Newlands Developments

Land West of Sheffield Road, Hoyland – Attenuation Land

BIODIVERSITY IMPACT ASSESSMENT

April 2021

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1.0 INTRODUCTION

1.1 This report has been prepared by FPCR Environment and Design Ltd on behalf of Newlands Developments in support of a detailed planning application for a SUDS feature on land located west of Sheffield Road in Hoyland, South Yorkshire (central grid ref: SK 3586 9894) and associated with a consented scheme granted approval by Barnsley Metropolitan Borough Council on 9th November 2020 (Planning Application No. 2020/0647).

1.2 Details of habitat creation mitigation including target conditions and detailed management required to provide net gain is provided in the separate Biodiversity Enhancement & Management Plan (BEMP) (FPCR, April. 2021[1]). Net gain shown on Figure 1 within the BEMP is covered by baseline reporting within the Ecological Appraisal Additional Attenuation Land report (FPCR, 6th April 2021[2]) and the baseline reporting informing the above planning approval (FPCR, May 2020[3]).

Site Description

1.3 The new land brough within the detailed application, together with the land adjacent the south (previously forming part of the consented scheme), was dominated by arable habitat of low ecological value with a species-poor native hedgerow dividing the two arable parcels.

Proposals

1.4 The proposals are for two detention basins together with an associated buried inflow/outflow pipe and weir structure linking the two basins. A habitat creation scheme will be provided as an integrated part of the SUDS features.

Offsetting Context

1.5 The overall aim of the biodiversity offsetting initiative is to provide a mechanism by which development activities are designed to deliver biodiversity benefits in compensation for losses, which can be delivered with a measurable outcome.

1.6 Using the biodiversity offsetting approach means that a developer employs a standardised formula (metric) to calculate the number of biodiversity 'units' to be lost as a result of their development, based on the habitat(s) and hedgerow(s) affected, their condition and extent. The developer then provides an 'offset' (where necessary) to deliver an equivalent number of biodiversity units; these ideally should be within the development boundary (habitat enhancement/creation) or off-site (refer to Appendix A for calculator sheets).

1.7 Biodiversity offsetting is to compensate for adverse impacts on biodiversity identified after appropriate avoidance, minimisation and on-site rehabilitation measures have been undertaken, in accordance with the mitigation hierarchy as required by National Planning Policy Framework (NPPF, 2019 (as amended)). Any subsequent changes to planning proposals may affect the credit requirement of the site and a review of the changes would be required.

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[1] FPCR Environment and Design Ltd (April. 2021) *Land West of Sheffield Road, Hoyland – Attenuation Land – Biodiversity Enhancement & Management Plan.* For Newlands Developments.

[2] FPCR Environment and Design Ltd (6th April 2021) *Land West of Sheffield Road, Hoyland – Ecological Appraisal Additional Attenuation Land.*

[3] FPCR Environment and Design Ltd (May 2020) Land West of Sheffield Road, Hoyland – Ecological Appraisal. For Newlands Developments.

Legislative Context

1.8 The UK Government, as signatory to the Rio Convention on Biological Diversity, is committed to conserving and enhancing biodiversity. This commitment is further enforced in the Natural Environment and Rural Communities Act (NERC) 2006 and the Natural Environment White Paper (June 2011).

1.9 DEFRAs 25 Year Environment Plan (2018) seeks to embed a 'net environmental gain' principle for development to deliver environmental improvements locally and nationally. Current policy is that the planning system should provide biodiversity net gains where possible however this is moving towards a mandatory requirement.

1.10 NPPF (2019) in particular seeks to ensure that the planning system contributes to and enhances the natural and local environment, protect and enhance biodiversity and geodiversity by:

170. d) Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

174. b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

1.11 The Barnsley local plan supplementary planning document: Biodiversity and Geodiversity states

The LPA will not support applications that would damage the ecological network and cause a net-loss in biodiversity in line with the NPPF.

