Biodiversity Impact Assessment

Project: South Caldecotte, Milton Keynes

Technical Briefing Note 02: Biodiversity Impact Assessment

Date: 06 July 2020

1. Introduction

1.1. Aspect Ecology was commissioned by Hampton Brook in November 2019 to undertake a Biodiversity Impact Assessment (BIA) for new strategic employment development, including nine warehouses, with offices, parking and associated access and infrastructure at South Caldecotte, Milton Keynes, hereafter referred to as 'the site'.

1.2. The DEFRA 2.0 Biodiversity Impact Calculation Tool was used to conduct the BIA in accordance with Policy NE3 of the Milton Keynes Council Plan:MK 2016-2031 which states `*Development proposals of 5 or more dwellings or non-residential floorspace in excess of 1,000 sq. m will be required to use the* ***Defra metric*** *or locally approved Biodiversity Impact Assessment Metric to demonstrate any loss or gain of biodiversity*` [our emphasis]. A BIA, based on the findings set out in Aspect Ecology's Ecological Appraisal dated June 2019, was submitted in January 2020 to inform planning application 19/01818/OUT.

1.3. Since this time, update ecology survey work has since been undertaken at the site between April and June 2020, including an update National Vegetation Classification (NVC) survey of the fields previously classified as Lowland Meadow undertaken by Blackstone Ecology[1].

1.4. In line with Planning Policy Guidance: Natural Environment[2], which advises under the heading 'what is the baseline for assessing net gain?', that *"The existing biodiversity value of a development site will need to be assessed at the point that planning permission is applied for"*, the BIA has been updated to reflect the results of the updated NVC survey. This note appends extracts from the DEFRA Impact Calculation Tool (see Annex 5263/1) and provides a summary of the results and justifies the choice of habitat definitions, distinctiveness, target habitat condition and temporal factors where appropriate.

2. Approach and Methodology

2.1. A BIA calculation tool requires information on the site pre and post development to determine any change in 'biodiversity units' for 'Habitat units' and 'Hedgerow units' and 'River units'. Where a BIA calculates a *net loss* in biodiversity, and does not provide an offset compensation estimate for the re-creation/restoration of habitats off-site, this can be calculated by a suitable third-party biodiversity offsetting service provider such as the Environment Bank.

[1] Johnson, I (June 2020) South Caldecotte, Milton Keynes: Botanical Assessment of Grassland. Blackstone Ecology

[2] https://www.gov.uk/guidance/natural-environment

2.2. Pre development information used to inform the DEFRA 2.0 Biodiversity Impact Calculation Tool has been based on the results of the Phase 1 habitat survey set out within Aspect Ecology's Ecological Appraisal dated June 2019 and the recent botanical assessment of grassland fields F3 and F4 undertaken by Blackstone Ecology (see the Pre-development Metric Habitat Plan at Annex 5263/2). Whilst an update Phase 1 habitat survey of the remainder of the site was undertaken in April 2020, no significant changes to the habitats or their condition was recorded that would necessitate adjustment to the 2019 pre-development information. Post development information has been taken from the illustrative Landscape Strategy Plan (see Post-development Metric Habitat Plan at Annex 5263/3).

3. Updates from January 2020

3.1. The following updates to the BIA have been made since the previous version was issued to Milton Keynes Council in January 2020 (where `Ref` is stated this relates to the row on the relevant worksheet):

A-1 Site Habitat Baseline

- **Ref 4** – This row relates to field F3 only (previously fields F3 and F4), which based on the update botanical assessment undertaken in June 2020 has been re-classified as moderately species-rich neutral grassland (non-priority habitat). Accordingly, the area for field F4 has been split out and inputted at Ref 15 (see below, and Pre-development Metric Habitat Plan at Annex 5263/2).
- **Ref 6** – The connectivity category has been updated to `medium` to accord with the User Guide[3] in respect of high distinctiveness habitats. The strategic significance category has been updated to 'within area formally identified in the local strategy' as Traditional Orchards are a Local BAP habitat.
- **Refs 7 & 8** - The strategic significance category has been updated to `within area formally identified in the local strategy` as Native Woodland is a Local BAP habitat.
- **Ref 13** – The connectivity category has been updated to `medium` to accord with the User Guide in respect of high distinctiveness habitats.
- **Ref 15** – This is a new row within the calculation tool to account for field F4, which has been classified as Priority Habitat Lowland Meadow following the update botanical assessment undertaken in June 2020. A proxy input (which is discussed further at section 4) has been utilised in the metric to enable functionality and achieve an at least equivalent multiplier scoring to the Lowland Meadow category. The connectivity category has been updated to `medium` to accord with the User Guide in respect of very high distinctiveness habitats. The strategic significance category has been updated to `within area formally identified in the local strategy` as Lowland Meadow is a Local BAP habitat.

