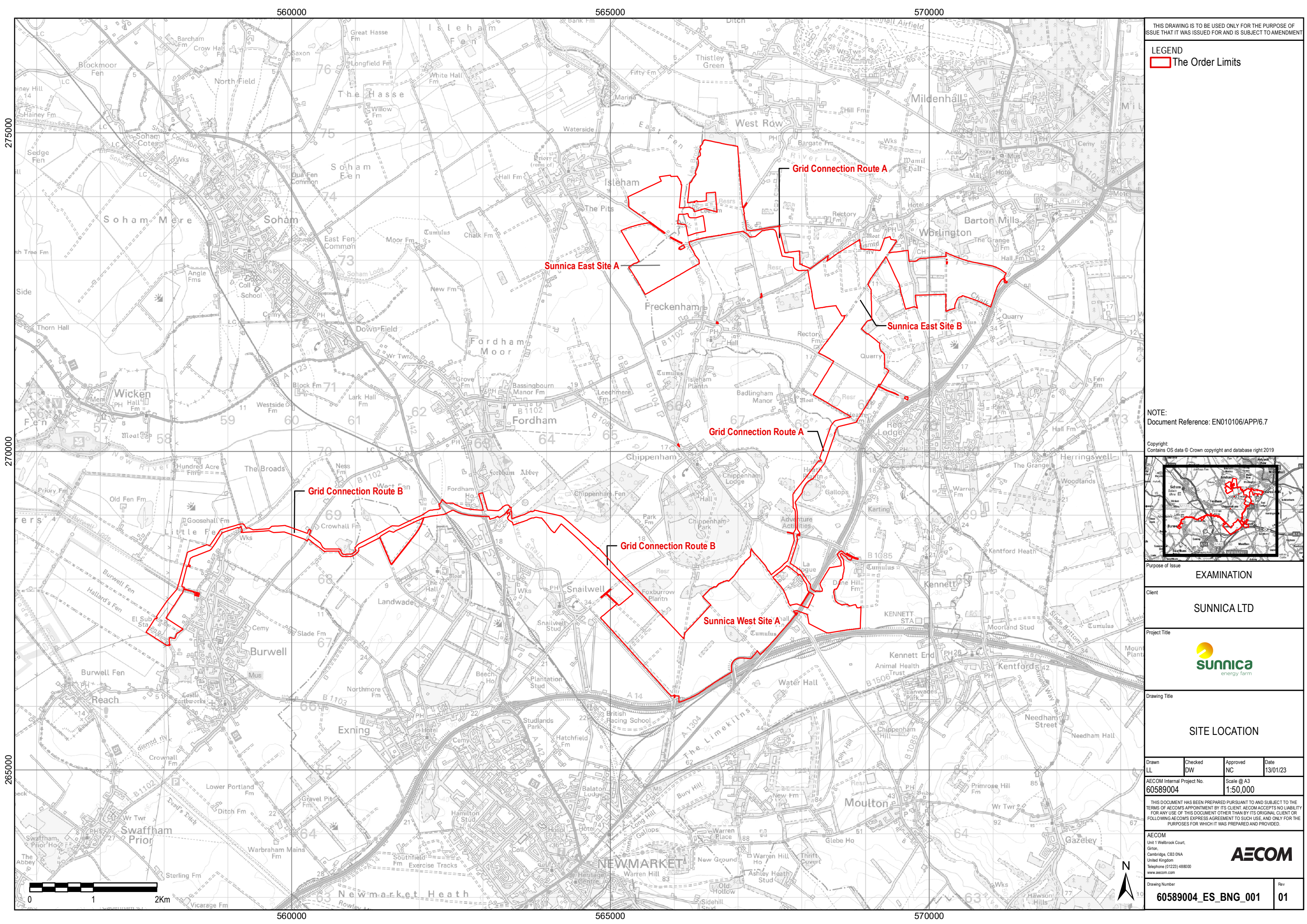
5 Conclusions

- 5.1.1 Based on the current proposals and outlined assumptions, the Scheme is predicted to result in an overall net gain of approximately 40% habitat units, 28% hedgerow units and 11% river units. These values exceed the 10% net gain target for habitat, hedgerow and river units set out in the Environment Act. As the Scheme is expected to achieve the 10% BNG target across all three measures, no further recommendations for habitat creation or enhancement are provided for these habitats.
- 5.1.2 The trading rules within the metric are a set of rules that try to prevent the trading down of habitat distinctiveness. Under the trading rules, losses of habitat are to be compensated for on a “like for like” or “like for better” basis. The trading rules within the Metric are currently satisfied for each level of habitat distinctiveness.
- 5.1.3 Mitigation and compensation measures for protected species may be counted towards a scheme’s biodiversity net gain calculation but those measures should not make up all of a development’s biodiversity net gain. At least 10% of the gain should be delivered through separate activities which are not required to directly mitigate or compensate for protected species impacts. In this instance units generated through the mitigation interventions designed for Stone Curlew deliver a total of 79.08 units, 6.29% of the 1258.61 habitat unit uplift delivered by the scheme. As such, the overall net gain of 40.25% has taken into account the need for additionality when considering the schemes wider environmental planning policy and legislative requirements.
- 5.1.4 It is important to note that the outputs of the metric are dependent on all created and retained and enhanced habitats meeting the target conditions, subject to the criteria outlined within Natural England’s Biodiversity Metric 3.1 Technical Note and within the allotted time to condition. Management methods to meet this condition target have been outlined within the Landscape and Ecology Management Plan brought forward to include the measures set out in the OLEMP. The OLEMP is presented as **Appendix 10I** of the Environmental Statement **[EN010106/APP/6.2]**.
- 5.1.5 All of the habitat enhancement/creation options taken forward will need to be monitored to ensure their correct establishment. Remedial action will need to be undertaken if this does not proceed as expected, otherwise the target conditions used in the calculations may not be met and the predicted biodiversity units might not be achieved. Long-term monitoring and management will therefore be secured through the OLEMP.

6 References

- Ref 1. Natural England's Biodiversity Metric 3.1 User Guide
- Ref 2. Natural England (2022). The Biodiversity Metric 3.1 – Technical Supplement.
- Ref 3. Her Majesty's Stationery Office (2021) National Planning Policy Framework
- Ref 4. East Cambridgeshire District Council Local Plan. Adopted April 2015
- Ref 5. East Cambridgeshire District Council Supplementary Planning Document
Natural Environment September 2020
- Ref 6. East Cambridgeshire District Council 2022 Biodiversity Net Gain
- Ref 7. East Cambridgeshire District Council Supplementary Planning Documents
Renewable Energy Development (Commercial Scale) October 2014
- Ref 8. Forest Heath District Council Core Strategy Adopted 2010
- Ref 9. Forest Heath and St Edmundsbury Local Plan: Joint Development
Management Policies Document (last updated February 2015)
- Ref 10. Fordham Neighbourhood Plan (made December 2018)
- Ref 11. Discovering Priority Habitats in England. River data
- Ref 12. Natural Environment and Rural Communities Act (2006) Section 41.
- Ref 13. BRE (2014) Biodiversity Guidance for Solar Developments. Eds G E Parker
and L Greene
- Ref 14. RSPB Policy Briefing on Solar Energy. December 2014
- Ref 15. DEFRA (2023) Government response and summary of responses: Biodiversity
Net Gain (<https://www.gov.uk/government/consultations/consultation-on-biodiversity-net-gain-regulations-and-implementation/outcome/government-response-and-summary-of-responses>)
- Ref 16. Catchment Based Approach (CaBA). Chalk Stream Restoration Strategy 2021

Appendix A Order Limits

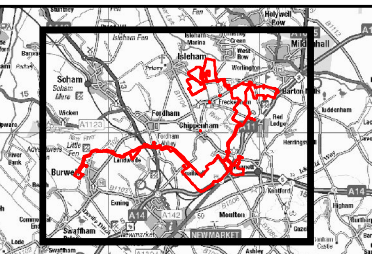


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LEGEND
The Order Limits

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Drawing Title
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AECOM Internal Project No. 60589004		Scale @ A3 1:50,000	

