DEFRA METRIC METHODOLOGY

LAND OFF OXFORD ROAD, BIDCOTE

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REPORT PREPARED FOR: HOLLINS STRATEGIC LAND

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1. INTRODUCTION

1.1 Introduction

Resource and Environmental Consultants Ltd (REC) has been commissioned by Footprint to undertake a Defra Metric Methodology on a site proposed for development located at Land off Oxford Road, Bidcote OX16 9HA; hereafter referred to as the 'site'. The development includes the residential development of 46 dwellings.

This is a modification of the original plans for 52 residential dwellings, and now includes greater provision of open green space. For the current illustrative layout, please refer to **Appendix 1.**

1.2 Objectives

The purpose of the Defra Metric is to:

- Value the ecological baseline habitats;
- Identify and value the habitats which are to be lost, recreated, maintained or new habitats to be created to replace those that have been lost;
- Identify the overall value of the site post development;
- Distinguish the overall net gain or net loss of biodiversity of the site; and,
- Set out enhancements which would provide an overall net gain or to further increase the net gain the proposed development will already produce.

1.3 Site Description

The site was originally surveyed and was mapped as improved grassland as documented in the Extended Phase One Habitat survey report undertaken by REC (Report Ref: 103869EC1R0 – Extended Phase 1 Habitat Survey, April 2018) (**Figure 1.1** shows the Phase 1 habitat map, **Figure 1.2** shows the approximate site location), with a series of hedgerows surrounding, scattered trees within the improved grassland and a number of buildings in the south west corner surrounded by bare ground. There was a pocket of improved grassland in the north-western corner of the site. Some successional grasses and plants were growing on the periphery of the site around the field margins.

The adjacent land was predominantly residential with a field used for the training of horses. There were also some semi-improved fields to the east and south. A small area of semi natural woodland was located adjacent to the site to the north western corner.

