Land off Gallagher Retail Park,

Scunthorpe

Ecological Appraisal

2024

RACHEL
HACKING
ECOLOGY

Client	Lindum Developments
Project Title	Land off Gallagher Retail Park, Scunthorpe
Project Reference	RHE.4009
Project Leader	Mark Woods
Contact Details	mark@rachelhackingecology.co.uk

	Name	Position	Date
Author	Mark Woods	Principal Ecologist	27/02/2024
Revision	Mark Woods	Principal Ecologist	16/03/2024

RACHEL HACKING ECOLOGY

The Stables
Paradise Wharf
Ducie Street
Manchester
M1 2JN

0161 465 8971

www.rachelhackingecology.co.uk

mail@rachelhackingecology.co.uk

Report Contents

Executive Summary

Development Details

The client is proposing commercial development of a plot of land to the north of Gallagher Retail Park, Scunthorpe, hereafter referred to as the 'site'.

This report describes the ecological features of the site and its surroundings and assesses the potential impacts of the development on the ecological interest. Recommendations are provided so that the development is compliant with biodiversity policy and legislation.

Ecological Interest

The site has a low level of ecological interest. Ecological features of interest include boundary drains and a hedgerow with rough grassland, scrub, and plantation woodland on adjacent areas. Water Vole *Arvicola amphibius* could be present in the Soak Mere Drain.

Outcomes

Further survey work is required because Water Vole could be present in the Soak Mere Drain.

Loss of improved grassland will need to be mitigated and impacts on the boundary drains and adjacent habitats avoided.

1. Introduction

1.1 Project Brief

1.1.1 Rachel Hacking Ecology Limited was commissioned in 2023 by Lindum Developments to carry out an ecological appraisal of land next to Gallagher Retail Park, Scunthorpe. The site is located at O.S. grid reference: SE 8649 1135 (see Figure 1).

Figure 1. Location Map (red line)

1.1.2 The proposed development site is a recently sown flat grassland field enclosed by the Soak Mere Drain to the north, the A1077 Trunk Road to the west, housing to the east and Gallagher Retail Park to the south. There is a block of rough grassland between the housing development and the site. There is an unmanaged area of grassland, scrub and plantation woodland between the site and a supermarket to the southwest. The roadside boundary to the west is flanked by a shallow drain. The supermarket to the southeast is separated by a species-rich hedgerow. To the north and west the land is agricultural. To the south and east the land is urban.

Description of Development

1.1.3 The site will be the subject of a planning application for commercial development (see Appendix 6).

1.2 Scope of Work

1.2.1 The Client commissioned Rachel Hacking Ecology to carry out the following works:

- Desk-based study to obtain details of designated sites, protected and notable species within a 1km radius search area.
- Record the extent, type, and condition of habitats within and next to the site.
- Calculate the baseline and post-development biodiversity units.
- Search for signs of protected species and assessment of the potential of habitats and features to support protected and notable species.

1.3 Site Visit Information

Surveyor Details

1.3.1 Mark Woods *MCIEEM, CEcol* (Principal Ecologist) visited the site on 1st December 2023. Mark has 35 years of professional experience and has carried out ecological appraisals throughout the British Isles.

Weather

1.3.2 The weather at the time of the survey was foggy and cold.

2. Methods

2.1 Desk Study

2.1.1 The Magic website (Multi-Agency Geographical Information for the Countryside) was interrogated for the presence of Statutory Designated Sites within 2km radius of the site.

2.1.2 The site was checked to determine if it is located within an Impact Risk Zones for any SSSI and if so, whether the Local Planning Authority will need to consult Natural England.

2.1.3 The Lincolnshire Environmental Records Centre (LERC) was contacted to provide details of non-statutory designated sites and records of protected and notable species within a 1km radius of the site.

2.2 Field Survey

Extended Phase 1 Habitat Survey

2.2.1 In accordance with JNCC guidelines[1] the site was walked over, and the habitats and features of ecological interest were mapped and described. Habitats and features of particular interest were target noted.

2.2.2 During the walkover habitat and features were assessed for their suitability to support protected and notable species in accordance with CIEEM guidelines[2]. Field signs of protected, notable, and invasive non-native species, if encountered, were mapped, and described.

2.3 Biodiversity Net Gain

2.3.1 During the site walkover the ecological condition of each habitat was assessed in accordance with the Natural England (2022) guidelines[3]. Habitat types recorded and mapped during the field survey were converted from the JNCC system to the UK Habitat Classification system[4].

2.3.2 Habitat data including type, area (or length), condition and strategic location were uploaded to the Defra Biodiversity Metric Calculator (Statutory version) spreadsheet to determine the baseline value of the site. The extent of any habitats to be retained or enhanced was also entered into baseline worksheets.

2.3.3 The post-development masterplan was interrogated to determine areas of hard standing, buildings, and associated infrastructure. New, retained, and enhanced habitats were classified and allocated a target condition, based on habitat type, location, and management input. This information was uploaded to the metric spreadsheet to obtain a post-development value.

