

CRABTREE LANE, MANCHESTER

Biodiversity Net Gain Assessment

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1 INTRODUCTION

1.1 SCOPE & PURPOSE

1.1.1. Collington Winter Environmental Ltd was commissioned by KeepMoat Limited to prepare a Biodiversity Net Gain (BNG) Assessment for the proposed application at Crabtree Lane. This revised report has been prepared to inform an outline planning application for the construction of 70 residential dwellings and four apartment blocks, including access roads, private amenity gardens and Public Open Space.

1.1.2. The author of this report is Eleanor Clark BSc (Hons), MSc, ACIEEM Consultant Ecologist at Collington Winter Environmental Ltd. Eleanor is experienced managing schemes and has produced many ecological reports to inform planning management plans. A River Condition Assessment was undertaken in 2024, the report has been updated with the results by Caitlin O'Connor, Consultant Ecologist at Collington Winter Environmental.

1.1.3. This report has been written broadly following the Biodiversity Net Gain Report and Audit Templates (CIEEM, 2021).

1.2. LOCATION

1.2.1. Please refer to Figure 1.1 for the site location. The site is located approximately 4km east of Manchester City Centre, north of Openshaw, a suburb of Manchester.



Figure 1.1 Site Location

1.3. OBJECTIVES

1.3.1. The report has been produced to document the methods, results, and conclusions of a BNG Assessment undertaken based on the proposed development for the site to fulfil the following:

- Ensure that the mitigation hierarchy has been applied.

- Identify the baseline habitats present and provide a condition assessment.
- Identify the post development habitats on site, assess the possible target condition and provide an indication of the likely importance of those habitats.
- Calculate the overall change in biodiversity score from pre- post development.
- Provide design recommendations to maximise potential net gain achievable.
- Provide an indication of likely outcomes and indicative cost as required.

1.4. PLANNING CONTEXT

- 1.4.1 The Government 25-year Environment Plan states that government will “embed environmental net gain principle for development.”
- 1.4.2 National policy already sets out that planning should provide Biodiversity Net Gain (BNG) where possible. National Planning Policy Framework (NPPF) Paragraphs 174(d), 179(b) and 180(d) refer to this policy requirement and the Natural Environment Planning Practice Guidance (PPG) provides further explanation on how this should be done.
- 1.4.3 Under the Environment Act 2021, all planning permissions granted in England (with a few exemptions) except for small sites will have to deliver at least 10% biodiversity net gain from January 2024. BNG will be required for small sites from April 2024. BNG will be measured using Defra’s biodiversity metric and habitats will need to be secured for at least 30 years. Key points regarding BNG are listed below:
- Minimum 10% gain required calculated using Biodiversity Metric & approval of net gain plan.
 - Habitat secured for at least 30 years via obligations/ conservation covenant.
 - Habitat can be delivered on-site, off-site or via statutory biodiversity units.
 - There will be a national register for net gain delivery sites.
 - The mitigation hierarchy still applies of avoidance, mitigation, and compensation for biodiversity loss.
 - Will also apply to Nationally Significant Infrastructure Projects (NSIPs)
 - Does not apply to marine development.
 - Does not change existing legal environmental and wildlife protections.

3 METHODS

2.1 EXISTING HABITAT (BASELINE)

- 2.1.1. An Preliminary Ecological Appraisal (PEA) of the site was undertaken by Collington Winter Environmental in March 2025 (report reference: CW20-2148 RPT 001). The survey was undertaken on the 2nd August 2024. The weather was clear (2/8 oktas), with no precipitation, wind speed 2 and 21°C. .
- 2.1.2. The walkover survey was undertaken broadly in line with standard UK HAB Methodology. The assessment is undertaken with consideration of methodology as per “Preliminary Ecological Appraisal” (CIEEM, 2018).
- 2.1.3. A UK HAB Plan has been produced and is presented in the Appendix of this report. Standard methodology has been used, though adjustments have been made based on judgement to demonstrate habitats in a clearer manner, or where standard guidance does not fit the conditions found on site.

2.2 PLANNING LAYOUT (POST-DEVELOPMENT)

- 2.2.1 The Indicative Layout details the post-development habitats and was produced by J I Architects. The total areas of post-development were also provided by J I Architects.

