

CHAPTER 12: ECOLOGY

Introduction

- 12.1 This chapter of the Environmental Statement addresses the potential effects on ecology of the proposed mixed use development, having due regard to both the physical proposals, recommended mitigation measures and ecological features included within the scheme design proposals. The Ecological Impact Assessment (EcIA) has been carried out with reference to the guidance produced by the Institute of Ecology and Environmental Management (IEEM, 2006 - Ref 12-1), which is recognised as current best practice.
- 12.2 The Application Site is situated to the south of Tytton Lane within the southern extent of the town of Boston. The Application Site is divided into two separate areas by the A16, which itself is in part included within the red line plan. There are parcels of land to the east and west of the A16, covering a total area of 28.09 hectares (ha). It comprises predominantly arable land with two sections of broadleaved woodland, occasional scattered trees and hedgerows and ditches forming the field boundaries. Vehicular access to the western area of the Site will be off London Road to the west and, off a roundabout on the A16, which will also provide access into the eastern area of the Site. Pedestrian access to the western area of land will be off London Road and off Tytton Lane East. A private access is also proposed into the northern area of the land to the east of the A16. The northern and western Application Site boundaries abut residential gardens, whilst to the south-west beyond Towns Drain are further residences. To the south and east of the Application Site is arable land.
- 12.3 The proposed development comprises a sustainable mixed-use scheme including a new community stadium for Boston United Football Club, housing, retail, commercial and leisure uses. It includes the development of 502 residential dwellings, 7,000 m² (gross) of retail, 2.16 ha of commercial development, a 60 bedroom hotel, a 5,000 person capacity football stadium and a Petrol Filling Station (PFS). Hard and soft landscaping will be incorporated into the scheme. A total of 4.4 ha will be set aside as green infrastructure. There will be two areas of open amenity grassland play areas surrounded by scattered trees, formal playing fields, an Ecology Corridor comprising native grassland planting and scattered trees to the north of Towns Drain, whilst there

will be a Sustainable Urban Drainage System (SUDS) running from the north- south of the western area of the Application Site.

12.4 This chapter is supported by the following technical appendices:

- Appendix 12.1 - Extended Phase 1 Habitat Survey (Ref. 12-2), Volume II of this ES.
- Appendix 12.2 – Badger Survey (Ref. 12-3), Volume II of this ES.
- Appendix 12.3 – Bat Roost Potential Survey (Ref. 12-4), Volume II of this ES.

In addition to be above survey works, a water vole survey will be undertaken of Towns Drain at the appropriate time of year for the survey (mid-April-September, inclusive). On completion of the survey works, this report will be included as a technical appendix to the Ecology Chapter in Volume 2 of the ES.

Methodology

12.5 This methodology follows the principles set out within the Guidelines for EcIA published by IEEM in 2006 (Ref. 12-1). The baseline for the EcIA has been established through a combination of desk study and field survey. Biological data have been obtained from the Greater Lincolnshire Nature Partnership (GLNP) (Ref. 12-5) and from the Multi-Agency Geographic Information for the Countryside (MAGIC) website (Ref. 12-6). The following information has been obtained from these resources:

- Statutorily designated sites within 2 kilometres (km) of the centre of the Application Site;
- Non-statutorily designated sites within a 2 km radius of the centre of the Application Site; and
- Protected or notable species of flora and fauna within a 2 km radius of the centre of the Application Site.

12.6 On 16th September 2013, an Extended Phase 1 Habitat Survey was undertaken of the Application Site and surrounding land where access was permitted. This followed the methodology set out by the Joint Nature Conservation Council (JNCC), updated in 2010 (Ref. 12-7). The aims of the survey were to:

- Identify habitat types on the site using the standardised Phase 1 Habitat Survey technique;
- Identify areas of potential for protected species/species of conservation concern within the Application Site;
- Identify areas of potential for protected species/species of conservation concern immediately outside the Application Site;
- Prepare a Phase 1 Habitat Survey Plan of the Application Site; and where necessary,
- Propose recommendations for further surveys.

12.7 Where access was permitted, adjacent habitats were also considered to assess the Application Site within its wider context, and to provide information with which to assess the possible effects of the proposals.

12.8 At the time of the Extended Phase 1 Habitat Survey, a Bat Roost Potential Survey (BRP) of all of the trees on the Application Site was undertaken following the guidance set out by the Bat Conservation Trust (Ref.12-8). A Habitat Suitability Index (HSI) (Oldham et al. 2000, Ref. 12-9) score was calculated for the one wet ditch at the Application Site at the time of the survey. The assessment evaluates the suitability of the water body and surrounding terrestrial habitat to support Great Crested Newts (GCNs) and, therefore, the requirement for an aquatic survey for this species.

12.9 A Badger Survey of the Application Site and surrounding suitable habitats for badgers, where access permitted, was undertaken on 23rd January 2014. This involved a systematic search of suitable habitat for sett entrances and other signs associated with badger activity, including spoil heaps, bedding material, runs, footprints, hairs, scratching posts and feeding signs.

12.10 Each sett found was recorded and assigned to one of four sett categories (main, annexe, subsidiary and outlying) in accordance with Harris et al. (1989, Ref 12-10). Whether or not the sett was classified as 'active' or 'disused' was determined in accordance with the latest guidance on 'Current Use' in the definition of a badger sett (Natural England, June 2009, Ref 12-11).

12.11 A Bat Roost Potential (BRP) survey was undertaken on 13th March 2014 of residential dwellings numbers 262 and 264, London Road, situated adjacent to the western boundary of the Site. The requirement for the survey has arisen since the proposals include an access route onto the Site from the west, and this would require the demolition of the two detached properties to facilitate the installation of the access road.

12.12 The BRP survey was undertaken with reference to the guidelines specified within Natural England's Bat Mitigation Guidelines, 2004 (Ref. 12-12), and the Bat Conservation Trust (BCT) Guidelines, 2012 (Ref. 12-8). It involved an external and internal inspection of each building by a Natural England bat licenced ecologist to search for potential roosting features for bats, and for signs of bats and bat activity to indicate the presence of roosting bats.

Consultation

12.13 A scoping report was sent to Boston Borough Council outlining the issues that would be considered within the Environmental Statement (ES). This included Ecology. The Council's scoping opinion included a non-site specific standard response from Natural England dated 9th January 2014 requesting for the EcIA to follow the IEEM (2006) guidance. Furthermore, they request that the ES thoroughly assesses the potential for the proposals to impact upon the following: International designated sites; national designated sites; regionally and locally important sites; protected species; habitats and species of principle importance; and that the appropriate bodies, including GLNP is contacted for further information on habitats, flora and fauna.

