OXFORDSHIRE
STRATEGIC RAIL FREIGHT INTERCHANGE

DCO Submission

Environmental Statement

Chapter 6: Ecology including Arboriculture
Appendix 6.9: Biodiversity Net Gain Assessment – Part 1 of 2 – Report, Appendix A and Figures

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Rev D~~C~~

On behalf of
Oxfordshire Railfreight Limited

Prepared by FPCR Ltd.
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Appendix ES6.9 – Biodiversity Net Gain Report (Feasibility)

Client

Oxfordshire Railfreight Limited

Project

Ardley, Oxfordshire Strategic Rail Freight Interchange (OxSRFI)~~Proposed Oxfordshire Strategic Rail Freight Interchange~~

Date

~~May~~ October 2026

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THIS DOCUMENT ASSESSES THE FEASIBILITY OF CURRENT PROPOSALS TO DEVLIEVER A BIODIVERSITY NET GAIN.
THE CALCULATIONS ARE SUBJECT TO ANY CHANGES IN SITE DESIGNS, AND THE FIGURES REPORTED WITHIN THIS DOCUMENT SHOULD BE CONSIDERED AS INDICATIVE.

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-	Final	JDH / 19.09.25	RG / 13.02.26
A	Final	RH / 18.03.26	RG / 18.03.26
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NON-TECHNICAL SUMMARY

Report Scope and Methodology

FPCR were commissioned by Oxfordshire Railfreight Ltd. to undertake a Biodiversity Net Gain (BNG) assessment of land at Ardley, Bicester (central OS grid reference SP533263), to provide a baseline biodiversity score for the Site and compare this to proposals. Site proposals comprise a Strategic Rail Freight Interchange with associated infrastructure and industrial units (referenced to herein as the 'Main Site') and associated Highway Works (referred to collectively herein as the Highway Works').

This assessment has been informed by a survey of the habitats present onsite, including condition assessments, undertaken between June and August 2025, with survey and assessment in June 2026 of an additional arable field to the northwest of the Main Site that was subsequently brought into the Order Limits to provide ecological compensation for the on-site farmland bird assemblage.

Baseline

The Main Site is dominated by arable crops and agricultural grasslands, with hedgerows and trees at the field margins. Other habitats present within the Site include small areas of broadleaved woodlands, watercourses and ponds, lowland calcareous grassland, lowland meadows, and scrub.

The Highways Works largely comprise existing highways and grassland verges, arable land, and planted tree groups and scrub associated with screening functions of highways infrastructure.

The Proposed Development area extends across two small sections of the Ardley Cutting and Quarry SSSI. Impacts to the SSSI are firstly considered separately within a bespoke BNG strategy, and then in combination with the wider site.

Proposals

The Proposed Development comprises a Strategic Rail Freight Interchange with associated infrastructure and industrial units (referenced to herein as the 'Main Site') and associated Highway Works (referred to collectively herein as the 'Highway Works').

The proposals will necessitate the removal of c.2.89ha SSSI habitats encompassing bramble and mixed scrub (1.13ha), other neutral grassland (0.86ha), calcareous grassland (0.49ha), lowland meadow (0.06ha), broadleaved woodland (0.11ha), a seasonal pond (0.08ha), cereal crops (0.15ha) and bare ground (0.01ha).

Conclusion

A bespoke strategy is proposed by which to compensate the loss of SSSI habitats. This will deliver high and very high distinctiveness habitats (lowland calcareous grassland and lowland meadow respectively) suitable to provide a net biodiversity gain in excess of 20%. Habitats created specifically to mitigate SSSI losses will be subject to appropriate management for a period of 80 years.

The proposals for the remainder of the site are capable of delivering a net gain for habitats in excess of 10%. Overall the Proposed Development is able to deliver a 10%+ net biodiversity gain for habitats, hedgerows, and watercourses across the full Application Site.

Whilst Nationally Significant Infrastructure Projects are not yet required by legislation to deliver 10%+ net biodiversity gain, this assessment has demonstrated that the proposals can deliver an onsite gain that is compliant with anticipated future national policy requirements.

Report Scope and Methodology
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Baseline
The Main Site is dominated by arable crops and agricultural grasslands, with hedgerows and trees at the field margins. Other habitats present within the Site include small areas of broadleaved woodlands, watercourses and ponds, lowland calcareous grassland, lowland meadows, and scrub. The Highways Works largely comprise existing highways and grassland verges, arable land, and planted tree groups and scrub associated with screening functions of highways infrastructure. The Proposed Development area extends across two sections of the Ardley Cutting and Quarry SSSI.
Proposals
The Proposed Development comprises a Strategic Rail Freight Interchange with associated infrastructure and industrial units (referenced to herein as the 'Main Site') and associated Highway Works (referred to collectively herein as the 'Highway Works'). The proposals will necessitate the removal of c.2.8974ha SSSI habitats encompassing bramble and mixed scrub (1.13ha), other neutral grassland (0.86ha), calcareous grassland (0.49ha), lowland meadow (0.06ha), broadleaved woodland (0.11ha), a seasonal pond (0.08ha), cereal crops (0.15ha) and bare ground (0.01ha).
Conclusion
A bespoke strategy is proposed by which to mitigate the loss of SSSI habitats. This will deliver high and very high distinctiveness habitats (lowland calcareous grassland and lowland meadow respectively) suitable to provide a net biodiversity gain in excess of 20%. Habitats created specifically to mitigate SSSI losses will be subject to appropriate management for a period of 80 years. The proposals for the remainder of the site are capable of delivering a net gain for habitats in excess of 10%. Overall the Proposed Development is able to deliver a 10%+ net biodiversity gain for habitats, hedgerows, and watercourses within the Application Site. Whilst Nationally Significant Infrastructure Projects are not yet required by legislation to deliver 10%+ net biodiversity gain, this assessment has demonstrated that the proposals can deliver an onsite gain that is compliant with anticipated future national policy requirements.

1.0 INTRODUCTION

1.1 The following Biodiversity Net Gain (BNG) Report has been prepared by FPCR Environment and Design Ltd. on behalf of the Oxfordshire Railfreight Ltd. to support an application for a Development Consent Order for the Oxfordshire Strategic Rail Freight Interchange (central OS grid reference SP533263) herein referred to as 'the Site'.

1.2 This report should be read in conjunction with the Ecological Appraisal (FPCR, 2026~~5~~) for the Site. The Ecological Appraisal has been undertaken to inform the development proposals and to provide recommendations for mitigation, compensation and enhancement.

Development Proposals

1.3 The Proposed Development comprises a Strategic Rail Freight Interchange with associated infrastructure and industrial units (referenced to herein as the 'Main Site') and associated Highway Works (referred to collectively herein as the Highway Works').

1.4 In brief, the Proposed Development consists of the following:

- An intermodal freight terminal and associated infrastructure;
- Construction of warehousing and ancillary buildings;
- New road infrastructure and improvement works to the existing road network, and related traffic management measures;
- Strategic landscaping and tree planting to provide screening and improve habitat connectivity;
- New foot and cycle links and associated sustainable drainage;
- Earthworks and demolition of some existing structures within the Main Site, and
- Renovation and change of use of retained residential and agricultural buildings.

1.5 Full details of the Proposed Development are provided separately in the Environment Strategy (ES) Chapter 2: Proposed Development.

Site Context

1.6 The Application Site, as defined by the 'Order Limits', is located south and south-east of Ardley. The 'Main Site' is located between the B430 and the disused RAF Upper Heyford airfield which lies to the west and lies immediately south of the Chiltern Railway line. The Main Site is dominated by arable and neutral grassland used for grazing, with hedgerows trees, scrub and neutral grassland at the field margins. The Ashgrove Farm farmstead lies in the north-east of the Main Site which comprises several farm buildings and residences and a Biffa 'In Vessel Composting' facility lies within the southern east. Agricultural fields extend from the southern boundary and form much of the surrounding landscape. To the east of the Main Site and the B430 is the Viridor Ardley Energy Recovery Facility ('Viridor ERF'), Valencia Waste Management facility and Ardley Landfill Site, and to the south of the waste facilities is an active minerals quarry. Other habitats present within the Site include small plantation woodlands; predominantly broadleaved, although some mixed and coniferous areas were present, six waterbodies, watercourses and areas of hardstanding and unsealed surfaces, buildings, scrub, introduced shrub, lowland calcareous grassland, lowland meadows, modified grassland, ephemeral vegetation, tall forbs and bare ground.

1.7 The Highways Works part of the application site include land on the eastern and western sides of the M40 Junction 10 and the western side of M40 Junction 9 largely comprises arable land with planted tree groups

and scrub associated with screening functions of highways infrastructure. Other habitats include neutral grassland road verges and ponds. The proposed 'Ardley Bypass' is located to the north-east of the Main Site and crosses arable fields bound by native hedgerows, as well as the Chiltern Railway line. To the south-east of the Main Site the proposed route of the 'Middleton Stoney Relief Road' crosses arable fields and native hedgerows, a section of the Gagle Brook, neutral and modified grassland road verges and also woodland associated with the B4030.

Assessment Scope

1.8 Specific guidance for the application of BNG to NSIPs ~~is expected in May~~was published in August 2026[1] that provides further information following initial guidance published in May 2026. This confirms ~~In the interim,~~ the principle of providing compensation relative to impacts remains ecologically sound.

1.9 The criteria for inclusion within Order Limits as part of a DCO application are typically broader than the boundaries used for a standard planning applications (under the Town and Country Planning Act 1990).

1.10 Within the O~~o~~rder L~~l~~imits several areas have been identified as not subject to ecological impacts, and it is considered disproportionate to include them within the BNG assessment. The areas scoped out of the assessment are detailed below and illustrated in Figure 1.

- Retained land within the existing landfill permit area, which lies beyond the area of works.
- Modification to the active travel network which will result in the cessation of public rights of ways through restricted areas of agricultural land.
- Areas of highways works related solely to signage.
- Existing buildings to be retained and utilised as estate offices.
- Maintenance of rail tracks where bank sides will be unaffected.

1.11 To assess whether targeted mitigation proposals meet their requirements, the site has been further partitioned into two distinct areas:

- Ardley Cutting and Quarry Site of Special Scientific Interest (SSSI) and associated ~~mitigation~~ compensation areas: referred to as "SSSI & ~~Mitigation~~ Compensation Area" throughout this report. This area includes sections of the SSSI encompassed within the Order Limits and all areas dedicated to providing ~~mitigation~~ compensation for impacts to SSSI habitats.
- Wider Site: this refers to the remainder of the Application Site excluding the SSSI & Compens~~Mitig~~ation Area.

1.12 Any area that is referred to as "Combined" is the total of these two partitions, which is the entire scoped site area.

Report Objectives

1.13 This Biodiversity Net Gain Report is based on the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance. The 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.

[1] https://www.gov.uk/guidance/biodiversity-net-gain-nationally-significant-infrastructure-projects [accessed 01.10.26].

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- Demonstrate the capacity for the proposals to deliver a net gain in biodiversity through the Statutory Biodiversity Metric.
- Provide recommendations for the proposals to enhance their biodiversity value.

2.0 LEGISLATION AND POLICY

National Networks National Policy Statement (NNNPS 2024)

2.1 The National Networks National Policy Statement is the primary source of policy for Nationally Significant Infrastructure Projects. This sets out "*the need for, and government's policies to deliver, development of Nationally Significant Infrastructure Projects (NSIPs) on the national road and rail networks in England*" (paragraph 1.1) and provides guidance for the promoters of such projects.

2.2 With regard to biodiversity net gain the NNNPS references the requirement for this to be applied in conjunction with the mitigation hierarchy[2], and encourages consultation with Local Nature Recovery Strategies (where such strategies are in place) and to other relevant national or local plans and strategies in order to identify opportunities by which schemes can contribute towards local nature recovery and to wider environmental enhancements, such as via increased habitat connectivity (paragraphs 4.23-4.25). The NNNPS furthermore promotes a holistic approach whereby "*consideration should also be given to national priorities and targets, such as reduced flood risk, improved air or water quality, and increased access to natural greenspace, or tree planting, woodland creation and protecting long established woodlands*" (paragraph 5.67).

