



## DEFRA METRIC METHODOLOGY

LAND OFF OXFORD ROAD, BIDCOTE

REC REFERENCE: 103901EC3R0




REPORT PREPARED FOR: HOLLINS STRATEGIC LAND

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## 1. INTRODUCTION

### 1.1 Introduction

Resource and Environmental Consultants Ltd (REC) have 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'. It is understood that a number of residential housing units are proposed to be developed on the site.

### 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

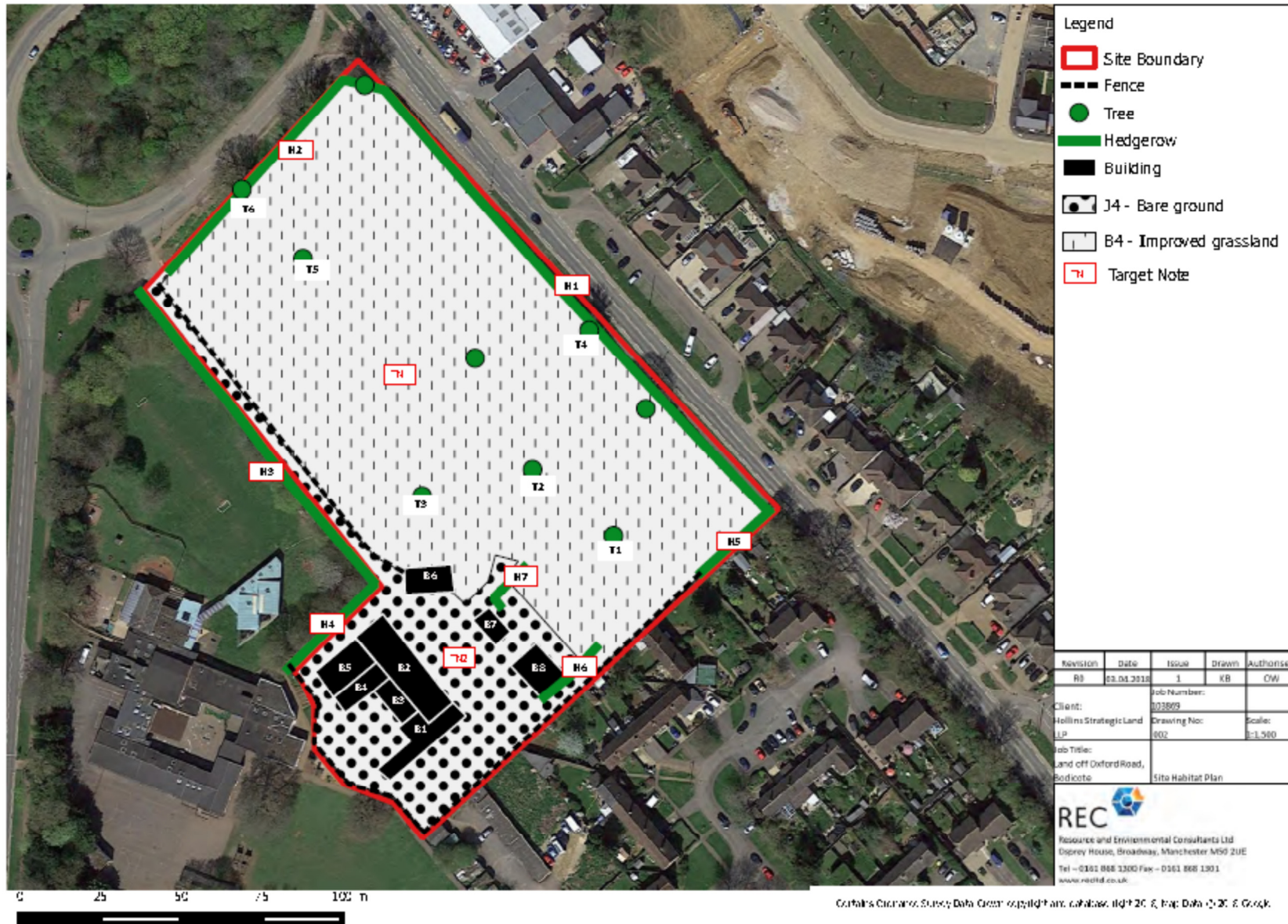
The site was originally surveyed and was mapped as improved grassland as documented in the Extended Phase One Habitat survey report undertaken by REC in 2018 (Report Ref: 103869EC1R0 – Extended Phase 1 Habitat Survey) (**Figure 1.1** shows the Phase 1 habitat map, **Figure 1.2** shows the approximate 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 is a pocket of improved grassland in the north-western corner of the site. Some successional grasses and plants are growing on the periphery of the site around the field margins.