Assessment Method

12.14 The EcIA methodology (Ref 12-1) comprises a staged approach to assessing the potential impacts of the proposed development on the ecological features of the Application Site.

12.15 The EcIA has involved the following stages:

- Definition of baseline conditions;

- Prediction of potential impacts;
- Definition of applicable mitigation measures;
- Assessment of residual effects;
- Cumulative impact assessment; and
- Statement of significance.

Significance Criteria

12.16 IEEM guidelines suggest that, a significant impact, in ecological terms, is defined as **“an impact (whether adverse or beneficial) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographical area, including cumulative and in-combination impacts”**.

12.17 The integrity of a site is defined in Government Guidance as, **“the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or levels of populations of the species for which it was classified”**. This acceptable definition applies easily to designated sites, but for sites which have not been designated, ecological judgment and background information is required to provide the context. The assessment of the significance of the impact requires consideration of the ecological value/ significance and the magnitude of impact. If significant impacts are identified then appropriate mitigation should be proposed.

12.18 The IEEM Guidelines encourage an approach to evaluation that involves taking apart the different values that can be attached to ecological features, whilst acknowledging that their attempt to produce guidance on defining how habitats and species could be assigned to different levels of value was unworkable. Therefore, instead, and in accordance with the IEEM Guidelines the value or potential value of an ecological resource will be determined within a defined geographical context and assigned a value as set out below:

1. High: International, UK, National or Regional;
2. Medium: County or District; and
3. Low: Local or Parish.

12.19 In addition to outlining the importance of the ecological features identified, the magnitude of predicted potential ecological impacts prior to any mitigation is evaluated. This is done by assessing the potential impacts on each of the identified ecological features based on available information including the background reports prepared by Delta- Simons (Ref. 12-2, 12-3, 12-4).

12.20 The likely effects of potential impacts on ecological receptors largely depend upon their sensitivity, whilst the level of certainty that an impact will occur as predicted is based on professional judgment. The following parameters may affect ecological features:

1. Magnitude – i.e. the size of an impact in quantitative terms where possible;
2. Extent – i.e. the area over which an impact occurs;
3. Duration – i.e. the time for which an impact is expected to last;
4. Reversibility – i.e. is the impact permanent or temporary; and
5. Timing and frequency – e.g. related to breeding seasons.

12.21 In accordance with the IEEM guidelines, an ecologically significant impact is defined as an impact (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographical area. The value of any feature that will be significantly affected is then used to identify the geographical scale at which the impact is significant.

12.22 For the purposes of this assessment, neutral and slight effects are considered to be not significant, while moderate and major effects are assessed to be significant.

Table 12.1 below provides a comparison of the terms used.

Table 12.1 Significance Effect Criteria.

Effect Significance		Equivalent CIEEM Assessment
Significant	Major Beneficial	Significant Positive Impact on ecological integrity or conservation status at Regional, National or International level.

Effect Significance		Equivalent CIEEM Assessment
	Moderate Beneficial	Significant Positive Impact on ecological integrity or conservation status at District - County level.
Non-significant	Slight Beneficial	Significant Positive Impact on ecological integrity or conservation status at Application Site- Local level.
Neutral	Neutral	No Significant Impact on ecological integrity or conservation status.
Non-significant	Slight Adverse	Significant Adverse Impact on ecological integrity or conservation status at Application Site- Local level.
Significant	Moderate Adverse	Significant Adverse Impact on ecological integrity or conservation status at District-County level.
	Major Adverse	Significant Adverse Impact on ecological integrity or conservation status at Regional, National or International level.

Planning Policy Context

The Development Plan

12.23 At a local level the Local Development Framework comprises the saved policies of the Boston Borough Local Plan (BBLP) 1999 and the Boston Borough Interim Plan – Non-Statutory Development Control Policy (February 2006).

12.24 Chapter 9 of the BBLP, Conservation, Archaeology and Environment considers the potential impact of development on international, national and local sites of importance to wildlife, and to individual features within the landscape:

- Policy C17 considers development proposals which would adversely affect the Sites of Nature Conservation Interest (SINCs);
- Policy C22 considers development within the coastal zone. Planning permission will not normally be granted for development within this zone apart from in the

following circumstances: Minor developments related to the enjoyment of the countryside and the foreshore, and for small scale agricultural developments; and

- Policy C24 states planning permission will normally be granted for the development of open land (protected landscape sites) within existing settlements.

12.25 Chapter 13 Environment, of the Boston Borough Interim Plan – Non-Statutory Development Control Policy includes consideration given to Nature Conservation:

- Policy E13 permits development that would adversely impact upon Wildlife Sites only (1.) When there are public benefits which decisively outweigh their adverse effect, and (2.) they could not feasibly be sited in a less sensitive location;
- Policy E14 states that planning permission will be granted for proposals to extend (or create new) wildlife habitats appropriate to the area. the protection and satisfactory management of existing sites, habitats and other features of wildlife value affected by approved planning proposals will be ensured;
- Policy E15 ensures the protection of the Coastal Zone through only granting planning permission in this area for minor developments related to the enjoyment of the countryside, the foreshore, and for small scale agricultural developments. Small extensions to existing buildings and uses will be allowed where the character of the countryside remains unaffected;
- Policy E16 states that planning permission will be granted for development provided it will not cause harm to, or the loss of, a tree or trees of significant amenity value, especially where protected by a tree preservation order; and
- Policy E17 states that planning permission will not be granted for development that will adversely affect the character or appearance of the sites designated as protected land of open character.

Other Material Considerations

National Planning Policy

12.26 National planning policy relating to the protection of biodiversity is contained within the National Planning Policy Framework (NPPF). It advises that **“development proposals where the primary objective is to conserve or enhance biodiversity should be permitted”** and, **“opportunities to incorporate**

biodiversity in and around developments should be encouraged (paragraph 118)."

12.27 Section 11 (Conserving and Enhancing the Natural Environment) advises that the planning system should contribute to and enhance the natural and local environment through a number of means, including:

- Recognising the wider benefits of ecosystem services; and
- Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

12.28 Paragraph 118 sets out that when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- **if significant harm 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;**
- **proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have 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;**
- **development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;**
- **opportunities to incorporate biodiversity in and around developments should be encouraged;**

- **planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and**
- **the following wildlife sites should be given the same protection as European sites:**
 - **potential Special Protection Areas and possible Special Areas of Conservation**
 - **listed or proposed Ramsar sites; and**
 - **sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation and listed or proposed Ramsar sites.**

The Emerging South-East Lincolnshire Local Plan

12.29 South-East Lincolnshire Local Plan (Preferred Options - May 2013). Section 8.1.13, points 1-3 state that:

“The planning system should contribute to and enhance the natural and local environment by:

- protecting and enhancing valued landscapes, geological conservation interests and soils;
- recognising the wider benefits of ecosystem services; and
- minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.”

