Cottam Parkway Railway Station

Cottam Parkway - Biodiversity Net Gain Report

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Lancashire County Council

Cottam Parkway

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P03	16/08/2022	Cottam Parkway Biodiversity Metric third draft	Naomi Watson	Rebecca Cracknell	Rebecca Cracknell	

Contents

Executive Summary

Jacobs was commissioned by Lancashire County Council (LCC) to undertake a Biodiversity Net Gain (BNG) assessment for the proposed Cottam Parkway Railway Station Scheme (hereafter referred to as the 'scheme').

The scheme comprises (but not exhaustively): a road connecting to Cottam Link Road at the Sidgreaves junction roundabout; a bridge over the Lancaster Canal connecting to the railway station; station platforms; buildings and associated structures; a footbridge over the railway and a 250/500 space car park; bridge approach embankments and earthworks. This development is related to the permitted road schemes of Preston Western Distributor and the East West Link Road including Cottam Link Road.

Taking into consideration the post-development habitats presented within the Environmental Masterplan (EMP), the scheme would currently represent again of **18.35 habitat units (45.63%)** and 4.46 **hedgerow units (29.02%).** The main area of habitat gain across the scheme is mixed scrub relating to the creation of mixed scrub north of Ashton and Lea Golf Course The main gain of hedgerow habitat relates to multiple new hedgerows with trees within the scheme and 310 metres of the tree line which is adjacent to the train station footprint being retained.

At current, approximately 705 metres of hedgerow is presented as woodland within the EMP, equating to a gain of 72.34% net gain in hedgerow units. As a result, the full value of hedgerow creation is not reflected in the post-intervention assessment

1. Introduction

1.1 Scheme Background

Jacobs was commissioned by Lancashire County Council (LCC) to undertake a Biodiversity Net Gain (BNG) assessment for the proposed Cottam Parkway Railway Station Scheme (hereafter referred to as the 'scheme'). This document should be read in conjunction with the following plans and tools:

- UK Habitat Classification Map (including the scheme boundary) (Appendix A/ Figure 1);
- Biodiversity Metrics Tool (Appendix B); and
- EMP (B2327FEF-JAC-ELS-00-DR-ENV-0010, revision 3 and B2327FEF-JAC-ELS-00-DR-ENV-0011, revision 3/ Appendix C).

The scheme comprises (but not exhaustively): a road connecting to Cottam Link Road at the Sidgreaves junction roundabout; a bridge over the Lancaster Canal connecting to the railway station; station platforms; buildings and associated structures; a footbridge over the railway and a 250/500 space car park; bridge approach embankments and earthworks. This development is related to the permitted road schemes of Preston Western Distributor and the East West Link Road including Cottam Link Road.

1.2 Biodiversity Net Gain

The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021) and accompanying National Planning Policy Guidance (NPPG) have identified that developments in England should deliver a net gain for biodiversity. The NPPF states (paragraph 170) that: *"Planning Policies and decisions should contribute to and enhance the natural and local environment by… minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures."*

The NPPG for the Natural Environment, updated in July 2019, states (paragraph 20) that: *"Net gain in planning describes an approach to development that leaves the natural environment in a measurably better state than it was beforehand."*

A key element of the net gain policy is that changes should be measurable. As a result, biodiversity net gain metrics that allow losses and gains in biodiversity to be measured in an objective and repeatable manner have been developed. This report uses the Department for Environment, Food and Rural Affairs (Defra) Biodiversity Metric 3.1 Calculation Tool (Panks *et al*, 2022a and 2022b) to determine if the scheme would result in a net gain in biodiversity. Net gains can be achieved by creating new habitats and enhancing existing habitats.

The forthcoming Environment Bill will make it mandatory for developments to achieve at least a 10% net gain in value for biodiversity. This means that the development of a site should leave the natural environment in a better state than found.

1.3 National Character Area

The scheme is located within National Character Area (NCA): 32 Lancashire and Amounderness Plain (Natural England, 2014). NCA profiles are guidance documents which can help inform decision-making about each NCA. The information they contain will support the planning of conservation initiatives at a landscape scale and encourage broader partnership working through Local Nature Partnerships. The profiles help to inform choices about how land is managed and can change.

