FUTURESECOLOGY

Crowther Bruce & Co Ltd.

New Mills, Marsden

BIODIVERSITY IMPACT ASSESSMENT (BIA)

Report Reference Number: FE551/BIA01

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Futures Ecology Ltd
Carrwood Park, Swillington Common Farm, Selby Rd, Leeds LS15 4LG

Company Number: 12125083

REV	Issue Status	Notes	Author or Reviewer	Name & Qualifications	Position	Date
	DRAFT		Author	J. Lally MSc BSc (Hons)	Assistant Ecologist	12.06.25
			Reviewer	R. Harmsworth BSc (Hons), MCIEEM	Ecology Director	24.06.25
	REV A		Author	J. Lally MSc BSc	Assistant Ecologist	08.01.26
			Reviewer	K. Haymes BSc (Hons) MCIEEM	Senior Ecologist	09.01.26

CONTENTS

TABLES

APPENDICES

FIGURES

1.0 INTRODUCTION

1.1 The following report has been prepared by Futures Ecology Ltd. on behalf of Crowther Bruce and Co Ltd. This summary report presents the results of the Biodiversity Impact Assessment (BIA) calculations using the Statutory Biodiversity Metric (SBM) Calculation Tool produced in respect of proposals for the development at New Mills, Marsden (grid reference: SE 05020 11684).

SITE LOCATION AND CONTEXT

1.2 The site was c. 1.64ha in extent and located c. around 50m from the centre of the town of Marsden, southwest of Huddersfield.

1.3 The site comprised of buildings, hardstanding, four small trees, bramble *Rubus fruticosus* agg. scrub, amenity (modified) grassland, tall ruderal and ephemeral vegetation, a culvert which the River Colne flows through under the north of the site, and the riparian zone of the River Colne, meaning the river was scoped into the site assessment.

1.4 To the north of the site is the River Colne and Warehouse Hill Road/ Mill Road with a patchwork of roads, car parks, buildings beyond this as well as woodland. To the east of the site is the River Colne and woodland. To the south was Brougham Road and residential development. To the west of the site was Peel Street and the centre of the town of Marsden, made up of roads, retail and residential properties. The wider landscape consisted of the town of Marsden directly surrounding the site, and further out, linear tracts of woodland flanking the River Colne intermesh with farmland and housing. The town is located at the foot of the South Pennines.

DEVELOPMENT PROPOSALS

1.5 Development proposals are for the demolition and restoration of some buildings along with the creation of new buildings for various uses including; retail, industrial, offices and residential. The proposals also include opening up of the River Colne in the north.

2.0 METHODOLOGY

FIELD SURVEY – HABITATS

Personnel

2.1 The habitat assessment was undertaken by R. Hill-Harmsworth BSc (Hons) MCIEEM who has extensive experience in undertaking these surveys. R. Hill-Harmsworth is appropriately qualified for the surveys based on the CIEEM competencies for species surveys and is registered to use a Natural England Class Licence Level 2 & 4 to survey for bats (CL20: 2015-11905-CLS-CLS), barn owls *Tyto alba* (CL29/00237) and great crested newts (GCN) *Triturus cristatus* (2015-17660-CLS-CLS). R. Harmsworth also has a Level 6 Ofsted approved certification in Field Ornithology. R. Harmsworth was certified in May 2021 to conduct River Condition Assessments (RCA).

2.2 The River Condition Assessment (RCA) survey was undertaken by J. Lally MSc, BSc (Hons), who is able to conduct RCA following certification as a Qualified Surveyor in September 2024 by the Cartographer RCA Team and RGS. Since then, J. Lally has carried out RCA surveys across a wide range of sites.

Habitat Appraisal

2.3 A detailed habitat survey was undertaken on 30th April 2025 and was used to fully inform the Biodiversity Impact Assessment (BIA) using the Statutory Biodiversity Metric Calculation Tool. This information was used to adequately map the on-site habitats to inform the BIA.

