

# BIODIVERSITY NET GAIN PLAN

## LAND OFF EASTOFT ROAD, CROWLE, NORTH LINCOLNSHIRE

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**Report to:** Richard Alderson  
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# **BIODIVERSITY NET GAIN PLAN**

## **LAND OFF EASTOFT ROAD, CROWLE, NORTH LINCOLNSHIRE**

### **1 INTRODUCTION**

CGC Ecology Ltd has been commissioned by Richard Alderson to undertake a biodiversity assessment of an area of land off Eastoft Road, Crowle in North Lincolnshire - central grid reference SE 77844 13460. The assessment is required in connection with proposals for a residential development on the site, where a post-development biodiversity net gain of at least 10% is required.

A biodiversity assessment is a calculation of the overall biodiversity unit value of all of the habitats on a site pre-development and a calculation of the expected biodiversity unit value of all the habitats on site post-development, to give the overall change in biodiversity unit value on site as a result of the proposals.

The site was surveyed on 24<sup>th</sup> August 2023, in warm and overcast conditions by Celia Commowick (having completed the following training/accreditation; CIEEM training courses in Biodiversity Net Gain for Development and use of the Biodiversity Metric 2.0, UK Habitat courses 'UKHab Introduction for Practitioners (intermediate)' and 'UKHab and Biodiversity Net Gain', a certified course in Modular River Survey, River Condition Assessment for Biodiversity Metric 3.0, and being a certified FISC Level 4 in botany).

This report follows a preliminary ecological appraisal that was undertaken by CGC Ecology Ltd (Preliminary Ecological Appraisal, Land off Eastoft Road, Crowle, North Lincolnshire, September 2023), in which a full description of the site and details of any identified ecological constraints can be found.

This report provides a baseline assessment of the current biodiversity unit value of the on-site areas, and an estimate of the change in biodiversity unit value as a result of the current proposals. A biodiversity assessment does not take into account statutorily protected species that are present or have the potential to occur on site.

It should be noted that a key aim of biodiversity net gain is to enhance what is already present on a site, rather than carry out transformative habitat change. For example, if a large area of grassland is to be impacted, it would be inappropriate to plant an area of woodland in order to achieve net gain.

This biodiversity net gain plan must be submitted to the Local Planning Authority along with the Biodiversity Metric 4.0 Calculation Tool (in Excel spreadsheet form) containing the data input for this site, to ensure transparency and good practice.

## 2 RELEVANT LEGISLATION

In England and Wales, the Natural Environment and Rural Communities (NERC) Act 2006, imposes a duty on all public bodies (including Local Authorities and statutory bodies) to conserve biodiversity – including restoring and enhancing a population or habitat. In addition, government planning policy guidance throughout the UK, provided in the latest National Planning Policy Framework (July 2021), states that ‘...local planning authorities should apply the following principles’; ‘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’.

Schedule 14 of The Environment Act (2021) amends the Town and Country Planning Act (1990) in England. It sets out that the majority of developments will be legally required to demonstrate a minimum net gain in biodiversity of 10% and secure those gains for a minimum of 30 years. The requirement to demonstrate net gain applies to all habitats within the red line, regardless of whether they are impacted or not. A two-year transition period for this requirement is included in the Act, with provision for secondary legislation to set a date for the requirement to come into force. This is expected to be by January 2024.

The North Lincolnshire Local Development Framework (adopted in June 2011) states that as part of Core Strategy 17 (CS17) - Biodiversity, the Council will promote effective stewardship of North Lincolnshire’s wildlife through;

- ‘...Maintaining and promoting a North Lincolnshire network of local wildlife sites and corridors, links and stepping stones between areas of natural green space.
- Ensuring development retains, protects and enhances features of biological and geological interest and provides for the appropriate management of these features.
- Ensuring development seeks to produce a net gain in biodiversity by designing in wildlife, and ensuring any unavoidable impacts are appropriately mitigated for.
- Supporting wildlife enhancements that contribute to the habitat restoration targets set out in the North Lincolnshire’s Nature Map and in national, regional and local biodiversity action plans...’