Figure 1.1: Site Phase 1 Habitat Map

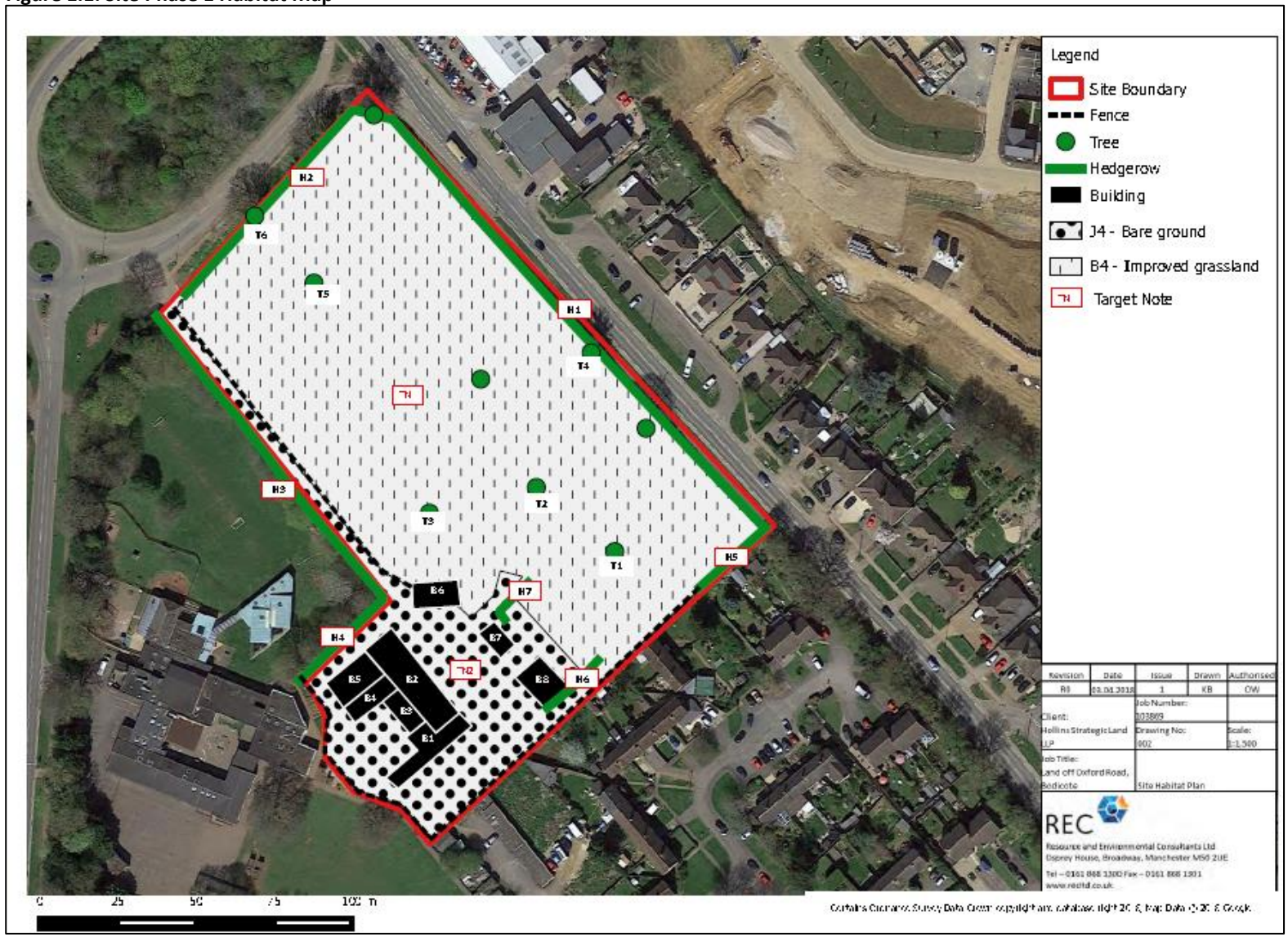


Figure 1.2: Site Location Plan

2. ECOLOGICAL FEATURES OF INTEREST

2.1 Previous Studies

In March 2018 the ecology of the site was assessed by REC during the Phase 1 Habitat Assessment. Furthermore, a condition assessment was undertaken to assess the features on site which will be impacted by the development and within the footprint of the site. The majority of the site was occupied by improved grassland with the surrounding vegetation consisting of a species poor intact hedgerow with scattered trees (Oak (*Quercus robur)* and Horse Chestnut (*Aesculus hippocastanum)*) and a single mature hawthorn (*Crataegus monogyna)* in the centre of the improved grassland. To the south east of the site five buildings were noted surrounded by bare ground.

2.2 Condition Assessment

As per the Farm and Environmental Plan guidance (2010) the habitat features on site which provide biodiversity were conditioned assessed. This involves assessing the habitats and using a series of criteria, varying from 3 to 6 criteria, see Farm and Environmental Plan guidance (2010) for extensive details. For a habitat to be considered as in 'excellent condition' it must meet all criteria listed for its type, 'moderate condition' habitats can fail one criterion, and those which fail two or more criteria are classed as in 'poor condition'. There are several habitat types which do not have a condition assessment due to its habitat type; these habitats are assessed through a default condition assessment which isn't specific to that habitat type but allows for an accurate condition assessment to be undertaken.

3. RESULTS

3.1 Condition Assessment

Figure 3.1 below illustrates the location of each habitat type assessed.

