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Biodiversity Net Gain Report

Client

Dean Lewis Estates Ltd

Proiect

Land off Old Ashford Road, Lenham

Date

February 2025



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Rev	Issue Status	Prepared/Date	Approved/Date
-	Final	CHK / 20.02.2025	SMM/25.02.25
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1.0 INTRODUCTION

- 1.1 The following report has been prepared by FPCR Environment and Design Ltd on behalf of the Dean Lewis Estates Ltd regarding the development proposals for Land off Old Ashford Road, Lenham (Central OS Grid Ref: TQ 904 103).
- 1.2 There is an existing application for the Site (Maidstone Borough Council ref 19/504724/HYBRID); for a hybrid development comprising of Outline application (all matters reserved except for access) for up to 100 dwellings with incidental open space, equipped play area and car park and one senior football pitch (with various improvements to local Highways and Public Rights of Way) with associated wetland scheme for nutrient reduction and full application for change of use of agricultural land for public sports and recreation with ancillary facilities.
- 1.3 This report explores two scenarios, whereby; Scenario 1 calculates the BNG score of "the Site" on the basis that the proposed floating treatment wetlands is developed, which will allow the development to achieve Nutrient Neutrality. Scenario 2 calculates the BNG for only the main development area, without the floating treatment wetlands. Under Scenario 2, Nutrient Neutrality Credits would be purchased from the Stodmarsh Ditch Enhancement Scheme to enable the development to achieve Nutrient Neutrality; this approach has been discussed with the LPA¹ and would be secured through a \$106 agreement.
- 1.4 This Biodiversity Net Gain Report is based on the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance. The scope and objectives of this report are to:
 - Summarise the results of the baseline UKHab Survey undertaken on the Site and to present the results of habitat condition assessment surveys following the Defra Statutory Biodiversity Metric Technical Guidance.
 - Provide an overview of the proposed habitats following completion of the scheme.
 - Present the results of the two Statutory Biodiversity Metric assessments completed for the proposals (Scenario 1 and Scenario 2).
 - Assess the feasibility of the two Scenarios to demonstrate a net gain in biodiversity through the Statutory Biodiversity Metric.
 - Recommendations for the proposals to maximise their biodiversity potential.
- 1.5 The assessment is based on the Parameters Plan by FPCR (drawing ref: 7968-L011_N).

¹ Planning Application19/504724/HYBRID, Applicant re NN mitigation options. Available at: https://pa.midkent.gov.uk/online-applicationS/applicationDetails.do?activeTab=documents&keyVal=PY11P4TY0XIO0 [Accessed 26.02.2025]



Site Context

- 1.6 The Site (Scenario 1) measures 13.56ha and largely comprises cropland and sheep-grazed pastures bound by fence lines, modified grassland field margins, hedgerows, ditches and scrub. Other habitats present on-site include mature trees, tall ruderal vegetation, and streams. The Site without the floating treatment wetlands area included (Scenario 2) measures 11.66ha; the floating w.
- 1.7 The Site is located within a semi-rural setting to the south-east of Lenham village, Kent. Old Ashford Road borders the site to the north as well as residential properties and associated gardens to the north-east and north-west. Arable fields and grazing pastures surround the remainder of the Site. An industrial site lies further to the north with the residential area of Lenham village extending from the western boundaries. A railway line runs further to the south of the site. Much of the surrounding areas comprise open pasture and arable fields as well as Mill Wood, a broadleaved woodland situated c.70m east of the application site.

2.0 LEGISLATION

The Environment Act 2021

- 2.1 In England, biodiversity net gain is now required under statutory frameworks introduced by Schedule 7A of the Town and Country Planning Act 1990 (inserted by the Environment Act 2021). Under this framework, every grant of planning permission will be deemed to have been granted subject to a general biodiversity gain condition. This will require an objective for developments to deliver at least a 10% increase in biodiversity value relative to the pre-development biodiversity value of all on-site habitats.
- 2.2 This is a pre-commencement condition requiring the provision of a Biodiversity Gain Plan to be submitted and approved before works can be commenced, but after planning permission has been granted.
- 2.3 In principle, the grant of planning permission is not within the scope of BNG, however it is important to consider as part of the consenting body's decision-making process how a scheme will be able to demonstrate BNG after permission is granted. Therefore, this biodiversity net gain report presents the results of a Biodiversity Net Gain assessment that has been completed in order to demonstrate how the proposals can be compliant with the requirements of the Environment Act.

Local Policy

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2.4 Maidstone Borough Council requires all residential developers to deliver a 20% net gain². This development will target a minimum of 20% net gain for area habitats, hedgerows and watercourses.

² Maidstone Borough Council, Biodiversity Net Gain. Available at: https://maidstone.gov.uk/home/primary-services/planning-and-building/planning/biodiversity-net-gain#:-:text=In%20the%20Maidstone%20borough%2C%20residential,developments%20from%2012%20February%202024.



Biodiversity Net Gain Hierarchy

- 2.5 The statutory framework allows for required biodiversity gain to be delivered through on-site biodiversity gains, registered off-site biodiversity gains or statutory biodiversity credits. However, as set out in Articles 37A and 37D of the Town and Country Planning (Development Management Procedure) (England) Order 2015, development must consider the biodiversity net gain hierarchy when designing scheme proposals. This sets out hierarchy of actions as follows:
 - a) First, for all medium, high and very high distinctiveness habitats, the avoidance of any adverse effects.
 - b) Where these can't be avoided, mitigating any adverse effects on medium, high and very high distinctiveness habitats.
 - c) Then, for all on-site habitats (including low distinctiveness), adverse effects should be compensated by in accordance with the following hierarchy:
 - Prioritising the enhancement of existing habitats; then
 - Creation of on-site habitats;
 - Allocation of registered off-site unit gains; then
 - Purchase of biodiversity credits
- 2.6 Proposals must demonstrate how the biodiversity hierarchy has been applied to or provide the reasons for any deviation. This biodiversity net gain hierarchy is distinct from the mitigation hierarchy set out in paragraph 186(a) of the National Planning Policy Framework (2023).

Exemptions

- 2.7 There are a number of circumstances where a Site will be exempt from biodiversity net gain including:
 - Development impacting habitat of an area below a 'de minimis' threshold of 25m², or 5m for linear habitats.
 - Householder applications (as defined within article 2(1) of the Town and Country Planning (Development Management Procedure) (England) Order 2015).
 - Self-build and custom-build applications (no more than 9 dwellings, site no larger than 0.5 ha and consists exclusively of self-build/custom dwellings).
 - Biodiversity gain sites (where habitats are being enhanced for wildlife only).
 - Previously developed land with a baseline score of zero (exempted via the metric).
- 2.8 The proposals for the Site do not fall under any of the above criteria and this report has therefore been prepared to aid Thurrock Council in their decision-making process.

National Planning Policy Framework (2024)

2.9 The NPPF (2024) in particular seeks to ensure that the planning system contributes to and enhances the natural and local environment, protect and enhance biodiversity and geodiversity by:

"187. d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures and



incorporating features which support priority or threatened species such as swifts, bats and hedgehogs;

192. b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."

Mandatory Biodiversity Net Gain Minimum Reporting Requirements

- 2.10 The BNG PPG sets out the minimum requirements of any planning application subject to mandatory BNG to present as part of any submission in order to validate the application. For ease of reference, the minimum information required has been set out in Table 1 below.
- 2.11 Additional detail and information appropriate to the application is provided within this report in order to assist Maidstone Borough Council in their decision-making process and to provide confidence that the scheme will be able to demonstrate a mandatory BNG through the provision of a Biodiversity Gain Plan following receipt of planning permission, in accordance with the PPG.

Table 1: Checklist of Minimum BNG Reporting Requirements for Planning Application Validation

Minimum Requirements in BNG PPG	Statement of Relevance to the Site
Confirmation that the Site is believed to be subject to the mandatory BNG condition.	The Site does not meet any of the exemption criteria and so it is understood that the site will be subject to the mandatory BNG condition, and that this will be 20% under local policy.
The pre-development biodiversity value of the Site, either on the data of application or an earlier proposed date (as appropriate).	The accompanying Statutory Biodiversity Metrics completed for the scheme provide the pre-development biodiversity value of the Site. The values are also presented within this report.
Where an earlier date is proposed, provide the reasons for proposing that date.	The 'relevant date' is proposed to be the latest date that a Site survey was completed during which observations were made to check if any significant changes in habitats had occurred. For the Site, this will be 5 th February 2025. This was the date of the last site survey and is considered to be appropriate as it is within the timeframe that ecological data is considered valid (two years, as recommended by CIEEM).
The completed metric calculation showing the calculations of the pre-development biodiversity value of the on-site habitat on the data of application (or proposed earlier date) including the publication date of the biodiversity metric used.	The Statutory Biodiversity Metric, published in August 2024, was used to calculate the predevelopment value of the Site. The completed metric has been provided alongside this BNG report.
A statement whether activities have been carried out prior to the date of application (or proposed date), that result in loss of on-site biodiversity value (degradation).	This statement confirms that FPCR and Dean Lewis Estates Ltd are not aware of any habitat degradation on-site.



A description of any irreplaceable habitat (as set out in column 1 of the Schedule to the Biodiversity gain Requirements (Irreplaceable Habitat) Regulations 2024) on the Site, that exists on the date of application (or an earlier proposed date)	This statement confirms that no irreplaceable habitat has been identified on-site.
Plan(s), drawn to an identified scale and showing the direction of North, showing on-site habitat existing on the date of application (or earlier proposed date) including any irreplaceable habitat (if applicable).	Figure 1 shows the baseline habitats present onsite on the proposed relevant date (5 th February 2025). This includes the minimum requirement to show an identified scale and north arrow.



