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Ecological Consultants
Environmental and Rural Chartered Surveyors

Biodiversity Net Gain

Land off Accrington Road, Whalley

Phase 1

Green at Heart BEN GOLD

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ACCURACY OF REPORT

This report has been compiled based on the methodology as detailed and the professional experience of the surveyor. Whilst the report reflects the situation found as accurately as possible, all of the protected species this survey covers are wild and can move freely from site to site. Their presence or absence detailed in this report does not entirely preclude the possibility of a different past, current or future use of the site surveyed.

We would ask all clients acting upon the contents of this report to show due diligence when undertaking work on their site and/or in their interaction with protected species. If protected species are found during a work programme, and continuing the work programme could result in their disturbance, injury or death, either directly or indirectly an offence may be committed.

If in doubt, stop work and seek further professional advice.

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EXECUTIVE SUMMARY

1. This assessment is a desk-based exercise using the results of surveys undertaken by Andrew Gardner of Envirotech to provide a baseline measure in biodiversity value at land owned by Oakmere Homes on Land of Accrington Road, Whalley using the Defra biodiversity metric 3.1. Proposed habitat changes arising from future ecological enhancements based on a proposed site layout plan (post-construction) provided by the client are evaluated against the pre-construction baseline ecology to demonstrate net change in biodiversity units.
2. This report calculates 'biodiversity units' using the Defra biodiversity metric 3.1 and following the methods set out in Defra's biodiversity metric 3.1 user guide. The calculations are based on the area or length of habitats found on the site; their distinctiveness, condition, strategic significance and connectivity.
3. The full biodiversity assessment calculation can be found in the accompanying Excel document Land of Accrington Road BNG Phase 1; however, the main results tables are presented here in Appendix A and B.
4. Assumptions have been made regarding the condition of enhanced and post-development scenarios. The condition assessments for these habitats are listed in Appendix D.
5. The site was found to comprise a total of three habitat types with a baseline of 7.88 habitat area units (i.e. 'biodiversity units'), and 1.53 terrestrial linear biodiversity units.
6. Post-development plans include retained grassland habitats and new hedgerow habitat with a total of 11.13 biodiversity area units and 1.68 terrestrial linear biodiversity units.
7. The biodiversity assessment thus concludes that the current proposed development will result in a change of +3.25 (+41.20%) biodiversity area units (i.e. a net gain) and +0.16 (+10.24%) terrestrial linear biodiversity units (i.e. a net gain)

INTRODUCTION

Purpose of this Report

In October 2022, Envirotech were requested by Oakmere Homes to carry out a biodiversity assessment of Land off Accrington Road, Whalley. The aim was for an ecologist with botanical expertise to carry out a site visit to map the habitat types present at the site in order to establish the biodiversity baseline.

Each habitat type was mapped using the standard habitat mapping convention using Phase 1 habitat survey (JNCC, 2010) which was subsequently converted into the UK Habitat Classification (Butcher et al., 2020) for the purposes of using the Defra metric.

Using the findings of the baseline surveys, pre-construction ecology was measured against proposed habitat changes arising from future ecological enhancements based on a proposed site layout plan (post-construction) provided by the client.

This report presents the results of this desk-based study to assess net change in biodiversity 'units' in connection with the removal of habitats for the proposed development at the site.

Ecological Context

The site is 1.99ha and *Figure 1* shows the site location.
The site comprises an open area of neutral grassland with hedges to its boundary.

Policy context

The primary aims of Biodiversity Net Gain are to secure a measurable improvement in habitat for biodiversity, to minimise biodiversity losses and to help to restore ecological networks whilst streamlining development processes.

The National Planning Policy Framework (NPPF) makes provisions for the delivery of biodiversity net gain. Additionally, there is a proposed 10% net gain requirement in the draft Environment Bill. There is currently no statutory requirement to deliver mandatory 10% biodiversity net gain.

Boundary

Figure 1

Site Location

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METHODS

Introduction

The biodiversity metric 3.1 is designed to quantify biodiversity to inform and improve planning, design, land management and decision-making (Panks et al., 2022).

This study has been carried out as a desk-based exercise, using the results of field surveys carried out at the site by Envirotech and an Illustrative Landscape Plan provided by the client. The primary documents consulted as part of this study include:

- Preliminary Ecological Appraisal Report (Envirotech, 17/11/2022)
- Illustrative Masterplan provided by client (015-R-OAK-01 (F))
- Landscape plans provided by the client (812-31 (sheet 1 of 3), 812-32 (sheet 2 of 3), 812-33 (sheet 3 of 3)

A map of the pre-construction habitats from the ecological appraisal is presented in *Figure 2*.

Biodiversity Assessment Methods

To calculate biodiversity units for the site and assess any changes arising from the proposed development this study uses methods set out the latest Biodiversity Metric 3.1 user guide (Panks et al., 2022).

