KNIGHT SKY ECOLOGY
PRACTICAL ECOLOGY SOLUTIONS

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ECOLOGY TECHNICAL NOTE

SITE NAME & ADDRESS	Land off Elker Lane, Billington (Grid reference SD 7177 3556)
DEVELOPMENT PROPOSAL	Continuing Care Retirement Facility
PLANNING REFERENCE	Not known
ECOLOGY ASSESSMENT TYPE	**BIODIVERSITY NET GAIN**
DATE	2 July 2024
AUTHOR	Ryan Knight BSc (Hons) MCIEEM - Principal Ecologist

INTRODUCTION & BACKGROUND

Knight Sky Ecology was commissioned to provide a Statutory Biodiversity Metric calculation tool (hereafter referred to as the 'metric tool') for the proposed development on land off Elker Lane, Billington. This technical note has been produced to accompany the metric tool and provide an overview of the results. It is also advised to read this document in conjunction with the following report:

- Land off Elker Lane, Billington. Preliminary Ecological Appraisal (PEA report). June 2024. (Knight Sky Ecology, 2024).

In England, biodiversity net gain is required under a statutory framework introduced by Schedule 7A of the Town and Country Planning Act 1990. This legislation was inserted into the 1990 Act by Schedule 14 of the Environment Act 2021, and was amended by the Levelling Up and Regeneration Act 2023.

Under the statutory framework for biodiversity net gain, subject to some exceptions, every planning permission is subject to a condition that the biodiversity gain objective is met ("the biodiversity gain condition"). This objective is for development to deliver at least a 10% increase in biodiversity value relative to the pre-development biodiversity value of the on-site habitat. This increase can be achieved through on-site biodiversity gains, registered off-site biodiversity gains or through statutory biodiversity credits.

METHODS

The latest version of the metric tool, habitat condition assessment and User Guide (Feb 2024) have been accessed from:
https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides

Desk Study
The Multi-Agency Geographic Information for the Countryside (MAGIC) mapping tool (Available from: https://magic.defra.gov.uk/) was used to search for ecological information contained within the following datasets:

- Statutory designated sites for nature conservation within a 500m radius.

- Priority habitats (as listed within Section 41 of the Natural Environment and Rural Communities Act 2006) within a 500m radius.

Habitats

A site walkover was undertaken on **7th June 2024** by Ryan Knight MCIEEM (Full member of the Chartered Institute of Ecology and Environmental Management). Ryan has extensive experience in survey and site assessment for habitats and protected species and holds a Level 2 Natural England Class Licence for bats (ref. 2015-12611-CLS-CLS) and a Level 1 licence for great crested newts (ref. 2015-16727-CLS-CLS).

All habitats within the site were described and mapped using UK Habitat Classification (UKHab) Version 2 definitions (UKHab Ltd, 2023).

Watercourses

The banks of two small watercourses are located within 10m of the development boundary. Therefore, the condition of both watercourses was required to be assessed, using Modular River Physical (MoRPh) survey methodology. This method assesses the physical and ecological characteristics of the riparian environment to include land up to 10m from the bank edge. The extent of modification of the channel is also assessed, together with influences from structures such as bridges along with non-native invasive plant species.

The survey was undertaken by Dr Rosalind King MCIEEM on 8th June 2024. Dr King is registered to undertake the MoRPh River surveys (as part of Biodiversity Metric habitat assessment of rivers).

RESULTS

BASELINE

Designated Sites

The proposed development is not located within 500m of any statutory designated sites. In addition, there are no such sites within 3km.

Irreplaceable Habitats

None located within the site.

Priority Habitats

There are no priority habitats on site. The nearest priority habitats are areas of deciduous woodland approximately 80m north (across the A59).

Lancashire Ecological Network

A section of the site appears to be within the Lancashire Ecological Network (see PEA report (Knight Sky Ecology, 2024)). An estimated 40% of the site is within the network and this has been reflected in the strategic significance of the existing and proposed habitats within the metric tool.

Habitats

No habitat degradation had taken place prior to the site visit.