The NCA profile details Statements of Environmental Opportunity (SEO) for Lancashire and Amounderness Plain. The SEO which is pertinent to this scheme is SEO 2: "*Work with landowners and land managers to protect, enhance and strengthen the network of farmland features in this agricultural plain landscape. Create and expand farmland habitats to enhance biodiversity, improve soil and water quality, strengthen the resilience of habitats to*

climate change and enhance landscape character". Enhancement of hedgerow features and creation of higher quality grassland habitat would be examples of achieving this objective.

1.4 Aims and Objectives

This report will calculate the losses and gains in biodiversity units as a result of the scheme. The report will detail the assumptions that have been made to inform the calculations. The calculations are based on the EMP (Jacobs, 2022).

This report will be in accordance with both legislative and the best practice guidelines for BNG. The report describes the survey methods employed, presents the results of the surveys and makes recommendations for further work that will be required to inform the detailed assessment.

It will set out a principle agreement in terms of what habitat will be created and the target condition. Further work will be required to explain how the habitats will be created, managed and monitored in the long term, in order to achieve the target condition.

1.5 Assumptions and Limitations

The metric uses habitat categories as a proxy for biodiversity. While the scoring of habitats is informed by ecological reasoning and the available evidence, the outputs of biodiversity unit calculations are not scientifically precise or absolute values. The generated biodiversity unit scores are proxies for the relative biodiversity worth for the state of a place. The metric and its outputs should therefore be interpreted, alongside ecological expertise and common sense, as an element of the evidence that informs plans and decisions. The metric is not a total solution to biodiversity decisions. The metric, for example, helps work out how much new or restored habitat is needed to compensate for a loss of habitat, but it does not tell you the management requirement to achieve the desired habitat.

2. Methodology

This report has been produced in accordance with the methodology set out in the following guidance documents:

- The Biodiversity Metric 3.1 – User Guide – Beta Test (Panks *et al.*, 2022a); and
- The Biodiversity Metric 3.1 – Technical Supplement – Beta Test (Panks *et al.*, 2022b).

2.1 Study Area

The Study Area is defined by the scheme design and temporary working areas provided by LCC (See Appendix A). It was not deemed necessary to assess Lancaster Canal on the following principles:

- The Lancaster Canal is a designated Biological Heritage Site (BHS) and is not appropriate to include in the metric calculator; and
- No significant impacts to the canal are predicted (in terms of habitat loss).

2.2 Habitat Metrics

The Biodiversity Metric 3.1 generates a value measured in units for a site before the development commences and after the development is completed, allowing the difference (positive or negative) to be measured. The calculation is based on habitats, and for each habitat parcel, a biodiversity value is generated based on four factors that are multiplied together. These are:

- The area of the habitat or length of hedgerow;
- The value (or distinctiveness) of the habitat;
- The condition (poor, moderate or good) of the habitat; and
- The strategic significance of the habitat.

Where habitat creation or enhancement is proposed to compensate for loss of biodiversity value, multipliers are used to reflect the time it will take for the required condition of the target habitat to be achieved and the difficulty of creating the target habitat in the first place. Whilst these are called multipliers, the effect they have on the number of biodiversity units that proposed new or enhanced habitats will deliver is to reduce them. This reflects uncertainties around the effectiveness of habitat creation and enhancement.

To calculate the change in biodiversity unit value using the Biodiversity Metric 3.1 calculator, firstly the baseline (or pre-intervention) 'biodiversity unit' value of each habitat parcel was calculated. Next, using the proposed design, the biodiversity unit value for the habitats that were expected to be retained, plus the values for any enhanced or newly created habitats, were calculated. The change in biodiversity was worked out by subtracting the site's baseline biodiversity unit value from the sum of post-intervention values for retained, created and enhanced parcels of the same habitat type. This gave the final biodiversity unit value from which net gain or loss for the scheme was assessed.

