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Yorkshire Green Energy Enablement (GREEN) Project

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Executive Summary

Introduction

This Biodiversity Net Gain (BNG) Report has been prepared to inform an application for development consent ('the Application') by National Grid Electricity Transmission plc (National Grid) for powers to construct, operate and maintain the Yorkshire Green Energy Enablement (GREEN) Project (referred to as the Project or Yorkshire GREEN).

National Grid has committed to deliver at least 10% or greater increase in environmental value (including biodiversity) on all construction projects. This includes delivering Biodiversity Net Gain and, for this Project, National Grid has set a voluntary target of a minimum 10% Biodiversity Net Gain (BNG).

Given that some detail required to inform a final BNG assessment is not yet available for the Project, it is proposed that the BNG assessment is updated at different stages through the project lifecycle (application stage, detailed design stage and after construction is complete based on as-built information) to refine ad finalise the assessment as information becomes available.

This report presents the application stage BNG metric calculation undertaken for the Project using Natural England's Biodiversity Metric V3.1 based on the design of the Project at application submission. A number of assumptions were made for this metric calculation, and various limitations were incurred when collecting the data for the BNG calculation. On this basis, this application stage BNG metric calculation provides only an indication of the deficit in "biodiversity units[1]" resulting from the Project (which is likely to overstate losses as a precaution) and the amount and type of on and off-site habitat creation required to achieve BNG. The key results of the application stage BNG metric calculation at this point are summarised below.

Irreplaceable and very high distinctiveness habitats

Based on information known about the Project, there are no anticipated impacts on Ancient Woodland, Veteran trees, or any habitats of very high distinctiveness.

Baseline: habitats before works

There are approximately 501ha of area-based habitats and approximately 26ha of hard-standing within the Order Limits before taking into account the works from the Project. Cropland is the dominant habitat type, with grassland, woodland and scrub also present. All area-based habitats generated approximately 1,170 units before works.

[1] "Biodiversity units" are a measure of the biodiversity value of a habitat; the Biodiversity Metric 3.1 uses habitats as a proxy for biodiversity and calculates units by taking account of the type, extent, condition, and location of habitats. There are three types of biodiversity unit considered separately by the Metric: area-based habitat units, hedgerow units, and river units.

There are also approximately 30km of hedgerow within the Order Limits before works, generating approximately 355 hedgerow units, and approximately 8km of river habitats within the Order Limits before works, generating approximately 89 river units.

On-site habitat clearance and habitat creation/enhancement

Accounting for permanent and temporary habitat clearance (which is likely to overstate application stage loss calculations as a precaution) and landscape planting incorporated within the Project design, the Project is predicted to result in:

- an overall 13% net loss of area-based units, which equated to a deficit of ~148 units;
- an overall 25% net loss in hedgerow units, which equated to a deficit of ~91 hedgerow units; and
- an overall 1% net loss in river units, which equated to a deficit of ~0.7 river units[2].

Modelling off-site BNG delivery

Modelling of various habitat creation scenarios was undertaken to provide an early estimate of what off-site BNG delivery might include, given the worst-case assumption that no further habitat creation/enhancement could occur on-site in addition to that already included. This early estimate sought to identify the habitat creation scenarios that would achieve a minimum 10% in ways that meet the trading rules for area-based units, hedgerow units, and river units separately. This early estimate (a worst-case scenario) showed that off-site BNG delivery might include approximately:

- ~94ha of habitat creation of a mix of woodland (high and medium distinctiveness woodland), grassland (high and medium distinctiveness grassland) and ponds;
- ~15km of hedgerow creation; and
- ~3km of river enhancements.

It is noted that this is a high-level estimate and the process of designing BNG would explore both on- and off-site options to achieve BNG that deliver the best outcomes for biodiversity in efficient and effective ways.

Recommendation

This report details recommendations for update BNG assessment including addressing assumptions made for this application stage BNG metric calculation to refine the calculation and undertake an updated BNG assessment based on detailed design and construction detail (including addressing each of the BNG Good Practice Principles[3]) and a final BNG assessment post construction using the as-built information. Recommendations also include exploring all options to achieve BNG, including avoiding and minimising habitat clearance where possible, the Project's on-site landscaping, and off-site enhancements.

[2] This 1% loss is due to temporary culverting of watercourses.
[3] These are summarised in **Appendix A.**

1. Introduction

1.1 Background

1.1.1 This Biodiversity Net Gain Report has been prepared to inform a Development Consent Order (DCO) application for the Yorkshire Green Energy Enablement (GREEN) Project, (herein referred to as 'the Project' or 'Yorkshire GREEN').

1.1.2 The Project is defined as a Nationally Significant Infrastructure Project (NSIP) under Section 14(1)(b) and Section 16 of the Planning Act 2008[4] (the Act) as it comprises new overhead electricity transmission connections of more than 2 kilometres (km) in length, with an operating voltage above 132 kilovolts (kV). Under Section 31 of the Act, development consent is required for development to the extent that it is or forms part of an NSIP. Development consent is granted by the making of a Development Consent Order (DCO) for which an application may be made under section 37 of the Act.

1.1.3 National Grid has committed to deliver at least a 10% Environmental Gain on all construction projects[5]. This includes delivering Biodiversity Net Gain and, for this Project, National Grid has set a voluntary target of a minimum 10% Biodiversity Net Gain.

