# Jacobs

# **Cottam Parkway Railway Station**

Cottam Parkway - Biodiversity Net Gain Report

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Lancashire County Council



#### **Cottam Parkway**

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# **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 a gain 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 Phase 1 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 Are	a Habitats (taken from Biodiversity Metric 3.1– User Guide)
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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 EP1HS 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	1.15
High potential and within area formally identified in local policy	
Moderate Strategic Significance	1.1
Good potential but not in area defined in local policy	
Low Strategic Significance	1
Low potential and not in area defined in local policy	

#### 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.

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

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

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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<sup>1</sup>.

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.

<sup>&</sup>lt;sup>1</sup> '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	<ul> <li>Proposed amenity grass</li> <li>Proposed grasscrete turning amenity grassland</li> <li>Compound area</li> </ul>	3.37 (Moderate)
	reinstatement - agriculture grassland	
Other neutral grassland	Proposed species rich     coarse grassland	3.1 (Moderate)
	<ul> <li>Compound area reinstatement - agriculture grassland</li> </ul>	



	<ul> <li>Proposed species rich grassland nutrient</li> <li>Wildlife enhancement - species rich wet grassland sward enhancement</li> </ul>	
Mixed scrub	<ul> <li>Bat hop-over native shrubs background</li> <li>Proposed native shrubs</li> <li>Proposed native scrub</li> </ul>	1.56 (Moderate)
Reedbed	Proposed aquatic plants	0.02 (Good)
Ponds (non-priority habitat)	<ul> <li>Proposed attenuation pond</li> </ul>	0.03 (Moderate)
Ponds (priority habitat)	<ul><li>Existing pond enhancement</li><li>Proposed pond</li></ul>	0.04 (Good)
Introduced shrubs	<ul> <li>Proposed ornamental shrubs</li> </ul>	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	<ul> <li>Developed land; sealed surface (Train station, car park</li> </ul>	1.39 (Condition Assessment N/A)
Built linear features	Linear features	1.53 (Condition Assessment N/A)
Ground level planters	<ul><li>Proposed native bulbs</li><li>Proposed ornamental groundcover planting</li></ul>	0.02 (Condition Assessment N/A)
Urban Tree	<ul> <li>Proposed ornamental trees (native cultivars planted in an urban environment)</li> </ul>	0.99 (Moderate)
Other woodland; broadleaved	<ul> <li>Proposed native trees and shrub</li> </ul>	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.

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

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

<sup>&</sup>lt;sup>2</sup> 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.

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# Appendix A. UK Habitat Classification Map and Scheme Boundary

**Jacobs** 



## FIGURE 1

### Legend

- Scheme Design
- Temporary Landtake
- 👝 Permanent Landtake
- UK Habs Survey Results
- 🗕 h2a hedgerows
- w1g6 line of trees
- r2b other rivers and streams
- 🔲 g3c other neutral grassland
- 🔲 g4 modified grassland
- 🗾 h3 dense scrub
- r1 standing open water and canals
- 📧 r1e canals
- 🔲 u1e built linear features
- 📖 w1g other woodland, broadleaved



P03	AUG 2022	Final Issue	RW	NW	RK	PH
P02	OCT 2021	Amendment to scheme boundary	MS	JG	RK	PH
P01	FEB 2021	Initial Issue	RW	JG	RK	PH
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd



Client



Project

#### COTTAM PARKWAY RAILWAY STATION

Drawing Title

# UK HABITAT CLASSIFICATION MAP AND SCHEME BOUNDARY

Drawing Status	FINAL							
Scale @ A3	1:3,000	DO NOT SCALE						
Jacobs No.	B2327FEF							
Client No.	5932							
Drawing No. B2327FEF-JAC-EBD-00-DR-ENV-0029								
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Metres