### **3 METHODS**

#### **3.1 Baseline assessment**

##### **3.1.1 Site survey**

A walkover survey is the first step in assessing the biodiversity unit value of a site, during which time the site boundaries are defined and the various habitats present identified in accordance with the UK Habitat Classification Version 2.0 (2023), and mapped as individual habitat parcels. Habitats are classed either as area habitats (for example, grassland and woodland), linear terrestrial habitats (hedgerows and lines of trees) or linear aquatic habitats (rivers, streams, canals and ditches). The condition of each habitat parcel on site is then determined, in accordance with The Biodiversity Metric 4.0 – Technical Annex 1: Condition Assessment Sheets and Methodology (Natural England, 2023). The condition assessment is one criterion used for determining the relative value of a habitat parcel for biodiversity. For example, an area of calcareous grassland with indicator species visible throughout and an open, varied-height sward with no non-natives or undesirable species present will achieve a higher condition score than a similar-sized area with low botanical diversity, a closed sward with few indicator species and a high amount of scrub present. As a result, there may be more than one parcel of a single habitat type on the same site with different condition assessment scores.

##### **3.1.2 The Biodiversity Metric calculation**

Once mapping is complete, the area or length of each habitat parcel is calculated using the Multi-Agency Geographic Information for the Countryside (MAGIC) website or tools within QGIS.

The strategic significance of each habitat parcel is then determined, depending on whether the habitat is within or close to a biodiversity opportunity area or similar, or if it has ecological significance for the area.

This information, together with the condition of each habitat parcel, is then input into the Biodiversity Metric 4.0 (2023) published by Natural England, which calculates the number of biodiversity units for each parcel. The total biodiversity units calculated for all of the area habitat parcels and all of the linear habitat parcels provide the baseline biodiversity unit values of a site.

#### **3.2 Post-development assessment**

The calculation is then repeated using the Biodiversity Metric 4.0, with each proposed habitat type input into the metric, including retention or enhancement of existing habitats and creation of new habitats. The post-development biodiversity unit values of the area and linear habitats on site are then deducted from the baseline biodiversity unit values, to give the overall change

in biodiversity unit values for area and linear habitats as a result of the proposals.

### 3.3 Assessment constraints and limitations

Calculating the area of each habitat parcel is done using tools on the MAGIC website or within QGIS, which have some limitations in terms of accuracy.

### 3.4 The Good Practice Principles

The ten Good Practice Principles were developed to provide a framework for development projects to show that they are following good practice, and these principles are considered within this report where relevant. Table 1 below lists the principles (taken from Biodiversity Net Gain. Good Practice principles for Development, A Practical guide, 2019);

**Table 1: The Ten Good Practice Principles**

Principle	In practice
Apply the mitigation hierarchy	Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, compensate for losses that cannot be avoided. If this cannot be achieved within the development footprint, then offset biodiversity losses by making gains elsewhere.
Avoid losing biodiversity that cannot be offset elsewhere	Avoid impacts on irreplaceable biodiversity – these impacts cannot be offset to achieve NNL (no net loss) or net gain.
Be inclusive and equitable	Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to net gain.
Address risk	Mitigate difficulty, uncertainty and other risks to achieving net gain.
Make a measurable net gain contribution	Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.
Achieve the best outcomes for biodiversity	Use robust credible evidence and local knowledge to make clearly justified choices when; <ul style="list-style-type: none"> <li>• Delivering compensation that is ecologically equivalent</li> <li>• Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation</li> <li>• Achieving net gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels</li> <li>• Enhancing existing or creating new habitat</li> <li>• Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity</li> </ul>
Be additional	Achieve nature conservation outcomes that demonstrably exceed existing obligations, i.e., do not deliver something that would occur anyway
Create a net gain legacy	Ensure net gain generates long-term benefits by; <ul style="list-style-type: none"> <li>• Engaging stakeholders and agreeing solutions that secure net gain in perpetuity</li> <li>• Planning for adaptive management and securing</li> </ul>

	<p>dedicated funding for long-term management</p> <ul style="list-style-type: none"> <li>• Designing net gain to be resilient to external factors, especially climate change</li> <li>• Mitigating risks from other land uses</li> <li>• Avoiding displacing harmful activities from one location to another</li> </ul>
Optimise sustainability	Prioritise BNG (biodiversity net gain) and, where possible, optimise the wider environmental benefits for a sustainable society and economy.
Be transparent	Communicate all net gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

## 4 RESULTS

### 4.1 Baseline assessment

#### 4.1.1 Area habitats

The total area of the site is 5.4ha, with all of it comprising part of a large arable field (classed as c1c7 - other cereal crops within UKHabs). Although the site was fallow at the time and had a mixed sward, it is classed as cropland in UKHabs (2023) if it has been cropped or cultivated within the current or previous year, and the site was last cropped in 2022 (pers. comm. with agent). It is not possible to allocate a condition score to this habitat type.