Photos which provide a general overview of the site and supporting data for the metric tool are provided in the PEA report. Figure 1 in Appendix A provides an overview of the habitat baseline as existing in June 2024.

The site area measures 2.54ha and includes the existing access road and an improved pasture field (UKHab Classification – g4 modified grassland). The grassland is in a 'poor' condition (see habitat condition assessment). All grassland habitat has been calculated as lost in the metric.

There are also two large oak trees on the site which are to be retained (good condition). The combined biodiversity value of the existing habitats is **6.18 habitat units.**

Hedgerows
There are no hedgerows on the site.

Watercourses
A Biodiversity Metric MoRPh Assessment report is provided in Appendix B. Please note, the biodiversity values listed in the metric tool and as summarised below have been revised from the MoRPH assessment report to reflect the added value of one of the watercourses (west stream) being within Lancashire Ecological Network.

Both streams have been assessed as 'Fairly poor' in condition and have a combined value of **1.36 watercourse units** for the 82m and 60m where they run alongside the site boundary.

ENHANCEMENTS

No habitats or watercourses are proposed to be enhanced at the time of writing. Also see recommendations.

CREATION

Habitats
Figure 2 in Appendix B provides a UK Habitat Classification map of the site as proposed. It has been based on the DWG (CAD) file provided from the agent along with the landscape plan. This landscape plan has been enhanced with habitats (namely g3c other neutral grassland) that can be feasibly achieved at the site in order to achieve at least a 10% net gain.

The habitats with a measurable biodiversity value within the site would be: vegetated gardens; modified grassland (assessed to reach a 'poor' condition); and, a species rich grassland (other neutral grassland - assessed to reach a 'moderate condition). In addition, the landscape plan includes the planting of 101 native trees (all assessed to reach a 'moderate' condition).

The combined value of the created habitats post-development would be **7.88 habitat units.**

Hedgerows
There is no mandatory requirement for net gain in respect of hedgerows. However, hedgerow planting would include two native species hedgerows along two boundaries (both assumed 'moderate' condition). The combined value of the created hedgerows post-development would be **0.67 hedgerow units.**

Watercourses
There are no watercourses within the development boundary and no current proposals for works outside the development boundary. However, due to the proximity of the two streams, at least 10% net gain is required for watercourses. Further recommendations for this are provided below.

SUMMARY

The development proposals will result in:

- a net gain of biodiversity value for habitats comprising **1.7 habitat units (27.51 %)**; and,
- no net loss or net gain of biodiversity value for watercourses **(0%)**

In addition, there is to be hedgerow planting on the site amounting to **0.67 hedgerow units.**

The development will therefore meet the biodiversity net gain condition for habitats as the 10% net gain would be achieved provided that the landscaping works are carried out in accordance with the specifications within this document. The time to target condition of the habitats (namely, the species rich grassland) is 5 years. The time to target condition of the hedgerows is 5 years and the trees 27 years.

The development will not currently meet the biodiversity net gain requirements for watercourses. Recommendations are provided below.

RECOMMENDATIONS

Post-consent Requirements & Recommendations

The statutory framework for biodiversity net gain requires a Biodiversity Gain Plan (BGP) to be submitted and approved by the planning authority to discharge the biodiversity gain condition prior to the commencement of development. The BGP should detail the measures undertaken to achieve the required 10% net gain as stated in the metric tool.

Local planning authorities have and are integrating their own approaches to detailing planning conditions since the government issued further legislation and guidance on BNG planning requirements between November 2023 and February 2024.

Watercourses

The development will not currently meet the biodiversity net gain requirements for watercourses. The developer must therefore consider the following options:

1. Achieve net gain by carrying out habitat enhancement measures on the streams. Recommendations for this are provided in the MoRPH assessment report (Appendix A). The land where the streams are located is technically off-site and it is not known if any agreement to enhance and manage the streams can be made. Any land proposed for use for off-site BNG must be a registered biodiversity gain site. To be eligible for registration on the biodiversity net gain site register, land must be secured by one of two legal mechanisms. The first are planning obligations with local planning authorities (LPA) under section 106 Town and Country Planning Act 1990. The second legal mechanism is conservation covenants. In order to register a biodiversity site and allocate to the development at the same time, a planning application decision notice is needed along with several other requirements (see – https://www.gov.uk/guidance/register-a-biodiversity-site-and-allocate-to-a-development). However, the LPA are likely to require further details on the enhancement measures for the watercourses (if this option is feasible).

