

# Tween Bridge Solar Farm

## 7.6 Outline Landscape Ecological Management Plan

**Planning Act 2008  
Infrastructure Planning (Applications: Prescribed Forms  
and Procedure) Regulations 2009**

**APFP Regulation 5(2)(q)**

**Document Reference: 7.6**

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# OUTLINE LANDSCAPE ECOLOGICAL MANAGEMENT PLAN

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## 1 Introduction and Site Context

### 1.1. Introduction

1.1.1. This Outline Landscape and Ecological Management Plan (LEMP) has been prepared by Tyler Grange Group Ltd on behalf of RWE Renewables UK Solar and Storage Ltd (the Applicant) in respect of 'Tween Bridge Solar Farm' (the Scheme) and is provided as a standalone document as part of the application for a Development Consent Order (DCO Application). It must be read alongside the **ES Ecology and Nature Conservation Chapter [Document Reference 6.2.7]** for full context. For the purposes of this report, the extent of the Scheme is referred to as the 'Order Limits', which includes all areas proposed for solar panels, ecological mitigation areas and associated infrastructure.

1.1.2. This 'Outline' LEMP will be secured via a requirement of the DCO and a final version is to be submitted to and approved by the relevant local planning authority.

1.1.3. The intention of this document is to provide the principles of habitat management measures for retained and created habitats associated with the proposed project, which are separated into:

- Retained woodland;
- Retained hedgerows;
- Retained ditches/ponds/watercourses;
- Created grassland beneath solar arrays;
- Created landscape screening;
- Created bird mitigation areas;

1.1.4. Enhancement measures are also proposed regarding herptiles, roosting bats and nesting birds.

1.1.5. This Outline LEMP is informed by a suite of ecological survey work, which has identified the presence of protected/notable sites, habitats and species both within and adjacent to the Order Limits, all of which will need a degree of protection and mitigation during the site's construction. The following section of this Plan

summarises the baseline context regarding ecological receptors within the Zone of Influence of the Order Limits.

- 1.1.6. This Outline LEMP should be read alongside the **Landscape and Visual Mitigation Strategy [Document Reference 6.4.6.4]**.

### 1.2. Coverage

- 1.2.1. This Outline LEMP sets out details of initial habitat interventions and subsequent long-term management of habitats and is set out as follows:

- **Section 2** describes the Order Limits including baseline ecological/ground conditions;
- **Section 3** sets out management objectives for the Outline LEMP and describes ecological/ground constraints to be factored into the proposed management prescriptions;
- **Section 4** describes the management prescriptions to achieve objectives set out in **Section 3** as well as setting out monitoring and remedial actions where necessary;
- **Section 5** describes the monitoring programme over the lifetime of the development, along with indications of mechanisms for remedial measures; and
- **Section 6** describes who will be responsible for implementing the plan and how arrangements for funding will be organised.

- 1.2.2. For the purposes of this report, Year 0 is defined as the year of the initial habitat interventions and Year 1 refers to the following year/planting season. Given the large size of the Order Limits, it is expected that the Scheme would be delivered in phases i.e. not all habitats would be created within the same year. It is therefore proposed that management of habitats would commence in the year of completion of habitat creation in that area.

- 1.2.3. Implementation of the plan will be iterative in the management prescriptions and will be refined as necessary based on the condition of the site and outcomes following the first cycle of the implemented management and ongoing monitoring.

- 1.2.4. The implementation of the LEMP will be secured through a requirement to the DCO.

## 2 Site and Habitat Summary

### 2.1. Site Context

- 2.1.1. The Order Limits consist of c. 1831ha of agricultural land, the majority of which consists of arable farmland with cereal and non-cereal crops. Fields are bounded by watercourses as well as fences, hedgerows and tree lines. Modified grassland used for pastoral gland is also present within the Order Limits as well as a woodland copse and a number of ponds.
- 2.1.2. Part of the Tween Bridge Wind Farm is located within the Order Limits and consists of twenty-two operational wind turbines. The Stainforth and Kneadby Canal crosses the Order Limit from west to east.
- 2.1.3. In the wider context, the Order Limits is surrounded by extensive areas of farmland and areas of woodland, with areas of lowland peat bog (Thorne & Hatfield Moors) located to the north and south of the Order Limits.

### 2.2. Site Baseline

- 2.2.1. The Order Limits are dominated by arable land in use as cereal crops, with some areas of modified grassland and tall ruderal vegetation. All of these habitats are of intrinsic negligible ecological importance in their own right and do not require any specific considerations regarding protection during the construction phase. They are known, however, to support protected/notable species, which are discussed in the relevant sections of this report.
- 2.2.2. Other habitats of local importance, some of which are also identified as Habitats of Principal Importance (HoPI) under the Natural Environment and Rural Communities Act (NERC) Act 2006, are also present within the Order Limits, comprising scrub, hedgerows (HoPI), lines of trees, ponds (HoPI), ditches and woodland (HoPI).
- 2.2.3. **Table 2-1** below summarises the baseline ecological and ground conditions of the site, all of which have been factored into the feasibility and scope of the management objectives and principles proposed.