A-2 Site Habitat Creation

- **Grassland – Other neutral grassland -** The connectivity category has been updated to `low` to accord with the User Guide in respect of medium distinctiveness habitats.
- **Urban Amenity Grassland -** The connectivity category has been updated to `low` to accord with the User Guide in respect of low distinctiveness habitats.
- **Woodland and forest - Other woodland; broadleaved –** The condition has been changed to `good` on the basis a diverse native planting strategy and appropriate long-term management plan are implemented. The strategic significance category has been updated to `within area formally identified in the local strategy` as Native Woodland is a Local BAP habitat.

[3] The Biodiversity Metric 2.0 – User Guide. Natural England Joint Publication JP029. July 2019

B-1 Site Hedge Baseline

- **Ref 2** – The strategic significance category has been updated to `within area formally identified in the local strategy` as Hedgerows are a Local BAP habitat.
- **Ref 3** – The strategic significance category has been updated to `within area formally identified in the local strategy` as Hedgerows are a Local BAP habitat.

B-2 Site Hedge Creation

- **Ref 1** – The strategic significance category has been updated to `within area formally identified in the local strategy` as Hedgerows are a Local BAP habitat.

4. Biodiversity Impact Assessment

4.1. The following section provides a systematic review of the input information, referencing, justifying and discussing the habitat categories and their condition chosen from the drop-down menus of the BIA calculator. The BIA Calculator has been completed following the guidance set out within 'The Biodiversity Metric 2.0 (Beta version) auditing and accounting for biodiversity user guide' published 29 July 2019 and 'The Biodiversity Metric 2.0 (Beta version) auditing and accounting for biodiversity technical supplement' published 29 July 2019.

4.2. Worksheets from the completed DEFRA 2.0 Biodiversity Impact Assessment Calculation Tool are provided at Annex 5263/1. The completed calculator can be made available to Milton Keynes Council on request.

Lowland Meadow

4.3. The first step in the BIA process is to enter the habitats present on the site within the baseline section of the spreadsheet. When Lowland Meadow, represented by field F4, is inputted to the spreadsheet (at Ref 15) it generates an output 'bespoke compensation likely to be required'. This is automatically generated when any habitat of 'high distinctiveness' is present. The generation of the advisory of 'bespoke compensation likely to be required', effectively prevents the metric from being run (a function of its beta testing status, with this expected to be resolved in the final version). Accordingly, to move forward, it is first necessary to determine what level of bespoke compensation is necessary so this can be entered into the metric.

4.4. In terms of lowland meadow, the bespoke compensation required, will be dependent on the value of the existing habitat. This is defined (under the Defra 2.0 metric) by reference to its distinctiveness, condition, connectivity and strategic significance. These parameters are discussed below:

4.5. Distinctiveness: The Defra 2.0 metric defines the distinctiveness of lowland meadow as 'very high' which is a pre-set parameter.

4.6. Condition: A review of the 2020 NVC survey finds that the habitat is currently in poor to moderate condition with reference to the criteria set out in the Technical Supplement[4]. This is due to the somewhat patchy cover of herbs and the elevated frequency and abundance of Rye-grass, most likely as a result of attempts at improvement or through mis-management. Referring to the metric, the available condition parameter mid value between 'poor' and 'moderate' is 'fairly poor'. However, taking a cautious approach the metric has been set to 'moderate' for condition.

[4] p19. The Biodiversity Metric 2.0. Technical Supplement. Natural England Joint Publication JP029. July 2019

4.7. Connectivity: The User Guide sets out how the connectivity parameter should be populated: "*Connectivity (high, medium and low) – N.B. in the beta version of the biodiversity metric 2.0 these scores should be set at 'low' for low and moderate distinctiveness habitats and 'medium' for high or very high distinctiveness habitats in the absence of local data."* Accordingly, the 'medium' parameter has been used[5].

4.8. Strategic significance: Instructions on how to populate this parameter of the metric are set out in the User Guide. This states: "*The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are located in preferred locations for biodiversity and other environmental objectives. Ideally these aspirations will have been summarised in a local strategic planning document which articulates where biodiversity is of high priority and the places where it is less so. Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement, such Nature Recovery Areas, local biodiversity plans, National Character Area objectives and green infrastructure strategies*". Lowland meadow is included in the Buckingham and Milton Keynes BAP and accordingly the 'strategic significance' value in the metric has been set to 'within area formally identified in local strategy'.

4.9. Value in Biodiversity Units of lowland meadow at the site: Following a review of the above parameters, and with reference to the survey work at the site, it is considered that the lowland meadow at the site represents an unremarkable example of the habitat type and accordingly no upward bespoke adjustment of its value is required. As such, it is appropriate to utilise the stepwise scoring within the metric to define its baseline value.