National Planning Policy Framework (NPPF 2026)

2.3 Whilst not the primary source of policy for NSIPs, the NPPF is a relevant material consideration. It was updated in summer 2026.

2.4 Paragraph 17(c) of t~~T~~he National Planning Policy Framework (NPPF) 2026 highlights environmental themes, including the enhancement of biodiversity, as one of the three overarching objectives of the planning system.

2.5 Plan-making policy N2: Improving the natural environment furthermore states:

"N2 (1). To contribute positively to the natural environment, and support nature's recovery, development proposals should:

a. Consider the environmental qualities of land proposed for development, including habitats, landscape character and the natural beauty of the countryside, and identify opportunities for those qualities to be conserved or enhanced (including through requirements for biodiversity net gain where these apply); …

c. Take suitable opportunities to connect to and strengthen ecological networks that extend beyond the site, drawing on the measures proposed by Local Nature Recovery Strategies, National Forest Strategies and Community Forest Plans, where present, and other relevant assessments;

d. Conserve and enhance existing natural features of visual, historic or nature conservation value (such as established trees and hedgerows) where possible; and use appropriate landscaping to help create a well-designed place and integrate the development into its surroundings;

[2] The principle that environmental harm resulting from a development should be avoided (through locating development where there will be less harmful impacts), adequately mitigated, or, as a last resort, compensated for.

e. Use green infrastructure provided as part of the scheme and nature-based solutions to secure multiple benefits: such as for biodiversity; surface water and pollution management (including maintaining flow rates and water quality); climate change mitigation and adaptation, and recreation;

f. Minimise any adverse impacts on biodiversity and include features which support priority or threatened species such as swifts, bats and hedgehogs. Development proposals should incorporate integrated nest boxes (commonly known as swift bricks) into their construction unless there are compelling technical reasons which prevent their use, or would make them ineffective; and

g. Ensure that green infrastructure and other features to support nature are located and designed to minimise risk of future failure, and that appropriate measures are in place for any necessary long-term management."

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~~2.1 4 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;*~~

~~*193.d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."*~~

~~**National Networks National Policy Statement (NPS 2024)**~~

~~2.2 The National Networks National Policy Statement sets out "*the need for, and government's policies to deliver, development of Nationally Significant Infrastructure Projects (NSIPs) on the national road and rail networks in England*" (paragraph 1.1) and provides guidance for the promoters of such projects.~~

~~2.3 With regard to biodiversity net gain the NPS references the requirement for this to be applied in conjunction with the mitigation hierarchy[3], and encourages consultation with Local Nature Recovery Strategies (where such strategies are in place) and to other relevant national or local plans and strategies in order to identify opportunities by which schemes can contribute towards local nature recovery and to wider environmental enhancements, such as via increased habitat connectivity (paragraphs 4.23-4.25). The NPS furthermore promotes a holistic approach whereby "*consideration should also be given to national priorities and targets, such as reduced flood risk, improved air or water quality, and increased access to natural greenspace, or tree planting, woodland creation and protecting long established woodlands*" (paragraph 5.67).~~

The Environment Act 2021

~~2.4~~2.6 In England, biodiversity net gain is required for all minor and significant applications (excluding DCO) under statutory frameworks introduced by Schedule 7A of the Town and Country Planning Act 1990 (inserted by the Environment Act 2021).

~~[3] The principle that environmental harm resulting from a development should be avoided (through locating development where there will be less harmful impacts), adequately mitigated, or, as a last resort, compensated for.~~

~~2.5~~2.7 At this point mandatory BNG has not been brought into force for NSIP applications. Current guidance from Natural England and DEFRA indicates that BNG will become mandatory for application from May 2026. However, no fixed date for this has been published and as such is potentially subject to change.

Biodiversity Net Gain Hierarchy

~~2.6~~2.8 The statutory framework allows for the 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

~~2.7~~2.9 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 by CIEEM.

Cherwell District Council Local Policy

~~2.8~~2.10 The Cherwell Local Plan Part 1 2011-2031 (Adopted 2015)[4] includes a number of policies of relevance to biodiversity.

Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment

"Protection and enhancement of biodiversity and the natural environment will be achieved by the following:

- *In considering proposals for development, a net gain in biodiversity will be sought by protecting, managing, enhancing and extending existing resources, and by creating new resources;*
- *The protection of trees will be encouraged, with an aim to increase the number of trees in the District;*
- *The reuse of soils will be sought If significant harm resulting from a development cannot be avoided ~~(~~(through locating on an alternative site with less harmful impacts~~)~~), adequately mitigated, or as a last resort, compensated for, then development will not be permitted;*
- *Development which would result in damage to or loss of a site of international value will be subject to the Habitats Regulations Assessment process and will not be permitted unless it can be demonstrated that there will be no likely significant effects on the international site or that effects can be mitigated;*

[4] Cherwell Local Plan (Adopted July 2015). Available at: *https://www.cherwell.gov.uk/downloads/download/45/adopted-cherwell-local-plan-2011-2031-part-1-incorporating-policy-bicester-13-re-adopted-on-19-december-2016*

- *Development which would result in damage to or loss of a site of biodiversity or geological value of national importance will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site and the wider national network of SSSIs, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity;*
- *Development which would result in damage to or loss of a site of biodiversity or geological value of regional or local importance including habitats of species of principal importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity;*
- *Development proposals will be expected to incorporate features to encourage biodiversity, and retain and where possible enhance existing features of nature conservation value within the site. Existing ecological networks should be identified and maintained to avoid habitat fragmentation, and ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity;*
- *Relevant habitat and species surveys and associated reports will be required to accompany planning applications which may affect a site, habitat or species of known or potential ecological value 106 Cherwell Local Plan 2011-2031 Part 1 Section B - Policies for Development in Cherwell;*
- *Air quality assessments will also be required for development proposals that would be likely to have a significantly adverse impact on biodiversity by generating an increase in air pollution;*
- *Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourably;*
- *A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management.*

Policy ESD 11: Conservation Target Areas

"Where development is proposed within or adjacent to a Conservation Target Area biodiversity surveys and a report will be required to identify constraints and opportunities for biodiversity enhancement. Development which would prevent the aims of a Conservation Target Area being achieved will not be permitted. Where there is potential for development, the design and layout of the development, planning conditions or obligations will be used to secure biodiversity enhancement to help achieve the aims of the Conservation Target Area."

~~2.9~~2.11 The Ardley and Heyford Conservation Target Area Conservation Target Area (CTA) encompasses a limestone plateau between Ardley and Upper Heyford. The CTA includes two SSSIs (Ardley Cutting and Quarry; Ardley Trackways), two LWS (Upper Heyford Airfield; Trow Pool) and one proposed LWS (Ardley Fields Quarry). It further includes Local Geological Sites (Ardley Quarry North; Ardley Fields Quarry), two District Wildlife Sites (The Heath; Trackway adjacent to The Gorse) and one road verge nature reserve.

~~2.10~~2.12 The stated ecological targets are

- Calcareous grassland – management, restoration and creation;
- Hedgerows – management and restoration;
- Grassland management including buffering to support ground nesting birds;

- Great crested newts (GCN) – conserve conservation status; manage ponds and terrestrial habitat such as copses and wooded strips.

Policy ESD 13: Local Landscape Protection and Enhancement

"Opportunities will be sought to secure the enhancement of the character and appearance of the landscape, particularly in urban fringe locations, through the restoration, management or enhancement of existing landscapes, features or habitats and where appropriate the creation of new ones, including the planting of woodlands, trees and hedgerows."

Policy ESD 17: Green Infrastructure

The District's green infrastructure network will be maintained and enhanced through the following measures:

- *Pursuing opportunities for joint working to maintain and improve the green infrastructure network, whilst protecting sites of importance for nature conservation;*
- *Protecting and enhancing existing sites and features forming part of the green infrastructure network and improving sustainable connectivity between sites in accordance with policies on supporting a modal shift in transport* (*Policy SLE 4: Improved Transport and Connections*)*, open space, sport and recreation* (*Policy BSC 10: Open Space, Outdoor Sport and Recreation Provision*)*, adapting to climate change* (*Policy ESD 1: Mitigating and Adapting to Climate Change*)*, SuDS* (*Policy ESD 7: Sustainable Drainage Systems* (*SuDS*))*, biodiversity and the natural environment* (*Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment*)*, Conservation Target Areas* (*Policy ESD 11: Conservation Target Areas*)*, heritage assets* (*Policy ESD 15*) *and the Oxford Canal* (*Policy ESD 16*)*;*
- *Ensuring that green infrastructure network considerations are integral to the planning of new development. Proposals should maximise the opportunity to maintain and extend green infrastructure links to form a multi-functional network of open space, providing opportunities for walking and cycling, and connecting the towns to the urban fringe and the wider countryside beyond;*
- *All strategic development sites* (*Section C: 'Policies for Cherwell's Places'*) *will be required to incorporate green infrastructure provision and proposals should include details for future management and maintenance."*

Biodiversity Net Gain Minimum Reporting Requirements

~~2.11~~2.13 The Government's BNG Planning Practice Guidance (PPG)[5] sets out the minimum requirements of any planning application subject to mandatory BNG to present as part of any submission. While this scheme is not subject to mandatory BNG, these requirements have been conformed with and are set out in Table 1 below to provide confidence that the scheme will be able to demonstrate a BNG.

[5] Gov.uk (2024), Biodiversity Net Gain. Available at: Biodiversity net gain - GOV.UK

Table 1: Checklist of Minimum BNG Reporting Requirements

Minimum Requirements in BNG PPG	Statement of Relevance to Site
Confirmation that the Site is believed to be subject to the mandatory BNG condition.	The Site is an NSIP and the application is for an Order granting Development Consent. It is therefore exempt from the mandatory BNG condition.
The pre-development biodiversity value of the Site, either on the data of application or an earlier proposed date (*as appropriate*).	The accompanying Statutory Metric completed for the scheme provides 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 13th August 2025 when the final habitat survey was completed. This is considered to be an appropriate date as it is within the date 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, (last updated in Julyne~~ly~~ 202~~6~~5~~5~~), was used to calculate the pre-development 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 Oxfordshire Railfreight Limited 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*)	Twenty-eight trees classified as veterans under The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024 are to be removed. Of these trees a single tree also qualified as a Veteran under the definitions used in the National Planning Policy Framework 2026 and National Networks National Policy Statement 2024. A Veteran Tree Strategy is appended to the draft Habitat Management and Monitoring Plan (HMMP) (ES Appendix ES6.11) that details bespoke mitigation measures for these trees.
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 2 shows the baseline habitats present on-site on the proposed relevant date (13th August 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. All survey work was undertaken by suitably experienced surveyors with minimum FISC level 3 or equivalent experience. Survey work within the Ardley Cutting and Quarry SSSI was undertaken by a FISC level 5 surveyor.

3.2 A habitat survey was conducted over multiple visits between June and August 2025. Survey methods broadly followed the UK Habitat Classification System[6] (UKHab) to map habitats present onsite. This involved a systematic walk over of the Site to classify the broad habitat types which were broadly mapped in the field using a detailed topography map produced for the scheme using a combination of Qfield and manual paper recording as appropriate.

3.3 Habitat condition assessment surveys were completed over multiple visits between June and August 2025 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.

3.4 A River Condition Assessment Survey was undertaken following the MoRPh methodology as requirement by the Statutory Biodiversity Net Gain Metric. This including both the MoRPh field survey and the RCA desk study elements in order to assess the condition of rivers present onsite. The survey was completed by a trained and accredited MoRPh surveyor on 10th and 11th June 2025.

3.5 Further details of the above surveys are provided in the accompanying Ecological Appraisal (FPCR, 2026).

Biodiversity Net Gain Calculation

3.6 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.

3.7 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.

3.8 On-Site post-development habitats were determined with reference to the latest Parameters Plan (08308-FPCR-ZZ-XX-DR-L-0012, Rev P3~~3~~, FPCR, 202~~5~~) and adapted with input from other contributing disciplines, and where further ecological enhancements are being recommended. Proposed habitats were mapped and digitised using QGIS to generate spatial data.

3.9 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.

3.10 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:

[6] Butcher, B., Edmonds, B., Norton, L., & Treweek, J. (n.d.). The UK Habitats Classification System V2. UKHab. Available at: https://ukhab.org~~/~~

- 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.

