DEFRA METRIC METHODOLOGY

LAND OFF OXFORD ROAD, BIDCOTE

REC REFERENCE: 103901EC3R0

REPORT PREPARED FOR: HOLLINS STRATEGIC LAND

DATE: AUGUST 2018

National Consultancy, Locally Delivered

A CONCEPT LIFE SCIENCES COMPANY

Issue/revision	Issue 1	Revision 1	Revision 2	Revision 3
Remarks	Draft			
Date	16/08/2018			
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Project number	103869EC3			

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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:

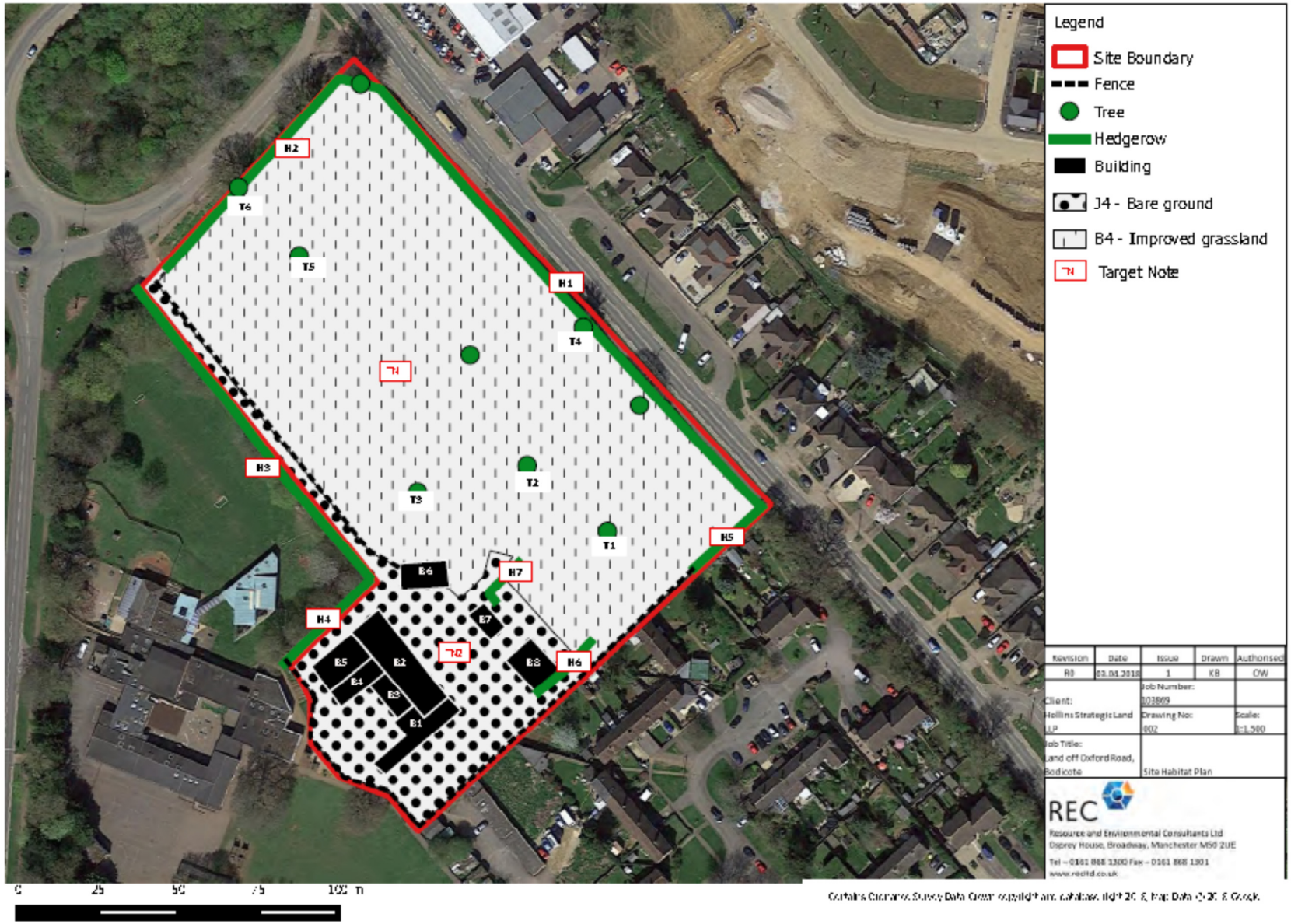
- Value the ecological baseline habitats;
- Identify and value the habitats which are to be lost, recreated, maintained or new habitats to be created to replace those that have been lost;
- Identify the overall value of the site post development;
- Distinguish the overall net gain or net loss of biodiversity 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