4.10. Although the beta testing version of the metric does not generate this score automatically, the appropriate value can be calculated for 'very high distinctiveness' habitats by reference to the difference in biodiversity units between the other habitat distinctiveness bands, with all other parameters remaining unchanged. This calculation is presented in Table 4.1 below:

Habitat type	Area	Distinctiveness	Condition	Connectivity	Strat Sig	Units	Difference
Modified grassland	0.7646	Low	Moderate	Medium	Within area	3.87	N/A
Other neutral grassland	0.7646	Medium	Moderate	Medium	Within area	7.74	3.87
Upland calcareous grassland	0.7646	High	Moderate	Medium	Within area	11.61	3.87
Lowland Meadow	0.7646	Very high	Moderate	Medium	Within area	15.48	3.87

Table 4.1 Scoring differences between habitats of differing distinctiveness types

4.11. Accordingly, the baseline value of the lowland meadow at the site is 15.48 biodiversity units. To enable the metric to function (as the beta testing version does not currently work for 'very high distinctiveness' habitats), it is necessary to substitute the lowland meadow habitat with a proxy input. In this case 'lowland calcareous grassland' has been selected as the proxy and the parameters set to ensure at least the same number (15.48) of baseline biodiversity units are achieved. The closest output that can be achieved under the metric is 15.83 biodiversity units and this uplifted value is utilised.

[5] A new connectivity tool is also available, however this did not appear to function for this habitat on site and Natural England technical support is currently unavailable to resolve this issue. Accordingly, this tool has not been used.

Other habitats

A-1 Site Habitat Baseline (Pre-development)

4.12. **Ref 1 'Cropland – Cereal Crops'** The arable land within the site has been attributed to this category as the survey work undertaken by Aspect Ecology recorded the arable land to be seeded with cereal crops at the time of survey. In accordance with the User Guide and Technical Supplement, this habitat type is does not require an assessment of the condition or connectivity and is instead allocated a fixed score of 1 for both categories. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.13. **Ref 2 'Urban – Amenity Grassland'** The amenity grassland within the site comprises a limited diversity of common and widespread species and is under regular management to maintain a short sward height. Accordingly, a condition of 'poor' is given to the amenity grassland, whilst connectivity of `low` has been selected to accord with the User Guide in respect of low distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.14. **Ref 3 'Grassland – Other Neutral Grassland'** The semi-improved and rough grassland within the site has been included under this category. These areas of grassland are moderately species-rich and contain a number of lowland meadow indicator species, albeit these are localised and not sufficiently abundant for the grassland to qualify as a Priority Habitat. Accordingly, a 'moderate' condition is assigned to this category, whilst connectivity of `low` has been selected to accord with the User Guide in respect of medium distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.15. **Ref 4 'Grassland – Other Neutral Grassland'** The semi-improved grassland (Field F3) within the site has been included under this category. The grassland is moderately species-rich and contains a number of lowland meadow indicator species, albeit these are localised and not sufficiently abundant for the grassland to qualify as a Priority Habitat. Accordingly, a 'moderate' condition is assigned to this category, whilst connectivity of `low` has been selected to accord with the User Guide in respect of medium distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.16. **Ref 5 'Grassland – Modified Grassland'** The improved grassland within the site is dominated by a low diversity of common and widespread species, typically associated with improved grassland, such as Perennial Rye-grass. The grassland is, or has until recently been, grazed regularly and enriched through animal droppings and is therefore considered to be in a 'poor' condition, whilst connectivity of `low` is a selected to accord with the User Guide in respect of low distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.17. **Ref 6 'Cropland – Traditional Orchards'** The orchard within the site may potentially qualify as the Priority Habitat 'Traditional Orchard' as it is not intensively managed and, as such, has been included in this category in the metric. However, the orchard within the site is not a good example of a Traditional Orchard, being of a very small size, with the trees being regularly managed such that little deadwood is allowed to accumulate and the grassland regularly mown as part of the garden setting in which the orchard is located. Accordingly, the condition of the orchard is considered to be 'moderate', whilst connectivity of `medium` has been selected to accord with the User Guide in respect of high distinctiveness habitats. In terms of strategic

significance `within area formally identified within local strategy` has been selected as Traditional Orchard is a Local BAP habitat.

4.18. **Refs 7 & 8 'Woodland and Forest – Other Woodland; Broadleaved'** The plantation woodland and the broadleaved woodland within the site have been included under this category. The woodlands meet a number of the woodland condition assessment criteria within the Biodiversity Metric 2.0 Technical Supplement, but not sufficiently to qualify as 'good' condition, and therefore `moderate` condition has been selected. Connectivity of `low` has been selected to accord with the User Guide in respect of medium distinctiveness habitats. In terms of strategic significance `within area formally identified within local strategy` has been selected for the broadleaved woodland (Ref 8) the plantation woodland (Ref 7) as Native Woodland is a Local BAP habitat.