12.30 Paragraph 8.1.17 sets out the requirements of Local Planning Authorities (LPA’s) with regards to protected wildlife or geodiversity sites:

“Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or

geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.”

12.31 Paragraph 8.1.18 states that **“Local planning authorities should:**

- **set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure; and**
- **maintain the character of the undeveloped coast, protecting and enhancing its distinctive landscapes, particularly in areas defined as Heritage Coast, and improve public access to and enjoyment of the coast.”**

12.32 Paragraph 8.1.19 states that **“Great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to landscape and scenic beauty. The conservation of wildlife and cultural heritage are important considerations in all these areas, and should be given great weight in National Parks and the Broads.”**

12.33 Paragraph 8.1.20 states that **“To minimise impacts on biodiversity and geodiversity, planning policies should:**

- **plan for biodiversity at a landscape-scale across local authority boundaries;**
- **identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation;**
- **promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority**

- species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan;**
- **aim to prevent harm to geological conservation interests; and**
 - **where Nature Improvement Areas are identified in Local Plans, consider specifying the types of development that may be appropriate in these Areas.”**

Office of the Deputy Prime Minister Circular 2005

12.34 This provides guidance on changes made to the development control system, including the need to undertake ecology surveys before a planning application is submitted, such that only in exceptional circumstances should they be left to coverage under planning conditions.

UK Biodiversity Action Plan (BAP)

12.35 The UK BAP describes the biological resources of the UK and provides detailed plans for conservation of these resources. Action plans for the most threatened species and habitats are set out to aid recovery, and national reports, produced every three- to five-years, show how the UK BAP is contributing to the UK’s progress towards the significant reduction of biodiversity loss.

Lincolnshire BAP

12.36 The BAP considers the landscape and biodiversity of Lincolnshire, and the need for action. There are 41 action plans in total. Each plan describes the habitat or species of concern, its status in Lincolnshire and current threats. It outlines the progress made towards previous BAP targets and current conservation actions are then outlined. Each plan also looks to the future – detailing objectives, targets and actions in increasing levels of detail. Target dates for completion are listed, along with identified delivery partners. Its states that developments should not simply seek to avoid causing harm, but opportunities should be sought for positive biodiversity enhancement.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

- 12.37 This is the primary legislation in the UK which protects animals, plants and certain habitats. It has numerous parts and supplementary lists and schedules many of which have been amended since publication.

Conservation of Habitats and Species Regulations 2010

- 12.38 This legislation consolidates all the amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. The 2010 Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European sites.

The Protection of Badgers Act 1992

- 12.39 This legislation protects badgers and their setts and makes it illegal to kill, injure or take badgers or to interfere with a badger sett.

The Hedgerow Regulations 1997

- 12.40 Under the Hedgerows Regulations it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. Various criteria specified in the Regulations are used to identify "important" hedgerows for wildlife, landscape or historical reasons.

The Countryside and Rights of Way Act 2000

- 12.41 The Act provides for public access on foot to certain types of land, amends the law relating to public rights of way, increases measures for the management and protection for Application Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation, and provides for better management of Areas of Outstanding Natural Beauty (AONB).

The Natural Environment and Rural Communities Act (2006)

12.42 Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Existing Situation

12.43 The following section describes the baseline ecological conditions at the Application Site, outlining the results of the desk study and field survey findings. The conservation importance of the features identified is then evaluated using the geographical scale outlined in the previous section.

Statutorily Designated Sites

12.44 The MAGIC online search indicated that there are no statutorily designated sites within a 2 km radius of the Application Site centre.

Non-Statutorily Designated Sites

12.45 The information gained on non-statutorily designated sites was provided by GLNP, and included any sites within a 2 km radius from the Application Site centre.

12.46 Tytton Lane West Pits East Local Wildlife Site (LWS) is situated approximately 220 m to the north-west of the Application Site and comprises a flooded pit and dense scrub.

12.47 Tytton Lane West Pit West LWS is situated approximately 360 m to the north-west of the Application Site and comprises a flooded pit and dense scrub.

12.48 Botolphs Park Pond LWS is situated approximately 385 m to the north-west of the Application Site and comprises a pond and gardens.

- 12.49 Frampton Hall LWS is situated approximately 1.5 km to the south of the Application Site and comprises parkland with semi-natural woodland.
- 12.50 South Forty Drain LWS is situated approximately 1.6 km to the north of the Application Site and comprises semi-improved grassland and a drain.
- 12.51 The geographical level of value of each of these sites is considered to be Local (Low value).

Habitats

- 12.52 Several habitats are present across the Application Site. Each one is discussed in turn below, along with the key floral species within each habitat and any observation of current faunal use. They are to be read in conjunction with the Phase 1 Habitat Map and the Target Notes within the Extended Phase 1 Habitat report (Ref 12-2).

Broadleaved Plantation

- 12.53 The eastern boundary of the fields to the west of the A16 featured two shelter belts, comprising pedunculate oak *Quercus robur*, field maple *Acer campestre*, hazel *Corylus avellana*, crack willow *Salix fragilis*, dogwood *Cornus sanguinea*, guelder rose *Viburnum opulus* and alder *Alnus glutinosa*. This habitat formed a vegetated buffer between the Application Site and the adjacent road. The trees were all immature or semi-mature in stature.

Scattered Broadleaved Trees

- 12.54 A single semi-mature ash *Fraxinus excelsior* and single semi-mature crack willow were present on the eastern edge of the dense scrub within the land east of the A16.

Dense Scrub

- 12.55 A small area of dense hawthorn *Crataegus monogyna* and elder *Sambucus nigra* scrub was present to the north—east of a triangular shaped area of scrub that was situated immediately east of the A16. Common nettle *Urtica dioica*, hogweed *Heracleum*

sphondylium, dog rose *Rosa canina*, ivy *Hedra helix* and creeping thistle *Cirsium arvense*, formed an understorey.

Standing Water

- 12.56 A ditch ran along the eastern boundary of the land to the east of the A16. At the time of the survey there was no flow. The surface had a covering of duckweed *Lemna sp.* The ditch was heavily shaded in places by common reed *Phragmites australis*, and ruderals on the banks including great willowherb *Epilobium hirsutum*, nettle and occasional common ragwort *Senecio jacobaea*.