Figure 3.1: Habitat Location Plan

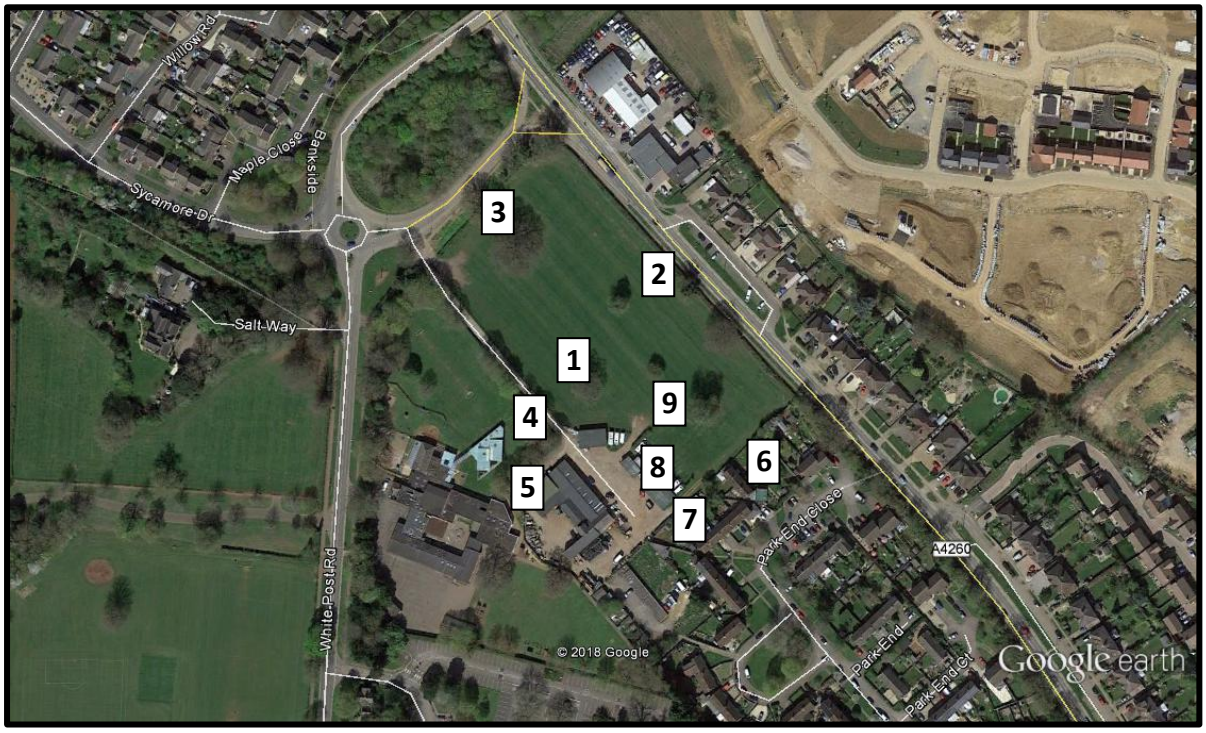


Table 1: Improved Grassland – No condition assessment – Use default assessment.

Criterion	Commonly used habitat condition assessment criteria in the FEP	Pass / Fail	Comments
1	A diverse age range	Fail	Improved Grassland field with signs of management and use for occasional storage.
2	A diverse species mix	Fail	
3	Diverse structural variety / diverse form	Fail	
4	Presence of protected species	Fail	
5	None or a limited presence of invasive species	Pass	
6	No or limited damage for example by machinery	Fail	
Overall Condition	**Poor**		

Table 2: Hedgerow with Trees - High Environmental Value Field Boundaries: Hedgerows (F02)

Criterion	Commonly used habitat condition assessment criteria in the FEP	Pass / Fail	Comments
1	Height: The hedgerow must meet a minimum threshold of 2m in height. Assess the height of the woody component of the hedgerow from the base of the stems to the top of the shoots of the woody species. This should be assessed along the whole length of the hedgerow and the most common height used. Gaps are not included, nor are hedgerow trees. Where a bank is present, the height of the bank must be excluded.	Fail	Currently approaching 2m but signs it is managed annually so will be below 2m.
2	Width: The hedgerow must meet a minimum threshold of 1.5 m in width. Assess the width of the woody component between the shoot tips at the widest point. This should be assessed along the whole length of the hedgerow and the most common width used. Gaps are not included	Fail	Currently below 1.5m width
3	Gappiness: Assess the horizontal gappiness of the woody component. Gaps are complete breaks in the woody canopy of the hedgerow (see Figure 3.2). No more than 10% of the hedgerow length should be occupied by gaps and no one gap should be greater than 5 m wide (this excludes access points and gates). Where dormice or target species of bat are present in the hedgerow there must be no gaps.	Fail	Gaps evident along the length equating to more than 10%
Overall Condition	**Poor**		

Table 3: Hedgerow with Trees - High Environmental Value Field Boundaries: Hedgerows (F02)

Criterion	Commonly used habitat condition assessment criteria in the FEP	Pass / Fail	Comments
1	Height: The hedgerow must meet a minimum threshold of 2m in height. Assess the height of the woody component of the hedgerow from the base of the stems to the top of the shoots of the woody species. This should be assessed along the whole length of the hedgerow and the most common height used. Gaps are not included, nor are hedgerow trees. Where a bank is present, the height of the bank must be excluded.	Fail	Under 2m tall.
2	Width: The hedgerow must meet a minimum threshold of 1.5 m in width. Assess the width of the woody component between the shoot tips at the widest point. This should be assessed along the whole length of the hedgerow and the most common width used. Gaps are not included	Fail	Currently below 1.5m width
3	Gappiness: Assess the horizontal gappiness of the woody component. Gaps are complete breaks in the woody canopy of the hedgerow (see Figure 3.2). No more than 10% of the hedgerow length should be occupied by gaps and no one gap should be greater than 5m wide (this excludes access points and gates). Where dormice or target species of bat are present in the hedgerow there must be no gaps.	Fail	Some gaps evident along the length
Overall Condition	**Poor**		