4.19. **Refs 9 & 10 'Heathland and Shrub – Mixed Scrub'** The dense and scattered scrub at the site comprises a limited range of species that are common and widespread in the local and national context. This habitat does not meet the 'high environmental value' categorisation defined in the Farm Environment Plan (FEP) Manual. Overall, the scrub within the site is considered to be in 'moderate' condition. Connectivity of `low` has been selected to accord with the User Guide in respect of medium distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.20. **Ref 11 'Urban – Introduced Shrub'** The amenity planting within the site comprises a range of common and non-native species managed for their amenity rather than biodiversity value. In accordance with the User Guide and Technical Supplement, this habitat type does not require an assessment of the condition and is instead allocated a fixed score of 1. Connectivity of `low` has been selected to accord with the User Guide in respect of low distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.21. **Ref 12 'Sparsely vegetated land – Ruderal / Ephemeral'** The tall ruderal within the site comprises a limited range of species that are common and widespread in the local area and the national context. The tall ruderal does not form an important ecological feature and overall is considered to be in `poor' condition. Connectivity of `low` was selected to accord with the User Guide in respect of low distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.22. **Ref 13 'Lakes – Ponds (Non-Priority Habitat)'** The ponds within the site are either stocked with large numbers of fish, are relatively recently cleared to contain water, or are highly ephemeral in nature. Accordingly, the ponds within the site are not considered to form important ecological features and fail to meet a number of the pond condition assessment criteria within the Biodiversity Metric 2.0 Technical Supplement, such that a condition score of 'poor' has been allocated. Connectivity of `medium` was selected to accord with the User Guide in respect of high distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as the ponds on site do not qualify as Priority Habitat.

4.23. **Ref 14 'Urban – Developed land; sealed surface'** The remainder of the site is comprised of agricultural buildings and hardstanding which are largely devoid of vegetation and do not form an important ecological feature. In accordance with the User Guide and Technical Supplement, this habitat type does not require an assessment of the condition and is instead allocated a fixed

score of 0. Selections for other categories become inconsequential due to multiplier value of `0` under condition resulting in Total Biodiversity Units of 0.

4.24. **Ref 15 'Lowland meadow': proxy input `Grassland – Lowland Calcareous Grassland`** This is discussed above at paragraphs 4.3 to 4.12.

A-2 Site Habitat Creation (Post-development)

4.25. **'Grassland – Other Neutral Grassland'** This habitat includes semi-improved grassland which will be created along the northern boundary of the site and species-rich grassland which will be created along the western site boundary. The aim will be to manage these grasslands based on ecological principles, which should enable the grasslands to reach 'good' condition within 15 years. Connectivity of `low` is selected to accord with the User Guide in respect of medium distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.26. **'Urban – Amenity Grassland'** This includes the grassland in close proximity to the built development. The amenity grassland is likely to comprise a seed mix that is tolerant of frequent mowing and is unlikely to be managed for biodiversity. Accordingly, a condition score of 'poor' has been allocated for this habitat type. Connectivity of `low` is selected to accord with the User Guide in respect of low distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.27. **'Woodland and Forest – Other Woodland: Broadleaved** Native woodland planting is to be incorporated into the scheme, planted at the boundaries of the site. The `good` condition is based on the woodland planting being native and diverse and the habitat receiving on-going management as part of the landscape strategy. Subject to this management, it is considered that the woodland should achieve 'good' condition within 32+ years. Connectivity of `low` is selected to accord with the User Guide in respect of medium distinctiveness habitats. In terms of strategic significance `within area formally identified within local strategy` has been selected for the broadleaved woodland as Native Woodland is a Local BAP habitat.

4.28. **'Urban – Introduced Shrub'**. This will include all amenity planting in proximity to the built development. In accordance with the User Guide and Technical Supplement, this habitat type does not require an assessment of the condition and is instead allocated a fixed score of 1. Connectivity of `low` has been selected to accord with the User Guide in respect of low distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.29. **'Urban – Sustainable urban drainage feature'** This habitat represents the SuDS features to be created at the north of the site. Assuming all of the SuDS are seeded with a diverse native wet grassland seed mixture and management incorporates ecological principles for the benefit of biodiversity, it is considered achievable for this habitat to be of 'good' condition in five years. Connectivity of `low` is selected to accord with the User Guide in respect of low distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

4.30. **'Urban – Developed Land; sealed surface**' This habitat includes all new buildings, roads, parking and tarmac footpaths. In accordance with the User Guide and Technical Supplement, this habitat type does not require an assessment of the condition and is instead allocated a fixed score of 0. Selections for other categories become inconsequential due to multiplier value of `0` under condition resulting in Habitat Units Delivered of 0.

Habitat Biodiversity Impact Score

4.31. The BIA calculator computes a Net Project Biodiversity Units (Habitats) score of **-166.07**, a biodiversity loss of **75.35%**.

5. Hedgerow Impact Assessment

B-2 Site Hedge Baseline (Pre-development)

5.1. **Ref 1 'Line of Trees'** A number of tree lines are present within the site which contain a range of native species and are fenced from livestock, such that they are outgrown in nature. The tree lines achieve a condition score of 'moderate' utilising the condition assessment for a line of trees, as provided in the Biodiversity Metric 2.0 Technical Supplement. Connectivity of `low` has been selected to accord with the User Guide in respect of low distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

5.2. **Ref 2 'Native Species Rich Hedgerow'** This habitat refers to the species-rich hedgerows within the site which are well connected and generally outgrown in nature. Accordingly, the species-rich hedgerows are considered to be in 'moderate' condition. Connectivity of `low` has been selected to accord with the User Guide in respect of medium distinctiveness habitats. In terms of strategic significance `within area formally identified within local strategy` has been selected as Hedgerows are a Local BAP habitat.