3.0 METHODOLOGY

Baseline Habitat Assessment

- 3.1 A baseline habitat survey was completed broadly following the UK Habitat Classification System and the Statutory Biodiversity Metric Condition Assessment Criteria. This involved a systematic walkover of the Site to map all habitats present for the purposes of completing the Statutory Biodiversity metric Calculation Tool and their current condition. Habitat condition assessment surveys were also completed in accordance with the Statutory Biodiversity Metric Habitat Condition Assessments. The summary results of the habitat condition assessment survey results are presented in this report.
- 3.2 The Site and habitats present were surveyed by FPCR in 2018 and in September 2021. An update habitat survey was carried out on 6th December 2024. A conditions assessment to facilitate a BNG assessment was then undertaken on 5th February 2025.

Biodiversity Net Gain Calculation

- 3.3 Defra's Statutory Biodiversity Metric calculation tool was used to inform this BNG Report. It is an MS Excel spreadsheet that is used to quantify the predicted net-change in biodiversity value ("biodiversity units") of a proposed development site before and after development. It treats the area-based habitats and linear features such as hedgerows and lines of trees separately, and is based on pre-determined values, along with published written guidance set by a Natural England-led team of experts.
- 3.4 The development Site was surveyed and mapped, as described above. The survey results were digitised using QGIS, with the existing habitats identified and areas automatically generated.
- 3.5 On-Site post-development habitats were determined from the Parameters Plan by FPCR (drawing ref: 7968-L011_N) with proposed habitats mapped and digitised using QGIS to generate areas for each of the habitats proposed for enhancement.
- 3.6 These pre- and post-enhancement habitat areas were then inputted into the Statutory Biodiversity Metric Calculation tool. The metric automatically assigns habitat distinctiveness score for each of the baseline and proposed habitats.
- 3.7 The metric then assigns a range of pre-assigned factors to each of the proposed habitats. These have been advised by subject knowledge experts and are universal multipliers generated by the metric itself for the following variables relevant to habitat creation, enhancement or restoration proposals:
 - difficultly of creating or restoring/enhancing a habitat: This pre-assigned score is based on how difficult a particular habitat type is to create or restore/enhance
 - temporal risk: this is the 'time to target condition' for any particular habitat and determines
 how long a particular habitat type is likely to take to reach the condition score that the
 desired condition score assigned to it.
 - spatial risk: this score is based on the distance between the site of habitat loss and any habitats creation or enhancement proposals at any off-site offsetting solutions.
- 3.8 Full details of the calculation methodology are provided in The Statutory Biodiversity Metric User Guide.



Limitations

- 3.9 Data provided by third party sources collated during the desktop study is generally made up from a wide range of sources including (but not limited to) those submitted by ecological consultancies, wildlife conservation organisations and volunteers. As such, this data is typically focused on areas of known nature conservation, is reliant upon formal surveys having been undertaken within an area or the presence of an expert within the locality (particularly for invertebrate records) and as such this data can never be fully relied upon as a complete ecological dataset for any given area. Rather, this data is used as a guide to likely presence of notable ecological features and can never be relied upon for likely absence.
- 3.10 The UKHab map has been reproduced from detailed field notes and informed by aerial imagery, OS mapping and site maps provided by the client. The accuracy of this figure is therefore ultimately guided by the accuracy of these sources and can only be relied upon to a certain degree of resolution.
- 3.11 The BNG conditions assessments were undertaken during the sub-optimal survey season (November to March inclusive for most habitats). Due to the breadth of data held by FPCR for the Site, and the fact that the habitats are generally not deemed to have changed from when they were surveyed in 2018 and 2021, and owing to the dominance of cropland and sheep-grazed pasture across the Site, it is not considered that the timing of the surveys in 2024/2025 is a major limitation to the assessment for this Site.



4.0 BASELINE CONDITIONS

Strategic Significance

- 4.1 A desk-study has been undertaken for the Site, which identified one SPA/Ramsar within 15km of the Site (The Swale SPA & Ramsar, 13km NE), and two Local Wildlife Sites within 1km of the Site (Kiln Wood and Oxley Wood, 550m SW, and St Mary's Churchyard, 430m W). No other sites designated for biodiversity were located within the search radii. All of the designated sites were over 550m from the Site.
- 4.2 The Site does not lie within the Zone of Influence or Buffer Zone of any internationally designated sites (SPA, SAC) or nationally designated sites (SSSI's).
- 4.3 The Site has therefore been assigned Low Strategic Significance.

Biodiversity Units

<u>Habitats</u>

- 4.4 The survey area was dominated by cropland (cereal, non-cereal, and temporary grassland), with modified grassland margins. Two parcels of modified grassland were also present within the Site. Small areas of bramble scrub and tall forbs were present along the west boundary of the Site.
- 4.5 A summary description and baseline conditions of the baseline habitats is provided in *Table 2* below and an illustration is provided in *Figure 1*.
- 4.6 Full survey results, baseline condition assessments are provided in Appendix A, and the full metric is provided as an excel spreadsheet.

Table 2: Summary of Baseline Habitats

Location	Habitat	Description	Condition	Distinctiveness
Margins around F1, F4, F5 and the floating treatment wetlands area	Modified grassland	The field margins comprised perennial rye-grass Lolium perenne, cock's-foot Dactylis glomerata, Yorkshire-fog Holcus lanatus, false oat-grass Arrhenatherum elatius and creeping bent Agrostis stolonifera. Other occasional herb species included white clover Trifolium repens, creeping buttercup Ranunculus repens, and ground ivy Glechoma hederacea. The margins generally had a lack of species (<6 per m²) and were managed as a homogenous short sward, and were therefore in Poor condition. Two of the grassland margins (around field parcel F5 and around the proposed floating treatment wetland area) were assessed as being in Moderate condition, as they had 6-8 species per m² and more of a tussocky composition.	Poor - Moderate	Low



Location	Habitat	Description	Condition	Distinctiveness
Field parcel F2	Modified grassland	Field compartment F2 comprised species-poor, sheep-grazed, modified grassland. The composition of grass species included abundant meadow-grass species Poa sp., bent grass species Agrostis sp., and cock's-foot, as well as occasional perennial rye-grass, Yorkshire-fog and red fescue Festuca rubra agg. The assemblage of other short herb species was poor, but included frequent white clover, creeping thistle, common mouse-ear, broad-leaved dock, creeping buttercup and rare occurrences of garlic mustard Alliaria petiolata. This grassland was dominated by palatable grasses, and the presence of perennial rye grass and dominance of forbs indicative of nutrient enrichment lead to this grassland being categorized as modified grassland. The grassland had <6 species per m² and therefore cannot achieve more than Poor condition.	Poor	Low
Field parcel F3	Other neutral grassland	Field F3 was also species-poor and sheep-grazed. This grassland was less intensively grazed, and Yorkshire-fog was the most frequent species of grass present, as well as red fescue and hairy sedge. This field compartment had a higher assemblage of other short herb species, including occasional creeping cinquefoil <i>Potentilla reptans</i> , common bird's-foot trefoil <i>Lotus corniculatus</i> and silverweed <i>Argentina anserina</i> . Other tall ruderal species were present throughout the field, including common nettle <i>Urtica dioica</i> and creeping thistle <i>Cirsium arvense</i> . The composition of the grassland indicates that it is inundated seasonally, from the stream which bisects F2 and F3. The grass and forb composition of the grassland leans more towards other neutral than F2, although it is not a good representation of the habitat type. Due to not being a good example of the habitat and having being species-poor, the grassland was assessed as being in Poor condition.	Poor	Medium
Within F3	Bramble scrub	A small parcel of bramble scrub was present on the west boundary of field parcel F3. Bramble scrub does not require a conditions assessment, as it can only ever achieve Poor condition.	N/A	Medium
Within F3	Tall forbs	An area of tall forbs was present on the west boundary of field parcel F3. Common nettle <i>Urtica dioica</i> was the most abundant species, with frequent occurrences of cleavers <i>Galium aparine</i> , spear thistle <i>Cirsium vulgare</i> and white deadnettle <i>Lamium album</i> .	Poor	Low
F1, F5, floating treatment wetlands	Cropland – non-cereal crop	An oilseed rape <i>Brassica napus</i> crop was identified in three of the field parcels (F1, F5 and within the floating treatment wetland area). This was the dominant habitat across the Site. Sheep were grazing the winter stubble in January 2025.	N/A	Low
F4	Cropland – temporary grassland and clover leys	Field parcel F4 was planted with an oilseed rape crop in 2018 and 2021. At the time of survey in 2025 the field parcel was seeded with a grass mix, and was grazed by sheep. This is a temporary grass crop, as part of the crop rotation. The	N/A	Low



Location	Habitat	Description rotation of this field from grassland to crop and back again can be observed on Google Earth. Therefore, this has been mapped as temporary grassland.	Condition	Distinctiveness
т1	Individual trees - Rural tree	One individual tree was located within the Site boundary, and therefore considered as part of the BNG for the development. The tree is a medium sized ash Fraxinus excelsior tree. It was assessed as being in Good condition, as it is a native tree, mature, has features which provide habitat for wildlife, and there was little evidence of negative impacts by humans. It was noted that the tree was suffering from ash dieback and was not healthy.	Good	Medium

Hedgerow Features

- 4.7 Eleven hedgerows were identified within the Site, some of which were identified as hedgerows with trees, and/or associated with ditches. The hedgerows were all assessed as being native and not species-rich, as the maximum number of species per 30m recorded within the hedgerows is 3 species.
- 4.8 Four lines of trees were identified within the Site boundary, to the north-west and south-east boundaries of the Site, and along stream S1.