2.3 THE STATUTORY BIODIVERSITY METRIC

- 2.3.1 The BNG calculation was undertaken utilising The Statutory Biodiversity Metric from DEFRA (full calculation available in Appendix), the site's Habitat map and the Indicative Layout (produced by J I Architects). The calculation was performed by a technically competent and experienced ecologist as detailed in British Standard BS8683 – Suitably qualified person –definition in BS8683:2020.
- 2.3.2 The Statutory Biodiversity Metric uses habitat features as a proxy measure for capturing the value and importance of nature. The metric takes into account the size, ecological condition, location and proximity to nearby 'connecting' features. The metric enables assessments to be made of the present and forecast future biodiversity value of a site.

2.4 HABITAT SCORING

- 2.4.1 The Statutory Biodiversity Metric supplies reference documents and user guides in which to accurately evaluate and assess the different habitats on site. The methodology for the baseline and post development calculations are demonstrated in the following sections.

Baseline Units

- 2.4.2 To assess the quality of a habitat and therefore calculate the units scored the Statutory Biodiversity Metric utilises three scoring factors as detailed below.

Condition

- 2.4.3 The condition of a habitat is assessed utilising the Condition Sheets provided for each habitat type. These list positive indicators for each habitat and indicate how many of these indicators need to be present to meet certain thresholds of condition. These condition sheets can be found in the Statutory Biodiversity Metric habitat condition assessment sheets with instructions tool Technical (Natural England Joint Publication, 2023).

Distinctiveness

- 2.4.4 The distinctiveness of each habitat (area and linear) is automatically assigned by the tool, based upon national records of the occurrence and rarity of each habitat (Statutory Biodiversity Metric).

Strategic Significance

- 2.4.5 The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are in preferred locations for biodiversity and other environmental objectives. Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement, such as Nature Recovery Areas, local biodiversity plans, National Character Area objectives and green infrastructure strategies. The site has been considered to be within “*Location ecologically desirable but not in local strategy*”.

Post Development Units

2.4.6 Additional factors are implemented when assessing post development habitats.

- Difficulty of Creation/Enhancement
- Temporal Risk “Time to target condition”
- Spatial Risk (when offsite mitigation is necessary)

2.5 RIVER CONDITION ASSESSMENT (RCA)

2.5.1. Another walkover of the site was conducted by Caitlin O'Connor, Consultant Ecologist and Qualified RCA Surveyor at Collington Winter Environmental Ltd on 22nd October 2024. The methods were based on the MoRPh method (Cartographer, 2023) to assess the condition of the watercourse along the southern aspect of the site.

2.5.2. The condition of rivers is assessed using the MoRPh method (Cartographer, 2023). The survey assessed conditions along the bank tops (10m back from the bank face), the bank face and the channel bed. Figure 1 shows where MoRPh surveys were undertaken.

2.5.3. The condition assessment for rivers is split into two sections: Desk Study and Field Survey. Each section uses a series of criteria to generate two outcomes an Indicative River Type (in the case of the Desk Study) and a Provisional Condition Score (in the case of the Field Survey).

Desk Study

2.5.4. The MoRPh desk study is conducted of a wider reach of the river channel to determine the river type based on available satellite data and maps. The wider reach was defined by significant changes in the channel, for example:

- A major tributary (e.g. contributing >10% flow to the receiving watercourse)
- A major artificial barrier (e.g. >5m tall, likely to significantly change flow or sediment movement)
- A distinct and persistent change in planform (e.g. change from meandering to straight).

2.5.5. Eight river-type indicators are assessed based on the desk study information; these are combined to determine Indicative River Type. Five indicators are assessed by desk study (A1 -A5) while three are automatically estimated from the field survey data (A6 -A8). These eight indicators are summarised in Table 1 in Appendix 7.2.

- Local Plans
- River Basin Management Plans
- Catchment Plans

2.5.6. Catchment For rivers and streams, ‘high’ strategic significance has been applied to watercourses within local, regional or national strategies or plans, including:

- Planning System
- Priority Habitats for Restoration

Field Survey

2.5.7. A MoRPh survey is used to collect information in the field for subreach(es) of a river. The aim of the MoRPh survey is to survey at least 20 % of the total river length within the site. The surveys assessment information on short lengths (or modules) of a river that are approximately twice the river width.

2.5.8. A subreach survey is comprised of five contiguous MoRPh module surveys to gather information for subreaches 50, 100, 150 and 200 m in length (250 m for canals, navigable and large rivers) according to the width of the river. MoRPh surveys included the river and all habitats within a radius of 10 m from the riverbank.