1.1.4 Under its commitment to achieve Environmental Gain, National Grid will provide an initial Biodiversity Net Gain (BNG) metric calculation for the Project at the stage of the DCO application submission. This report and its annexes set out this application stage BNG calculation, including methodology, estimated baseline results, and options to achieve BNG. Given that some detail required to inform a final BNG assessment is not yet available for the Project, it is proposed that the BNG assessment is updated at different stages through the project lifecycle (detailed design stage and after construction is complete based on as-built information) to refine and finalise the assessment as information becomes available.

1.1.5 BNG is defined by the Department for Environment, Food and Rural Affairs as "*development that leaves the natural environment in a measurably better state than beforehand.*"[6] It follows a process of avoiding and minimising biodiversity loss in the first instance, and providing positive habitat interventions, which result in a measurable net improvement to biodiversity for a development. BNG is measured in 'units' using Natural England's most recent biodiversity calculating tool (Biodiversity Metric 3,1)[7] achieved for habitat areas, hedgerows/lines of trees, and rivers separately.

[4] The Planning Act, 2008, https://www.legislation.gov.uk/ukpga/2008/29/contents
[5] National Grid (2021) Our 2021-2026 Environmental Action Plan. National Grid; London
[6] Defra. (2019). Biodiversity Net Gain Definitions and Current Practice (online). Available at: https://consult.defra.gov.uk/land-use/net-gain/user_uploads/02.-definitions-and-current-practice.pdf (Accessed 25 July 2022)
[7] Natural England (2022). The Biodiversity Metric V3.1 (JP039). Natural England; York.

1.2 Project Overview

1.2.1 The Order Limits form the boundary of the Project for which development consent is being sought and within which all works would take place (**Figure 1.1**).

1.2.2 The Project is divided into six sections for ease of reference as indicated in **Figure 1.2.**

1.2.3 In this report the Project sections are presented in terms of new versus existing infrastructure; in summary the Project comprises the following *new* infrastructure within the Order Limits:

- Section B (North west of York Area):
  - Shipton North and South 400kV cable sealing end compounds (CSECs) and 230m of cabling;
  - the 2.8km YN 400kV overhead line (north of proposed Overton Substation);
  - Overton 400/275kV Substation; and
  - two new sections of 275kV overhead line south of Overton Substation: the XC 275 kV overhead line to the south-west (2.1km) and the SP 275kV overhead line to the south-east (1.5km);
- Section D (Tadcaster Area): Tadcaster Tee West and East 275kV cable sealing end compounds and 350m of cabling; and
- Section F (Monk Fryston Area): Monk Fryston 400kV Substation (adjacent to the existing substation).

1.2.4 Works to *existing* infrastructure within the Order Limits would comprise:

- Section A (Osbaldwick Substation): Minor works at Osbaldwick Substation comprising the installation of a new circuit breaker and isolator along with associated cabling, removal and replacement of one gantry, and works to one existing pylon. All substation works would be within existing operational land.
- Section B (North west of York Area): Reconductoring of 2.4km of the 2TW/YR 400kV overhead and replacement of one pylon. A mixture of decommissioning, replacement and realignment of 5km of the existing XCP 275kV Poppleton to Monk Fryston overhead line between Moor Monkton and Skelton. To the south and south-east of Moor Monkton the existing overhead line would be realigned up to 230m south from the current overhead line and the closest pylon to Moor Monkton (340m south-east) would be permanently removed. A 2.35km section of this existing overhead line permanently removed between the East Coast Mainline (ECML) Railway and Woodhouse Farm to the north of Overton.
- Section C (Moor Monkton to Tadcaster): Works proposed to the existing 275kV Poppleton to Monk Fryston (XC) overhead line comprise replacing existing overhead line conductors, replacement of pylon fittings, strengthening of steelwork and works to pylon foundations.
- Section D (Tadcaster Area): Replacement of one pylon on the Tadcaster Tee to Knaresborough (XD) 275kV overhead line route.
- Section E (Tadcaster to Monk Fryston). Works proposed to the existing 275kV Poppleton to Monk Fryston (XC) overhead line comprise replacing existing overhead

line conductors, replacement of pylon fittings, strengthening of steelwork and works to pylon foundations.

- Section F (Monk Fryston Area): Reconfiguration of the existing XC Monk Fryston to Poppleton overhead line at its southern end to connect into the new substation at Monk Fryston; Reconfiguration of the Monk Fryston to Eggborough 400kV 4YS overhead line to connect into the new substation at Monk Fryston.

1.2.5 Please refer to **ES Chapter 3: Description of the Project, Volume 5, Document 5.2.3** for a more detailed description of the Project.

1.3 Ecological context

1.3.1 An ecological desk study, baseline habitat and protected species surveys, and an Ecological Impact Assessment (EcIA) have been undertaken to inform the Project design and construction. The methodology and results of the EcIA are presented in **Environmental Statement** (**ES) Chapter 8: Biodiversity** (**Volume 5, Document 5.2.8**) and baseline habitat survey in **ES Appendix 8B Extended Phase 1 Habitat Survey Report** (**Volume 5, Document 5.3.8B**). The results of the baseline surveys have been used to inform this application stage BNG metric calculation of the Project and should be read in conjunction with this report.

1.3.2 The Project is located within the administrative boundaries of Hambleton District Council, City of York Council, Harrogate Borough Council, Selby District Council, Leeds City Council and North Yorkshire County Council[8], as shown on **ES Figure 1.2, Volume 5, Document 5.4.1**. The Extended Phase 1 report desk study (**Appendix 8B, Volume 5, Document 5.3.8B**) found no statutory biodiversity sites (Ramsar Sites, Special Protection Areas, or Sites of Special Scientific Interest) within the Order Limits. Two non-statutory biodiversity sites (Sites of Importance for Nature Conservation (SINC)) were found to be located fully or partially within the Order Limits (Overton Borrow Pits SINC and River Ouse Candidate SINC). In addition, two 'deleted' SINCs were within the Order Limits (Field near Healaugh Manor Farm deleted SINC and Disused Quarry, Newthorpe deleted SINC[9].