2.3.4 The pre- and post-development values were compared to determine whether the yield of biodiversity units achieved a deficit or gain.

---

[1] JNCC (2010). *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*. Joint Nature Conservation Committee, Peterborough

[2] CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal*. Chartered Institute of Ecology and Environmental Management, Winchester.

[3] Panks, S. White, N., Newsome, A. et al. (2023). *Biodiversity metric 4: Auditing and accounting for biodiversity – User Guide*. Natural England.

[4] Butcher, B., Carey, P., et al. (2020). UK Habitat Classification – Habitat Definitions V1.1. at http://UKhab.org

2.4 Mitigation Hierarchy

2.4.1 Mitigation measures should be embedded within the masterplan design and planning application process. Measures during the construction phases should be included in a Construction Environmental Management Plan: Biodiversity (CEMP). This process from proposal to implementation needs to consider the 'mitigation hierarchy' of avoid, reduce, compensate, and enhance:

- Aim to avoid negative effects through the design process.
- Mitigate if negative effects cannot be avoided.
- Use compensation measures to offset residual impacts.
- Identify and implement opportunities to enhance biodiversity.

3. Results

3.1 Survey Constraints

3.1.1 Field survey results are valid for a limited duration and no investigation can provide a complete description and characterisation of a site. The composition of habitats and species can change depending on environmental variables and the mobility of species, so the results of a study become less reliable over time. In some cases, surveys that are 3 years old may be acceptable for a project assuming that habitats have not significantly changed in the intervening period, but for protected species it is likely that survey data will need to be no more than 18 months old.

3.1.2 The vegetation was covered in frost, but the grassland within the site was species-poor and contained readily identifiable species. The timing of the survey was not optimal for signs of some protected species such as Water Vole.

3.2 Designated Sites

3.2.1 The desk study provided information on the designated sites listed below in Table 1.

Table 1. Designated Sites

Name	Status	Location/distance	Interest
Humber Estuary	Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), Ramsar	2.5km, west	Habitats, Fish, Birds, Mammals
Brumby Common West	Local Wildlife Site (LWS)	0.8km, west	Not provided
Ferry Road West Heath	LWS	0.9km, north	Not provided
Gunness Common	LWS	0.9km, south	Not provided
Kingsway Golf Course	LWS	0.8km, southeast	Not provided

3.2.2 The desk study identified that the site was located within the Impact Risk Zone of the Humber Estuary Site of Special Scientific Interest. The proposed development will require the Local Planning Authority to consult with Natural England.

3.3 Habitats

3.3.1 For Target Notes and photographs see Appendix 3; for the habitats survey plan see Appendix 4, and for Condition Assessments see Appendix 5.

Modified Grassland

3.3.2 The species-poor sward of modified grassland (TN1) has a short, uniform structure with localised patches of bare ground that appear to have been recently created by vehicles carrying out site investigation work. The sward is dominated by Perennial Rye-grass *Lolium perenne*, with occasional Cock's-foot *Dactylis glomerata*, Yorkshire Fog *Holcus lanatus*, Common Ragwort *Jacobaea vulgaris*, Spear Thistle *Cirsium vulgare*. Dandelion *Taraxacum* agg., and Prickly Lettuce *Lactuca serriola* are rare. The grassland is in 'poor' ecological condition because there are less than six species in a square metre.

Hedgerow

3.3.3 The southeast boundary is defined by a metal palisade security fence with planted semi-mature trees and shrubs forming a species-rich native hedgerow with trees (TN7) with an average height of 3m and width of 3m, located on either side of the fence. A ground cover is present of planted Persian Ivy *Hedera colchica* and Irish Ivy *Hedera* 'Hibernica'. Trees and shrubs include Wild Cherry *Prunus avium*, Wild Privet *Ligustrum vulgare*, Hawthorn *Crataegus monogyna*, Hazel *Corylus avellana*, Cherry Laurel *Prunus laurocerasus*, Ash *Fraxinus excelsior*, Grey Willow *Salix cinerea*, Blackthorn *Prunus spinosa*, Field Maple *Acer campestre*, Beech *Fagus sylvatica*, Olive Willow *Salix elaeagnos* and self-set Franchet's Cotoneaster *Cotoneaster franchetii*. The hedgerow is in 'moderate' ecological condition because of the field layer species, presence of non-native species and uniform age of the trees.

Drains

3.3.4 The Soak Mere Drain (TN2) is 2.5m wide and less than 0.5m deep with a sand/silt substrate. There was little aquatic vegetation because the drain had been recently dredged. A few scattered remnants of Common Reed *Phragmites australis*, Branched Bur-reed *Sparganium erectum*, Water Starwort *Callitriche* agg., and Fool's Water-cress *Helosciadium nodiflorum* are present. The banks of the drain are more than 10m deep, steep, and up to 70^0 in places. The north side bank is the steepest and supports a grassland sward dominated by tall grasses such as Cock's-foot, False Oat-grass *Arrhenatherum elatius* and Common Couch *Elymus repens*. Tall ruderals such as Common Nettle *Urtica dioica*, Spear Thistle and Common Ragwort are also present. The south bank supported a similar assemblage of species, but Bramble *Rubus fruticosus* agg. was much more abundant and a few semi-mature Hawthorn *Crataegus monogyna* shrubs were present at the top of the bank. The drain is in

'poor' ecological condition because of the shallow depth, lack of aquatic and margin vegetation and recent disturbance.