2.5.9. There are 8 broad categories of river type assessment, some factors are determined through the field study, and some through the desk study. These are outlined in the Appendix 7.2, Table 1.

2.5.10. A Provisional Condition Score is assessed using 32 condition indicators, split between four morphological features (Bank Top, Bank Face, Channel- Water Margin and Channel Bed). Each river condition indicator is assigned a score of 0 to +4 (positive indicators) or 0 to -4 (negative indicators). These 32 condition indicators are listed within Appendix 7.2 in Table 2- with all negative indicators listed in red.

2.5.11. The Preliminary Condition Score for each MoRPh subreach is calculated as the sum of the average positive condition indicator scores and the average of the negative condition indicator scores. A Final Condition Score is then assigned in accordance with the river type under assessment.

2.5.12. Final Condition scores in the River Condition Section of the DEFRA Statutory Metric are as follows:

Condition	Score
Good	5
Fairly Good	4
Moderate	3
Fairly Poor	2
Poor	1

2.5.13. The output condition score is then entered into the **Statutory Biodiversity Metric**.

Encroachment

2.5.14. The level of encroachment (presence of buildings, farming or hardstanding within 10m of the bank edge) is assessed on the banksides. Encroachment is a negative factor to the overall river condition. There are two types of encroachment in the rivers and streams metric:

- In-watercourse encroachment has been assigned using the guidance in Table 3 (See Appendix 7.2)
- Riparian encroachment has been assigned using the guidance in Table 4 (See Appendix 7.2)

2.6 LIMITATIONS OF ASSESSMENT

2.6.1 Whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment. The conclusions and recommendations detailed in this report are based upon the site redline boundary and the development proposals as outlined by the client at the time of writing. Should there be any changes to the site redline boundary or development proposals at a later stage, this assessment should be reviewed to determine whether any amendments or additional survey work is required.

2.6.2 Habitat areas (predevelopment and post-development) have been measured using online mapping, and therefore will not be completely accurate.

2.6.3 River Condition assessments are taken from the accessible bankside. Therefore, some elements such as soil substrate and bank profile may not always be visible and is based on a surveyor's professional judgment.

2.6.4 Many rivers have also been previously assessed under individual Water Framework Directive Regulations (WFD Regulations). In this instance, it has been assumed that restoration or enhancements to channel morphology will follow these requirements where applicable.

2.6.5 Assumptions on the enhancements of the riverbank have been made. If these assumptions are not viable, the enhancements will have to be re-assessed.

Table 2.1 Limitations Review

Limitation	Analysis
Competence of surveyor	A condition assessment was undertaken in August 2024 by Eleanor Clark BSc (Hons), MSc, ACIEEM, Consultant Ecologist. An updated site walkover was then completed by Caitlin O'Connor on the 15th August

	2024. This has been reviewed and overseen by Olivia Collington BSc (Hons), MEnvSc, CEnv, Managing Director at Collington Winter Environmental Ltd who has over 10 years professional experience in ecological consultancy and holds key experience undertaking BNG assessments and providing advice on habitat creation, management and enhancements for both developers and habitat banks.
Competence of ecologist completing the metric	The metric was completed and updated by Eleanor Clark BSc (Hons), MSc, ACIEEM who holds four years' experience. The River metric was completed by Caitlin O'Connor who holds two years' experience. This has been overseen by Olivia Collington who is a Chartered Environmentalist and holds 12 years' experience.
Age of survey data	The updated condition assessment was undertaken in August 2024 and is therefore less than 6 months old. There is no constraint to the age of survey data and this falls within best practice guidance.
Timing of survey	The survey was undertaken in May and the updated walkover was completed in August which is considered a suitable time of year to undertake condition assessments for BNG.
Departure from best practice guidance	No departure from best practice guidance.

4 BASELINE CONDITIONS

3.1. STRATEGIC SIGNIFICANCE

3.1.1.A Local Nature Recovery Strategy (LNRS) has not yet been published for Greater Manchester. As such, Table 8 located within the Statutory Biodiversity Net Gain Metric User Guide and alternative documents have been used to assess the strategic significance of habitats on site.