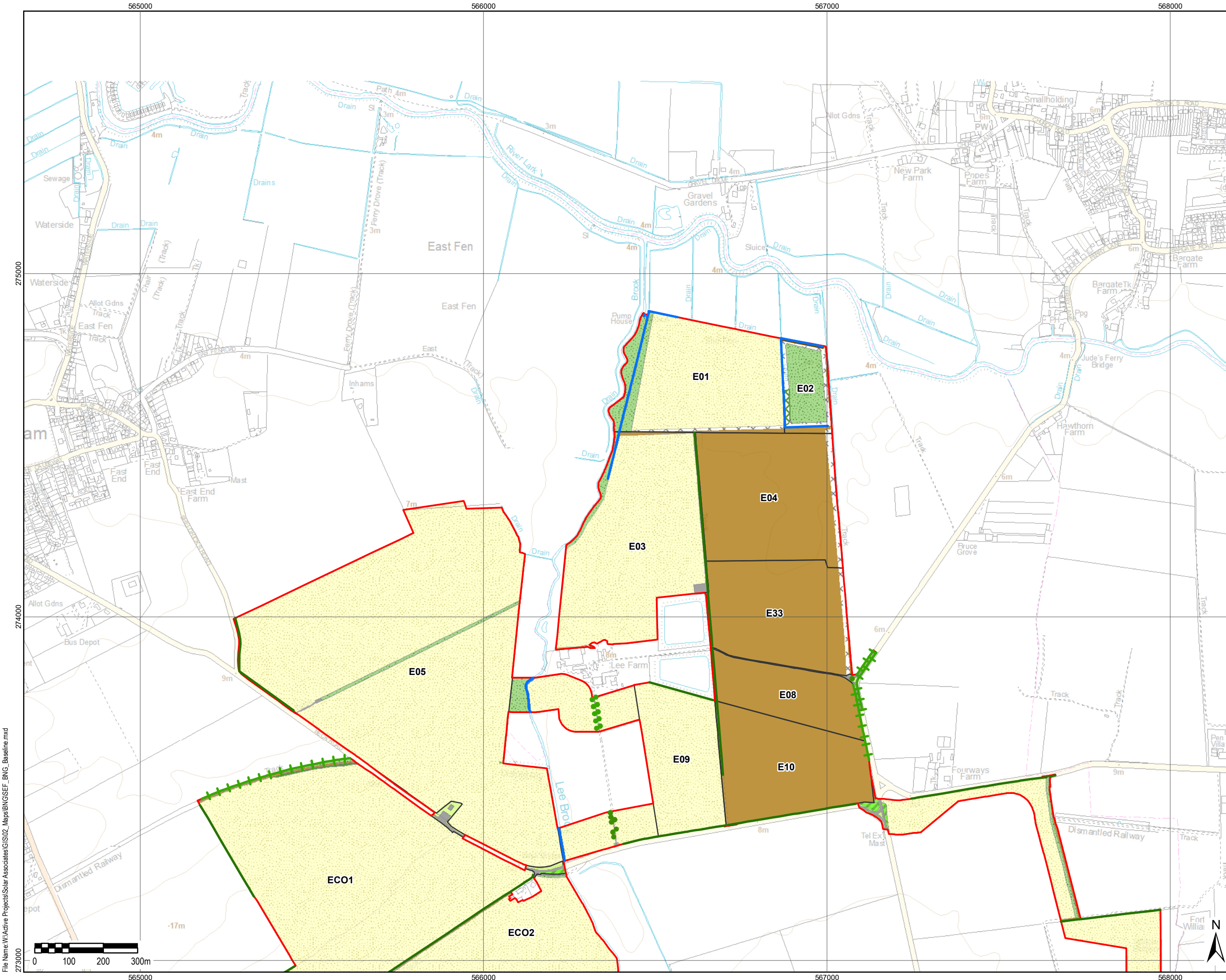
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Appendix B Phase 1 Habitat Plan



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LEGEND

- Order Limits
- Field Reference Boundary
- UK Habitat**
- Other woodland; broadleaved
- Other coniferous woodland
- Lowland mixed deciduous woodland
- Mixed scrub
- Other neutral grassland
- Modified grassland
- Ruderal/Ephemeral
- Cereal crops
- Other rivers and streams
- Vacant/derelict land/ bareground
- Developed land; sealed surface
- Line of trees
- Native hedgerow
- Native hedgerow; with ditch
- Native hedgerow with trees
- Other rivers and streams
- Urban tree

Sheet Layout

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BIODIVERSITY NET GAIN BASELINE

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AECOM Internal Project No. 60589004		Scale @ A3 1:10,000	

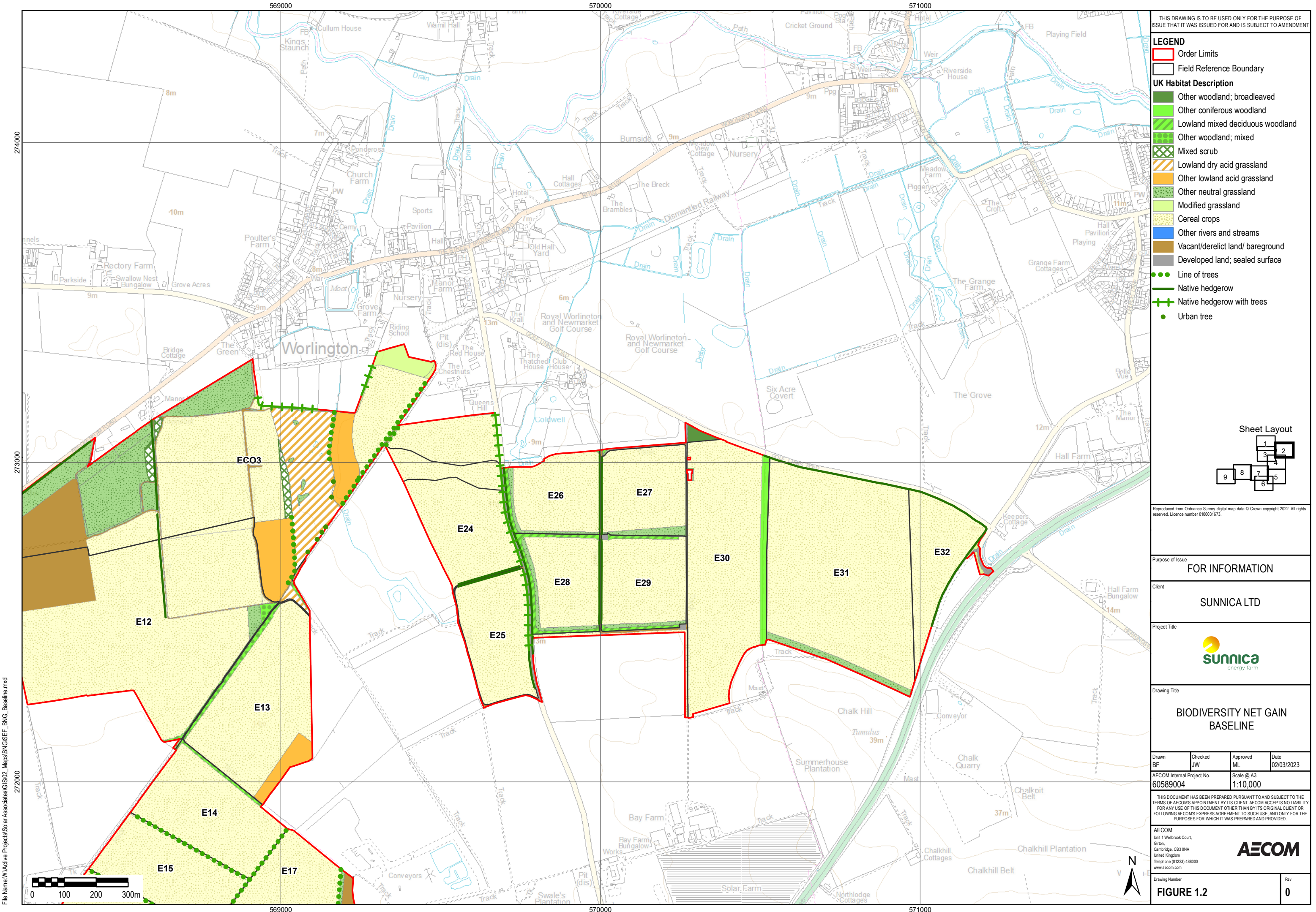
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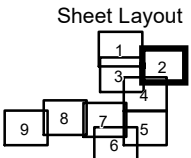
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- LEGEND**
- Order Limits
 - Field Reference Boundary
 - UK Habitat Description**
 - Other woodland; broadleaved
 - Other coniferous woodland
 - Lowland mixed deciduous woodland
 - Other woodland; mixed
 - Mixed scrub
 - Lowland dry acid grassland
 - Other lowland acid grassland
 - Other neutral grassland
 - Modified grassland
 - Cereal crops
 - Other rivers and streams
 - Vacant/derelict land/ bareground
 - Developed land; sealed surface
 - Line of trees
 - Native hedgerow
 - Native hedgerow with trees
 - Urban tree