Table 4: Hedgerow with Trees - High Environmental Value Field Boundaries: Hedgerows (F02)

Criterion	Commonly used habitat condition assessment criteria in the FEP	Pass / Fail	Comments
1	Height: The hedgerow must meet a minimum threshold of 2m in height. Assess the height of the woody component of the hedgerow from the base of the stems to the top of the shoots of the woody species. This should be assessed along the whole length of the hedgerow and the most common height used. Gaps are not included, nor are hedgerow trees. Where a bank is present, the height of the bank must be excluded.	Fail	Under 2m tall.
2	Width: The hedgerow must meet a minimum threshold of 1.5 m in width. Assess the width of the woody component between the shoot tips at the widest point. This should be assessed along the whole length of the hedgerow and the most common width used. Gaps are not included	Fail	Currently below 1.5m width
3	Gappiness: Assess the horizontal gappiness of the woody component. Gaps are complete breaks in the woody canopy of the hedgerow (see Figure 3.2). No more than 10% of the hedgerow length should be occupied by gaps and no one gap should be greater than 5 m wide (this excludes access points and gates). Where dormice or target species of bat are present in the hedgerow there must be no gaps.	Fail	Gaps evident along the length
Overall Condition	**Poor**		

Table 5: Hedgerow with Trees - High Environmental Value Field Boundaries: Hedgerows (F02)

Criterion	Commonly used habitat condition assessment criteria in the FEP	Pass / Fail	Comments
1	Height: The hedgerow must meet a minimum threshold of 2m in height. Assess the height of the woody component of the hedgerow from the base of the stems to the top of the shoots of the woody species. This should be assessed along the whole length of the hedgerow and the most common height used. Gaps are not included, nor are hedgerow trees. Where a bank is present, the height of the bank must be excluded.	Fail	Under 2m tall.
2	Width: The hedgerow must meet a minimum threshold of 1.5 m in width. Assess the width of the woody component between the shoot tips at the widest point. This should be assessed along the whole length of the hedgerow and the most common width used. Gaps are not included	Fail	Currently below 1.5m width
3	Gappiness: Assess the horizontal gappiness of the woody component. Gaps are complete breaks in the woody canopy of the hedgerow (see Figure 3.2). No more than 10% of the hedgerow length should be occupied by gaps and no one gap should be greater than 5 m wide (this excludes access points and gates). Where dormice or target species of bat are present in the hedgerow there must be no gaps.	Fail	Gaps evident along the length
Overall Condition	**Poor**		

Table 6: Hedgerow with Trees - High Environmental Value Field Boundaries: Hedgerows (F02)

Criterion	Commonly used habitat condition assessment criteria in the FEP	Pass / Fail	Comments
1	Height: The hedgerow must meet a minimum threshold of 2m in height. Assess the height of the woody component of the hedgerow from the base of the stems to the top of the shoots of the woody species. This should be assessed along the whole length of the hedgerow and the most common height used. Gaps are not included, nor are hedgerow trees. Where a bank is present, the height of the bank must be excluded.	Pass	Hedgerow over 3metres tall
2	Width: The hedgerow must meet a minimum threshold of 1.5 m in width. Assess the width of the woody component between the shoot tips at the widest point. This should be assessed along the whole length of the hedgerow and the most common width used. Gaps are not included	Fail	Currently below 1.5m width
3	Gappiness: Assess the horizontal gappiness of the woody component. Gaps are complete breaks in the woody canopy of the hedgerow (see Figure 3.2). No more than 10% of the hedgerow length should be occupied by gaps and no one gap should be greater than 5 m wide (this excludes access points and gates). Where dormice or target species of bat are present in the hedgerow there must be no gaps.	Fail	Gaps evident along the length, defunct.
Overall Condition	**Poor**		

Table 7: Hedgerow with Trees - High Environmental Value Field Boundaries: Hedgerows (F02)

