



Document No 1243.1 BIA Biological Impact Assessment

Proposed Residential Development

Whitehouse Lane, Boston

Lincolnshire

30th November 2023 revised 15th March 2024

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Introduction

A BIA using DEFRA v4.0 metric was conducted for the proposed development of the site to form four new dwellings with associated hard surfaces and landscaped gardens.

The LPA requires a Biodiversity Net Gain. This report assesses the BNG for the proposal and provides recommendations to achieve the BNG where the current proposal falls short of the BNG target

Assessment Method

- Existing habitat areas and hedge lengths were calculated based on the phase one habitat map from the site Preliminary Ecological Appraisal (Dr Stefan Bodnar Bost1023_PEA (October 2023))
- Proposed habitat areas including retained and new habitats were calculated using Sutton and Wilkinson proposed site layout Drawing No. 2451/09B and soft landscape plan Keary Design Associates 2401-PL1-02 (Feb 2024)
- This data was entered into the DEFRA metric v4.0 and results used to make an assessment on whether the proposal meets LPA requirements for 10% Biodiversity Net Gain (BNG)

Site description from PEA (Bodnar 2023)

The site consists of a mainly flat, former arable field, it has grass margins around the edges and the majority of the site is short ephemerals dominated by Broad leaf willowherb *Epilobium montanum*, Cocksfoot *Dactylis glomerata* and Dandelion *Taraxacum officinale*. There are off site native and non-native planted trees and hedges along the northern and southern boundaries with the adjacent to residential gardens. (See Phase 1 Habitat Map, appendix 1d). The site is located on the eastern edge of Boston, Lincolnshire. Beyond the site to the east is intensively used, industrial scale, arable agricultural land. It has very few trees and no hedges, with very heavy use of insecticides, fungicides and herbicides. This represents high risk land for wildlife and as such has very low ecological and wildlife value. The area represents low quality bat foraging habitat, with residential gardens creating some low quality habitat for bat species with higher tolerance of light pollution

Existing Habitats:

A preliminary ecological appraisal was conducted on the site by Dr Stefan Bodnar 17th October 2023. The phase one habitat map from the subsequent report is shown in figure one (below). The report describes the site as:

Habitat Types Present & Baseline Ecological Conditions

*The site consists of a mainly flat, former arable field, it has grass margins around the edges and the majority of the site is short ephemerals dominated by Broad leaf willowherb *Epilobium montanum*, Cocksfoot *Dactylis glomerata* and Dandelion *Taraxacum officinale*. There are off site native and non-native planted trees and hedges along the northern and southern boundaries with the adjacent to residential gardens. (See Phase 1 Habitat Map, appendix 1d).*

Habitats present:

Improved grassland: *There are narrow grass margins around the edges of the site, dominated by Perennial ryegrass with Creeping Buttercup *Ranunculus repens* and horseradish *Armoracia rusticana* adjacent to the adjacent allotments.*

Short ephemerals: *The majority of the site is short ephemerals dominated by Broad leaf willowherb *Epilobium montanum*, Cocksfoot *Dactylis glomerata* and Dandelion *Taraxacum officinale*. With other species also present including, Common ragwort *Senecio jacobaea*, Creeping thistle *Cirsium arvense*, Broad leaved Dock *Rumex obtusifolius* and Smooth Sow-thistle *Sonchus oleraceus*.*

Planted landscape trees: *these are outside the development area and are located in adjacent gardens, species include Cypress, Cherry, Plum, Poplar, Sycamore & Hawthorn.*

Native Hedges: A short section of hawthorn hedge along the northern boundary with adjacent allotments.

Non-native hedge: A short section of privet hedge along the northern and southern boundaries with the adjacent residential gardens.