3.1.2.Alternative documents include the Draft LNRS for Greater Manchester which details the following priorities relating to habitats found within or adjacent to the site:

- More existing woodlands, hedgerows, trees and scrub are safeguarded, restored and resilient (Pg 55)
- Bigger and better-connected woodlands, trees and scrub, integrated with patchworks of other habitat (Pg 55)
- More native hedgerows created and maintained, linking together spaces for wildlife (Pg 55)
- More accessible and visible rivers, canals and waterbodies, with fewer barriers to species movement (Pg 59)
- Cleaner, more natural and resilient rivers and waterbodies, that are well protected, maintained and biodiverse (Pg 59)
- Species-rich and semi-natural grasslands and lowland heath are safeguarded, well-managed and restored (Pg 64)
- More urban meadows, with native wildflower species and longer grasses (Pg 64)

3.1.3.Due to being flagged as notable habitats for nature restoration within the Draft LNRS, the canal, woodland, mixed scrub, and line of trees have been assessed as **“Formally identified in local strategy”**. All other habitats have been assessed as **“Area/compensation no in local strategy/no local strategy”**.

3.2. WATERCOURSES PRE-DEVELOPMENT

Desk Study

3.2.1.The river type was automatically assigned **“Navigable/Canal”** and included within the Watercourse Tab of the Statutory Biodiversity Net Gain Metric as **“Canals”**.

3.2.2. The watercourse is mostly straight with few meanders and did not possess vegetated bars or islands during low flows. The watercourse is unconfined, meaning that it may migrate laterally naturally and is not in contact with (or close proximity to) valley side slopes or ancient terraces. Artificial features or land use does not contribute towards the level of confinement.

3.2.3. Due to the canal’s depth, the bed material could not be observed, although gravel and cobble was observed in shallower sections adjacent to the locks. As such, each individual module length comprised 50 m to gather as much information as possible about the watercourse and its condition.

Field Study

3.2.4. At the time of the survey, the watercourse was on average 8 m wide, assumed 1 m deep with mostly a rippled and smooth flow. The watercourse was assessed from both banks at 50 m intervals forming one MoRPH5 modules (Modules 1-5) The length of the watercourse within the site boundary or within 10 m from the site boundary totals approximately 0.210 km and the MoRPH5 modules cover 0.250 km of the watercourse (over 20%).

3.2.5. The left bank top comprised mostly an established tow path along its entire length. The tow path measured approximately 5 m and does not contribute towards the riparian encroachment as they are exempt within the Statutory Biodiversity Metric Guidance. However, the remainder of the riparian zone comprises a sealed access track, as well as vacant brownfield land making up the development site. Some woodland within the site also falls within the development site. As such, the riparian encroachment for the left bank was assessed as major due to over 25% of the riparian zone comprising developed land.

3.2.6. Vegetation along the towpath comprised modified grassland assessed as short creeping herbs and extensive

mosses. Traces of scrub/shrubs including bramble are also present within vegetated strips along the towpath and access road as well as traces of saplings and trees within the riparian zone of the left bank, relating to those within the development site. Traces of wall cotoneaster were also present within the left bank face, contributing to a negative score for bank face Non-Native Invasive Plant Species (NNIPS) cover. See Figure 3.2.1 for photographs of the left bank.



Figure 3.2.1 Photographs of the left bank

3.2.7. Particularly in Modules 3-5, the right bank top comprises commercial buildings, bordered by a narrow strip of vegetation including self-set deciduous scrub/shrubs, saplings/trees, and herbs. The strip widens within Modules 1-2 and forms a small woodland block dominated by trees and scrub. The riparian encroachment was assessed as 'Major' for the right bank due to hardstanding within 4 m from the bank top.

3.2.8. See Figure 3.2.2 for photographs of the right bank, as seen from the left bank tow path.





Figure 3.2.2 Photographs of the right bank, as seen from the left bank towpath

- 3.2.9. Both the right and left bank faces were heavily reinforced and had been obviously reshaped. The bank faces were constructed with brick/laid stone (cemented). Vegetation within the bank faces themselves was overall limited, although mosses and scrub/shrubs were identified growing from the brickwork, particularly those associated with Modules 1 and 2.
- 3.2.10. There was minimal aquatic, marginal, emergent, or submerged vegetation identified across the length of the watercourse, although some vegetation on the right bank was trailing into the channel from the bank face and bank top.
- 3.2.11. The watercourse encroachment has been assessed as 'Major' due to the presence of two canal locks within the MoRPH5 module (Figure 3.2.3).