2. Set up a purchase agreement for the required watercourse units from a third-party provider (e.g., the Environment Bank).
3. Contact the council regarding using their habitat bank vehicle as the council may be in a position to sell watercourse units by the time the application is consented and the relevant planning condition needs to be discharged.

Please be aware that a 'spatial risk multiplier' (SRM) will apply which would double the number of biodiversity units needed to achieve a 10% gain if there are no suitable options for off-site net gain within the local authority area.

Biodiversity Unit Trading

Based on the post-development habitat plan (Figure 2), the development would result in excess habitat and hedgerow units being created on the site (i.e., excess value over the mandatory 10% threshold). The developer may wish to 'bank' these excess credits for any further development sites that are subject to the BNG condition (following the same rules as mentioned above).

Provided that the minimum 10% net gain is achieved, if any scaling back of the biodiversity enhancement measures are proposed, the metric tool and habitat figures would need to be revised and submitted with the Biodiversity Gain Plan.

Further Commitments

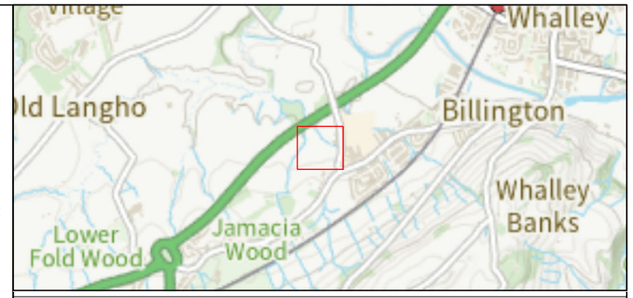
The post-development habitat plan (Figure 2) has been based on the landscape plan with the addition of habitats which can be most feasibly be achieved within the site. This landscape plan is required to be supplemented with the design of a planting schedule and planting establishment and management measures which are typically completed by a specialist landscape contractor prior to the commencement of the works. A Habitat Management and Monitoring Plan which details such measures is recommended as this will form the basis for the habitat monitoring commitments that are to be made.

Any seeds, plants or trees used within the landscaping scheme should be sourced from a reputable stockist and be of local provenance. Only UK based stock is advised to be purchased. Only UK native species should be used with regards to trees and grassland seed mixes. The developer may wish to plant more trees than required to allow for failures.

APPENDIX A

FIGURES (NEXT PAGE)

- **FIGURE 1. UK HABITAT CLASSIFICATION MAP (BASELINE)**
- **FIGURE 2. UK HABITAT CLASSIFICATION MAP (POST-DEVELOPMENT)**



Survey Information	
	Site boundary (25,470.0m^2)

UKHab Habitat Survey	
	g4 - Modified grassland (24,983.9m^2)
	u1b - Developed land; sealed surface (486.1m^2)
	32 - Scattered tree (2)

0 5 10 20 30 40 50

Metres

PROJECT TITLE

LAND OFF ELKER LANE, BILLINGTON

DRAWING TITLE

Figure 1: UK Habitat Classification Map (Baseline)

VER	DATE	REMARKS	Drawn	Checked
1.1	27/06/24	UKHab	MP	RK

DRAWING NUMBER:

KSEcology/ElkerLane/UKHab

SCALE	PLOT SIZE	DATUM	PROJECTION
1:1,000	A3	OSGB	BNG

N

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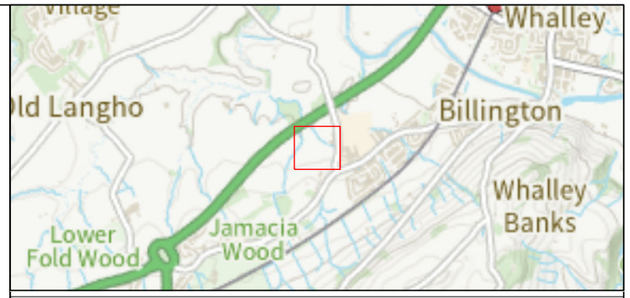