Total Site: 29100m²

Improved grassland field

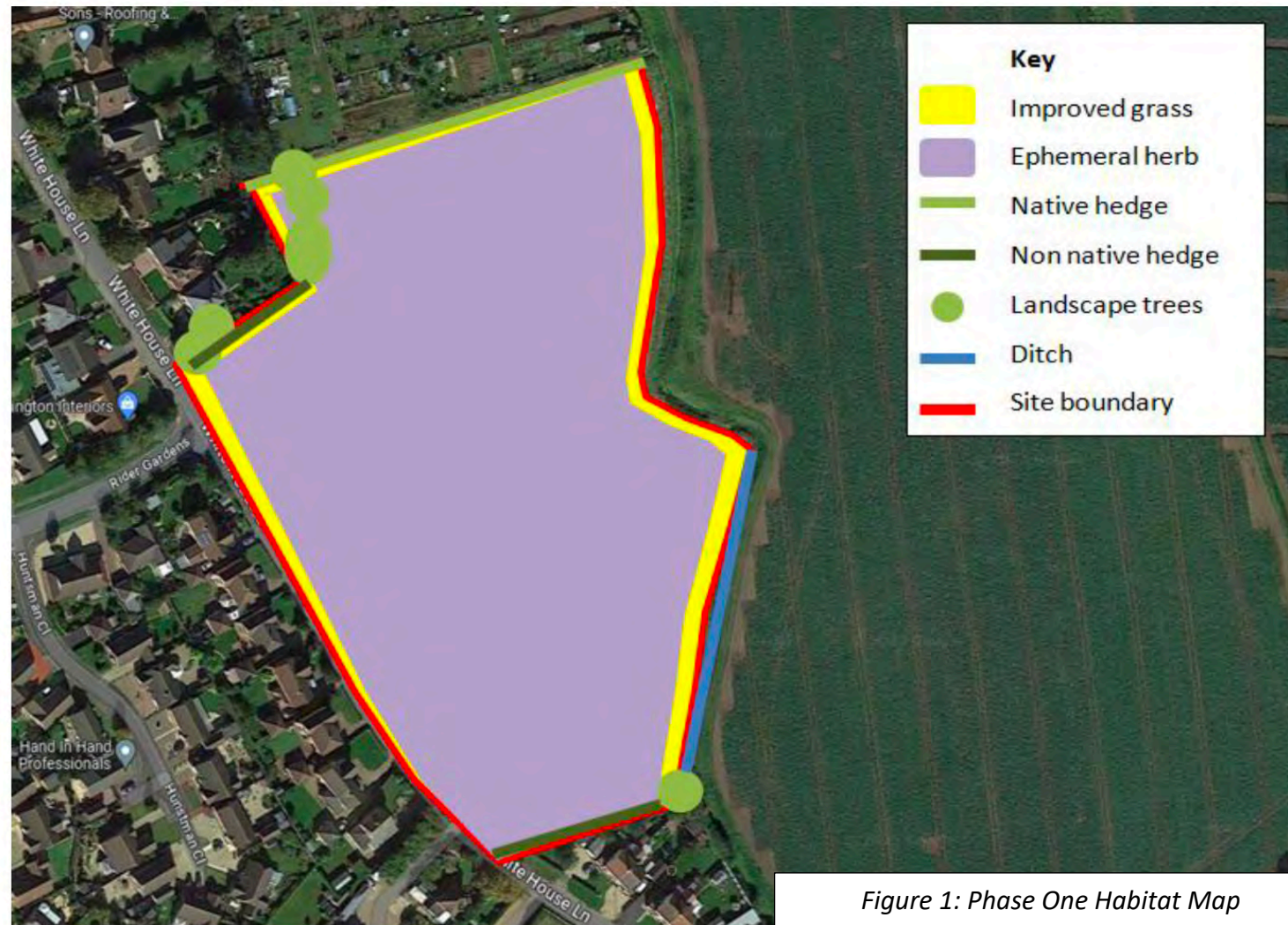
3400m²

Ephemeral/short perennial (former arable) treated as temporary ley: 25,700m²
(Urban trees: 7 outside of boundary)

Native species hawthorn hedge 140m

Non-native Privet hedge

Appendix 1d Phase 1 Habitat Map



along
the

part

edge:

the

100m

The Client proposes to develop the site to provide 102 new private dwellings with associated access, hard surfaces and gardens (see figure 2).

- 3700m² new buildings.
- 7600m² hard standing.



- 11,00m² vegetated gardens including new trees, shrubs and lawns.
- 1000m² shared space amenity grass
- 1100m² public open space flower rich grassland
- 600m² retention basin floodplain grassland
- 27no new landscape trees in shared space
- 2600m² buffer zone consisting of 1700m² flower rich grassland and 600m² retained improved grassland, 100m of non-native hedge and 140m hawthorn hedge.



Headline results

The proposed development as shown in figure 3 provides:

- a net loss of 0.45units (7.77%) habitat
- no net change in hedgerow
- Trading rules not satisfied.

Limitations

The proposed landscape plan details soft landscaping providing accurate description of the proposed habitat creation. No management plan has been provided. An assumption that high biodiversity value areas e.g. wildflower grassland will be managed principally for wildlife and amenity grass and planting intensively managed for landscape and amenity value. All tree planting is assessed as poor condition and small after 30 years with value increasing beyond this.