The EMP (as of the design in June 2022) has been used to assess the habitats to be created on land that will be maintained within the permanent boundary of the scheme. Habitat type has been translated to the Metric habitat types based on discussions with the Landscape Architects along with an assumption for condition based on the likely maintenance routines as detailed in the first iteration landscape and ecology management plan (B2327FEF-JAC-ELS-00-RP-ENV-0009). Details of landscape code habitat translations and target condition scores are provided in section 3.4; Table 3.3 and 3.4.

2.3 Hedgerow Metrics

In the Biodiversity Metric 3.1, hedgerows and lines of trees are measured by the hedgerow biodiversity unit. This uses length (kilometres), height and condition to calculate the units. The loss and gain in hedgerow biodiversity units needs to be assessed separately to other biodiversity unit measures. As such, it is only possible to compensate for the loss of hedgerow through the creation or enhancement of hedgerows elsewhere.

2.4 Biodiversity Value

2.4.1 Habitat Parcels (Habitat Area)

An Extended Phase1 Habitat Survey (EP1HS) was carried out in February 2020 (Jacobs, 2020) with a supplementary update survey in July 2020. All habitats were recorded following the methodology outlined in the Phase 1 Habitat Survey handbook: A technique for environmental audit (JNCC, 2010). For the purpose of this assessment, Phase 1 habitat types were converted to classifications defined within the UK Habitat Classification User Manual (UK Habitat Classification Working Group, 2018). The map resulting from this conversion and classification is provided as a UK Habitat Classification Map. The extent, type, value and condition of each habitat was recorded during this survey, and these factors are discussed in greater detail below.

Habitats were separated into discrete parcels either when they were geographically discrete or where there was a change in habitat condition across a single location. Each parcel was recorded on the map and calculated separately using the metric calculator.

2.4.2 Hedgerow

The EP1HS was reviewed to identify hedgerow locations for field survey and subsequently, a dedicated hedgerow field survey was undertaken following the methodology outlined in the Hedgerow Survey Handbook (Defra, 2007) in May 2020. Hedgerow types for Metric 3.1 were determined from the attributes collected during the hedgerow survey, based on the following assumptions:

- If the type of hedgerow was a line of trees, it was classified as such, if not it was classified as a hedgerow. If these trees were mature and considered part of a priority habitat, the line of trees was considered 'Ecologically Valuable'.
- Native hedgerows with an average species richness across all sections of four or more species were considered 'species-rich'.
- Any hedgerows noted to include trees during the field survey were classified as their relevant Metric 3.1 hedgerow habitat with trees.

2.4.3 Habitat Distinctiveness

Habitat distinctiveness is a standard score based on the type of habitat present. The EP1HS recorded the habitat type and a review of the Section 41: Habitats of Principal Importance in England was then carried out to confirm the category for each habitat. Detailed tables for the habitat distinctiveness score for each habitat are provided in the technical supplement (Panks *et al.*, 2022b); however, the overall distinctiveness categories used for habitat areas is reproduced from the user guide (Panks *et al.*, 2022a) in Table 2.1 below.

Table 2.1. Distinctiveness categories used for Area Habitats (taken from Biodiversity Metric 3.1 – User Guide)

Category	Scores	Definition
Very High	8	Priority habitats as defined in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 that are highly threatened, internationally scarce and require conservation action.

High	6	Priority habitats as defined in Section 41 of the NERC Act 2006 requiring conservation action.
Medium	4	Semi-natural habitats not classed as a Priority habitat.
Low	2	Habitat of low biodiversity value e.g. temporary grass and clover ley.
Very Low	0	Little or no biodiversity value e.g. hard standing.

A separate table is provided in the user guide (Panks *et al.*, 2022a) for the distinctiveness categories and weightings (scores) for different hedgerow types. The categories are based on the physical structure and the species composition of the woody element of the hedgerow, and their association with physical features (ditches and banks) that may enhance their ecological value by providing additional niches or enhanced capacity to provide habitat connectivity.