3.3.5 The A117 Roadside Drain (TN3) is approximately 1m wide, very shallow with iron oxide deposits. It was partially cut at the time of the survey but most of the channel was covered in Common Reed with localised patches of Branched Bur-reed, Greater Reedmace *Typha latifolia* and Hard Rush *Juncus inflexus*. The west bank is approximately 5m high and dominated by a mix of rough grassland and Bramble. The east bank is covered in short, recently cut grassland, but also contains tall grasses such as Cock's-foot, False Oat-grass, and Common Couch. The drain is in 'poor' ecological condition because it passes only five of the eight condition criteria.

Adjacent Land

3.3.6 A plot of Other neutral grassland (TN8) separates the field from a housing estate on the east side of the site. The species-poor grassland is unmanaged and heavily encroached by Hawthorn, Bramble and Elder *Sambucus nigra*. Tall ruderal vegetation is also frequent to locally abundant with Hogweed *Heracleum sphondylium*, Rosebay Willowherb *Chamaenerion angustifolium*, Mugwort *Artemisia vulgaris* and Thistles *Cirsium* spp., growing with False Oat-grass, Common Couch and Cock's-foot.

3.3.7 A raised area of land supports a rough grassland (TN5), which may have been sown with a grassland seed-mix, but a lack of management has resulted in much of the sward being dominated at the west end by tall grasses and tall ruderals such as Teasel *Dipsacus fullonum*, Hemlock *Conium maculatum* and Common Nettle and to the east Common Reed is dominant. Hawthorn, Grey Willow, and Goat Willow *Salix caprea* are occasional to locally frequent. Sown areas of grassland occur in small patches and are much more species-rich with finer-leaved grasses such as Red Fescue *Festuca rubra* and herbs such as Fodder Burnet *Poterium balearicum*, Black Knapweed *Centaurea nigra*, Lady's Bedstraw *Galium verum*, Common Sorrel *Rumex acetosa* and Ox-eye Daisy *Leucanthemum vulgare*.

3.3.8 The west facing embankment of grassland TN5 supports a semi-mature plantation of Wild Cherry (Other broadleaved woodland, TN4), with numerous young suckers and a field layer dominated by Common Nettle. The north-facing embankment (Willow scrub, TN6) was probably planted with willows, but there are numerous saplings, so it is not clear as to the origin of the stand. Semi-mature Grey Willow, Goat Willow, Crack Willow *Salix* x *fragilis* sens. lat. and Hawthorn form a fairly uniform stand with a field layer of rough grassland and abundant Cleavers *Galium aparine*.

3.4 Species

Badger

3.4.1 The desk study returned two records within the search area with the closest being more than 0.5km distance from the site.

3.4.2 No signs of Badger *Meles meles* were located on the site or in the neighbouring rough grasslands (TN5 and TN8) and a woodland embankment to the east of the retail park.

Bats

3.4.3 The desk study returned seven records within the search area with four records of Pipistrelle type *Pipistrellus* sp. bats undefined at species level, and three records of unknown species. The closest record is 0.2km from the site.

3.4.4 The rough grasslands (TN5 and TN8) on the periphery and the drains (TN2 and TN3) provide foraging opportunities but the site itself is sub-optimal and there are no potential roosting features (PRFs).

Water Vole

3.4.5 The desk study returned four records of Water Vole within the search area the nearest being 0.5km distance from the site.

3.4.6 Most signs of Water Vole, if present, in the Soak Mere Drain TN2 will have been removed by the recent dredging and given the timing of the survey Water Vole activity will be limited to the immediate area of a winter burrow. Burrows that may have been created by Water Vole were found approximately 2m above and at the water margin on the north side of the drain (See Figure 3) at an approximate grid reference of SE 864 114.

Figure 3. Possible Water Vole burrows

Other Mammals

3.4.7 The desk study returned:

- Five records of Brown Hare *Lepus europaeus* within the search area, the nearest being 0.35km distance;
- 21 records of Western European Hedgehog *Erinaceus europaeus* within the search area, the nearest being more than 0.5km distance from the site, and
- Two records of Harvest Mouse *Micromys minutus* within the search area, the nearest being 0.8km distance from the site.

3.4.8 The grassland TN1 is suitable habitat for Brown Hare but is sub-optimal for Hedgehog and Harvest Mouse. The banks of the drains (TN2 and TN3) and the peripheral grasslands are more suitable for Hedgehog and Harvest Mouse and could also be used for cover by Brown Hare

Birds

3.4.9 The desk study returned 1213 records of 75 bird species. The site and peripheral habitats provides suitable habitat for 26 of the species.