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**Table 2-1: Site Baseline Summary**

|   |   |
|---|---|
| <p><b>Statutory / Non-Statutory Sites</b></p> | <p>A small area of Thorne &amp; Hatfield Moors Special Protection Area (SPA), Thorne Moor Special Area of Conservation (SAC), Thorne, Crowle and Goole Moors Site of Special Scientific Interest (SSSI) and Hatfield Chase Ditches SSSI lie within the Order Limits. The Humber Estuary SPA/SAC/Ramsar sites approximately 6km to the northeast of the Order Limits.</p> <p>Of particular relevance to these sites is the designation of Thorne and Hatfield Moors SPA for its breeding population of nightjar, which has been identified as a principle objective of this management plan (<b>Objective 2</b>).</p> <p>A number of non-statutory Local Wildlife Sites (LWS) are also present within the Order Limits, associated with the ditch network and woodland copses.</p>   |
| <p><b>Protected and Notable Species</b></p>   | <p>Survey work has confirmed the presence of the following protected/notable species within the Order Limits:</p> <ul style="list-style-type: none"> <li>• Ground-nesting bird species (most notably skylark);</li> <li>• Farmland bird species associated with agricultural landscapes;</li> <li>• Non-breeding bird species associated with Humber Estuary SPA (most notably lapwing, pink-footed goose, greylag goose and mallard – golden plover also considered);</li> <li>• Non-breeding farmland bird species;</li> <li>• Water vole;</li> <li>• Otter;</li> <li>• Badger;</li> <li>• Small mammals (brown hare, hedgehog);</li> <li>• Some notable invertebrates;</li> </ul> <p>Although not confirmed, the Order Limits may also support amphibians and reptiles (collectively referred to as herptiles for the remainder of this report).</p> |
| <p><b>Invasive Species</b></p>                | <p>Water fern and rhododendron have been recorded within the Order Limits associated with ditches and pockets of woodland.</p>  |
| <p><b>Baseline Habitats</b></p>               | <p>The Order Limits is dominated by arable land separated by an extensive ditch network. Hedgerows and woodland copses are also present throughout the Order Limits.</p>  |

|                               |  |
|-------------------------------|--|
| <b>Public Access</b>          | Public access is limited around the Order Limits, and is mainly restricted to the towpath of the Stainforth & Keadby Canal.  |
| <b>Topography</b>             | The Order Limits is generally flat so there are no management restrictions or considerations to this regard.   |
| <b>Current Use</b>            | The land across the Order Limits is in use for arable crop production.   |
| <b>Landscape Character</b>    | The Order Limits is located entirely within NCA 39 – Humberhead Levels, one of the key features of which is floodplains, washlands and traditionally grazed alluvial flood meadows, which give rise to important wetland habitats.     |
| <b>Strategic Location</b>     | The Order Limits is not identified within any strategically beneficial location (i.e. one identified within any Local Plan for biodiversity), although it is situated between two Special Protection Areas designated for bog habitat. |
| <b>Irreplaceable Habitats</b> | There are no irreplaceable habitats within the Order Limits, although the adjacent lowland raised bog associated with the moors is considered irreplaceable. There would be no impacts on such habitat.                                |

### 3 Management Objectives and Biodiversity Net Gain

#### 3.1. Management Considerations

3.1.1. There are no specific ground conditions or designations which would mandate a particular type of management, other than the acknowledgement of the likely presence of protected/notable species. Of particular note is the requirement for habitat creation with the specific purpose of providing suitable habitat for both ground-nesting breeding birds and non-breeding bird species over winter and on passage.

#### 3.2. Management Objectives

3.2.1. Considering the habitats and key fauna present within the Order Limits, the following objectives for nature conservation management have been set:

- Objective 1: To provide open areas of permanent pasture specifically managed for the benefit of ground-nesting bird species and non-breeding bird species over winter and on passage;
  - Objective 2: To provide permanent areas or arable land managed for the benefit of ground-nesting bird species such as nesting and foraging skylark, and non-breeding bird species over winter and on passage, specifically pink-footed geese;
  - Objective 3: To provide strengthened green corridors along field boundary features, specifically for the benefit of nightjar;
  - Objective 4: To enhance quality of existing woodland habitat;
  - Objective 5: To enhance quality of ditch network and ponds;
  - Objective 6: To monitor the efficiency of nature conservation management through regular assessment of habitat establishment; and
  - Objective 7: To enhance the value of the land within the Order Limits for roosting bats and nesting birds through the installation and continued care of bat and bird boxes on retained trees.
- 3.2.2. With the implementation of the measures proposed, that will create and maintain native habitats of ecological importance resulting in improved connectivity for wildlife, ecological enhancements and gains in biodiversity, it is considered that the Scheme will contribute to the aspirations of the City of Doncaster Council to create a biosphere reserve.
- 3.2.3. The cessation of intensive agricultural farming within the Order Limits, which includes the application of agrichemical inputs, will create enhancements to existing, retained habitats, through improved water quality within the ditch network, ponds and associated habitats, including those within statutory designated sites.