Figure 3.2.3 Canal locks within the MoRPH5

- 3.2.12. Following the assessment, the watercourse was recorded to be in **"Poor" condition** across the MoRPH5 modules. The watercourse scored poorly on a range of criteria including but not limited to; the bank top habitat richness (tree features, water-related features), bank top managed ground cover; bank face artificial profile extent; bank face reinforcement; bank face NNIPS cover; and channel bed reinforcements.
- 3.2.13. The canal scored positively on the bank face riparian vegetation structure relating to shrubs growing from the bank face; bank face tree feature richness; and bank top vegetation structure relating to the right bank woodland.
- 3.2.14. A copy of the River Condition Assessment results from Cartographer is provided in Appendix 7.2.

3.3. HABITATS CONDITION ASSESSMENT

- 3.3.1. The following section summarises the condition assessment based on the condition sheets present within the Statutory Biodiversity Metric. Full descriptions and photographs of each habitat type can be found within the accompanying PEA (20-2148 RPT 001). The urban line of trees described in the PEA has been included within the Statutory Biodiversity Metric as 'Urban Trees'. Table 3.1 and Table 3.2 summarises the baseline habitats.

Table 3.1 Summary of baseline habitats.

Baseline Habitat Type	Area (ha)	Distinctiveness	Condition	Baseline Habitat Units
Developed land; sealed surface	1.4	V.Low	N/A - Other	0.00
Vacant or derelict land	0.046	Low	Poor	0.09
Mixed scrub	0.78	Medium	Poor	3.59
Bramble scrub	0.014	Medium	Condition Assessment N/A	0.06
Other woodland; broadleaved	0.77	Medium	Moderate	7.08
Urban tree	0.0326	Medium	Poor	0.15
Urban tree	0.1059	Medium	Moderate	0.97

3.4. RETAINED AND ENHANCED HABITATS

- 3.4.1. Please refer to Table 3.2 for details of habitats to be retained and enhanced within the site. A small parcel of woodland, approximately 0.0144ha, is to be retained. The woodland is connected to woodland located off-site.
- 3.4.2. The Manchester Ship Canal located parallel to the northern aspect of the site is to be retained through development in a 'Poor' condition. The most common negative indicators for the Canal included bank top managed ground cover, bank face NNIPS cover, channel bed artificial features severity, bank face artificial bank profile extent and reinforcement severity.
- 3.4.3. The canal is located offsite, although the development site falls within 10 m of the bank top, making it part of the riparian zone. There will be no alterations to the canal itself or the associated towpath. A tall brick wall separates the development site from the towpath. Along the northern aspect of the development site will comprise a band of wildflower meadow, anticipated to provide value for foraging invertebrates already associated with the canal. Enhancements in the riparian zone are not sufficient to increase the BNG score from Poor to Fairly Poor. As such, the canal is categorised as 'retained' although it is considered that the proposed enhancements will benefit local flora and fauna, increasing the biodiversity value of the site.

Table 3.2 Retained Habitats

HABITAT TYPE	AREA RETAINED (ha)	AREA ENHANCED (ha)
Developed land; sealed surface	-	-
Vacant or derelict land	-	-
Mixed scrub	-	-
Bramble scrub	-	-
Other woodland; broadleaved	0.0144	-
Urban trees	-	-
HABITAT TYPE	LENGTH RETAINED (km)	LENGTH ENHANCED (km)
Canals	0.21	-

3.5. LOST HABITATS

- 3.5.1. All other habitats within the red line boundary are to be lost to development.

3.6. PRE- DEVELOPMENT HABITAT BASELINE

- 3.6.1. Please refer to Table 3.3 summarising the Habitat Baseline for the calculation, demonstrating habitats to be retained, enhance and/or lost.

Table 3.3 Habitat Baseline

	<i>On site Baseline</i>	<i>Retained</i>	<i>Enhanced</i>	<i>Lost</i>
<i>Habitat (Area) Units</i>	11.94	0.13	-	11.81
<i>Watercourse Units</i>	0.21	0.21	-	-

5 HABITAT CREATION

4.1.1. Please refer to Appendix 7.4 for details of the condition criteria targeted for each habitat group (where appropriate). The condition criteria will need to be met in order to achieve their target condition. This can be achieved through the production of a Habitat Management and Monitoring Plan with a minimum 30-year management period, which can be conditioned as part of planning permissions.