3.4.10 During the field survey ten bird species were observed foraging on the site including Carrion Crow *Corvus coronne*, Redshank *Tringa totanus*, Blackbird *Turdus merula*, Woodpigeon *Columba palumbus*, Black-headed Gull *Chroicocephalus ridibundus*, Magpie *Pica pica*, Great Tit *Parus major*, Blue Tit *Cyanistes caeruleus*, Long-tailed Tit *Aegithalos caudatus* and Wren *Troglodytes troglodytes*.

Reptiles

3.4.11 The desk study returned six records of three species including Grass Snake *Natrix helvetica*, Common Lizard *Zootoca vivipara* and Adder *Viperus berus*.

3.4.12 The drains (TN2 and TN3) could support Grass Snake, but the presence of Adder and Common Lizard are not anticipated because the habitats are sub-optimal and isolated from good quality habitats.

Amphibians

3.4.13 The desk study returned 15 records of amphibians within the search area including Great Crested Newt *Triturus cristatus*, Smooth Newt *Lissotriton vulgaris*, Common Frog *Rana temporaria*, and Common Toad *Bufo bufo,*

3.4.14 The grassland TN1 is considered to be sub-optimal but the peripheral habitats and drain banks provide suitable terrestrial habitat for all amphibian species. However, the drains are unsuitable breeding habitat for amphibians because the smaller drain (TN3) is very shallow (despite recent prolonged precipitation), and the larger drain (TN2) has a slow to moderate flow.

Invertebrates

3.4.15 The desk study returned:

- Six records of Small Heath *Coenonympha pamphilus*, the nearest record being 0.35km distance.
- One record of Large Heath *Coenonympha tullia* at an unspecified location within the search area.
- One record of Grayling *Hipparchia semele* at an unspecified location within the search area.
- 18 records of Wall *Lasiommata megera*, the nearest being 0.35km distance from the site.
- One record of Shimmering Ruby-tailed Wasp *Chrysis ignita* at an unspecified location within the search area.
- One record of Shaded Broad-bar *Scotopteryx chenopodiata* at an unspecified location within the search area.
- One record of Latticed Heath *Chiasmia clathrata* at an unspecified location within the search area.

3.4.16 Rough grassland (TN5 and TN8) on the edge of the site could provide suitable habitat for Small Heath, Shaded Broad Bar and Latticed Heath and the Common ragwort on the modified grassland (TN1) could also support Shaded Broad Bar. Suitable habitat for other invertebrates species is not present on the site.

Plants

3.4.17 Suitable habitat is not present on site for any of the five species of notable plants returned by the desk study and notable plants are not considered any further in this report.

3.5 Invasive Species

3.5.1 The desk study returned four records of Eastern Grey Squirrel *Sciurus carolinensis*, the nearest being 0.35km distance from the site. There were no sightings of Grey Squirrel and suitable habitat is not present, so this species is not discussed any further in this report.

3.5.2 The desk returned:

- Three records of Butterfly Bush *Buddlejia davidii*.
- One record of Spotted Archangel *Lamiastrum galeobdolon* subsp. *argentatum*.
- One record of Japanese Rose *Rosa rugosa*.
- Two records of Himalayan Balsam *Impatiens balsamifera*.

3.5.3 All of the records were more than 0.8km distance from the site. Japanese Rose, Spotted Archangel and Butterfly Bush are not present on or next to the site. The large drain (TN2) is suitable habitat for

Himalayan Balsam, but the timing of the survey and recent management removed any potential to detect the species if it is present.

3.6 Biodiversity Net Gain

3.6.1 There are three habitat types on the site including:

- 4.987ha of Modified Grassland (TN1) in 'poor' ecological condition that has a value of 9.97 units.
- 0.185km of Species-rich Native hedgerow with Trees (TN7) in 'good' condition that has a value of 3.33 units.
- 0.494km of drains (TN2 and TN3) in 'poor' ecological condition that have a value of 1.66 units.

4. Assessment

4.1 Development Context

4.1.1 The following assessment assumes that the majority of the site will be developed, but the boundary drains will not be directly affected, and the peripheral habitats will also remain unaffected by development.

4.2 Impacts on Designated Sites

4.2.1 The nearest Statutory Designated Site is the Humber Estuary SSSI, SAC and Ramsar which shares common boundaries that include a section of the tidal River Trent, which is approximately 2.5km distance. The Local Planning Authority (LPA) will consult with Natural England because of the size of development and the proximity of designated sites.

4.2.2 It is anticipated that Natural England will expect the LPA to carry out a Habitat Regulations Assessment (HRA) to determine if the development proposal could significantly harm the designated features of the Humber Estuary SSSI, SAC, Ramsar. The assessment is carried out under the Habitats Regulations, which protect European sites in England and Wales and their inshore waters. A European site is protected by the Conservation of Habitats and Species Regulations 2017 as amended.