1.12 With specific reference to sites located within the Nature Improvement Area the above document states:

Within the NIA (Nature Improvement Area) we require specific biodiversity enhancements with developments over and above the minimum mitigation/ compensation measures……

…….Such quantifiable, significant benefits could include:

• New woodland;

• New wetland;

• Enhancing areas of poor environmental quality;

• Improving public access, or

• Improving the management of existing habitats;

Report Context

1.13 Following provision of initial biodiversity offsetting calculations and consultation with the Biodiversity Officer this report will provide the following:

- Baseline information and assessment justification for habitats on-site
- Justification for the metric calculation

2.0 METHODOLOGY

Habitat assessment

2.1 The habitat assessments were undertaken on 6th May 2020 and 26th March 2021 by a FISC level 4 botanical surveyor in accordance with the UK Habitat Classification as set out in the guidance (Natural England, 2019[4]).

Existing Value

2.2 Defra has developed a metric based on evaluating each individual habitat's value. While the Defra metric is still under development and subject to future review, a 'beta test' Biodiversity Metric 2.0 (Natural England, 2019) is available for use. The calculator is in excel format and is used to measure the biodiversity value of habitats and hedgerows within an application site before and after development, therefore calculating the expected biodiversity net loss or gain.

2.3 The development site is mapped and divided into existing habitat criteria. Habitats are defined under UK Habitat Classification with further information providing habitat area, distinctiveness and condition, which are used to calculate the value of each habitat.

2.4 Linear habitats require different treatments, measuring lengths rather than areas. Therefore, in accordance with the guidance hedgerows are considered separately.

Compensation

2.5 In addition to quantifying the biodiversity value of habitats / hedgerows to be lost, to determine the offsetting requirement it is also necessary to measure the offsetting potential of mitigation measures. This allows for the potential quantity of off-site units required to be calculated. For this to take place a number of factors must be considered:

- the size of the mitigation areas;
- the habitat distinctiveness band it is assigned currently, and the target band once improved; and
- the condition of the habitat at the start of the offset project, and its condition at the end.

2.6 The potential compensation value is derived from the difference in quality between the habitat to be lost and that to be created. The area from which the same number of units can be achieved may allow for the area required for mitigation to be smaller than that which is being lost. For example, if a habitat of low distinctiveness and poor condition is improved to create a habitat of high distinctiveness in good condition, the area needed to offset can theoretically be less than that lost.

[4] Natural England, (2019) The biodiversity metric 2.0 – auditing and accounting for biodiversity Technical Supplement (Beta Edition) Available at: http://publications.naturalengland.org.uk/publication/5850908674228224

Risk Multipliers

2.7 Once the maximum potential value of the mitigation is calculated (the difference between the current value and the proposed value) a set of risk multipliers is used to quantify the difference between the area to be lost and the area to be created/enhanced.

2.8 The aim of a multiplier is to correct for a disparity or risk. There are three main types of risk that are associated with habitat creation:

2.9 Temporal risks: Many factors influence how long a habitat takes to go from the point of creation or restoration to the desired end point condition. Within the metric average time estimates have been used, accepting that there will be variation from this central estimation. Average estimates of the time to target condition were largely expert driven.

2.10 Delivery risks: The risks associated with the actual delivery of the offset due to the uncertainty in the effectiveness of restoration and/or habitat creation/management techniques.

2.11 Spatial risks: These reflect ecological risks deriving from the change in location of the habitat or resource. For example, it may be that recreating a type of habitat in a new location may reduce its biodiversity value.

2.12 The above risks are automatically factored into the calculations completed using the metric calculator however it should be noted that woodland and scrub creation for example have been targeted adjacent existing established woodland reducing the risk and uncertainty of creating good quality new habitat.

Strategic Significance

2.13 As recognised in the Barnsley Local Plan Supplementary Planning Document: Biodiversity and Geodiversity (adopted May 2019) the majority of the application site falls within the Dearne Valley Green Heart 'Nature Improvement Area' and these areas are recognised in the calculations as being 'within area formally identified in local strategy'.

Considerations

2.14 Natural ecological communities are susceptible to change; at times this change can be rapid as a result of internal and external environmental factors. The biodiversity offsetting calculations are based on ecological assessments of habitats carried out during 2020 and 2021; as a result, changes which may affect the conclusions of this report may occur, if a prolonged period of time elapses prior to the commencement of the project.