Survey Information	
	Site boundary (25,470.0m^2)

UKHab Habitat Survey	
	g3c - Other neutral grassland (5,876.8m^2)
	g4 - Modified grassland (6,213.9m^2)
	u1b - Developed land; sealed surface (4,110.5m^2)
	u1b5 - Buildings (6,106.0m^2)
	804 - Car Park (2,914.4m^2)
	828 - Vegetated garden (248.4m^2)
	h2 - Hedgerows (187.1m)
	Individual trees (101) and shrubs

0 5 10 20 30 40 50
Metres

PROJECT TITLE

LAND OFF ELKER LANE, BILLINGTON

DRAWING TITLE

Figure 2: UK Habitat Classification Map (Post-Development)

VER	DATE	REMARKS	Drawn	Checked
2.0	01/07/24	Post-Development	MP	RK

DRAWING NUMBER:

KSEcology/ElkerLane/Post-Development

SCALE	PLOT SIZE	DATUM	PROJECTION
1:1,000	A3	OSGB	BNG

N

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APPENDIX B

MoRPH Assessment Report (NEXT PAGE)

Ecology Survey

Biodiversity Metric MoRPh Assessment of Two Streams

at

Land off Elker Lane, Billington, Whalley

June 2024

Project:	Two Streams in Lane off Elker Lane, Billington Biodiversity Metric River MoRPh Assessment
Version:	V1, Draft for Client Review
Version Date	V1 – June 2024
Prepared for:	Ryan Knight, Knight Sky Ecology
Prepared by:	Dr Rosalind King MCIEEM

CONTENTS

1 SUMMARY

1.1. A Modular River Physical Assessment (MoRPh Assessment) has been undertaken of the two water courses running through land off Elker Lane, Billington (National Grid Reference SD 716 355). The survey was undertaken to determine the condition of the water courses and inform a Biodiversity Metric Assessment undertaken by Knight Sky Ecology to support a planning application for a care home and residential development on the site.

1.2. The Baseline Survey was undertaken on the 8th June 2024 by Dr Rosalind King, MCIEEM. Dr King has over 17 years' experience as an Ecological Consultant in the private and public (Local Authority) sectors including 5 years' experience at undertaking BNG Assessments using the Natural England Biodiversity Metric.

1.3. The water courses are un-named on OS maps so have been called Elker Lane West (ELW) and Elker Lane East (ELE). They are both considered to be **Type K rivers**, which are straight – sinuous rivers with very few meanders, and a sand/gravel – silt/clay bed indicating moderate flow with moderate levels of deposition. The water courses are both shallow (5 to 10 cm deep), with ELW flowing from west to east and partially shaded by tall nettles and rush on one bank. ELE flows from south to north and is also partially shaded by tall herb vegetation. The habitat surrounding the two water courses is sheep and cattle grazed pasture.

1.4. Assessed using the Cartographer database, ELW is classified as being in **Moderate** Condition (score of **0.753**) and ELE is classified as being in **Moderate** condition (score of **1.008**). The water courses are potentially over deep (no longer interacts with the surrounding land during high flow) and this allows the condition score to be dropped to '**Fairly Poor**' for both streams. If considered as 'Fairly poor' both streams together comprise approximately 1.41 River units for the 82 and 60 m where they run alongside the red line boundary.

1.5. Following the works, it is considered there may be minor encroachment on one bank only. There is the chance to enhance the water course, but proposals have not yet been agreed.