5.3. **Ref 3 'Native Hedgerow'** The remainder of the hedgerows within the site are species-poor; however, they are well established and provide good connectivity within the site. As such, the species-poor hedgerows are considered to be in 'moderate' condition. Connectivity of `low` has been selected to accord with the User Guide in respect of medium distinctiveness habitats. In terms of strategic significance `within area formally identified within local strategy` has been selected as Hedgerows are a Local BAP habitat.

B-2 Hedge Creation (Post-development)

5.4. **Ref 1 'Native Species Rich Hedgerow'** This includes all new hedgerows within the scheme which will be planted with a diverse range of native tree/shrub species to ensure that the hedgerows are species-rich. The hedgerows will be managed in perpetuity of the scheme to ensure their value for biodiversity is maximised and it is considered that a condition of 'good' can be achieved for the hedgerows within 10 years. Connectivity of `low` has been selected to accord with the User Guide in respect of medium distinctiveness habitats. In terms of strategic significance `within area formally identified within local strategy` has been selected as Hedgerows are a local BAP habitat.

5.5. **Ref 2 'Line of Trees'** A number of tree lines are proposed within the development scheme. These will include native species and will be managed for biodiversity in perpetuity of the scheme. It is anticipated that a condition of 'good' can be achieved for the tree lines within 30 years. Connectivity of `low` was selected to accord with the User Guide in respect of low distinctiveness habitats. In terms of strategic significance `area/compensation not in local strategy/ no local strategy` has been selected as this habitat type is not a Local BAP habitat.

Hedgerow Biodiversity Impact Score

5.6. The BIA calculator computes a Net Project Biodiversity Units (Hedgerows) Score for the proposals of **-4.17 units**, a biodiversity loss of **17.31%**.

6. River Impact Assessment

C- 1 Site River Baseline (Pre-development)

6.1. **Ref 1 'Rivers & Streams (Other)**. A small stream passes across the site from east to west. The stream is semi-natural, contains aquatic and marginal macrophytes and has well vegetated banks and bank tops. However, the stream is silted and heavily shaded over much of its reach, such that very little aquatic vegetation is present. In addition, littering is present within the stream, particularly at the eastern end. Overall, the stream is likely to function as a wildlife corridor in the local context and has been categorised as being in `fairly poor' condition. In terms of strategic significance `low potential/ action not identified in any plan` has been selected as this habitat type is not a Local BAP habitat.

C-2 Site River Creation (Post-development)

6.2. **Ref 1 'Rivers & Steams (Other)** The stream is to be diverted as part of the proposals and will achieve a greater length than the existing stream. Over time, the diverted section of the stream will become colonised with marginal and aquatic vegetation established through seeding or plug planting and natural colonisation. The stream will be managed in perpetuity over the life of the scheme to ensure that the stream does not become over-shaded and to remove any litter that may enter the stream. Furthermore, the stream will be buffered by wildflower grassland and native shrub planting which will also be managed long-term. Subject to management of the stream for the benefit of biodiversity, over time (~5 years) it is considered achievable for the stream to reach 'moderate', if not good condition. In terms of strategic significance `low potential/ action not identified in any plan` has been selected as this habitat type is not a Local BAP habitat.

River Biodiversity Impact Score

6.3. The BIA calculator computes a Net Project Biodiversity Units (Rivers) score for the proposals of **-3.75 units**, a biodiversity loss of **65.96%**.

7. Summary & Conclusion

7.1. In order to inform the proposals, a Biodiversity Impact Assessment calculation has been carried out. The BIA calculates that a net loss of -166.07 habitat units, -4.17 hedgerow units and -3.75 river units is likely to occur under the proposed development. This represents a biodiversity loss of 75.35% for habitat units, 17.31% for hedgerow units and 65.96% for river units.

8. Consultation with the Environment Bank

8.1. The Environment Bank has been approached to provide a quotation for a biodiversity compensation scheme to offset the biodiversity impact of the proposals, based on the results of the metric calculations undertaken in November 2019 and more recently in July 2020.

8.2. The DEFRA 2.0 Biodiversity Impact Calculation Tool has been provided to the Environment Bank, who have confirmed they are able to bring forward a scheme exceeding 166.07 biodiversity units and therefore achieving biodiversity net gain for the proposals. This would also include a 30 year costed management and monitoring plan and monitoring and oversight of the offset site over 30 years with reporting to the LPA.

8.3. The biodiversity compensation scheme proposes to target the creation/restoration of grassland to Lowland Meadow within the Milton Keynes authority, in combination with the enhancement

of a wider mosaic of habitats. The Environment Bank has confirmed a minimum threshold for the extent of Lowland Meadow creation/restoration can be set, in order to achieve a minimum 33% increase over the calculated Lowland Meadow biodiversity units lost from the site. This would contribute to the local BAP target to increase Lowland Meadow in Buckinghamshire and Milton Keynes by 33%[6].