1.3.3 The EcIA assessment of the Project shows that the main habitat type within the Order Limits is arable land. Other habitats recorded included broadleaved, coniferous, and mixed woodland; poor, improved and semi-improved neutral grassland; standing water; running water; ditches; scattered and dense/continuous scrub; ephemeral/short perennial vegetation; tall ruderal vegetation; introduced shrub; and scattered trees[10].

[8] The local authorities' boundaries and titles are correct at the time of submission November 2022. North Yorkshire County Council, Hambleton District Council, Selby District Council, Ryedale District Council, Scarborough Borough Council, Harrogate Borough Council, Craven District Council and Richmondshire District Council are expected to form a new single council (North Yorkshire Council) on 1 April 2023 as a result of Local Government Reorganisation.
[9] These two Sites have been deleted from the register of SINCS as they no longer meet the requirements for designation.
[10] Full details on baseline habitat surveys are available in **ES Appendix 8B Extended Phase 1 Habitat Survey Report (Volume 5, Document 5.3.8B)**

1.4 Context of Biodiversity Net Gain

1.4.1 National Grid has committed to deliver at least 10% Environmental Gain (including biodiversity) on all construction projects.[5] Although this commitment is independent of development consenting requirements and planning permission mandates, the framework and Biodiversity Metric developed by Defra/Natural England on behalf of the UK Government to fulfil the mandatory delivery of BNG provides a system for delivery. Adopting this approach allows inter-operability with the BNG elements of National Grid's capital projects, and is consistent with the Government mandatory approach towards BNG, as well as the approach of other regulated businesses (e.g. many water companies) and Government agencies (e.g. National Highways).

1.4.2 The Environment Act 2021 provides a legal framework for environmental governance and makes provision for biodiversity net gain (BNG) assessments for nationally significant infrastructure projects. The Environment Act 2021 will mandate for NSIPs to achieve BNG and is expected to come into force in 2025, with a requirement to achieve a minimum 10% uplift in biodiversity value. However, the relevant sections of the Environment Act 2021 (Section 99 and Schedule 15) have not yet come into force, and there is currently no secondary legislation to implement them. Nevertheless, National Grid has committed to deliver at least 10% environmental gain and, in order to achieve this, will calculate biodiversity value for the Project using the applicable Biodiversity Metric published by Natural England[7].

1.4.3 The current Overarching National Policy Statement for Energy EN-1[11] was adopted in 2011 and does not currently make explicit reference to BNG. Similarly, NPS EN-3[12] and EN-5 Electricity Networks[13]. which were adopted at the same time, do not refer to BNG.

1.4.4 In September 2021, the government published the Draft NPS EN-1[14] for consultation. Section 4.5 'Environmental and Biodiversity Net Gain' sets out the government's draft policy as it applies to NSIPs. It notes that projects should seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity where possible, encouraging applicants to use "*the most current version of the Defra biodiversity metric*". It also highlights that "*any habitat creation or enhancement delivered for biodiversity net gain should generally be maintained for a minimum period of 30 years*".

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[11] Department of Energy & Climate Change (2011a). Overarching National Policy Statement for Energy (EN-1). (online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf (Accessed October 2022).

[12] Department of Energy & Climate Change (2011b). National Policy Statement for Renewable Energy Infrastructure (EN-3). (online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/37048/1940-nps-renewable-energy-en3.pdf (Accessed October 2022).

[13] Department of Energy & Climate Change (2011c). National Policy Statement for Renewable Energy Infrastructure (EN-5). (online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf (Accessed October 2022).

[14] Department for Business, Energy & Industrial Strategy (2021). Draft Overarching National Policy Statement for Energy (EN-1). (online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf (Accessed October 2022).

1.4.5 The government also issued a Draft NPS EN-3 and EN-5 in September 2021. Advice on the specific opportunities provided by linear electricity networks infrastructure is set out in section 2.8 of Draft NPS EN-5, including "*recognition that the linear nature of electricity networks infrastructure allows excellent opportunities to:*

- *reconnect important habitats via green corridors, biodiversity stepping zones, and reestablishment of appropriate hedgerows; and/or*
- *connect people to the environment, for instance via footpaths and cycleways constructed in tandem with biodiversity enhancements*"

1.4.6 For the wider policy context, the National Planning Policy Framework 2021 makes clear that development should achieve BNG. The Framework states in section 15, paragraph 174 (d) that development should contribute to enhancing the natural environment by "*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*".

1.4.7 The recommended approach for measuring BNG within the Draft NPS EN-1[14] is the Biodiversity Metric published by the Secretary of State. As of 15 November 2022, V3.1 is the applicable metric published by Natural England[6, 18]. BNG is defined in numerical terms as a minimum 10% increase in each of the three types of biodiversity 'unit' within the Biodiversity Metric: area-based habitat units (e.g., woodland, grassland); linear units (hedgerows and lines of trees); and river units. Where developments exceed the statutory requirement, Defra has indicated that developers may be able to sell the excess units as off-site biodiversity gains for other developments[15].

