



Biodiversity Metric Report

Acornfield Phase 2, Knowsley Industrial Estate

Reference: 81-377-R3-3

Date: October 2023



BIODIVERSITY METRIC REPORT

Acornfield Phase 2
Knowsley Industrial Estate

Prepared for:
Prime Property Consultancy

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QUALITY ASSURANCE

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EXECUTIVE SUMMARY

Site Address	Acornfield Road, Knowsley Industrial Estate, L33 7BJ.				
Co-ordinates	E 343648, N 398600				
Site Area	Approximately 0.6 ha				
Current Site Use	The site comprised shipping containers, hardstanding, scattered scrub, dense scrub, scattered trees and treelines. The site was located in the north-east of Knowsley Industrial Estate. The site is currently in use as a wooden pallet yard. Adjacent areas comprised industrial units, roads and public open spaces.				
Proposed Development	Development proposals include the construction of two new industrial units with ancillary office space, new accesses, hard and soft landscaping, and associated works.				
Results	The biodiversity metric results show a gain of both habitat and hedgerow units as follows: <table><tr><td>Habitat Units</td><td>+0.07</td></tr><tr><td>Hedgerow Units</td><td>+0.15</td></tr></table> A gain of +14.19% habitat units and a gain of +46.98% hedgerow units will be incurred on-site as a result of development. The trading rules of the metric have not been satisfied as habitats lost have not been 'traded up'. It is not currently a mandatory requirement to meet these trading rules on small sites, but will be from April 2024.	Habitat Units	+0.07	Hedgerow Units	+0.15
Habitat Units	+0.07				
Hedgerow Units	+0.15				
Conclusions and Recommendations	The proposed scheme and proposed site plans show a total gain of +0.07 habitat units and +0.15 hedgerow units as a result of the development. There is provision for additional species enhancements on-site, which could include hedgehog houses and hibernacula.				



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1. INTRODUCTION

1.1. BACKGROUND

E3P has been instructed Prime Property Consultancy to undertake an Ecological Walkover and Biodiversity Metric Calculation at Oxford Road, Macclesfield, hereafter referred to as “the site”.

This report has been produced by Conor Evans BSc (Hons) MRes QCIEEM Consultant Ecologist. Conor has experience undertaking Biodiversity Net Gain and Condition Assessments on a variety of projects across the UK.

This report should be read in conjunction with 'Biodiversity Metric 4.0 Calculation Tool – Acornfield Phase 2, Knowsley Industrial Park – R3.xl'.

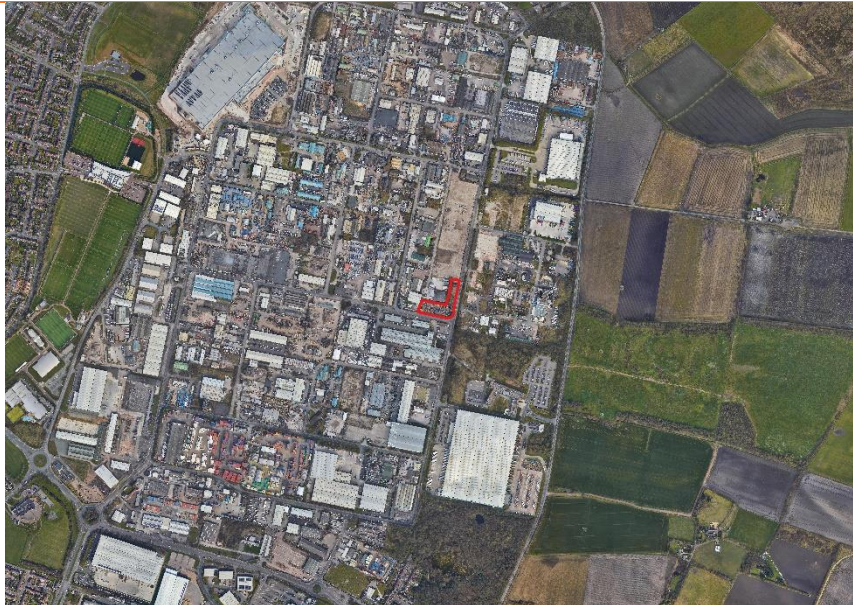
1.2. PREVIOUS SURVEYS

E3P undertook a Preliminary Ecological Appraisal on-site in July 2023 (report reference: 81-377-R2). During the survey, the site was found to comprise shipping containers, hardstanding, scattered scrub, dense scrub, scattered trees and treelines.

1.3. SITE LOCATION

The site is located in the north-east of Knowsley Industrial Park, within a predominantly industrial area. Access to the site is gained via Kirkby Bank Road, which enters the site to the south, and Acornfield Road, which enters the site the east. The wider landscape is comprised of agricultural fields, residential and commercial buildings. Please refer to Figure 1.1 for the approximate site location.