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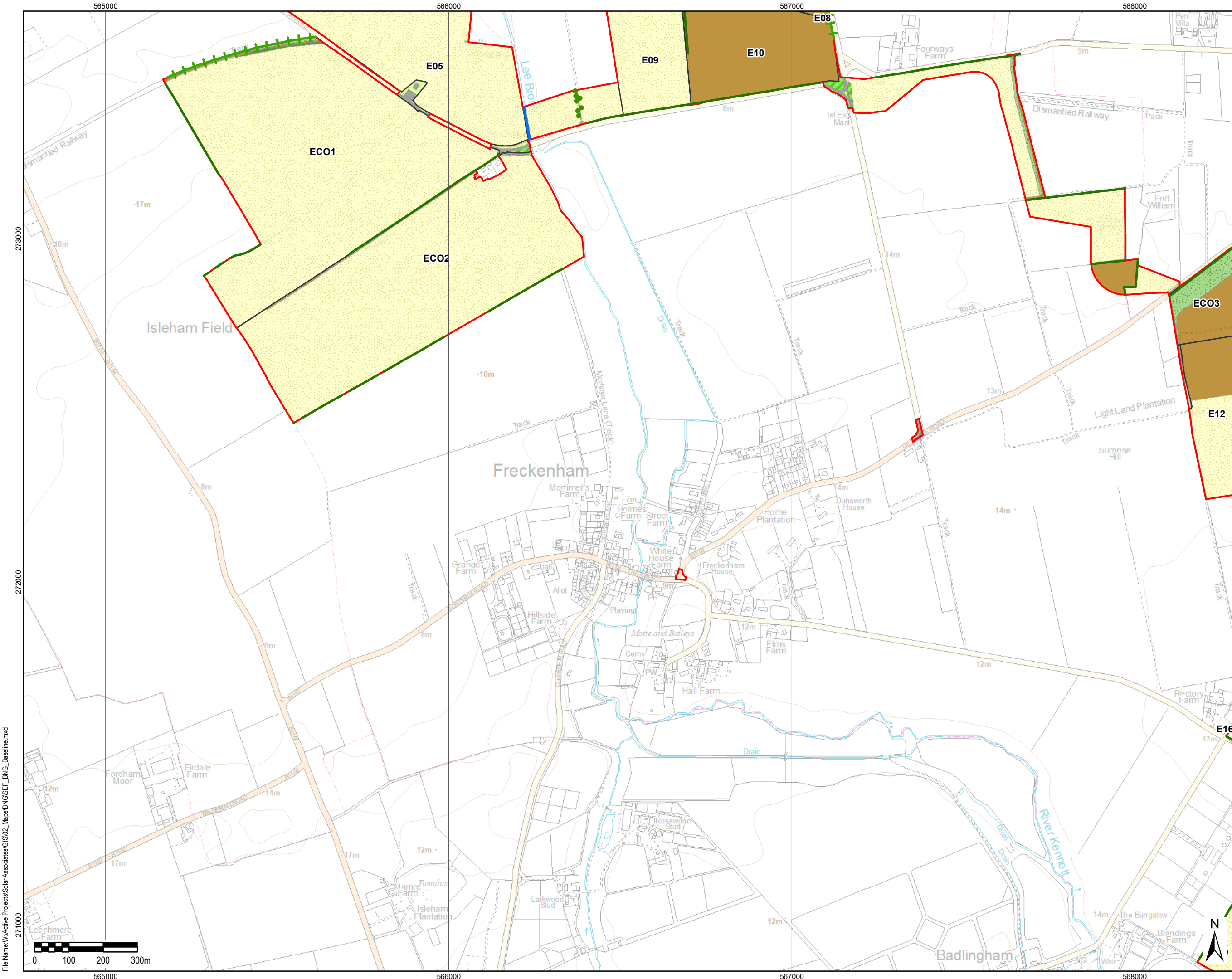
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LEGEND

- Order Limits
- Field Reference Boundary
- UK Habitat Description**
- Other woodland; broadleaved
- Other coniferous woodland
- Lowland mixed deciduous woodland
- Other neutral grassland
- Modified grassland
- Cereal crops
- Other rivers and streams
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- Native hedgerow with trees
- Other rivers and streams
- Urban tree

Sheet Layout

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BASELINE

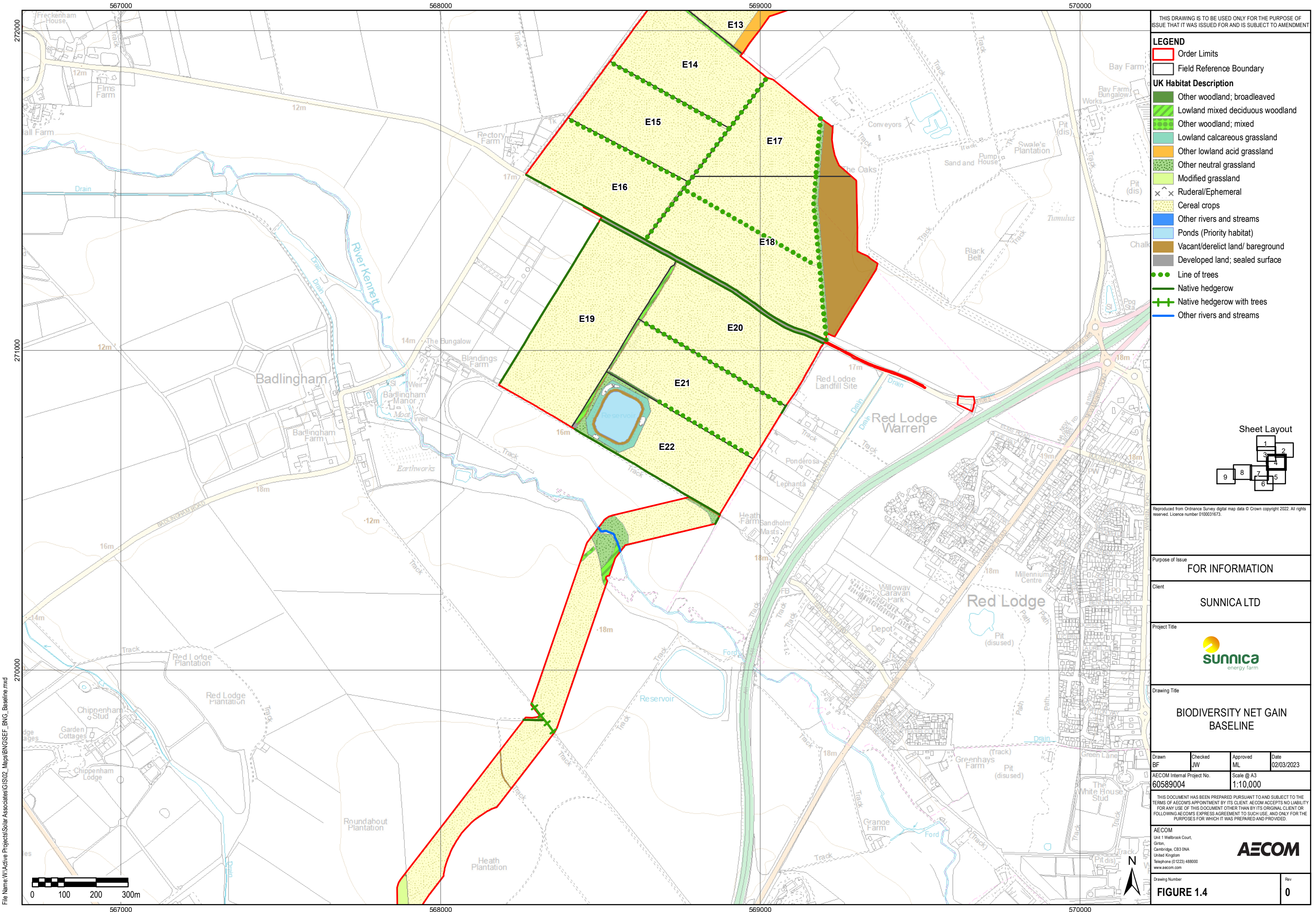
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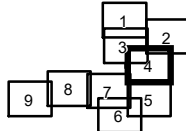


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LEGEND

- Order Limits
- Field Reference Boundary
- UK Habitat Description
 - Other woodland; broadleaved
 - Lowland mixed deciduous woodland
 - Other woodland; mixed
 - Lowland calcareous grassland
 - Other lowland acid grassland
 - Other neutral grassland
 - Modified grassland
 - Ruderal/Ephemeral
 - Cereal crops
 - Other rivers and streams
 - Ponds (Priority habitat)
 - Vacant/derelict land/ bareground
 - Developed land; sealed surface
- Line of trees
- Native hedgerow
- Native hedgerow with trees
- Other rivers and streams