4.2.3 An adverse impact on the Humber Estuary SSSI, SAC, Ramsar is not anticipated because the impact pathways that could affect the qualifying features of the site such as visual and audio disturbance, changes to water quality, direct damage and visitor pressure are not relevant.

4.2.4 The grassland could provide functionally linked habitat to the Humber Estuary SSSI and Ramsar because some of the wildfowl (Geese and duck) species are likely to make use of grasslands in the vicinity of the Humber Estuary for grazing. Under such circumstances the short length of the sward, grazed shoots of grasses and faecal remains would provide evidence of grazing by wildfowl. No such evidence was present, and it can be confidently assumed that the site is not regularly used for grazing by wildfowl associated with the Humber Estuary SSSI or Ramsar.

4.2.5 There are four Local Wildlife Sites within 1km radius of the site, all separated by at least 0.8km of farmland and/or urban development. Given the geographical separation an adverse direct impact is not anticipated. Indirect impacts caused by increased visitor pressure are not anticipated because the development is not residential.

4.3 Impacts on Habitats

4.3.1 This section evaluates and describes potential impacts and assesses ecological effects on habitats that are within the study area. There are no Habitats of Principal Importance on the site.

Grassland

4.3.2 There will be a loss of just under 5ha of modified grassland, which will have an adverse impact, but the significance will be minor. The grassland is species-poor, of uniform structure and to some extent is isolated by urban development to the south and east, a major road to the west, and a very deep drain to the north.

Hedgerows

4.3.3 Hedgerow TN7 will be retained within the development footprint, but without precautions there is potential for an adverse impact during the construction phase, because of pollution, dust, and direct damage from construction activity.

Drains

4.3.4 The two drains will be retained, but without precautions there is a risk of harm because of pollution, dust, and direct damage from construction activity.

Off-site Habitats

4.3.5 Isolation of off-site habitats will be required to minimise potential for damage or disturbance during the construction phase. Indirect impacts during the operational phase are not anticipated because accessibility to the two grasslands will not change.

4.4 Impacts on Species

Badger

4.4.1 Badger is a highly mobile animal that can occupy suitable habitat at any time during the year so there is a risk that Badger will access the construction site searching spoil piles and excavations for food. Without mitigation measures there is a risk of entrapment in excavations and equipment.

Bats

4.4.2 There is no anticipated risk to roosting bats because of a lack of PRFs. It is anticipated that bat activity will be limited to the rough grasslands (TN5 and TN8), plantation woodland (TN4), scrub (TN6), hedgerow (TN7) and the two drains (TN2 and TN3), which are present on the perimeter or outside of the development footprint. With controls on artificial light spillage it should be feasible to maintain foraging areas and with appropriate tree or hedgerow planting on the east and west boundaries there is potential to improve foraging opportunities.

Water Vole

4.4.3 At this stage, an impact on Water Vole cannot be discounted because the species may be present in Drain TN2. Development in close proximity to the south bank could have an adverse effect during the construction phase because of noise, pollution, dust, and direct damage to bankside habitats. During the operational phase there is potential for impacts from noise and light spillage if Water Vole is present.

Other Mammals

4.4.4 The loss of habitat could have an adverse impact on Brown Hare, but suitable, alternative habitat is abundant in the local area and development will not cause fragmentation of the farmland landscape. As such the impact of development on Brown Hare is likely to be adverse but insignificant.

4.4.5 Habitats most likely to be used by Hedgehog and Harvest Mouse, if present, are located on the periphery of the development site. If the peripheral habitats are retained and protected from harm during the construction phase the risks of an adverse impact to Hedgehog and Harvest Mouse are negligible.

Birds

4.4.6 The loss of grassland TN1 could have an adverse impact on species such as Skylark *Alauda arvensis* and Starling *Sturnus vulgaris*, which forage on short grasslands. However, the magnitude of the impact is unlikely to be of major significance because Skylark are just as likely to be found in adjacent arable fields and Starling can make use of urban habitats in addition to grassland fields.

4.4.7 Other bird species recorded in the local area are much more likely to be associated with peripheral habitats on and next to the development footprint or arable fields in the local area.

Reptiles

4.4.8 The drains (TN2 and TN3) and their associated banks, and peripheral grasslands (TN5 and TN8) are suitable habitat for Grass Snake but foraging opportunities in the drains are likely to be limited because amphibians are not anticipated to be using the drains for breeding and/or foraging. Isolation of the drains and grasslands during the construction phase will be sufficient to minimise the potential for harm should Grass Snake be present on site.

Amphibians

4.4.9 The terrestrial habitats associated with the drains (TN2 and TN3) and peripheral grasslands (TN5 and TN8) provide foraging opportunities and cover for amphibians, but the presence of these species is not anticipated because of a lack of accessible breeding habitat within 0.5km. The nearest ponds are isolated by main roads and large drains.

Invasive Species

4.4.10 Suitable habitat to support Himalayan Balsam is present in Drain TN2, but detection in mid-Winter is not feasible. It is not an offence to have Himalayan Balsam on your land, but it is an offence to allow the species to spread into neighbouring areas or to grow in the wild. Given the depth of the drain and the footprint of the development the spread of the species, if present in the drain, is not anticipated.