FIGURE 1.1 APPROXIMATE SITE LOCATION



1.4. OBJECTIVES

The objectives of the Biodiversity Metric are to:

-  Identify percentage change in on-site habitat.
-  Identify the number of habitat units lost/gained on-site; and
-  Determine the need for a conservation offset payment or off-site habitat creation.

The findings of the calculation are detailed within this report, along with recommendations.



2. METHODOLOGY

2.1. BIODIVERSITY METRIC

Department for Environment, Food and Rural Affairs' (DEFRA) Biodiversity Metric 4.0 2023 version was used to undertake the metric calculation. The metric was undertaken following guidance as detailed within The Biodiversity Metric 4.0 User Guide (Natural England, 2023), the Biodiversity Metric 4.0 Technical Supplement (Natural England, 2022) and the Summary of Changes Biodiversity Metric 3.1 to 4.0 (2023).

This metric was calculated by Conor Evans, Consultant Ecologist at E3P. Conor has attended internal training courses focusing on Biodiversity Net Gain and using the Biodiversity Metric Calculation Tool.

This metric was reviewed by Associate Director Celia Barlow, BSc (Hons) MSc MEnvSc CEnv MCIEEM. Celia has undertaken a number of online training courses with CIEEM including 'Calculating and Using Biodiversity Units with Metric 2.0' and 'Biodiversity Net Gain Through Development'. Celia has also completed Condition Assessments on a number of sites across the UK and holds a Level 3 Field Identification Skills Certificate (FISC).

2.2. ON-SITE HABITAT BASELINE DATA

The baseline data used to inform the condition assessment was collected on 26th July 2023 during a Preliminary Ecological Appraisal. The Biodiversity Metric 4.0 – Technical Annex 1 – Condition Assessment Sheets and Methodology (Natural England 2023) was used to undertake the condition assessment. The methodology follows the Biodiversity Metric 4.0 – User Guide (Natural England 2023).

On-site baseline habitats were measured from the Phase 1 Habitat Plan using QGIS. Phase 1 habitat types were translated into UKHab habitat types using the metrics Technical Data Translation Tool. Scattered tree areas were calculated using the Root Protection Areas (RPAs) from the Arboricultural Impact Assessment and Method Statement (AIA) (report reference: 81-377-R1). Some of the scattered trees are located outside of the site boundary, but the RPAs encroach onto site, and a number of trees included on the AIA report have been included within the treeline on the Phase 1 Habitat Plan.

Please see Appendix I for the Phase 1 Habitat Plan.

2.3. POST DEVELOPMENT HABITAT CREATION

The Landscape Strategy drawing was used to measure potential habitat creation on-site (Kova Landscape Ltd, 2023; drawing reference: KL-570-001-P3). The areas of proposed habitat were measured using QGIS from the PDF drawing. The area for scattered trees was calculated using the Tree Helper calculator within the metric.

Please see Appendix II for the Landscape Strategy.

2.4. LIMITATIONS

Some areas on the site are double counted where overlap is shown. This means areas of habitat pre- and post-development do not total to the same area.



3. RESULTS

3.1. ON-SITE BASELINE CONDITION ASSESSMENT RESULTS

Table 3.1 shows the details of the habitat condition assessment used for input into the metric calculation tool.

TABLE 3.1 HABITAT BASELINE CONDITION ASSESSMENT RESULTS

HABITAT TYPE (PH1)	HABITAT TYPE (UKHAB)	AREA/LENGTH (HA/KM)	CONDITION ASSESSMENT	DESCRIPTION
DENSE SCRUB	Heathland and Shrub – Mixed Scrub	0.0143	Poor	Passes 1 of 5 condition assessment criteria: There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA4) and species indicative of sub-optimal condition make up less than 5% of ground cover.
SCATTERED SCRUB	Heathland and Shrub – Mixed Scrub	0.0149	Poor	Passes 1 of 5 condition assessment criteria: There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA4) and species indicative of sub-optimal condition make up less than 5% of ground cover.
HARDSTANDING	Urban – Developed Land; Sealed Surface	0.5898	N/A	Condition automatically set by the metric.



HABITAT TYPE (PH1)	HABITAT TYPE (UKHAB)	AREA/LENGTH (HA/KM)	CONDITION ASSESSMENT	DESCRIPTION
SCATTERED TREES	Individual Trees – Urban Tree	0.0469*	Moderate	Passes 3 of 6 condition assessment criteria: ✳ The tree is a native species (or at least 70% within the block are native species). ✳ The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion). ✳ More than 20% of the tree canopy area is oversailing vegetation below.
TREELINE	Hedgerows and Line of Trees – Line of Trees	0.0780	Moderate	Passes 3 of 5 condition assessment criteria: ✳ At least 70% of trees are native species. ✳ Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide. ✳ At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.