Criterion	Commonly used habitat condition assessment criteria in the FEP	Pass / Fail	Comments
1	Height: The hedgerow must meet a minimum threshold of 2m in height. Assess the height of the woody component of the hedgerow from the base of the stems to the top of the shoots of the woody species. This should be assessed along the whole length of the hedgerow and the most common height used. Gaps are not included, nor are hedgerow trees. Where a bank is present, the height of the bank must be excluded.	Fail	Under 2m tall.
2	Width: The hedgerow must meet a minimum threshold of 1.5 m in width. Assess the width of the woody component between the shoot tips at the widest point. This should be assessed along the whole length of the hedgerow and the most common width used. Gaps are not included	Fail	Currently below 1.5m width
3	Gappiness: Assess the horizontal gappiness of the woody component. Gaps are complete breaks in the woody canopy of the hedgerow (see Figure 3.2). No more than 10% of the hedgerow length should be occupied by gaps and no one gap should be greater than 5 m wide (this excludes access points and gates). Where dormice or target species of bat are present in the hedgerow there must be no gaps.	Fail	Gaps evident along the length
Overall Condition	**Poor**		

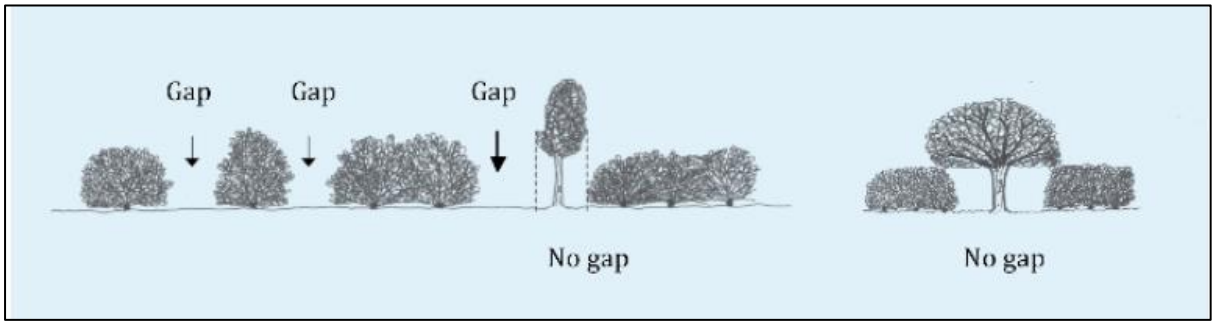
Table 8: Hedgerow with Trees - High Environmental Value Field Boundaries: Hedgerows (F02)

Criterion	Commonly used habitat condition assessment criteria in the FEP	Pass / Fail	Comments
1	Height: The hedgerow must meet a minimum threshold of 2m in height. Assess the height of the woody component of the hedgerow from the base of the stems to the top of the shoots of the woody species. This should be assessed along the whole length of the hedgerow and the most common height used. Gaps are not included, nor are hedgerow trees. Where a bank is present, the height of the bank must be excluded.	Fail	Under 2m tall.
2	Width: The hedgerow must meet a minimum threshold of 1.5 m in width. Assess the width of the woody component between the shoot tips at the widest point. This should be assessed along the whole length of the hedgerow and the most common width used. Gaps are not included	Fail	Currently below 1.5m width
3	Gappiness: Assess the horizontal gappiness of the woody component. Gaps are complete breaks in the woody canopy of the hedgerow (see Figure 3.2). No more than 10% of the hedgerow length should be occupied by gaps and no one gap should be greater than 5 m wide (this excludes access points and gates). Where dormice or target species of bat are present in the hedgerow there must be no gaps.	Fail	Gaps evident along the length
Overall Condition	**Poor**		

Table 9: Scattered trees - Wood Pasture and parkland – BAP habitat (T03) (T08)

Criterion	Commonly used habitat condition assessment criteria in the FEP	Pass / Fail	Comments
1	Trees should have a wide age range. There should be some young trees and Saplings.	Fail	Mature Oaks and a single mature Horse Chestnut only.
2	The balance between the trees, scrub and grassland should be typical of wood pasture in the local area.	Fail	Mature trees within an improved grassland field.
3	There should be minimal bare earth and no evidence of poaching by livestock.	Fail	Improved grassland, minimal bare ground but no diversity in ground flora, any poaching or use would deem it bare or of low value.
Overall Condition	**Poor**		

Figure 3.2 – Hedgerow Gap illustration



4. DEFRA METRIC RESULTS

4.1 Introduction

Following the condition assessment of the on-site habitats, a Defra metric was undertaken to value the current habitats on site. This was measured against the proposed plans and the proposals for the maintenance, re-creation, or creation of habitats on the site. The information below has been calculated utilising a Biodiversity Impact Calculator designed by DEFRA. The calculator used has been provided along with this report.