2.4 Survey methodology followed guidance from Joint Nature Conservation Committee (JNCC) 2016[1] comprising a walkover of the survey area mapping (using JNCC standard habitat codes) and broadly describing and classifying the principal habitat types and identifying the dominant plant species present within each habitat type, noting any features of interest. Any plant species lists obtained should not be regarded as exhaustive, sufficient information was obtained to determine broad habitat types.

2.5 The Statutory Biodiversity Metric works best where habitat types are classified using the UK Habitats Classification methodology (UKHab Ltd., 2023)[2]. Therefore, habitats were also described and evaluated in accordance with the UK Habitats Classification methods aligning the assessed habitats with the Biodiversity Metric habitat types.

2.6 The surveys used were sufficient to determine the Statutory Biodiversity Metric habitat types present onsite and to fully inform the Biodiversity Impact Assessment (BIA) using the Statutory Biodiversity Metric (SBM). This information was used to adequately map the onsite habitats to inform the BIA.

Habitat Condition Assessment

2.7 Habitat condition was assessed and assigned during the habitat assessment following the guidance from the 'The Statutory Biodiversity Metric – Technical Annex 1: Condition

[1] JNCC (2016) *Handbook for Phase1 Habitat Survey – a technique for environmental audit*. ISBN 0 86139 636 7
[2] UKHab Ltd. (July 2023) UK Habitat Classification Version 2.0 https://ukhab.org/

Assessment Sheets and Methodology' excel document (Natural England, February 2024) which accompanies the Statutory Biodiversity Metric. Assessment criteria were followed for each broad habitat type, to determine the condition of each habitat.

River Condition Assessment (RCA)

2.8 Watercourses must be scoped into the metric calculations when they are within the site boundary or when the riparian zone of a watercourse is within the site boundary (land that is within 10m of the bank top of watercourses).

2.9 The River Colne runs under the buildings in the north within the site boundary and is present adjacent to the northern site boundary further west with areas of its riparian zone within the site boundary. Therefore, a River Condition Assessment (RCA) was required.

2.10 The average width of the River Colne within the scoped-in length was estimated to be less than 5m wide. Therefore, each Morph module was 10m of the river length and the MoRPh5 survey had an overall length of 50m.

2.11 The scoped-in length of the River Colne was c. 67m in length. In order to cover at least 20% of the total length of the scoped-in watercourse, one MoRPh5 survey was necessary.

2.12 RCAs are made up of two parts: MoRPh5 field surveys (sub-reach scale) and river type desk studies (reach scale).

2.13 The MoRPH5 field survey for the River Colne was undertaken on 4th June by J.Lally who is trained and accredited to conduct a river condition assessment (RCA).

2.14 The River Condition Assessment (RCA) followed the Statutory Metric User Guidance which requires sections of water course to be scoped into the metric calculations where the redline includes watercourses or land within the riparian zone of a watercourse (up to 10m from the bank top of watercourses). The guidance follows methodologies of the Modular River Physical (MoRPh) Survey, as outlined in the Technical Reference Manual[3].

2.15 The data was inputted into the Cartographer©[4] online portal, the RCA information system used to analyse and interpret the data collected from the field surveys and desk study, which generated a condition assessment score. The Cartographer© data output for the MoRPh5 Surveys and the River Type desk study for the River Condition Assessment is provided in Appendix B.

Soil Type

2.16 Soil type was determined from Land Information System (LandIS)[5].

Strategic Significance

[3] Angela Gurnell et al. 2020. The MoRPh Survey Technical Reference Manual. Queen Mary University of London, Environment Agency & Cartographer.
[4] Cartographer Studios Ltd (March 2025) Cartographer 1.3.4 [App] (Released October 2020).
[5] https://www.landis.org.uk/soilscapes/

2.17 Strategic significance is the local significance of the habitat based on its location and habitat type.

2.18 The Statutory Biodiversity Metric assigns strategic significance based on the Local Nature Recovery Strategy (LNRS) and descriptions set out in table 7 of the Statutory Metric User Guide (July 2024)[6].

2.19 In the absence of an LNRS, the relevant planning authority should specify alternative documents for assigning strategic significance whilst an LNRS is put in place. The strategic significance is then based on the alternative documents and the descriptions set out in table 8 of the Statutory Metric User Guide (July 2024)[7]. If no alternative documents are specified by the relevant planning authority medium strategic significance can be assigned when the criteria in table 8 are met.