4.5 Biodiversity Net Gain

4.5.1 The baseline area habitat value within the redline development is 9.97 units. The baseline hedgerow value is 3.33 units and the baseline drain value is 1.66 units.

4.5.2 For the proposed development to achieve an overall net gain for biodiversity it will be necessary to seek mitigation or compensation for any shortfall in units either by direct management of land by the applicant or the purchase of biodiversity units from a third party.

4.5.3 Scenario A is on-site mitigation, which will be required to achieve 10.97 area units, 3.66 hedgerow units and 1.83 watercourse units. If on-site mitigation is insufficient to deliver a post-development net gain for biodiversity, two other options are available:

4.5.4 Scenario B: the developer is unable to compensate all impacts on-site but is able to secure local compensatory habitat creation. This scenario is not modelled explicitly and would require making assumptions for what an individual development might look like.

4.5.5 Scenario C: the developer is unable to compensate on site and is unable to find local compensatory habitat in which to invest. Instead, they have to pay for their units through a biodiversity unit offsetting market. This could be an Environment Bank, or North Lincolnshire Council.

4.5.6 The on-site mitigation yielded a deficit of 4.69 (-37.02%) units for area habitats; a gain of 0.33 (74.41%) units for hedgerow habitats, and a gain of 0.17 (13.23%) units for watercourses. It will be necessary to consider Scenarios B and C to offset the deficit in Area habitats and to satisfy the trading rules.

5. Recommendations

5.1 Further Surveys

Water Vole

5.1.1 Mitigation measures may be required for Water Vole if the species is present in the Soak Mere Drain. A targeted survey in early summer is recommended. Given the depth of the banks and inaccessibility of the drain margins it is recommended that a drone be used to carry out a camera survey of each margin to detect signs of Water Vole activity. A thermal imaging camera on a drone can also be used to detect Water Vole if they are close to their burrow entrances.

5.2 Appropriate Assessment

5.2.1 North Lincolnshire Council will have to carry out an Appropriate Assessment of the impacts of the development proposals on the Humber Estuary SAC, Ramsar. It is not expected that the assessment will extend beyond the first stage (Test of Likely Significant Effects) because there are no impact pathways associated with the development.

5.3 Biodiversity Net Gain

5.3.1 There is a deficit of 4.69 area units and the Trading Rules are not satisfied because of a loss of Low Distinctiveness habitat (modified grassland, which is a ubiquitous habitat in Lowland England). This will require offsite compensation or a compensatory payment to be legally compliant.

5.3.2 Proposals to ensure that linear habitats achieve a 10% net gain are set out below in section 5.4.

5.4 Mitigation and Enhancement Measures

5.4.1 Protection of ecological features (habitats and species) during the construction phase will be described in a Construction Environmental Management Plan (CEMP). Mitigation measures to protect, maintain and enhance ecological features during the operational phase of development will be described in a Biodiversity Management Plan (BMP). Management Plans will contain Operational Aims and Objectives, Rationale for management, Prescriptions and schedules detailing the timing and responsibility for delivering the prescriptions. It is anticipated that the CEMP and BMP will be provided as a planning condition in advance of the commencement of the proposed development.

Habitats

5.4.2 Appendix 6 shows the layout of greenspace in the proposed development, which includes native tree planting, reedbeds in the attenuation basins that will be kept permanently wet and flowering lawns. Linear habitats include new species-rich hedgerows on the west and east boundaries and internal hedgerows of Hornbeam *Carpinus betulus*.

5.4.3 Verges sown with a flowering lawn seed mix (Naturescape N14[5]) provide an alternative to species-poor amenity-grassland, yield a high unit value per hectare and require less intensive management care (lower costs).

5.4.4 Two attenuation basins will be planted with Common Reed to establish permanently wet reedbed habitat. That can be managed by rotational cutting every 2-3 years to stop scrub encroachment and achieve moderate condition.

5.4.5 The east and west boundaries are to be planted with native, species-rich hedgerows that include trees, which has realised a net gain for linear habitats.

5.4.6 Drain TN3 will be enhanced by dredging and removal of silts to increase the depth of water, remove pollutants (Iron oxide) and enhance water quality, which will realise a change from 'poor' to 'moderate' ecological condition and a net gain for biodiversity.

5.4.7 If the Biodiversity Net Gain calculations identify a deficit, management of neighbouring grasslands TN5 and/or TN8 may be worth considering. Both grasslands are in 'poor' ecological condition and require active intervention to enhance the ecological condition to 'moderate'. This will require agreement from landowners. Alternatively land management in the local area or a compensatory offsetting payment provide further alternatives.

Badgers

5.4.8 To ensure that badger and any other mammals are not trapped or harmed during the construction work, smaller excavations should be covered if left overnight. Larger excavations, if left overnight or for longer periods, should be ramped to enable animals to escape.