1.4.8 BNG should be designed and implemented in accordance with the UK's Good Practice Principles for BNG and associated guidance, which were developed by leading professional environmental institutes within the UK (CIEEM, IEMA & CIRIA, 2016[16], and 2019[17]). These include the recommendation that BNG should be achieved by following the mitigation hierarchy to first avoid, then mitigate, restore, or - as a last resort - offset biodiversity losses. Habitats that are lost should also be replaced with 'like for like or better' habitats, to prevent the replacement of one habitat type with another of lower distinctiveness. The ten Good Practice Principles should be applied in an integrated way and are summarised in **Appendix A** for reference. Given that some detail required to inform a final BNG assessment is not yet available for the project, it is proposed that the BNG assessment is updated at different stages through the project lifecycle (application stage, detailed design stage and after construction is complete based on as-built information) to refine and finalise the assessment as information becomes available.

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[15] Department for Environment, Food and Rural Affairs (DEFRA), (2022). Consultation on Biodiversity Net Gain Regulations and Implementation. (online) Available at: https://consult.defra.gov.uk/defra-net-gain-consultation-team/consultation-on-biodiversity-net-gain-regulations/ (Accessed October 2022).

[16] CIEEM, IEMA & CIRIA. (2016). Biodiversity Net Gain: Good Practice Principles for Development. (online) Available at: [redacted] (Accessed October 2022).

[17] CIRIA, CIEEM & IEMA. (2019). Biodiversity Net Gain: Good Practice Principles for Development, A Practical Guide. (online) Available at: [redacted] (Accessed October 2022).

1.5 Purpose of this report

1.5.1 This report presents the application stage BNG metric calculation undertaken for the Project using Biodiversity Metric 3.1. It describes the methodology and limitations (**Section 2**); presents results of the application stage BNG calculation for the Project as currently designed and based on the information available, as well as modelling scenarios for achieving the minimum 10% BNG in line with the Biodiversity Metric 3.1 trading rules (**Section 2**); and provides recommendations for the Project to achieve BNG (**Section 4**). This BNG assessment will be updated when detailed design and construction detail is available and will be finalised after construction is complete based on as-built information.

1.5.2 This application stage BNG calculation is set out in terms of:

- **Baseline:** The baseline of habitats within the Order Limits prior to the Project commencing (including the types and quantities of habitats present, and how many units they generate as measured by the Biodiversity Metric).
- **Direct Impact:** Estimates of the type and amount of habitat retained, cleared (temporarily or permanently), created, and enhanced for the Project as far as known at this stage, with the resulting estimated deficit in both biodiversity units and habitat area (hectares/kilometres).
- **BNG modelling:** Options for further off-site habitat creation that might achieve BNG for the Project in ways that meet the Metric's trading rules.

2. BNG Methodology

2.1 Biodiversity Metric 3.1 Overview

2.1.1 This application stage BNG calculation was carried out using the Defra Biodiversity Metric Version 3.1[18] following the associated guidance and technical supplement published by Natural England in April 2022[19].

2.1.2 The Biodiversity Metric 3.1 uses habitats as a proxy measure for biodiversity. It quantifies 'units' for different habitat parcels, which provide a measure of relative biodiversity value. This allows a measurable comparison between the biodiversity value of pre-works (baseline) habitats and post-works habitats.

2.1.3 The Biodiversity Metric 3.1 calculates three types of units:

- **Area-based habitat units (Section A of Biodiversity Metric 3.1**): the subsection of area-based terrestrial and aquatic habitat types above the mean water mark (measured in ha) including, for example, grassland, woodland, lakes and ponds, cropland, and urban habitats.
- **Hedgerow units (Section B of Biodiversity Metric 3.1)**: the subsection of linear terrestrial habitats (measured in km) of lines of trees and hedgerow habitats.
- **River units (Section C of Biodiversity Metric 3.1)**: the subsection of linear aquatic habitats (measured in km) including main rivers, other rivers and streams, canals, ditches, and culverts. Note that rivers include a 10m riparian zone.

2.1.4 These three types of biodiversity units are unique and cannot be summed, traded, or converted. When reporting biodiversity gains or losses, the three different biodiversity unit types must be reported separately and not summed to give an overall unit value.

2.1.5 For the baseline, units are calculated per habitat parcel, based on its:

- **Extent** – measured in hectares (ha) or kilometres (km);
- **Distinctiveness** – a score pre-set by Natural England based on the type of habitat present and its rarity/protected status relative to other habitat types;
- **Condition** – a score determined by a field-based assessment of whether habitat-specific condition criteria (set out in the Technical Supplement) have been passed or failed[7]; and
- **Strategic significance** – a score based on whether the location of a habitat parcel has been identified as strategically significant for nature (for example, contributing to habitat networks noted within a Local Plan).

[18] This was most current version of the Metric at the time of preparing this report. Should an updated version of the Biodiversity Metric become available during the detailed design or post construction of this Project, an assessment will be made whether version 3.1 should be carried forward or whether BNG assessment should be transposed into the updated version.
[19] Natural England (2022). The Biodiversity Metric 3.1: Auditing and accounting for biodiversity; Technical Supplement.

2.1.6 These measures of habitat quantity and quality are each scored to calculate the number of units that a given habitat parcel generates. Additional unit modifiers apply to river habitats that include the level of encroachment of development on riparian and in-channel habitat, with greater encroachment resulting in a lower unit score.

2.1.7 Habitats that are cleared during works are marked as a loss of units. Gains in units can be achieved through habitat creation (creating 'new' habitats) or habitat enhancement (improving existing habitats).