2.20 West Yorkshire Combined Authority (WYCA) has been appointed by DEFRA to be the Responsible Authority[8] to lead on the development of the LNRS for West Yorkshire. However, WYCA has not produced a LNRS and does not expect to publish a LNRS until late 2025. WYCA has not specified any alternative documents, despite this the Local Planning Authority (LPA), in this case Kirklees Metropolitan Borough Council (KMBC) has produced a draft guidance document for Biodiversity Net Gain Delivery[9].

2.21 The guidance specified by KMBC sets out the following for assigning strategic significance:

"The Kirklees local development documents, including the Local Plan, have not been developed with the specific aim of facilitating the biodiversity net gain approach described in this guidance. The net gain approach has been given greater emphasis in national planning policy subsequent to publication of the Kirklees Local Plan. For development within Kirklees, and in the absence of clear guidance elsewhere, the following definitions should be used to determine the strategic significance scores used in the metric calculation.

- *High strategic significance*

Any habitat parcel within a statutory designated wildlife site, a Local Wildlife Site or the Kirklees Wildlife Habitat Network.

Any Habitat of Principal Importance within Kirklees located within the associated Biodiversity Opportunity Zone (As seen within Table 1).

- *Medium strategic significance*

Any habitat parcel not designated as above but directly adjoining such a habitat.

- *Low Strategic Significance*

Habitat parcels not within or adjacent to a statutory designated wildlife site, a Local Wildlife Site or the Kirklees Wildlife Habitat Network.

BIODIVERSITY IMPACT ASSESSMENT (BIA)

[6] DEFRA (February 2024) The Statutory Biodiversity Metric. User Guide.
[7] DEFRA (February 2024) The Statutory Biodiversity Metric. User Guide.
[8] https://www.gov.uk/government/publications/local-nature-recovery-strategies-areas-and-responsible-authorities#full-publication-update-history
[9] Biodiverstity Net Gain Technical Advice Note

2.22 To quantify deliverable net gain for the site, the baseline value of the habitats within the site have been calculated utilising the Statutory Biodiversity Metric.

Survey Limitations

2.23 The habitat survey was carried out during the optimal period for surveys (April – September).

2.24 The River Condition Assessment was carried out during the optimal period for surveys (spring and early summer). As such, no survey limitations are anticipated

3.0 BASELINE ECOLOGY

3.1 The baseline habitats are shown on Figure 1.

3.2 A summary of the habitats present is provided in Table 1 below. This includes the Biodiversity Metric Habitat Type and the equivalent Phase 1 habitats, as well as a brief description of the habitats and the condition assessments for the purpose of the BIA.

3.3 The habitat condition assessment sheets are provided in Appendix B.

Table 1: Summary of Habitats

Phase 1 Habitat	UK Hab Code	Biodiversity Metric Habitat Type	Brief Description and Habitat Condition Assessment (HCA)
Area Habitats			
Buildings	u1b	Urban – Developed land; sealed surface	N/A
Hardstanding	U1b	Urban – Developed land; sealed surface	N/A
Scattered trees	32	Individual trees – Urban tree	4 x small trees Condition: **Poor** Passes: A, B Fails C, D, E and F.
Bramble scrub	h3d	Heathland and shrub – Bramble scrub	N/A
Tall ruderal vegetation	81	Urban – Ruderal / Ephemeral	Condition: **Moderate** Passes: B, C Fails A.
Amenity grassland	g4	Grassland - Modified grassland	Condition: **Moderate** Passes: A, C, F, G Fails: B, D, E.
Short ephemeral vegetation	81	Urban – Ruderal / Ephemeral	Condition: **Moderate** Passes: B, C Fails: A.
Watercourse Habitats			
River Colne	r2b	Other rivers and streams	River Colne (River 1 on Figure 1) is located offsite but the site is within the 10m riparian zone of the right bank. River Type: F - Straight/sinuous, coarsest CO, average GP Overdeep: No Condition Assessment**: Fairly Poor**
Culvert	851	Culvert	N/A – culvert 1 on Figure 1