Sheet Layout



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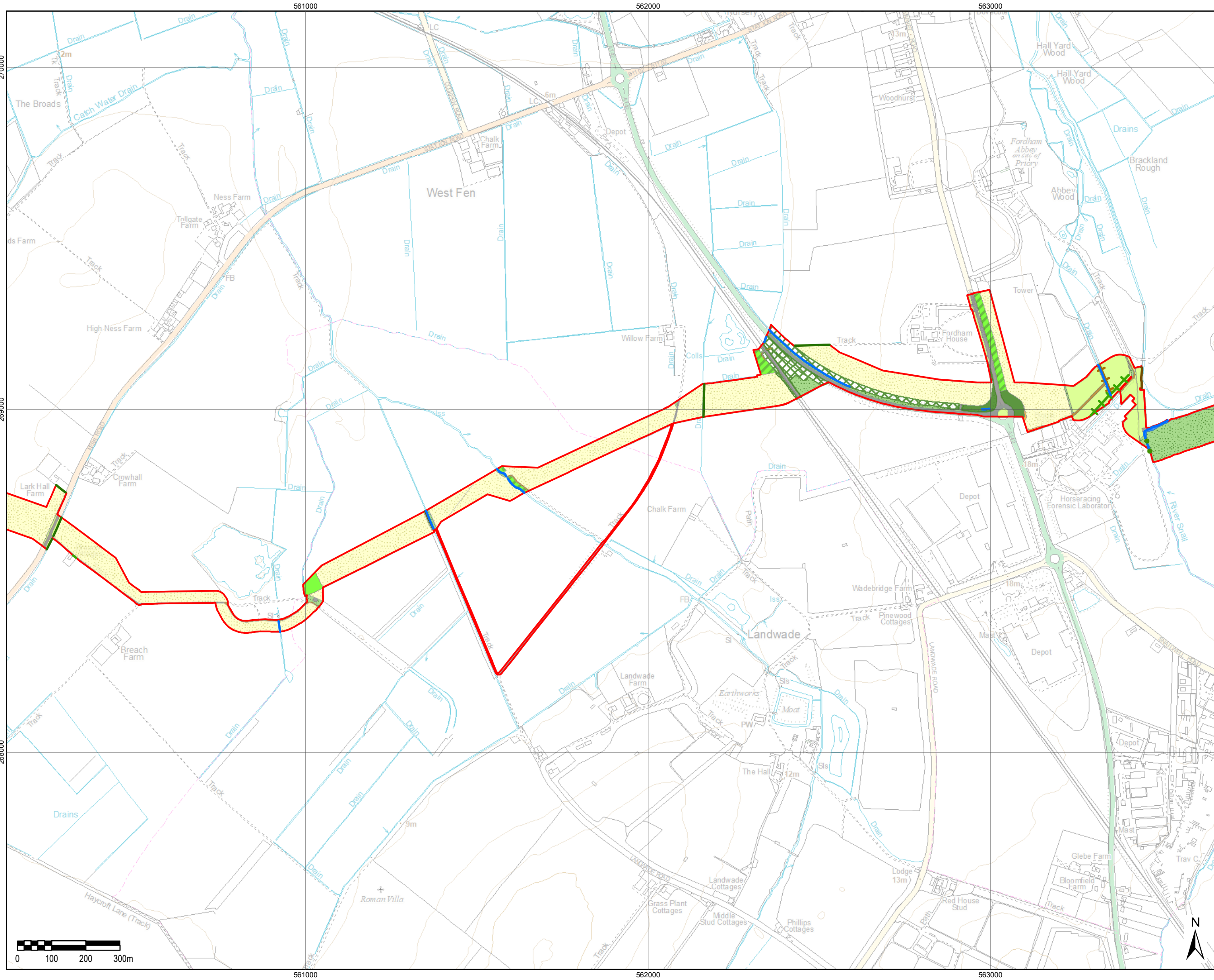
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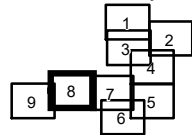


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LEGEND

- Order Limits
- UK Habitat Description**
 - Other woodland; broadleaved
 - Other coniferous woodland
 - Lowland mixed deciduous woodland
 - Other woodland; mixed
 - Mixed scrub
 - Other lowland acid grassland
 - Other neutral grassland
 - Modified grassland
 - Cereal crops
 - Other rivers and streams
 - Vacant/derelict land/ bareground
 - Developed land; sealed surface
 - Native hedgerow
 - Native hedgerow; with ditch
 - Native hedgerow with trees
 - Native hedgerow with trees; with ditch
 - Other rivers and streams
 - Urban tree

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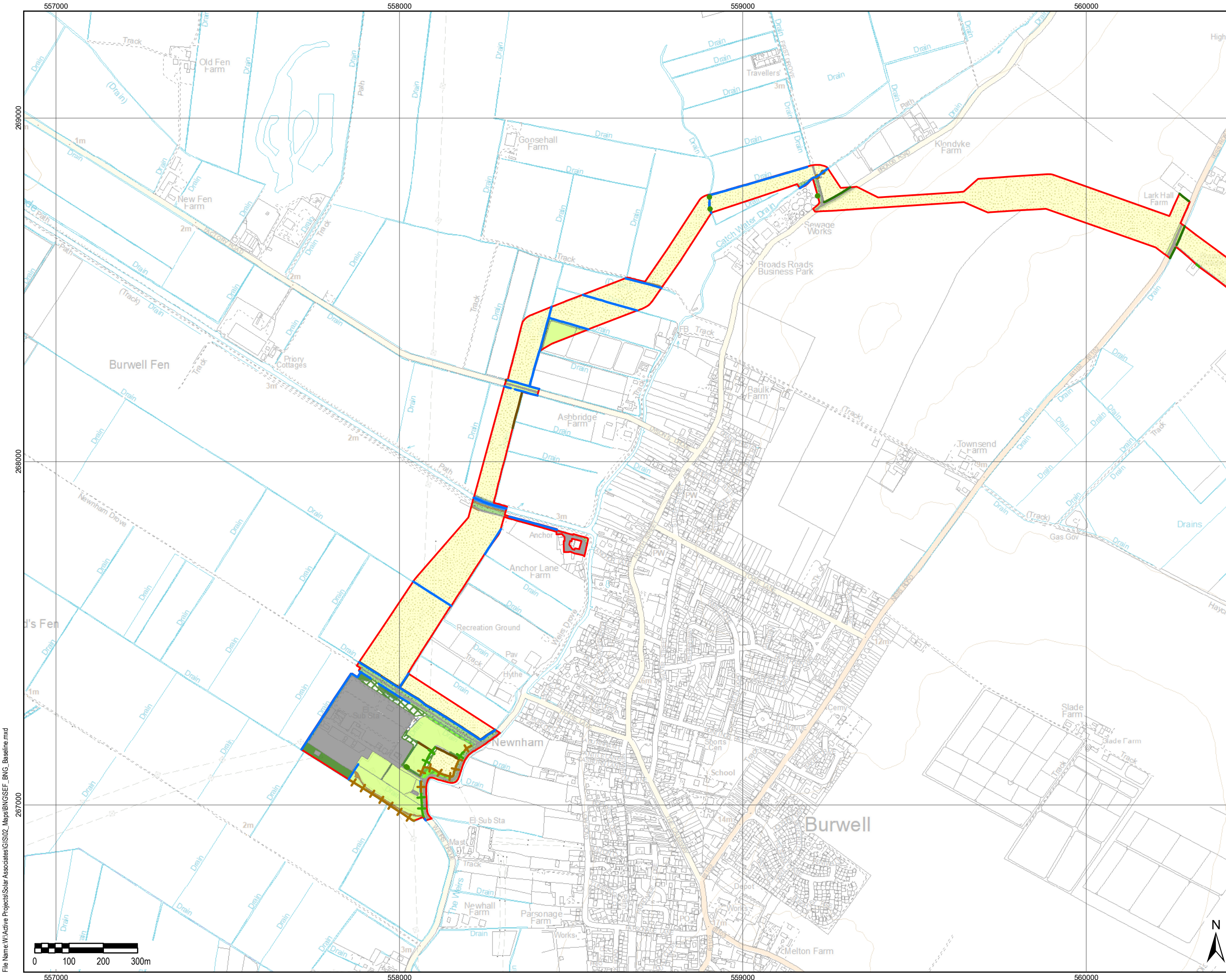
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LEGEND

- Order Limits
- UK Habitat Description**
 - Other woodland; broadleaved
 - Lowland mixed deciduous woodland
 - Mixed scrub
 - Other neutral grassland
 - Modified grassland
 - Ruderal/Ephemeral
 - Cereal crops
 - Other rivers and streams
 - Vacant/derelict land/ bareground
 - Developed land; sealed surface
 - Line of trees; with ditch
 - Native hedgerow
 - Native hedgerow; with ditch
 - Native hedgerow with trees
 - Native hedgerow with trees; with ditch
 - Other rivers and streams
 - Urban tree