### **3.3. Biodiversity Net Gain**

- 3.3.1. It is not yet a mandatory requirement for applications for Nationally Significant Infrastructure Projects (NSIPs) to demonstrate a quantifiable biodiversity net gain (BNG) of at least 10% under the Environment Act 2021. However, the Applicant



intends to provide evidence of the deliverability of measurable BNG, in accordance with NERC obligations and the Overarching National Policy Statement for Energy (EN-1) and National Policy Statement for Renewable Energy Infrastructure (EN-3). This material is contained in Appendix 7.12 Biodiversity Net Gain assessment forming part of the submitted Environmental Statement.

- 3.3.2. Given the limited land take associated with solar developments and low distinctiveness of the arable habitat across much of the Order Limits, it is expected that the Scheme will be able to deliver well in excess of +10% biodiversity net gain in habitat and hedgerow within the Order Limits and without the need to procure any off-site habitat creation.

## 4 Management Prescriptions

- 4.1.1. An outline of the broad habitat types proposed for creation and management prescriptions for the Scheme are set out in **Table 4-1** within the subsequent pages of this section of the report. The management will be implemented in stages, as indicated in the timings column in accordance with the management task, as will the appropriate timing of required habitat maintenance once established.
- 4.1.2. The prescriptions seek to cover a period equating to a 40-year period which is the lifetime of the Scheme and exceeds the 30 years required for BNG on conventional planning applications under the Town and Country Planning Act 1990, and includes both the start-up works and continued management post intervention. This is inclusive of primary establishment of habitats and subsequent management regimes. These actions are set out under the individual objective headings set out in Section 3.
- 4.1.3. The landscape strategy is described in further detail within the This Outline LEMP should be read alongside the **Landscape and Visual Mitigation Strategy [Document Reference 6.4.6.4]**. An overview of habitats to be created is also provided on Figures 1 and 2 attached to this Outline LEMP.

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**Table 4-1: Habitat Management by Type**

| Habitat   | Rationale for Feature Creation / Management  | Species Mix  | Management Tasks   |
|---|--|--|--|
| <p><b>Grassland mixture beneath and around solar arrays</b></p> | <p>To create a relatively species-diverse neutral grassland, including tussocky grassland on field margins to benefit ground nesting and foraging birds, including skylark and nightjar. Will also benefit other wildlife and increase biodiversity.</p> | <p>Emorsgate EMI General Purpose Meadow Mixture (or equivalent)</p> <p><b>Forbs (10%):</b> yarrow, knapweed, oxeye daisy, musk mallow, ribwort plantain, salad burnet, meadow buttercup, wild carrot</p> <p><b>Grasses (90%):</b> common bent (9%), crested dogstail (31.50%), red fescue (27%), smaller cat’s-tail (4.50%), smooth-stalked meadow-grass (18%)</p> | <p><u>Preparation</u></p> <p>Prior to sowing the seed mix, the ground will need to be prepared by cultivation whereby weeds will be removed by hand or spot treated with herbicide. Following this the soil will then be harrowed or raked to provide a medium tilth then rolled.</p> <p><u>Sowing</u></p> <p>The seed mix will be sown in Autumn or Spring in accordance with the manufacturer’s specifications at a density of 4g/m<sup>2</sup> / 40kg/ha. Care will be taken to ensure the seeds are not covered but are ‘firmed’ in and have good contact with the soil.</p> <p><u>Ongoing management</u></p> <p>Once established, the grassland will be managed via sheep grazing at appropriate densities, or an appropriate mowing regime.</p> <p>Where possible, rotation of grazing / mowing will be employed whereby not all of the Order Limits is subject to grazing / mowing at the same time, thus allowing some areas to remain</p> |

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|   |  |   | unmanaged at sensitive times of year (i.e. bird nesting season, flowering season) so such areas can realise their full biodiversity potential.   |
| Grassland mixture in proposed bird mitigation areas | To create a diverse, tussocky grassland specifically managed for ground-nesting birds and foraging birds such as nightjar, and non-breeding birds over winter and on passage | An example grass mixture is Emorsgate EM1 or EM2. This will provide suitable breeding habitat for ground-nesting farmland birds and foraging/roosting/loafing habitat for non-breeding birds (primarily geese, lapwing and golden plover). Subject to topography, consideration will also be given to the creation of shallow scrapes (in consultation with engineering/attenuation requirements) in these areas which can be designed to function as either a permanently marshy grassland (Emorsgate EM8), or | <p><u>Preparation</u></p> <p>Prior to sowing the seed mix, the ground will need to be prepared by cultivation whereby weeds will be removed by hand or spot treated with herbicide. Following this the soil will then be harrowed or raked to provide a medium tilth then rolled.</p> <p><u>Sowing</u></p> <p>The seed mix will be sown in Autumn or Spring in accordance with the manufacturer's specifications at a density of 4g/m<sup>2</sup> / 40kg/ha. Care will be taken to ensure the seeds are not covered but are 'firmed' in and have good contact with the soil.</p> <p>It is proposed that the initial ground preparation and sowing of seed mix will take place in the season before the main construction activity commences, to ensure that favourable bird habitat is available for birds to relocate to once construction activity commences.</p> <p><u>Traditional Hay Management</u></p> <p>This would comprise bi-annual cuts, with the first cut to 15cm undertaken in late summer after the core breeding season for ground-nesting farmland birds. The arisings would need to be</p> |