1.6. In order to meet the 10% biodiversity net gain requirements, suggestions have been made that may improve the condition score. These include minor improvements such as adding deadwood to the banks, planting trees on the bank and bank face and providing physical features in the channel to form side bars and encourage greater diversity in the water flow. Major improvements include bank reprofiling, to enable the river to interact more with the surrounding land (widening the river and reducing the bank heights) plus developing a pond or wetland on the bank. If all these options are implemented, the condition score of the stream is predicted to **rise to > 1.6**. By reprofiling the banks, the river would no longer be considered overdeep and the condition would rise to **Moderate.**

1.7. Under the above scenario, if the condition of the enhanced sections of stream are improved to Moderate, this results in an estimated credit uplift of 0.26 to have a total of 1.66 post development. This would result in **18.38% net gain**, meeting the requirements of a minimum of 10% net gain in the watercourse units on-site. This is a theoretical enhancement. Any proposed works would need to be run through the cartographer database to confirm condition improvement and credit uplift.

2. INTRODUCTION

2.1. A River MoRPh Assessment has been undertaken of the two watercourses running through land off Elker Lane, Billington (National Grid Reference SD 716 355) as marked in Figure 2.1. The aim is to provide an assessment of the condition of the stream in order to inform a Biodiversity Metric Assessment to support proposals for a care home and residential dwellings on the site.

Figure 2.1: Site proposals with the streams marked as two black lines north and east of the development. Supplied by Knight Sky Ecology from Avalon, Dwg 01a, 09.09.2021

2.2. The site was visited on the 8th June 2024, where the stream was assessed following MoRPh methodology and in accordance with Biodiversity Metric Principles.

2.3. This brief report sets out the baseline survey methods and results, including the baseline calculation of the river section of the Biodiversity Metric Version 4.0. The initial assessment is a snapshot of current conditions and has not been compared to existing species records for the site or wider area.

3. METHODS

3.1. The condition of the watercourses was assessed, following MoRPh[1] survey methodology. This method assesses the physical and ecological characteristics of the riparian environment to include land up to 10 m from the bank edge. The extent of modification of the channel is also assessed, together with influences from structures such as bridges along with invasive plant issues.

3.2. A minimum of five sections of water course are surveyed in the field, in order to cover at least 20% of the length of each stream. The length of each section surveyed is determined by the width of the water course under assessment, and is required to be at least two times the width of the channel. In the case of both streams the channel was estimated to be 20 to 30 cm wide, therefore

[1] **Mo**dular **R**iver **Ph**ysical

each sector was 10 m long. In order to cover the required minimum of 20% of the watercourse total length, one sub reach was sampled per stream, each comprising 5 MoRPh surveys. These covered 50 m of each stream, meeting the 20% target for assessment (the red line boundary lies alongside approximately 84 m of ELW and 60 m of ELE water courses).

3.3. The length of each stream was walked, with the sector for survey chosen based on the development proposals (where the most impact would occur), ease of access, good visibility of the stream and being representative of the stream as a whole.

3.4. At each sector, the structure and features of the bank top (within 10 m of the bank) and the bank side were assessed for both the left bank and right banks. The assessment was undertaken from both banks as the streams were narrow and easily crossed. The banks are named left and right when looking downstream as the survey moves from upstream to downstream. The structure and features of the channel were assessed including channel bed material, water flow type and vegetation in the channel.

3.5. The assessment of vegetation and features, together with results from a desk-based exercise that looks at river valley shape, gradient and river type, are combined by the Cartographer programme to determine the condition score of the water course.

3.6. The survey was undertaken by Dr Rosalind King, MCIEEM. Dr King has over 17 years' experience as a Private Ecological Consultant and Local Authority Ecologist including experience at undertaking surveys to inform Biodiversity Net Gain (BNG) proposals, and has been involved in this work since the initial stages of BNG. Dr King is registered to undertake the MoRPh River surveys (as part of Biodiversity Metric Habitat assessment of rivers).

3.7. The report is prepared based on the CIEEM Biodiversity Net Gain Report Template[2] as far as possible. However, as this report is prepared to inform a more detailed assessment of the site, following an ecological appraisal prepared by Knight Sky Ecology, this report does not include reference to legislation, or other more detailed ecological surveys as this is believed to have been completed already.