Arable

- 12.57 The majority of the Application Site is characterised by arable, which at the time of the survey comprised cereal crop stubble that had begun to regrow with a cereal crop and recolonising grassland and ruderal vegetation. Species included perennial ryegrass *Lolium perenne*, Yorkshire fog *Holcus lanatus*, bristly oxtongue *Picris echioides*, white dead nettle *Lamium album*, spear thistle *Cirsium vulgare*, creeping buttercup *Ranunculus repens*, dandelion *Taraxacum officinale*, ribwort plantain *Plantago lanceolata*, red dead nettle *Lamium purpureum*, common nettle and field forget-me-not *Myosotis arvensis*. In addition, cow parsley *Anthriscus sylvestris* and hogweed were recorded at the field boundaries. The vegetation was scattered with areas of bare ground also present.

Intact Species-Poor Hedgerow

- 12.58 Three boundary hedgerows within land to the east of the A16 and one in the north-western extent of land to the west of the A16 were recorded to be intact. The hedgerows were assessed as being species poor, as they were dominated by hawthorn, with occasional elder, ash, bramble *Rubus fruticosus* agg. and dog rose. Since the hedgerows only support a total of three woody species along any 30 m section, they cannot qualify as 'Important' under the Hedgerow Regulations (1997). The hedgerows were largely managed with bramble growing in some areas.

Defunct Species-Poor Hedgerow

- 12.59 A defunct hedgerow partially separates two fields within the north-western extent of the land to the west of the A16. The hedgerow was assessed to be species poor, comprising predominately hawthorn with occasional bramble and dog rose. Since the hedgerows only support three woody species along any 30 m continuous section, they cannot qualify as 'Important' under the Hedgerow Regulations (1997).

Dry Ditch

- 12.60 A series of dry ditches divided the fields within land to the west of the A16. The ditches were approximately 3 m wide with a depth of 2 m. At the time of the survey no standing water was present. Common reed was present in a number of sections of the ditches, indicating that the ditches had previously supported water. In places, bankside vegetation had recently been cut, however, where this had not taken place great willowherb, common nettle and hedge bindweed *Caylystegia sepium* dominated.

- 12.61 A dry ditch ran along the western boundary of the land to the east of the A16. The ditch was unmanaged with vegetation dominated by common reed, occasional spear thistle *Cirsium vulgare* and dog rose. A further ditch was present between the area of dense scrub and the hedgerow that bordered the field. The ditch was heavily shaded by the surrounding scrub vegetation and featured fallen vegetation and leaf litter.

Hard Standing

- 12.62 A tarmac cycle/ footpath ran along the eastern extent of land to the west of the A16. This was not seen to support any significant vegetation growth and was considered to have negligible ecological value.

Land Surrounding the Application Site

- 12.63 Bounding the land to the west of the A16 to the north, west and south-west, beyond Towns Drain which sits immediately beyond the Application Site boundary, and to the north of land to the east of the A16, are gardens or yards of the adjacent residences.

The Application Site is situated within a predominately agricultural setting with further arable fields and a network of hedgerows characterising the surrounding landscape.

- 12.64 The geographical level of value of each of the different habitats occurring at the Application Site is considered to be Local (Low value).

Fauna

- 12.65 Species records from the GLNP are provided as an Appendix to the Extended Phase 1 Habitat survey for the site (Ref 12-2) and summarised below, together with data gathered from the field survey.

Birds

- 12.66 Bird species recorded during the survey include pheasant *Phasianus colchicus*, wood pigeon *Columba palumbus*, collared dove *Streptopelia decaocto*, wren *Troglodytes troglodytes*, blackbird *Turdus merula*, blue tit *Parus caeruleus*, great tit *Parus major*, carrion crow *Corvus corone*, starling *Sturnus vulgaris* (a UK BAP Priority Species), and reed bunting *Emberiza schoeniclus* (a UKBAP Priority Species).
- 12.67 The trees, dense scrub and hedgerows provide suitable habitat for nesting birds, although no evidence to indicate recent nesting activity was recorded at the time of the survey. In addition, the banks of the ditches at the Application Site provide opportunities for ground nesting birds, particularly due to the surrounding agricultural landscape. However, no ground nesting species were recorded at the Application Site, or within land immediately surrounding the Application Site, at the time of the survey.
- 12.68 No birds listed on Schedule 1 of the WCA (1981), as amended, (Ref. 12-13) were recorded at the Application Site at the time of the survey. GLBP hold numerous records of bird species for a 2 km radius from the Application Site centre. Those most likely to occur at the Application Site include field fare *Turdus pilaris* (Schedule 1, WCA) most recently recorded in 2007, common linnet *Carduelis cannabina* (2008), house sparrow *Passer domesticus* (2010), starling *Sturnus vulgaris* (2010) and song thrush *Turdus philomelos* (2010) – all are Red List species of conservation concern (Ref. 12-14). Graylag goose *Anser anser* (2007), reed bunting *Emberiza schoeniclus* (2007), and

common bullfinch *Pyrrhula pyrrhula* (2007) are all Amber List species of conservation concern.

GCNs

12.69 The stretch of ditch within the eastern extent of the land to the west of the A16 supported standing water at the time of the survey. A GCN HSI calculation was made for the wet ditch and the overall score for the ditch was 0.55. From this score, the likelihood of GCNs occurring within the ditch is 'below average'. The terrestrial habitats at the Application Site were not considered ideal to support foraging, sheltering or dispersing GCNs, were they present in the area. The hedgerows and dry ditches at the Application Site may provide limited opportunities for this species. The majority of the Application Site comprised arable habitat, which is considered likely to discourage amphibian dispersal across much of the Application Site, furthermore, the A16 creates a barrier to dispersal between the two areas of the Application Site. No evidence of GCN's was recorded at the Application Site.

12.70 A review of aerial photographs and OS maps revealed the presence of four ponds within 500 m of the Application Site's boundaries, which are all separated from the Application Site by expanses of hard standing and residential housing. It is considered unlikely that, if GCNs occur within these ponds, they would venture to on-Application Site habitats. The GLBP search did not reveal any recent records of GCNs within 500 m of the Application Site. GCNs are, therefore, considered to be absent from the Application Site, and are not considered further within this assessment.

Reptiles

12.71 No evidence of reptiles was recorded on the Application Site. The majority of the Application Site was considered unsuitable to support reptile species, however, the dry ditches and hedgerow bases may provide limited sheltering opportunities for reptiles if they occur in the local area. The GLBP desk search did not reveal any records of reptiles within 1 km of the Application Site. Reptiles are, therefore, considered to be absent from the Application Site, and are not considered further within this assessment.