Photograph 1: Arable c1c7 on site



Photograph 2: Further view of the arable field

The baseline biodiversity unit (BU) value of the site is 10.8 for the area habitats, with the detailed results shown in Table 2 below.

**Table 2: Baseline assessment results for area habitats**

Habitat parcel	Area (ha)	Biodiversity unit value
Arable field – c1c7	5.4	10.8
<b>Total</b>	<b>5.4</b>	<b>10.8</b>

#### **4.1.2 Linear terrestrial habitats**

There are no linear terrestrial habitats on the site.

#### **4.1.3 Linear aquatic habitats**

There are no linear aquatic habitats on the site.

#### **4.1.4 Baseline habitats map**

A habitat map (produced using QGIS, v3.4) of the site is provided in Figure 1 below, showing all area habitat parcels. The UK Habitats mapping symbology used in Figure 1 is taken from <https://ukhab.org/ukhab-documentation/>.

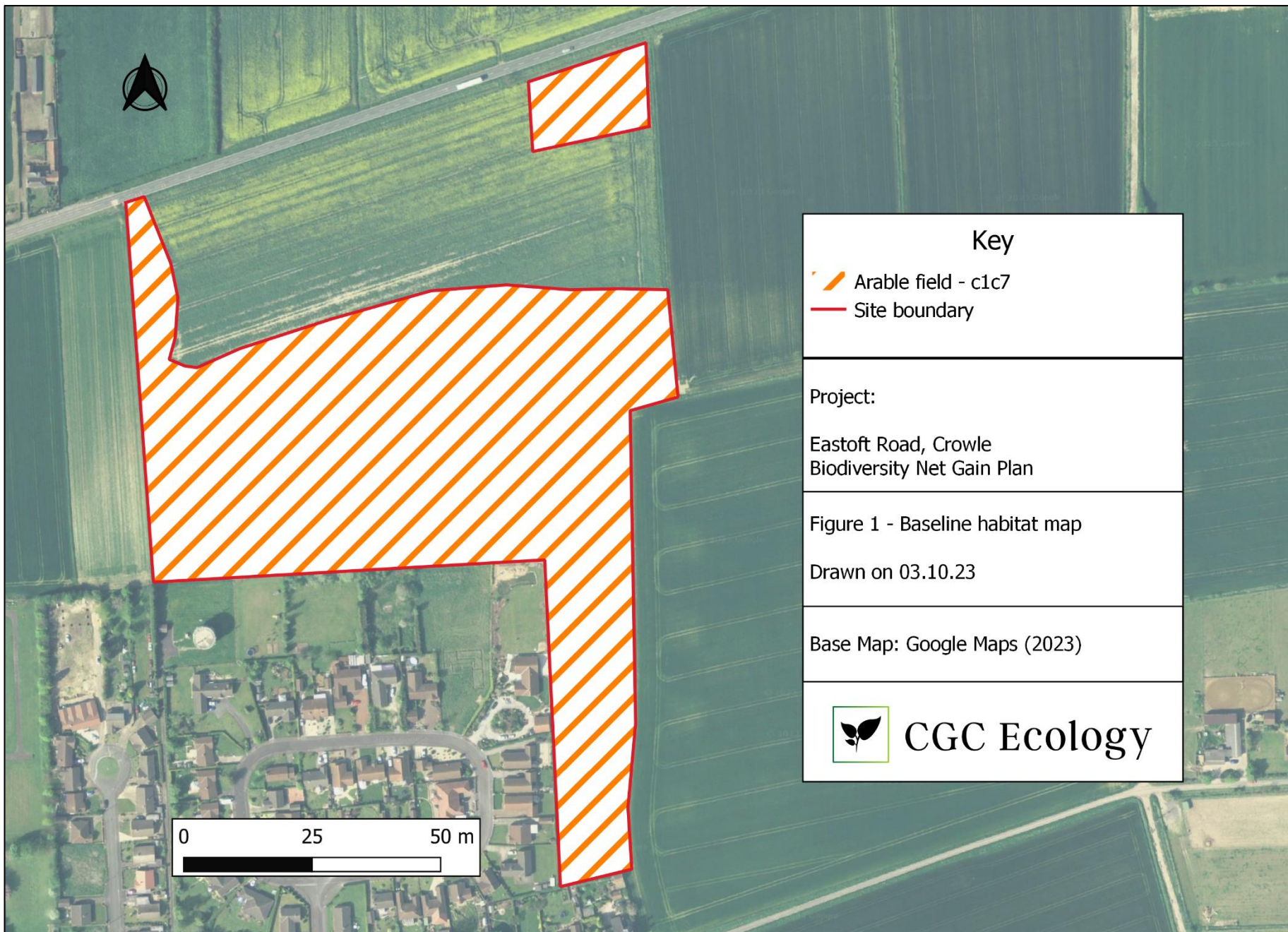


Figure 1: Baseline habitat map of the site

## 4.2 Application of the mitigation hierarchy

As the habitat on site is classed as being of low distinctiveness, avoiding or minimising impacts on this habitat is considered unnecessary, and offsetting any biodiversity impact will be achieved by meeting the required 10% uplift in overall site biodiversity.

## 4.3 Post-development assessment

### 4.3.1 Area habitats

According to the current proposals, a total of 1.9ha of u1b (developed land; sealed surface) will be created, comprising the buildings, roads, driveways, pavements, paths and parking areas, along with 1.2ha of vegetated gardens (additional secondary code 828 in UKHabs). It is not possible to allocate condition scores to these habitat types.

A total of 1.2ha of other neutral grassland (g3c in UKHabs) will be created on site (comprising the park area, swales and verges), and will be expected to reach moderate condition by fulfilling criteria A, D and E on the relevant condition sheet. This will be achieved by seeding the area with an appropriate, species-rich wildflower and grass mixture, employing an adaptive management regime and ensuring no invasive, non-native species are present. It will be important to prepare the soil properly before seeding to reduce the fertility levels, by either removing topsoil, spraying with glyphosate or allowing repeat cultivation to remove more competitive species present within the existing seed bank. Sowing the seed using deep cultivation (30-40cm depth) has been shown to increase the success rate of restoring arable fields to species-rich grassland (Pywell *et al*, 2002), and is recommended here.