4.1.2. The habitats and hedgerows to be created on site are detailed in Table 4.1 and Table 4.2.

Table 4.1 Summary of habitat creation.

Proposed Habitat Type	Area (ha)	Distinctiveness	Condition	Baseline Habitat Units	Comments
Developed land; sealed surface	2.013	V.Low	N/A - Other	0.00	Buildings & hardstanding
Vegetated garden	0.543	Low	Condition Assessment N/A	1.01	Private gardens
Mixed scrub	0.1316	Medium	Poor	0.56	Native shrub
Introduced shrub	0.083	Low	Condition Assessment N/A	0.15	Feature planting mix 1
Introduced shrub	0.0243	Low	Condition Assessment N/A	0.05	Feature planting mix 2
Introduced shrub	0.0205	Low	Condition Assessment N/A	0.04	Ornamental ground cover
Other neutral grassland	0.1218	Medium	Poor	0.50	Wildflower meadow
Modified grassland	0.0287	Low	Poor	0.05	Turf grass
Urban tree	0.3664	Medium	Moderate	1.24	90 trees
Urban - Rain Garden	0.021	Low	Moderate	0.07	Rain Garden

Table 4.2 Summary of hedgerow creation

Proposed Hedgerow Type	Length (km)	Distinctiveness	Condition	Baseline Hedgerow Units	Comments
Non-native and ornamental hedgerow	0.57	V.Low	Poor	0.55	Ornamental hedge
Native hedgerow	0.086	Low	Poor	0.19	Native hedge mix

6 SUMMARY

- 5.1.1. This report and the Statutory Biodiversity Metric submitted have demonstrated that the proposed habitat creation and enhancements create a net loss of biodiversity within the site of **-68.03% in Habitat Units** and **no net gain of Watercourse Units**. In addition, the trading rules have not been satisfied due to the loss of habitats including; scrub and woodland.

Figure 5.1 On site net %

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	-8.13
	<i>Hedgerow units</i>	0.74
	<i>Watercourse units</i>	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	-68.03%
	<i>Hedgerow units</i>	N/A
	<i>Watercourse units</i>	0.00%
Trading rules satisfied?	No - Check Trading Summaries ▲	

- 5.1.2. Given the net loss achieved on site relating to the Habitat Units and not get gain in Watercourse Units, and the lack of opportunity within the current scheme to provide sufficient habitat quality to achieve a net gain, offsetting will be required. The 'Unit Shortfall Calculations' tab with the Statutory Biodiversity Metric **3.08 Habitat Units relating to Heathland and Shrub, 6.95 Habitat Units relating to Woodland and Forest** and **0.04 Watercourse Units** will be required to meet the trading rules and achieve a minimum of 10% net gain.
- 5.1.3. The development must achieve the minimum 10% BNG, this can be achieved through the making off-site biodiversity gains on their own land outside the development site, or through buying off-site biodiversity units from a Habitat Bank. If the development cannot achieve on-site or off-site BNG, they must purchase statutory biodiversity credits. This is seen as a last resort.
- 5.1.4. It is recommended that a Habitat Management and Monitoring Plan (HMMP) be conditioned as part of the planning permission to meeting the targeted conditions of post development habitats. The HMMP will detail full management prescriptions, for the 30-year period required as best practice for biodiversity net gain. The HMMP will be provided to all tenants and future homeowners and will detail where monitoring surveys are to be conducted.

7 BIBLIOGRAPHY

- CIEEM (2021) Biodiversity Net Gain Report and Audit Templates.
- GOV.UK (2023) The Statutory Biodiversity Metric Auditing and Accounting for Biodiversity
- GOV.UK (2023) Statutory Biodiversity Metric: Auditing and Accounting for Biodiversity. Condition Assessment Sheets (Excel Format)
- Natural England (2019). Lake Naturalness Assessment Guidance
- Collington Winter Environment Ltd (2025) Preliminary Ecological Appraisal, Crabtree Lane

7 SUMMARY

7.1 APPENDIX 1 – UKHAB BASELINE HABITAT MAP

7.2 APPENDIX 2 – WATERCOURSE INDICATORS

Table 1: River Type Indicators

Survey Type	River type Code	Feature
Desk Study	A1	Braiding Index
Desk Study	A2	Sinuosity Index
Desk Study	A3	Anabranching Index
Desk Study	A4	Level of Confinement
Desk Study	A5	Valley Gradient
Field Study	A6	Bedrock Reaches
Field Study	A7	Coarsest bed Material size Class
Field Study	A8	Average alluvial bed material size class