2.15 The proposed site habitat biodiversity values have been calculated using habitat creation details shown on Figure 1 Post Development Habitat Plan provided with the BEMP.

2.16 The aim of biodiversity offsetting is to compensate for significant adverse impacts on biodiversity identified after appropriate avoidance, minimisation and on-site rehabilitation measures have been taken, according to the mitigation hierarchy as required by NPPF. Any changes to planning proposals or decisions may affect the credit requirement of the site.

3.0 RESULTS

Biodiversity Units – Existing Value

Habitats

3.1 The existing Phase 1 Habitats are show in Figure 1 for the land not previously surveyed (under the existing consented scheme).

3.2 The biodiversity units for each habitat within the consented scheme, have been calculated and are presented in Table 1. Justifications for condition scores are detailed below.

Table 1: Biodiversity Units: Existing Habitats

Habitat	Area (ha)	Condition	Biodiversity Units
Cropland: Cereal crops	6.53	n/a	14.93
Woodland and forest – Lowland mixed deciduous woodland	0.18	Moderate	2.48
Total	**6.71**		**17.41**

Please note there may be minor discrepancies (rounding errors) between the columns and the totals, however, the numbers duplicate those presented within the matrix calculator.

Lowland mixed deciduous woodland (high distinctiveness)

3.3 Semi-natural ash dominated woodland colonising spoil heap/disturbed ground and falling partially within the south site boundary.

- Condition assessment – Moderate
- Little evidence of seedlings and saplings recorded and ground flora supported stands of dense ruderal and bramble
- Woodland compartment unprotected from adjacent arable operations
- Some standing deadwood over 20cm was recorded but limited fallen deadwood noted

Hedgerows

3.4 Under the proposed new attenuation scheme only H1 (H22 under the consented scheme) will be subject to additional impacts (total loss) to facilitate construction of attenuation.

3.5 H2 (H17 under the consented scheme) was subject to limited losses under the consented scheme (to facilitate a breach for buried inflow pipe). This hedgerow is outside the boundary of the new proposals, the impacts were mitigated by the portion of the adopted biodiversity offsetting scheme that remains unaffected by this new proposed scheme so that details of H2 are not included in this BIA assessment.

3.6 The biodiversity unit totals for each hedgerow have been calculated and are presented in Table 2.

Table 2: Biodiversity Units: Existing On-Site Hedgerows

Habitat	Length (km)	Condition (score)	Biodiversity Units
H1 (H22 under consented scheme) Hedges: native hedgerow	0.2	Good (3)	1.362
H20 Hedges: native hedgerow	0.17	Good (3)	1.122
H21 Hedges: native hedgerow	0.14	Good (3)	0.966
H23 Hedges: hedgerow with trees	0.09	Good (3)	0.621
Total	**0.60**	**-**	**4.07**

Please note there may be minor discrepancies (rounding errors) between the columns and the totals, however, the numbers duplicate those presented within the matrix calculator.

3.7 Hedgerows which met 'Good' condition but which failed on some criteria:

- H1 – failed C1 (ground disturbed by arable cultivation within 1m of canopy on both sides)
- H20 and H21 failed A1 and C2 (flailed hedges less than or equal to 1.5m high with ground flora indicators including cleavers and nettles >20% cover).

4.0 CONCLUSION

4.1 Biodiversity offsetting has been used to inform the habitat creation and enhancement proposals for the scheme and the presence of Dearne Valley Nature Improvement Area covering most of the site has been factored into the calculations in accordance with the metric.