Soil Type

3.4 The site is located within two soilscapes. The first, which the majority of the site lies in, is Soilscape 16, this can be described as *very acid loamy upland soils with a wet peaty surface*. Broader details of this soil structure can be found below:

- Drainage: Surface wetness
- Fertility: Very low

- Landcover: Moorland rough grazing forestry and grassland
- Habitats: Grass moor and heather moor with flush and bog communities in wetter parts
- Carbon: High

3.5 The second Soilscape, which a smaller area of the site lies in, is Soilscape 6, this can be described as *freely draining slightly acid loamy soils.* Broader details of this soil structure can be found below:

- Drainage: Freely draining
- Fertility: Low
- Landcover: Arable and grassland
- Habitats: Neutral and acid pastures and deciduous woodlands; acid communities such as bracken and gorse in the uplands
- Carbon: Low

Strategic Significance

Strategic significance has been applied to the baseline habitats as described in the methodology. The table below provides a summary of the strategic significance applied to the baseline habitats.

Table 2: Summary of Strategic Significance of Baseline Habitats

Strategic Significance	Applicable habitats	Justification for Statutory Significance applied
High	Bramble scrub	HPI within Kirklees and located within associated Biodiversity Opportunity Zone (urban), see Figure 3.
	Other rivers and streams	HPI within Kirklees and located within associated Biodiversity Opportunity Zone (floodplain and riverine corridors).
	Culvert	Located within associated Biodiversity Opportunity Zone (floodplain and riverine corridors).
Medium	Ruderal/Ephemeral	Directly adjacent to bramble scrub
	Modified grassland	Directly adjacent to bramble scrub
Low	Developed land; sealed surface	Not considered a habitat of local significance
	Urban tree	Although mapped directly above the culvert the trees are isolated located on hardstanding and do not form any connective habitat with the culvert.
	All other habitats	All other habitats that do not qualify as high or medium.

Baseline Summary

3.6 From the completed Statutory Biodiversity Metric, the value of the existing onsite habitats is **0.23 Habitat Units** and **0.64 Watercourse Units** (see Appendix A).

4.0 BIODIVERSITY IMPACT ASSESSMENT

4.1 In accordance with the NPPF (December 2024)[10] and Policy 13.1 of the Kirklees Local Plan[11] the aim is to generate a net gain for biodiversity.

4.2 The Environment Act 2021[12] became mandatory on 12th February 2024 and requires a minimum 10% net gain in biodiversity units.

Site

4.3 Figure 2 outlines the habitat areas post development across the site.

4.4 The proposed habitats are based on layout titled '*Illustrative Landscape Masterplan'*, drawing number PWP-847-DR-L-0001, produced by PWP Design, 19th December 2025.

Lost Habitats

4.5 Habitats that are lost to the proposals include –

- All four small, scattered trees (Poor condition);
- Modified grassland (Moderate Condition);
- Ruderal/Ephemeral Vegetation (Moderate Condition);
- Bramble Scrub (Condition N/A).

Retained Habitats

4.6 Retained habitats include –

- River Colne (other rivers and streams) [Fairly Poor Condition].
- Small section of Culvert (Condition N/A).

Enhanced Habitats

4.7 Enhanced habitats include –

- Majority of Culvert to be enhanced to 'Other rivers and streams' (Fairly Poor Condition).

Created Habitats

4.8 Proposed habitat creation outlined on Figure 2 includes:

- An area of mixed native scrub in the centre of the site;
- Small areas of amenity grassland to be created across the site;
- Small areas of introduced shrub throughout the site;

[10] National Planning Policy Framework. London https://www.gov.uk/government/publications/national-planning-policy-framework
[11] Kirklees Local Plan Strategy and Policies
[12] https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted

- An area of watercourse footprint to flank the enhanced culvert, and an uncovered area of watercourse footprint flanking the existing section of river;
- Thirty-seven small trees.

Post Development Summary

4.9 Post development, the net unit change as a result of the on-site habitat retention, enhancement, and creation (Figure 2) with long-term management (for a minimum of 30 years) is summarised below.