# Appendix B. Biodiversity Metrics Tool

		Cottam Pa A-2 Site Habit	arkway at Creation					
	Condense / Sł Main I	now Columns Menu	Condense / She Instructio	ow Rows ons				
Broa	ad Habitat		Proposed habitat		Area (hectares)	Distinctive	eness Score	Co
τ	Urban	D	eveloped land; sealed surface		1.39	V.Low	0	N/A
Heathlai	nd and shrub		Mixed scrub		1.56	Medium	4	M
Woodla	ind and forest	C	)ther woodland; broadleaved		0.36	Medium	4	M
	Lakes		Ponds (Priority Habitat)		0.04	High	6	
τ	Urban		Introduced shrub		0.05	Low	2	Cc Ass
Ţ	Urban		Intensive green roof		0.02	Low	2	Mo

Post d Strategic significance Condition Strategic Standard time to position Strategic significance ondition Strategic significance target Score condition/years multiplier Area/compensation not in local strategy/ no Low Strategic Significance A - Other 0 1 0 local strategy Area/compensation not in local strategy/ no Low Strategic 5 2 1 loderate local strategy Significance High strategic Formally identified in local strategy 15 1.15 loderate 2 significance High strategic Formally identified in local strategy 5 1.15 Good 3 significance ondition Area/compensation not in local strategy/ no Low Strategic sessment 1 1 1 local strategy Significance N/A Area/compensation not in local strategy/ no local strategy Low Strategic 2 1 3 loderate Significance

Urban	Urban Tree	0.99	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	27
Wetland	Reedbeds	0.02	High	6	Good	3	Formally identified in local strategy	High strategic significance	1.15	12
Urban	Built linear features	1.53	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0
Urban	Ground level planters	0.02	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1
Grassland	Modified grassland	2.92	Low	2	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	4
Grassland	Other neutral grassland	1.35	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5
Grassland	Other neutral grassland	1.75	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5
Grassland	Modified grassland	0.45	Low	2	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	4
Lakes	Ponds (Non- Priority Habitat)	0.03	Medium	4	Moderate	2	Formally identified in local strategy	High strategic significance	1.15	3

Urban	Artificial unvegetated, unsealed surface	0.17	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0
Woodland and forest	Other woodland; broadleaved	0.62	Medium	4	Fairly Poor	1.5	Formally identified in local strategy	High strategic significance	1.15	7
	Total habitat area	13.27								
	Site Area (Excluding area of Urban trees and Green walls)	12.28	]							

# Check Areas - Area cross check failed (Baseline habitat lost does not match development footprint plus area of new habitat creation)

levelopment/ post intervention habitats										
Temporal multiplier					Difficulty multipliers			C		
Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	Habitat units delivered	Assessor comments
0	0	Standard time to target condition applied	0	1.000	Low	Standard difficulty applied	Medium	0.67	0.00	Railway station and car park
0	0	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Low	1	10.44	Areas of mixed scrub planting surrounding the proposed carpark creation area and large area of mixed scrub west of Ashton and Lea golf course which will replace the majority of the modified grassland there. Some areas of scrub are small and therefore will not likely meet the criteria for good condition (with open glades/a good age range) and therefore moderate has been chosen.
0	0	Standard time to target condition applied	15	0.586	Low	Standard difficulty applied	Low	1	1.94	Woodland habitat which is to be created comprise 'native trees and shrubs and native shrubs' in the landscape plans where tree planting comprises over 25% cover. There is a local plan for broadleaved woodland (Lancashire BAP) and some areas are within the network enhancement zone, therefore it is of high strategic significance. This is the larger area of woodland, which has the potential to meet moderate condition.
0	0	Standard time to target condition applied	5	0.837	Medium	Standard difficulty applied	Medium	0.67	0.46	Pond within wildlife enhancement zone has been moved, I have based these calculations on a loss of a pond and a creation of a pond. Ponds also include two new ponds being created south of the attenuation pond. Reedbed habitat will be created. I have recommended to the design team the addition of aquatic plant species from a controlled stock (to reduce the risk of invasives) and to create toad friendly habitat (pond-associated BAP species). Aquatic plant species are required to contribute towards a PSYM score, UK hab priority pond (r1a) and a high condition. Ponds are within Central Lancashire Biodiversity and Nature Conservation Supplementary Planning Document (SPD) & one pond is within the network enhancement zone, therefore it is of high strategic significance.
0	0	Standard time to target condition applied	1	0.965	Low	Standard difficulty applied	Low	1	0.10	Ornamental shrubs in car park.
0	0	Standard time to target condition applied	3	0.899	Low	Standard difficulty applied	Low	1	0.07	A sedum green roof on the northern pitch. Full details of the roof yet to be released by the station team architect. Likely to be a mix of native and non native species with no non native invasives (confirmation from design). This would classify as moderate condition.