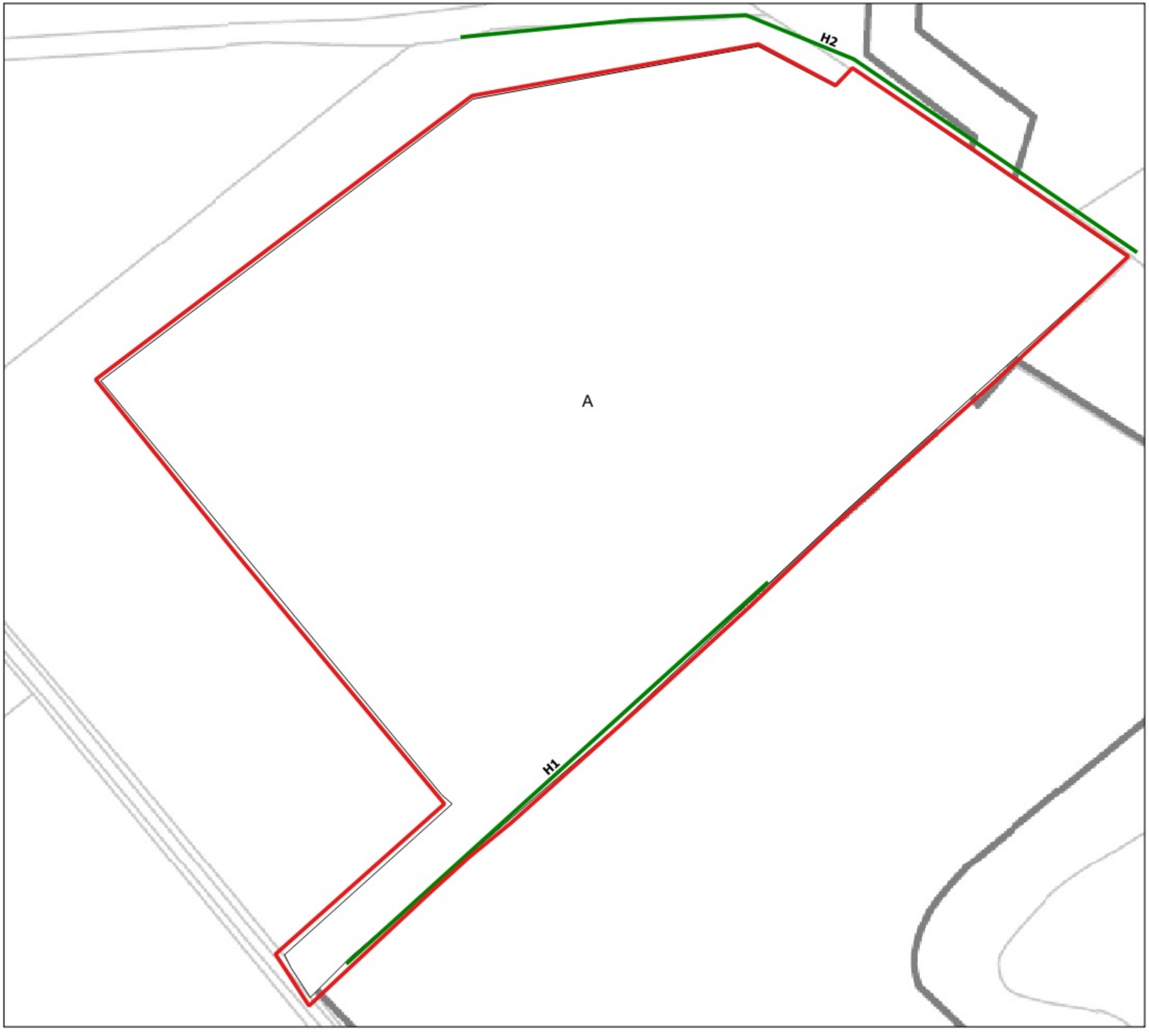
4.2 The results of the assessment demonstrate that the scheme will lead to the delivery of a total net gain in biodiversity for habitats and linear features in line with NPFF.

4.3 The baseline BU value of the new site area (see Figure 1 Phase 1 habitat Plan) is 6.36 BU (for habitats) and 4.07 BU (for hedgerows). The baseline value for the consented attenuation land is 17.41 BU for habitats with the hedgerow units (shared by the two land parcels) covered above.

4.4 Proposed habitats will deliver 45.98 Biodiversity Units (BU) for habitats and 4.13 BU for hedgerows across both the new site area and the consented attenuation land adjacent its south.

4.5 The scheme provides a 160.31% gain overall for habitats (+28.32 BU) and a 1.43% gain for hedgerows. Overall this equates to a net gain over and above that provided by the consented attenuation scheme.

4.6 Habitat management details for the revised scheme to achieve the target conditions are set out in a separate revised Biodiversity Enhancement Management Plan including a Post Development Habitat Plan.