Table 2 River Condition Indicators (negative indicators in red)

Location Code	Condition	Description
Bank Top	B1	Vegetation Structure
	B2	Tree Feature
	B3	Water Related Features
	B4	NNPS Cover
	B5	Managed Ground Cover
Bank Face	C1	Riparian Vegetation Structure
	C2	Tree Feature

	C3	Natural Bank Profile Extent
	C4	Natural Bank Profile Richness
	C5	Natural Bank Material Richness
	C6	Bare Sediment Extent
	C7	Artificial Bank Profile Extent
	C8	Reinforcement Extent
	C9	Reinforcement Material Severity
	C10	NNPS Cover
Channel – Water Margin	D1	Aquatic Vegetation Extent
	D2	Aquatic Morphotype
	D3	Physical Feature Extent
	D4	Physical Feature Richness
	D5	Artificial Features
Channel Bed	E1	Aquatic Morphotype Richness
	E2	Tree Features Richness
	E3	Hydraulic Features Richness
	E4	Natural Features Extent
	E5	Natural Features Richness
	E6	Material Richness
	E7	Siltation
	E8	Reinforcement Extent
	E9	Reinforcement Severity

	E10	Artificial Features Severity
	E11	NNPS Extent
	E12	Filamentous Algae Extent

Table 3: Thresholds of Preliminary Condition Scores extracted from Gurnell et al (2024).

Table 3: Likely best and worst Preliminary Condition Scores for each River Type and lower threshold values for allocating Preliminary Condition Scores to Final Condition Classes (Good – 3; Fairly Good – 2.5; Moderate – 2; Fairly Poor – 1.5; Poor – 1).															
River Type	Canals and Navigable rivers	Large rivers	A	B	C	D	E	F	G	H	I	J	K	L	M
Likely best Provisional Condition Score	1.8	2.2	2.4	2.7	2.7	2.7	2.7	2.8	3.0	2.9	3.1	2.8	2.4	2.4	2.4
Lower threshold for GOOD	>1.4	>1.8	>1.9	>2.2	>2.2	>2.2	>2.2	>2.3	>2.5	>2.4	>2.5	>2.3	>1.9	>1.9	>1.9
Lower threshold for FAIRLY GOOD	>0.9	>1.3	>1.2	>1.4	>1.4	>1.4	>1.4	>1.5	>1.6	>1.6	>1.7	>1.5	>1.2	>1.2	>1.2
Lower threshold for MODERATE	>0.3	>0.5	>0.2	>0.2	>0.2	>0.2	>0.2	>0.4	>0.5	>0.5	>0.6	>0.4	>0.2	>0.2	>0.2
Lower threshold for FAIRLY POOR	>-0.5	>-0.4	>-1.0	>-0.9	>-0.9	>-0.9	>-0.9	>-0.9	>-0.9	>-0.9	>-0.8	>-0.9	>-1.0	>-1.0	>-1.0
Likely worst Provisional Condition Score	-1.5	-1.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5

Table 4: In-watercourse Encroachment Bands

In-watercourse Encroachment Band	Multiplier	Description	Examples
No encroachment	1.0	<%5 Bank length compromising an engineered bank revetment and no encroachment to the watercourse	-

Minor	0.8	5-20% of bank length comprising engineered revetment or encroachment up to 10% of the river width.	Small Headwalls,
Major	0.5	>20% of the bank length comprising engineered revetment or encroachment >10% of the channel width	Weirs, large headwalls, bank revetments.

Table 5: Riparian Encroachment Bands

Riparian Encroachment Band	Multiplier	Description
No encroachment	1.0	No encroachment within 10m of the Banktop
Minor	0.95	Any encroachment 8-10m from the bank top Or Where the development occupies 10% of the riparian zone within 4-10 of the bank top.
Moderate	0.85	Encroachment of 10-25% within 4-10m from the bank top And/If Any is in 4-8m from the bank top
Major	0.75	Any encroachment 0-4m from the bank top Or Where the development footprint occupies >25% of the total riparian zone.