0	0	Standard time to target condition applied	27	0.382	Low	Standard difficulty applied	Low	1	3.03	Trees comprise Acer campestre streetwise, Carpinus betulus Fastigiata and corylus colurina. For the purpose of this assessment, the native cultivars have been considered native due to them offering the same ecological value (i.e being more adapted to urban environments) as the non cultivar natives. They will be approximately 5-7 years old when planted and will be managed for 5 years.
0	0	Standard time to target condition applied	12	0.652	Medium	Standard difficulty applied	Medium	0.67	0.18	Reedbed creation areas within the attenuation pond and the two ponds being created south of the attenuation pond. Marsh and wet species mix with common reed being the dominant species will be planted here.There is a local plan for reedbed (Lancashire BAP) and some areas are within the network enhancement zone, therefore it is of high strategic significance.
0	0	Standard time to target condition applied	0	1.000	Low	Standard difficulty applied	Low	1	0.00	New road development.
0	0	Standard time to target condition applied	1	0.965	Low	Standard difficulty applied	Low	1	0.04	Native bulb planting areas on the roundabout.
0	0	Standard time to target condition applied	4	0.867	Low	Standard difficulty applied	Low	1	10.13	Two areas of g4 - Reinstatement of grassland used for compound areas An agricultural meadow mix will be used, however due to the species mix not being confirmed with the land owner and the regular grazing, it is likely the habitat will return to the same habitat (g4) prior to works. Since the area is being cleared for works and then reinstated and managed for 5 years, the grassland will pass criteria for scrub, bracken, bare ground and absense of sch 9 species. It would therefore classify as moderate condtition as a minimum.
0	0	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Low	1	9.04	Area of g3c - The area is within a Compound area and is to be reinstated as per previous habitat with higher condition (moderate) - agricultural meadow mix will be used.
0	0	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Low	1	11.72	Other areas of g3c include species rich coarse grassland, species rich grassland nutrient mix.
0	0	Standard time to target condition applied	4	0.867	Low	Standard difficulty applied	Low	1	1.56	Amenity grassland creation surrounding car park and managed areas including road verges. Species rich amenity grassland will be planted, however the grass will be maintained short and therefore sward diversity will lessen in the longterm so it will be modified grassland. The grassland will be a dense sward with no bare patches and free from noxious weed growth. Since sward height will not be varied and adjacent scrub may encroach on these areas overtime, the grassland has been classified as moderate condition.
0	0	Standard time to target condition applied	3	0.899	Low	Standard difficulty applied	Low	1	0.25	Attenuation pond falling within Magic - Network Enhancement Zone. Run off from the road would make it polluted, its part of the road drainage scheme so there will be pipework and the surrounding G4 grassland is to be reinstated, likely to return to previous habitat of low distinctiveness. Therefore this will be a non-priority pond which could aim to be in moderate condition.Ponds are within Central Lancashire Biodiversity and Nature Conservation Supplementary Planning Document (SPD) & area is within the network enhancement zone, therefore it is of high strategic significance.