Bats

- 12.72 The trees at the Application Site lacked the necessary structural features such as storm damage, rot holes and lifted bark suitable to support roosting bats and were, therefore, assessed as having negligible BRP. There are no other structures at the Application Site suitable to support roosting bats. The trees and hedgerows at the Application Site do provide ideal habitat for commuting and foraging bats which may occur in the local area.
- 12.73 No signs of bats or bat activity to indicate that either 262 or 264, London Road had previously been used by bats for roosting were found. Property no. 262 lacked the necessary structural features suitable to support roosting bats and was, therefore, assessed as having negligible potential to support roosting bats, and there are no further recommendations with regards to bats for this building. Property no. 264 had a large roof void and a number of potential access points for bats were recorded in between the roof tiles. Furthermore, several gaps were noted between overlapping tiles and beneath hip and ridge tiles within the original roof structure. These may provide opportunities for crevice dwelling bats, or allow access into the roof void beneath.
- 12.74 The data search revealed extensive bat records within the search area, including records of common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus* and Daubenton's bat *Myotis daubentonii*. The closest record from the past 15 years is of a pipistrelle, recorded approximately 200 m to the west of the Application Site in 2008.
- 12.75 The geographical level of value of this species group is considered to be Local (**Low value**).

Badgers

- 12.76 At the time of the Extended Phase 1 Habitat survey, a disused single-hole badger sett was recorded within the bank of a dry ditch on the western area of the Application Site. Two further disused outlier setts were recorded within the eastern extent of the

dense scrub within land to the east of the A16 and a number of dung pits were recorded at the south-western extent of this land.

- 12.77 A comprehensive badger survey was carried out of the Application Site in January 2014. The three sett entrances previously found were all inactive at the time of the survey, but each had been excavated since the previous visit. A fourth disused outlier sett was found within the western area of the Application Site, this was not new, however, it had been covered by vegetation that had been cut back since the last Application Site visit. No new dung pits were recorded. Three mammal runs were recorded to pass through vegetation in the south-eastern corner of the Application Site. The eastern field margin is regularly used by dog walkers which may deter badgers from utilising this area for sett digging. Land beyond the eastern Application Site boundary could not be accessed, however, it is considered likely that the main badger sett is within this area.
- 12.78 Four records of badger have been identified from the data search. These are from locations approximately 1.4 km to the south recorded in 2004, 1.9 km and 800 m to the south and 800 m to the west of the Application Site, recorded in 2009.
- 12.79 The geographical level of value of badgers is considered to be **Local (Low value)**.

Water Vole

- 12.80 The wet ditch adjacent to the eastern edge of land to the west of the A16 was not considered ideal habitat for water vole. The banks appeared steep sided and although there was taller vegetation to provide shelter and protection from predators, foraging potential in the form of submerged and marginal vegetation was limited. No evidence of water vole activity, such as burrows, feeding remains or latrines were recorded from the banks. Towns Drain immediately adjacent to the western area's southern boundary was considered suitable to support this species, although in low numbers due to encroachment and overshadowing from tall bankside vegetation.
- 12.81 Water voles were found to be present here in a survey carried out in 2007 by Ecological Services Limited (ESL), however, an update survey has not been undertaken following the recommendation for further survey made in the Extended Phase 1 Habitat survey

report, since water vole surveys can only be undertaken during the main active season for this species (mid-April- September, inclusive).

12.82 Occasional burrows that were considered likely to be water vole were recorded at the time of the badger survey along this ditch. They were clearly visible since the vegetation had died back and, therefore, it is assumed that water voles are present on this Drain. The data search revealed 37 records of this species dating from 2006 within the Towns Drain on the stretch bordering the Application Site.

12.83 The geographical level of value of water voles is considered to be **Local (Low value)**.

Other Protected or Notable Species

12.84 There was no evidence of other protected species on the Application Site identified during the field survey. The arable fields are considered suitable habitat to support brown hare (a UK BAP priority species). This species has been recorded within the local area. The most recent record held by the GLBP is from 2001.

12.85 The geographical level of value of hares is considered to be **Local (Low value)**.

Impact of Development

12.86 This section reviews the proposed development plans for the Application Site and assesses the likely effects on flora and fauna arising during the construction and operational phases without mitigation. Effects are only assessed in detail for features that are of adequate value such that effects upon them may be significant in EIA terms and features that are potentially vulnerable to significant effects from the proposals.

Construction

12.87 The principle effects likely to arise during the construction phase are disturbances during Application Site preparation works, including noise and vibration of machinery during vegetation clearance. Such effects have the potential to disturb ecological features and habitat.

- 12.88 The Application Site will be developed in seven separate phases spanning over a six year period such that the proposed new Boston Football Club stadium will be completed first, taking two years to complete from 2015, and then a total of 60 to 100 residential dwellings per year for a six-year period from 2016 and the commercial and retail buildings taking between one to two years to complete from 2016/17.
- 12.89 Undertaking a phased approach to the construction process potentially ensures that the effects across the Application Site are gradual over an extended period of time, and will allow mitigation measures and enhancements for wildlife to become established gradually and sustainably. By commencing habitat creation works at the Application Site for wildlife during the earliest phases of the proposals, this will allow establishment prior to the remainder of the proposed development being constructed, therefore, potentially helping to offset any adverse effects which would occur in the short term.

Non-Statutorily Designated Sites

- 12.90 Due to the localised nature of the potential construction effects, it is considered highly unlikely that the proposals will have any direct effect on any of those non-statutory designations identified. The closest non-designated sites to the Application Site are Tytton Lane West Pits East and West LWS's, situated at a distance of 220 m to the north-west of the Application Site and fragmented from it for species movement by a road and residential housing. The temporary indirect effects from increased disturbance as a result of lighting, noise and vibration will be **negligible** and, therefore, **not significant**.

Habitats

- 12.91 The habitats occurring on the Application Site are all considered to be widespread both on a local and national level. The impact upon each habitat type is considered below.

Broadleaved Plantation

- 12.92 The two shelter belts comprising immature and semi-mature broadleaved trees along the eastern boundary of the land to the west of the A16 will be felled to facilitate the

proposals. This habitat comprises widespread species and copses of this size are commonly occurring throughout the local area. The potential loss of this habitat will cause a **negligible** effect and is, therefore, considered to be **not significant**.

Scattered Broadleaved Trees

- 12.93 The two semi-mature trees at the Application Site will be felled to facilitate the development. The trees represent widespread species and scattered trees are commonly occurring across the local area. The potential loss of this habitat will cause a **negligible** effect and is, therefore, considered to be **not significant**.

Dense Scrub

- 12.94 The area of dense scrub along the north-eastern edge of a large triangular shaped parcel of scrub that lies to the east of the A16 will be cleared to facilitate the proposals. It supports widespread species and it is commonly occurring across the local area. At the Application Site it offers limited shelter and foraging provision to a range of ecological receptors and, therefore, the potential loss of this habitat is considered to be **slight adverse** and is, therefore, considered to be **not significant**.