Revision	Date	Issue	Drawn	Authorised
00	09.08.2018	1	KB	DW

Job Number: 103869
Client: Hollins Strategic Land LLP
Drawing No: 001
Scale: N/A
Job Title: Land off Oxford Road, Bodicote
Site Location Plan

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Resource and Environmental Consultants Ltd
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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 criterions, 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 criterion 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

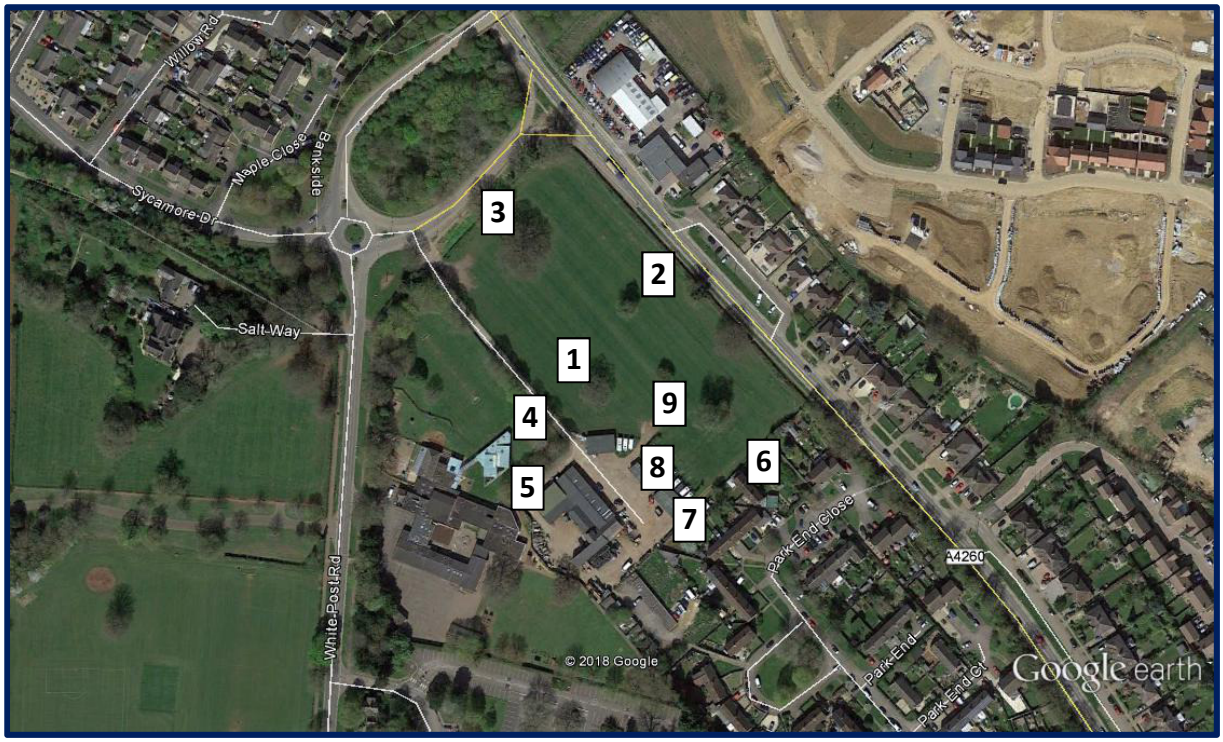


Table 1: Improved Grassland – No condition assessment – Use default assessment.

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	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	**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	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	**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**		

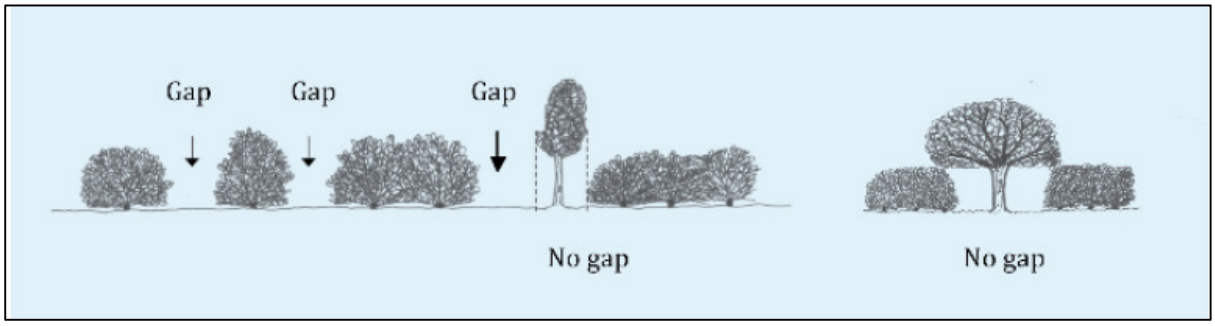
Table 8: Hedgerow with Trees - High Environmental Value Field Boundaries: Hedgerows (F02)

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 1.57 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.