Table 3: Summary of Headline Results

	Baseline Units (Figure 1)	Proposed Units (Figure 2)	Net Unit Change	Net % Change	Trading Rules Satisfied?
Habitat Units	**0.23**	**0.85**	**+0.62**	**271%**	**Yes**
Watercourse Units	**0.64**	**0.80**	**+0.17**	**26.32%**	**Yes**

Additional Enhancements

4.10 The above calculation does not account for the following additional enhancement measures that will be provided within the development as these cannot be quantified using the BM calculator. The inclusion of the following biodiversity enhancements with what has already been outlined above would be considered a benefit to biodiversity.

- Provision of bee, bat and bird boxes throughout the site;
- Installation of gaps for hedgehogs within any boundary treatments.

Good Practice Principles for Development

4.11 The CIEEM Good Practice Principles for Development[13] provide an industry-standard to demonstrate that development projects have followed best practice. Table 4 below provides a summary of how these principles have been followed throughout this project.

Table 4: Biodiversity Net Gain Good Practice Principles for Development[14] Summary

Principle	Justification of measures in place to achieve each Principle
Principle 1: Apply the Mitigation Hierarchy Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.	The habitats present on-site were of medium (trees/ scrub), low or very low distinctiveness. The watercourse that runs outside of the site along the north of the boundary has a high distinctiveness. This is fully retained. Certain losses of habitat could not be avoided and are to be lost under the footprint of the development. The habitat loss has been compensated for with mixed scrub, amenity grassland and tree planting.
Principle 2: Avoid losing biodiversity that cannot be offset by gains elsewhere Avoid impacts on irreplaceable biodiversity - these impacts cannot be offset to achieve No Net Loss or Net Gain.	No irreplaceable habitats are present on-site; all baseline habitats are able to be offset.
Principle 3: Be inclusive and equitable Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to Net Gain. Achieve Net Gain in partnership with stakeholders where possible, and share the benefits fairly among stakeholders.	The metric results were provided as soon as available and disseminated to all relevant parties.
Principle 4: Address risks Mitigate difficulty, uncertainty and other risks to achieving Net Gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.	There is a +271% net gain in Habitat Units. The habitats created must achieve poor or moderate condition which is considered achievable and mitigating any risks.
Principle 5: Make a measurable Net Gain contribution Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.	There is a +271% net gain in Habitat Units and a 26.32% net gain in Watercourse Units. The opening up of the culvert will aid in improving riverine habitats and the corridor in the Biodiversity Opportunity Zone.

[13] https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf
[14] https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf

Principle	Justification of measures in place to achieve each Principle
Principle 6: Achieve the best outcomes for biodiversity Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly-justified choices when: • Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses • Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation • Achieving Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels • Enhancing existing or creating new habitat • Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity	The net gains in Habitat Units and Watercourse Units will have a benefit for biodiversity and incorporate habitats which will have benefits for local wildlife populations. They will improve riverine habitats and the corridor in the Biodiversity Opportunity Zone.
Principle 7: Be additional Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e. do not deliver something that would occur anyway).	The net gains in Habitat Units and Watercourse Units would not occur in the absence of this exercise.
Principle 8: Create a Net Gain legacy Ensure Net Gain generates long-term benefits by: • Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity[15] • Planning for adaptive management and securing dedicated funding for long-term management • Designing Net Gain for biodiversity to be resilient to external factors, especially climate change • Mitigating risks from other land uses • Avoiding displacing harmful activities from one location to another • Supporting local-level management of Net Gain activities	Management of the habitats will be secured for 30 years, and a flexible management plan will enable adaptations. The long-term management of the habitats created will be secured under a legal agreement, with the applicant responsible for long-term management. .

[15] Biodiversity compensation should be planned for a sustained Net Gain over the longest possible timeframe. For development in the UK, the expectation is that compensation sites will be secured for at least the lifetime of the development (e.g. often 25-30 years) with the objective of Net Gain management continuing in the future.