Annexes:

Annex 5263/1 – Completed BIA Calculator

Annex 5263/2 – 5263/BIA1 Pre-development Metric Habitat Plan

Annex 5263/3 – 5263/BIA2 Post-development Metric Habitat Plan

[6] Forward to 2020: Buckinghamshire and Milton Keynes Biodiversity Action Plan

Annex 5263/1:

Completed BIA Calculator

South Caldecotte
Detailed Results

Return to results menu

Summary Figures

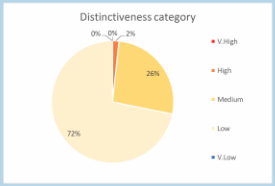
Net project biodiversity units (including all on-site & off-site habitat retention/creation)	*Habitat units*	-166.07
	Hedgerow units	-4.17
	River units	-3.75
Total project biodiversity % change (including all On-site & Off-site Habitat Creation + Retained Habitats)	*Habitat units*	-75.35%
	Hedgerow units	-17.31%
	River units	-65.96%

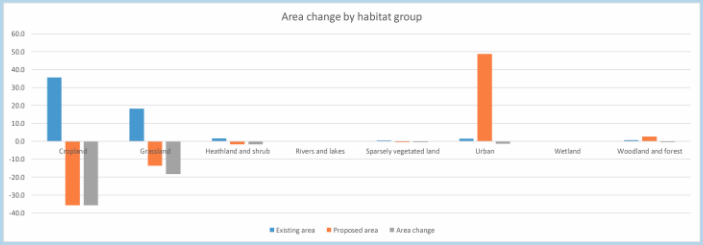
On-site habitat retention and enhancement

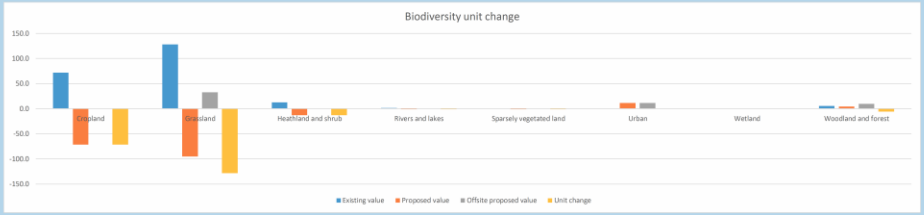
	Habitats	Hedgerows	Rivers
Total site area / length	58.16	5.02	0.71
Total site units	220.40	24.06	5.68
Area / length retained	0.04	0.10	0.00
Units Retained	0.32	0.46	0.00
Area / length enhanced	0.00	0.00	0.00
Baseline units enhanced	0.00	0.00	0.00
Area / length succession	0.00		
Units succession	0.00		
Area / length lost	58.12	4.92	0.71
Units lost	220.08	23.60	5.68

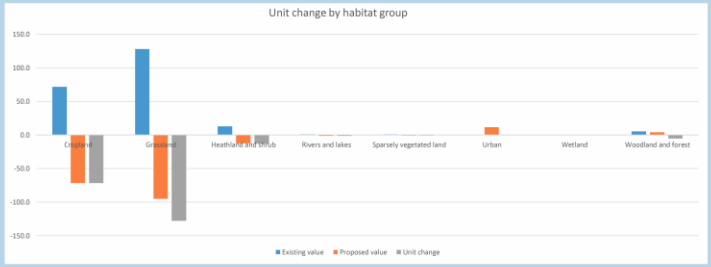
Area lost by distinctiveness band

Category	Area lost (hectares)	Area lost (%)
V.High	0	
High	0.9624	2
Medium	15.0658	27
Low	40.7285	72
V.Low	0	

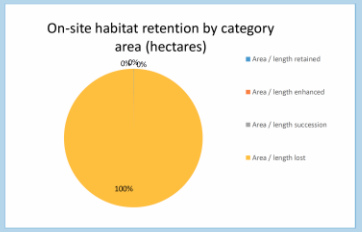


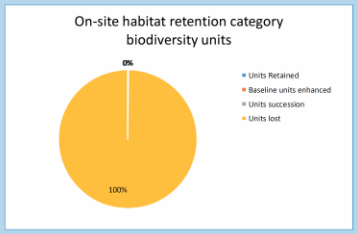






Habitat group	Pre-development		Post development on site		Post Development off site		Total post development		Change	
	Existing area	Existing value	Proposed area	Proposed value	Proposed area	Offsite proposed value	Proposed area	Proposed value	Area change	Unit change
Cropland	35.6	71.6	-35.6	-71.6	0.0	0.0	0.0	0.0	-35.6	-71.6
Grassland	18.3	128.0	-13.6	-95.1	4.7	32.9	0.0	0.0	-18.3	-128.0
Heathland and shrub	1.7	12.9	-1.6	-12.6	0.0	0.3	0.0	0.0	-1.7	-12.9
Rivers and lakes	0.2	1.1	-0.2	-1.1	0.0	0.0	0.0	0.0	-0.2	-1.1
Sparsely vegetated land	0.4	0.9	-0.4	-0.9	0.0	0.0	0.0	0.0	-0.4	-0.9
Urban	1.4	0.1	48.8	11.4	50.2	11.5	0.0	0.0	-1.4	-0.1
Wetland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Woodland and forest	0.6	5.4	2.6	4.1	3.2	9.5	0.0	0.0	-0.6	-5.4