Biodiversity Impact Calculator

Quick reference instruction
Habitat calculator - Linear calculator - Useful hints

For Local Planning Authority use only.

Please do not edit the formulae or structure of the calculator.
Please contact Environment Bank if you require additional rows or have feedback.

For a full guide on how to complete the calculator please see accompanying guidance document.

Habitat calculator

1. Enter all habitats found within the development red line boundary into the top section of the Biodiversity Impact Calculator - Linear features e.g. hedges to be entered on into the Linear Calculator.

2. For each habitat, enter area (hectares to 2d.p.), and existing condition (see accompanying guidance document) and complete relevant columns depending on whether the area of habitat will be retained, restored or lost with new habitat creation. As follows:

a. Area of existing habitat to be retained and maintained in current condition - enter under D.
No further entry required.
E.g. Area of existing scrub at development edge. To be retained and protected from damage during development works and to be managed in current condition thereafter.

b. Area of existing habitat to be retained and restored - enter under F.
Enter target habitat details into section 3. - Existing biodiversity units of area to be entered under V.
E.g. Existing species poor grassland to be retained and protected from damage during development works and to be subsequently enhanced with appropriate longterm management to restore to species rich grassland.

c. Area of existing habitat to be retained during development works with new habitat creation - enter under H.
Enter target habitat details into section 2. - Existing biodiversity units of area to be entered under V.
e.g. Existing improved grassland to be be protected from damage during development works and to be sensitively planted with new native woodland and managed thereafter.

d. Area of habitat to be lost to development works - enter under J.
Enter new habitat to be creation into section 1
E.g. Arable or grassland which can not be protected from damage from development works. Habitats to be recreated could include built environment, amenity area and new biodiversity compensation habitats.

3. If new habitat is to be restored/created as per 2.b/c above - It must be of equal or higher distinctiveness and condition compared with the existing habitat. If this is not the case the habitat should be entered in section 1 (as habitat loss and new habitat creation) as per 2.d.

4. Indirect negative impacts are when the construction works, or resultant development will cause a negative impact to a habitat, but not habitat loss - usually but not always adjacent to the site. - Measures may be able to be taken to avoid or mitigate these impacts.
E.G. construction pollution into an adjacent watercourse / future permanent light spillage into an adjacent woodland / increase public pressures to adjacent nature reserve.

6. Any land outside the development red line (i.e. adjacent blue line land ownership) may also be entered into the calculator as part of the onsite compensation package.

7. Any off-site land should not be entered here and must be assessed separately as part of a biodiversity offset proposal, as strategic location factors may apply - Environment Bank can assist with these calculations.

Linear calculator

1. The linear calculator accounts for linear features, such as the loss of hedges.

2. These features are assessed using length (m) and condition and must be compensated/offset by the creation of new hedges or other appropriate linear feature.

3. Linear features are particularly valuable with regard to connectivity. Their biodiversity net loss/gain is not able to compensate for net loss/gain of other habitats.

Useful hints

1. Utilise the comments column to provide reasoning for condition assessments and any amendments you have made to distinctiveness or risk factors.

2. When selecting 'other' habitats, enter the habitat type in the comments box - appropriate risk factors will also need to be entered. Provide reasoning for all.

3. Remember to carry-down and manually enter 'existing' biodiversity units in the lower boxes, of the retained areas of land where habitats are to be created or restored - sections 2-3.

4. The total area of habitat (ha) for each option above must equal the total ha of habitats in the appropriate following section.- E.G. The total area of habitat loss 'J' must equal the total area of habitat recreation 'Q1'

5. Low distinctiveness habitats should be entered as poor condition as standard or reasoning should be provided otherwise. They should only be recorded as in a good condition when strong evidence is presented.