3.8. The water course element of the site was mapped using Magic Maps[3] with reference to Google Earth imagery and maps provided by Knight Sky Ecology.

3.9. Weather conditions were also noted during the survey as presented in Table 4.1, whilst general habitat conditions are discussed below with a plant species list presented in Appendix 1.

Survey Limitations

3.10. The methods are consistent with national methods and in accordance with best practice. However, the results and conclusions set out in this report should be considered within the context of the survey limitations which are:

- *Access* - The stream was easily accessible, and easily viewed from either bank for the length of the red line boundary. Access was not considered a limitation to assessment of the condition of the watercourses.

- *Time of year* – the survey was undertaken at the optimal time of year for survey of water courses. The streams were not in spate, and the river bed material was clearly visible. Vegetation was growing, enabling accurate categorisation of various components of the scoring system including cover by invasive non-native species; and

[2] CIEEM (2021). *Biodiversity Net Gain Report and Audit Templates* Chartered Institute of Ecology and Environmental Management, Winchester, UK.
[3] https://magic.defra.gov.uk/MagicMap.aspx

- *Surveyor skills* – the surveyor is a suitably qualified ecologist with good plant identification skills (FISC level 4). A species list was not required for the assessment, but the surveyor was able to sufficiently identify species encountered within the survey area in order to complete the assessment and a plant species list is presented in Appendix 1.

4. BASELINE CONDITIONS

4.1. Weather conditions during the survey are set out in Table 4.1 and were suitable for this type of survey.

Table 4.1: Weather conditions during survey

Date	Time	Temperature (°C)	Cloud cover (%)	Wind (Beaufort Scale)	Conditions
8th June 2024	13:15 – 15:30	14	50	F4	Cool, sunny spells, fresh breeze

4.2. The survey locations (red dots) are shown on the aerial imagery map below (Figure 4.1) with the streams marked in blue and the flow direction indicated by the blue arrow. The water courses are un-named on OS maps so have been called Elker Lane West (ELW) and Elker Lane East (ELE).

Figure 4.1: Aerial view of the Elker Lane West (ELW) and Elker Lane East (ELE) streams in Land off Elker Lane in blue (arrow indicates flow direction). The 10 cross section survey locations (MoRPh 1 to 5 ELW and 1 to 5 ELE) are marked by red and orange dots. Map from Cartographer Copyright Mapbox, OpenStreetMap and Maxar.

4.3. Elker Lane West stream runs west to east, before heading north under the A49. Elker Lane East flows from south to north also heading under the A49. The site location in relation to the wider area is shown in Figure 4.2.

4.4. The stream is assumed to fall under the strategic significance category of 'Location ecologically desirable but not in local strategy' and therefore be of 'medium strategic significance' within the Biodiversity Metric. If this is not the case the estimated credits would need to be adjusted accordingly.

Figure 4.2: The location of the two streams (marked out in blue) in relation to the wider area. Map from Magic, (c) Crown Copyright and database rights 2022. Ordnance Survey AC0000851168.

4.5. The MoRPh methodology requires a minimum of three photographs to be taken at each of the five survey sectors. The photographs are taken from the mid-section of the survey point, one facing across the stream, one facing upstream and one facing downstream. As the section of streams surveyed were fairly similar in condition for the 50 m survey sector photographs from one MoRPh sector only are presented in Figure 4.3 to 4.6 below for each stream.

Figure 4.3: Looking west along ELW, showing steep banks and sheep grazing with tall grass and herb vegetation growing near the stream. (08/06/2024).

Figure 4.4: Looking downstream along the ELE towards the north showing the steep banks with one tree (alder) and tall herb vegetation on the bank top and face (08/06/2024).

Figure 4.5: Left: The clear water of ELW with gravel pebble and silt as channel bed material plus overhanging long grass. Right: In areas poaching has occurred along ELW and the stream runs across the area which is predominantly short vegetation and earth. (08/06/2024).

Figure 4.6: Left: Looking upstream along the ELE towards the south showing the steep banks with overhanging vegetation and the single tree. Right: The clear, slow flowing water with broadleaved vegetation emerging from the stream margins in 1 sector of ELE. (08/06/2024).