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|  |  | <p>ephemeral pools. Both of these habitats will be suitable as mitigation for both breeding and non-breeding birds.</p> <p>It would also be preferable to work with the topography of the land and create ground which is not completely flat. This will introduce a natural variation in the cutting height of the grass, leaving some areas longer and some areas possibly scalped, creating areas of bare ground which will ultimately allow new grass growth to develop. Grassland will include White Clover, and Borage for the benefit of pollinators such as bees.</p> | <p>removed from the area following the cut to allow new growth. A second cut should then be taken to 5cm in Autumn (no later than September), at the time when non-breeding birds will be arriving on passage and kept like this until the beginning of March.</p> <p>This can be achieved with low density sheep or other livestock or infrequent cuts/topping, and arisings removed. It is important to ensure the grass is kept at this height going into breeding season, to ensure that the grass is short enough for wading birds such as golden plover and lapwing to access the soil for foraging.</p> <p>From March and during the breeding season, approximately 50% of the grassland should be less than 5cm in height to benefit early-season nesters such as skylark and lapwing, and approximately 25% of the grassland should be cut between 5cm and 15cm, and the remainder left between 20-50cm to benefit skylark.</p> <p>It is also of benefit that the parcels of proposed bird mitigation are separate, to allow a rotational management practice to be adopted, so not 'all' parcels are managed/disturbed at the same time, allowing birds the ability to retain access to suitable habitat at all times.</p> |
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|                   |   |   |  |
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|                   |   | These interventions would introduce more botanically diverse grassland and provide the wetland mosaics in strategic locations, particularly along the central canal corridor. |  |
| Arable management | To maintain arable habitat managed for ground-nesting birds such as nesting and foraging skylark, and non-breeding birds over winter and on passage, including pink-footed geese. | Rotational arable management  | <ul style="list-style-type: none"> <li>• Use sugar beet where possible.</li> <li>• Use other appropriate crops on rotation when sugar beet is not being grown, such as winter cereal crops, oil seed rape, post-harvest cereal stubbles, potatoes<sup>1</sup>.</li> <li>• Post-harvest, the fields should be left until the spring before ploughing to maximise the foraging resource, with the geese foraging on roots chopped into fragments by the harvester, as well as unharvested roots.</li> <li>• Avoidance of deep ploughing.</li> <li>• Incorporation of a ley crop within the management rotation.</li> </ul> |

<sup>1</sup> <https://www.rspb.org.uk/birds-and-wildlife/pink-footed-geese>

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|                     |   |  |   |
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|                     |   |  | <ul style="list-style-type: none"> <li>Inclusion of permanent grass margins to the fields measuring a minimum 2 metres.</li> </ul>  |
| Landscape screening | To provide native species-diverse screening where necessary                       | To comprise a mixture of native woodland, scrub/tree species and hedgerows, including berry-producing species to benefit over-wintering birds. | <p><u>Planting</u></p> <p>Trees/scrub whips planted over winter when they have better drought tolerance.</p> <p><u>Ongoing management</u></p> <p>Once mature and failed stock removed where necessary, management should comprise occasional pruning in late January/early February as necessary, to avoid the bird nesting season and to also allow berry-producing species to fruit and allow over-wintering birds (most notably thrushes) access to foraging resources.</p> <p>For the benefit of species such as the scarce vapourer moth which is vulnerable to intensive vegetation cutting, vegetation will be cut rotationally on minimum 3 year cycle.</p> |
| Retained hedgerows  | To maintain and, where possible, improve quality of hedgerows around Order Limits | N/A  | Management of existing hedgerows will comprise rotational cutting in late January/February to allow berry producing plants the chance to fruit and offer over-wintering resources for farmland birds, particularly redwing and fieldfare.   |

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|                            |   |     |   |
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|                            |   |     | For the benefit of species such as the scarce vapourer moth which is vulnerable to intensive vegetation cutting, vegetation will be cut rotationally on minimum 3 year cycle.   |
| Retained and new woodland  | To maintain and, where possible, improve quality of woodland around Order Limits, including removal/control of invasive non-native species (rhododendron) | N/A | <p>Rhododendron will be removed in Year 1, and thereafter monitored and controlled for the duration of the site's management.</p> <p>Ongoing management will comprise regular woodland health checks to ensure that any failed (or failing) stock is removed, along with ongoing control of woodland flora to maintain ground vegetation within limits i.e. control of bramble.</p> <p>For the benefit of species such as the scarce vapourer moth which is vulnerable to intensive vegetation cutting, vegetation will be cut rotationally on minimum 3 year cycle.</p>  |
| Retained ditches and ponds | To maintain and, where possible, improve quality of ditches and ponds around Order Limits   | N/A | <p>Many of the ditches within the site are under the control and management of the Internal Drainage Board (IDB), who have standard internal management procedures to ensure that each ditch is functioning as intended. The following measures therefore apply to all non-IDB ditches and ponds or, where agreed with the IDB as a stakeholder, IDB ditches too.</p> <p>Prior to any ditch or pond enhancement works commencing, they will be assessed for their quality in terms of macrophyte cover, shading, undesirable species etc. and other criteria, as directed/identified by the Statutory Biodiversity Metric (SBM)</p> |