Table 3: Existing Hedgerow Biodiversity Units

Ref	Habitat	Description	Condition	Distinctiveness
H1, H2, H11	Native hedgerow	Three of the on-site hedgerows were assessed as being native hedgerows. The hedgerows were not associated with ditches, and did not have enough species to be classed as species-rich (1-3 species per 30m). The hedgerows included the following species; hawthorn Cratageus monogyna, elder Sambucus nigra, field maple Acer campestre, hazel Corylus avellana, blackthorn Prunus spinosa, dog rose Rosa canina and bramble Rubus fruticosus. H2 was a onespecies hawthorn hedge, with some dog rose also present. The hedgerows were assessed as being in Moderate condition. For full conditions assessments see Appendix A.	Moderate	Low
H3, H4, H8	Native hedgerow - associated with bank or ditch	H3 & H4 were present along stream S1, while H8 is present along stream S2. H3 & H4 comprise hawthorn, dog rose, elder, and willow species. The hedges were dominate by hawthorn, and were therefore species-poor. There hedges were assessed as being in Moderate condition. H8 was also dominated by hawthorn, with ash and elder also present. The hedgerow was also assessed as being in Moderate condition.	Moderate	Medium



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H5, H6, H7, H9, H10	Native hedgerow with trees - associated with bank or ditch	Hedgerows H5, H6, H7, H9 and H10 were all present along ditches or streams and had mature specimens of trees within them. H5 was dominated by willow, including mature specimens. Other species within the hedgerow included ash, elder, hawthorn, bramble and blackthorn. The field margins along H5 are very thin (<1m), and it had signs of being damaged by machinery, leading to it being assessed as being in Moderate condition. H6, H7 and H9 were dominated by hawthorn, with other species including blackthorn, elder, and willow. The hedgerows had 1-2 species per 30m. The hedgerows were assessed as being in Good condition as they didn't show signs of neglect or negative management practices. H10 was dominated by field maple, with other species including bramble, blackthorn, and hawthorn. The hedgerow was grown out and showed signs of a lack of management. The hedgerow was very gappy; it was confined by the field margins and the ditch to the other side. All of the hedgerows has vegetation beneath them indicating nutrient enrichment.	Poor to Good	High
L4	Line of trees	One line of trees was present along the north-east boundary of the Site. The line of trees is an old hedgerow, which is dominated by hawthorn. The trees have grown out, and their canopies and trunks are distinct. There were also hazel and spruce trees recorded within the line of trees. The line of trees is in Poor condition, as there aren't veteran features within the trees, there isn't 6m of undisturbed land on either side of the line of trees, and the ash trees are not in a healthy condition.	Poor	Low
L1, L2 & L3	Line of trees associated with bank or	L1 is located along ditch D1a. The line of trees is made up of semi-mature blackthorn, hawthorn and elder trees. The trees have distinct canopies and trunks and do not form a hedge structure, although this is likely the remains of a defunct hedgerow. The line of trees is in a Poor condition due to the trees not having veteran features, there not being a 6m stretch of undisturbed ground on either side of the line of trees, and the trees not being in a healthy condition. L2 and L3 are present on either side of stream S1. The lines of trees are dominated by mature hawthorn trees, with some elder, blackthorn, field maple, ash and hazel, Due to the maturity of the trees and the definition of the trunks and canopies this has created a tree line, rather than a hedgerow structure. The tree lines are in Poor condition for the same reason as the ones above, and in addition there was more than 10% gaps recorded between the trees.	Poor	Low

Linear Features: Ditches

- 4.9 Two ditches are present on-site, recorded as D1a, D1b and D2. Ditch D1 is split into D1a and D1b as D1a has generally been recorded as a dry ditch, and D1b has been seasonally wet, with approximately 5cm of water present.
- 4.10 Three streams were also recorded across the Site. The streams are included within the assessment, however for full details on the stream conditions assessments, please refer to the River Conditions Assessment Report by FPRC (February 2025).



Table 4: Existing Watercourse Biodiversity Units

Ref	Habitat	Description	Condition	Distinctiveness
D1a, D1b, D2	Ditches	Ditches D1a and D1b are located along the southern edge of arable field F1. D1a was a dry ditch that was choked with non-aquatic vegetation such as common nettle. D1b was a seasonally wet ditch. Up to 5cm of standing water has been observed in the ditch during the surveys. The ditch It was also choked by vegetation with species including willowherb sp., broad-leaved dock Rumex obtusifolius, fools' watercress Helosciadium nodiflorum and cuckooflower Cardamine pratensis. Ditch D2 was a dry and shallow ditch occurring on the west boundary of the site adjacent to hedgerow H10. The ditches on site lacked evidence of aquatic vegetation growing, suggesting they are dry for the majority of the year. The ditches were assessed as being in Poor condition.	Poor	Medium
S1 - S3		Stream S1 arises in a residential garden to the northwest of field parcel F2 and F3. The depth of S1 fluctuates seasonally, but is approximately 5-10cm, with clear water flowing gently. S1 has a stone and pebble substrate. The overall width of the watercourse was 1-2m and runs for approximately 218m within the site, continuing south off-site from the application boundary. The north-west portion of the stream was choked with vegetation including water cress Nasturtium officinale, rosebay willowherb Chamaenerion angustifolium, brooklime Veronica beccabunga and lesser water parsnip Berula erecta; however this opened up further downstream, beneath the tree line. S1 was assessed as being in Moderate condition by the River Conditions Assessment. Stream S2 flows southwards and is present along hedgerows H5, H6, H7 and H8. The water was clear with a depth of 20-30cm, which flowed gently over a substrate of silt. The watercourse was 1-2m in width and is present for approximately 199m of the Site. The banks of the ditch were densely vegetated with species such as common nettle, cleavers and also willowherb species Epilobium sp. Aquatic vegetation occurred within the stream, which was dense in places. S2 was assessed as being in Fairly Poor condition by the RCA. Stream S3 is present to the west of the proposed water treatment area. The stream is set within a ditch-like channel, with an average width of 3 meters and an average depth of 0.2 meters. There was approximately 0.1m of water within the channel, with a gravel / pebble substrate, with areas of silt. The stream was considered to be over-deep, and was therefore assessed as being in Fairly Poor condition by the RCA.	Fairly Poor - Moderate	High



6.0 PROPOSED DESIGN

- 6.1 The proposed habitats are shown in *Figure 2*, with habitat retention illustrated in *Figure 3*; based on the Parameters Plan by FPCR (drawing ref: 7968-L011_N).
- 6.2 A summary of the proposed habitat, hedgerow and watercourse creation and enhancement is provided in Tables 5 7.
- 6.3 A brief outline of the management required to achieve the target condition for each habitat type is given,. However a Habitat Management and Monitoring Plan (HMMP) will need to be produced, which will outline the planting and landscape information, and the management and monitoring of the proposed and enhanced habitats for a minimum of 30 years in accordance with the Environment Act. This can be submitted as part of a planning condition, which is to be submitted and discharged prior to the commencement of works.

Habitat Retention/Loss (Figure 3)

6.4 It is expected that all of the area habitats will be lost to allow for the proposals. This is partly due to changes in broad habitat type (cropland to grassland) and partly due to the nature of the construction works on-site.

Habitat Creation & Enhancement (Figure 2)

- 6.5 Species-rich modified grassland, scrub, and ponds, all with target Moderate condition, will be created around the built development in the northern part of the Site. Individual trees will also be planted along roads throughout the development. Two attenuation basins, with target moderate condition, will also be created to the south-east of the residential development.
- 6.6 Playing fields will be created within the south-eastern part of the Site; these are proposed to be modified grassland in Poor condition. Around the perimeter of the sports pitches, species-rich modified grassland and mixed scrub, both in Moderate condition, are proposed. Some areas of other neutral grassland, with target Poor condition, have also been proposed, where footfall is expected to be lower and where management can be relaxed.
- 6.7 The proposed floating treatment wetland area has been assessed as a reedbed, with modified grassland around the boundaries of the treatment area. The reedbed and grassland will both target Moderate condition.

Hedgerow Retention/Loss

6.8 The hedgerows will largely be retained by the proposals. It is expected that 36m of native hedgerow and 13m of lines of trees, present along the south of the proposed residential development, will be lost access roads and associated soft landscaping in this area.

Hedgerow Creation

6.9 340m of species-rich hedgerows will be planted across the Site. The hedgerows will target Moderate condition.



Watercourse Retention/Loss

6.10 The ditches will all be retained and enhanced by the proposals. The streams will all be retained by the proposals in their current condition, as demonstrated by the RCA.

Watercourse Creation & Enhancement

6.11 It is proposed that 284m of ditches will be improved, from Poor to Moderate condition. This will require enhancements to be made to D1b and D2.

Table 5: Summary of Proposed Habitat Creation

Habitat	Description	Condition	Distinctiveness
Modified grassland	Areas of modified grassland will be created around the residential development, the play area to the south, and the playing fields to the south of the development. A strip of modified grassland is also proposed around the perimeter of the floating treatment wetland. The majority of the modified grassland will target Moderate condition. These areas will be sown with a flowering lawn seed mix (or similar) to aim for a minimum of 6 species per m². They will be managed in the long term through regular mowing to prevent scrub and bramble encroachment, and they will be monitored for the establishment of any Non-native, invasive species (which will be removed where identified).	Moderate	Low
Modified grassland	Areas of modified grassland will be created which will make up and be adjacent to the proposed footpaths in the south of the Site. The playing fields will also be created as modified grassland. These areas are unlikely to achieve better than Poor condition due to heavy footfall. These areas will also be managed for their amenity function, and it is expected that they will be heavily managed.	Poor	Low
Other neutral grassland	Other neutral grassland is proposed around the playing fields in the south of the Site. These grasslands will be seeded with an appropriate species-rich seed mix, or seeded through the introduction of green hay from an appropriate local donor site. The area will be managed in the long-term through cut-and-collect mowing or strimming no more than twice per year and ensure nutrients are removed from the grassland to ensure it achieves the correct species composition. This habitat will be monitored for the establishment of any non-native, invasive species (which will be removed where identified.	Poor	Medium
Mixed scrub	Areas of mixed scrub are proposed around the residential development, and sports pavilion. The created scrub will need to planted with a diverse range (5 species) of native species such as (but not limited to) hawthorn, holly Ilex aquifolium, hazel, blackthorn, common dogwood Cornus sanguinea, goat willow Salix caprea and mountain ash Sorbus aucuparia. These areas will need to be managed through rotational pruning/coppicing. The majority of the proposed mixed scrub planting will target Moderate condition, as it isn't large enough to have managed glades, and is unlikely to have the gradual edges required to meet the target criteria.	Moderate or Good	Medium