The biodiversity metric uses three core measurements:

- Habitat area
- Length of linear terrestrial habitats
- Length of linear aquatic habitats.

Consequently, a site can have three biodiversity unit values, which are assessed using the same metric, but cannot be summed together.

Habitat area is multiplied by several factors that indicate its quality: distinctiveness, condition, strategic location and connectivity, and this gives its biodiversity unit value. This can be used for existing and future created habitats. In addition, when habitats are to be enhanced or newly-created, the risk of failure is accounted for by applying multipliers for risk factors (difficulty, time to target condition, and off-site risk).

Habitat Distinctiveness

Habitats are classified using the phase 1 habitat survey methodology (JNCC 2010) or the UK habitat classification system (Butcher et al., 2020).

The metric pre-assigns each habitat type to a distinctiveness band according to its distinguishing features, i.e. species richness, rarity (at local, regional, national and international scales), and the degree to which it supports species rarely found in other habitats. On rare occasions, the habitat distinctiveness of a habitat can be altered up or down from the preassigned value. Any alterations must then be fully explained using evidence relevant to the site, e.g. an increase in

distinctiveness because of rare flora or fauna or a decrease in distinctiveness because of significant damage to the habitat.

Habitat Condition

Habitat condition measures the varying quality of similar habitats against what is perceived to be their optimal state. The biodiversity metric 3.1 technical supplement (Panks et al., 2022) contains condition sheets for all habitats to which the metric can apply. The condition sheets contain a habitat description, contextual information to aid the assessment, and the assessment criteria. The criteria describe what components need to be present for a habitat to be in good, moderate or poor condition.

Strategic Location

Strategic location - sometimes called 'strategic significance' – works at a landscape scale, allowing additional value to be added to habitats in 'priority' or 'biodiversity target areas'. They include statutory and non-statutory sites and other areas with biodiversity value or potential, and they are mainly identified from local plans and objectives. If a habitat is within such a target area, a multiplier is applied to increase its value.

Connectivity

Connectivity aims to consider a habitat in relation to surrounding similar or associated habitats. The connectivity of a habitat is calculated by inputting GIS layers of habitats and the site boundary into the connectivity tool, which then produces an output with the connectivity value. Full details of how the connectivity tool works can be found within the published guidance (Panks et al., 2022).

Difficulty of Creation and Restoration

The risks associated with creating new or enhancing existing habitats, are known as difficulty factors; for example, where habitats fail to establish owing to natural changes in local conditions, incorrect management or for unknown reasons. The biodiversity metric 3.1 contains default values for each habitat based on the average difficulty of creating or enhancing a habitat. Occasionally, under exceptional circumstances, these can be modified, but any deviation from the default value must be fully justified.

Time to Target Condition

There is often a lag between a habitat being removed and the new compensation habitats achieving their target condition. This gives reduced biodiversity value for a time. The biodiversity metric 3.1 preassigns the time to target condition based on good practice and typical conditions, and assigns a multiplier based on the number of years required to achieve it.

Using bespoke techniques under unique conditions, or creating compensation habitats prior to impacts taking place, the time to target condition can be adjusted. Any changes must again be fully justified.

Off-site Risk

Sometimes it is not possible to compensate adequately for loss of biodiversity within the site boundary, so off-site compensation is required. If the off-site compensation is a significant

distance from the development site, then there will be a local loss of biodiversity and a multiplier is applied to any off-site compensation.

BIODIVERSITY ASSESSMENT

Biodiversity Baseline

The phase 1 habitat survey map (Figure 2) has been used to identify three habitat areas and one linear habitat within the development redline boundary.

These habitats have been input into the Defra Biodiversity Metric 3.1 calculator and indicate a total of 7.88 area units and 1.53 terrestrial linear units. The results of the calculations are presented in Appendix A. It should be noted that these represent screenshots from the calculator; the full biodiversity assessment calculation can be found in the Excel document 'Land of Accrington Road BNG Phase 1'.

The river to the South and stream to the East are outside the development boundary.

The condition assessments for each of the linear and area habitats are presented in Appendix C. No deviations have been made from the default methods for baseline habitats assessment.

Post-development Habitat Creation and Enhancement

Illustrative landscape scheme has been used to identify that there will be one retained habitat, three created habitats and one enhanced habitat.

Urban areas have been split 70:30 between built infrastructure and gardens.

POS will be available for "amenity" use but will comprise neutral grassland which will have desire paths created in it due to the passage of local residents. The grassland will be mown in late summer. Invasive weed species will be controlled within it.

Urban trees planted as heavy or extra heavy standards will be of "medium size".

Existing boundary hedges are retained and will become taller, wider and in better condition post development.

These figures have been put in to the Biodiversity Metric 3.1 and would comprise a total of 11.13 biodiversity area units and 1.68 terrestrial linear biodiversity units.