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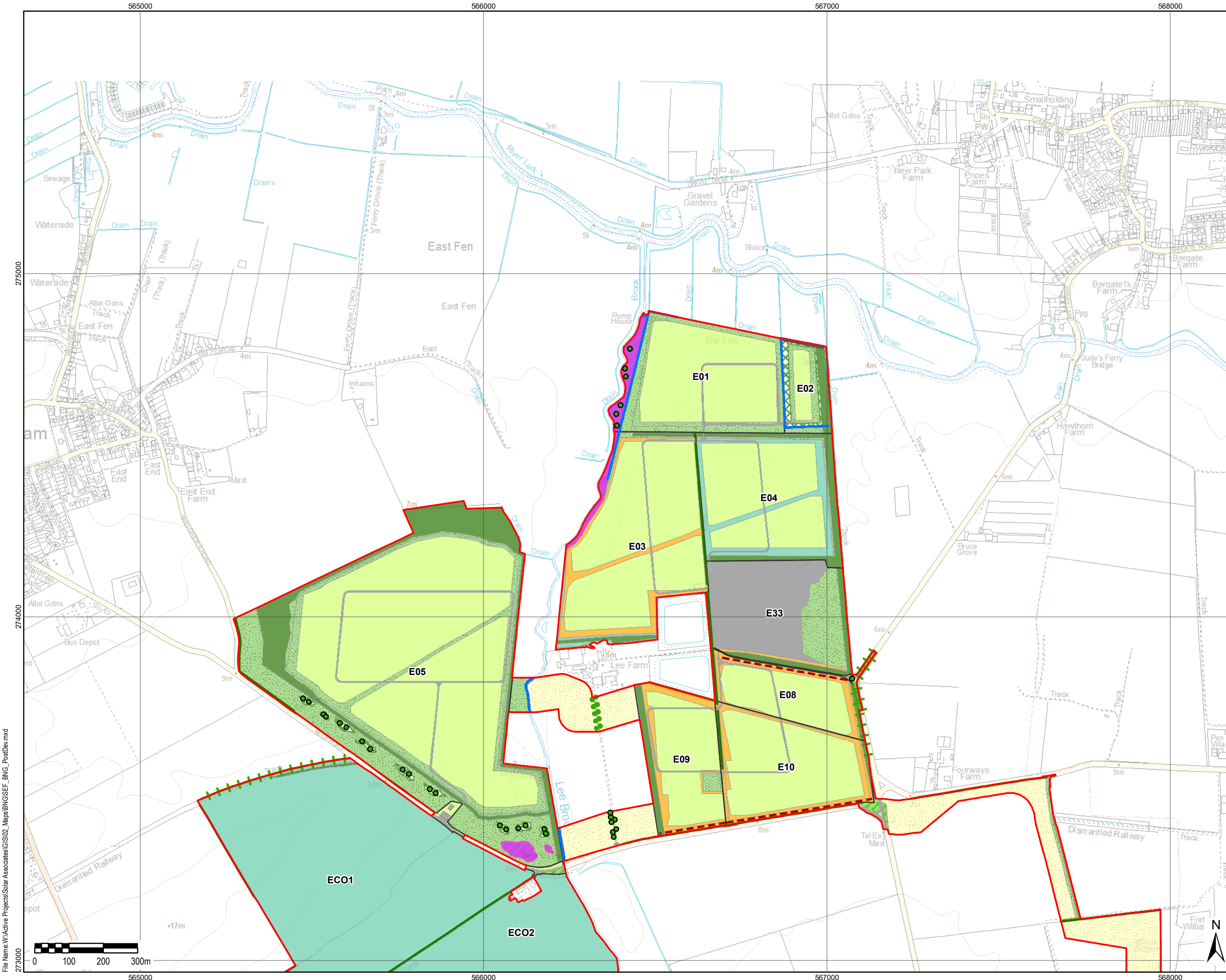
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Appendix C Parameter Plans



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LEGEND

Order Limits

Field Reference Boundary

UK Habitat Description

Other woodland; broadleaved

Other coniferous woodland

Lowland mixed deciduous woodland

Mixed scrub

Lowland calcareous grassland

Other lowland acid grassland

Other neutral grassland

Modified grassland

Purple moor grass and rush pastures

Cereal crops

Other rivers and streams

Vacant/derelict land/ bareground

Developed land; sealed surface

Line of trees

Native Species Rich Hedgerow

Native hedgerow

Native hedgerow; with ditch

Native hedgerow with trees

Other rivers and streams

Urban tree

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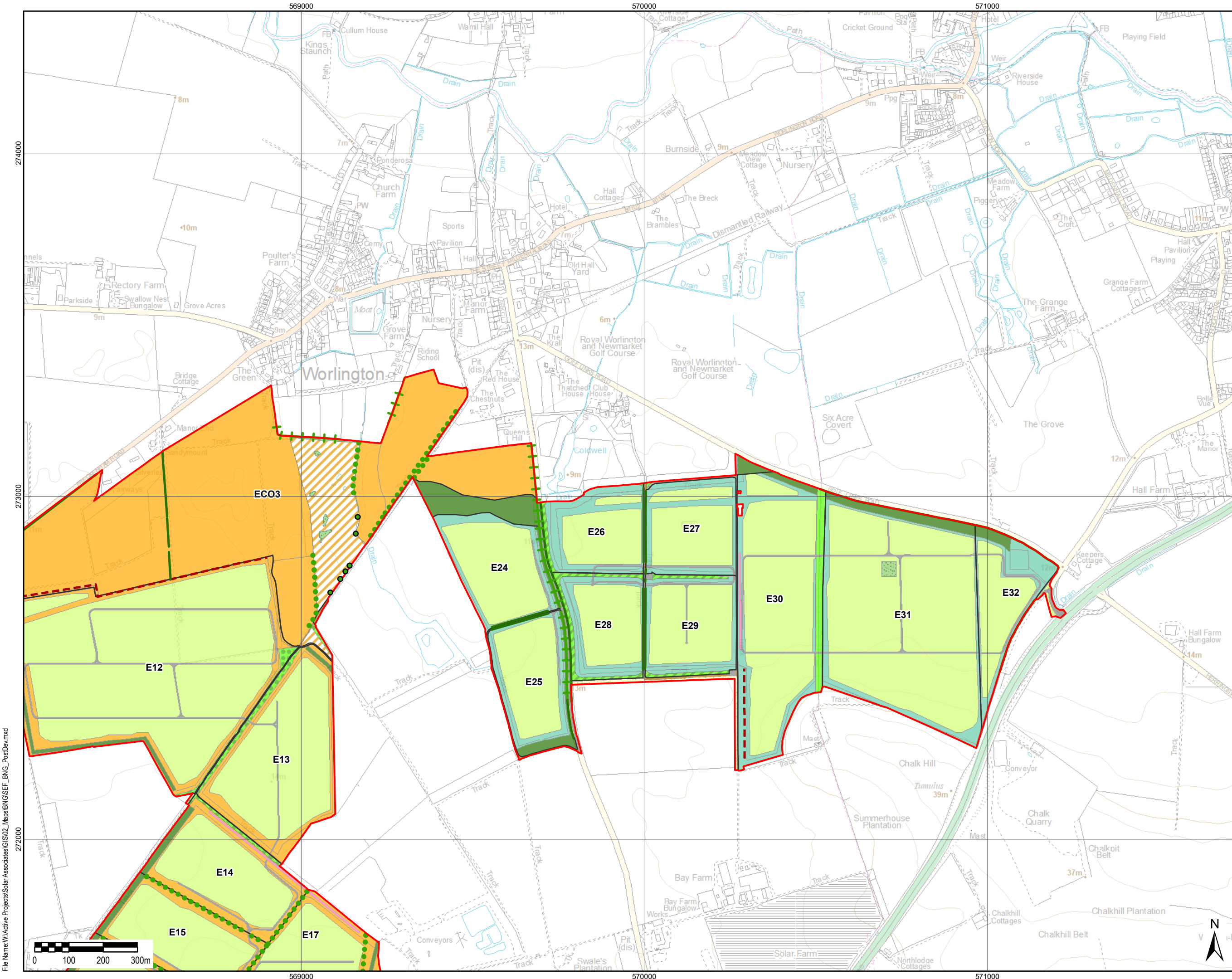
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FIGURE 2.1

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LEGEND

- Order Limits
- Field Reference Boundary
- UK Habitat Description**
 - Other woodland; broadleaved
 - Other coniferous woodland
 - Lowland mixed deciduous woodland
 - Other woodland; mixed
 - Lowland calcareous grassland
 - Lowland dry acid grassland
 - Other lowland acid grassland
 - Other neutral grassland
 - Modified grassland
 - Arable field margins game bird mix
 - Cereal crops
 - Vacant/derelict land/ bareground
 - Developed land; sealed surface
- Line of trees
- Native Species Rich Hedgerow
- Native hedgerow
- Native hedgerow with trees
- Urban tree