Principle	Justification of measures in place to achieve each Principle
Principle 9: Optimise sustainability Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy	The net gains in Habitat Units and Watercourse Units will have a benefit for biodiversity and people. Creating and enhancing habitats increases economic and social sustainability by aiding in albeit minimal contributions but intake of CO2 to assist in climate change issues and also sourcing saplings and seed will continue to the economy. Planting trees will also aid in visual amenity to local people.
Principle 10: Be transparent Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders	Net gain information has been communicated in a transparent and timely manner.

APPENDIX A: STATUTORY BIODIVERSITY METRIC (SBM)

The headline results are provided below. Please see the accompanying SBM (excel document) for further details.

New Mills Marsden, Huddersfield

Headline Results

Return to results menu

Scroll down for final results ⚠

On-site baseline	*Habitat units*	0.23	
	Hedgerow units	0.00	
	Watercourse units	0.64	
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.85	
	Hedgerow units	0.00	
	Watercourse units	0.80	
On-site net change (units & percentage)	*Habitat units*	0.62	271.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.17	26.32%
Off-site baseline	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	*Habitat units*	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	0.62	
	Hedgerow units	0.00	
	Watercourse units	0.17	
Spatial risk multiplier (SRM) deductions	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	

FINAL RESULTS

Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	0.62
	Hedgerow units	0.00
	Watercourse units	0.17
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	271.00%
	Hedgerow units	0.00%
	Watercourse units	26.32%
Trading rules satisfied?	Yes ✓	

Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	0.23	0.25	0.00	No additional area habitat units required to meet target ✓
Hedgerow units	10.00%	0.00	0.00	0.00	No additional hedgerow units required to meet target ✓
Watercourse units	10.00%	0.64	0.70	0.00	No additional watercourse units required to meet target ✓

APPENDIX B: CARTOGRAPHER MORPH 5 PRO MAP DATA

Table B1: Cartographer MoRPh5 Pro Map Data for the MoRPh5 Survey of River Colne.

	River Colne / Marsden / New Mill
Survey Details	
National Grid Reference	SE 04975 11719
River Name	River Colne
Reach Name	New Mill
Subreach Name	1
Survey Type	Pre-project
Scenario Name	Baseline
Module Numbers	1 to 5
Date of Survey	04/06/2025
Assessor	J. Lally
Watercourse Dimensions	
River Shape	2.701
Average Width	4.7
River Type (Determined by Group A)	
River Category	Other river
Calculated River Type	F - Straight/sinuous, coarsest CO, average GP
Overridden	No
River Type	F - Straight/sinuous, coarsest CO, average GP
Watercourse Condition (Determined by Group B-E)	
Positive Index Average	1.263
Negative Index Average	--1.846
Preliminary Condition Score	-0.583
Condition Class / Score (Final)	Fairly Poor
Overdeep	No – The river shape value is less than 4 (2.701). A score below 4 would indicate the river is likely to be overdeep, especially if the average width is greater than 10m. However, the river width was less than 10m, and there was no obvious signs of overdeepening. As the river shape score is above 2 and therefore only indicates likely overdeepening of the channel (and this is particularly for watercourse over 10m wide), the channel is not considered to be overdeep.
Final Condition Class Adjusted	No
Group A: River Type and Function Indicators (A1-A5 derived from desk study, A6-A8 derived from MoRPh5 Survey)	
A1: Braiding index	1.000
A2: Sinuosity index	1.015
A3: Anabranching index	1.000
A4: Level of confinement	Unconfined
A5: Valley gradient	0.00735
A6: Bedrock Reaches	No
A7: Coarsest Bed Material Size Class	BO
A8: Average Alluvial Bed Material Size Class	GP
Group B: Bank Top Indicators	
B1: Bank Top Vegetation Structure	1
B2: Bank Top Tree Feature Richness	0