*Tree numbers as detailed in the AIA report: T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18 and T19



3.2. HABITAT RETENTION

Table 3.2 outlines the area of habitat to be retained. Only the majority of the scattered trees and the hedgerow are to be retained.

TABLE 3.2 HABITAT RETENTION

HABITAT TYPE (PH1)	HABITAT TYPE (UKHAB)	AREA (HA) / LENGTH (KM)	CONDITION ASSESSMENT
SCATTERED TREES	Individual Trees – Urban Tree	0.0292 (8 Trees)	Moderate

*Tree numbers as detailed in the AIA report: T4, T5, T6, T7, T8, T17, T18 and T19

3.3. HABITAT CREATION CONDITION ASSESSMENT

Habitats are indicated on the Landscape Strategy, which include the construction of a new building, recreational sports area, gardening area, and a multi-use games area. Table 3.3 shows the details of the target condition assessment and total areas of habitat creation. It has been assumed that there will be no significant delay in the creation of the proposed habitat features, as such the delay in starting habitat creation has been set to zero.

TABLE 3.3 HABITAT CREATION CONDITION ASSESSMENT RESULTS

HABITAT TYPE (LANDSCAPE PLAN)	HABITAT TYPE (UKHAB)	AREA (HA) / LENGTH (KM)	TARGET CONDITION/DESCRIPTION	TARGET TIME TO CONDITION
NATIVE SHRUB PLANTING	Heathland and Shrub – Mixed Scrub	0.0058	Poor Passes 2 of 5 condition assessment criteria:  The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native,	Target time to condition will be one year.



HABITAT TYPE (LANDSCAPE PLAN)	HABITAT TYPE (UKHAB)	AREA (HA) / LENGTH (KM)	TARGET CONDITION/DESCRIPTION	TARGET TIME TO CONDITION
			and there are at least three native woody species, with no single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i>, common juniper <i>Juniperus communis</i>, sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i>, which can be up to 100% cover). There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of sub-optimal condition make up less than 5% of ground cover.	
WILDLIFE-FRIENDLY ORNAMENTAL PLANTING	Urban – Introduced Shrub	0.0102	N/A	Target time to condition will be one year.
NATIVE MIXED SPECIES HEDGEROW	Hedgerows and Line of Trees – Native Hedgerow	0.1370	Moderate No more than 4 failures in total and does not fail both attributes in more than one functional group.	Target time to condition will be 5 years.
SPECIMEN NATIVE TREES	Individual Trees – Urban Tree	0.0936 (23 small trees with girths between 12 – 14 cm and 14 – 16 cm)	Moderate Passes 4 of 6 condition assessment criteria: - The tree is a native species (or at least 70% within the block are native species). - The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion). - There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural	Target time to condition will be 27 years.



HABITAT TYPE (LANDSCAPE PLAN)	HABITAT TYPE (UKHAB)	AREA (HA) / LENGTH (KM)	TARGET CONDITION/DESCRIPTION	TARGET TIME TO CONDITION
			activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.  More than 20% of the tree canopy area is oversailing vegetation below.	
HARDSTANDING AND BUILDINGS	Urban – Developed Land; Sealed Surface	0.6036	N/A	N/A



3.4. STRATEGIC SIGNIFICANCE

The strategic significance was defined as 'Area not in local strategy, no local strategy'. The site comprised a large area of hardstanding, surrounded by industrial units. Due to the developed nature of the site and the surrounding area, the site is not anticipated to have significant ecological value. Additionally, the site is not noted within the local strategy.

3.5. BIODIVERSITY UNIT RESULT

The headline results of the metric show a gain of +0.07 habitat units and +0.15 hedgerow units as a result of development. Table 3.4 shows the headline results detailed within the Biodiversity Metric.

TABLE 3.4 HEADLINE RESULTS

HEADLINE	CATEGORY	RESULT
TOTAL NET UNIT CHANGE	Habitat Units	+0.07
	Hedgerow Units	+0.15
	River Units	N/A
TOTAL NET % CHANGE	Habitat Units	+14.19%
	Hedgerow Units	+46.98%
	River Units	N/A

The trading rules of the metric have not been satisfied as habitats lost have not been 'traded up'.



4. CONCLUSIONS AND RECOMMENDATIONS

The proposed scheme and proposed site plans show a total gain of +0.07 habitat units and +0.12 hedgerow units as a result of the development. The trading rules have not been satisfied; however, this is not currently a mandatory requirement on small sites, but will be from April 2023.