Habitat	Description	Condition	Distinctiveness
	The proposed mixed scrub to the north of the residential development, which is approximately 15m wide along its length, will target Good condition. As well as being managed as outlined above it will need to have a gradual edge, and have rides, glades, or a scalloped edge to allow it to meet its target condition.		
Pond (non- priority)	A pond will be created in the south of the Site. The pond will be managed to meet target Moderate condition. The pond will be designed to hold water all year round. The pond will be designed to support a diverse profile to create microclimates for a range of wetland plants to colonise. Plants will be allowed to naturally colonise in accordance with good practice guidelines for wildlife pond creation ³ . Once established, the pond will require minimal management beyond intermittent cut-and-collect management to avoid siltation and selective thinning to prevent overshading. Fertiliser must not be used within the pond or on the surrounding habitats to prevent eutrophication of the water.	Moderate	Medium
SuDS	A large sustainable drainage basin will be created in the south-west corner of the Site. The SuDS will be designed to hold water seasonally, although it is expected the basin will dry at some points of the year. It is recommended that the basin is allowed to naturally vegetate. The aquatic and marginal plant composition will be monitored and seeding or plug planting can be undertaken if required.	Moderate	Low
Reedbeds	The floating treatment wetland is expected to be planted with aquatic plants. This is expected to be common reed <i>Phragmites australis</i> . The reedbed will need to be monitored for the presence of encroaching scrub, and the presence of invasive non-native species. Retention of open water clearings between the reeds will also be beneficial to the reedbed condition.	Moderate	High
Individual trees	The proposals include planting 32 small trees within the residential development. Where possible, the trees should be comprised of native species. Due to the time required for trees to reach 'Good' condition (30 years), the trees will target 'Moderate' condition. The trees will be subject to a management program to ensure they maintain healthy growth. The trees will be monitored, and any individual failures will be replaced on a like-for-like basis.	Moderate	Medium
Artificial unvegetated unsealed surface	The play area to the south of the residential area has been mapped as an unvegetated unsealed surface. This is either likely to be rubber matting, or bark mulch.	N/A	V. Low
Developed land sealed surface	The proposed residential development, roads, pavilion carpark and associated parking have been mapped as developed land sealed-surface.	N/A	V.Low

 $^{3\} Pond\ Creation\ Toolkit,\ Freshwater\ Habitats\ Trust.\ Available\ at:\ https://freshwater\ Habitats.org.uk/advice-resources/pond-creation-hub/pond-creation-toolkit/$



Table 6: Summary of Proposed Hedgerow Creation

Hedgerow	Description	Condition	Distinctiveness
Native species- rich hedgerows	340m of species-rich hedgerows will be planted across the Site, including 154m along the east boundary of field parcel F4, and the remainder around the south and west boundaries of F5. This will provide links around the site's boundaries and shield the proposed development from the wider landscape. The hedgerows will be comprised of native species, providing shelter, pollen, nectar, and berries for local wildlife. The hedgerows will target Moderate condition. To achieve this, the following management measures need to be implemented, which will allow the criteria within Appendix A to be achieved; Failed specimens will be replaced during establishment on a like-for-like basis; Hedgerows will be managed to encourage tall (>1.5m), wide (>1.5m) and bushy features; Fertiliser and herbicide use will be prohibited around the hedgerows to reduce nutrient enrichment; A minimum of 2m adjacent to the hedgerows will be managed as 'undisturbed' ground wherever possible.	Moderate	Medium

Table 7: Summary of Proposed Ditch Enhancement & Creation

Watercourse	Description	Condition	Distinctiveness
Ditches D1b and D2	Ditch D1b is seasonally wet, and has some aquatic vegetation within it already. Ditch D2 is dry and shallow. Both ditches would benefit from bottom scraping, to clear the vegetation choking the ditches, and deepening to encourage water retention and depth. Following bottom scraping the ditches should be allowed to vegetate naturally, and the aquatic plant composition monitored. The habitat around the ditches should also be managed to ensure the ditches are not over-shaded.		Medium
Ditch (to be created – Scenario 1 only)	The creation of this ditch is only required, to achieve a 20% net gain for watercourses, with the inclusion of the wetlands treatment area in the Metric (Scenario 1). In Scenario 1, a new ditch is proposed along the east boundary of field parcel F4. The ditch will be 148m long and target Moderate condition. The ditch will need to be deep enough to retain water year-round. This will require consultation with a drainage consultant. As with the enhanced ditches above, the ditch should be allowed to naturally vegetate, and this should be monitored.	Moderate	Medium

7.0 STATUTORY BNG METRIC

7.1 The habitat retention, enhancement and creation proposals highlighted within this report have all been inputted into the Statutory Biodiversity Metric. As explained within paragraph 2.2 two Statutory BNG Metrics have been produced for the Site. The first metric (Scenario 1, Table 8) includes the main development area and assumes the proposed floating treatment wetlands is developed. Scenario 2 (Table 9) only includes the main development area and assumes Nutrient Neutrality Credits will be purchased from the Stodmarsh Ditch Enhancement Scheme.



Metric Results and Discussion – Scenario 1: Site including Floating treatment wetlands

- 7.2 Scenario 1 will mainly result in the loss of low distinctiveness habitats (cropland and modified grassland), and sections of hedgerows including native hedgerows and lines of trees. Small areas of medium distinctiveness other neutral grassland and bramble scrub will be lost to the proposals. The development of the floating treatment wetlands would result in the loss of low distinctiveness habitats (cropland and modified grassland).
- 7.3 Due to the presence of multiple streams and ditches within the baseline for Scenario 1, including the presence of stream S3 to the west of the floating treatment wetlands, the proposed enhancement of the ditches D1b and D2 alone was found to be insufficient to create a net gain of 20%+ in watercourse units. 'Figure 4 Proposed Habitats' shows a new ditch to be created along the east boundary of field parcel F4. This ditch will be 148m long and target moderate condition, to allow a net gain of 20% for watercourse units. This ditch is only required if Scenario 1 is taken forward. This creation has been taken into account within the Scenario 1 Metric and in Table 8 below.
- 7.4 The proposals for the floating treatments wetlands will result in some engineering to the watercourse to the west of the floating treatment wetlands, including a headwall and two outflow pipes. It is not expected that the condition of the watercourse will be diminished by the proposals (for full details, see the RCA Report for the Site).

Table 8: Statutory Biodiversity Metric Headline Results (Scenario 1)

Baseline	Habitat Units	30.18
	Hedgerow Units	9.86
	Watercourse Units	7.89
Post-Intervention	Habitat Units	41.42
	Hedgerow Units	11.91
	Watercourse Units	9.53
Total Net Unit Change	Habitat Units	+11.24
	Hedgerow Units	+2.05
	Watercourse Units	+1.65
Total Net Percentage Change	Habitat Units	+37.24%
	Hedgerow Units	+20.76%
	Watercourse Units	+20.91%

7.5 As demonstrated within Table 8, the proposed habitat creation and enhancement relating to Scenario 1, as outlined above and shown in Figures 1-5, will result in an on-site net gain in excess of 20% for habitats, hedgerows and watercourses. The proposals also satisfy the Trading Rules, through the creation of higher distinctiveness and better-quality habitats.

Metric Results and Discussion – Scenario 2: Site excluding Floating treatment wetlands

- 7.6 Scenario 2 will also result in the loss of low and medium distinctiveness habitats (cropland, modified grassland, other neutral grassland, bramble scrub), and small sections of hedgerows.
- 7.7 Due to removal of stream S3 from the Scenario 2 baseline, the enhancement of ditches D1b and D2 is sufficient to create a net gain of 20%+ in watercourse units.

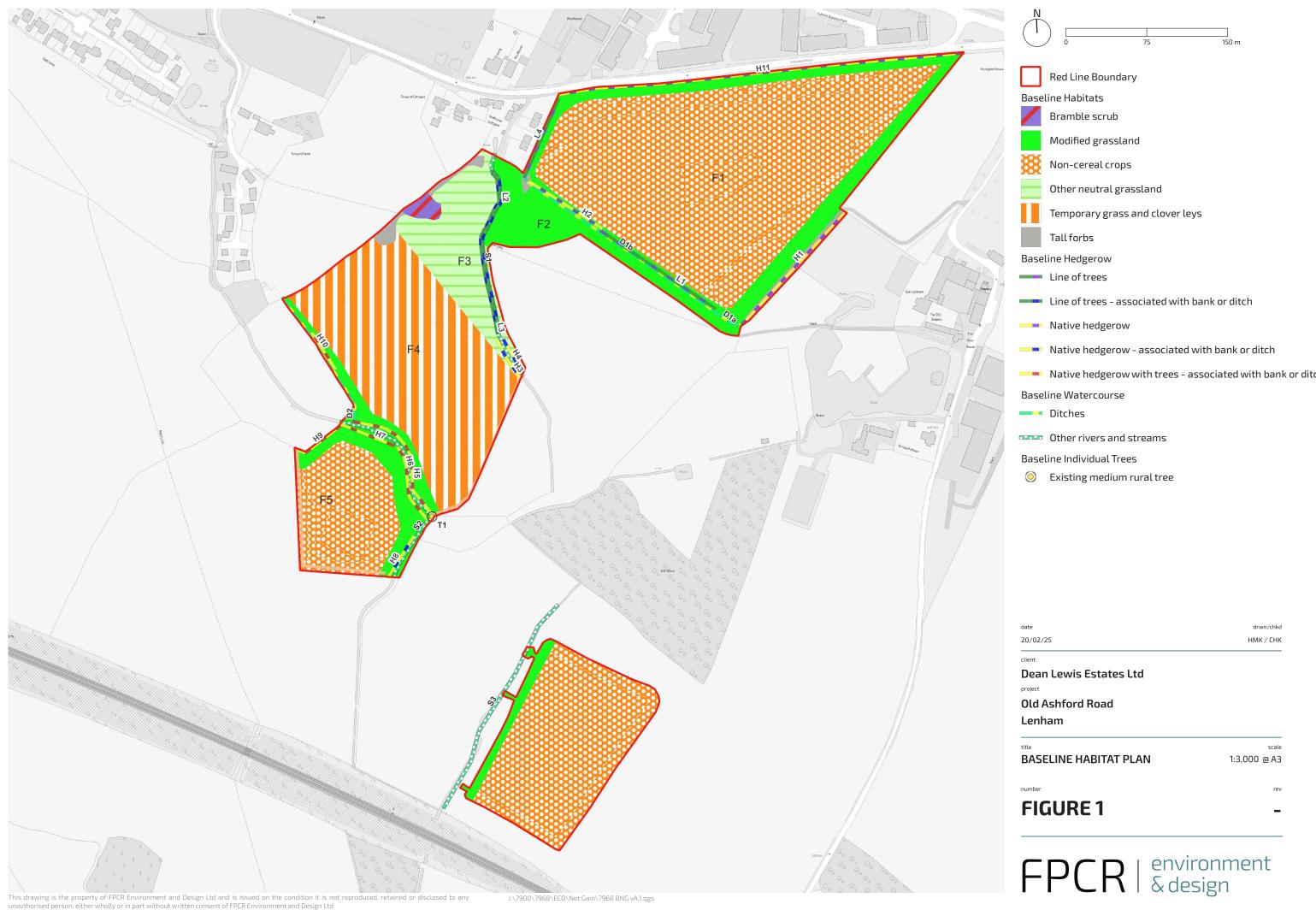
Table 9: Statutory Biodiversity Metric Headline Results (Scenario 2)