0	0	Standard time to target condition applied	0	1.000	Low	Standard difficulty applied	Low	1	0.00	Areas of bare ground left to naturally regenerate. Habitats may form over time but since no management is envisaged for this area, I have added this as artificial unvegetated, unsealed surface.
0	0	Standard time to target condition applied	7	0.779	Low	Standard difficulty applied	Low	1	3.33	Woodland habitat which is to be created comprise 'native trees and shrubs and native shrubs' in the landscape plans where tree planting comprises over 25% cover. There is a local plan for broadleaved woodland (Lancashire BAP) and some areas are within the network enhancement zone, therefore it is of high strategic significance. These areas are the smaller polygons of woodland creation, they do have the potential to be on the lower side of moderate condition due to absence of native species, browsing, disease, open space, damaged ground and with the mix being 100% native. However, given the sizes, on a precautionary basis I have given these Fairly Poor condition.
										l
									=0.00	
								'l'otal Units	52.29	

Cottam	Parkway
--------	---------

# A-3 Site Habitat Enhancement

Condense / Show Columns

Main Menu

Condense / Show Rows Instructions

					Baseline habita	ts				
Baseline ref	Baseline habitat	Total habitat area (hectares)	Baseline distinctiveness band	Baseline distinctiveness score	Baseline condition category	Baseline condition score	Baseline strategic significance category	Baseline strategic significance score	Baseline habitat units	Suggested action to address habitat losses
2	Grassland - Other neutral grassland	3.97	Medium	4	Poor	1	Low Strategic Significance	1	15.88	Same broad habitat or a higher distinctiveness habitat required (≥)

								Post
		Change in distinctiv	reness and condition					
Propo	osed Habitat (Pre-populated but can be overridden)			Area		G	G IV	a
Proposed Broad Habitat	Proposed habitat	Distinctiveness change	Condition change	(hectares)	Distinctiveness	Score	Condition	Score
Toposed Broad Hashar		Distilicitycricits criange						
Grassland	Other neutral grassland	Medium - Medium	Poor - Good	0.171	Medium	4	Good	3

levelopment/ post intervention habitats	evelopment/ post intervention habitats											
Strategic significar	ıce				Tempora	l risk multiplier				Difficulty risk multip	bliers	
Strategic significance	Strategic significance	Strategic position multiplier	Standard time to target condition/years	Habitat enhanced in advance/years	Delay in starting habitat enhancement/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of enhancement	Applied difficulty multiplier	Final difficulty of enhancement	Difficulty multiplier applied
Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15	0	0	Standard time to target condition applied	15	0.586	Low	Standard difficulty applied	Low	1

Hobitot units	Con	nments
delivered	Assessor comments	Reviewer comments
1.49	Area of grassland relating to 'wildlife enhancement area'. Based on grassland creation to good condition within a habitat mosaic (area of scrub within the grassland is well defined and therefore will be a distinct habitat not relating to the condition of the grassland). Marsh and wet grassland species mix to be used. Lack of ditches surrounding the area would mean it does not qualify for CFGM.	

# B-1 Site Hedge Baseline

Condense / Show Columns Main Menu Condense / Show Rows Instructions

ī				Habitat			Faologiaal							
		UK Habitats - existing habitats		distinctiveness	condition	Strategic significance		baseline		Retention	n category b	iodiversity val	lue	
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Condition	Strategic significance	address habitat losses	Total hedgerow units	Lengt retaine	h Length ed enhanced	Units retained	Units enhanced	Length lost	Units lost
1		Line of Trees (Ecologically Valuable)	0.45	Medium	Good	Area/compensation not in local strategy/ no local strategy	Like for like or better	5.40	0.31	0	3.72	0.00	0.14	1.68
2		Native Hedgerow	0.77	Low	Moderate	Formally identified in local strategy	Same distinctiveness band or better	3.54	0.41	0	1.89	0.00	0.36	1.66
3		Native Species Rich Hedgerow	0.22	Medium	Moderate	Formally identified in local strategy	Like for like or better	2.02	0	0	0.00	0.00	0.22	2.02
4		Native Species Rich Hedgerow with trees	0.32	High	Moderate	Formally identified in local strategy	Like for like or better	4.42	0.07	0	0.97	0.00	0.25	3.45
5														
6														<u> </u>
8														
9														
			1.76					15.38	0.79	0.00	6.57	0.00	0.97	8.81