2.1.8 Biodiversity gains must be designed in ways that meet the habitat trading rules of the Biodiversity Metric – specifically, Rule 3 of the Biodiversity Metric 3.1 guidance[7] states that: "*Trading down' must be avoided. Losses of habitat are to be compensated for on a 'like for like' or 'like for better' basis. New or restored habitats should aim to achieve a higher distinctiveness and/or condition than those lost. Losses of irreplaceable or very high distinctiveness habitat cannot adequately be accounted for through the metric.*"

2.1.9 Proposed habitat creation or enhancement is similarly measured based on a combined set of proposed extent, habitat type/distinctiveness, target condition, and strategic significance scores. In addition to these, there are risk multipliers that can affect the final unit score based on:

- **The difficulty of habitat creation** – habitats that are harder to create (e.g., a lowland raised bog) are associated with greater risk than those that are easier to create (e.g. modified grassland). This is pre-set by Natural England within the Metric[20].
- **The time it takes for a habitat to reach target condition ('standard time to target condition')** – habitats that take longer to establish (e.g., a good condition woodland) are associated with greater risk than those that are quick to establish (e.g., a poor condition grassland). This is pre-set by Natural England within the Metric[20].
- **The delay or advance in providing habitat creation or enhancement** – The number of years delay/advance is defined as the number of years between the start year of habitat clearance and the start year of habitat creation / enhancement. A delay in habitat creation/enhancement results in a higher time to target condition multiplier, whereas habitats created/enhanced in advance benefit from a shorter time to target condition. This information is specific to each project.
- **The spatial location of off-site BNG delivery** – multipliers are applied to off-site habitat creation/enhancement that is delivered outside of the Local Planning Authority or National Character Area within which the site of impact is located.

2.1.10 The Biodiversity Metric 3.1 then compares the baseline unit scores to the proposed post-works biodiversity unit score to determine the percentage and numerical change and whether a net gain in units has been achieved in line with the habitat trading rules. This is calculated separately for area-based habitat units, hedgerow units, and river units, which each have a separate minimum 10% net gain requirement.

[20] Natural England (2022). The Biodiversity Metric 3.1: Auditing and accounting for biodiversity calculation tool

2.2 Baseline

Data collection and mapping

2.2.1 This application stage BNG calculation was based upon the baseline data that was collected for the purposes of producing **Chapter 8: Biodiversity (Volume 5, Document 5.2.8)** of the ES[21]. This baseline data was collected via a desk study and via an extended Phase 1 habitat survey of land within the Project Order Limits, undertaken during 2021-2022. The survey methodology followed the standard Phase 1 habitat survey guidelines[22] for habitat recording and mapping, and the detailed methodology and timing is provided in **Appendix 5.3.8B Extended Phase 1 Habitat Survey Report (Volume 5, Document 5.3.8B).**

2.2.2 During the Extended Phase 1 habitat survey, all distinct habitats within the Order limits were identified and mapped digitally during fieldwork using the OS Mastermap[23] polygons within ArcGIS Collector app on a tablet computer, mapped within a Phase 1 Area layer (these were for area-based habitats to then map as polygons in GIS). Linear features of lines of trees, hedgerows, river habitats and ditches were mapped as lines separately (in order to measure the length in km) by the surveyor in the field using a separate mapping layer ('Phase 1 line'). The tablet computer's GPS function and aerial imagery in the Collector app were used to spatially identify and record the boundaries of each habitat parcel. Additional information on the habitats was recorded as target notes where relevant. An individual habitat parcel was recorded for each discrete block (both area and linear) of a given habitat type in a given condition. Where one block of habitat varied in condition, the variation was mapped as different habitat parcels.

2.2.3 Field data was transferred from the ArcGIS Collector app to ArcGIS ArcMap version 10.8.1, to undergo a process of data quality assurance on a desk top computer and refinement of geospatial accuracy against the inbuilt Ordnance Survey base map and aerial imagery.

Area and length data collection and mapping

2.2.4 The measurements of area and length attained for each habitat parcel of the baseline were measured automatically by ArcMap, from the associated polygon and linear features mapped within the GIS system.

2.2.5 Natural England's User Guide for the Biodiversity Metric 3.1 does not specify a Minimum Mappable Unit (MMU) but recommends that a proportionate approach be taken to avoid recording large areas as one habitat parcel, whereas the habitat varies in its condition. Also, to avoid recording very small areas of habitat which cover less than $1m^2$ (0.0001ha)[24].

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[21] Yorkshire Green Project: Environmental Impact Assessment Scoping Report, March 2021: Chapter 7- Biodiversity.

[22] Joint Nature Conservation Committee (JNCC) (2010). Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit. JNCC; Peterborough, UK.

[23] Ordnance Survey Mastermap is the digital product of the Ordnance Survey, and is a database that provides the most detailed and accurate large scale representation of Great Britain's landscape available from Ordnance Survey.

[24] Natural England (2022). Biodiversity Metric 3.1 Auditing and accounting for biodiversity – User Guide. Natural England; York.

2.2.6 For this Project, the baseline data was measured and entered into the Biodiversity Metric 3.1 Calculation Tool at three decimal places.

Correcting mapping errors

2.2.7 When mapping habitat parcels manually in the field, a margin of error occurred which produced minor duplications in habitat areas, for example, when one polygon overlapped with another. To address this for the BNG calculation, once all data capture was completed in the field, the surveyors and report compilers agreed a hierarchy using professional judgement and, as a reference, the Phase 1 translation tab (tab G-9 'Translation Phase 1') within the Biodiversity Metric calculation tool and the Habitats Definition tab within the Biodiversity Metric Condition Assessment Sheets[25]. This hierarchy dictated which habitats would be 'cut out' from an overlap, and which would remain, following a precautionary approach to prioritise higher distinctiveness habitats over lower distinctiveness habitats.