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|  |  |  | <p>River MoRPH condition criteria, as ditches vary in their quality, structure and scope for enhancement across the site. Pond condition assessments will also take place</p> <p>Where scrub encroachment is identified as a limiting factor, the initial management measures will comprise selective scrub removal to allow greater light into the ditch and encourage a more diverse aquatic fauna.</p> <p>Macrophyte cover can also be supplemented through the enhancement of ditch banks by plug-planting with specialist wetland plants (i.e. common reed), where this is relevant.</p> <p>Ongoing management will then comprise continued scrub control, sensitive dredging works and rotational management to ensure that entire lengths of ditch are affected at the same time.</p> |
|--|--|--|--|



### 5 Faunal Enhancements

5.1.1. In addition to the habitat interventions set out above, the following enhancement measures are proposed across the Order Limits to provide enhancements for certain faunal groups:

- 5 barn owl nest boxes installed on suitable mature trees, micro-sited by a suitably experienced ecologist;
- 5 kestrel nest boxes installed on woodland edge/mature hedgerow trees;
- 90 small nest boxes comprising a mixture of open-fronted and hole-fronted nest boxes, with the latter targeted at 40mm in diameter to target starling;
- 100 bat boxes on retained mature trees;
- 100 hedgehog boxes;
- 100 insect hotels, comprising underground bee shelters and general-purpose insect hotels made from natural materials (i.e. brash);
- Inclusion of 100 beetle banks;
- Inclusion of 50 bee hives; and
- 50 amphibian/reptile refugia, designed in line with English Nature's (now Natural England) mitigation guidelines, whereby refugia are made from brash/rubble/grass cuttings.

5.1.2. The locations of the enhancement features will be presented as part of a 'final' LEMP.

### 6 Monitoring

6.1.1. Along with the requirement for ongoing management of the operational site by specialist contractors, it will also be necessary for the site to be periodically monitored by a Suitably Qualified Ecologist (SQE) to ensure the habitats are in the appropriate condition and are either showing signs of success in the management objectives put forward (i.e. between Years 1 and 5) and later with evidence that the habitats have achieved their target condition under the SBM.