Baseline	Habitat Units	24.78
	Hedgerow Units	9.81

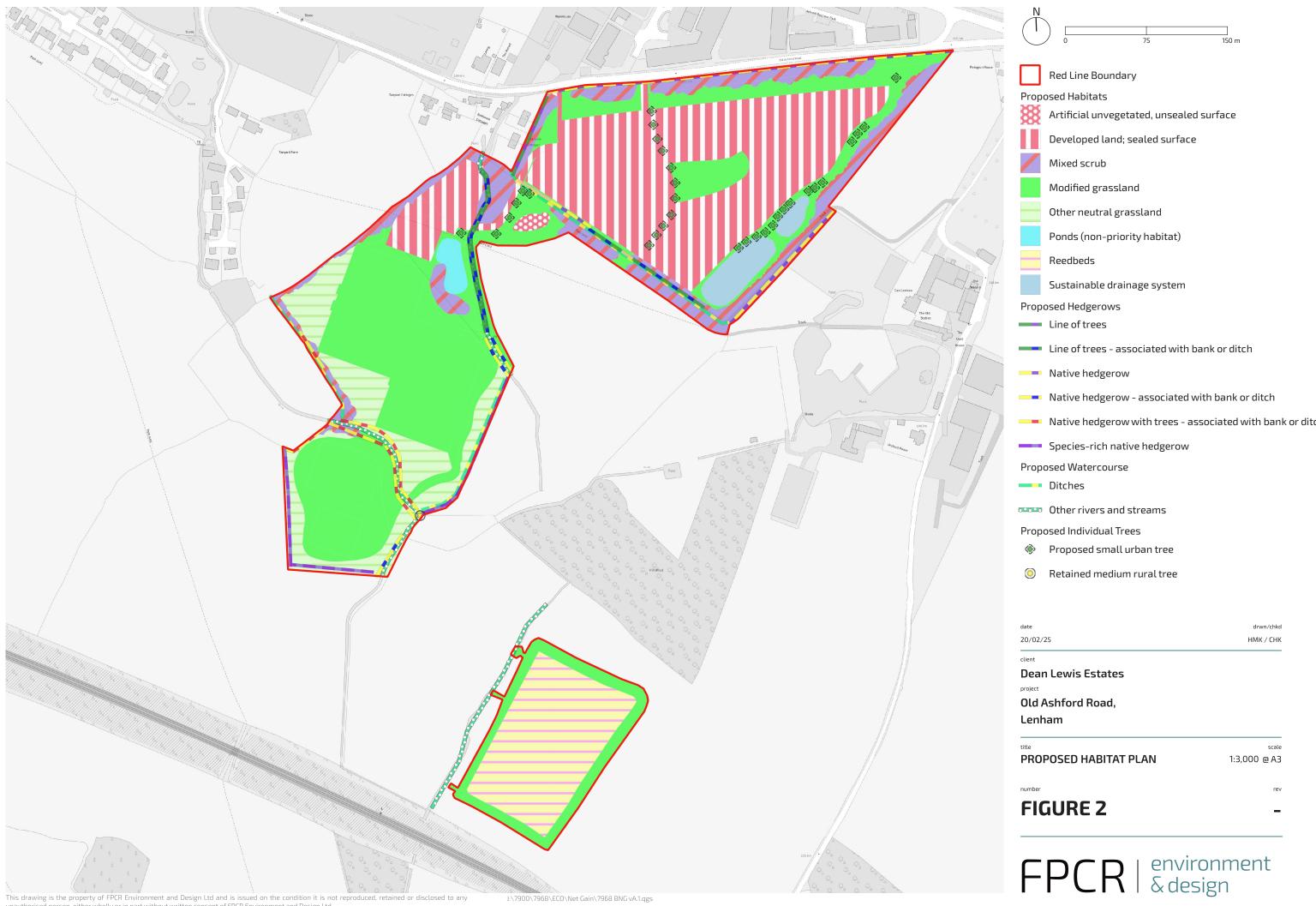


	Watercourse Units	5.95
Post-Intervention	Habitat Units	31.01
	Hedgerow Units	11.86
	Watercourse Units	7.33
Total Net Unit Change	Habitat Units	+6.31
	Hedgerow Units	+2.05
	Watercourse Units	+1.38
Total Net Percentage Change	Habitat Units	+25.57
	Hedgerow Units	+20.85
	Watercourse Units	+23.12

- 7.8 As demonstrated in Table 9, the proposed habitat creation and enhancement relating to Scenario 2 outlined above, and shown in Figures 1-5, will result in an on-site net gain in excess of 20% for habitats, hedgerows and watercourses. The proposals also satisfy the Trading Rules through the creation of higher distinctiveness and better-quality habitats.
 - Further Required Work
- 7.9 A Habitat Management and Monitoring Plan will be provided for whichever of the two Scenarios is carried forward as part of a Biodiversity Gain Plan which, in accordance with the requirements of the Environment Act, will be provided following receipt of full planning permission. The HMMP will provide details on how created and enhanced habitats across the Site that are significantly contributing to the Site's BNG will be managed for a minimum of 30 years.