B3: Bank Top Water-Related Features	0
B4: Bank Top NNIPS Cover	0
B5: Bank Top Managed Ground Cover	-4
Group C: Bank Face Indicators	
C1: Bank Face Riparian Vegetation Structure	2
C2: Bank Face Tree Feature Richness	1
C3: Bank Face Natural Bank Profile Extent	1
C4: Bank Face Natural Bank Profile Richness	1
C5: Bank Face Natural Bank Material Richness	1
C6: Bank Face Bare Sediment Extent	2
C7: Bank Face Artificial Bank Profile Extent	-3
C8: Bank Face Reinforcement Extent	-4
C9: Bank Face Reinforcement Material Severity	-4
C10: Bank Face NNIPS Cover	-2
Group D: Channel – Water Margin Indicators	
D1: Channel Margin Aquatic Vegetation Extent	1
D2: Channel Margin Aquatic Morphotype Richness	1
D3: Channel Margin Physical Feature Extent	1
D4: Channel Margin Physical Feature Richness	1
D5: Channel Margin Artificial Features	-3
Group E: Channel Bed Indicators	
E1: Channel Aquatic Morphotype Richness	2
E2: Channel Bed Tree Features Richness	1
E3: Channel Bed Hydraulic Features Richness	2
E4: Channel Bed Natural Features Extent	2
E5: Channel Bed Natural Features Richness	1
E6: Channel Bed Material Richness	3
E7: Channel Bed Siltation	0
E8: Channel Bed Reinforcement Extent	-1
E9: Channel Bed Reinforcement Severity	-3
E10: Channel Bed Artificial Features Severity	0
E11: Channel Bed NNIPS Extent	0
E12: Channel Bed Filamentous Algae Extent	0

Key

- Site Boundary

Pre-development Habitats

- Buildings [Urban: Developed land; sealed surface]
- Hardstanding [Urban: Developed land; sealed surface]
- Cultivated/disturbed land - Ephemeral/short perennial [Sparsely vegetated land: Ruderal/Ephemeral]
- Cultivated/disturbed land - Amenity grassland [Grassland: Modified grassland]
- Other tall herb and fern - ruderal [Sparsley vegetated land: Ruderal/Ephemeral]
- Scrub - scattered [Heathland and shrub:Bramble scrub]
- Standing water [Culvert]
- Running water [River]
- Broadleaved tree

FUTURES ECOLOGY
Carrwood Park, Swillington Common Farm, Selby Road, Leeds, LS15 4LG
Telephone: 01133 372185

Unit 9, The Tangent Business Hub, Weighbridge Road, Shirebrook, Mansfield, Derbyshire, NG20 8RX
Telephone: 01623 749709

Client:	Crowther Bruce & Co Ltd	Plan Reference:	FE551_01	Author:	JL
Project:	New Mills Marsden, Huddersfield	Project Reference:	FE551	Date:	8/1/2026
Title:	Figure 1 - Baseline Habitat Plan	Report Reference:	BIA01	Scale:	1:750

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FUTURESECOLOGY

Carrwood Park, Swillington Common Farm, Selby Road, Leeds, LS15 4LG
Telephone: 01133 372185

Unit 9, The Tangent Business Hub, Weighbridge Road, Shirebrook, Mansfield, Derbyshire, NG20 8RX
Telephone: 01623 749709

Key

- Site Boundary
- Buildings [Urban: Developed land; sealed surface]
- Hardstanding [Urban: Developed land; sealed surface]
- Introduced shrub [Urban: Introduced scrub]
- Cultivated/disturbed land - Amenity grassland [Grassland: Modified grassland]
- Scrub - dense/continuous [Heathland and shrub: Mixed scrub]
- Watercourse Footprint [Watercourse footprint]
- Standing water [Culvert]
- River [Other rivers and streams]
- Small individual tree [Individual tree: Urban tree]

Client:	Crowther Bruce & Co Ltd	Plan Reference:	FE551_02	Author:	JL
Project:	New Mills, Marsden	Project Reference:	FE551	Date:	8/1/2026
Title:	Figure 2 - Proposed Habitat Plan	Report Reference:	BIA_01	Scale:	1:750