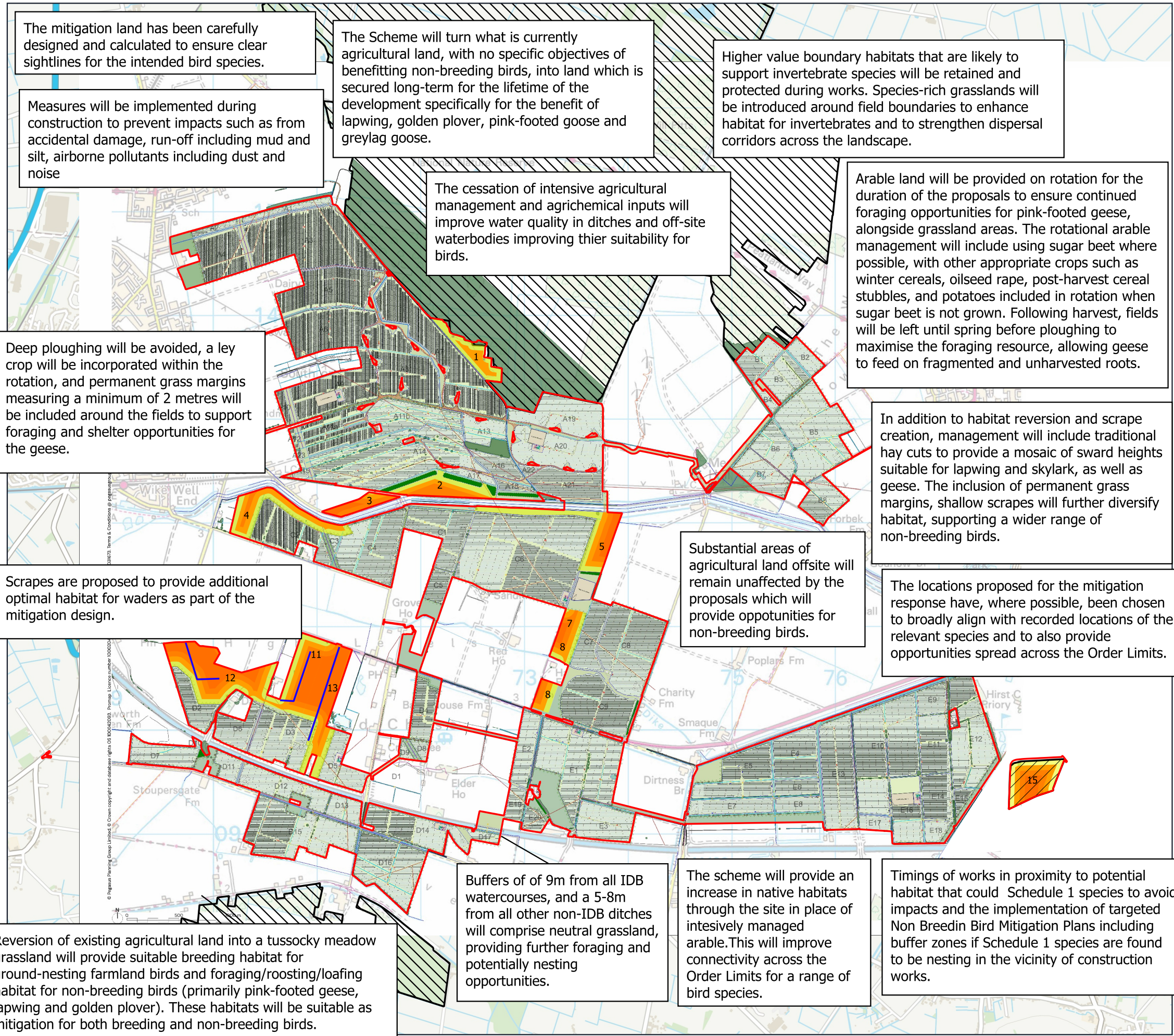
- 6.1.2. Pre-construction monitoring of the mitigation grassland areas will be required to ensure that they are suitably established prior to construction works commencing. This monitoring will take place during the optimal growing season—typically late spring to early summer—when grassland flora and associated fauna are most active and visible. Surveys will assess sward composition, structure, coverage, and the presence of target species to confirm that the habitat is developing as intended. The results of these surveys will inform any necessary adjustments before construction begins, ensuring the best possible baseline for subsequent habitat interventions.
- 6.1.3. Except for the pre-construction monitoring, which is a standalone requirement, regular monitoring of the site will commence in Year 1 following the completion of all habitat interventions. Given the likely phased development approach spanning several planting and growing seasons, post-construction monitoring will only begin once all proposed interventions are in place.
- 6.1.4. Except for the pre-construction monitoring described above, subsequent assessments will be carried out post-creation with a full strategy devised. The appointed SQE will undertake Habitat Condition Assessments to evaluate progress against the management objectives and BNG condition criteria. If habitats are observed to be failing or in 'Poor' condition, the SQE is responsible for reporting this to the Applicant. The Applicant must then implement appropriate remedial measures. Monitoring results for each assessment year will be compiled into reports for submission to the relevant local planning authority.

## 7 Delivery of the LEMP

- 7.1.1. The site operator will be the body responsible for the delivery of this LEMP. It will be the responsibility of the site operator and their appointed contractors to deliver the practical measures detailed in the final plan i.e. ground preparation, sowing and ongoing management. It will be the site operator's overall responsibility to ensure the prescriptions detailed in any future management plan are delivered, and any remedial actions arranged and delivered.
- 7.1.2. The mitigation measures will be delivered in line with construction phasing.
- 7.1.3. There will be a requirement under the DCO to implement the approved LEMP.

- 7.1.4. An SQE will need to be appointed to undertake the required monitoring measures. The SQE will then be responsible for ongoing monitoring and reporting of discrepancies to the site operator along with compiling the results of the monitoring for submission to the relevant local planning authority.

## Figure 1 – Non-Breeding Bird Mitigation Plan



The mitigation land has been carefully designed and calculated to ensure clear sightlines for the intended bird species.

Measures will be implemented during construction to prevent impacts such as from accidental damage, run-off including mud and silt, airborne pollutants including dust and noise

The Scheme will turn what is currently agricultural land, with no specific objectives of benefitting non-breeding birds, into land which is secured long-term for the lifetime of the development specifically for the benefit of lapwing, golden plover, pink-footed goose and greylag goose.

Higher value boundary habitats that are likely to support invertebrate species will be retained and protected during works. Species-rich grasslands will be introduced around field boundaries to enhance habitat for invertebrates and to strengthen dispersal corridors across the landscape.

The cessation of intensive agricultural management and agrichemical inputs will improve water quality in ditches and off-site waterbodies improving their suitability for birds.

Arable land will be provided on rotation for the duration of the proposals to ensure continued foraging opportunities for pink-footed geese, alongside grassland areas. The rotational arable management will include using sugar beet where possible, with other appropriate crops such as winter cereals, oilseed rape, post-harvest cereal stubbles, and potatoes included in rotation when sugar beet is not grown. Following harvest, fields will be left until spring before ploughing to maximise the foraging resource, allowing geese to feed on fragmented and unharvested roots.