3.11 The strategic significance multiplier was assigned based on the strategic objectives and locations identified within the Oxfordshire Local Nature Recovery Strategy (LNRS). The published LNRS spatial data used in the assessment for was downloaded on 19th January 2026.

3.12 Full details of the calculation methodology are provided in The Statutory Biodiversity Metric User Guide.

Limitations

3.13 Natural ecological communities are susceptible to change; at times this change can be rapid as a result of internal and external environmental factors. The calculations are based on ecological assessments of habitats carried out during 2025; as a result, changes which may affect the conclusions of this report may occur, if a prolonged period of time elapses prior to the commencement of the project.

4.0 BASELINE - SSSI / COMPENSATION AREA

Irreplaceable Habitats

4.1 Impacted habitats located within Ardley Cutting and Quarry SSSI were given consideration as to the feasibility of their replacement.

4.2 The limestone grassland on the steep banks of the railway cutting and the adjacent quarry forms the main biological interest. The invertebrate fauna is particularly rich along the railway cutting, with large populations of calcareous grassland butterflies.

4.3 The grassland exists as a result of thin soils and rock exposures created by the construction of the rail line. While the proposed works will impact these habitats where rail siding junctions are created, the works will result in an overall increase in length rail cuttings and as a result, an increase in provision of rock exposures and suitable soils to support calcareous grassland communities. The feasibility of replacement grasslands and associated timescales are not considered to warrant classification as irreplaceable.

Area Habitats (SSSI / Compensation Area)

4.4 A summary description and baseline conditions are provided in *Table 2* below and an illustration is provided in *Figures 2-3.7*. Full descriptions are given in the Ecological Appraisal (FPCR, 2026).

4.5 Baseline condition assessments are provided in *Appendix A*.

Table 2: Baseline Habitats Summary – SSSI / Compensation Area

Ref	Habitat	Condition	Distinctiveness	Description
N/A	Cropland	N/A	Low	The fields within the dedicated mitigation area are managed as arable cereal crops.

Ref	Habitat	Condition	Distinctiveness	Description
G132, G137, G138, G139, G140, G141, G143, G144, G145	Lowland calcareous grassland	Poor - Moderate	High	A patchwork of grassland was present within the boundary of the SSSI, predominantly on the banks of the railway cutting and extending within the former quarry area to the south. Significant areas of encroaching scrub were recorded.
G133, G134, G135, G136, G23	Lowland meadows	Poor - Moderate	Very high	A patchwork of grassland was present within the boundary of the SSSI, predominantly on the banks of the railway cutting and extending within the former quarry area to the south. Significant areas of encroaching scrub were recorded.
G33, G35, G41, G63, G65, G67, G105, G131, G142, G146	Other neutral grassland	Poor - Moderate	Medium	Patches of grassland present along the verges of the railway banks.
S40, S78	Blackthorn scrub	Poor - Moderate	Medium	Located along the railway embankments with an additional area on a road verge.
N/A	Bramble scrub	N/A	Medium	Some small patches were present along the railway cutting.
N/A	Hawthorn scrub	Poor - Moderate	Medium	Recorded along the banks of the railway cutting.
S1, S13, S17, S2, S20, S21, S23, S36, S38, S4, S45, S47, S52, S6, S68, S72, S74, S77, S78, S81, S9	Mixed Scrub	Poor – Good	Medium	Areas of dense scrub were recorded along the banks of the railway line.
W40, W50	Other woodland; broadleaved	Poor - Moderate	Medium	Small areas of woodland located along the southern railway embankment.
P20	Ponds (non-priority habitat)	Moderate	Medium	A pond located to the south of the railway line, around 80m in length.
P4	Ponds (priority habitat)	High	Poor	GCN were last recorded within P50 in 2022 (not recorded during surveys in 2025).

Hedgerows (SSSI/ Compensation Area)

4.6 The Site supports a range of hedgerows and lines of tress associated with field boundaries. A summary description and baseline conditions are provided in *Table 3* below and an illustration is provided in *Figures 2-3.7*. Full descriptions are given in the Ecological Appraisal (FPCR, 2026). Baseline condition assessment are provided in *Appendix A*.

Table 3: Baseline Hedgerow Summary – Wider Site

Ref	Hedgerow Type	Condition	Description
H41	Native hedgerow	Good	Located along the northern boundary of the arable cereal crop field
H87	Species-rich native hedgerow	Good	Located along the western boundary of the arable cereal crop field

Watercourses (SSSI/ Compensation Area)

4.7 Several watercourse sections pass through or adjacent to the Site. A summary description and baseline conditions are provided in *Table 4* below and an illustration is provided in *Figures 2-2.7*.and *3-3.7*. Full descriptions are given in the Ecological Appraisal (FPCR, 2026).

4.8 Baseline condition assessment are provided in *Appendix A*.

Table 4: Baseline Watercourse Summary

Ref	Watercourse Type	Condition	Distinctiveness	Description
KC, GB	Other rivers and streams	Poor - Moderate	High	Watercourses mainly in association with field boundaries.
N/A	Culvert	Poor	Low	Culverts under field access links and under the path of the railway.

5.0 PROPOSALS – SSSI / COMPENSATION AREA

5.1 Proposed habitat retention is shown on *Figures 4-4.7*. Proposed habitats are shown on *Figures 5-5.7* and summarised in *Table 11*.

5.2 At this design stage, planting plans and detailed habitat creation and ongoing management measures have not yet been fixed. Therefore, a number of assumptions regarding proposed habitat types and condition have been made during this assessment. Individual habitat type and condition targets are outlined within this section and have been informed by the Parameters Plan and ecological professional judgement.

Additional Considerations (SSSI / Compensation Area)

5.3 Targeted mitigation will be provided to offset unavoidable habitat loss from within the Ardley Cutting and Quarry SSSI to maintain the ecological integrity and qualifying features of this designated site.

Habitats (SSSI / Compensation Area)

Habitat Retention

5.4 Habitats proposed for retention includes all habitats within the Ardley Cutting and Quarry SSSI outside the required works footprint.

Habitat Enhancement

5.5 Watercourses are to be enhanced where specific sections were assessed in a lower condition, than was typical of the wider water course in the immediate areas. Riparian encroachment will be reduced to enhance watercourse corridors.

Habitat Creation

5.6 Proposed habitat creation comprises a range of grassland habitats including calcareous grassland and lowland meadows. A section of broadleaved woodland will also be created to expand upon an adjoining section of existing woodland that falls within the Wider Site boundary.

Table 5: Outline Habitat Creation Proposals – SSSI / Compensation Area

Habitat	Description	Condition
Other neutral grassland	Grassland with management tailored for biodiversity value. Smaller areas, close to sources of disturbance are predicted to be limited to poor conditions, whereas more extensive areas can be expected to achieve at least moderate condition. Management practices will be designed to support ground nesting birds and GCN.	Poor - Moderate
Lowland calcareous grassland	Limestone arising to be integrated with topsoil to support calcareous species assemblages.	Poor - Good
Lowland meadows	Species rich meadow grassland area managed to maximize biodiversity value.	Poor - Good
Other woodland; broadleaved	A small section of woodland planting will expand an area of existing woodland that lies adjacent to the Ardley Cutting and Quarry SSSI.	Moderate

Hedgerows (SSSI / Compensation Area)

Hedgerow Retention

5.7 Approximately 0.52km (c.98%) of the existing hedgerow network will be retained across the SSSI / Compensation Area.

Hedgerow Creation

5.8 Proposed hedgerow creation will provide 238m of species-rich native hedgerow.

Table 6: Outline Hedgerow Creation Proposals – SSSI / Compensation Area

Habitat	Description	Condition
Species-rich Native Hedgerow	Standard new planting across the scheme.	Moderate

Watercourses (SSSI / Compensation Area)

Watercourse Retention

5.9 Approximately 0.44km (c.98%) of the existing watercourses are to be retained or enhanced within the SSSI / Compensation Area's impact zone.

Watercourse Enhancement

5.10 The section of Padbury Brook immediately downstream of Kennel Copse (KC-A, Figure 5.1 will be enhanced through targeted measures to improve its condition. The southern bank top will be planted with native lowland meadow grassland and the northern bank with native woodland and scrub with a scalloped edge facing the watercourse to provide a varied vegetation structure within the riparian zone. The bank face will also be modified to produce some shallow sections, with boulders and gravel introduced to the channel to create natural features within. Native aquatic plant species will be planted at the margins and within the channel.

Watercourse Creation

5.11 6m of watercourse will be culverted to route it beneath the proposed rail line. Although this is located within the Wider Site boundary rather than directly inside the SSSI / Compensation Area, it falls within the designated watercourse impact zone that must be considered for Biodiversity Net Gain purposes.

Table 7: Outline Watercourse Creation Proposals – SSSI / Compensation Area

Habitat	Description	Condition
Culverts	6m of culvert will be created to route the existing watercourse beneath the proposed rail line.	Poor

Strategic Significance

5.12 The Oxfordshire Local Nature Recovery Network Strategy was reviewed to inform site design. The key objectives identified which were considered applicable to allocate strategic significance (Figure 7) were:

- (5) Create areas of calcareous species-rich grasslands in suitable locations, particularly slopes.
- (6) Create areas of neutral species-rich grasslands in suitable locations.
- (30) Create new areas of habitat that contain a matrix of habitat types including small woodland patches, scattered trees, scrub, and grassland.
- (38) Create new woodland by planting trees (or enabling their natural regeneration) using species that are suited to the soil type and site conditions.
- (42) Restore river diversity and manage rivers and their riparian (riverside) habitats to achieve good ecological condition that supports species.
- (55) Create new, varied ponds in suitable locations across all habitat types to increase biodiversity and create more clean water habitats.

5.13 While further reference to the LNRS objectives has been used to inform planting and management prescriptions, the diffuse nature of these measures do not fit within the spatial requirements to be considered from a BNG assessment. In particular the scheme will support:

- Willow tits through provision and retention of deadwood habitats.
- Black and brown hairstreak butterflies through inclusion of blackthorn, and management to allow areas of suckering growth.
- Dark Green Fritillary through inclusion violets and sensitive management to provided light patches of scrub.

- White Letter Hairstreak butterflies through new disease resistant elms.

~~4.0~~6.0 BASELINE – WIDER SITE

Irreplaceable Habitats

~~4.1~~6.1 A veteran tree survey and assessment was undertaken by FPCR Environment and Design on 30th June 2026. The survey was conducted by an experienced arboriculturist ~~in accordance with guidance contained within British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations' (hereafter referred to as BS5837)~~. Trees were reviewed ~~under~~ using two approaches.

6.2 All trees on Site were firstly assessed using N~~PPF~~ NPS (2024) definition for veteran trees~~:~~: *"A tree which, may not be very old, but they have significant decay features, such as branch death and hollowing. All ancient trees are veteran trees, but not all veteran trees are ancient."*

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~~4.2~~6.3 ~~–~~Four such trees were identified, of which three can be retained and appropriately buffered within the scheme designs.

~~4.3~~6.4 The lower threshold set by The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024, was ~~only~~ also considered, but only in relation to trees which would be removed as a result of proposals. As such the list identifies impacted trees but should not be viewed as an exhaustive list of BNG veterans on-Site. In addition to the single tree to be lost defined as veteran under the NNPS~~PPF~~ 2024~~6~~ definition, a further twenty-seven trees to be lost were identified as BNG defined veterans.

6.5 A separate Veteran Tree Strategy (HMMP: ES Appendix ES6.11) details these trees and provides bespoke mitigation measures.

~~Irreplaceable Habitats~~

~~4.4 Impacted habitats located within Ardley Cutting and Quarry SSSI were given consideration as to the feasibility of their replacement.~~

~~4.5 The limestone grassland on the steep banks of the railway cutting and the adjacent quarry forms the main biological interest. The invertebrate fauna is particularly rich along the railway cutting, with large populations of calcareous grassland butterflies.~~

~~4.6 The grassland exists as a result of thin soils and rock exposures created by the construction of the rail line. While the proposed works will impact these habitats where rail siding junctions are created, the works will result in an overall increase in length rail cuttings and as a result, an increase in provision of rock exposures and suitable soils to support calcareous grassland communities. The feasibility of replacement grasslands and associated timescales are not considered to warrant classification as irreplaceable.~~

Area Habitats (Wider Site)

~~4.7~~6.6 A summary description and baseline conditions are provided in *Table ~~8~~2.1* below and an illustration is provided in *Figures 2-3.7*. Full descriptions are given in the Ecological Appraisal (FPCR, 2026).