Com	ments
Assessor comments	Reviewer comments
Mature trees with continuous canopy Definition: a 'mature tree' in this context is one that is at least 1/3 expected fully mature height gaps make up <10% of total length and there are no canopy gaps >5m. Overall feature meets most of the qualifying condition criteria. Listed as ecologically valuable due to ages and diversity of the linear feature. Area is not within any local biodiversity network strategy or NE enhancement areas.	
Species poor hedgerows following Sidgegreaves Lane and Lea road. Nutrient enriched perennial vegetation and heavily managed hedgerows within the scheme footprint. No more than 4 failures in total and fails both attributes in a maximum of one functional group e.g. fails attribute 1 & 2, 5 & 7 = Moderate condition. Within NE enhancement area.	
Species rich hedgerows following Sidgegreaves Lane. Nutrient enriched perennial vegetation and heavily managed hedgerows within the scheme footprint. No more than 4 failures in total and fails both attributes in a maximum of one functional group e.g. fails attribute 1 & 2, 5 &7 = Moderate condition. Within NE enhancement area.	
Species rich hedgerows with trees following Sidgegreaves Lane. Nutrient enriched perennial vegetation and heavily managed hedgerows within the scheme footprint. No more than 4 failures in total and fails both attributes in a maximum of one functional group e.g. fails attribute 1 & 2, 5 & 7 = Moderate condition. Within NE enhancement area.	

B-2 Site Hedge Creation	
-------------------------	--

Condense / Show Columns

Main Menu

Condense / Show Rows Instructions

		Proposed habitats		Habitat distinc	Habitat condition		Strategic signific					
Baseline ref	New hedge number	Habitat type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard Time to target condition/years	Habitat created in advance/years
1		Native Species Rich Hedgerow	0.55	Medium	4	Good	3	Formally identified in local strategy	High strategic significance	1.15	12	0
2		Native Species Rich Hedgerow with trees	0.82	High	6	Good	3	Formally identified in local strategy	High strategic significance	1.15	20	0
3												
4												
5												
6												
7												
			1.37									

Ten	nporal multiplier			Difficulty risk m	ultipliers		Hedge units	Comments			
Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of creation	Applied difficullty multiplier	Final difficulty of creation	Difficulty multiplier applied	delivered	Assessor comments	Reviewer comments	
0	Standard time to target condition applied	12	0.652	Low	Standard difficulty applied	Low	1	4.95	Hedgerow creation areas based on species rich hedgerow across the scheme.		
0	Standard time to target condition applied	20	0.490	Low	Standard difficulty applied	Low	1	8.32	Hedgerow creation areas based on species rich hedgerow with trees across the scheme.		
								13.27			