Deep ploughing will be avoided, a ley crop will be incorporated within the rotation, and permanent grass margins measuring a minimum of 2 metres will be included around the fields to support foraging and shelter opportunities for the geese.

In addition to habitat reversion and scrape creation, management will include traditional hay cuts to provide a mosaic of sward heights suitable for lapwing and skylark, as well as geese. The inclusion of permanent grass margins, shallow scrapes will further diversify habitat, supporting a wider range of non-breeding birds.

Scrapes are proposed to provide additional optimal habitat for waders as part of the mitigation design.

Substantial areas of agricultural land offsite will remain unaffected by the proposals which will provide opportunities for non-breeding birds.









The locations proposed for the mitigation response have, where possible, been chosen to broadly align with recorded locations of the relevant species and to also provide opportunities spread across the Order Limits.

Reversion of existing agricultural land into a tussocky meadow grassland will provide suitable breeding habitat for ground-nesting farmland birds and foraging/roosting/loafing habitat for non-breeding birds (primarily pink-footed geese, lapwing and golden plover). These habitats will be suitable as mitigation for both breeding and non-breeding birds.

Buffers of 9m from all IDB watercourses, and a 5-8m from all other non-IDB ditches will comprise neutral grassland, providing further foraging and potentially nesting opportunities.

The scheme will provide an increase in native habitats through the site in place of intensively managed arable. This will improve connectivity across the Order Limits for a range of bird species.

Timings of works in proximity to potential habitat that could Schedule 1 species to avoid impacts and the implementation of targeted Non Breeding Bird Mitigation Plans including buffer zones if Schedule 1 species are found to be nesting in the vicinity of construction works.

-  Draft Order Limit
-  Mitigation Land
-  Mitigation Land with a 50m Buffer from Vertical Features
-  Mitigation Land with a 100m Buffer from Vertical Features
-  Mitigation Land with a 150m Buffer from Vertical Features
-  Mitigation Land (Managed As Arable)
-  Special Protection Area (SPA)
-  Scrapes