There are no changes to default values for post development habitats. Details of the assumptions made to achieve the proposed conditions are found in Appendix D.

Figure 2

Phase 1 Habitat Survey

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Change in Biodiversity Value

Under the current proposals set out in the Illustrative Masterplan there will be a GAIN of 3.25 biodiversity area units, and a GAIN of 0.16 terrestrial linear biodiversity units. This is shown in Table 1.

Trading rules are not satisfied as there is an overall loss of grassland habitats.

On-site baseline	*Habitat units*	**7.88**
	Hedgerow units	**1.53**
	River units	**0.00**
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	**11.13**
	Hedgerow units	**1.68**
	River units	**0.00**
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	**41.20%**
	Hedgerow units	**10.24%**
	River units	**0.00%**
Off-site baseline	*Habitat units*	**0.00**
	Hedgerow units	**0.00**
	River units	**0.00**
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	**0.00**
	Hedgerow units	**0.00**
	River units	**0.00**
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	**3.25**
	Hedgerow units	**0.16**
	River units	**0.00**
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	**41.20%**
	Hedgerow units	**10.24%**
	River units	**0.00%**
Trading rules Satisfied?	**No - Check Trading Summary ▲**	

Table 1. *Change in Biodiversity Units Calculation*

REFERENCES

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020), UK Habitat Classification – Habitat Definitions V1.1 at http://ukhab.org

Stephen Panks A, Nick White A, Amanda Newsome A, Jack Potter A, Matt Heydon A, Edward Mayhew A, Maria Alvarez A, Trudy Russell A, Sarah J. Scott B, Max Heaver C, Sarah H. Scott C, Jo Treweek D, Bill Butcher E And Dave Stone A 2022. *Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide*. Natural England.

JNCC. (2010), *Handbook for Phase 1 Habitat Survey* (revised). JNCC, Peterborough.

APPENDIX A – DEFRA METRIC TABLES – BASELINE

	Habitats and areas			Distinctiveness		Condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value						Bespoke compensation agreed for unacceptable losses	Comments	
Ref	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic Significance multiplier		Total habitat units	Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost		Assessor comments	Reviewer comments
1	Grassland	Other neutral grassland	1.722	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (SU	6.89		0.348	0.00	1.39	1.37	5.50		Grassland to bank enhanced	
2	Urban	Artificial unvegetated, unsealed surface	0.019	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00	0.019		0.00	0.00	0.00	0.00			
3	Grassland	Other neutral grassland	0.088	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (SU	0.35			0.00	0.00	0.09	0.35		Marshy Grassland	
4	Grassland	Other neutral grassland	0.16	Medium	4	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (SU	0.64		0.16	0.00	0.64	0.00	0.00		Grassland to South enhanced	
5																					
6																					
7																					
8																					
9																					
		Total habitat area	1.99									7.88	0.02	0.51	0.00	2.03	1.46	5.85			

Total area lost (excluding area of Urban trees and Green walls)	1.46

	UK Habitats - existing habitats			Habitat distinctiveness		Habitat condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value					
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		Total hedgerow units	Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost
1	1	Native Hedgerow	0.382	Low	2	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	1.53	0.298	0.084	1.19	0.34	0.00	0.00
2																		
3																		
4																		
5																		
6																		
			0.38									1.53	0.30	0.08	1.19	0.34	0.00	0.00

APPENDIX B – DEFRA METRIC TABLES – POST-DEVELOPMENT

Post development/ post intervention habitats																						
			Distinctiveness		Condition		Strategic significance			Temporal multiplier						Difficulty multipliers					Comments	
Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard time to target condition/years	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	Habitat units delivered	Assessor comments	Reviewer comments
Urban	Developed land; sealed surface	0.962	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	0	0	Standard time to target condition applied	0	1.000	Low	Standard difficulty applied	Medium	0.67	0.00	70%	
Urban	Vegetated garden	0.5	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0	0	Standard time to target condition applied	1	0.965	Low	Standard difficulty applied	Low	1	0.97	30%	
Urban	Urban Tree	1.8801	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	27	0	0	Standard time to target condition applied	27	0.382	Low	Standard difficulty applied	Low	1	5.75	12 small and 50 medium size urban trees	
	Total habitat area	3.34																	Total Units	6.71		