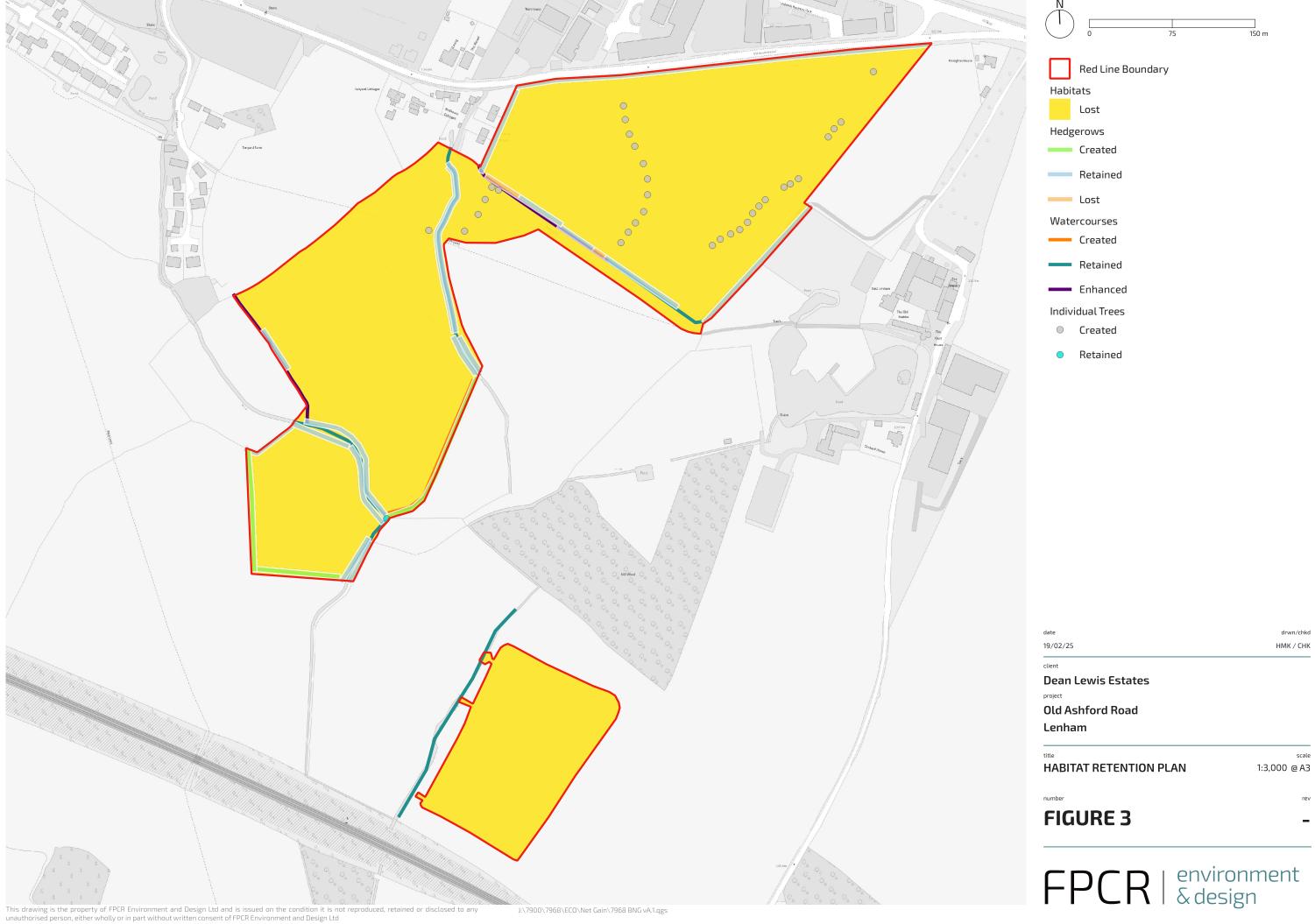
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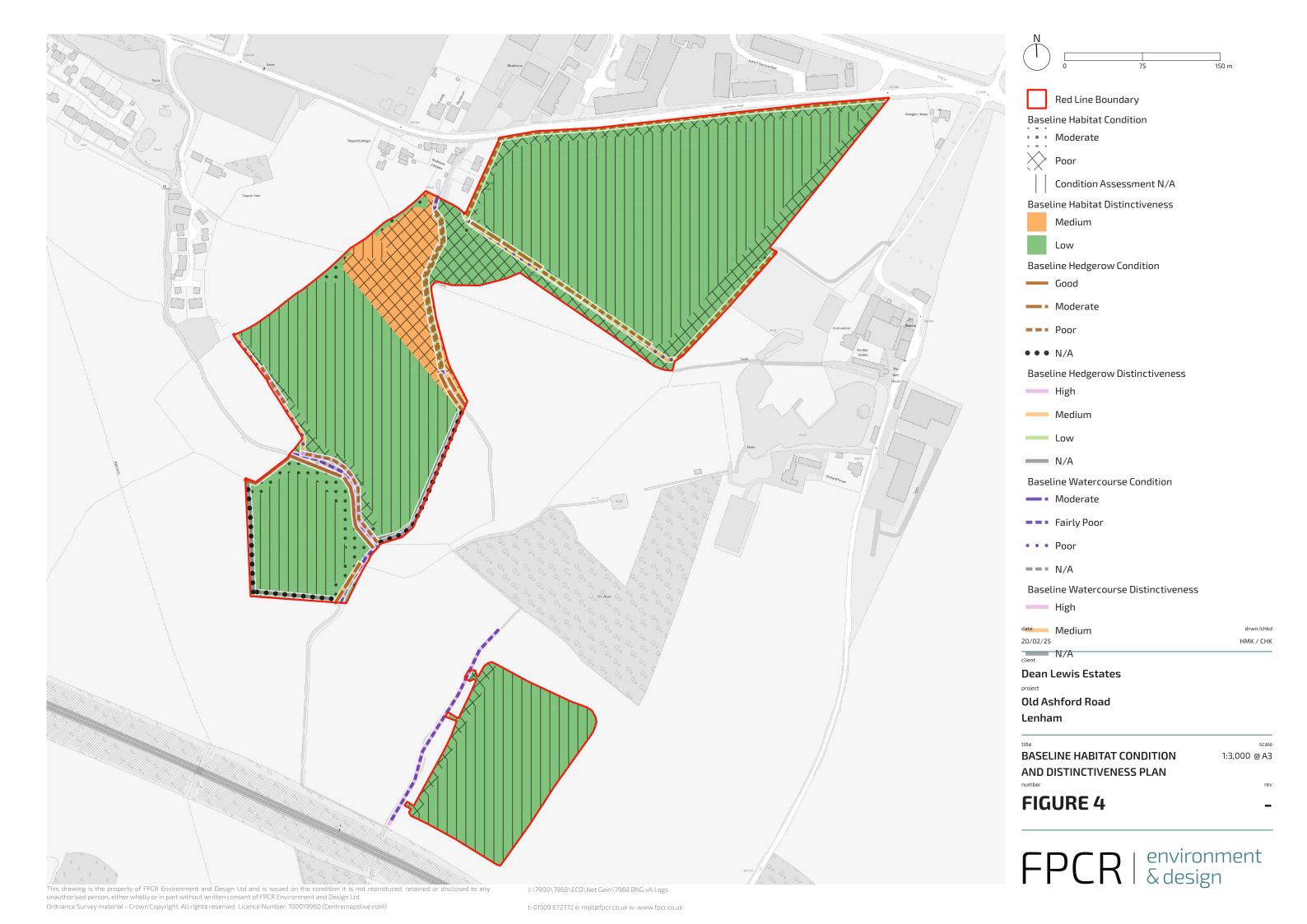
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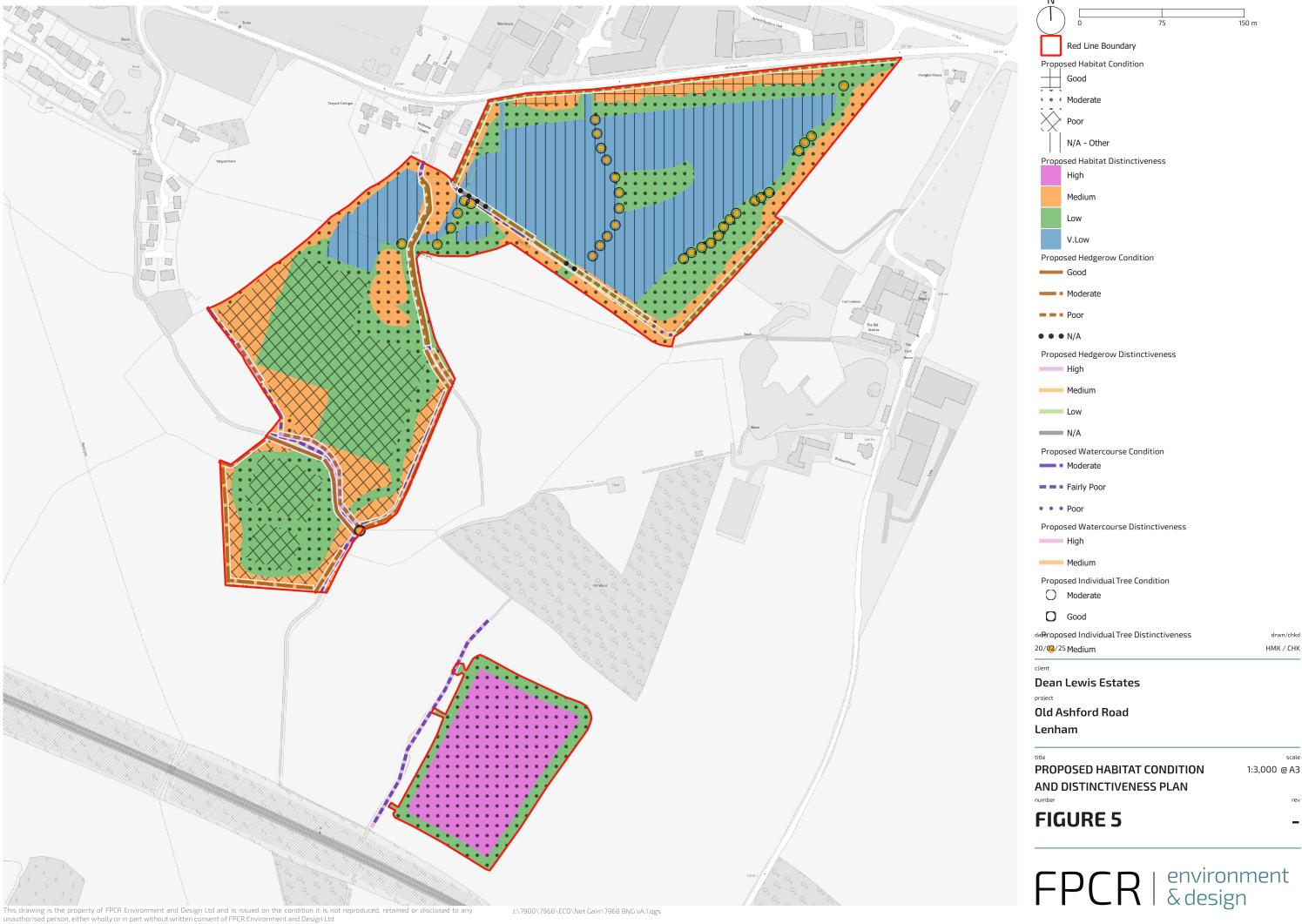
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APPENDIX A: BASELINE HABITAT – STATUTORY CONDITION ASSESSMENTS

GRASSLAND (LOW DISTINCTIVENESS)

(Grassland – modified grassland)

Vegetation dominated by a few fast-growing grasses on fertile, neutral soils. It is frequently characterised by an abundance of rye-grass *Lolium spp.* and white clover *Trifolium repens*.

Palatable grasses dominate and usually cover over 75%. Species poor <9 species per m2.

Patatable grasses dominate a	The distance cover	21 0 0 21 73	o. species pe		sland Refer	ence		
Statutory Condition Criteria	F1 margin	F2	F5 margin	FTWA margin				
1 There must be 6-8 species per m2, including at least 2 forbs. Note - if a grassland has 9 or more species per m2 it should be classified as a moderate distinctiveness grassland habitat type. NB - this criterion is non-negotiable for achieving moderate or good condition.	X	Х	✓	√				
2 Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	X	X	Х	X				
3 Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	√	✓	√	√				
4 Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	Х	✓	х	Х				
5 Cover of bare ground between 1% and 10%, including localised areas, for example, rabbit warrens.	Х	✓	Х	✓				
6 Cover of bracken less than 20%.	✓	~	✓	✓				
7 There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981)	✓	✓	✓	✓				
Total Passes	3	5	4	5				
Passes 6 or 7 criteria including non-negotiable criterion 1 Good (3) Passes 4 or 5 criteria including non-negotiable criterion 1 Moderate (2) Passes 3 or fewer criteria; Poor (1) OR Passes 4-6 criteria (excluding criteria A)	Poor	Poor	Mod	Mod				



GRASSLAND (MEDIUM, HIGH AND VERY	Y HIGH DISTINCTIVENESS)	
	Grassland Reference	
Statutory Condition Criteria	F3	
1 The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description).		
NB – this criterion is essential for achieving moderate or good condition (non-acid grassland types only).		
2 Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.		
3 Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	t v	
4 Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	→	
5 Combined cover of species indicative of sub-optimal condition* and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive plants listed on Schedule 9 of WCA, 1981 this criterion is automatically failed.		
Additional Group (Non-acid types only)		
There are greater than 10 species per metre squared, including forbs that are characteristic of the habitat type. (Species referenced in footnote 5 those indicative of sub-optimal condition cannot contribute towards this. NB – this criterion is essential for achieving good condition (non-acid grassland types only)		
Total Passes	s 2	
Non-Acid Grassland Types Passes 5 or 6 criteria, including essential Criterion 1 and 6 Passes 3-5 criteria including essential Criterion 1 Passes 2 or fewer criteria OR Passes 3 or 4 criteria excluding criterion 1 and 6	Poor	