The Biodiversity Metric does not take account for additional species enhancements within the site, and to further increase the site's value for wildlife the following could be provided:

-  Creation of hibernacula (following guidance set out within Froglife, 2001) for common amphibians.
-  Hedgehog houses may be installed to enhance the site for hedgehogs.



5. REFERENCES

- ✚ E3P (2023). Arboricultural Impact Assessment and Method Statement – Acornfield Phase 2, Knowsley Industrial Park. Report Reference: 81-377-R1.
- ✚ E3P (2023). Preliminary Ecological Appraisal – Acornfield Phase 2, Knowsley Industrial Park. Report Reference: 81-377-R2.
- ✚ Kova Landscape Ltd (2023). Landscape Strategy. Drawing Number: KL-570-001-P3.
- ✚ National Planning Policy Framework (2021). Ministry of Housing, Communities and Local Government.
- ✚ Natural England Joint Publication JP039. (2023). The Biodiversity Metric 4.0. User Guide. Technical Annex 2.
- ✚ Natural England Joint Publication JP039. (2023). The Biodiversity Metric 4.0. User Guide.
- ✚ Natural England. (2023). The Biodiversity Metric 4.0. Technical Annex 1. Condition Assessment Sheets.

END OF REPORT



APPENDIX I

PHASE 1 HABITAT PLAN



Key:

- Boundary
- Tree line
- Scattered trees
- Scattered scrub
- Dense scrub
- Structures
- Hardstanding

Notes

Issue: 1	Revision: 1	Date: 09/08/2023	Drawn: CE	Authorised: CB
Client: Prime Property Consultancy			Job No. 81-377	Date: 09/08/2023
			Drawing No. 001	Scale: 1:1200 @ A4
Job title: Acornfield Phase 2, Knowsley Industrial Estate			Drawing title: Phase 1 Habitat Plan	

APPENDIX II

LANDSCAPE STRATEGY

APPENDIX III HEDGEROW CONDITION ASSESSMENT

HEDGEROW CONDITION ASSESSMENT

ATTRIBUTES AND FUNCTIONAL GROUPINGS (A, B, C, D & E)		CRITERIA (THE MINIMUM REQUIREMENTS FOR 'FAVOURABLE CONDITION')	DESCRIPTION	HEDGEROW 1 CONDITION ACHIEVED (Y/N)
A1.	HEIGHT	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is > 1.5 m height).	No
A2.	WIDTH	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (e.g. blackthorn suckers) are only included in the width estimate when they >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice⁴).	Yes



ATTRIBUTES AND FUNCTIONAL GROUPINGS (A, B, C, D & E)		CRITERIA (THE MINIMUM REQUIREMENTS FOR 'FAVOURABLE CONDITION')	DESCRIPTION	HEDGEROW 1 CONDITION ACHIEVED (Y/N)
B1.	GAP - HEDGE BASE	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	This is the vertical gappiness of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	Yes
B2.	GAP - HEDGE CANOPY CONTINUITY	Gaps make up <10% of total length and No canopy gaps >5 m	This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall gappiness, but are not subject to the >5 m criterion (as this is the typical size of a gate).	Yes
C1.	UNDISTURBED GROUND AND PERENNIAL VEGETATION	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: - measured from outer edge of hedgerow, and - is present on one side of the hedge (at least)	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedge. Undisturbed ground should be present for at least 90% of the hedgerow length, greater than 1m in width and must be present along at least one side of the hedge. This criterion recognises the value of the hedge base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	Yes



ATTRIBUTES AND FUNCTIONAL GROUPINGS (A, B, C, D & E)		CRITERIA (THE MINIMUM REQUIREMENTS FOR 'FAVOURABLE CONDITION')	DESCRIPTION	HEDGEROW 1 CONDITION ACHIEVED (Y/N)
C2.	UNDESIRABLE PERENNIAL VEGETATION	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	The indicator species used are nettles (<i>Urtica</i> spp.), cleavers (<i>Galium aparine</i>) and docks (<i>Rumex</i> spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.	No
D1.	INVASIVE AND NEOPHYTE SPECIES	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Neophytes are plants that have naturalised in the UK since AD 1500. For information on neophytes see the JNCC website and for information on invasive non-native species see the GB Non-Native Secretariat website.	Yes
D2.	CURRENT DAMAGE	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g. excessive hedge cutting).	Yes



Condition categories for hedgerows		
CATEGORY	MAXIMUM NUMBER OF ATTRIBUTES THAT CAN FAIL TO MEET 'FAVOURABLE CONDITION' CRITERIA IN TABLE TS1-2	WEIGHTING (SCORE)
GOOD	No more than 2 failures in total; AND No more than 1 in any functional group.	3
MODERATE	No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1, C2 & E1 = Moderate condition).	2
POOR	Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	1