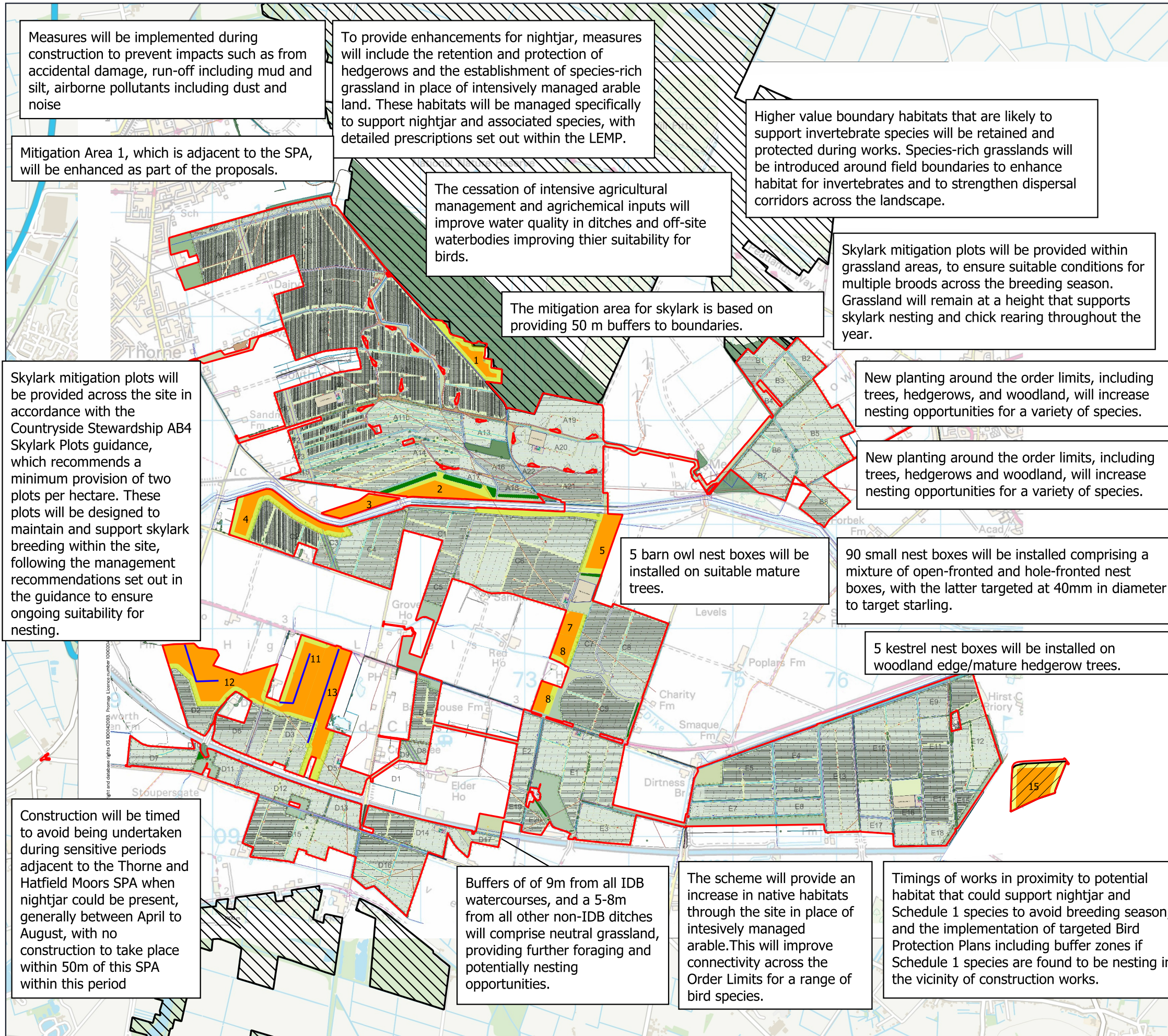


|               |   |
|---------------|---|
| Project       | Tween Bridge                                |
| Drawing Title | Figure 1: Non Breeding Bird Mitigation Plan |
| Scale         | As Shown (Approximate)                      |
| Drawing No.   | 16413/P14a                                  |
| Date          | August 2025                                 |
| Checked       | TLR/RR                                      |



Town House, 3rd Floor, 11-15 Dix's Field, Exeter, EX1 1QA  
 T: 01392 447 588 E: info@tylergrange.co.uk W: www.tylergrange.co.uk

## **Figure 2 – Breeding Bird Mitigation Plan**



-  Draft Order Limit
-  Mitigation Land
-  Mitigation Land with a 50m Buffer from Vertical Features
-  Mitigation Land (Managed As Arable)
-  Special Protection Area (SPA)
-  Scrapes

Measures will be implemented during construction to prevent impacts such as from accidental damage, run-off including mud and silt, airborne pollutants including dust and noise

To provide enhancements for nightjar, measures will include the retention and protection of hedgerows and the establishment of species-rich grassland in place of intensively managed arable land. These habitats will be managed specifically to support nightjar and associated species, with detailed prescriptions set out within the LEMP.

Mitigation Area 1, which is adjacent to the SPA, will be enhanced as part of the proposals.

The cessation of intensive agricultural management and agrichemical inputs will improve water quality in ditches and off-site waterbodies improving their suitability for birds.

Higher value boundary habitats that are likely to support invertebrate species will be retained and protected during works. Species-rich grasslands will be introduced around field boundaries to enhance habitat for invertebrates and to strengthen dispersal corridors across the landscape.

The mitigation area for skylark is based on providing 50 m buffers to boundaries.

Skylark mitigation plots will be provided within grassland areas, to ensure suitable conditions for multiple broods across the breeding season. Grassland will remain at a height that supports skylark nesting and chick rearing throughout the year.

Skylark mitigation plots will be provided across the site in accordance with the Countryside Stewardship AB4 Skylark Plots guidance, which recommends a minimum provision of two plots per hectare. These plots will be designed to maintain and support skylark breeding within the site, following the management recommendations set out in the guidance to ensure ongoing suitability for nesting.

New planting around the order limits, including trees, hedgerows, and woodland, will increase nesting opportunities for a variety of species.

New planting around the order limits, including trees, hedgerows and woodland, will increase nesting opportunities for a variety of species.

5 barn owl nest boxes will be installed on suitable mature trees.

90 small nest boxes will be installed comprising a mixture of open-fronted and hole-fronted nest boxes, with the latter targeted at 40mm in diameter to target starling.

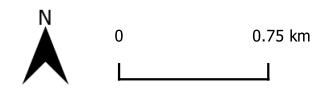
5 kestrel nest boxes will be installed on woodland edge/mature hedgerow trees.

Construction will be timed to avoid being undertaken during sensitive periods adjacent to the Thorne and Hatfield Moors SPA when nightjar could be present, generally between April to August, with no construction to take place within 50m of this SPA within this period

Buffers of 9m from all IDB watercourses, and a 5-8m from all other non-IDB ditches will comprise neutral grassland, providing further foraging and potentially nesting opportunities.

The scheme will provide an increase in native habitats through the site in place of intensively managed arable. This will improve connectivity across the Order Limits for a range of bird species.

Timings of works in proximity to potential habitat that could support nightjar and Schedule 1 species to avoid breeding season, and the implementation of targeted Bird Protection Plans including buffer zones if Schedule 1 species are found to be nesting in the vicinity of construction works.



|               |   |
|---------------|---|
| Project       | Tween Bridge                            |
| Drawing Title | Figure 2: Breeding Bird Mitigation Plan |
| Scale         | As Shown (Approximate)                  |
| Drawing No.   | 16413/P12a                              |
| Date          | August 2025                             |
| Checked       | TLR/RR                                  |



Town House, 3rd Floor, 11-15 Dix's Field, Exeter, EX1 1QA  
T: 01392 447 588 E: info@tylergrange.co.uk W: www.tylergrange.co.uk