DITCHES

(Rivers and streams – ditches)

Artificially created, linear water-conveyancing features that are less than 5 m wide and likely to retain water for more than 4 months of the year. Their hydraulic function is primarily for land drainage, and although partially or fully connected to a river system, they would not have been present without human intervention

					Ditch R	eference				
Condition Criteria 4.0	D1a	D1b	D2		Ditoli it		<u> </u>			
1 The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Х	X	Х							
2 A range of emergent, submerged and floating leaved plants are present. As a guide >10 species of emergent, floating or submerged plants in a 20 m ditch length.	Х	х	х							
3 There is less than 10% cover of filamentous algae and/or duckweed (these are signs of eutrophication).	Х	Х	Х							
4 A fringe of marginal vegetation is present along more than 75% of the ditch.	Х	Х	Х							
5 Physical damage evident along less than 5% of the ditch, such as excessive poaching, damage from machinery use or storage, or any other damaging management activities.	х	х	х							
6 Sufficient water levels are maintained: as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	Х	Х	Х							
7 Less than 10% of the ditch is heavily shaded.	Х	Х	Х							
8 There is an absence of non-native plant and animal species.	✓	✓	✓							
Total Passes	1	1	1							
Passes 8 of 8 criteria Good (3) Passes 6 or 7 of 8 criteria Moderate (2) Passes 0, 1, 2, 3, 4 or 5 of 8 criteria Poor (1)	Poor	Poor	Poor							

NOTE: Any species included on the Water Framework Directive UKTAG GB High Impact Species List should be absent.

Frequently occurring non-native plant species include water fern *Azolla* spp., Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides*, Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum* (on the bank).

Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus*, zebra mussels *Dreissena polymorpha*, killer shrimp *Dikerogammarus villosus*, demon shrimp *Dikerogammarus haemobaphes*, carp *Cyprinus carpio*.



INDIVIDUAL TREES

(Urban trees, Rural trees)

Covers the following topographical formations most commonly found in urban areas:

- Individual Trees: Young trees over 7.5cm diameter at breast height whose canopies are not touching
- Perimeter Blocks: Groups or stands of trees within and around boundaries of land, former field boundary trees incorporated into developments, individual trees in gardens whose canopies overlap continuously
- Linear Blocks: Lines of trees along streets, highways, railways and canals whose canopies may or may not overlap continuously.

Elliear Blocks. Ellies of trees along streets, highways, fallways	Urban Trees Reference													
Condition Criteria				•		Urb	an Trees	s Ketere	nce	•	,			
••••••••••••••••••••••••••••••••••••••	T1													
1 The Tree is a native species (or more than 70% within the block are native species	✓													
2 Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	х													
3 The tree is mature (or more than 50% within the block are mature). A mature tree is 2/3 its expected fully mature height for the species	✓													
4 There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	~													
5 Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark.	✓													
6 More than 20% of the tree canopy area is oversailing vegetation beneath.	✓													
Total Passes	5													
Passes 5 or 6 criteria Good (3) Passes 3 or 4 criteria Moderate (2) Passes 2 or fewer criteria Poor (1)	Good													

Note - All ancient trees are veteran trees, but not all veteran trees are ancient. A veteran tree may not be very old, but it has decay features, such as branch death and hollowing. These features contribute to its biodiversity, cultural and heritage value. Veteran trees can be classified if they have four out of the five following features:

- 1. Rot sites associated with wounds which are decaying >400cm².
- 2. Holes and water pockets in the trunk and mature crown >5 cm diameter.
- 3. Dead branches or stems >15 cm diameter.
- 4. Any hollowing in the trunk or major limbs.
- 5. Fruit bodies of fungi known to cause wood decay.



	HEDGEROWS														
Functional	Condition Criteria 4.0	Hedgerow Reference													
Group		H1	H2	H3&4	H5	Н6	H7	H8	Н9	H10	H11				
_	A1 Height >1.5m average along length	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Α	A2 Width >1.5m average along length	✓	✓	✓	✓	✓	✓	✓	✓	✓	√				
	B1 Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')	Х	✓	✓	✓	✓	✓	✓	✓	Х	✓				
В	B2 Gaps make up <10% of total length and no canopy gaps >5 m (access points and gates excluded from <5m)	Х	Х	✓	✓	✓	✓	Х	✓	Х	Х				
^	C1 >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length measured from outer edge of hedgerow, and is present on at least one side of the hedge (at least)	✓	✓	Х	Х	✓	✓	Х	✓	Х	Х				
С	C2 Plant species indicative of nutrient enrichment (nettles, docks, cleavers) dominate <20% cover of the area of undisturbed ground	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х				
D	D1 >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte (recently introduced) spp					✓	✓	✓	✓	✓	✓				
	D2 >90% of the hedgerow or undisturbed ground is free of damage caused by human activities					✓	✓	Χ	✓	X	Х				
Additional gr	oup – applicable to hedgerows with trees only														
	E1 There is more than one age-class (or morphology) of trees present (young, mature, veteran, ancient) and there is on average at least one present per 20-50m of hedgerow. (A mature tree is one that is at least 2/3 expected fully mature height for the species)				✓	✓	✓		✓	✓					
E	E2 At least 2/3 expected fully friature fleight for the species) E2 At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity				Х	Х	Х		х	Х					
	Total Fails	4	3	3	4	2	2	4	2	6	4				
	Condition														
in any function For Hedgerow No more thar attributes in m For Hedgerow No more thar attributes in m For Hedgerow Fails more th functional grou For Hedgerow	s with no trees: 4 total failures; AND does not fail both ore than one functional group vs with trees: 5 total failures; AND does not fail both ore than one functional group vs with no trees: an 4; OR fails both attributes in multiple ips vs with trees: an 5; OR fails both attributes in multiple	Moderate	Moderate	Moderate	Moderate	Good	Good	Moderate	Good	Poor	Moderate				



LINE OF TREES

(Line of trees, – associated with bank or ditch, - (ecologically valuable), - (ecologically valuable) – associated with bank or ditch)

A line of trees at least 20 metres in length, with open habitat on each side.

Inclusions: grown out hedgerows, avenues, narrow windbreaks, willows and alders along watercourses.

Exclusions: Overgrown hedgerows still capable of being laid into a stockproof hedge.												
				Line of Trees Reference								
Condition Criteria	L1	L2 & L3	L4									
1 More than 70% of trees are native species.	✓	✓	✓									
2 Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	✓	Х	х									
3 One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates; presence of standing and attached deadwood, cavities, ivy or loose bark		Х	Х									
4 There is an undisturbed naturally vegetated strip of at least 6m on both sides to protect the line of trees from farming and other anthropogenic operations. Where veteran trees are present root protection areas should follow standing advice		х	Х									
5 At least 95% of the trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.		Х	Х									
Total Passes	2	1	1									
Passes 5 criteria Good (3) Passes 3 or 4 criteria Moderate (2) Passes 2 or fewer criteria Poor (1)	Poor	Poor	Poor									



URBAN

(Sparsely vegetated land - Ruderal/ephemeral, sparsely vegetated land - tall forbs, Urban - Allotments, Biodiverse green roof, Bioswale, Cemeteries and churchyards, Façade-bound green wall, Ground based green wall, Intensive green roof, Open mosaic habitats on previously developed land, Rain Garden, Sustainable urban drainage feature [open SUDS with vegetation and/or open water], Vacant / derelict land /

bare grou					,	,
			Urban R	eference		
Core Criteria – must be assessed for all urban habitat types:	BG					
A Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area.	F					
B The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	F					
C Invasive non-native species (Schedule 9 of WCA) and those detrimental to native wildlife cover less than 5% of total vegetated area. For green roofs also include cover of <i>Buddleia davidii</i> . NB - To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).	Р					
Additional Criterion – only applicable to Open Mosaic on Previously Deve	loped La	nd				
D The site shows spatial variation, forming a mosaic of bare substrate PLUS: - At least 4 early successional communities (a) to (i): (a) to (h) PLUS bare substrate. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland pools.	NA					
Additional Criteria – Only applicable to Bioswale and SUDS						
E1 Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife	NA					
E2 The vegetation is comprised of plant species suited to wetland or riparian situations	NA					
Additional Criteria – Only applicable to Intensive green roofs:						
F The roof has a minimum of 50% native and non-native wildflowers. 70% of the roof area is soil and vegetation (including water features)	NA					
Additional Criterion – Biodiversity green roofs only:						
G The roof has a varied depth of 80-150mm at least 50% is at 150mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. NB - To achieve Good condition some additional habitat, such as sand piles, logs etc should be present	NA					
Total Passes	1					
Condition	Poor					



APPENDIX B: PROPOSED HABITATS - STATUTORY CONDITION TARGETS

Conditions Assessment Criteria for Grasslands (Medium Distinctiveness)

Co	ondition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
А	proportion of characteristic ind	example of its habitat type, with a consistently high licator species present relevant to the specific habitat 3 suboptimal species which may be listed in the		
	Note - this criterion is esser non-acid grassland types or	ntial for achieving Moderate or Good condition for aly.		
В		t 20% of the sward is less than 7 cm and at least 20% icroclimates which provide opportunities for insects, ve and breed.		
С	Cover of bare ground is betwe rabbit warrens ² .	en 1% and 5%, including localised areas, for example,		
D	Cover of bracken Pteridium ac bramble Rubus fruticosus agg	guilinum is less than 20% and cover of scrub (including 3.) is less than 5%.		
Е	(such as excessive poaching, levels of access, or any other than 5% of total area. If any invasive non-native plant	dicative of suboptimal condition ³ and physical damage damage from machinery use or storage, damaging damaging management activities) accounts for less species ⁴ (as listed on Schedule 9 of WCA ⁵) are		
	present, this criterion is autom	•		
F	There are 10 or more vascular characteristic of the habitat typ contribute towards this count).	plant species per m² present, including forbs that are be (species referenced in Footnote 3 and 5 cannot state for achieving Good condition for non-acid		
	grassland types only.			
	Essential criterion for	Good condition achieved (for non-acid grassland) (Yes or No)		
		Number of criteria passed		
Co	ondition Assessment Result	Condition Assessment Score	Score Achieved ×/√	
	id grassland types (Result of		1	
Н	asses 5 criteria	Good (3)		
Passes 3 or 4 criteria		Moderate (2)		
_	Passes 2 or fewer criteria Poor (1) Non-acid grassland types (Result out of 6 criteria)			
Pa es	on-acid grassland types (Res asses 5 or 6 criteria, including sential criterion A and Iditional criterion F.	Good (3)		
	asses 3 - 5 criteria, including sential criterion A.	Moderate (2)		
OI Pa	asses 2 or fewer criteria; R asses 3 or 4 criteria excluding terion A and F.	Poor (1)		

Footnote 1 - Professional judgement should be used alongside the UKHab description.