The values below are calculated off an indicative layout plan, if this plan is to substantially change, the figures would require re-calculation.

4.2 Current Biodiversity Value

In total, 1.91 ha of land is to be developed. Following the methodology set out by Defra, the current value of the site in biodiversity units is **4.22**. The development will result in the loss of low value improved grassland, however will retain the bordering hedgerows and any hedgerows that require removal to accommodate the proposals will be reinstated to a higher condition than those currently on site. All existing mature trees will be retained and protected throughout as they hold sufficient ecological value within the site. It is anticipated that 1.4 ha of land will be permanently lost to the development in the form of buildings and hardstanding and a further 0.3 lost to amenity gardens, resulting in an overall loss of **0.10** biodiversity units.

Currently, the majority of the site is improved grassland with low distinctiveness (2ha).

4.3 Habitat Re-creation

It is currently anticipated that 0.2ha of species rich grassland will be recreated; in the form of a grassland and bordering the lengths of hedgerows being retained and untouched during the development. This will create a species rich linear habitat bordering the development. This will be to a substantially higher value than the current value through being recreated as species rich grassland with a diverse structure. A further 0.34ha of amenity grassland will be recreated in the place of the lost improved grassland, the amenity grassland will take the form of residential gardens and a local area for play (LAP). A Sustainable Urban Drainage System (SUDS) will be re-created within the place of the lost improved grassland, it is anticipated to be 0.3ha in size. The creation of these habitats would generate 4.13 biodiversity units.

The Sustainable Urban Drainage System (SUDS) feature will primarily be utilised for urban drainage, however will have the added advantage of providing standing water which is beneficial for a wide range of wildlife. The SUDS feature will incorporate ecological features such as native planting and adjacent hibernaculas (for amphibians and invertebrates).

4.4 Habitat Creation

No habits are anticipated to be created on land protected during the development.

4.5 Habitat Restoration (Non-linear features)

It is currently anticipated that the trees found within the site will be protected during the development and will be maintained post development to restore them to a good condition, this will involve the protection of the trees post development and the vegetation in the immediate vicinity of the tree (approximately 2m), to grow naturally. The allowance of the trees to be managed, and condition improved, would generate a biodiversity gain of 0.57 units.

4.6 Linear Features

The site currently contains 450m of hedgerows bordering the site. The development will retain 450m of hedgerow in its current condition. It is anticipated that a slight loss in linear features (approximately 10 metres) may occur to accommodate an access route, however these hedgerows are currently in a poor condition as per the FEP guidelines. With the implementation of appropriate management and restoration, the condition of the hedgerows can be improved which would offset this loss and most likely result in a net gain of biodiversity value of linear features.

For a location of the hedgerows, please refer to **Appendix 2.**

4.7 Overall Site Value post development

Post development, the current proposal will result in a **net gain** of **1.18** biodiversity units.

5. CONCLUSION AND RECOMMENDATIONS

After an extensive analysis of the site for its biodiversity value at a base level, it is anticipated that the development will provide a **net gain** of **1.18** biodiversity units.

Due to the low quality of habitat currently existing on the site, there are opportunities to enhance the site alongside the proposed development to increase the biodiversity value. The net gains in biodiversity were achieved through the provision of amenity grassland, species rich grassland, SUDS pond, and the restoration of the existing trees and hedgerows.

The new proposed layout has an increased amount of open space to provide further ecological improvements**.** In addition, the development will also incorporate a variety of bat and bird nesting boxes, as well as improving the existing hedgerows, which will provide further net gains not considered within the Defra metric. The Defra metric is a used as a guide to quantify potential net gains in ecology, and is not a replacement for professional judgement. It is therefore regarded that taking into consideration the above points, the ample open space around the development, and our own professional judgement, that the proposed development can achieve a meaningful net gain.

6. APPENDIX

6.1 Appendix 1 – Illustrative layout

6.2 Appendix 2 – Hedgerow Measurements