~~4.8~~6.7 Baseline condition assessments are provided in *Appendix A*.

Table ~~8~~2.1: Baseline Habitats Summary – Wider Site

Ref	Habitat	Condition	Distinctiveness	Description
N/A	Cropland	N/A	Low	The majority of the fields are managed as arable cereal crops.

Ref	Habitat	Condition	Distinctiveness	Description
N/A	Temporary Ley	Poor	Medium	Three arable fields south of the quarry supported a homogenous grassland sward. Cropping cycle for these fields are on a four year Ley. The 10 year history is as follows – 2016 Winter Wheat 2017 Oil Seed Rape 2018 Winter Wheat 2019 Oil Seed Rape 2020 Winter Wheat 2021 Rye 2022 AB15 Legume Fallow 2023 AB15 Legume Fallow 2024 AB15 Legume Fallow 2025 AB15 Legume Fallow 2026 schedules as Spring Barley
G23~~132, G137, G138, G139, G140, G141, G143, G144, G145~~	Lowland calcareous grassland	Poor–~~Moderate~~	High	A small patch of grassland located along the eastern boundary of the site. ~~patchwork of grassland was present within the boundary of the SSSI, predominantly on the banks of the railway cutting and extending within the former quarry area to the south. Significant areas of encroaching scrub were recorded.~~
~~G133, G134, G135, G136, G23~~	~~Lowland meadows~~	~~Poor - Moderate~~	~~Very high~~	~~A patchwork of grassland was present within the boundary of the SSSI, predominantly on the banks of the railway cutting and extending within the former quarry area to the south. Significant areas of encroaching scrub were recorded.~~
G31, G6	Modified grassland	Poor - Moderate	Low	Various parcels in association with Ashgrove Farmstead, highway verges and tracks. These were species poor swards, typically subject to regular mowing or grazing.
~~G133, G134, G135, G136, G23 G82,~~ G1, G10, G100, G102, G103, G105, G106, G107, G11, G111, G112, G113, G116, G117, G12, G121, G124, G126, G128, G13, G130,~~G131,~~ G14, ~~G142,~~ G146, G16, G17, G2, G21, G24, G25, G26, G3, G33, G35, G36, G41, G44, G46, G48, G52, G55, G56, G58, G60, G61, G62, G63, G64, ~~G65,~~ G66, G67, G74, G8, G80, G82, G84, G88, G90, G93, G97, G98, G99	Other neutral grassland	Poor - Moderate	Medium	This was the main grassland habitat record on site and included field compartments, highway verges and railways. Two larger areas of note were: - Two fields of former landfill south of the SSSI which was largely unmanaged and supported a long sward. - Three central fields of sheep/cattle grazing with a uniform short sward.
S19~~, S40, S78~~	Blackthorn scrub	Poor–~~Moderate~~	Medium	~~The vast majority of blackthorn scrub was located within the SSSI along the railway embankments with an~~

Ref	Habitat	Condition	Distinctiveness	Description
				~~additional area on a road verge.~~A small patch of scrub located on a highway embankment.
N/A	Bramble scrub	N/A	Medium	Some small patches were present ~~along the railway cutting SSSI and also~~ around the Ashgrove Farmhouse and Farmstead.
~~S1,~~S10, S11, S12, S13, S14, S16, S17, S18, S2, S20, ~~S21,~~ S22, S23, S24, S36, S38, S4, S45, ~~S47,~~ S50A, ~~S52,~~ S57, ~~S6, S68, S72, S74,~~S77, S78, S81, S9	Mixed Scrub	Poor – Good	Medium	Scattered and dense scrub habitats were present at the site boundaries. Areas of dense ~~areas of~~ scrub were also recorded ~~at the in association with the railway line and~~ within more formerly planted areas within the Highway Works area.
~~N/A~~	~~Hawthorn scrub~~	~~Poor - Moderate~~	~~Medium~~	~~Hawthorn scrub areas were solely recorded along the banks of the SSSI railway cutting.~~
U4	Ruderal/Ephemeral	Poor - Moderate	Low	Small areas recorded in disturbed areas.
G84	Tall Forbs	Poor	Low	Areas set aside from arable production were present at field boundaries and locally disturbed areas.
N/A	Introduced shrub	N/A	Low	Areas of introduced planting were present within the site in association with buildings and gardens.
W11, W34, W7	Lowland mixed deciduous woodland	Poor - Moderate	High	An area of lowland mixed deciduous woodland borders the Gagle Brook, and a further linear area is located to the south of the B4030.
W39	Other coniferous woodland	Poor	Low	A small coniferous woodland located within the garden of Ashgrove Farmstead.
W10, W14, W15, W16, W17, W18, W19, W2, W20, W21, W22, W23, W24, W25, W26, W27, W28, W29, W30, W31, W32, W33, W34, W35, W36, W37, W38, W4, W40, W41, W42, W44, W45, W46, W49, W50, W51, W52, W53, W56, W59, W6, W60, W64, W66, W67, W68, W8, W9	Other woodland; broadleaved	Poor - Moderate	Medium	The majority of tree cover comprised small plantations or tree groups at the peripheries of arable field compartments and screening belts/groups in association with the M40 junction.
W1, W3, W43, W5, W58, W61, W62	Other woodland; mixed	Poor - Moderate	Poor - Moderate	The majority of tree cover comprised small plantations or tree groups at the peripheries of arable field compartments and screening belts/groups in association with the M40 junction.
N/A	Rural tree	Poor - Good	Medium	182 trees ranging from small to very large trees which qualify for individual consideration.
N/A	Ornamental pond	Poor	Low	A concrete water tank – P4

Ref	Habitat	Condition	Distinctiveness	Description
N/A	SuDS	Moderate	Low	Small areas adjacent to existing highways.
P1, P2, ~~P20,~~ P3, P50	Ponds (non-priority habitat)	Moderate	Medium	Four~~Five~~ waterbodies - P1, P2, P3, SP1~~, P20.~~located within the wider site.
P4	Ponds (priority habitat)	High	Poor	GCN were last recorded within P50 in 2022 (not recorded during surveys in 2025).

Hedgerows (Wider Site)

4.96.8 The Site supports a range of hedgerows and lines of tress associated with field boundaries. A summary description and baseline conditions are provided in *Table 93.1* below and an illustration is provided in *Figures 2-3.7*. Full descriptions are given in the Ecological Appraisal (FPCR, 2026). Baseline condition assessment are provided in *Appendix A*.

Table 93.1: Baseline Hedgerow Summary – Wider Site

Ref	Hedgerow Type	Condition	Description
H112	Non-native hedgerow	Poor	A single hedgerow along residential property frontages.
H101, H102, H104, H11, H110, H13, H14, H15, H17, H18, H19, H2, H20, H21A, H22, H23, H25B, H27, H28, H30, H33, H35, H36, H37, H39, H4, ~~H41,~~ H43, H46, H49, H53, H57, H58, H59, H62, H67, H68, H69, H7, H71, H72, H73, H74, H75, H80, H84, H9, H90, H91, H94, H95	Native hedgerow	Poor - Good	501 hedgerows distributed across the ~~S~~wider ite.
H10, H100, H111, H16, H21B, H26, H31, H5, H79, H8, H99	Native hedgerow - associated with ditch	Poor - Good	11 hedgerows distributed across the wider ~~S~~site.
H114, H25A, H29, H32, H45, H47, H60, H61, H62, H78, H81, H82, H83, H88	Native hedgerow with trees	Poor - Good	13 hedgerows distributed across the ~~S~~wider site.
H1, H34, H76	Native hedgerow with trees - associated with ditch	Moderate - Good	3 hedgerows distributed across the ~~S~~wider site.
H103, H105, H106, H108, H44, H54, H56, H6, H70, H77, H87, H92, H93, H97, H98	Species-rich native hedgerow	Poor - Good	17 hedgerows distributed across the wider s~~S~~ite.
H3, H38, H40	Species-rich native hedgerow - associated with ditch	Good	3 hedgerows distributed across the wider s~~S~~ite.
H115, H48, H50, H65, H86, H89, H96	Species-rich native hedgerow with trees	Moderate - Good	6 hedgerows distributed across the wider s~~S~~ite.
TL1, TL10, TL11, TL12, TL13, TL14, TL15, TL17, TL19, TL2, TL20, TL21, TL23, TL24, TL25, TL26, TL27, TL28, TL29, TL3, TL4, TL5, TL6, TL7, TL8, TL9	Line of trees	Poor - Moderate	27 lines of trees distributed across the wider s~~S~~ite.
TL22	Line of trees - associated with ditch	Moderate	A single line of trees extending north from the railway.

Watercourses (Wider Site)

4.106.9 Several watercourse pass through or adjacent to the Site. A summary description and baseline conditions are provided in *Table 104* below and an illustration is provided in *Figures 2-2.7*.and *3-3.7*. Full descriptions are given in the Ecological Appraisal (FPCR, 2026).

4.116.10 Baseline condition assessment are provided in *Appendix A*.

Table 104: Baseline Watercourse Summary – Wider Site

Ref	Watercourse Type	Condition	Distinctiveness	Description
TAG, ToGB, KC, J10, GB	Other rivers and streams	Poor - Moderate	High	Watercourses mainly in association with field boundaries.
N/A	Culvert	Poor	Low	Culverts under existing highways.

7.0 PROPOSALS – WIDER SITE

7.1 Proposed habitat retention is shown on *Figures 4-4.7*. Proposed habitats are shown on *Figures 5-6.7*, and summarised in *Table 11*.

7.2 At this design stage, planting plans and detailed habitat creation and ongoing management measures have not yet been fixed. Therefore, a number of assumptions regarding proposed habitat types and condition have been made during this assessment. Individual habitat type and condition targets are outlined within this section and have been informed by the Parameters Plan and ecological professional judgement.

Additional Considerations (Wider Site)

7.3 The eventual land ownership and potential for securing management is limited in certain areas. Specifically:

- Habitat creation associated with highways corridors has been restricted to reflect conditions present in the baseline. Specifically new woodlands are targeted to moderate condition, and grasslands to poor condition.
- The area of former landfill (other neutral grassland in poor condition) is being treated a retained, with impacts expected to be temporary and grassland restored within 2 years.
- The cropland area where the junction works site compound is to be located is being treated as lost, then returned to cropland.
- Linear routes associated with pipeline installation through agricultural habitats are being treated as retained.
- The land along the existing, retained road network connecting into Ardley (Station Road/the B430) and to Bicester (B4030) are treated as retained.

7.4 In addition to the above, a formal legal agreement has been entered into by Oxfordshire Railfreight Ltd. and the relevant landowners to lease for a period of not less than 30 years the two northwesternmost field parcels encompassed by the Order Limits for the purpose of farmland bird mitigation provision.

7.5 With the above considerations, the BNG assessment approach captures the impacts of identified works and aims to deliver appropriate and achievable compensation and enhancement measurements.

Habitats (Wider Site)

Habitat Retention

7.6 Habitats proposed for retention include:

- Arable field area to be re-sown with a cover crop and managed to support the local farmland bird assemblage, specifically wintering corn bunting.
- Highways verges outside the required works footprint.

Habitat Enhancement

7.7 Watercourses are to be enhanced where specific sections were assessed in a lower condition, than was typical of the wider water course in the immediate areas. Riparian encroachment will be reduced across the site to enhance watercourse corridors.

Habitat Creation

7.8 Proposed habitat creation includes:

- A range of grassland habitats including lowland meadows.
- Broadleaved woodland belts across the main development site.
- Lowland mixed deciduous woodland buffering existing woodland area.
- 481 new individual trees.
- Additional smaller areas of habitat including orchards, ponds and scrub.
- Species mitigation measures, which will also contribute to BNG delivery.