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





Figure 1.1: Site Phase 1 Habitat Map





## 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

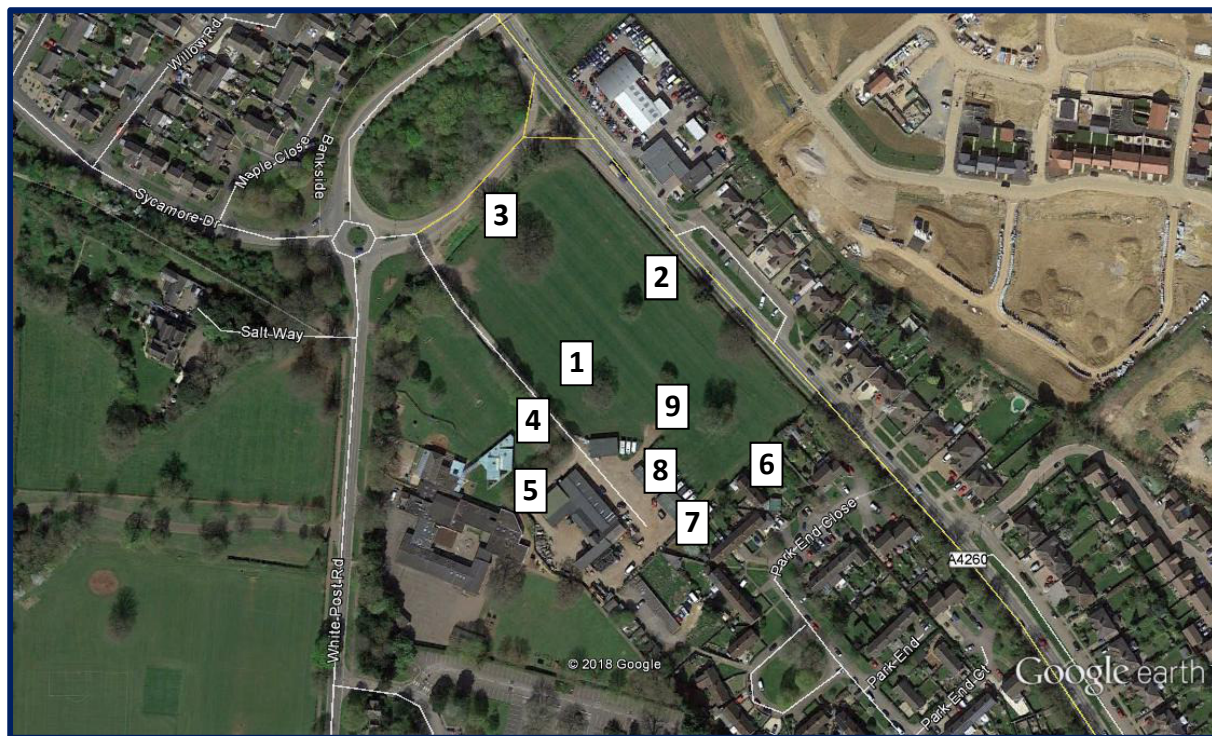


Table 1: Improved Grassland – No condition assessment – Use default assessment.