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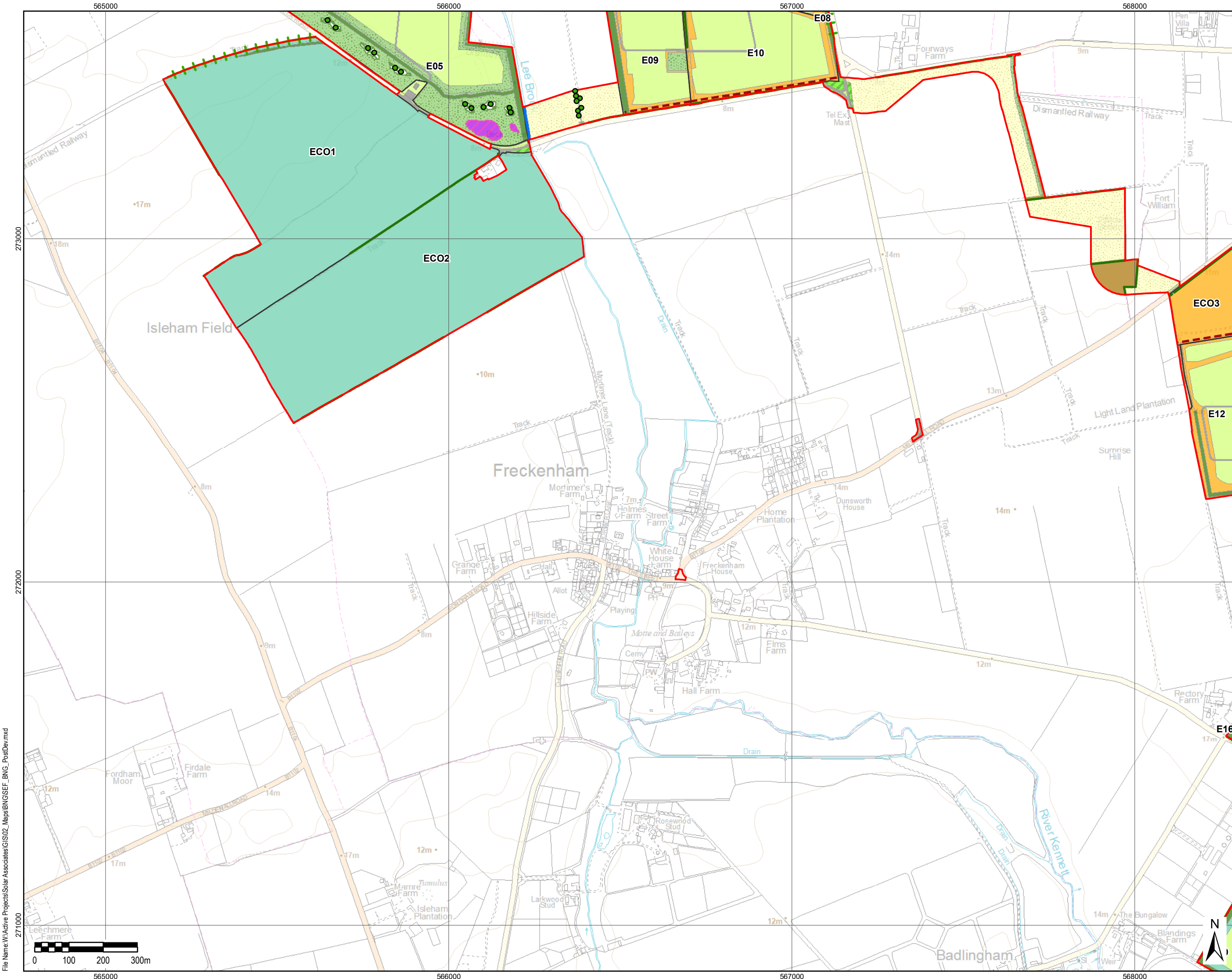
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LEGEND

- Order Limits
- Field Reference Boundary
- UK Habitat Description**
- Other woodland; broadleaved
- Other coniferous woodland
- Lowland mixed deciduous woodland
- Mixed scrub
- Lowland calcareous grassland
- Other lowland acid grassland
- Other neutral grassland
- Modified grassland
- Purple moor grass and rush pastures
- Cereal crops
- Other rivers and streams
- Vacant/derelict land/ bareground
- Developed land; sealed surface
- Native Species Rich Hedgerow
- Native hedgerow
- Native hedgerow with trees
- Other rivers and streams
- Urban tree

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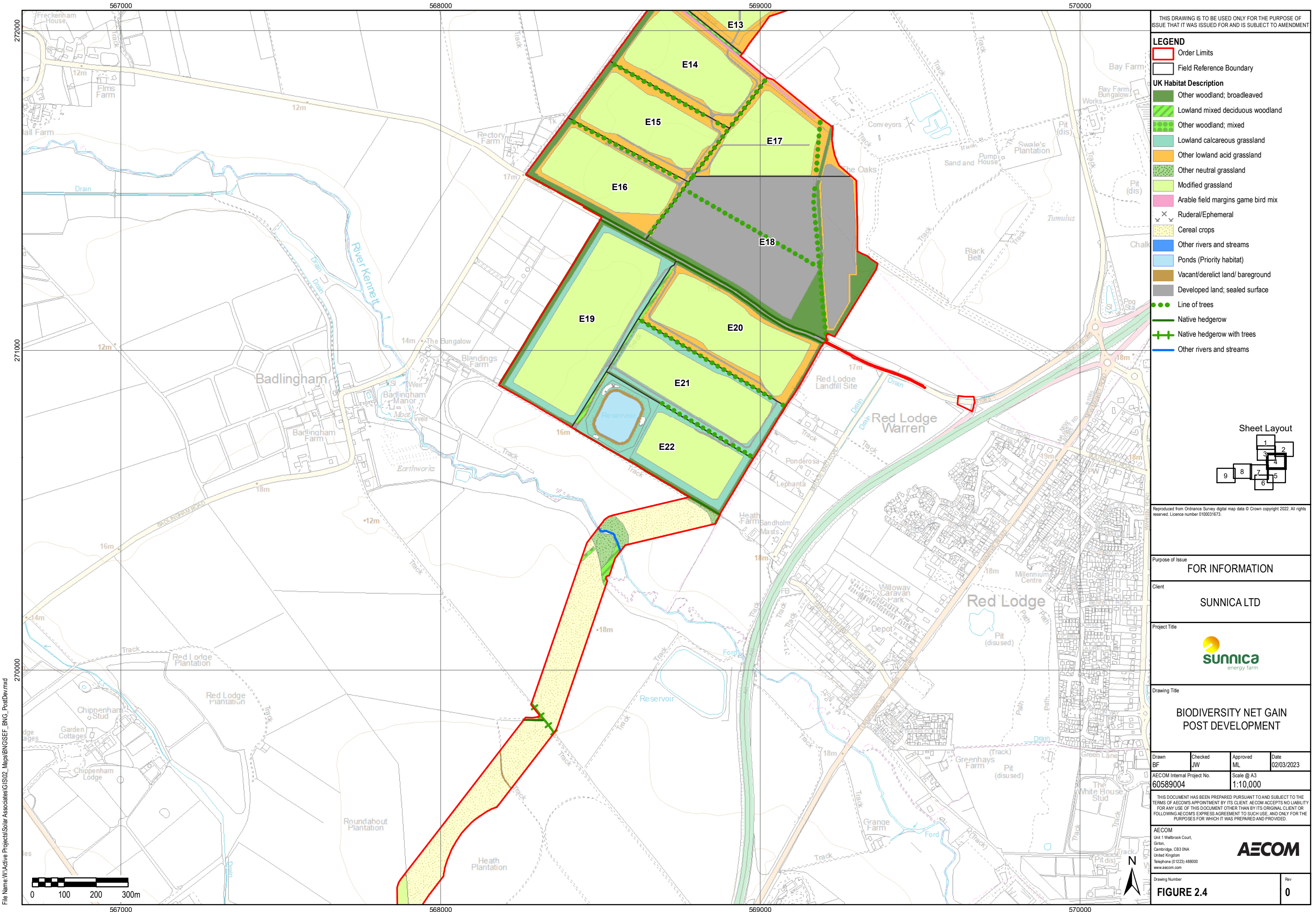
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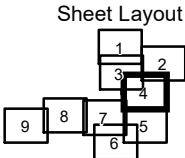
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LEGEND

- Order Limits
- Field Reference Boundary
- UK Habitat Description**
 - Other woodland; broadleaved
 - Lowland mixed deciduous woodland
 - Other woodland; mixed
 - Lowland calcareous grassland
 - Other lowland acid grassland
 - Other neutral grassland
 - Modified grassland
 - Arable field margins game bird mix
 - Ruderal/Ephemeral
 - Cereal crops
 - Other rivers and streams
 - Ponds (Priority habitat)
 - Vacant/derelict land/ bareground
 - Developed land; sealed surface
 - Line of trees
 - Native hedgerow
 - Native hedgerow with trees
 - Other rivers and streams