Table 11: Outline Habitat Creation Proposals – Wider Site

Habitat	Description	Condition
Modified Grassland	These areas will be created using a flowering lawn seed mix and will be managed sensitively to encourage a more diverse sward throughout. Where any excessive areas of bare ground establish or signs of damage are observed, reseeding will be undertaken.	Poor
Other neutral grassland	Grassland with management tailored for biodiversity value. Smaller areas, close to sources of disturbance are predicted to be limited to poor conditions, whereas more extensive areas can be expected to achieve at least moderate condition. Management practices will be designed to support ground nesting birds and GCN.	Poor - Moderate
Lowland meadows	Species rich meadow grassland area managed to maximize biodiversity value.	Poor - Good
Traditional orchards	An area of orchard to be created within the core development area to provide further habitat diversity and social value for Site users.	Poor
Mixed scrub	Areas of scrub focused around GCN mitigation area and creating connecting habitat between existing woodlands.	Moderate - Good
Lowland mixed deciduous woodland	As per the rules of the metric, an area of this habitat has been created to a limited extent to meet trading rules. This has been sited next to an area of offsite Lowland mixed deciduous woodland, and an area recorded as ancient woodland. This will maximize opportunities for ground flora colonization and succession. To address the additional difficulty of creating this type of habitat, predicted condition has been restricted to poor.	Poor
Other woodland; broadleaved	Significant new woodland planting will provide enhanced connectivity across the Site, linking existing on and offsite woodlands.	Moderate
Individual trees	Scattered tree planting will provide additional value in newly created habitats.	Poor
Ponds (priority habitat)	GCN mitigation ponds, used as a receptor for translocations.	Moderate

Hedgerows (Wider Site)

Hedgerow Retention

7.9 Approximately 15.66km (c.58%) of the existing hedgerow network will be retained across the Wider Site.

Hedgerow Creation

7.10 Proposed hedgerow creation will provide species-rich hedgerows with trees across the scheme. In addition, associated topographical ditch features will be created with select hedgerow planting in open areas.

Table 12: Outline Hedgerow Creation Proposals – Wider Site

Habitat	Description	Condition
Species-rich Native Hedgerow	Standard new planting across the scheme.	Moderate
Species-rich Native Hedgerow with trees	New planting along development frontages. This hedge will be planted with a minimum of 5 native species and managed in the long-term through rotational cutting to encourage the establishment of bushy hedgerows. The hedgerow is to be created with a margin that will be sown with a native wildflower seed mix. Specimen trees will be allowed to establish every 20m to create an oversailing canopy above the hedgerow base.	Moderate
Species-rich Native Hedgerow with trees, associated with ditch	New planting in ecological zone south of the main development. Management as per above, with the addition that a topographical ditch feature (not expected to hold permanent water) will be created on one side of the hedgerow. This will provide additional diversity, providing seasonally damp habitat. Rotational management of the ditch feature will be undertaken to prevent it scrubbing over.	Moderate

Watercourses (Wider Site)

Watercourse Retention

7.11 Approximately 1.97km (c.43%) of the existing watercourses are to be retained or enhanced within the Wider Site's impact zone.

Watercourse Enhancement

7.12 Watercourses will be enhanced by reducing the bank top encroachment within the 10m riparian zone by removing the land from arable agriculture/pasture use and replacement with native species-rich grassland mixes, scrub and woodland.

7.13 The section of Ashgrove Brook between Ashgrove Farm and the proposed Heyford Park Link Road (ToGB-F, Figure 5.4) will be further enhanced through targeted measures to improve its condition. The bank top will be planted with native other neutral grassland and native mixed scrub with a scalloped edge to provide a varied vegetation structure within the riparian zone. Aquatic plant species will be planted at the margins and within the channel. Artificial features on the bank top and in channel will be removed. Most other on-site watercourse sections will be subject to similar measures; however, enhancements elsewhere will not be sufficient to result in the recategorization of watercourse sections into a higher condition category.

Watercourse Creation

7.14 New watercourse channels will be created to realign the headwater sections which are to be lost to facilitate the development proposals.

7.15 Several new ditches will be created in association with SuDS features.

Table 13: Outline Watercourse Creation Proposals – Wider Site

Habitat	Description	Condition
Other river and stream	New stream will be created as part of the channel re-routing. These will be designed to promote a more naturalistic profile than the sections which are to be lost, and buffered from the development footprint.	Fairly Poor
Ditches	Ditches will be created within SuDS network. These will be designed and managed to support GCN. Sections of these will be further deepened to achieve 2m to allow aquatic overwintering habitat. Gradual bank profiles will be included to allow ease of ingress and egress for wildlife. A tailored planting scheme will further support amphibians by providing suitable egg laying habitats.	Poor
Culverts	A number of culverts will be required to allow transport links.	Poor

Baseline – SSSI / Mitigation Area

Irreplaceable Habitats

Impacted habitats located within Ardley Cutting and Quarry SSSI were given consideration as to the feasibility of their replacement.

The limestone grassland on the steep banks of the railway cutting and the adjacent quarry forms the main biological interest. The invertebrate fauna is particularly rich along the railway cutting, with large populations of calcareous grassland butterflies.

The grassland exists as a result of thin soils and rock exposures created by the construction of the rail line. While the proposed works will impact these habitats where rail siding junctions are created, the works will result in an overall increase in length rail cuttings and as a result, an increase in provision of rock exposures and suitable soils to support calcareous grassland communities. The feasibility of replacement grasslands and associated timescales are not considered to warrant classification as irreplaceable.

Area Habitats (SSSI / Mitigation Area)

A summary description and baseline conditions are provided in *Table 2.2* below and an illustration is provided in *Figures 2-3.7*. Full descriptions are given in the Ecological Appraisal (FPCR, 2026).

Baseline condition assessments are provided in *Appendix A*.

Table 2.2: Baseline Habitats Summary – SSSI / Mitigation Area

Ref	Habitat	Condition	Distinctiveness	Description
N/A	Cropland	N/A	Low	The fields within the dedicated mitigation area are managed as arable cereal crops.
G132, G137, G138, G139, G140, G141, G143, G144, G145	Lowland calcareous grassland	Poor – Moderate	High	A patchwork of grassland was present within the boundary of the SSSI, predominantly on the banks of the railway cutting and extending within the former quarry area to the south. Significant areas of encroaching scrub were recorded.
G133, G134, G135, G136, G23	Lowland meadows	Poor – Moderate	Very high	A patchwork of grassland was present within the boundary of the SSSI, predominantly on the banks of the railway cutting and extending within the former quarry area to the south. Significant areas of encroaching scrub were recorded.
G33, G35, G41, G63, G65, G67, G105, G131, G142, G146	Other neutral grassland	Poor - Moderate	Medium	Patches of grassland present along the verges of the railway banks.
S40, S78	Blackthorn scrub	Poor - Moderate	Medium	Located along the railway embankments with an additional area on a road verge.
N/A	Bramble scrub	N/A	Medium	Some small patches were present along the railway cutting.
N/A	Hawthorn scrub	Poor – Moderate	Medium	Recorded along the banks of the railway cutting.
S1, S13, S17, S2, S20, S21, S23, S36, S38, S4, S45, S47, S52, S6, S68, S72, S74, S77, S78, S81, S9	Mixed Scrub	Poor – Good	Medium	Areas of dense scrub were recorded along the banks of the railway line.

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Ref	Habitat	Condition	Distinctiveness	Description
W40, W50	Other woodland: broadleaved	Poor - Moderate	Medium	Small areas of woodland located along the southern railway embankment.
P20	Ponds (non-priority habitat)	Moderate	Medium	A pond located to the south of the railway line, around 80m in length.
P4	Ponds (priority habitat)	High	Poor	GCN were last recorded within P50 in 2022 (not recorded during surveys in 2025).

Hedgerows (SSSI/ Mitigation Area)

The Site supports a range of hedgerows and lines of tress associated with field boundaries. A summary description and baseline conditions are provided in *Table 3.2* below and an illustration is provided in *Figures 2-3.7*. Full descriptions are given in the Ecological Appraisal (FPCR, 2026). Baseline condition assessment are provided in *Appendix A*.

Table 3.2: Baseline Hedgerow Summary – Wider Site

Ref	Hedgerow Type	Condition	Description
H41	Native hedgerow	Good	Located along the northern boundary of the arable cereal crop field
H87	Species-rich native hedgerow	Good	Located along the western boundary of the arable cereal crop field

Watercourses (SSSI/ Mitigation Area)

Several watercourse pass through or adjacent to the Site. A summary description and baseline conditions are provided in *Table 4* below and an illustration is provided in *Figures 2-2.7*and *3-3.7*. Full descriptions are given in the Ecological Appraisal (FPCR, 2026).

Baseline condition assessment are provided in *Appendix A*.

Table 4.2: Baseline Watercourse Summary

Ref	Watercourse Type	Condition	Distinctiveness	Description
KC-GB	Other rivers and streams	Poor - Moderate	High	Watercourses mainly in association with field boundaries.
N/A	Culvert	Poor	Low	Culverts under field access links and under the path of the railway.

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6.0 Proposals – Wider Site

6.1 Proposed habitat retention is shown on *Figures 4-4.7*. Proposed habitats are shown on *Figures 5-6.7*, and summarised in *Table 5*.

6.2 At this design stage, planting plans and detailed habitat creation and ongoing management measures have not yet been fixed. Therefore, a number of assumptions regarding proposed habitat types and condition have been made during this assessment. Individual habitat type and condition targets are outlined within this section and have been informed by the Parameters Plan and ecological professional judgement.

Additional Considerations (Wider Site)

6.3 The eventual land ownership and potential for securing management is limited in certain areas. Specifically:

- Habitat creation associated with highways corridors has been restricted to reflect conditions present in the baseline. Specifically new woodlands are targeted to moderate condition, and grasslands to poor condition.
- The area of former landfill (other neutral grassland in poor condition) is being treated a retained, with impacts expected to be temporary and grassland restored within 2 years.
- The cropland area where the junction works site compound is to be located is being treated as lost, then returned to cropland.
- Linear routes associated with pipeline installation through agricultural habitats are being treated as retained.
- The land along the existing, retained road network connecting into Ardley (Station Road/the B430) and to Bicester (B4030) are treated as retained.

6.4 With the above considerations, the BNG assessment approach captures the impacts of identified works and aims to deliver appropriate and achievable compensation and enhancement measurements.

Habitats (Wider Site)

Habitat Retention

6.5 Habitats proposed for retention include:

- Habitats within the Ardley Cutting and Quarry SSSI outside the required works footprint.
- Arable field area to be re-sown with a cover crop and managed to support Corn bunting.
- Highways verges outside the required works footprint.

Habitat Enhancement

6.6 Watercourses are to be enhanced where specific sections were assessed in a lower condition, than was typical of the wider water course in the immediate areas. Riparian encroachment will be reduced across the site to enhance watercourse corridors.

Habitat Creation

6.7 Proposed habitat creation includes:

- A range of grassland habitats including calcareous grassland and lowland meadows.
- Broadleaved woodland belts across the main development site.
- Lowland mixed deciduous woodland buffering existing woodland area.

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- 481 new individual trees.
- Additional smaller areas of habitat including orchards, ponds and scrub.
- Species mitigation measures, which will also contribute to BNG delivery.