An area of native broad-leaved woodland (classed as w1f7 – other lowland mixed deciduous woodland in UKHabs) measuring 0.8ha will be created, and is expected to achieve moderate condition. The woodland will need to have a diverse age range of trees with five or more native species present, underplanting with a suitable seed mixture (such as EW1 from Emorsgate Seeds), no non-native species, no damage or disease present, natural regeneration occurring, a good vertical structure, no ground enrichment and some deadwood allowed to persist to achieve the target condition.

A sustainable drainage system (additional secondary code 848 in UKHabs) measuring 0.3ha will be created in the north-western corner of the arable field, separate from the rest of the site. It will be planted up with native species of varying form and structure (marginal and aquatic plants) and no fish will be introduced. The SuDS feature is likely to reach good condition, but a precautionary approach has been taken as the establishment of aquatic vegetation is hard to predict. The SuDS feature is expected to fulfil criteria A, C, E1 and E2 on the urban habitat type condition sheet, and achieve moderate condition.

A total of 130 small individual rural trees will also be planted around the site, measuring a total area of 0.529ha. These trees are expected to achieve moderate condition; they will comprise native species without any adverse health impacts of vandalism, herbicide use or regular pruning, and they will all be adjacent to or oversailing other vegetation.

The post-development biodiversity unit value is 16.44BU for area habitats. The biodiversity unit values of each of the new area habitats is provided in Table 3 below.

**Table 3: Post-development assessment results for area habitats**

Habitat parcel	Area (ha)	Biodiversity unit value
Developed land; sealed surface – u1b	1.9	0
Vegetated garden (828)	1.2	2.32
Other neutral grassland – g3c (moderate condition)	1.2	8.03
Other woodland; broadleaved – w1f7 (moderate condition)	0.8	3.75
SuDS - 848 (moderate condition)	0.3	0.72
Individual rural tree	0.529 (area overlaid so taken off total)	1.62
<b>Total</b>	<b>5.4</b>	<b>16.44</b>

#### 4.3.2 Linear terrestrial habitats

New native species-rich hedgerows (classed as h2a5 in UKHabs) totalling 375m in length and in moderate condition will be planted on site. Although more hedgerows than this are to be planted, most will be in the control of homeowners and so are not included here.