2.4.4 Habitat Condition

Habitat condition is a score based on the quality of the habitat, judged against the perceived ecological optimum state for that particular habitat. The process of assessing habitat condition considers how many of the key physical characteristics and typical species of a particular habitat type are present in a habitat patch. This is determined by the condition criteria outlined in Table TS1-1 of the technical supplement (Panks *et al.*, 2022b), which lists the habitat condition sheets that are available and indicates which sheet should be used for each area habitat type.

Some habitats have a pre-defined condition score and no assessment is required. These tend to be habitats that are intensively managed (e.g. arable land) or habitats which are artificial and have a narrow biodiversity niche (e.g. ground level planters).

Habitat condition is divided into one of three categories: Good, Moderate and Poor. These three main categories will be used but the metric and calculation tool does allow for half scores, if for example, it is not possible to separate two main categories.

Identifying habitat condition requires some ecological knowledge in most circumstances and quantitative information was collected to explain how each habitat meets the assessment criteria in the technical supplement. Condition assessment information is provided within the EP1 HS report (Jacobs, 2020) and Biodiversity Metrics Tool.

2.4.5 Strategic Significance

Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement. It works at a landscape scale and gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives. A summary of the strategic significance categories and scores adapted from the user guide (Panks *et al.*, 2022a) is shown in Table 2.2 below.

The Lancaster Biodiversity Action Plan (BAP) outlines specific habitat plans and the Central Lancashire Biodiversity and Nature Conservation Supplementary (SPD) Planning document outlines plans for priority habitats including ponds. They habitats were taken into consideration when applying significance scores.

A review of the Lancashire Ecological Network (Bloch *et al.,* 2015) was carried out to identify green corridor or important habitat networks. The Strategy provides district plans which illustrate the greatest need for habitat corridors and habitats for wildlife.

In addition to this, a review of Natural England's Habitat Networks Maps (Edwards *et al..,* 2020) was carried out. The maps are based on two components: "Existing Habitat" and "Network Enhancement & Expansion". The

"Existing Habitat" element has four components: primary habitats, associated habitats, areas suitable for habitat creation/restoration and restorable habitat areas. The "Network Enhancement & Expansion" element also comprises four elements. These are network zones that identify areas for improvement that will improve habitat networks, join up areas of existing habitat, increase connectivity and reduce habitat fragmentation.

The habitat network maps are intended to be used to help identify areas for future habitat creation and restoration at a landscape scale but need to be considered alongside other local datasets and knowledge.

Table 2.2 - Strategic significance categories and scores

Category	Score
High Strategic Significance High potential and within area formally identified in local policy	1.15
Moderate Strategic Significance Good potential but not in area defined in local policy	1.1
Low Strategic Significance Low potential and not in area defined in local policy	1

2.5 Risk Multipliers – Habitat Creation and Enhancement

2.5.1 Time to Target Condition

Time to target condition is a standard score based on how long the habitat type takes to establish. The time period to use is the length of time (in years) between the intervention and the point in time the habitat reaches the pre-agreed target quality (i.e. distinctiveness, condition, area). This time will vary between habitat types, between change scenarios (e.g. creation typically takes longer than enhancement) and the way in which the habitat is managed. A summary of the time to target condition multipliers for different time periods adapted from the user guide is shown in Table 2.3 below. Detailed tables for the time to target condition for each habitat is provided in the technical supplement.

Table 2.3. Time to target condition: multipliers for different time periods using a 3.5% discount rate

Time (years)	Multiplier	Time (years)	Multiplier
0	1.000	15	0.586
1	0.965	20	0.490
2	0.931	25	0.410
5	0.837	30	0.343
10	0.700	>32	0.320

2.5.2 Difficulty of Creation or Restoring a Habitat

Habitat creation carries an associated risk based on the difficulty and uncertainty of successfully creating, restoring or enhancing a habitat. The level of risk differs between habitat types because of ecological factors (e.g. the different challenges posed by creating different habitat types) and due to the availability of techniques or know-how to create habitats in a realistic timeframe. Uncertainty in achieving the target outcome for each habitat is addressed by a habitat-specific 'difficulty' multiplier based on available science and expert opinion. A multiplier is therefore applied to recognise the difficulty of creating different habitats (Table 5.5; Panks *et al.*, 2022b). Where uncertainties have been identified further work will be required to help give confidence that the habitat creation or restoration will be successful.