Standing Water

- 12.95 A ditch ran along the eastern boundary of the land to the west of the A16 which had no flow and was heavily shaded in parts at the time of the survey. It is understood that the southern half of the ditch will be culverted to facilitate the proposed development, including the installation of a roundabout. It represents a commonly occurring habitat in the local area and supported one widespread aquatic plant. There is the potential for run-off from the construction works to negatively impact upon the water quality. The potential loss of part of this habitat will cause a **slight adverse** effect and is, therefore, considered to be **not significant**.

Arable

- 12.96 All of the arable will be lost to facilitate the construction of the proposed development. Taking into account the area comprising this habitat to be lost to the development and

the low value of the ecological features within it, the potential loss of this habitat is considered to be **slight adverse** and is, therefore, considered to be **not significant**.

Intact Species-Poor Hedgerow

- 12.97 All of the hedgerow habitat will be lost to facilitate the construction of the proposed development. The hedgerows support few widespread floral species and are commonly occurring within the local area. They offer commuting and foraging corridors for wildlife, as well as shelter and a food source seasonally. The potential loss of this habitat is considered to be **slight adverse** and is, therefore, considered to be **not significant**.

Defunct Species-Poor Hedgerow

- 12.98 The proposals necessitate the removal of the hedgerow. The hedgerow supports few widespread floral species and, hedgerows are commonly occurring within the local area. Given that the hedgerow is defunct it offers limited opportunities for wildlife as a commuting corridor and as shelter. However, it does offer a food source. The potential loss of this habitat is considered to be **slight adverse** and is, therefore, considered to be **not significant**.

Dry Ditch

- 12.99 The dry ditches will be in-filled as part of the proposals. They represent widespread habitat in the local area and support commonly occurring floral species. Loss of this habitat will cause a **neutral** effect and is, therefore, considered to be **not significant**.

Hard Standing

- 12.100 The hard standing cycle/ footpath at the Application Site is considered to be of negligible ecological value and, therefore, its loss to facilitate the proposals is considered to have a neutral effect and is, therefore considered, to be **not significant**.

Towns Drain beyond the Application Site boundary

12.101 Towns Drain is due to be realigned as part of the proposals for the Site. The works will impact on both the structure of the water body itself and its banks. There is also the potential for the construction of the proposed development to negatively impact on the water quality of the beck as a consequence of runoff from the Application Site, furthermore, the realignment process could also negatively impact upon water quality of the beck until the sediment settles. The potential impact of the proposed works is considered to be **minor adverse** and, therefore, **not significant**.

Fauna

Nesting Birds

12.102 The sections of broadleaved plantation, occasional scattered trees, hedgerows and dense scrub habitat will be removed during the construction phase. There is potential for direct adverse effects on nesting birds as a result of such clearance. Under the Wildlife and Countryside Act it is an offence to disturb nesting bird habitat during the nesting bird season (March-July, inclusive). The Applicants will not disturb nesting birds during this period.

12.103 Although direct impacts upon nesting birds can be avoided by appropriate management, construction works being carried out within a distance of 10 m of nesting birds may affect them indirectly, depending on the works being carried out, and the species of bird. The effects of noise and disturbance may result in birds being repeatedly flushed off nests, causing disruption to feeding activity, or even abandonment of nests. The impact during the nesting bird season as a result of disturbance will be **minor adverse** and, therefore, is considered to be **not significant**. All effects will be indirect and temporary in nature.

Bats

12.104 The direct loss of hedgerows, linear woodland and occasional scattered trees may result in the loss of favoured foraging and commuting corridors for bats and therefore, limit the proportion of the Application Site used for foraging and commuting. The

impact of the loss of foraging habitat for bats will be **minor adverse** and is, therefore, considered to be **not significant**. Effects will be indirect and temporary in nature.

12.105 The direct loss of no 264 London Road to facilitate access to the development will result in the loss of a potential bat roost site, however, since no bat roost has been found to date to be associated with this property, the effect will be **neutral** and is, therefore, considered **not significant**.

Badgers

12.106 Badgers have been found to use three of the four outlier setts at the Application Site occasionally. The proposals will necessitate closure of the setts given that they are located within the footprint of the development. This may result in harm to badgers should one of the setts be active at the time of closure. Under the Protection of Badgers Act it is an offence to disturb an active badger sett. The Applicants will ensure that a Natural England licence to interfere with a badger sett has been granted and the associated method statement is followed in order to avoid harm to badgers.

12.107 Since the Application Site has been used intermittently by foraging badgers there will be a loss for foraging habitat as a result of the proposals. Furthermore, as the Application Site may be used by commuting badgers resident in the local area, there is the risk of harm to them should they fall into pits or trenches left open overnight during the works.

12.108 Since there are no badgers inhabiting the Application Site on a permanent basis or utilising the Application Site regularly for foraging, and any works to close the outlier setts at the Application Site will be undertaken under a Natural England licence to ensure that they are lawful and no harm occurs to badgers, the impact of the construction phase on badgers will be **minor adverse** and, therefore, is considered to be **not significant**. Effects will be direct and **permanent in nature**.

Water Vole

12.109 Water voles are anticipated to be present along Towns Drain immediately beyond the Application Site boundary, although the northern bankside vegetation which may

support their burrows is on the Application Site. The proposals for the development include the realignment of the eastern extent of the Drain within the land to the west of the A16. This will include the permanent loss of the banks within which water vole burrows may occur, and also the associated bankside vegetation that offers foraging habitat and cover, as well as the water body itself. The proposals may cause harm to this species. It is an offence to damage the burrows that water voles occupy and to harm the animals themselves since they are protected under the Wildlife and Countryside Act 1981, as amended. The Applicants will ensure that if water voles are found to occur along the section of Towns Drain that is to be negatively impacted upon that this species will not be harmed. The potential impact upon the population of water voles occurring along Towns Drain will depend on the density of the population and, therefore, whether or not they can be encouraged to disperse along the banks away from the works. Otherwise, a translocation exercise under a Conservation Licence from Natural England will be undertaken. The potential effect will be **slight adverse** and is, therefore, considered **not significant**. Effects will be direct and **permanent in nature**.

Other Protected Species

Hare

- 12.110 The habitats at the Application Site are considered suitable to support this species. The loss of arable land will result in the loss of habitat suitable to support brown hare on Application Site; however, they are highly mobile and, if present, will disperse to suitable off-Application Site habitats. The noise and vibration disturbance of the construction works will cause brown hare to disperse if present at the Application Site. The effect of the construction works on hares as a result of noise and vibration disturbance will be **indirect** and **temporary** in nature will, therefore, be **neutral** and **not significant**.