Table 6: River Condition Assessment Raw Data (Final Condition Assessment; Pre-Project)

MoRPH5 Modules	a1	a2	a3	a4	a5	a6	a7	a8	Calculated River Type	Overridden River Type
Modules 1 to 5		1	1	Confined	0.005	FALSE				Navigable
Final River Type	Multi Morph River Name	Multi Morph Reach Name	Subreach Name	Module Numbers	survey Type	Scenario Name	Shape	average Width	Preliminary Condition Score	Final Condition Class
Navigable/Canals	Manchester Ship Canal	Manchester Ship Canal,	Manchester Ship Canal,	1 to 5	pre-project	N/A	5.714286	8	-1.2915	Poor

		Crab Tree Lane	Crab Tree Lane, Crab							
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Table 7: River Condition Assessment Raw Data (Preliminary Condition Assessment; Pre-Project; Per Module)

MoRPH5 Module	Index 1	Index 2	Index 3	Index 4	Index 5	Index 6	Index 7	Index 8	Index 9	Index 10
Module 1	2	RP	2	CO	-5.25	GP	0	1.666667	0	0
Module 2	2	RP	2	CO	-5.25	GP	0	1.666667	0	0
Module 3	2	RP	2	CO	-5.25	GP	0	1.666667	0	0
Module 4	3	UW	2	CO	-5.25	GP	0	2.083333	0	0.5
Module 5	2	RP	2	CO	-5.25	GP	0	1.666667	0	0.5
MoRPH5 Module	Index 11	Index 12	Index 13	Index 14	himalayanBalsam	japaneseKnotweed	giantHogweed	floatingPennywort		
Module 1	3.5	15	6.7	0	A	A	A	A		
Module 2	4.5	11	6.7	0.05	A	A	A	A		
Module 3	4	11	6.7	0	A	A	A	A		
Module 4	4	13.5	6.8	0	A	A	A	A		
Module 5	3	15	6.7	0	A	A	A	A		

Table 8: Photographs of the Modules

Module Number	Photographs	
5		

				
4				

				
3				



2



1





7.3 APPENDIX 3 – BASELINE CONDITION ASSESSMENT SHEETS



Crabtree Lane - UKhab
Date: 03.03.2025

-  Red Line Boundary
-  Line of Trees
-  Vacant or Derelict Land
-  Other Broadleaved Woodland
-  Developed Land Sealed Surface
-  Buildings
-  Bramble Scrub

Scale: 1:3000

Drawn By: CW

Checked By: EC

Approved By: EC



Client: Keep Moat

Site: Crabtree Lane

Project Number: 20-2148

Rev: 2.0

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7.4 APPENDIX 4 – POST DEVELOPMENT TARGET CONDITIONS

Habitat Type: Mixed Scrub		Target Condition: Poor
Condition Assessment Criteria		Targeted
A	The parcel represents a good example of its habitat type – the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). - At least 80% of scrub is native, - There are at least three native woody species, - 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).	Yes
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	No
C	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.	Yes
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	No
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	No

Habitat Type: Other Neutral Grassland		Target Condition: Poor
Condition Assessment Criteria		Targeted?
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type. Note – this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	No
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Yes
C	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Yes
D	Cover of bracken <i>Pteridium aquilinum</i> less than 20% and cover of scrub (including bramble) less than 5%.	Yes
E	Combined cover of species indicative of suboptimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging activities) accounts for less than 5% of total area. If any invasive non-native species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.	Yes
F	There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type. Note – this criterion is essential for achieving Good condition for non-acid grassland types only.	No

Habitat Type: Modified Grassland		Target Condition: Poor
Condition Assessment Criteria		Targeted
A	There are 6-8 vascular plant species per m² present, including at least 2 forbs. Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m², please review the full UKHab description to assess whether the grassland should be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high or very high distinctiveness, please use the relevant condition sheet.	No
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	No
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Yes
D	Physical damage is evident in less than 5% of total grassland area Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	No
E	Cover of bare ground between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens.)	No
F	Cover of bracken <i>Pteridium aquilinum</i> less than 20%.	Yes
G	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA).	Yes

Habitat Type: Individual Trees		Target Condition: Moderate
Condition Assessment Criteria		Targeted?
A	The tree is a native species (or more than 70% within the block are native species).	No
B	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).	No
C	The tree is mature (or more than 50% within the block are mature).	Yes
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Yes
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Yes
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Yes