Discussion

The DEFRA 4.0 metric calculation (1243.2 rev1 BNG) headline result as above and full document supplied separately shows a net loss failing to conform to the requirements of the local authority and national planning policies.

Land East of Whitehouse Lane Boston

Headline Results

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On-site baseline	Habitat units	5.82		
	Hedgerow units	0.66		
	Watercourse units	0.00		
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	5.37		
	Hedgerow units	0.66		
	Watercourse units	0.00		
On-site net change (units & percentage)	Habitat units	-0.45	-7.77%	On-site net gain is less than target set
	Hedgerow units	0.00	0.00%	On-site net gain is less than target set
	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 (Including habitat retention, creation & enhancement)	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site net change (units & percentage)	Habitat units	0.00	0.00%	
	Hedgerow units	0.00	0.00%	
	Watercourse units	0.00	0.00%	
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	-0.45		
	Hedgerow units	0.00		
	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 (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	-0.45		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	-7.77%	Total net gain achieved is less than target set	
	Hedgerow units	0.00%	Total net gain achieved is less than target set	
	Watercourse units	0.00%		
Trading rules satisfied?	No - Check Trading Summaries			
Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	5.82	6.40	1.03
Hedgerow units	10.00%	0.66	0.73	0.07
Watercourse units	10.00%	0.00	0.00	0.00
Unit requirement met or surpassed				

Figure 4: Headline Summary from 1243.2 rev1 BNG metric v4.0

Opportunities for Onsite Habitat Creation

There are opportunities for onsite habitat creation within the buffer zones, enhancing the retained habitats and in the shared spaces including POS and landscaped street areas. There is also scope for additional tree planting.

Recommended mitigation:

1. 102no locally native trees within shared space
2. Amenity grass areas within the shared spaces sown with the flower rich grassland mix and managed with mown paths and tall grassed areas to create a mosaic attractive to wildlife but useable by residents.

Onsite habitat creation assessment (DEFRA metric 1243.3 rev1)

Results from analysis of the recommended mitigations found a habitat area net gain of 0.60 (10.23%) with no net change in hedgerow value and trading rules satisfied.

Land East of Whitehouse Lane Boston

Headline Results

Scroll down for final results

Return to results menu

On-site baseline	Habitat units	5.82	
	Hedgerow units	0.66	
	Watercourse units	0.00	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	6.42	
	Hedgerow units	0.66	
	Watercourse units	0.00	
On-site net change (units & percentage)	Habitat units	0.60	10.23%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%

On-site net gain is less than target set

Off-site baseline	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%

Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.60	
	Hedgerow units	0.00	
	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 (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.60	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	10.23%	
	Hedgerow units	0.00%	
	Watercourse units	0.00%	

Total net gain achieved is less than target set

Trading rules satisfied?	Yes ✓
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Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	5.82	6.40	0.00	Unit requirement met or surpassed ✓
Hedgerow units	10.00%	0.66	0.73	0.07	
Watercourse units	10.00%	0.00	0.00	0.00	Unit requirement met or surpassed ✓

Essential Recommendations

- 102no locally native trees within shared space
- Amenity grass areas within the shared spaces sown with the flower rich grassland mix and managed with mown paths and tall grassed areas to create a mosaic attractive to wildlife but useable by residents.
- Condition of retained trees enhanced by management and setting within an enhanced grassland and hedge environment.

Further Ecological Enhancements

In addition to this mitigation required to achieve 10% net gain further enhancements could be introduced to the new properties in order to increase biodiversity value:

- Use of a mix of locally native landscape tree species with a high proportion of fruiting species to enhance the area for wildlife e.g. birds including thrush species, pollinators and other invertebrates.
- New hedges using mixed native hedge species of local character. Include honeysuckle, dog rose, hazel and wild clematis for small mammals and for nesting birds.
- Planting to provide a continuum of accessible nectar/pollen sources for pollinators from early spring through to autumn.
- Inclusion of additional fruiting shrubs and trees for birds. Structure planting to emulate woodland strata of canopy, understorey and ground flora layers to encourage common bird species.
- External lighting to comply with BCT/ILP guidance note 8 External Lighting and bats with hedgerow and trees set within a 'dark corridor' along the boundaries and buffer zones.
- Artificial nesting and bat roost boxes on the building in suitable locations including integrated into new buildings >4m above ground level and away from windows and light sources

Conclusion

The proposed external work plan would result in a biodiversity net loss of 0.45units (7.77%) with trading rules not satisfied. However, with additional onsite habitat creation creating areas of diverse grassland and planting native landscape trees and shrubs a net gain of 0.60 (10.23%) can be achieved with trading rules satisfied.