Operational Phase

- 12.111 The principle effects are expected to be **long-term** changes in habitat types and the resultant increased disturbance from people, vehicular movements, lighting, noise and vibration during the operational phase.

12.112 The operation of the proposals, given their nature, are not anticipated to result in any increased risk or severity of pollution incidents. Therefore, **no significant impact** on any existing waterbodies is anticipated.

Impacts upon Non-Designated Sites

12.113 Increased noise levels or lighting effects generated as a result of the proposals on the flora and fauna for which Tytton Lane West Pits East and West LWS's are designated for are considered to be **negligible**. This is due to their distance from the Application Site and the fact there is residential development in between the Application Site itself and these wildlife sites.

Habitats

12.114 The majority of the Application Site currently supporting a monoculture arable crop and offering limited shelter and foraging opportunities for wildlife, will be developed into a combination of residential housing, retail, commercial and recreational land. The proposals include an Ecological Corridor within the southern area of the Application Site and a SUDS system through the central area of the land to the west of the A16, both of which will increase biodiversity at the Application Site through the inclusion of a range of native tree, hedgerow, shrub, grassland, wetland and aquatic plant species that in turn are anticipated to support a greater diversity of fauna than what currently occurs at the Application Site.

12.115 The proposals will enable access throughout the Application Site for pedestrians and dog walkers. The proposed combination of amenity areas and wildlife areas (the Ecological Corridor and the SUDS pond), should encourage people to utilise the open amenity grassland areas for most recreational activities rather than the more wildlife friendly areas of the Application Site, such that disturbance to them will be limited.

12.116 The standing water to be retained along the northern section of the eastern boundary of the Application Site to the west of the A16 will be frequently managed in order to ensure the bankside vegetation does not encroach upon and overshadow the waterbody.

This is anticipated to have a **slight beneficial** effect on the habitat and, is therefore, considered to be **not significant**.

12.117 The proposed ecological enhancement features are anticipated to have a **slight beneficial** effect on habitats and are, therefore, considered to be **not significant**.

Fauna

Nesting Birds

12.118 It is anticipated that foraging, sheltering and nesting opportunities for birds will increase at the Application Site as a result of the proposed development since the majority of the proposed 502 residential properties will have individual gardens with associated landscaping that will be suitable for nesting and foraging birds in the **medium term**, once the gardens have matured. The Ecology Corridor in the southern area of the Application Site will also offer opportunities for birds, and the SUDS system will provide opportunities for species of birds that previously would not have used the Application Site. It is expected that the same species that were recorded on Application Site at the time of the Extended Phase 1 Habitat survey will continue to thrive at the Application Site, apart from pheasant, which is a species introduced to the UK. This is because the Application Site was not found to support typical farmland bird species. Disturbance to nesting birds is likely to increase due to the increased presence of people, dogs and cats. Overall, however, there is considered to be **slight beneficial** effect on nesting birds which is, therefore, considered to be **not significant**.

Bats

12.119 No evidence has been found to date to indicate that no. 264, London Road supports a bat roost. The Ecological Corridor and SUDS system will offer new foraging opportunities for bats. The key impact upon bats during the operational phase of the proposed development will be lighting. It is anticipated that light spill from the proposed residential, commercial and retail properties and leisure facilities along with street lighting will negatively impact upon the majority of foraging and commuting bats at the Application Site since few species are at all light tolerant. The operation of the

proposed development is, therefore, anticipated to have a **slight adverse** effect on bats and is, therefore, considered to be **not significant**.

Badgers

12.120 The outlier badger setts on the Application Site that are used intermittently will be lost to the development. Given the level of increased anthropogenic activity at the Application Site, it is anticipated badgers will disperse to suitable habitats within the surrounding area and will no longer utilise the Application Site for commuting, foraging or sett digging. It is anticipated that the increased anthropogenic activity at the Application Site will deter badgers from commuting across the land to the east of the Application Site, over the A16 to the land to the west of the A16. This should limit badger casualties on the A16. The effect upon badgers is considered to be **slight adverse** and, therefore, considered to be **not significant**.

Water Voles

12.121 With the inclusion of the Ecological Corridor to the north of Towns Drain there is anticipated to be increased foraging opportunities for water vole once the Drain has been realigned. The SUDS system within the western area of the Application Site may also increase the area of available habitat for this species to encourage the population to grow at the Application Site. However, the residential development at the Application Site will increase the number of domestic cats present, which may prey upon water voles. The effect upon water voles is considered to be **slight beneficial** and, therefore, to be **not significant**.

Other Protected Species

Hare

12.122 Hare will not tolerate anthropogenic disturbance and will, therefore, disperse to suitable habitats in the surrounding area. The impact upon hares is considered to be **neutral** and, therefore, to be **not significant**.

Mitigation Measures

Construction Phase

Non-Designated Sites

12.123 In order to ensure that any potential impact on the environment is negligible during the construction phase, Chestnut Homes will carefully control construction works through implementation of CIRIA's working with wildlife (2010, Ref. 12-15) guidance to ensure that appropriate environmental controls are used to protect habitats immediately adjacent to the Application Site and within surrounding areas. All possible practical means will be followed to reduce disturbance resulting from dust, light and noise during the construction process.

Habitats

12.124 In order to ensure that there is no runoff into Towns Drain or the drain that runs parallel to the A16 in the western area of Application Site the Environmental Alliance's Pollution Prevention Guidance (PPG) 5 (Ref. 12-16) will be carefully followed.

Fauna

Nesting Birds

12.125 Where feasible, clearance of the existing vegetation from the Application Site will be undertaken outside of the main nesting bird period (i.e. only within the months August to February inclusive). If these works cannot be restricted to within this period, an Ecological Watching Brief will be maintained during the main bird breeding season to ensure that no nesting birds are adversely affected. This will entail a suitably qualified ecologist checking all suitable habitat for nesting birds, and a buffer of at least 10 m beyond that area, immediately before it is due to be cleared. If, during the Ecological Watching Brief, nesting birds are found to be either within the area due to be cleared or within the buffer zone, measures to prevent any disturbance to breeding birds, including the cessation of tree and vegetation clearance, or construction works in areas close to breeding sites will be put in place until all chicks have fledged. Confirmation

that chicks have fledged will be given by a suitably qualified ecologist before works are allowed to recommence within any buffer zone previously established around an active birds' nest.

Bats

12.126 No bats have been found to be roosting within no 264, London Road, which has potential to support bat species. In order to confirm that the building is not utilised as a bat roost site a nocturnal bat survey will be undertaken during the peak active bat season. The survey will determine the use of the building by bats and, if bats are present, will enable an appropriate mitigation to be prepared, along with a European Protected Species Licence application for bats which will be made to Natural England to enable lawful demolition of the building to be undertaken under a method statement.