The post-development biodiversity unit value is 2.51BU for linear terrestrial habitats, with the biodiversity unit values of the new linear terrestrial habitats shown in Table 4.

**Table 4: Post-development assessment results for linear terrestrial habitats**

Linear feature	Length (km)	Biodiversity unit value
Native species-rich hedgerow – h2a5	0.375	2.51
<b>Total</b>	<b>0.375</b>	<b>2.51</b>

#### 4.3.3 Proposed site plan

Figure 2 below shows the new habitats within the proposed site plan.



**Figure 2: Proposed site plan (taken from Soft Landscaping Plan, Drawing Number 607.12, Kelly & MacPherson Architects, September 2023)**

#### 4.4 Summary

Table 5 below is taken from the Biodiversity Metric 4.0, and gives a summary of the baseline biodiversity units, the post-development biodiversity units and the total net change in biodiversity as a result of the proposals.

**Table 5: Summary table of biodiversity unit change as a result of the proposals**

Eastoft Road, Crowle		Return to results menu		
Headline Results				
Scroll down for final results ▲				
On-site baseline	Habitat units	10.80		
	Hedgerow units	0.00		
	Watercourse units	0.00		
On-site post-intervention <small>(Including habitat retention, creation &amp; enhancement)</small>	Habitat units	16.44		
	Hedgerow units	2.51		
	Watercourse units	0.00		
On-site net change <small>(units &amp; percentage)</small>	Habitat units	5.64	52.22%	
	Hedgerow units	2.51	N/A	
	Watercourse units	0.00	0.00%	
Off-site baseline	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site post-intervention <small>(Including habitat retention, creation &amp; enhancement)</small>	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site net change <small>(units &amp; percentage)</small>	Habitat units	0.00	0.00%	
	Hedgerow units	0.00	0.00%	
	Watercourse units	0.00	0.00%	
Combined net unit change <small>(Including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>	Habitat units	5.64		
	Hedgerow units	2.51		
	Watercourse units	0.00		
Spatial risk multiplier (SRM) deductions	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
FINAL RESULTS				
Total net unit change <small>(Including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>	Habitat units	5.64		
	Hedgerow units	2.51		
	Watercourse units	0.00		
Total net % change <small>(Including all on-site &amp; off-site habitat retention, creation &amp; enhancement)</small>	Habitat units	52.22%		
	Hedgerow units	N/A	0 baseline	
	Watercourse units	0.00%		
Trading rules satisfied?	Yes ✓			
Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	10.80	11.88	0.00
Hedgerow units	10.00%	0.00	0.00	0.00
Watercourse units	10.00%	0.00	0.00	0.00

Source: Biodiversity Metric 4.0 (2023)

If the proposals for habitat creation are carried out successfully, then a measurable net gain of

52.22% will be achieved for area habitats and a gain of 2.51BU for linear terrestrial habitats as a result of the development.

Full details of the results can be viewed within the Biodiversity Metric 4.0 Calculation Tool Excel spreadsheet submitted with this report.

#### **4.5 Management and monitoring**

A 30-year management and monitoring plan will be required should planning permission be granted, to fulfil the following requirements;

- To detail how the proposed habitat parcels on site will be created, enhanced and managed to achieve their target conditions;
- To provide details of timescales for each habitat parcel on site to reach target condition;
- To ensure that all habitat parcels are monitored regularly by a suitably qualified person over the 30-year minimum period, with a report to be produced after each monitoring visit and sent to the LPA to detail the progress being made;
- To specify that the management regime be adaptive, according to progress being made towards the target conditions for each habitat parcel. Any subsequent changes to the management regime must have prior approval by the LPA;
- To specify the company or individual(s) responsible for the ongoing management of the habitats on site;
- To provide a management schedule;
- To ensure the predicted biodiversity net gain is achieved.

## **5 SUMMARY**

A biodiversity assessment was carried out on land off Eastoft Road, Crowle in Lincolnshire in connection with plans to develop the site for residential use, where a post-development biodiversity net gain of at least 10% is required.

The current proposals include measures to create habitats on site to ensure a biodiversity net

gain in excess of 10% is achieved.

A 30-year management and monitoring plan will be required should planning permission be granted, to ensure that the new habitats are managed and monitored appropriately and the predicted biodiversity net gain is achieved.

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