Table 5.1: Outline Habitat Creation Proposals – Wider Site

Habitat	Description	Condition
Modified Grassland	These areas will be created using a flowering lawn seed mix and will be managed sensitively to encourage a more diverse sward throughout. Where any excessive areas of bare ground establish or signs of damage are observed, reseeding will be undertaken.	Poor
Other neutral grassland	Grassland with management tailored for biodiversity value. Smaller areas, close to sources of disturbance are predicted to be limited to poor conditions, whereas more extensive areas can be expected to achieve at least moderate condition. Management practices will be designed to support ground nesting birds and GCN.	Poor Moderate
Lowland calcareous grassland	Limestone arising to be integrated with topsoil to support calcareous species assemblages.	Poor Good
Lowland meadows	Species rich meadow grassland area managed to maximize biodiversity value.	Poor Good
Traditional orchards	An area of orchard to be created within the core development area to provide further habitat diversity and social value for Site users.	Poor
Mixed scrub	Areas of scrub focused around GCN mitigation area and creating connecting habitat between existing woodlands.	Moderate Good
Lowland mixed deciduous woodland	As per the rules of the metric, an area of this habitat has been created to a limited extent to meet trading rules. This has been sited next to an area of offsite Lowland mixed deciduous woodland, and an area recorded	Poor

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Habitat	Description	Condition
	as ancient woodland. This will maximize opportunities for ground flora colonization and succession. To address the additional difficulty of creating this type of habitat, predicted condition has been restricted to poor.	
Other woodland; broadleaved	Significant new woodland planting will provide enhanced connectivity across the Site, linking existing on and offsite woodlands.	Moderate
Individual trees	Scattered tree planting will provide additional value in newly created habitats.	Poor
Ponds (priority habitat)	GCN mitigation ponds, used as a receptor for translocations.	Moderate

Hedgerows (Wider Site)

Hedgerow Retention

6.8 Approximately 15.665.587km (c.587%) of the existing hedgerow network will be retained across the Combined siteWider Site. This comprises 0.52km retained hedgerow habitat within the SSSI & Mitigation Area and 15.35km within the Wider Site.

Hedgerow Creation

6.9 Proposed hedgerow creation will provide species rich hedgerows with trees across the scheme. In addition, associated topographical ditch features will be created with select hedgerow planting in open areas.

Table 6.1: Outline Hedgerow Creation Proposals – Wider Site

Habitat	Description	Condition
Species-rich Native Hedgerow	Standard new planting across the scheme.	Moderate
Species-rich Native Hedgerow with trees	New planting along development frontages. This hedge will be planted with a minimum of 5 native species and managed in the long-term through rotational cutting to encourage the establishment of bushy hedgerows. The	Moderate

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Habitat	Description	Condition
	hedgerow is to be created with a margin that will be sown with a native wildflower seed mix. Specimen trees will be allowed to establish every 20m to create an oversailing canopy above the hedgerow base.	
Species-rich Native Hedgerow with trees, associated with ditch	NVew planting in ecological zone south of the main development. Management as per above, with the addition that a topographical ditch feature (not expected to hold permanent water) will be created on one side of the hedgerow. This will provide an additional diversity, providing seasonally damp habitat. Rotational management of the ditch feature will be undertaken to prevent it scrubbing over.	Moderate

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Watercourses (Wider Site)

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Watercourse Retention

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6.10 Approximately 1.973.31km (c.4376%) of the existing watercourses are to be retained or enhanced within the Combined Site'sWider Site's impact zone. This comprises 3.12km within the Wider Site and 0.44km within the SSSI/Mitigation Area. Note that these figures do not sum to the combined total due to BNG calculations requiring the inclusion of a 10m buffer beyond boundaries. This is to ensure consideration is given to neighbouring watercourse sections that may be impacted, therefore overlap and "double-counting" results where watercourse sections fall within the impact zones of both the Wider Site and SSSI/Mitigation Area partitions.

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Watercourse Enhancement

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6.11 Watercourses will be enhanced by reducing the bank top encroachment within the 10m riparian zone by removing the land from arable agriculture/pasture use and replacement with native species-rich grassland mixes, scrub and woodland.

The section of Padbury Brook immediately downstream of Kennel Copse (KC-A, Figure 5.1), and a section of Ashgrove Brook between Ashgrove Farm and the proposed Heyford Park Link Road (ToGB-F, Figure 5,4) will be further enhanced through targeted measures to improve their its condition. For section ToGB-F tThe bank top will be planted with native other neutral grassland and native mixed scrub with a scalloped edge to provide a varied vegetation structure within the riparian zone. Aquatic plant species will be planted at the margins and within the channel. Artificial features on the bank top and in channel will be removed.

6.12

6.13 For section KC-A the southern bank top will be planted with native calcareous grassland and the northern bank with native woodland and scrub with a scalloped edge facing the watercourse to provide a varied vegetation structure within the riparian zone. The bank face will also be modified to produce some shallow

sections and boulders and gravel will be introduced to the channel to create natural features within the channel. Native aquatic plant species will be planted at the margins and within the channel.

6.14 For section ToGB F the bank top will be planted with native other neutral grassland and native mixed scrub with a scalloped edge to provide a varied vegetation structure within the riparian zone. Aquatic plant species will be planted at the margins and within the channel. Artificial features on the bank top and in channel will be removed.

6.15 Most other on-site watercourse sections will be subject to similar measures; however, enhancements elsewhere will not be sufficient to result in the recategorization of watercourse sections into a higher condition category.

Watercourse Creation

6.16 New watercourse channels will be created to realign the headwater sections which are to be lost to facilitate the development proposals.

6.17 Several new ditches will be created in associationed with SuDS features.

Table 7.1: Outline Watercourse Creation Proposals – Wider Site

Habitat	Description	Condition
Other river and stream	New stream will be created as part of the channel re-routing. These will be designed to promote a more naturalistic profile than the sections which are to be lost, and buffered from the development footprint.	Fairly Poor
Ditches	Ditches will be created within SuDS network. These will be designed and managed to support GCN. Sections of these will be further deepened to achieve 2m to allow aquatic overwintering habitat. Gradual bank profiles will be included to allow ease of ingress and egress for wildlife. A tailored planting scheme will further support amphibians by providing suitable egg laying habitats.	Poor
Culverts	A number of culverts will be required to allow transport links.	Poor

Strategic Significance

6.18 The Oxfordshire Local Nature Recovery Network Strategy was reviewed to inform site design. The key objectives identified which were considered applicable to allocate strategic significance (Figure 7) were:

- (5) Create areas of calcareous species rich grasslands in suitable locations, particularly slopes.
- (6) Create areas of neutral species rich grasslands in suitable locations.
- (30) Create new areas of habitat that contain a matrix of habitat types including small woodland patches, scattered trees, scrub, and grassland.

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- (38) Create new woodland by planting trees (or enabling their natural regeneration) using species that are suited to the soil type and site conditions.
- (42) Restore river diversity and manage rivers and their riparian (riverside) habitats to achieve good ecological condition that supports species.
- (55) Create new, varied ponds in suitable locations across all habitat types to increase biodiversity and create more clean water habitats.

6.19 While further reference to the LNRS objectives has been used to inform planting and management prescriptions, the diffuse nature of these measures do not fit within the spatial requirements to be considered from a BNG assessment. In particular the scheme will support:

- Willow tits through provision and retention of deadwood habitats.
- Black and brown hairstreak butterflies through inclusion of blackthorn, and management to allow areas of suckering growth.
- Dark Green Fritillary through inclusion violets and sensitive management to provided light patches of scrub.

White Letter Hairstreak butterflies through new disease resistant elms.

PROPOSALS – SSSI / MITIGATION AREA

Proposed habitat retention is shown on *Figures 4-4.7*. Proposed habitats are shown on *Figures 5-6.7*, and summarised in *Table 5*.

At this design stage, planting plans and detailed habitat creation and ongoing management measures have not yet been fixed. Therefore, a number of assumptions regarding proposed habitat types and condition have been made during this assessment. Individual habitat type and condition targets are outlined within this section and have been informed by the Parameters Plan and ecological professional judgement.

Additional Considerations (SSSI / Mitigation Area)

Targeted mitigation will be provided to offset any habitat loss from within the Ardley Trackways or Ardley Cutting and Quarry SSSIs to maintain the ecological integrity and qualifying features of these designated sites.

Habitats (SSSI / Mitigation Area)

Habitat Retention

Habitats proposed for retention includes all habitats within the Ardley Cutting and Quarry SSSI outside the required works footprint.

Habitat Enhancement

Watercourses are to be enhanced where specific sections were assessed in a lower condition, than was typical of the wider water course in the immediate areas. Riparian encroachment will be reduced to enhance watercourse corridors.

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Habitat Creation

Proposed habitat creation comprises a range of grassland habitats including calcareous grassland and lowland meadows. A section of broadleaved woodland will also be created to expand upon an adjoining section of existing woodland that falls within the Wider Site boundary.

Table 5.2: Outline Habitat Creation Proposals – SSSI / Mitigation Area

Habitat	Description	Condition
Other neutral grassland	Grassland with management tailored for biodiversity value. Smaller areas close to sources of disturbance are predicted to be limited to poor conditions, whereas more extensive areas can be expected to achieve at least moderate condition. Management practices will be designed to support ground nesting birds and GCN.	Poor - Moderate
Lowland calcareous grassland	Limestone arising to be integrated with topsoil to support calcareous species assemblages.	Poor - Good
Lowland meadows	Species rich meadow grassland area managed to maximize biodiversity value.	Poor - Good
Other woodland; broadleaved	A small section of woodland planting will expand an area of existing woodland that lies adjacent to the Ardley Cutting and Quarry SSSI.	Moderate

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Hedgerows (SSSI / Mitigation Area)

Hedgerow Retention

Approximately 0.52km (c.98%) of the existing hedgerow network will be retained across the SSSI / Mitigation Area.

Hedgerow Creation

Proposed hedgerow creation will provide 238m of species rich native hedgerow.

Table 6: Outline Hedgerow Creation Proposals – SSSI / Mitigation Area

Habitat	Description	Condition
Species rich Native Hedgerow	Standard new planting across the scheme.	Moderate

Watercourses (SSSI / Mitigation Area)

Watercourse Retention

Approximately 0.44km (c.98%) of the existing watercourses are to be retained or enhanced within the SSSI / Mitigation Area's impact zone.

Watercourse Enhancement

The section of Padbury Brook immediately downstream of Kennel Copse (KC-A, Figure 5.1 will be enhanced through targeted measures to improve its condition. The southern bank top will be planted with native lowland meadow grassland and the northern bank with native woodland and scrub with a scalloped edge facing the watercourse to provide a varied vegetation structure within the riparian zone. The bank face will also be modified to produce some shallow sections, with boulders and gravel introduced to the channel to create natural features within. Native aquatic plant species will be planted at the margins and within the channel.

Watercourse Creation

6m of watercourse will be culverted to route it beneath the proposed rail line. Although this is located within the Wider Site boundary rather than directly inside the SSSI / Mitigation Area, it falls within the designated watercourse impact zone that must be considered for Biodiversity Net Gain purposes.

Table 7.2: Outline Watercourse Creation Proposals – SSSI / Mitigation Area

Habitat	Description	Condition
Culverts	6m of culvert will be created to route the existing watercourse beneath the proposed rail line.	Poor

Strategic Significance

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The Oxfordshire Local Nature Recovery Network Strategy was reviewed to inform site design. The key objectives identified which were considered applicable to allocate strategic significance (Figure 7) were:

- (5) Create areas of calcareous species rich grasslands in suitable locations, particularly slopes.
- (6) Create areas of neutral species rich grasslands in suitable locations.
- (30) Create new areas of habitat that contain a matrix of habitat types including small woodland patches, scattered trees, scrub, and grassland.
- (38) Create new woodland by planting trees (or enabling their natural regeneration) using species that are suited to the soil type and site conditions.
- (42) Restore river diversity and manage rivers and their riparian (riverside) habitats to achieve good ecological condition that supports species.
- (55) Create new, varied ponds in suitable locations across all habitat types to increase biodiversity and create more clean water habitats.

While further reference to the LNRS objectives has been used to inform planting and management prescriptions, the diffuse nature of these measures do not fit within the spatial requirements to be considered from a BNG assessment. In particular the scheme will support:

- Willow tits through provision and retention of deadwood habitats.
- Black and brown hairstreak butterflies through inclusion of blackthorn, and management to allow areas of suckering growth.
- Dark Green Fritillary through inclusion violets and sensitive management to provided light patches of scrub.
- White Letter Hairstreak butterflies through new disease resistant elms.