2.2.8 Hardstanding and buildings - both of which are of very low distinctiveness - were selected first above other habitat types (locations and extent as provided from the Master-mapping) as these are 'fixed' in the mapping so the data was highly reliable, whereas vegetated habitats, water or bare ground can vary in terms of distinctiveness. The exception to this hierarchy was where trees overlapped onto hardstanding and buildings: in these cases, the tree canopy was given priority over the hardstanding and buildings.

2.2.9 Following this mapping exercise, a small area remained where habitats of the same distinctiveness were overlapping. As it was uncertain which habitat was present on the ground, both these areas were retained, following a precautionary approach, accounting for approximately 0.5% (2.7 ha) of the mapped area within the Order Limits.

2.2.10 There were a few instances when habitats classed as linear (hedgerows/lines of trees and river habitats, including ditches) for BNG had been mapped as polygons in the field. The linear feature was drawn using the length of the polygon and a review of available online aerial mapping resources to check that the length was as accurate as possible. Following Biodiversity Metric 3.1 guidance, distinct area-based habitat parcels immediately adjacent to (and in some cases underlying) hedgerows/lines of trees, were mapped as polygons. There were also a few instances where area-based habitats (in BNG terms) had been mapped as linear features in the field. These were mapped as polygons using aerial mapping as a basis to draw the polygon; the line was then deleted.

Linear data for Rivers and Streams

2.2.11 Within the Biodiversity Metric 3.1, river habitats are linear features (measured in km) and include main rivers, other rivers and streams, canals, ditches, and culverts.

2.2.12 The following approach was adopted to map river habitats and the surrounding area habitats for this application stage BNG calculation:

- In some cases, main rivers, other rivers, streams, ditches, and canals had been originally mapped as polygons within GIS.

[25] Natural England (2022). The Biodiversity Metric 3.1 (JP039) – Habitat Condition Assessment Sheets. Natural England; York.

- These polygons were re-mapped as lines, measured in km, for entry into the Biodiversity Metric 3.1.
- A buffer was then mapped for each river habitat line extending to the bank, which covered the area of watercourse that would be captured in the linear river unit calculated by the Metric (totalling approximately 1.6ha).
- Habitats on the bank of the watercourse were then mapped as per the dominant habitat or land cover (entered in the area-based habitats section of the Metric).
- In some instances, bankside habitats were not accessible in the field, and these were mapped from field-notes of what could be seen, as well as aerial mapping.

Point data collection and mapping

2.2.13 In cases where parcels of scattered scrub or individual trees were mapped as point features in the Extended Phase 1 survey, their area (i.e. hectares) for the application stage BNG calculation were assigned based on the following:

- **Scattered scrub**: The area of each scattered scrub parcel was set at 10m^2 circular buffer around a scrub point feature. This 10m^2 represented an estimated average area of all parcels. This area of each scattered scrub parcel was subtracted from any overlapping habitat polygons to avoid double counting of habitat areas.
- **Individual trees (non-veteran)**: From consultation with an arborist on the individual trees within the Order Limits, an average Root Protection Area (RPA) was set at a 20m^2 circular buffer around a tree point feature. Any mapped habitat areas overlapping this RPA were included in the baseline for this application stage BNG calculation because these habitats were occupying the ground-level space of the RPA.
- **Veteran trees**: RPA values for veteran trees that lie[26] within the Order Limits were taken from the Arboricultural Impact Assessment report (**Appendix 5.3.3I, Volume 5, Document 5.3.3I**) (However, these are irreplaceable habitats and were excluded from this BNG calculation (see 'Irreplaceable and very high distinctiveness habitats' section below).

2.2.14 Habitat survey data was only included in this application stage BNG calculation if it occurred within the Order Limits and data was clipped to those limits within ArcGIS. Where scrub and tree features mapped as points fell outside of the Order Limits, these were excluded from the application stage BNG calculation, including cases where the RPA partially overlapped the boundary of the Order Limits. Future iterations of the BNG calculation (at design stage when construction details is available and post construction when as-built information is available) will assess such instances to determine whether inclusion in a BNG calculation is required, for example based on direct impact.

Irreplaceable habitats

2.2.15 The BNG Good Practice Principle 2 is "avoid impacts on irreplaceable biodiversity – these impacts cannot be offset to achieve No Net Loss or Net Gain" (see **Appendix A**).

[26] For the purposes of the application stage BNG calculation, the RPA for the veteran tree was not included within the calculations where it coincides with the Order Limits.

2.2.16 On that basis, impacts on irreplaceable habitats (e.g., ancient woodland, veteran trees, peatland) cannot be accounted for through the Biodiversity Metric. BNG is not possible for a project as a whole if the project results in losses of irreplaceable habitats.

2.2.17 Phase 1 survey data was checked for occurrences of irreplaceable habitats; these comprised ancient Woodland and veteran trees only.

2.2.18 Phase 1 survey data was also checked against areas of ancient woodland mapped within the Natural England Ancient Woodland Inventory[27]. Where ancient woodland occurred within the Order Limits as mapped within this inventory, the critical importance of avoiding impacts on ancient woodland was worked through with the design team.

2.2.19 Similarly, veteran trees (as mapped/detailed within the Tree Constraints Plan, of ES **Appendix 5.3.3l (Volume 5, Document 5.3.3l)** Arboricultural Impact Assessment Report were individually checked with the design team to look at all possible options to retain these trees

2.2.20 It is noted that Natural England has outlined within the Biodiversity Metric guidance that if there are no negative impacts on irreplaceable habitats, then irreplaceable habitats could be enhanced, and the associated units could count towards BNG (using the nearest best-fit habitat within the Biodiversity Metric)[7].