4.6. As can be seen from the photographs above, the surrounding habitat is grazed pasture with tall herb and grass vegetation along the bank tops and bank faces of both water courses with only one tree (vegetation terminology as per MoRPh methodology). Both streams are shallow and narrow, generally sat in a deep valley except where poaching occurs along sections of ELW. The flow varies from rippled to smooth and the bed material ranges from gravel and pebbles to sand and clay.

4.7. They are both considered to be **Type K rivers**, which are straight – sinuous rivers with very few meanders, and a sand/gravel – silt/clay bed indicating moderate flow with moderate levels of deposition. The water courses are both shallow (5 to 10 cm deep), with ELW flowing from west to east and partially shaded by tall nettles and rush on one bank. ELE flows from south to north and is also partially shaded by tall herb vegetation. The habitat surrounding the two water courses is sheep and cattle grazed pasture.

4.8. Himalayan balsam, a Schedule 9 invasive non-native species, was noted occasionally along both water courses.

4.9. Assessed using the Cartographer database, taking into account the field and desk-based data, ELW is classified as being in **Moderate** Condition (score of **0.753**) and ELE is classified as being in **Moderate** condition (score of **1.008**) (see excel file *Elker Lane MoRPh Pro River Condition RK 13.06.2024)*. The stream is potentially over deep (no longer interacts with the surrounding land during high flow) and this allows the condition score to be dropped to '**Fairly Poor**' for both streams (see excel file *Current and Proposed Elker Lane MoRPh data RK 13.06.2024)*. If considered as 'Fairly poor' both streams together comprise approximately 1.41 River units for the 82 and 60 m where they run alongside the red line boundary (see *Elker Lane Watercourse Metric 13.06.2024*).

4.10. Following the works, it is considered there may be minor encroachment on one bank only of each stream. There is the chance to enhance the water course, but proposals have yet to be agreed.

5. SUGGESTED BIODIVERSITY ENHANCEMENTS

5.1. In order to meet the 10% biodiversity net gain requirements, suggestions have been made that may improve the condition score. The aim is to uplift the condition of the stream by enhancing the condition of the 4 elements of the stream, namely the Bank Top, Bank Face, Channel Margin and Channel Bed. These include minor improvements such as adding deadwood to the banks, planting trees on the bank and bank face and providing physical features in the channel (such as cobbles) to form side bars and encourage greater diversity in the water flow.

5.2. Major improvements include bank reprofiling, to enable the river to interact more with the surrounding land. This could be done by widening the river in one or two places and lowering the bank heights to enable the river to interact more with the surrounding land for approximately 10% of the watercourse length. Addition of a pond or wetland feature on the bank is also suggested in these lowered areas. If all these options are implemented, the condition score of the stream is predicted to rise to **> 1.6**. By reprofiling the banks, the river would no longer be considered overdeep and the condition would rise to **Moderate**.

5.3. Under the above scenario, if the condition of the enhanced sections of stream are improved to Moderate, this results in an estimated credit uplift of 0.26 to have a total of 1.66 post development. This would result in **18.38% net gain**, meeting the requirements of a minimum of 10% net gain in the watercourse units on-site.

5.4. The above is a theoretical estimate. Any agreed enhancements would need to be mapped and run through the Cartographer programme to confirm how they impact the condition score.

APPENDIX 1 - Plant Species List

Incidental plants recorded during the MoRPh survey. This is not a comprehensive list of all plants along the river bank and does not include most grasses

English Common Name	Scientific Name
Creeping buttercup	*Ranunculus repens*
Alder	*Alnus glutinosa*
Floating sweet-grass	*Glyceria fluitans*
Brooklime	*Veronica beccabunga*
Cuckoo flower	*Cardamine pratensis*
Himalayan balsam	*Impatiens glandulifera,*
Soft rush	*Juncus effusus*
Angelica	*Angelica sylvestris*
Stinging nettle	*Urtica dioica*
Broadleaved dock	*Rumex obtusifolius*