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~~7.0~~8.0 CONCLUSION

~~7.1~~8.1 The habitat retention, enhancement and creation proposals highlighted within this report have all been inputted into the Statutory Biodiversity Metric. *Table ~~14~~8* provides a summary of the headline results of the assessment completed for the proposals

Table ~~14~~8: Statutory Biodiversity Metric Headline Results

		SSSI / Compens~~Mitig~~ation Area	Wider Site	Combined Site
Baseline	Habitat Units	~~63.14~~101.80	~~1141.21~~1141.21~~57.99~~	~~1243.86~~1243.01~~59.79~~
	Hedgerow Units	4.88~~5.15~~	198.05~~37~~	202.92~~3.52~~
	Watercourse Units	3.24	30.63	31.87
Post-Intervention	Habitat Units	~~50.01~~125.04~~123.76~~	~~1288.76~~1288.76~~86.02~~	~~1409.32~~1413.80~~09.77~~
	Hedgerow Units	5.56~~4.64~~	225.30~~2.91~~	230.86~~27.55~~
	Watercourse Units	4.41	33.60	35.36
Total Net Unit Change	Habitat Units	~~-13.13~~23.23~~21.95~~	147.55~~28.03~~	~~153.5~~170.796~~149.98~~
	Hedgerow Units	0.68~~-0.5~~	27.25~~4.54~~	27.94~~24.03~~
	Watercourse Units	1.17	2.97	3.50
Total Net Percentage Change	Habitat Units	~~-20.80~~22.82~~21.57~~%	~~12.93~~12.93~~1.06~~%	13.74~~1.91~~%
	Hedgerow Units	14.04~~-9.79~~%	13.76~~2.37~~%	13.77~~1.81~~%
	Watercourse Units	36.16~~36.16~~%	9.7%	10.98%

~~7.2~~8.2 The Statutory Metric has demonstrated that the combined scheme is capable of gains above 10% in all three assessment categories.

~~7.3 Furthermore, the bespoke SSSI metric demonstrates that the proposals can deliver a significant net gain (21.5%+) via the creation of new high distinctiveness (calcareous grassland) and very high distinctiveness (lowland meadow) habitats, suitable to mitigate and compensate for the small-scale habitat loss from the Ardley Cutting and Quarry SSSI.~~

8.3 Although 9.36ha of the SSSI habitat falls within the boundary of the application site boundary, only 2.89ha will be directly impacted by the proposed development. This will result in the loss of 13.13 habitat units from within the SSSI area. To compensate for this loss, the development proposal offers an additional 19.33ha of land as dedicated on-site compens~~mitig~~ation, providing an additional 36.36 habitat units. Overall, this will result in a significant +22.82% net gain including the creation of new high distinctiveness (calcareous grassland) and very high distinctiveness (lowland meadow) habitats, tailored to mitigate and compensate for the localised habitat loss from the Ardley Cutting and Quarry SSSI.

~~7.4~~8.4 ~~Whilst there would be an overall reduction in hedgerow units within the SSSI / Mitigation Area (0.5 units, 9.79% deficit), hedgerows are not a qualifying feature of the SSSI and the combined proposals would deliver in excess of a 10% net gain in hedgerow habitat. Conversely t~~The metric for the Wider Site alone indicates that whilst it~~this can~~ will deliver a net gain for watercourse units, it may~~but may~~ not achieve a 10%+ gain. In combination with the SSSI / Compens~~Mitig~~ation Area however, the Application Site as a whole would achieve 10%+. Note that these figures do not sum to the combined total due to BNG calculations requiring the inclusion of a 10m buffer beyond boundaries. This is to ensure consideration is given to neighbouring watercourse sections that may be impacted, therefore overlap and "double-counting" results where watercourse sections fall within the impact zones of both the Wider Site and SSSI/Compens~~Mitig~~ation Area partitions.

~~7.5~~8.5 The final BNG gains will be subject to detailed designs.

Habitat Trading Rules

~~7.6~~8.6 Trading rules have been complied with in all three assessment categories.

Additionality

~~7.7~~8.7 BNG guidance highlights that where part of the habitat delivery relates to mitigation and compensation actions, at least 10% of the developer's total biodiversity units must come from additional activities.

~~7.8~~8.8 The extent of specific mitigation and compensation measures for protected species and designated site impacts (*Figures 8-10.2*) are shown in *Figures 11-13*. These ecological ~~mitigation~~ measures are to some extent stacked. Specifically, c.~~13.65ha~~ 15.44ha calcareous grassland and c~~6.96ha~~ 5.17ha lowland meadow are being created to compensate for impacts to SSSI habitats. Sensitive management of these areas will encompass consideration of the requirements of farmland birds including ground nesting species such as skylark and so will also contribute towards the bird mitigation strategy.

~~7.9~~8.9 The BNG delivery apportioned to SSSI and species-specific mitigation measures totals 297.82~~37.58~~ area habitat units. This represents ~~16.9~~21.07% of the total delivery. As such the BNG is compliant with additionality requirements.

Biodiversity Net Gain Hierarchy

~~7.10~~8.10 The Biodiversity Net Gain hierarchy is provided within the Government's PPG and sets out guidance on how to prioritise habitat avoidance, retention and compensation for more valuable habitats. The BNG Hierarchy has influenced the Site design through the following measures:

- Habitat loss has for the most part avoided high and very high distinctiveness habitats, with the exception of some areas of grassland loss required to create the new railway cuttings.
- Retained habitats will be protected from further impacts with specific measures set out in the CEMP.
- Proposals have sought to appropriately mitigate impacts and support targets set out within the Ardley and Heyford CTA.

Securing BNG

~~7.11~~8.11 Future management of the main development area and ecological mitigation and compensation areas will be secured by Oxfordshire Railfreight Limited. Transport infrastructure are understood to be managed by the appropriate bodies including Network Rail, Highways England and Oxfordshire County Council.

~~7.12~~8.12 A Habitat Management and Monitoring Plan is provided that provide details on how creation, retained and enhanced habitats across the Site that are significantly contributing to the Site's BNG will be managed for a minimum of 80 years (for SSSI compens~~mitig~~ation areas) and for 30 years (remainder of the on-site green infrastructure).

~~7.13~~ Biodiversity Net Gain has been used to inform the habitat creation and enhancement proposals for the scheme, and the resulting habitats will provide a betterment for local wildlife.

APPENDIX A: CONDITION ASSESSMENT TABLES

Grassland – Low Distinctiveness

Condition Criteria	G39	G37, G40, G75, G96, G101	G38	G116, G122	G123	G76, G78, G79, G89	G113	G4, G5, G6, G114, G115, G117, G119	G73	G87	G104	G71	G77
A 6-8 vascular plant species per m^2 present (Essential for achieving Moderate or Good condition)	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Pass	Pass
B Sward height is varied	Fail	Fail	Fail	Fail	Fail	Fail	Pass	Fail	Pass	Pass	Pass	Fail	Fail
C Scrub < 20% of total grassland area	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
D Physical damage <5% of total grassland area	Fail	Fail	Fail	Fail	Pass	Pass	Fail	Pass	Pass	Fail	Pass	Fail	Pass
E Cover of bare ground between 1% and 5%	Fail	Fail	Pass	Pass	Fail	Fail	Pass	Pass	Fail	Pass	Pass	Pass	Fail
F Cover of bracken <20%.	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
G No invasive non-native species	Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Total Passes	2	3	4	4	4	4	5	5	5	5	6	5	5
Condition	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Moderate	Moderate

Poor Condition Grassland – Medium+ Distinctiveness

Condition Criteria	G86	G69, G91, G92, G95, G99, G100, G101	G34, G49, G50, G51, G55, G56, G67, G74, G80, G81, G83, G84, G85, 88, G89, G93, G94	G32, G54, G60, G63	G23	G72	G12, G13, G15, G25, G26, G27, G30, G43, G45, G57, G68, G103, G113, G116	G126, G127, G134	G16, G41, G42, G53, G65, G82, G97, G105, G108, G109, G110, G120, G121, G130	G117	G98	G142	G145	G70, G132, G135, G144	G1, G2, G3, G8, G9, G10, G11, G21, G24, G28, G29, G33, G40, G58, G59, G102, G106, G125, G128, G129, G146	G22	G64, G66	G124	G17, G20, G35, G44, G52	G112
A The parcel represents a good example of its habitat type (Essential for achieving Moderate or Good condition)	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Pass	Pass	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
B Sward height is varied	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Pass	Fail	Fail	Fail	Fail	Fail	Pass	Pass	Pass	Fail	Pass
C Cover of bare ground between 1% and 5%	Fail	Fail	Fail	Pass	Fail	Fail	Fail	Pass	Pass	Fail	Fail	Pass	Fail	Pass	Pass	Fail	Pass	Pass	Pass	Pass
D Cover of bracken <20% and cover of scrub <5%.	Fail	Fail	Pass	Fail	Fail	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Pass	Fail	Pass	Pass	Fail	Fail	Pass	Pass
E No invasive non-native species. Combined cover of undesirable species and physical damage <5%.	Fail	Pass	Fail	Fail	Pass	Fail	Pass	Pass	Fail	Fail	Pass	Fail	Pass	Pass	Pass	Pass	Fail	Pass	Pass	Pass
F 10 or more vascular plant species per m^2 (Essential for achieving Good condition)	Fail	Fail	Fail	Fail	Pass	Pass	Fail	Fail	Fail	Fail	Fail	Fail	Pass	Pass	Fail	Fail	Pass	Fail	Pass	Fail
Total Passes	0	1	1	1	2	2	2	2	2	2	2	2	3	3	3	3	3	3	4	4

Moderate Condition Grassland – Medium+ Distinctiveness

Condition Criteria	G137, G140	G61, G139	G90	G46, G47, G48	G131, G133, G136, G141, G143	G14, G62	G36, G107, G111	G138
A The parcel represents a good example of its habitat type (Essential for achieving Moderate or Good condition)	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
B Sward height is varied	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Pass
C Cover of bare ground between 1% and 5%	Fail	Fail	Pass	Fail	Pass	Pass	Pass	Fail
D Cover of bracken <20% and cover of scrub <5%.	Fail	Pass	Fail	Pass	Fail	Pass	Pass	Fail
E No invasive non-native species. Combined cover of undesirable species and physical damage <5%.	Pass	Fail	Fail	Pass	Pass	Fail	Pass	Pass
F 10 or more vascular plant species per m^2 (Essential for achieving Good condition)	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Pass
Total Passes	3	3	3	4	4	4	4	4

Ponds

Condition Criteria	P4	P1	P20	P52	P2	P3	P51
A The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	Pass	Pass	Fail	Pass	Pass - livestock	Pass	Pass
B There is semi-natural habitat (i.e. moderate distinctiveness or above) for at least 10 m from the pond edge.	Pass	Fail – arable	Pass	Pass	Pass	Fail	Pass
C Less than 10% of the pond is covered with duckweed or filamentous algae.	Pass	Pass	Pass	Pass	Pass	Pass	Pass
D The pond is not artificially connected to other waterbodies, either via streams, ditches or artificial pipework.	Fail – pipework	Fail – Outlet	Pass	Fail – balancing feature	Fail – Pipe	Pass	Pass
E Pond water levels should be able to fluctuate naturally throughout the year. No obvious dams, pumps or pipework.	Fail	Fail – Outlet	Pass	Fail – balancing feature	Fail – Pipe	Pass	Fail – balancing feature
F There is an absence of non-native plant and animal species.	Pass	Pass	Pass	Pass	Pass	Pass	Pass
G The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Pass	Pass	Pass	Pass	Pass	Pass	Pass
H In non-woodland ponds, plants, be they emergent, submerged or floating (excluding duckweeds), should cover at least 50% of the pond area that is less than 3 m deep.	Fail – none	Fail < 50%	Fail	Pass	Fail < 50%	Fail < 50%	Pass
I The surface of non-woodland ponds is no more than 50% shaded by woody bankside species.	Fail	Pass	Pass	Pass	Pass	Pass	Pass
Total Passes	5	7	7	7	8	8	8
Condition	Poor	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate

Scrub

Condition Criteria	S22	S5, S8	S12	S18, S19	S11, S17	S1, S3, S4, S15	S14	S2, S7, S9, S20, S21, S23, S24, S78	S6	S10, S13, S16
A The parcel represents a good example of its habitat type	Fail	Fail	Pass	Fail	Pass	Pass	Fail	Pass	Pass	Pass
B Seedlings, saplings, young shrubs and mature shrubs are all present.	Fail	Fail	Fail	Fail	Fail	Fail	Pass	Fail	Pass	Pass
C No invasive non-native species and undesirable species <5% of ground cover.	Fail	Pass	Fail	Pass	Fail	Pass	Pass	Pass	Pass	Pass
D Well-developed edge with scattered scrub and tall grassland and/or herbs present	Pass	Fail	Fail	Pass	Pass	Fail	Pass	Pass	Fail	Pass
E There are clearings, glades or rides present within the scrub	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
Total Passes	1	1	1	2	2	2	3	3	3	4
Condition	Poor	Poor	Poor	Poor	Poor	Poor	Moderate	Moderate	Moderate	Moderate