Table 2.4. Difficulty category multipliers

Difficulty categories	Category Multiplier
Very High	0.1
High	0.33
Medium	0.67
Low	1

2.5.3 Off-site Risk

An off-site risk multiplier is also applied (Table 2.5) (Panks *et al.*, 2022b). This is a score based on where the habitat creation or enhancement is undertaken. The offsite multiplier is applied to compensation parcels outside of the relevant Local Planning Authority (LPA) – Preston City Council, or National Character Area (NCA) 32 Lancashire and Amounderness Plain (NE512). It is currently assumed that all habitats will be created on site within the LPA and NCA boundary.

Table 2.5. Off-site risk multipliers

Category	Score
Compensation inside LPA or NCA of impact site	1.0
Compensation outside of PLA or NCA of impact site but in neighbouring LCA or NCA	0.75
Compensation outside LPA or NCA of impact site and beyond neighbouring LPA or NCA	0.5

3. Results

The results should be read in conjunction with the EP1HS report (Jacobs, 2020), UK Habitat Classification map, (Appendix A),biodiversity metrics calculator spreadsheet (Appendix B) and the EMP (Appendix C).

3.1 Habitat Loss

3.1.1 Habitat Loss Calculation

Tables 3.1 and 3.2 provide the baseline loss calculations for habitats and linear features located within the scheme footprint and temporary working areas.

Table 3.1. Habitat loss (including temporary and permanent loss)

Habitat Classification	Loss (ha)
Grassland - Modified grassland	7.59
Grassland - Other neutral grassland	3.58
Heathland and shrub - Mixed scrub	0.23
Rivers and Lakes – Standing open water and canals	0.04
Urban – Built Linear features	0.59
Woodland and forest - Other woodland; broadleaved (Scattered trees)	0.22
TOTAL	12.25

Table 3.2. Linear Habitat loss

Habitat Classification	Loss (km)
Native species rich hedgerow	0.22
Native hedgerow (species poor hedgerow)	0.36
Native species rich hedgerow with trees	0.25
Line of trees (ecologically valuable)	0.14
TOTAL	0.97

In total, these equate to a loss of 34.74 habitat units and a total of 8.81 hedgerow units.

3.1.2 Distinctiveness and Condition Scores

Built linear features within the scheme boundary are categorised as having Very Low distinctiveness[1].

Modified grassland habitat within the scheme boundary is categorised as having Low distinctiveness as it provides little ecological benefit.

Neutral grassland, mixed scrub, ponds and other broadleaved woodland are all categorised as having Medium distinctiveness.

[1] 'Urban' habitats do not have a bearing on unit loss.

3.1.3 Strategic Significance

Habitats across the scheme have not been identified in Lancashire's Ecological Network; however, habitats within the study area (around the road connecting to Cottam Link Road at the Sidgreaves junction roundabout) fall within Network Enhancement Zone 1 (Natural England, 2020). Since the habitats within this area do not fall within local plans, a Low strategic significance score was applied.

Areas southeast of the scheme, including habitats north and south of the railway line do not fall within any strategically significant locations. However, within the Lancashire Local BAP, there are specific habitat plans for broadleaved woodland, and ponds are a priority within the SPD. For this reason, a High strategic significance was applied.

Lancaster Canal, Central Watercourse, Western Ordinary Watercourse and Lady Head Runnel act as important wildlife corridors for the area and as such, any associated habitat type within the area have been identified as holding High strategic significance. Data for Central Watercourse, Western Ordinary Watercourse and Lady Head Runnel is still being gathered and will be provided in supplementary information to the planning application.

For all other habitats, a category of 'area/ compensation not in local strategy/ no local strategy' was applied, resulting in Low strategic significance.

3.2 Retained Habitats

Areas of modified grassland (0.56ha), neutral grassland (0.22ha), mixed scrub (0.28ha), broadleaved woodland (0.04ha) and built-linear features (0.82ha) will be retained within the planning application boundary. A total of 0.79km of linear hedgerow features will be retained across the planning application boundary.