Footnote 2 – For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.

Footnote 3 - Species indicative of suboptimal condition for this habitat type include:creeping thistle Cirsium arvense, spear thistle Cirsium vulgare, curled dock Rumex crispus, broad-leaved dock Rumex obtusifolius, common nettle Urtica dioica, creeping buttercup Ranunculus repens, greater plantain Plantago major, white clover Trifolium repens and cow parsley Anthriscus sylvestris. There may be additional relevant species local to the region and or site.

Footnote 4 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, by applying professional judgement.

Footnote 5 – Wildlife and Countryside Act 1981 (as amended).



Conditions Assessment Criteria for grasslands (Low Distinctiveness)

Co	Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
Α	include those listed in Footnote Moderate or Good condition. Where the vascular plant speci distinctiveness grassland, or th (excluding those listed in Footn whether the grassland should ir	ecies per m² present, including at least 2 forbs (these may 1). Note - this criterion is essential for achieving es present are characteristic of medium, high or very high ere are 9 or more of these characteristic species per m² ote 1), please review the full UKHab description to assess instead be classified as a higher distinctiveness grassland. as medium, high, or very high distinctiveness, please use the		
В	Sward height is varied (at least more than 7 cm) creating micro invertebrates to live and breed.			
С	scrub such as bramble Rubus	less than 20% of the total grassland area. (Some scattered fruticosus agg. may be present). ntinuous (more than 90%) cover should be classified as the		
D	damage include excessive poar	ess than 5% of total grassland area. Examples of physical ching, damage from machinery use or storage, erosion s, or any other damaging management activities.		
Е	Cover of bare ground is betwee concentration of rabbit warrens	in 1% and 10%, including localised areas (for example, a 2 .		
F	Cover of bracken Pteridium aqu	uilinum is less than 20%.		
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).			
	Essential criterion achieved (Yes or No) Number of criteria passed			
Co	ondition Assessment Result			
	(out of 7 criteria)		Score Achieved x/√	
Passes 4 or 5 criteria including		Good (3)		
ра	ssing essential criterion A	Moderate (2)		
OI Pa	Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A) Poor (1)			

Footnotes

Footnote 1 – Creeping thistle Cirsium arvense, spear firstle Cirsium vulgare, curled dock Rumex crispus, broad-leaved dock Rumex obtusifolius, common nettle Urtica dioica, creeping buttercup Ranunculus repens, greater plantain Plantago major, white clover Trifolium repens and cow parsley Anthriscus sylvestris.

Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover.

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 4 – Wildlife and Countryside Act 1981 (as amended).



Conditions Assessment Criteria Scrub

Co	ndition Assessment Criteria	Criterion passed (Yes or No)	Notes (such as justification)	
Α	and composition of the vegetation (where in its natural range). - At least 80% of scrub is native - There are at least three native - No single species comprises round of the control o	•		
В	Seedlings, saplings, young shru shrubs are all present.	bs and mature (or ancient or veteran ³)		
С		non-native plant species ⁴ (as listed on ies indicative of suboptimal condition ⁶ make r.		
D		edge with scattered scrub and tall between the scrub and adjacent habitat.		
E	There are clearings, glades or ri sheltered edges.	ides present within the scrub, providing		
	Condition Assessment Result (out of 5 criteria) Condition Assessment Score		Score Achieved ×/√	
Pa	sses 5 criteria	Good (3)		
Pa	sses 3 or 4 criteria	Moderate (2)		
Pa	sses 2 or fewer criteria			

Footnotes

Footnote 1 - Professional judgement should be used alongside the UKHab description.

Footnote 2 – Native woody species as defined and listed in the Hedgerow Survey Handbook: DEFRA (2007) *Hedgerow Survey Handbook: A standard procedure for local surveys in the UK.* 2nd ed. [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).

Footnote 3 – See gov.uk standing advice on ancient and veteran species. Available from:

Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

Footnote 4 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 5 - Wildlife and Countryside Act 1981 (as amended).

Footnote 6 – Species indicative of suboptimal condition for this habitat type may include: non-native conifers, tree-of-heaven Alianthus altissima, holm oak Quercus ilex, European turkey oak Quercus cerris, cherry laurel Prunus laurocerasus, snowberry Symphoricarpos spp., shallon Gaultheria shallon, American skunk cabbage Lysichiton americanus, buddleia Buddleja spp., cotoneaster Cotoneaster spp., Spanish bluebell Hyacinthoides hispanica and hybrid bluebells Hyacinthoides x massartiana. There may be additional relevant species local to the region and or site.



Conditions Assessment Criteria for Individual Trees

Co	ondition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)	
Α	The tree is a native species (or at le species).	east 70% within the block are native			
В	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).				
С	C The tree is mature (or more than 50% within the block are mature) ¹ .				
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.				
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.				
F	F More than 20% of the tree canopy area is oversailing vegetation beneath.				
Number of criteria passed					
	ondition Assessment Result (out 6 criteria)	Condition Assessment Score	Score Achieved ×/√		
Pa	Passes 5 or 6 criteria Good (3)				
Pa	Passes 3 or 4 criteria Moderate (2)				
Pa	Passes 2 or fewer criteria Poor (1)				
No	Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.				

Footnotes

Footnote 1 - See gov.uk standing advice on ancient and veteran trees. Available from:

Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and:

Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)



Conditions Assessment Criteria for Hedgerows

	Hedgerow favourable condition attributes					
funct	ional groupings	Criteria - the minimum requirements for 'favourable condition'	Criteria description		Criterion passed (Yes or	Notes (such as
(A, B, Core	C, D and E) groups - applicab	le to all hedgerow types			No)	justification)
The average stem to the stem t		stem to the top of the si hedgerow, any gaps or Newly laid or coppiced I management and pass	nedgerows are indicative of good this criterion for up to a maximum of four			
			years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).			
				body growth estimated at the widest luding gaps and isolated trees.		
A2.	Width	>1.5 m average along length	Outgrowth (such as blackthorn Prurus spinose suckers) are only included in the width estimate when they are >0.5 m in height. Laid, copposed, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).			
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafly growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).			
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Caps are compete breaks in the woody campoy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).			
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbacous vegetation for >50% of length: - Measured from outer edge of hedgerow; and - Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow energh, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat include.			
C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.			
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WOA ²) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes sea the INCC website," as well as the BSU website," where the the INCC website," as well as the BSU website in the Fore to Chillian Allas of the British and this Flora" contains an up-to- ducted list of the status of species. For information on invasive non- native species see the GB Non-Neisro-Scretariat website."			
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (for example, excessive hedgewor cutting).			
		icable to hedgerows with trees only There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient ⁸),	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.			
E1.	Tree class	and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.				
E2. Tree health in c		At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which t compromises the survival and health of the individual specimens.			
The h	edgerow condition tables below.	assessment generates a weighting (score) ranging from 1 - 3, white	ch is used within the Statutory Biodiversity	Metric. The score	s for each are set out
Cond	lition categories fo	or hedgerows without trees				
Cate:	gory	Category Requirements No more than 2 failures in total; AND No more than 1 failure in any functional	Metric Score			
Moderate		group. No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and C2 = Moderate	2			
Poor		condition). Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1			
-	ition on the	Score achieved:				
Category		or hedgerows with trees Category Requirements No more than 2 failures in total; AND	Metric score			
		No more than 1 failure in any functional group. No more than 5 failures in total;				
Moderate		Does not fail both attributes in more than one functional group (for example, fails attributes A1, A2, B1, C2 and E1 = Moderate condition).	2			
Poor		Fails a total of more than 5 attributes; OR Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor	1			
		condition). Score achieved:				



Footnotes

Footnote 1 - DEFRA (2007) Hedgerow Survey Handbook. A standard procedure for local surveys in the UK. [online] Available on: ayout (hedgelink.org.uk)

Footnote 2 – STALEY, J.T. ET AL. (2020) Definition of Favourable Conservation Status for Hedgerows. [online] Available on:

Definition of Favourable Conservation Status for Hedgerows - RP2943 (naturalengland.org. Footnote 3 – Wildlife and Countryside Act 1981 (as amended).

Footnote 4 - CHEFFINGS, C. M. et al. (2005) The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. [online] Available on:

The Vascular Plant Red Data List for Great Britain (Species Status No. 7) | JNCC Resource Hub

Footnote 5 - BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). Definitions: wild, native or alien? [online] Available on:

Definitions: wild, native or alien? – Botanical Society of Britain & Ireland (bsbi.org)

Footnote 6 – BSBI and Biological Records Centre (BRC) (2022) Online Atlas of the British and Irish Flora. [online] Available on:

Acknowledgements | Online Atlas of the British and Irish Flora (brc.ac.uk)

Footnote 7 – GB NON-NATIVE SPECIES SECRETARIAT (GBNNSS) (2022) Available on:

Home » NNSS (nonnativespecies.org)

Footnote 8 – See gov.uk standing advice on ancient and veteran trees. Available from:

Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)

and

Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