6. Proposed gardens should be entered as low distinctiveness, poor condition.

7. Due to feasibility of creation and management of good quality habitat within the restraints of a development site, a good condition target should not be set for proposed habitat restoration or creation without strong supporting evidence, it may not be achievable within a typical development for high distinctivenes habitats.

8. Habitat option 'scattered trees' refers to discrete parcels mapped as scattered trees and does not refer to total combined canopy cover area of occasional trees found across a development site.

9. Do not include individual trees in the assessment - these should be considered separately within the planning process (but should still be valued and retained).

With acknowledgement to Warwickshire County Council Ecological Services who's Biodiversity Impact Assessment, which was developed in partnership with Environment Bank, was used as a basis for the assessment tool.

Definitions

For the purposes of this calculator definitions are as follows:

Distinctiveness - The distinctiveness of a habitat includes parameters such as species richness, diversity, rarity (at local, regional and international scales) and the degree to which a habitat supports species rarely found in other habitats (Treweek et. al. 2010).
Condition - Refers to the condition of the habitat present. All habitats, including low distinctiveness habitats require condition assessments using the Farm Environment Plan (FEP) manual where applicable, along with ecological expertise. Please see accompanying guidance for more information.
Temporal factor - The time from commencement until the target condition will be reached.
Difficulty factor - The risk of failure for the habitat to reach its target.
Habitat protection - Areas which will be protected from development works, such that no negative impact
Habitat retention and maintenance - Existing habitats which are not to be negatively impacted by the development and will be maintained in the current condition.
Habitat loss - Areas to be negatively impacted by a development.
Habitat recreation - Habitats created on areas of negatively impacted by development works. E.G. built environment and amenity areas or new conservation habitats.
Habitat creation - New habitats or higher value, created on retained and protected areas. E.G. woodland creation on retained grassland.
Habitat restoration - Habitats which are retained and restored/enhanced to a higher value. E.G. Meadow restoration.
Indirect negative impacts - Habitats which are primarly off-site, which will be retained, but will have a loss in value due to indirect impacts such as light spillage, pollution or increased disturbance.
Gross biodiversity loss - The total biodiversity unit loss of direct and indirect impacts that will require compensation on or off-site.
Trading-down correction - Habitats can only be compensated for by the restoration/creation of habitat of the same, or higher value - for e.g. amenity grassland cannot compensate in any way for the loss of species-rich neutral grassland. High distinctiveness habitat must be compensated for like-for-like.
On-site compensation gain - The total biodiversity gain of all on-site habitats created and restored, but taking into account the downtrading correction.
Net biodiversity balance - The final net biodiversity impact once on-site habitat compensation has been taken into account. A +ve score = biodiversity gain on-site. A -ve score indicates a loss where a biodiversity offset would be recommended.
Percentage of gross impact loss - % of gross biodiversity loss which will not be compensated for through on site measures.
Percentage of site biodiversity loss - % Percentage of net biodiversity loss of existing site biodiversity units

Development Biodiversity Impact Summary

Local Planning Authority:	Cherwell
Site name:	Land at Tappers Farm
Planning application ref:	18/00792/OUT
Site grid reference:	SP 46180 38373
Assessor:	Thomas Fawley
Date:	16th August 2018

Biodiversity impact accounting	**Area (ha)**	**Units**
Existing site	2.01	4.22
Gross biodiversity loss	1.91	3.82
Onsite compensation gain		3.62
Net biodiversity balance		**-0.20**
Percentage of gross impact loss		**5.20**
Percentage of site biodiversity loss		**4.71**

Linear features	**Length (m)**	**Linear units**
Total existing length onsite	550.0	550.0
Linear loss	0.0	0.0
New proposed hedgerows	0.0	
Net linear balance	**0.0**	

Development biodiversity impact		**Units**
Habitats	Net biodiversity loss	-0.20
Linear	Neutral impact	0.0

Offsite conservation credit requirement to deliver no net loss to biodiversity

Habitat	**Conservation credit requirement**
Total habitats (units)	**-0.20**
Total Linear (m)	**0.00**

See adjacent sheet for habitat specific requirements

For any questions with regard to biodiversity impact and this development, or if there is an anticipated loss to biodiversity and no further ecological enhancements can be incorporated within the development it may be possible to compensate for this loss through a biodiversity offsetting scheme. Please contact us.