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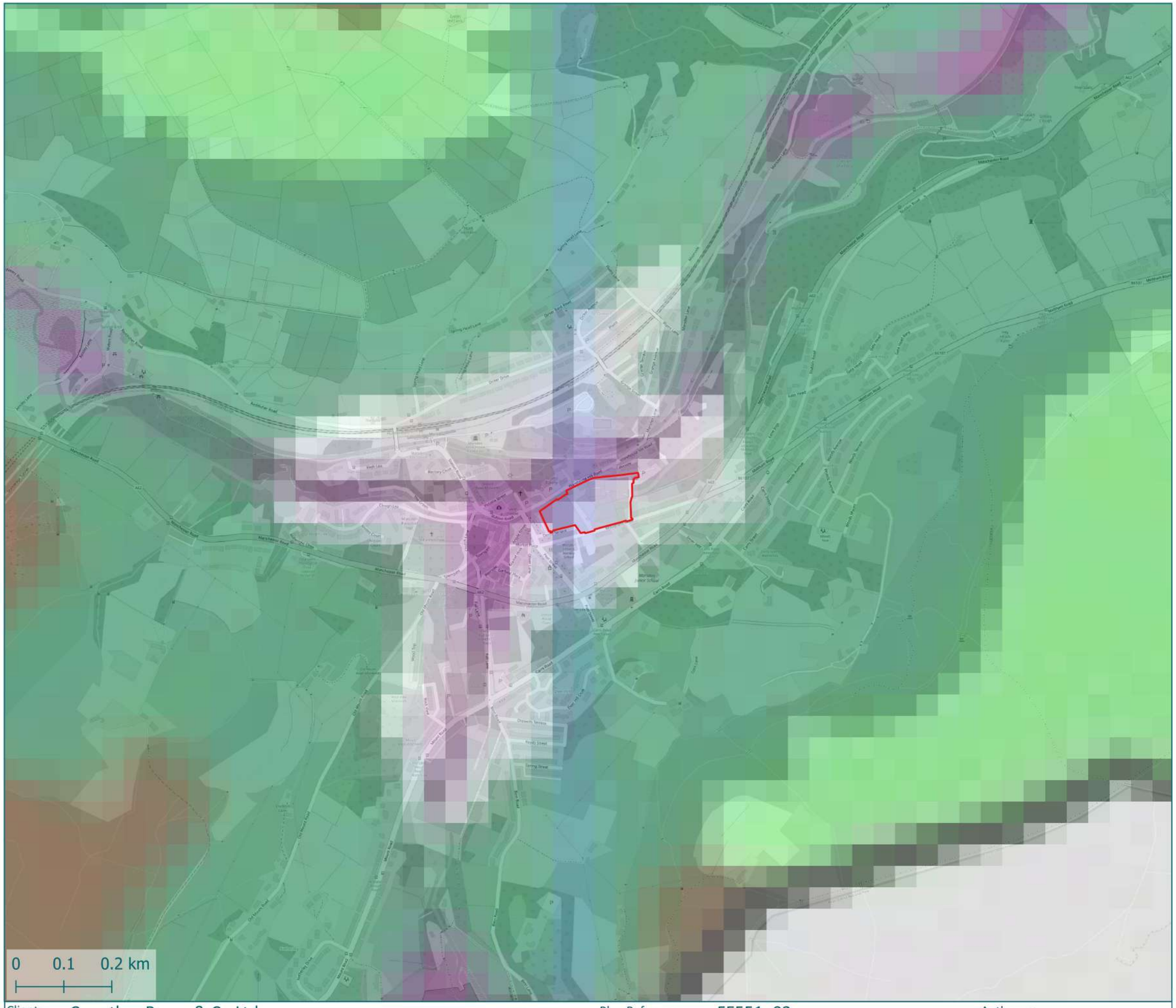

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Carrwood Park, Swillington Common Farm, Selby Road, Leeds, LS15 4LG
Telephone: 01133 372185

Unit 9, The Tangent Business Hub, Weighbridge Road, Shirebrook, Mansfield, Derbyshire, NG20 8RX
Telephone: 01623 749709

Key

- Site Boundary

Kirkless Biodiversity Opportunity Zones

- Urban
- Riverine
- Valley Slopes
- Mid-altitudinal Grasslands
- Uplands

Client:	Crowther Bruce & Co Ltd	Plan Reference:	FE551_03	Author:	JL
Project:	New Mills Marsden, Huddersfield	Project Reference:	FE551	Date:	8/1/2026
Title:	Figure 3 - Biodiversity Opoortunity Zones Plan	Report Reference:	BIA01	Scale:	1:8,000

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