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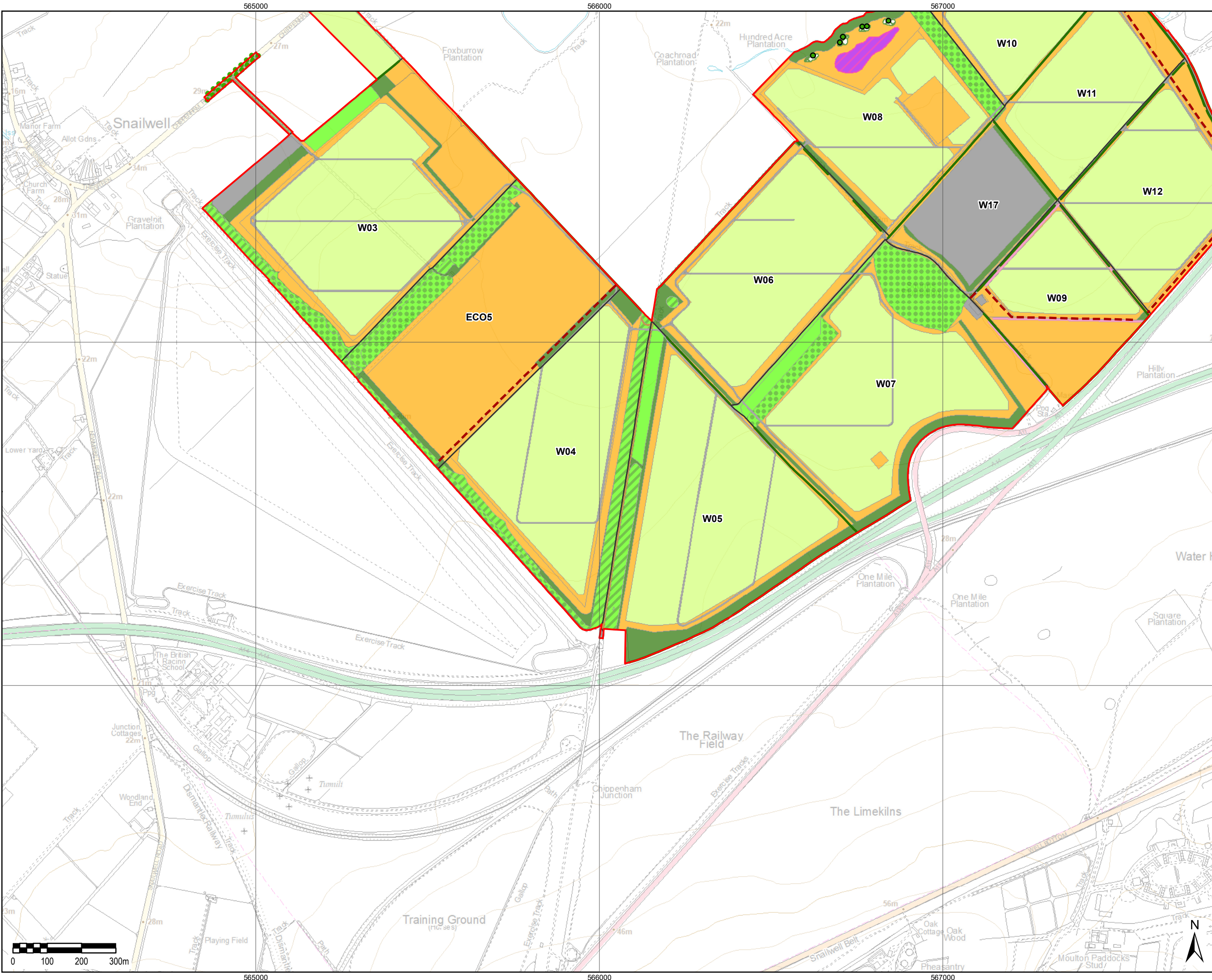
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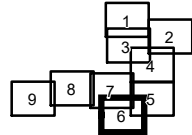


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LEGEND

- Order Limits
- Field Reference Boundary
- UK Habitat Description
 - Other woodland; broadleaved
 - Other coniferous woodland
 - Lowland mixed deciduous woodland
 - Other woodland; mixed
 - Mixed scrub
 - Other lowland acid grassland
 - Other neutral grassland
 - Modified grassland
 - Arable field margins game bird mix
 - Purple moor grass and rush pastures
 - Cereal crops
 - Vacant/derelict land/ bareground
 - Developed land; sealed surface
 - Line of trees
 - Native Species Rich Hedgerow
 - Native hedgerow
 - Urban tree

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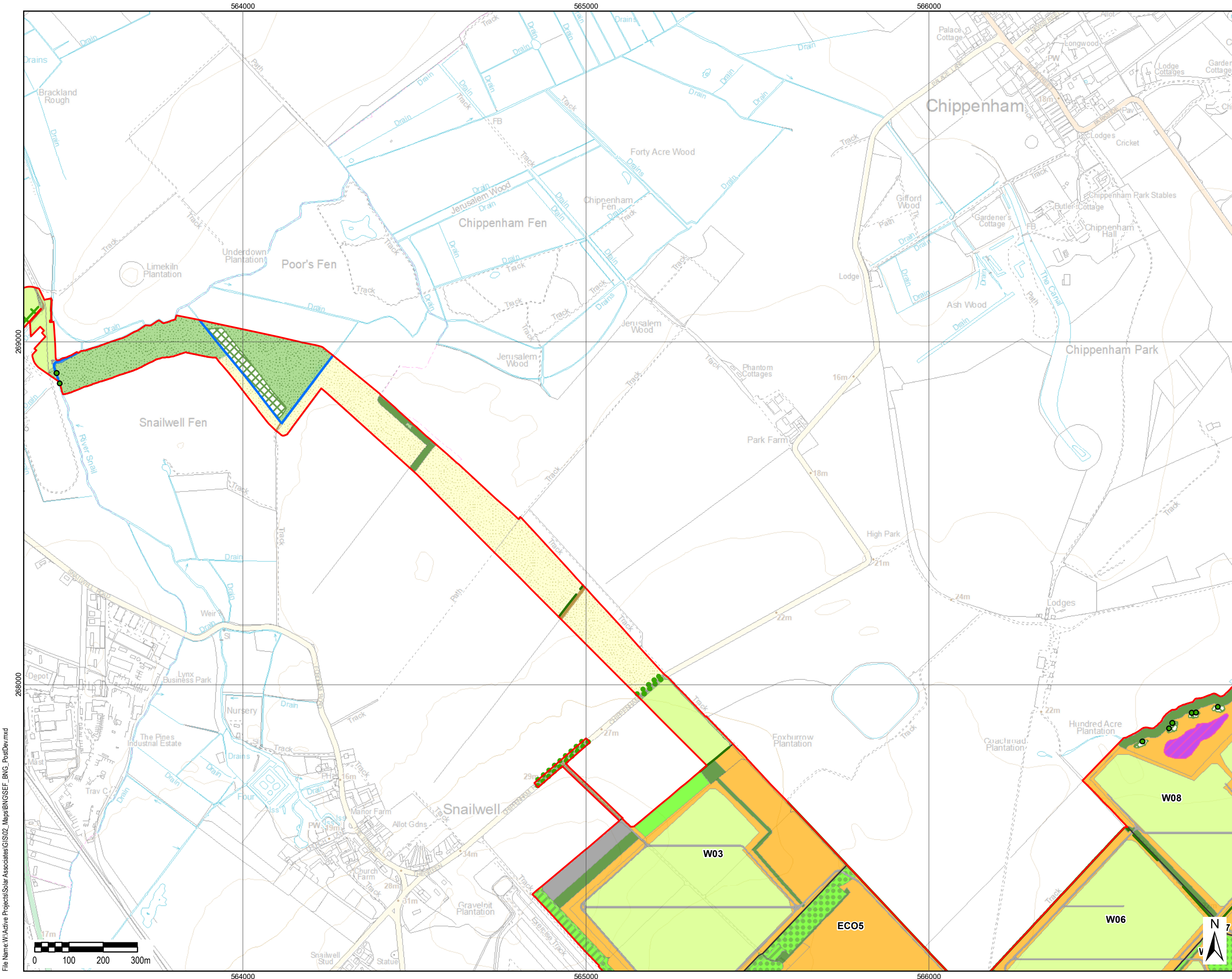
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LEGEND

- Order Limits
- Field Reference Boundary
- UK Habitat Description**
 - Other woodland; broadleaved
 - Other coniferous woodland
 - Lowland mixed deciduous woodland
 - Other woodland; mixed
 - Mixed scrub
 - Other lowland acid grassland
 - Other neutral grassland
 - Modified grassland
 - Purple moor grass and rush pastures
 - Cereal crops
 - Other rivers and streams
 - Vacant/derelict land/ bareground
 - Developed land; sealed surface
 - Line of trees
 - Native Species Rich Hedgerow
 - Native hedgerow
 - Native hedgerow; with ditch
 - Native hedgerow with trees
 - Other rivers and streams
 - Urban tree