Environment Bank
email: admin@environmentbank.com
tel: 07527 035359
web: www.environmentbank.com

Offset requirement habitat details

Distinctiveness	Habitat	Conservation credit requirement	
Linear Features	Hedgerows and trees	0.0	like-for-like
	Ditches	0.0	
	Other	0	
Low	**TOTAL**	**-0.20**	Trade up
Medium	**TOTAL**	**0**	Same or better
High	**TOTAL**	**0.00**	Like-for-like
	Arable: Arable field margins	0	
	Arable: Other high distinctiveness arable	0	
	Other Features: Other high distinctiveness feature	0	
	Grassland: Calaminarian grasslands	0	
	Grassland: Lowland dry acid grassland	0	
	Grassland: Other acid grassland	0	
	Grassland: Lowland calcareous grassland	0	
	Grassland: Upland calcareous grassland	0	
	Grassland: Other calcareous grassland	0	
	Grassland: Lowland meadows	0	
	Grassland: Upland hay meadows	0	
	Grassland: Marsh/marshy grassland	0	
	Grassland: Purple moor grass and rush pastures	0	
	Grassland: Other high distinctiveness grassland	0	
	Woodland: Native broadleaved woodland	0	
	Woodland: Lowland Beech and Yew woodland	0	
	Woodland: Lowland mixed deciduous woodland	0	
	Woodland: Upland mixed Ashwoods	0	
	Woodland: Upland Oakwood	0	
	Woodland: Wet woodland	0	
	Woodland: Native Pine woodlands	0	
	Woodland: Wood-pasture and parkland	0	
	Woodland: Scattered trees some veterans	0	
	Woodland: Traditional orchard	0	
	Woodland: Bracken with diverse flora	0	
	Woodland: Other high distinctiveness woodland	0	
	Heathland: Lowland heathland	0	
	Heathland: Mountain heaths and Willow scrub	0	
	Heathland: Upland heathland	0	
	Heathland: Wet heath	0	
	Heathland: Other high distinctiveness heathland	0	
	Freshwater: Aquifer fed naturally fluctuating water bodies	0	
	Freshwater: Standing water	0	
	Freshwater: Priority ponds	0	
	Freshwater: Rivers and streams	0	
	Freshwater: Other high distinctiveness freshwater	0	

Wetland: Blanket bog	0
Wetland: Lowland raised bog	0
Wetland: Lowland fens	0
Wetland: Upland flushes, fens and swamps	0
Wetland: Coastal and floodplain grazing marsh	0
Wetland: Reedbeds	0
Wetland: Other high distinctiveness wetland	0
Coastal & Estuary: Coastal saltmarsh	0
Coastal & Estuary: Coastal sand dunes	0
Coastal & Estuary: Coastal vegetated shingle	0
Coastal & Estuary: Maritime cliff and slopes	0
Coastal & Estuary: Saline lagoons	0
Coastal & Estuary: Other high distinctiveness coastal	0
Inland Rock: Open mosaic habitats on prev. dev. land	0
Inland Rock: Inland rock outcrop and scree habitats	0
Inland Rock: Other high distinctiveness rock	0

Biodiversity Impact Calculator - Habitats

v1.2 - December 2014

Local Planning Authority:	Cherwell
Site name:	Land at Tappers Farm
Planning application reference number:	18/00792/OUT
Site grid reference:	SP 46180 38373
Assessor:	Thomas Fawley
Date:	16th August 2018
Edit comments:	

KEY	
	No action required
	Enter value
	Drop-down menu
	Calculation
	Automatic lookup
	Result

							Existing bidiversity units								
							Areas to be retained and protected during development						**Habitats to be lost and subsequent recreation**		
	Existing site habitats Please enter all existing habitats within the development site.		**Existing habitat distinctiveness**		**Existing habitat condition**		**Habitats to be maintained** No further calculation		**Habitats to be restored** Enter target in section 3		**New habitat creation** Enter target in section 2		Enter target in section 1		
Parcel ID	Existing habitat baseline	Habitat area (ha)	Distinctive	Score	Condition	Score	Area (ha)	Units maintained	Area (ha)	Units to be enhanced	Area (ha)	Units to be enhanced	Area (ha)	Units lost	**Comment**
	Direct Impacts and retained habitats	A		B		C	D	DxBxC = E	F	FxBxC = G	H	HxBxC = I	J	JxBxC = K	
1	Grassland: Improved grassland	1.50	Low	2	Poor	1	0.00		0.00		0.00		1.50	**3.00**	
2	Woodland: Scattered trees	0.10	Medium	4	Poor	1			0.10	0.40					
3	Built Environment: Buildings and hardstanding	0.20	Low	2	Poor	1							0.20	**0.40**	
4	Other Features: Bare ground	0.21	Low	2	Poor	1							0.21	**0.42**	
	Total	2.01				Total	0.00	0.00	0.10	0.40	0.00	0.00	1.91	3.82	L
														∑(A x B x C)	
													Existing site biodiversity units	4.22	