3.3 Enhanced Habitats

Within the planning application boundary an area of neutral grassland (0.17ha) will be enhanced to a better condition.

3.4 Habitat Gain

3.4.1 Habitat Gain Calculation

Tables 3.3 and 3.4 provides the habitat creation calculations for habitats and linear features located within the scheme footprint and temporary working areas.

Table 3.3. Habitat creation

Proposed Habitat	EMP Reference	Gain (ha)
Modified grassland	• Proposed amenity grass • Proposed grasscrete turning amenity grassland • Compound area reinstatement - agriculture grassland	3.37 (Moderate)
Other neutral grassland	• Proposed species rich coarse grassland • Compound area reinstatement - agriculture grassland	3.1 (Moderate)

	• Proposed species rich grassland nutrient • Wildlife enhancement - species rich wet grassland sward enhancement	
Mixed scrub	• Bat hop-over native shrubs background • Proposed native shrubs • Proposed native scrub	1.56 (Moderate)
Reedbed	• Proposed aquatic plants	0.02 (Good)
Ponds (non-priority habitat)	• Proposed attenuation pond	0.03 (Moderate)
Ponds (priority habitat)	• Existing pond enhancement • Proposed pond	0.04 (Good)
Introduced shrubs	• Proposed ornamental shrubs	0.05 (Condition Assessment N/A)
Intensive green roof	• Proposed sedum roof	0.02 (Moderate)
Artificial unvegetated, unsealed surface	• Proposed natural regeneration	0.17 (Condition Assessment N/A)
Developed land; sealed surface	• Developed land; sealed surface (Train station, car park	1.39 (Condition Assessment N/A)
Built linear features	• Linear features	1.53 (Condition Assessment N/A)
Ground level planters	• Proposed native bulbs • Proposed ornamental groundcover planting	0.02 (Condition Assessment N/A)
Urban Tree	• Proposed ornamental trees (native cultivars planted in an urban environment)	0.99 (Moderate)
Other woodland; broadleaved	• Proposed native trees and shrub	0.36 (Moderate) 0.62 (Fairly Poor)
TOTAL		13.27

Table 3.4. Hedgerow creation

Habitat Classification	Length (km)
Native species rich hedgerow	0.55
Native species rich hedgerow with trees	0.82
TOTAL	1.37

In total, these equate to a total of 52.29 habitat units and a total of 13.27 hedgerow units being delivered.

3.4.2 Distinctiveness and Condition Scores

The Defra metric calculator automatically defines the distinctiveness scores based on the defined habitat types.

All habitats will be reinstated to the existing condition or higher.

For the majority of habitats, a target condition of moderate has been given. The habitats in this area will be managed and monitored to ensure the target condition can be achieved. Smaller areas of woodland have been given a target condition of fairly poor, this has been given on a precautionary basis that they might not reach a condition of moderate due to their size.

Grassland and pond habitat creation within the 'wildlife enhancement area' has been given a target condition of good. The habitats in this area will be managed and monitored to ensure the target condition can be achieved.

3.4.3 Strategic Significance

The strategic significance is low for the majority of the habitat creation proposed across the scheme. Woodland and priority habitat (ponds, reedbeds and hedgerows) identified for creation do provide enhancement within and outside of the network enhancement areas. These areas, as well as being present within local plan, will provide important network enhancement and supporting habitat to the Lancaster Canal and will have High strategic significance.

3.4.4 Difficulty of Creation and Time to Target Condition

The habitats and hedgerows across the scheme will need to be managed and monitored to ensure condition status as outlined in the biodiversity metric is met. The recommendations section of this report details what further work is required to ensure the success of these habitats.

Habitats of very low and low distinctiveness which have a standard time to target condition of 0 years include the road and station developments and bare ground which is going to be left to naturally regenerate.

Other low distinctive habitat across the scheme includes introduced shrub and ground level planters which have an establishment time of 1-year, intensive green roof in moderate condition which has an establishment time of 3 years, and modified grassland in moderate condition which has an establishment time of 4 years.