	Baseline habitats										Proposed Habitat (Pre-populated but can be overridden)		Change in distinctiveness and condition							Strategic significance			Temporal risk multiplier						Difficulty risk multipliers					Comments	
Baseline ref	Baseline habitat	Total habitat area (hectares)	Baseline distinctiveness band	Baseline distinctiveness score	Baseline condition category	Baseline condition score	Baseline strategic significance category	Baseline strategic significance score	Baseline habitat units	Suggested action to address habitat losses	Proposed Broad Habitat	Proposed habitat	Distinctiveness change	Condition change	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard time to target condition/years	Habitat enhanced in advance/years	Delay in starting habitat enhancement/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of enhancement	Applied difficulty multiplier	Final difficulty of enhancement	Difficulty multiplier applied	Habitat units delivered	Assessor comments	Reviewer comments
1	Grassland - Other neutral grassland	1.722	Medium	4	Poor	1	Low Strategic Significance	1	6.89	Same broad habitat or a higher distinctiveness habitat required (≥)	Grassland	Other neutral grassland	Medium - Medium	Poor - Good	0.348	Medium	4	Good	3	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15	0	0	Standard time to target condition applied	15	0.586	Low	Standard difficulty applied	Low	1	3.02		
4	Grassland - Other neutral grassland	0.16	Medium	4	Poor	1	Low Strategic Significance	1	0.64	Same broad habitat or a higher distinctiveness habitat required (≥)	Grassland	Other neutral grassland	Medium - Medium	Poor - Good	0.16	Medium	4	Good	3	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15	0	0	Standard time to target condition applied	15	0.586	Low	Standard difficulty applied	Low	1	1.39		
															0.51																		4.41		

	Baseline Habitats										Proposed (Pre-populated but can be overridden)	Change in distinctiveness and condition			Distinctiveness		Condition		Strategic significance			Temporal multiplier						Difficulty risk multipliers				
Baseline ref	Baseline habitat	Length (km)	Baseline distinctiveness band	Baseline distinctiveness score	Baseline condition category	Baseline condition score	Baseline strategic significance category	Baseline strategic significance score	Baseline habitat units	Suggested action		Distinctiveness movement	Condition movement	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard Time to target condition/years	Habitat enhanced in advance/years	Delay in starting habitat enhancement/years	Standard or adjusted time to target condition	Final time to target condition/years	Final Time to target multiplier	Standard difficulty of enhancement	Applied difficulty multiplier	Final difficulty of enhancement	Difficulty multiplier applied	Hedge units delivered
1	Native Hedgerow	0.382	Low	2	Moderate	2	Low Strategic Significance	1	1.528	Same distinctiveness band or better	Native Hedgerow	Low - Low	Moderate - Good	0.084	Low	2	Good	3	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	2	0	0	Standard time to target condition applied	2	0.931	Low	Standard difficulty applied	Low	1	0.49
														0.08																		0.49

APPENDIX C – BASELINE DETAILED CONDITION ASSESSMENTS

This appendix presents the condition assessments of the baseline habitats against the condition sheets in the biodiversity metric 3.1 technical supplement published by Panks et al., 2022. Any deviations from the published guidance are explained and justified.

Phase 1 Habitat	UK Hab Equivalent	Hedgerow Criteria Score										Condition Assessment	Notes
		A1	A2	B1	B2	C1	C2	D1	D2	E1*	E2*		
Intact Species-poor hedgerow	Native Hedgerow	P	F	P	P	F	F	P	F			Poor	

Key:
P – Criteria passed
F – Criteria failed
* - Application to Hedgerows with trees only

Appendix Table C1: Hedgerow Condition Assessment

UK Hab Equivalent	Condition Sheet	Other Habitat Criteria Score									Total Score	Condition Assessment	Notes
		C1	C2	C3	C4	C5	C6	C7	C8	C9			
Other neutral grassland	GRASSLAND: Medium-Very High distinctiveness	F	F	F	F	F	F				0	Poor	Bramble scrub, uniform sward, H balsam

Key:
P – Criteria passed
F – Criteria failed

Appendix Table C2: Condition Assessment for Area Habitats

APPENDIX D – POST-DEVELOPMENT DETAILED CONDITION ASSESSMENTS

Phase 1 Habitat	UK Hab Equivalent	Hedgerow Criteria Score										Condition Assessment	Notes
		A1	A2	B1	B2	C1	C2	D1	D2	E1*	E2*		
Intact Species-poor hedgerow	Native Hedgerow	P	P	P	P	P	F	P	F			Moderate	

Key:
P – Criteria passed
F – Criteria failed
* - Application to Hedgerows with trees only

Appendix Table D1: Hedgerow Condition Assessment

UK Hab Equivalent	Condition Sheet	Other Habitat Criteria Score									Total Score	Condition Assessment	Notes
		C1	C2	C3	C4	C5	C6	C7	C8	C9			
Other neutral grassland	GRASSLAND: Medium-Very High distinctiveness	P	P	F	P	P	F				4	Moderate	
Developed Land; Sealed Surface	Not assessed												
Garden	Vegetated Garden										-	-	
Urban trees	URBAN TREES	F	P	F	P	F	P				3	Poor	

Key:
P – Criteria passed
F – Criteria failed

Appendix Table D2: Condition Assessment for Area Habitats