Poor Condition Woodland Parcels

Condition Criteria	W61, W62, W64	W5	W54, W63	W58	W39	W1	W6	W48	W19	W65	W45	W30	W36, W37	W34	W24	W56	W16	W60	W15	W52
A Age of trees	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2
B Wild, domestic and feral herbivore damage	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C Invasive plant species	3	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
D Number of native tree species	1	2	1	1	1	2	2	2	2	1	2	2	2	2	2	3	3	2	3	3
E Cover of native tree and shrub species	1	2	1	3	3	2	2	2	3	3	2	2	3	3	3	3	3	3	2	3
F Open space within woodland	3	3	3	2	3	3	3	3	3	3	2	3	3	3	3	2	3	3	3	2
G Woodland regeneration	1	2	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1
H Tree health	3	1	3	3	3	2	3	3	1	3	2	2	2	2	3	3	2	3	2	3
I Vegetation and ground flora	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
J Woodland vertical structure	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1	1
K Veteran trees	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
L Amount of deadwood	1	2	1	1	1	2	1	1	1	1	1	2	1	2	1	1	1	1	1	1
M Woodland disturbance	1	3	3	3	2	2	2	1	3	3	2	2	3	2	2	1	2	1	2	1
Total Score	21	23	23	24	24	24	24	24	24	25	23	25	25	25	25	25	25	25	25	25

Moderate Condition Woodland Parcels

Condition Criteria	W4	W47, W50, W66, W67, W68	W28	W8	W20, W21, W22, W23, W33, W38	W17	W40	W42	W41, W43	W14	W53	W11	W25, W51, W57	W7	W3	W27, W29	W59	W55	W9	W44	W31	W35	W32	W18	W69	W49	W12, W13	W2, W26	W10	W46
A Age of trees	1	1	1	1	1	1	2	2	2	2	2	3	1	1	2	2	2	1	1	2	2	2	2	1	1	2	2	2	2	3
B Wild, domestic and feral herbivore damage	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
C Invasive plant species	1	3	3	3	3	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
D Number of native tree species	3	2	2	3	3	3	2	2	3	3	3	1	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3
E Cover of native tree and shrub species	3	3	3	3	3	3	2	3	2	2	3	1	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3
F Open space within woodland	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
G Woodland regeneration	2	1	1	1	1	2	2	1	1	2	1	2	1	2	2	1	3	1	2	2	1	2	2	2	3	2	1	2	2	2
H Tree health	2	3	3	2	3	1	3	2	2	2	3	2	3	2	2	3	1	3	2	3	3	2	3	3	1	3	2	2	2	3
I Vegetation and ground flora	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	3	1	1	1	1	2
J Woodland vertical structure	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	2	2	1	2	2
K Veteran trees	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
L Amount of deadwood	2	1	2	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	2	1	1	1	1	2	1	1	2	2	1	1
M Woodland disturbance	3	3	2	3	2	2	3	3	3	2	1	3	3	3	3	2	1	3	3	3	3	3	2	2	3	3	3	3	3	3
Total Score	26	26	26	26	26	26	26	26	26	26	26	26	27	27	27	27	27	28	28	28	28	28	28	29	29	29	29	29	29	32

Poor Condition Hedgerows

Condition Criteria	H99	H60, H95, H97, H98	H46	H20	H33	H91
A1 Height	Fail	Pass	Fail	Pass	Pass	Pass
A2 Width	Fail	Fail	Fail	Fail	Pass	Pass
B1 Gap at base of canopy	Fail	Fail	Pass	Fail	Fail	Fail
B2 Gaps <10% of total length and no canopy gaps >5 m	Fail	Fail	Pass	Pass	Fail	Fail
C1 >1 m width of undisturbed ground for >90% of length on at least one side of the hedge	Fail	Fail	Fail	Fail	Fail	Fail
C2 Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	Fail	Fail	Fail	Fail	Fail	Fail
D1 >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Pass	Pass	Pass	Pass	Pass	Pass
D2 >90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Fail	Fail	Fail	Fail	Fail	Pass
Total Passes	1	2	3	3	3	4

Moderate Condition Hedgerows

Condition Criteria	H90	H4, H6, H11	H58	H23, H35	H13, H15, H17, H18	H107, H109	H19	H16, H21, H22, H26	H108	H75	H43	H28	H14	H7, H8, H9, H10, H27, H30, H44, H77, 92
A1 Height	Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
A2 Width	Pass	Fail	Fail	Pass	Fail	Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
B1 Gap at base of canopy	Pass	Fail	Pass	Fail	Fail	Pass	Fail	Fail	Fail	Fail	Pass	Pass	Fail	Pass
B2 Gaps <10% of total length and no canopy gaps >5 m	Pass	Pass	Fail	Fail	Fail	Pass	Fail	Pass	Pass	Pass	Fail	Fail	Fail	Pass
C1 >1 m width of undisturbed ground for >90% of length on at least one side of the hedge	Fail	Fail	Fail	Pass	Pass	Fail	Pass	Fail	Fail	Pass	Fail	Fail	Pass	Fail
C2 Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	Fail	Fail	Fail	Fail	Pass	Pass	Fail	Fail	Pass	Fail	Fail	Pass	Pass	Fail
D1 >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Pass
D2 >90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Fail	Pass	Pass	Fail	Pass	Fail	Pass	Pass	Fail	Fail	Pass	Pass	Pass	Pass
Total Passes	4	4	4	4	5	5	5	5	5	5	5	5	6	6

Good Condition Hedgerows

Condition Criteria	H5	H40, H59	H2, H101	H100	H94, H104	H54, H56, H73, H74, H103	H3, H84, H87	H41, H68, H80, H110	H37, H38, H39,H53, H93, H105	H36	H31, H49, H57,H67, H69, H70,H71, H72, H79,H102, H106
A1 Height	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
A2 Width	Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
B1 Gap at base of canopy	Pass	Fail	Fail	Fail	Pass	Fail	Pass	Pass	Pass	Pass	Pass
B2 Gaps <10% of total length and no canopy gaps >5 m	Pass	Pass	Pass	Pass	Fail	Pass	Fail	Pass	Pass	Pass	Pass
C1 >1 m width of undisturbed ground for >90% of length on at least one side of the hedge	Pass	Fail	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Pass	Pass
C2 Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	Fail	Pass	Fail	Pass	Fail	Pass	Pass	Pass	Fail	Pass	Pass
D1 >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
D2 >90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Pass	Pass	Pass	Fail	Pass	Pass	Pass	Pass	Pass	Fail	Pass
Total Passes	6	6	6	6	6	7	7	7	7	7	8

Hedgerows with Trees

Condition Criteria	H25	H32	H90	H28	H1 ,H50	H78	H83	H86	H88, H89	H47, H48	H61	H76	H29	H81, H82	H62	H1a, H34	H96	H45, H65
A1 Height	Pass	Pass	Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
A2 Width	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
B1 Gap at base of canopy	Fail	Fail	Pass	Pass	Fail	Fail	Pass	Fail	Fail	Pass	Pass	Pass	Fail	Pass	Pass	Pass	Pass	Pass
B2 Gaps <10% of total length and no canopy gaps >5 m	Fail	Fail	Pass	Fail	Pass	Pass	Fail	Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
C1 >1 m width of undisturbed ground for >90% of length on at least one side of the hedge	Fail	Pass	Fail	Fail	Fail	Fail	Fail	Pass	Fail	Fail	Pass	Pass	Pass	Fail	Pass	Pass	Pass	Pass
C2 Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	Fail	Fail	Fail	Pass	Fail	Pass	Pass	Pass	Pass	Fail	Fail	Fail	Pass	Pass	Fail	Pass	Pass	Pass
D1 >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Pass	Pass	Pass	Fail	Pass	Pass	Fail	Pass	Pass	Pass	Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass
D2 >90% of the hedgerow or undisturbed ground is free of damage caused by human activities	Pass	Fail	Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
E1 >1 age-class of tree present , and there is on average at least one mature per 20 - 50m of hedgerow	Pass	Fail	Pass	Fail	Pass	Fail	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Pass	Pass	Fail	Pass	Pass
E2 At least 95% of the trees healthy	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Pass
Total Passes	6	5	6	6	7	7	7	8	8	8	8	8	9	9	9	9	9	10
Condition	Poor	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Good	Moderate	Good	Good	Good	Good	Good	Good	Good	Good

Line of Trees

Condition Criteria	TL23	TL15	TL21	TL26	TL1	TL14, T19, T20, T24, T27	TL25	TL16, 17	TL2, T13, T22, T28	TL3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T18
A >70% of trees are native species.	Fail	Fail	Fail	Pass	Fail	Fail	Pass	Fail	Pass	Pass
B Gaps in canopy cover <10% of total area and no individual gap >5 m wide.	Fail	Fail	Pass	Fail	Fail	Pass	Fail	Pass	Pass	Pass
C One or more trees has veteran features / other natural ecological niches	Fail	Pass	Fail	Fail	Pass	Fail	Fail	Pass	Fail	Pass
D Undisturbed naturally vegetated strip =/>6m on both sides. If veteran trees present, RPA adhered to.	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
E At least 95% of the trees healthy.	Pass	Fail	Fail	Fail	Pass	Pass	Pass	Pass	Pass	Pass
Total Passes	1	1	1	1	2	2	2	3	3	4
Condition	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Moderate	Moderate	Moderate

Individual Trees

Condition Criteria	T116	T115, T132, T257, T258, T259, T267, T268, Eco05, Eco06, Eco12, Eco15, Eco21, Eco22	Eco41	T114,T121	T117, T127, T144, T208, T209, T210, T249, T250, T254, T256, T273, T274, G36a-e, Eco02, Eco03, Eco07, Eco08, Eco09, Eco13, Eco16, Eco17, Eco18, Eco19, Eco24, Eco25, Eco26, Eco27, Eco28, Eco29, Eco30, Eco31, Eco32, Eco33, Eco34, Eco35, Eco36, Eco37, Eco38, Eco39, Eco40, Eco42, Eco43, Eco44, Eco45	T28, Eco10, Eco11	T119, T149, T151, T156, T158	T12, T106, T107, T255, Eco14	T26, T32, T35, T36, T48, T49, T82, T105, T145	T14, T118	T2, T3, T4, T11, T13, T16, T17, T18, T19, T20, T21, T22, T23, T24, T25, T27, T29, T30, T33, T34, T47, T52, T53, T54, T78, T79, T80, T81, T83, T85, T86, T87, T88, T90, T91, T92, T93, T94, T95, T96, T99, T110, T123, T130, T133, T134, T136, T146, T147, T148, T150, T152, T153, T154, T155, T201, T202, T211, T212, T213, T214, T215, T269, T270, Eco01, Eco04, Eco20, Eco23
1 The tree or >70% of trees within the block are native species	Fail	Fail	Pass	Fail	Pass	Pass	Fail	Pass	Pass	Pass	Pass
2 Gaps in canopy <10% of total area and no individual gap being >5 m wide.	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
3 The tree or >50% of trees within the block are mature or veteran	Fail	Fail	Fail	Pass	Fail	Pass	Pass	Fail	Pass	Pass	Pass
4 Little or no evidence of impact on tree health by anthropogenic activities. Trees retain >75% of expected canopy for their age range and height.	Fail	Pass	Fail	Pass	Pass	Fail	Pass	Pass	Fail	Pass	Pass
5 Micro habitat sites are present	Fail	Fail	Fail	Fail	Fail	Fail	Pass	Pass	Pass	Fail	Pass
6 >20% of tree canopy is oversailing vegetation beneath.	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Total Passes	2	3	3	4	4	4	5	5	5	5	6
Condition	Poor	Moderate	Moderate	Moderate	Moderate	Moderate	Good	Good	Good	Good	Good