If the site supports suitable soils and an appropriate management and monitoring plan is in place, neutral grassland creation proposed following the scheme footprint would be expected to achieve moderate condition within 5 years. The areas of grassland proposed within the 'wildlife enhancement area would be expected to achieve good condition within 15 years.

Woodland, tree and shrub planting can be readily planted on most soil types. It will take a number of years (7 years for woodland in poor condition, 15 years for woodland in moderate condition, 5 years for mixed scrub in moderate condition, 20 years for native species rich hedgerow with trees and 12 years for native species rich hedgerow) to develop and mature and eventually reach the target condition. Urban trees can be expected to achieve moderate condition in 27 years.

The creation of a new ponds/ wetland areas present few difficulties for creation. There are well documented methods on pond creation. This would be expected to achieve a moderate condition score in 3 years and a good condition score in 5 years. The reedbed habitats surrounding the ponds can be expected to reach good condition in 12 years.

A summary of the results from the Defra Biodiversity Metric 3.1 calculation for the scheme is presented in Table 3.5.

Table 3.5. Summary results of the Defra Biodiversity Metric 3.1 calculation for the scheme

Development Phase	Calculator	Biodiversity Units
Onsite baseline	Habitat units	40.22
	Hedgerow units	15.38
	River units [2]	0.00
On-site post-construction (including habitat retention)	Habitat units	58.57
	Hedgerow units	19.85
	River units[2]	0.00
Total net unit change	Habitat units	18.35
	Hedgerow units	4.46
	River units[2]	0.00
Total net % change	Habitat units	45.63%
	Hedgerow units	22.02%
	River units[2]	0.00%

[2] River metrics will be provided as supplementary information to this report.

4. Conclusions

The scheme would currently represent a gain of 18.35 habitat units (45.63%) and a gain of 4.46 hedgerow units (29.02%).

This gain in habitats assumes that all habitats within the temporary working areas would be reinstated to their previous habitat with the same or a higher condition.

The scheme would result in the loss of low-quality grassland habitat across its footprint. This predominantly relates to the permanent loss of modified grassland to the south and south-west of the scheme which will replaced with habitats of better quality and medium distinctiveness such as woodland, neutral grassland and a large area of mixed scrub to the north west of Ashton and Lea Golf Course which provides the largest gain.

Linear features including hedgerows and lines of trees would be impacted within the current design of the scheme and temporary working areas. The biggest gain in linear features is related to the creation of multiple native species rich hedgerows with trees adjacent to the east and west of Sidgreaves Lane. Some areas of habitat creation that are presented as native scrub and woodland habitat within the EMP are less than five metres wide and would therefore classify as a hedgerow linear feature in terms of UKHabs classification. As a result, the full value of hedgerow creation is not reflected in the post-intervention assessment. These area-based habitats would account for approximately 120 metres of native species rich hedgerow and 585 metres of native species rich hedgerow with trees, resulting in a 74.32% net gain in hedgerow units. This would result in a reduction of net gain for habitats, however this would be minimal, since removing all woodland creation areas (including areas that are not hedgerows), the gain is still substantial (37.34%).

Lancaster Canal intersects the northern extent of the scheme. The watercourse is a designated BHS and is not considered in the baseline metric results. Due to the canal's designation and the assumption that negligible impacts are predicted, it is not necessary to include in the metric.

Data on the three watercourses and associated proposed culverts are still being gathered and will be provided in supplementary information to the planning application.

5. Recommendations

A Landscape and Ecology Management Plan (LEMP) is to be completed in order to provide a framework for the immediate and long-term establishment, protection, and management of biodiversity within the scheme. The LEMP is to include such details as:

- Habitat establishment;
- Habitat maintenance;
- Aftercare;
- Remedial measures;
- A work schedule;
- Targets for success; and
- Details of the organisation responsible for implementation and management of the plan.

The LEMP is to provide management and maintenance action for a period of at least 30 years in line with the Environment Act 2021. This time allows for the hedgerows and trees to be established.

6. References

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Appendix A. UK Habitat Classification Map and Scheme Boundary

Appendix B. Biodiversity Metrics Tool

Appendix C. Environmental Masterplan