# Appendix C. Environmental Masterplan



k	Key									
		Lancaster Canal								
	$\bigotimes \bigotimes$	Existing vegetation (trees and shrubs subject to topographical survey)								
		Root protection area		Indicative location of proposed residential						
		Site boundary	development at Lea Road							
		Boundary of Preston Western Distributor Road (PWDR) scheme								
		Bitmac surfacing Acce (pern			ess to meable	canal to e surfac	owpath ce)			
Ρ	roposed	I								
2		Tree and vegetation removal	$\square$	LE6	.1a Po	nd				
		Hedge removal		LE6	LE6.1b Attenuation pond					
		LE1.2 Grassland with bulbs		LE7 fenc	.0 Close boarded timber ce (2m high)					
		LE1.3a Native 'amenity' grassland	LE8 and	8 Land to be reinstated d returned to agriculture						
		LE1.3b Coarse wildflower E3.2.1 Bat 'h grassland					'hop over' tree			
		LE2.4 Native trees and E3 shrubs				.2.2 Bat 'hop over' shrubs				
	LE2.6a Native shrubs			E3.2.3 Natural habitat regeneration						
		LE4.3 Native hedgerow				.2.5 Hibernacula (for otiles and amphibians)				
	LE5.1a Native individual									
		tree								
L	E6.4 Ma	rsh and wet grassland areas	to be co	nfirm	ed at d	letailed	desigr	۱.		
P04	15.08.22	Minor update to Landownershi	p insert plan	1	JP	RL	RL	PH		
P03	05.08.22	Final issue			AR	DB	DB	PH		
P02	06.07.22	Final Draft			AR	DB	DB	PH		
P01	11.10.21	Draft for consultation			AR	DB	DB	PH		
Rev.	Date	Purpose of revision			Drawn	Check`d	Rev`d	Appr`o		



Client

Lancashire County Council 

Project

Cottam Parkway Railway Station

Drawing Title

# Environmental Masterplan Sheet 1 of 2

	Drawing Status	FINAL					
	Scale @ A1	1:1000 DO NOT SCALE					
H	Jacobs No.	B2327FEF					
	Client No.	5932					
	Drawing No.	B2327FEF-JAC-ELS-00-DR-ENV-0010					
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	Кеу									
	$\bigotimes \otimes$	Exi to 1	sting vegetation (trees ar	nd shrubs	s subjec	ct				
		Ro	ot protection area		Public	Right	of Way	(PRo\	N)	
		Site	e boundary		Indica reside Road	tive loo ntial d	cation o evelopn	f propo nent at	osed t Lea	
				$\checkmark$	Indica pedes propos	tive loo trian a sed res	cation o ccess fi sidentia	f rom Il		
	Drenead					development at Lea Road				
		Tre ren	e and vegetation		Propo (divert	sed Pl ed)	PRoW FP44			
/ wet and		He	dge removal		Existing section of PRoW FP44 stopped up					
ion		LE <sup>-</sup> bul	1.2 Grassland with bs		Secondary Means of Es			of Esca	ipe	
		LE gra	1.3a Native 'amenity' Issland		Grass (LE1.3	crete a 3b)	access 1	track		
		LE wile	1.3b Coarse       +       E3.2.1         Idflower grassland       +       E3.2.1         1.3c Species rich       E3.2.2         assland (nutrient rich soil)       E3.2.2         2.4 Native trees and       E3.2.3         rubs       E3.2.4			E3.2.1 Bat 'hop over' tree				
		LE				2 Bat 'h	op ove	r' shrul	bs	
oxes and xact		LE:				.3 Natural habitat				
ed with esign.		shr				F3 2 4 Hedgebog bourse (2pg.)				
ap up			2.8 Scrub		E3.2.5	5 Hiber	nacula	(for re	ptiles	
edgerow.			2.0 Octub	<b>^</b>	and and E3.2.6	mphibi 3 Wildli	ans) fe enha	anceme	ent	
-		LE,	3.2 Ornamental shrubs		area			,		
		per	rennials		E3.2.7	′ Bat b	ox (12n	10.)		
			4.3 Native hedgerow			E3.2.8 Bird box (6no.)				
	LE5.1a Native individual tree LE7.0 Close boarded fence (2m high)						ed timb	er		
$\sim$	<b>o</b>	LE	E5.1b Ornamental tree LE8 L return				be rein Igricultu	stated ire	and	
	LE6.1 Pond									
Leyland Bri Farm	LE6.4 M	arsh	and wet grassland areas	s to be co	onfirme	d at de	tailed d	lesign.		
ad	P03 05.08	.22	Final issue			AR	DB	DB	РН	
	P02 06.07	.22 .21	Final draft	ation		AR AR	DB DB	DB DB	PH PH	
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