Nesting Birds

5.4.9 Impacts on nesting birds should be avoided by carrying out site clearance and similar operations outside of the bird breeding season (March- August). Construction activities that might directly impact upon breeding birds should hence be limited to the September-February period. If vegetation has to be cleared during the bird breeding season checks immediately before clearance by a suitably qualified ecologist will be required. If nesting activity is detected work in that area will need to stop until the ecologist considers that nesting activity is finished.

[5] https://www.naturescape.co.uk/product/n14-flowering-lawn-plant-collection/

Appendix 1: Planning Policy & Legislation

National Policy

The National Planning Policy Framework (NPPF 2023) describes the Government's planning policy for England and how it should be applied. Within this framework, the requirements in relation to biodiversity are included within several policies. The two most relevant to individual planning decisions are Paragraphs 180 and 186, shown below:

- 180. Planning policies and decisions should contribute to and enhance the natural and local environment by:
    a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
    b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
    c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
    d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
    e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
    f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.
- 186. When determining planning applications, local planning authorities should apply the following principles:
    a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
    b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments),

should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

Legislation

The Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) includes the notification and confirmation of Sites of Special Scientific Interest (SSSIs). SSSIs can be notified for their floral, faunal, geological, or physiographical features. Protection against damaging operations and management of SSSIs is also included within the Act. Impact Risk Zones (IRZs) are zones around an SSSI account for the particular sensitivities of the features for which it is notified and identify development proposal which could have adverse impacts.

The Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) protects native animals, plants, and habitats. Under the Act it is an offence to intentionally kill, injure or take any wild animal listed on Schedule 5 and it is an offence to interfere with places used for shelter or protection, or intentionally disturb animals occupying such places. The Act prohibits picking, uprooting or destroy any wild plant (or any attached seed or spore) listed in Schedule 8.

European Protected Species (EPS) such as bats, Hazel Dormouse, Otter, Natterjack Toad, Smooth Snake, Sand Lizard and Great Crested Newt are protected by the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000) and the Conservation of Habitats and Species Regulations 2017. The Acts make it an offence to:

a) Deliberately capture, injure, or kill an EPS;

b) Deliberately impair an EPS's ability to survive, breed, reproduce, rear or nurture young; to hibernate or migrate; or significantly affect the local distribution or abundance of the EPS.

c) Possess or control live or dead EPS or any part of, or anything derived from a EPS;

d) Damage or destroy a breeding site or resting place of an EPS;

e) Intentionally or recklessly obstruct access to any place that is used for shelter or protection by an EPS;

f) Intentionally or recklessly disturb a structure or place that it uses for shelter or protection that is occupied by an EPS.

All common herptiles are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000). Grass Snake, Slow Worm, Common Lizard, Adder are protected against intentional killing or injury. Common Frog, Common Toad, Smooth Newt, and Palmate Newt is protected against sale. In addition, all British reptiles, Common Toad, and Great Crested Newt are listed as Species of Principal Importance.

All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally kill, injure or take any wild bird or take, damage, or destroy its nest whilst in use or being built, or take or destroy its eggs. It is an offence to intentionally or recklessly disturb a species listed on Schedule 1 of the Act while they are nest building or at or near a nest with eggs or young, or to disturb the dependent young.

The Protection of Badgers Act 1992 makes it an offence to wilfully, or to attempt to kill, injure, take, possess, or cruelly ill-treat a Badger, or intentionally or recklessly interfere with a sett. Interference of a sett includes disturbing badgers during occupation of a sett, or damaging or destroying a sett, or obstructing access to the sett.

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places a duty on every public authority to have regard to conserving biodiversity. Section 41 of the same Act requires the Secretary of State to publish a list of the living organisms and types of habitats that are of 'Principal Importance' for the purpose of conserving biodiversity. The Secretary of State must take steps, as appear reasonably practicable, to further the conservation of those living organisms and habitats in any list published under this section. The list of species and habitats of principal importance currently includes 943 species and 56 habitats. These are the species and habitats found in England which are regarded as conservation priorities under the UK Post-2010 Biodiversity Framework

The Hedgerows Regulations 1997 protect 'important' hedgerows from destruction or damage. A hedgerow is 'important' if it (a) has existed for 30 years or more; and (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations. Under the Regulations, it is against the law to remove or destroy 'important' hedgerows unless permitted by the local planning authority.

Appendix 2: Desk Study

Desk study data has been summarised in the report. Many of the records supplied by LERC are sensitive and are not, therefore provided in full. Should further details be required, Rachel Hacking Ecology Ltd will consider written requests.