	Indirect negative impacts Including off site habitats	M	Distinctiveness B		Condition C		Value of loss from indirect impacts MxAxB = Oi, Oii	Oi - Oii	
Before									Offsite habitats unlikely be affected negatively as use is already similar as to what the are expected to be post developmen t.
After									

Before										
After										
Before										
After										
Before										
After										
	Total	0.00						0.00	P	GBL = L + P
										Gross biodiversity loss 3.82

Parcel ID	**Proposed habitats on site** Development, mitigation and onsite compensation		**Target habitats distinctiveness**		**Target habitat condition**			**Temporal factor**		**Difficulty factor**		**Biodiversity units generated**	**Comment**
	Target habitat	Area (ha)	Distinctive	Score	Condition	Score		Time (years)	Score	Difficulty	Score		
	1: Habitat recreation Enter target habitat to be recreated on area of development habitat impact	Q1		R1		S1			T1		U1	(Q1 x R1 x S1) / T1 / U1	
1	Grassland: Other high distinctiveness grassland	0.13	High	6	Good	3		5 years	1.2	Low	1	**1.95**	
2	Built Environment: Buildings and hardstanding	1.47	None	0	Good	3		5 years	1.2	n/a	1	**0.00**	
3	Grassland: Amenity grassland	0.30	Low	2	Moderate	2		5 years	1.2	Low	1	**1.00**	
4	Freshwater: Sustainable Urban Drainage Systems	0.01	Medium	4	Good	3		5 years	1.2	Low	1	**0.10**	
	Total	**1.91**									Total	3.05	W
	2: Habitat creation Enter new target habitat to be created on land protected during development. To be of higher value than existing	Q2		R2		S2	Existing value V2 (= I)		T2		U2	((Q2 x R2 x S2) - V2) / T2 / U2	
	Total	**0.00**									Total	0.00	X
	3: Habitat restoration **Enter target habitat of retained areas to be restored**	Q3		R3		S3	Existing value V3 (= G)		T3		U3	((Q3 x R3 x S3) - V3) / T3 / U3	
1	Woodland: Scattered trees	0.10	Medium	4	Good	3	**0.40**	10 years	1.4	Low	1	**0.57**	
	Total	**0.10**									Total	0.57	Y
											Trading down correction	0.00	Z
											Onsite compensation gain	**3.62**	OCG = W + X + Y - Z
												NBB = OCG - GBL	
											Net biodiversity balance	**-0.20**	Net loss and biodiversity off
											Percentage of gross impact loss	5.20	
											Percentage of site biodiversity loss	4.71	

setting requirement

Biodiversity Impact Calculator - Linear Features

v1 - October 2014

Local Planning Authority:	Cherwell
Site name:	Land at Tappers Farm
Planning application reference number:	18/00792/OUT
Site grid reference:	SP 46180 38373
Assessor:	Thomas Fawley
Date:	06/08/2018
Edit comments:	

KEY	
	No action required
	Enter value
	Drop-down menu
	Calculation
	Automatic lookup
	Result

	Existing Linear Features		**Existing Linear Condition**		**Development Impact**		**Compensation length requirement**
Linear ID	Existing linear baseline	Existing length (m)	*Condition*	*Score*	Length to be retained and managed (m)	Length to be removed (m)	
		A		B	C	A - C = D	D x B = E
1	Hedges/trees: Hedgerows	170.0	Poor	1	170.0		**0.00**
2	Hedges/trees: Hedgerows	100.0	Poor	1	100.0		**0.00**
3	Hedges/trees: Hedgerows	110.0	Poor	1	110.0		**0.00**
4	Hedges/trees: Hedgerows	30.0	Poor	1	30.0		**0.00**
5	Hedges/trees: Hedgerows	30.0	Poor	1	30.0		**0.00**
6	Hedges/trees: Hedgerows	80.0	Poor	1	80.0		**0.00**
7	Hedges/trees: Hedgerows	30.0	Poor	1	30.0		**0.00**
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
							0.00
	Total	550.0			550.0	0.0	0.0

	Proposed Linear Features On S
Linear ID	New linear features created
	Total

Gross linear loss
Onsite linear compensation gain

Net linear balance
(accounting downtrading)

site
Proposed length (m)
A
0.0

0.0
0.0


0.0