South Caldecotte

A-1 Site Habitat Baseline

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Ref	Habitats and areas: Broad Habitat	Habitats and areas: Habitat type	Habitats and areas: Area (hectares)	Habitat distinctiveness: Distinctiveness	Habitat distinctiveness: Score	Habitat condition: Condition	Habitat condition: Score	Ecological connectivity: Ecological connecti	Ecological connectivity: Connectivity	Ecological connectivity: Connectivity multiplier	Strategic significance: Strategic significance	Strategic significance: Strategic significance	Strategic significance: Strategic position multiplier	Suggested action to address habitat losses	Ecological: Total habitat units	Retention category biodiversity value: Area retained	Area enhanced	Area succession	Baseline units	Baseline units	Baseline units successi	Area lost	Units lost
1	Cropland	Cropland - Cereal crops	35.5711	Low	2	N/A - Agricultural	1	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	71.14				0.00	0.00	0.00	35.57	71.14
2	Urban	Urban - Amenity grassland	0.0582	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.12				0.00	0.00	0.00	0.06	0.12
3	Grassland	Grassland - Other neutral grassland	8.8335	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	70.67				0.00	0.00	0.00	8.83	70.67
4	Grassland	Grassland - Other neutral grassland	4.0306	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	32.24				0.00	0.00	0.00	4.03	32.24
5	Grassland	Grassland - Modified grassland	4.642	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local	Low Strategic Significance	1	Same distinctiveness or better habitat required	9.28				0.00	0.00	0.00	4.64	9.28
6	Cropland	Cropland - Traditional orchards	0.0293	High	6	Moderate	2	Medium	Moderately connected habitat	1.1	Within area formally identified in local strategy	High strategic significance	1.15	Same habitat required	0.44				0.00	0.00	0.00	0.03	0.44
7	Woodland and forest	Woodland and forest - Other woodland; broadleaved	0.302	Medium	4	Moderate	2	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	Same broad habitat or a higher distinctiveness habitat required	2.78				0.00	0.00	0.00	0.30	2.78
8	Woodland and forest	Woodland and forest - Other woodland; broadleaved	0.2897	Medium	4	Moderate	2	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	Same broad habitat or a higher distinctiveness habitat required	2.67				0.00	0.00	0.00	0.29	2.67
9	Heathland and shrub	Heathland and shrub - Mixed scrub	1.1522	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	9.22	0.04			0.32	0.00	0.00	1.11	8.90
10	Heathland and shrub	Heathland and shrub - Mixed scrub	0.4978	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	3.98				0.00	0.00	0.00	0.50	3.98
11	Urban	Urban - Introduced shrub	0.0123	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.02				0.00	0.00	0.00	0.01	0.02
12	Sparsely vegetated land	Sparsely vegetated land - Ruderal/Ephemeral	0.4449	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.89				0.00	0.00	0.00	0.44	0.89
13	Lakes	Lakes - Ponds (Non- Priority Habitat)	0.1685	High	6	Poor	1	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local	Low Strategic Significance	1	Same habitat required	1.11				0.00	0.00	0.00	0.17	1.11
14	Urban	Urban - Developed land; sealed surface	1.3625	V.Low	0	N/A - Other	0	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local	Low Strategic Significance	1	Compensation Not Required	0.00				0.00	0.00	0.00	1.36	0.00
15	Grassland	Grassland - Lowland calcareous grassland	0.7646	High	6	Good	3	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	Same habitat required	15.83				0.00	0.00	0.00	0.76	15.83
16																							
17																							
18																							
19																							
		Total site area ha	58.16											Total Site baseline	220.40	0.04	0.00	0.00	0.32	0.00	0.00	58.12	220.08

South Caldecotte

A-2 Site Habitat Creation

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Post development/ post intervention habitats: Proposed habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Ecological connectivity: Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance: Strategic significance	Strategic significance	Strategic position multiplier	Temporal multiplier: Time to target condition/years	Time to target multiplier	Difficulty multipliers: Difficulty of creation category	Difficulty of creation multiplier	Habitat units delivered
Grassland - Other neutral grassland	1.8255	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15	0.586	Low	1	12.84
Grassland - Other neutral grassland	2.8563	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15	0.586	Low	1	20.09
Urban - Amenity grassland	3.6907	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	7.12
Woodland and forest - Other woodland; broadleaved	3.2276	Medium	4	Good	3	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	32+	0.320	Medium	0.67	9.54
Urban - Introduced shrub	0.9658	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	1.86
Urban - Sustainable urban drainage feature	0.7585	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5	0.837	Medium	0.67	2.55
Urban - Developed land; sealed surface	44.7993	V.Low	0	N/A - Other	0	N/A	Assessment not appropriate	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	1.000	Low	1	0.00
Totals	58.12														Total Units	54.01