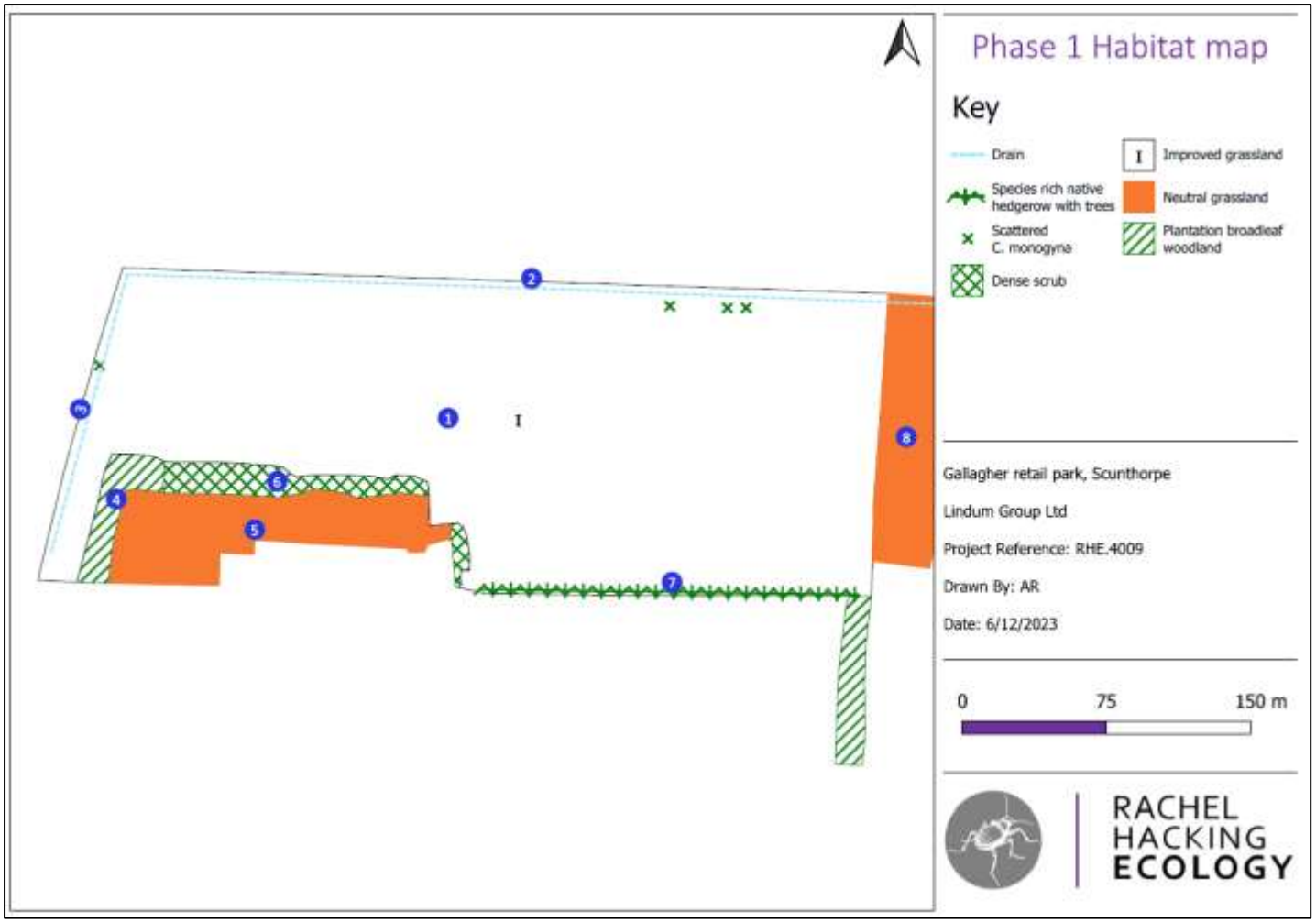
Appendix 3: Target Notes

Reference No.	Habitat	Photograph
1	Modified Grassland	
2	Ditch	
3	Ditch	

4	Other woodland; broadleaved	
5	Other neutral grassland	
6	Willow scrub	

7	Species-rich native hedgerow with trees	
8	Other neutral grassland	

Appendix 4: Plans



Appendix 5: Condition Assessments

Hedgerow				
Criteria				TN7
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps, or isolated trees.	Pass
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.	Pass
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth.	Pass
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).	Pass
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length:	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow.	Fail
C2.	Nutrient-enriched	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	Pass

Hedgerow				
Criteria				TN7
	perennial vegetation			
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives.	Fail
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes.	Pass
E1.	Tree class	There is more than one age-class (or morphology) of tree present.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.	Fail
E2.	Tree health	At least 95% of hedgerow trees are in a healthy condition.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.	Pass

Drains			
Criteria		TN2	TN3
A	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Pass	Fail
B	A range of emergent, submerged, and floating-leaved plants are present. As a guide >10 species of emergent, floating, or submerged plants present in a 20 m ditch length.	Fail	Pass
C	There is less than 10% cover of filamentous algae and or duckweed *Lemna* spp. (these are signs of eutrophication).	Pass	Pass

Drains			
Criteria		TN2	TN3
D	A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.	Fail	Pass
E	Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	Fail	Pass
F	Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	Fail	Fail
G	Less than 10% of the ditch is heavily shaded.	Pass	Pass
H	There is an absence of non-native plant and animal species.	Pass	Pass

Appendix 6: Proposed Layout