2.2.21 No negative impacts upon irreplaceable habitats are anticipated as a result of the Project (see **Results Section 3.1**).

Habitats of very high distinctiveness

2.2.22 The Biodiversity Metric contains habitats of very high distinctiveness (e.g., upland/lowland fens, upland/lowland meadows, blanket bogs etc). The Biodiversity Metric states that "*any loss of very high distinctiveness habitats is unacceptable*". Only under exceptional circumstances, losses of very high distinctiveness habitats may be compensated through bespoke agreements with the relevant regulator(s). However, very high distinctiveness habitats should be retained as a minimum and where possible enhanced to contribute towards achieving BNG.

2.2.23 Phase 1 survey data was checked for occurrences of very high distinctiveness habitats. In addition, the Phase 1 survey data was checked against habitats mapped within the Natural England Priority Habitat Inventory for both very high and high distinctiveness habitats. This open-source dataset has limitations (e.g., some data is outdated, or has a low confidence score) but is useful to check for presence of Priority Habitats (referred to as Habitats of Principal Importance, or HPI), which are predominantly high or very high distinctiveness habitats within the Biodiversity Metric[28].

2.2.24 Areas mapped as HPI within the Inventory were compared with the results of the Extended Phase 1 habitat survey. Where HPI habitats were mapped in the Inventory although the Phase 1 survey results identified that the habitat did not qualify for HPI status, the survey data was reviewed in detail to check the habitat type and its HPI status.

2.2.25 There were instances of Woodland mapped as Priority Habitat in the open-source data, yet the Phase 1 survey data identified the woodland as a plantation woodland that equated to a medium distinctiveness score. Each Woodland was checked and assigned

[27] Natural England, 2022 Ancient Woodland Inventory. Natural England; York.
[28] Natural England (2022). Priority Habitat Inventory (England). Natural England; York.

as either high or medium distinctiveness based on evidence from the survey data and desk-studies and feedback from the field team.

2.2.26 There were instances of Woodland mapped as priority habitat in the open-source data and identified as a high distinctiveness woodland type from the Phase 1 survey data. Following a review of the survey data, all such woodland was confirmed as high distinctiveness woodland.

2.2.27 There was one instance where poor semi-improved grassland was recorded during the Phase 1 habitat survey, although it had previously been mapped as Coastal and Floodplain Grazing Marsh (CFGM) in the open-source data on Priority Habitats. Given the location (within a floodplain) and historical management of the site, this parcel was categorised as the HPI habitat CFGM following a precautionary approach (in line with **ES Appendix 5.3.8B, Volume 5, Document 5.3.8B; Extended Phase 1 report**). This is a high distinctiveness grassland habitat within the Biodiversity Metric 3.1.

2.2.28 No negative impacts upon habitats of very high distinctiveness are anticipated as a result of the Project (see **Results Section 3.1**).

Translation of habitat types for use in Biodiversity Metric 3.1

2.2.29 The Biodiversity Metric operates using a specific list of habitat types, which is most closely aligned with the UK Habitat Classification system Level 4[29]. For this Project, the baseline habitat survey data was collected and classified using the Phase 1 habitat survey methodology (**see ES Appendix 5.3.8B, Volume 5, Document 5.3.8B**). It was necessary to translate the Phase 1 habitats into habitat types for use in the Biodiversity Metric. This translation was carried out using professional judgement and, as a reference, the Phase 1 translation tab (tab G-9 'Translation Phase 1') within the Biodiversity Metric calculation tool and the Habitats Definition tab within the Biodiversity Metric Condition Assessment Sheets[25].

2.2.30 Habitats were each checked against Phase 1 survey notes and species lists to enable the most accurate translation given the available data. In cases where limited information was available for a particular habitat parcel (e.g., there was no site access), habitats were translated based on the most-likely case from field notes, discussions with the field team and aerial images.

2.2.31 In line with **ES Appendix 5.3.8B, Volume 5, Document 5.3.8B (Extended Phase 1 report),** all waterbodies (referred to as standing open water in the Phase 1 methodology, and hereafter as ponds[30]) within the Metric's area-based habitats were assumed to be HPI and were assigned a high distinctiveness score.

2.2.32 For the Biodiversity chapter, a precautionary approach was undertaken to assume all hedgerows met criteria for Hedgerow HPI, including those less than 20 metres in length[31]. On this basis, all hedgerows recorded within the Order Limits were scored as high distinctiveness within the metric calculation.

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[29] UKHab (2020). The UK Habitat Classification – Habitat Definitions V1.1 (online) (Accessed August 2022).
[30] 'Pond' and lake are the terms provided with the Metric.
[31] Hedgerows are evaluated in part using their length, for which a measure of 20m is used. A hedgerow is protected if it is more than 20m long with gaps of 20m or less in its length or less than 20m long, but meets another hedge at each end.

2.2.33 All areas marked as arable land within the Phase 1 data were assumed to equate to cropland (cereal crops; low distinctiveness) for this application stage metric calculation, except for five instances where arable field margins have been assumed as HPI based on their dimensions and species composition (see Extended Phase 1 report as above). Arable field margins were translated into the Biodiversity Metric 3.1 habitat 'arable field margins; tussocky' (a medium distinctiveness cropland habitat).