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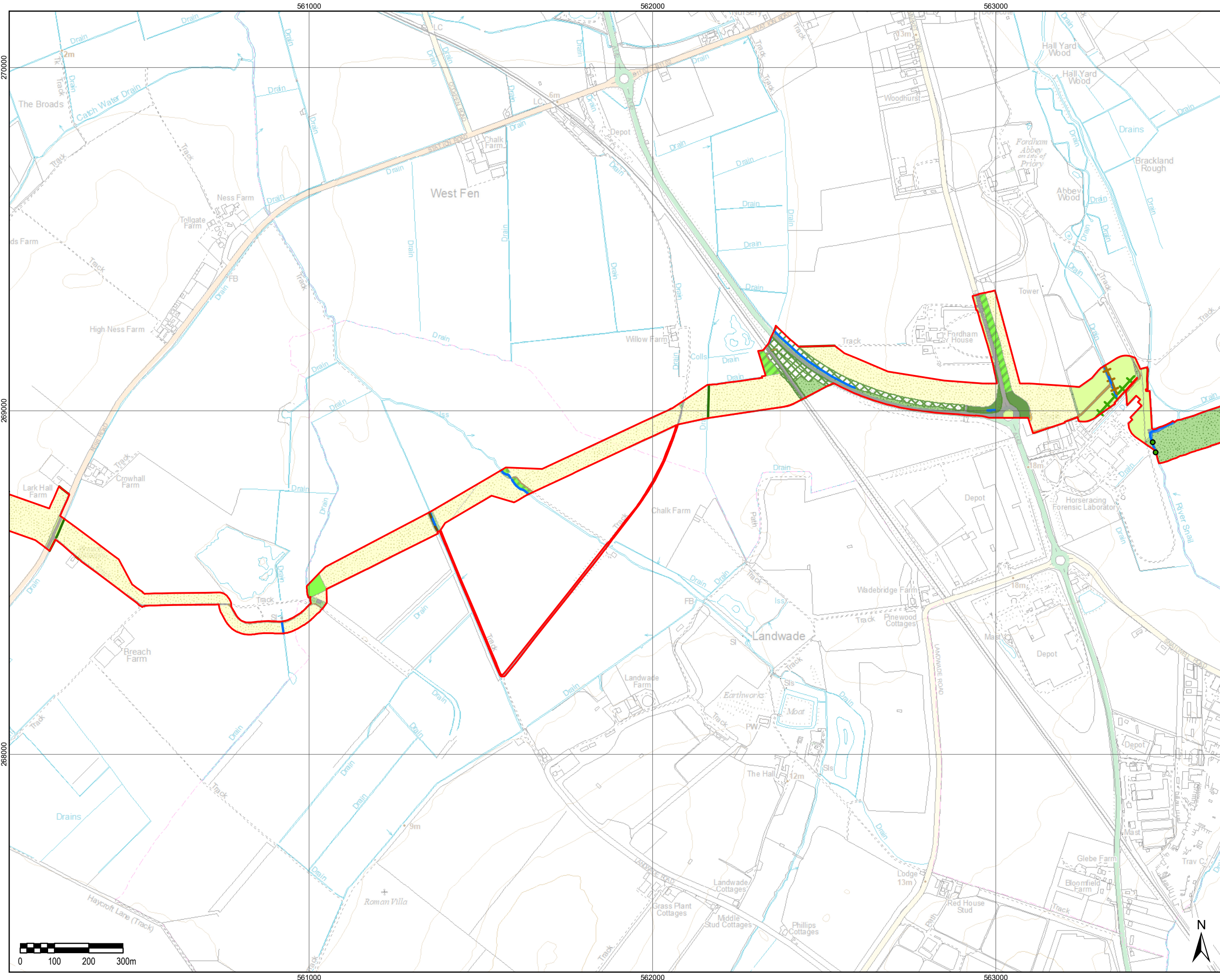
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FIGURE 2.7

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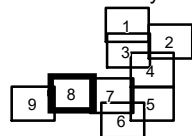


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LEGEND

- Order Limits
- UK Habitat Description
 - Other woodland; broadleaved
 - Other coniferous woodland
 - Lowland mixed deciduous woodland
 - Other woodland; mixed
 - Mixed scrub
 - Other lowland acid grassland
 - Other neutral grassland
 - Modified grassland
 - Cereal crops
 - Other rivers and streams
 - Vacant/derelict land/ bareground
 - Developed land; sealed surface
 - Native hedgerow
 - Native hedgerow; with ditch
 - Native hedgerow with trees
 - Native hedgerow with trees; with ditch
 - Other rivers and streams
 - Urban tree

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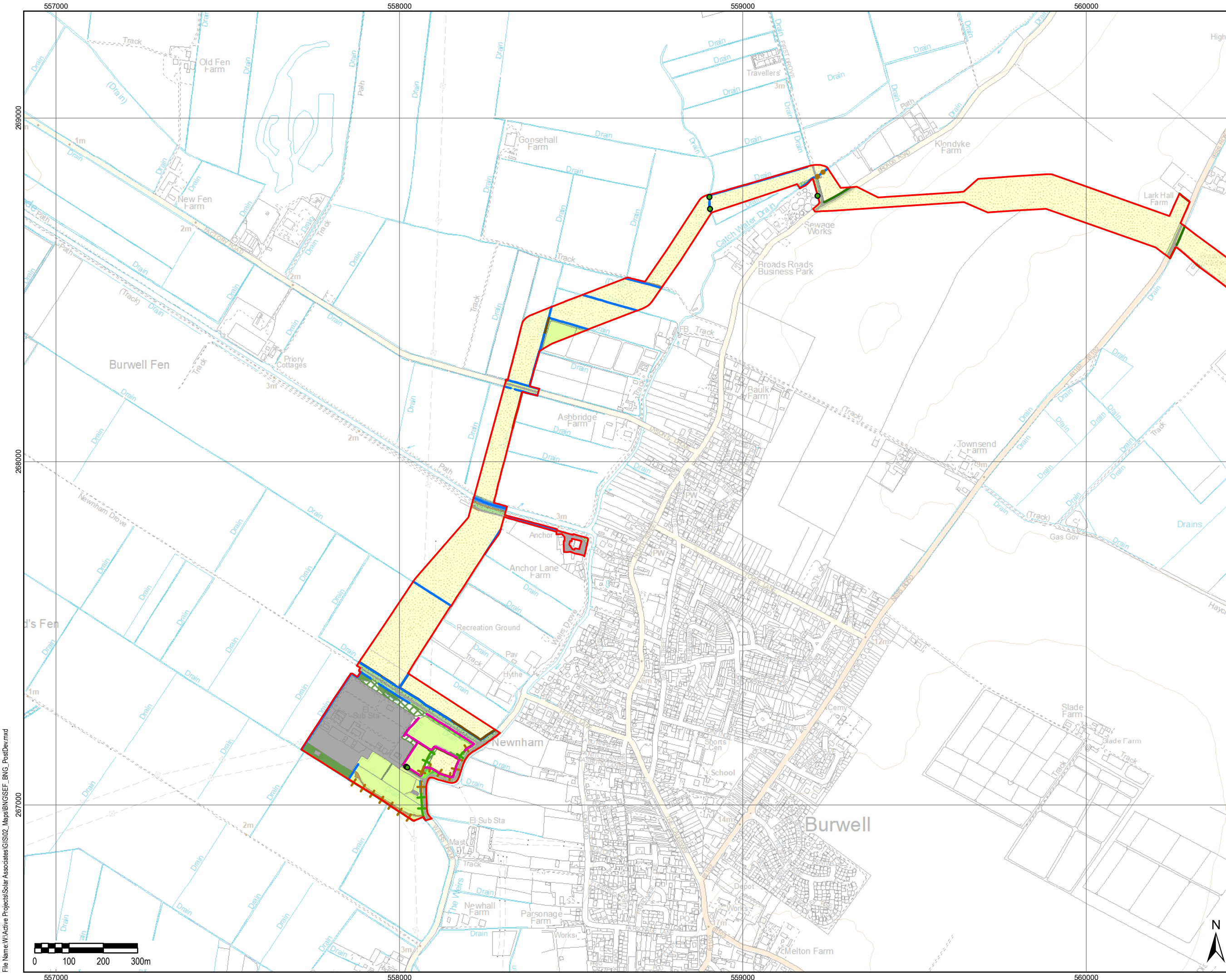
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LEGEND

- Order Limits
- UK Habitat Description**
 - Other woodland; broadleaved
 - Lowland mixed deciduous woodland
 - Mixed scrub
 - Other neutral grassland
 - Modified grassland
 - Ruderal/Ephemeral
 - Cereal crops
 - Other rivers and streams
 - Vacant/derelict land/ bareground
 - Developed land; sealed surface
 - <all other values>
 - Line of trees; with ditch
 - Native hedgerow
 - Native hedgerow; with ditch
 - Native hedgerow with trees
 - Native hedgerow with trees; with ditch
 - Other rivers and streams
 - Urban tree

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Appendix D Natural England's Biodiversity Metric 3.1 Calculations

SUNNICA WITHIN ECNRN

Headline Results

[Return to
results menu](#)

On-site baseline	<i>Habitat units</i>	1208.20
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	1883.48
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
On-site net % change (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	55.89%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	0.00%
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	675.29
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	55.89%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	0.00%
Trading rules Satisfied?	Yes ✓	

SUNNICA Outside ECNRN

Headline Results

[Return to
results menu](#)

On-site baseline	<i>Habitat units</i>	1728.92
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	2309.96
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
On-site net % change (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	33.61%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	0.00%
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	581.05
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	33.61%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	0.00%
Trading rules Satisfied?	Yes ✓	

On-site baseline	<i>Habitat units</i>	6.80
	<i>Hedgerow units</i>	153.57
	<i>River units</i>	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	11.07
	<i>Hedgerow units</i>	196.71
	<i>River units</i>	0.00
On-site net % change (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	62.84%
	<i>Hedgerow units</i>	28.09%
	<i>River units</i>	0.00%
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	4.27
	<i>Hedgerow units</i>	43.14
	<i>River units</i>	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	62.84%
	<i>Hedgerow units</i>	28.09%
	<i>River units</i>	0.00%
Trading rules Satisfied?	Yes ✓	

SUNNICA Rivers

Headline Results

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On-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	18.71
On-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	20.83
On-site net % change (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	11.37%
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>River units</i>	2.13
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00%
	<i>Hedgerow units</i>	0.00%
	<i>River units</i>	11.37%
Trading rules Satisfied?	Yes ✓	