Badgers

12.127 No heavy machinery is to enter the area within a 20 m radius of any of the known badger setts at the Application Site prior to a licence to disturb badgers being granted by Natural England and the setts being closed by the ecologist named on the licence. This will entail the installation of badger gates on each of the sett entrances once the licence has been granted and for a 21 day period by the ecologist. Before the setts closure works commence, a suitably qualified ecologist will undertake a check for new badger setts on the Application Site and land within 20 m of the Application Site boundary. Should any new sett entrances be found, Natural England will be contacted and an amendment to the licence will be made, if necessary. During the construction phase of works no open trenches or pits will be left uncovered or alternatively without a mammal ramp in overnight to prevent badgers becoming trapped.

Water voles

12.128 Water voles are anticipated to be present along Towns Drain, however, in order to confirm population size, and to ensure the mitigation proposal is appropriate, a water vole survey will be undertaken at the appropriate time of year before construction works commence. No intrusive works will be undertaken within 5 metres (m) of the

banks of Towns Drain without being under the supervision of a suitably qualified ecologist in order to ensure that no water voles or their burrows are harmed. Depending on the size of the water vole population along Towns Drain there will be two options to enable the works to proceed without harm to water voles or their burrows. If a small population is found along the Drain, following appropriate management to the western extent of the Drain to ensure it is suitable to support this species, it may be possible to encourage them to disperse in that direction in order to ensure they are not harmed. However, if a large population is found, since this species is territorial it will not be possible to encourage them to disperse out of the works footprint. Therefore, a suitable receptor site will need to be found or created that supports habitats of greater conservation value for water voles. This will enable an application to be made to Natural England to translocate the voles to the receptor site under a Conservation Licence.

Operational Phase

Non-Designated Sites

12.129 No mitigation during the proposed development operational phase is required with regards to Non-Designated Sites.

Habitats

12.130 Through appropriate management of the recreational areas and the Ecology Corridor, any damage to vegetation along the Ecology Corridor will be minimised as residents will utilise the maintained amenity grassland areas for recreational activities rather than other areas of the Application Site. Furthermore, ensuring that the vegetation along the Ecology Corridor does not become overgrown will encourage pedestrians to stay on the walkways and not trample over other areas.

Fauna

Bats

12.131 To mitigate for the potential effects of lighting on the Ecology Corridor and SUDS system, which represent ideal foraging or commuting habitat, it is recommended that a sensitive lighting plan be developed. This will ensure that light spill onto these areas and onto immediately adjoining habitats is kept to a minimum to ensure that bats have unlit corridors to encourage them to utilise the Application Site. With appropriate lighting at the Application Site along with the creation of the new habitats (including the SUDS system and Ecology Corridor), opportunities for foraging bats are expected to increase.

Water Voles

12.132 Regular management of the bankside vegetation along Towns Drain and along the banks of the SUDS system water bodies to prevent scrub encroachment and overshadowing will increase available suitable habitat and foraging opportunities for water voles at the Application Site.

Residual Effects

12.133 Table 12.2 below summarises the residual effect associated with the proposed development that remain after mitigation measures are implemented.

Ecological Feature	Value of Feature	Effect	Duration of Impact	Significance of Effect	Mitigation	Residual Effect
Non-Statutorily Designated Sites	Low	Lighting, noise and vibration disturbance	Construction and Operational Phases	Insignificant	None required	Insignificant
Broadleaved Plantation Woodland	Low	Loss of habitat	Construction Phase	Insignificant	None required	Insignificant

Ecological Feature	Value of Feature	Effect	Duration of Impact	Significance of Effect	Mitigation	Residual Effect
Scattered Broadleaved Trees	Low	Loss of habitat	Construction Phase	Insignificant	None required	Insignificant
Dense Scrub	Low	Loss of habitat	Construction Phase	Slight Adverse	None required	Insignificant
Standing Water	Low	Loss of habitat	Construction and Operational Phases	Slight Adverse	None required	Insignificant
Arable	Low	Loss of habitat	Construction Phase	Slight Adverse	None required	Insignificant
Intact Species-Poor Hedgerow	Low	Loss of habitat	Construction Phase	Slight Adverse	None required	Insignificant
Defunct Species-Poor Hedgerow	Low	Loss of habitat	Construction Phase	Slight Adverse	None required	Insignificant
Dry Ditch	Low	Loss of habitat	Construction Phase	Insignificant	None required	Insignificant
Hard Standing	Low	Loss of habitat	Construction Phase	Insignificant	None required	Insignificant
Nesting Birds	Low	Potential disturbance and loss of habitat	Construction Phase	Slight Adverse	Best practice guidance followed to avoid nesting bird season	Insignificant
Bats	Low	Potential loss of roosting, foraging and commuting habitat	Construction and Operational Phase	Slight Adverse Effect	Appropriate lighting at the site	Insignificant
Badgers	Low	Potential loss of habitat	Construction Phase	Slight Adverse	Natural England Licence	Insignificant

Ecological Feature	Value of Feature	Effect	Duration of Impact	Significance of Effect	Mitigation	Residual Effect
		and potential harm			granted for sett closure Pre-construction site check for new setts Follow best practice methodology during construction works	
Water Voles	Low	Potential loss of habitat and potential harm	Construction Phase	Slight Adverse	Ecological supervision of all works within 5 m of the banks of Towns Drain Small population present, encourage dispersal to avoid harm. Large population present, translocation under Conservation Licence	Insignificant
Other Protected Species- Hare	Low	Potential disturbance, habitat loss	Construction Phase	Insignificant	None required	Insignificant

Monitoring Programme

12.134 A nocturnal bat survey and a water vole survey will be undertaken during the appropriate survey window for these species to determine their presence or likely absence at the Application Site and, therefore, to fully inform this document.

Robustness of Analysis

12.135 Completion of the water vole and nocturnal bat surveys during the appropriate survey windows for these species will enable the full impacts of the proposals to be determined, and for an appropriate mitigation strategy for each species, or species group, to be prepared, where necessary.

Summary and Conclusions

12.136 No statutory or non-statutory designated sites will be impacted by the proposed development works.

12.137 All habitats present at the Site are considered to be of low value at a local level and, although the majority will be lost to facilitate the proposals, the greatest impact resulting from habitat loss at the Site is considered to be slight adverse. Therefore, no mitigation will be required and there are not anticipated to be any residual effects as a result of the proposed development.

12.138 The results of the survey works to date indicate that the greatest impact upon any protected species that may occur at the Site is considered to be slight adverse, and all potential impacts on protected species can be successfully mitigated for. Therefore, there are not anticipated to be any residual impacts as a result of the proposed development works.

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