Key

- Site Boundary
- A — Cultivated/disturbed land - arable
- Hedgerow (with ref)

client
Newlands Developments

project
Land West of Sheffield Road - Additional Attenuation Land,
Hoyland

PHASE 1 HABITAT PLAN

scale 1:1000 | drawn BJC/AWB | date 9/4/2021

drawing / figure number Figure 1 | no. 9295

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masterplanning ■ environmental assessment ■ landscape design ■ urban design ■ ecology ■ architecture ■ arboriculture

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Appendix A: Biodiversity Impact Assessment Calculator Sheets

Baseline Habitats

Habitats and areas			Habitat distinctiveness		Habitat condition		Ecological connectivity			Strategic significance			Suggested action to address habitat losses	Ecological baseline
Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier		Total habitat units
Cropland	Cropland - Cereal crops	0.93	Low	2	N/A - Agricultural	1	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same distinctiveness or better habitat required	2.05
Cropland	Cropland - Cereal crops	5.71	Low	2	N/A - Agricultural	1	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	Same distinctiveness or better habitat required	13.13
Woodland and forest	Woodland and forest - Lowland mixed deciduous woodland	0.18	High	6	Moderate	2	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	Same habitat required	2.48
	Total site area ha	6.82											Total Site baseline	17.66

Baseline Hedgerows

UK Habitats - existing habitats			Habitat distinctiveness		Habitat condition		Ecological connectivity			Strategic significance				Ecological baseline
Hedge number	Hedgerow type	length KM	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Suggested action to address habitat losses	Total hedgerow units
	Native Hedgerow	0.17	Low	2	Good	3	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same distinctiveness band or better	1.122
	Native Hedgerow	0.14	Low	2	Good	3	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	Same distinctiveness band or better	0.966
	Native Hedgerow	0.06	Low	2	Good	3	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	Same distinctiveness band or better	0.396
	Native Hedgerow	0.14	Low	2	Good	3	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	Same distinctiveness band or better	0.966
	Native Hedgerow with trees	0.09	Low	2	Good	3	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	Same distinctiveness band or better	0.621
	Total Site length/KM	0.60											Total Site baseline	4.07

Habitat Creation

Post development/ post intervention habitats																
						Ecological connectivity			Strategic significance			Temporal multiplier		Difficulty multipliers		
Proposed habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier	Difficulty of creation category	Difficulty of creation multiplier	Habitat units delivered
Urban - Amenity grassland	0.28	Low	2	Poor	1	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	1	0.965	Low	1	0.62
Lakes - Ponds (Non- Priority Habitat)	0.07	High	6	Moderate	2	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	3	0.899	Low	1	0.87
Heathland and shrub - Mixed scrub	0.41	Medium	4	Good	3	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	7	0.779	Low	1	4.22
Heathland and shrub - Mixed scrub	0.53	Medium	4	Good	3	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	7	0.779	Low	1	5.70
Grassland - Other neutral grassland	0.51	Medium	4	Good	3	Low	Unconnected habitat	1	Location ecologically desirable but not in local strategy	Medium strategic significance	1.1	15	0.586	Low	1	3.95
Grassland - Other neutral grassland	2.07	Medium	4	Good	3	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	15	0.586	Low	1	16.74
Grassland - Other neutral grassland	2.6	Medium	4	Poor	1	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	1	0.965	Low	1	11.54
Urban - Developed land; sealed surface	0.18	V.Low	0	N/A - Other	0	N/A	Assessment not appropriate	1	Within area formally identified in local strategy	High strategic significance	1.15	0	1.000	Low	1	0.00
Totals	6.65														Total Units	43.63

Hedgerow Creation

						Spatial quality						Temporal multiplier		Difficulty of creation multiplier	Hedge units delivered
Proposed habitats		Habitat distinctiveness		Habitat condition		Ecological connectivity			Strategic significance						
Habitat type	Length km	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier		
Native Species Rich Hedgerow	0.06	Medium	4	Good	3	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	10	0.700	0.67	0.39
Native Species Rich Hedgerow	0.17	Medium	4	Good	3	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	10	0.700	0.67	1.10
Creation Length/KM	0.23														1.49