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	<b>Poor</b>		





**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		<b>Poor</b>	

**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	Fail	Currently below 1.5m width



	whole length of the hedgerow and the most common width used. Gaps are not included		
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	<b>Poor</b>		

**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	<b>Poor</b>		





**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	<b>Poor</b>		

**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	Fail	Currently below 1.5m width





	whole length of the hedgerow and the most common width used. Gaps are not included		
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	<b>Poor</b>		

**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	<b>Poor</b>		





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

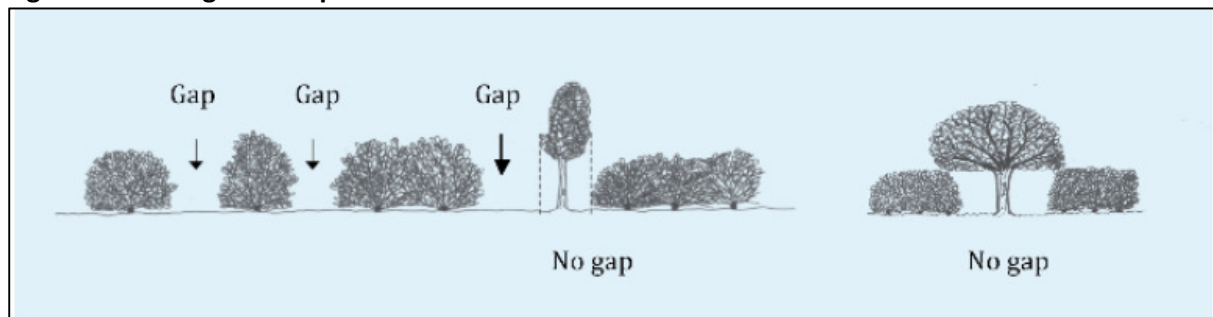
Criterion	Commonly used habitat condition assessment criteria in the FEP	Pass / Fail	Comments
1	Height: The hedgerow must meet a minimum threshold of 2m in height. Assess the height of the woody component of the hedgerow from the base of the stems to the top of the shoots of the woody species. This should 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	<b>Poor</b>		

**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	<b>Poor</b>		



**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 1.57 ha of land will be permanently lost to the development, resulting in an overall loss of **1.17** 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 0.13ha of grassland will be recreated; 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 0.3ha 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 0.1ha in size. The creation of these habitats would generate 3.05 biodiversity units.

### **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 0.17 units.

#### **4.6 Linear Features**

The site currently contains 550m of hedgerows bordering the site. The development will retain 550m of hedgerow in its current condition. There is a possibility that if an additional access route was needed to be made, this would result in the net loss corresponding to the amount of hedgerow required to be removed. It is anticipated that a loss of 10m of hedgerow may be required to accommodate proposals.

#### **4.7 Overall Site Value post development**

Post development, the current proposal will result in a **net loss** of **0.20** 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 overall value of the site will decrease if the proposed plans are implemented.

Due to the low quality of habitat currently existing on the site, there are opportunities to enhance the site alongside the proposed development to further increase the biodiversity value.

There is a suitable amount of amenity gardens proposed with amenity grassland and species rich grassland to be positioned across the proposed development, along with a drainage system which will have similar characteristics as a pond.

The overall net loss is calculated with the absence of any further enhancements for the site; the inclusion of suitable enhancements and mitigation would increase the overall gain in site biodiversity value.

It is anticipated that a slight loss in linear features (approximately 10 metres) may occur, 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. This condition improvement through correct management procedures, when positioned across the 550m of current hedgerow length is anticipated to provide a gain of biodiversity credits in excess of the current net loss of 0.20.

It is currently proposed that bat and bird boxes are to be positioned in suitable locations across the site with the retention of a barn owl box to the north of the site. The planting of native floral species on the edges of the development, the planting of suitable native species in the understorey of the hedgerows, and the retention of existing linear features will further increase the site suitability for bird assemblages and insect assemblages.

It is a recommendation that a hibernacula is positioned next to the SUDS and hedgerow on the northern boundary of the site to provide hibernation and cover features for reptiles and amphibians, further increasing the sites biodiversity value.

The current proposals to include further ecological enhancements on site would further enforce that the development will create a further gain in biodiversity metric units.

Overall the current proposals are currently showing a net loss according to the DEFRA metrics, however it is anticipated that a net gain in biodiversity value at a local site level will be acquired due to the current condition of the hedgerows on site, and the implementation of ecological enhancements. If these proposals are combined with other local developments there is an opportunity to increase biodiversity value at a wider level through either offsite habitat creation in the local area where suitable, or the joining up of on-site habitats to provide wider benefits for the local area.