South Caldecotte

B-1 Site Hedge Baseline

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	UK Habitats - existing habitats			Habitat distinctiveness		Habitat condition		Ecological connectivity			Strategic significance				Ecological baseline	Retention category biodiversity value					
Baseline ref	Hedge number	Hedgerow type	length KM	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Suggested action to address habitat losses	Total hedgerow units	Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost
1		Line of Trees	0.61	Low	2	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	2.44			0	0	0.61	2.44
2		Native Species Rich Hedgerow	0.29	Medium	4	Moderate	2	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	Like for like or better	2.668			0	0	0.29	2.668
3		Native Hedgerow	4.12	Low	2	Moderate	2	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	Same distinctiveness band or better	18.952	0.1007		0.46322	0	4.0193	18.489
4																					
5																					
6																					
7																					
8																					
		Total Site length/KM	5.02											Total Site baseline	24.06	0.10	0.00	0.46	0.00	4.92	23.60

South Caldecotte

B-2 Site Hedge Creation

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		Proposed habitats		Habitat distinctiveness		Habitat condition		Multipliers: Spatial quality: Ecological connectivity			Multipliers: Spatial quality: Strategic significance			Multipliers: Temporal multiplier		Difficulty of creation multiplier	Hedge units delivered
Baseline ref	New hedge number	Habitat type	Length km	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier		
1		Native Species Rich Hedgerow	2.75	Medium	4	Good	3	Low	Unconnected habitat	1	Within area formally identified in local strategy	High strategic significance	1.15	10	0.700	0.67	17.81
2		Line of Trees	0.789	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	30	0.343	1	1.63
3																	
4																	
5																	
		Creation Length/KM	3.54														19.43

South Caldecotte

C-1 Site River Baseline

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	Existing river type			Habitat distinctiveness		Habitat condition		Strategic significance			Sugested action	Ecological baseline	Retention category biodiversity value					
	Baseline ref	River type	length KM	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		Total river units	Length retained	Length enhanced	Units retained	Units enhanced	Length impacted	Units Lost
	1	Rivers & Streams (Other)	0.71	Medium	4	Fairly Poor	2	Low potential/ action not identified in any plan.	Low Strategic Significance	1	Avoid	5.68			0	0	0.71	5.68
	2																	
	3																	
	4																	
	5																	
		Total site length KM	0.71								Total Site	5.68	0.00	0.00	0.00	0.00	0.71	5.68

South Caldecotte

C-2 Site River Creation

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	Proposed habitats		Habitat distinctiveness		Habitat condition		Strategic significance			Temporal multiplier		Difficulty of creation category	Difficulty of creation multiplier	Riparian encroachment		River units delivered
Baseline ref	River type	Length km	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier			Extent of encroachment	Multiplier	
1	Rivers & Streams (Other)	0.778	Medium	4	Moderate	3	Low potential/ action not identified in any plan.	Low Strategic Significance	1	5	0.837	High	0.33	8+ m	0.75	1.93
2																
3																
4																
5																
	Creation Length/KM	0.78														1.93

Annex 5263/2:

Plan 5263/BIA1 – Pre-development Metric Habitat Plan

Key:

- Site Boundary
- Cropland - Cereal Crops
- Urban - Amenity Grassland
- Grassland - Other Neutral Grassland
- Grassland - Modified Grassland
- Grassland – Lowland Meadows (Proxy Input: Grassland - Lowland Calcareous Grassland)
- Cropland - Traditional Orchard
- Woodland and Forest - Other Woodland; Broadleaved
- Heathland and Shrub - Mixed Shrub
- Urban - Introduced Shrub
- Sparsley Vegetated Land - Ruderal/Ephemeral
- Lakes - Ponds (Non-Priority Habitat)
- Line of Trees
- Native Species-rich Hedgerow
- Native Hedgerow
- Urban - Development Land; Sealed Surface
- Rivers and Streams (Other)

0 70 140 210 280 m

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South Caldecotte	PROJECT
Pre-development Metric Habitat Plan	TITLE
5263/BIA1	DRAWING NO.
B	REV
July 2020	DATE

Annex 5263/3:

Plan 5263/BIA2 – Post-development Metric Habitat Plan

Key:

- Site Boundary
- Grassland - Other Neutral Grassland (Species-rich)
- Urban - Amenity Grassland
- Grassland - Other Neutral Grassland
- Heathland & Shrub - Mixed Scrub
- Urban - Introduced Shrub
- Woodland & Forest - Other Woodland
- Line of Trees
- Native Species-rich Hedgerow
- Native Hedgerow
- River & Streams (Other)
- Urban - Sustainable Urban Drainage Feature
- Urban - Development Land; Sealed Surface

0 70 140 210 280 m

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South Caldecotte	PROJECT
Post-development Metric Habitat Plan	TITLE
5263/BIA2	DRAWING NO.
B	REV
July 2020	DATE

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