2.2.34 Similarly, all areas mapped as poor semi-improved grassland within the Phase 1 data was assumed to equate to low distinctiveness modified grassland within this application stage calculation, except for one instance where land initially recorded as poor semi-improved grassland was categorised as the HPI habitat floodplain grazing marsh (see **paragraph 2.2.27**). Floodplain grazing marsh was translated as 'Coastal Floodplain wetland mosaic (CFGM)' within the Metric, which is a high distinctiveness grassland habitat.

2.2.35 Where parcels were marked as 'parkland and scattered trees' within the Phase 1 survey, the Biodiversity Metric tab G-9 suggests 'wood-pasture and parkland' as the metric habitat type, which is a very high distinctiveness habitat. However, based on the Phase 1 survey data, it was evident that these habitats were not wood pasture and were not very high distinctiveness habitats. Based on species lists from the Phase 1 surveys, these habitats were listed as the closest-matched woodland type within the metric while noting that these habitat parcels were parkland and scattered trees.

2.2.36 An area of approximately 0.2 ha (0.04% of the total area within the Order Limits) was mapped as the Phase 1 category 'Other habitat'. This represented small parcels of habitats throughout the Order Limits, some of which appeared to be woody areas. All such parcels were assumed as medium distinctiveness woodland (other broadleaved woodland) following a precautionary approach.

2.2.37 **Table 2.1** shows the Biodiversity Metric 3.1 habitat types selected for each Phase 1 habitat type (excluding ancient woodland and veteran trees).

Table 2.1 - Translation of habitat types from Phase 1 to habitats within the Biodiversity Metric 3.1

Phase 1 Habitat Type	Biodiversity Metric 3.1 broad habitat	Biodiversity Metric 3.1 habitat type	Biodiversity Metric 3.1 Distinctiveness band
Area-based habitats:			
A1.1.1: Broadleaved woodland - semi-natural	Woodland and Forest	Lowland mixed deciduous woodland	High
A1.1.2: Broadleaved woodland – plantation	Woodland and Forest	Other woodland; broadleaved	Medium
A1.2.2: Coniferous woodland – plantation	Woodland and Forest	Other coniferous woodland	Low
A1.3.2: Mixed woodland – plantation	Woodland and Forest	Other woodland; mixed	Medium

Phase 1 Habitat Type	Biodiversity Metric 3.1 broad habitat	Biodiversity Metric 3.1 habitat type	Biodiversity Metric 3.1 Distinctiveness band
A2.1: Scrub- Dense/Continuous	Heathland and shrub	Mixed scrub	Medium
A2.2: Scrub- Scattered	Heathland and shrub	Mixed scrub	Medium
A3.1: Parkland and scattered trees- broad-leaved	Woodland and Forest	Other woodland; broadleaved	Medium
A3.3: Parkland and scattered trees- mixed	Woodland and Forest	Other woodland; mixed	Medium
B2.2: Neutral grassland - semi-improved	Grassland	Other neutral grassland	Medium
B4: Improved grassland	Grassland	Modified grassland	Low
B6: Poor semi-improved grassland (excluding one parcel of assumed HPI, see row below)	Grassland	Modified grassland	Low
B6: Poor semi-improved grassland (assumed CFGM HPI habitat)	Grassland	Floodplain wetland mosaic (CFGM)	High
C3.1: Tall ruderal vegetation	Sparsely Vegetated Land	Ruderal/Ephemeral	Low
G1: Standing water	Lakes	Ponds (priority habitat)	High
Hardstanding	Urban	Developed land; Sealed surface	V.Low
I2.1: Quarry	Urban	Actively worked sand pit quarry or open cast mine	Low
J1.1: Arable (excluding parcels of assumed HPI, see row below)	Cropland	Cereal crops	Low
J1.1: Arable (assumed arable field margins HPI)	Cropland	Arable field margins; tussocky	Medium
J1.2: Amenity grassland	Grassland	Modified grassland	Low
J1.3: Ephemeral/short perennial	Sparsely Vegetated Land	Ruderal/Ephemeral	Low
J1.4: Introduced shrub	Urban	Introduced shrub	Low

Phase 1 Habitat Type	Biodiversity Metric 3.1 broad habitat	Biodiversity Metric 3.1 habitat type	Biodiversity Metric 3.1 Distinctiveness band
J3.6: Buildings	Urban	Developed land; Sealed surface	V.Low
J4: Bare ground	Urban	Vacant/derelict land/ bare ground	Low
J5: Other habitat	Woodland and Forest	Other woodland; broadleaved	Medium
Hedgerows/lines of trees			
J2.1.1: Intact hedge native species-rich (assumed HPI)	n/a	Native Species Rich Hedgerow with trees	High
J2.1.2: Intact hedge native species poor (assumed HPI)	n/a	Native Species Rich Hedgerow with trees	High
J2.2.1: Defunct hedge native species-rich (assumed HPI)	n/a	Native Species Rich Hedgerow with trees	High
J2.2.2: Defunct hedge native species poor (assumed HPI)	n/a	Native Species Rich Hedgerow with trees	High
J2.3.1: Hedge and trees native species-rich (assumed HPI)	n/a	Native Species Rich Hedgerow with trees	High
J2.3.2: Hedge and trees native species poor (assumed HPI)	n/a	Native Species Rich Hedgerow with trees	High
River habitats			
G1: Standing water (ditches)	n/a	Ditches	Medium
G2: Running water	n/a	Other rivers and streams	High
J2.6: Dry ditch	n/a	Ditches	Medium

Habitat distinctiveness

2.2.38 Each Biodiversity Metric habitat type is preassigned a distinctiveness band from Very Low, Low, Medium, High and Very High (which has been set by Natural England[7]). This is a measure of habitat quality, relating to the distinguishing features of a habitat type such as rarity, conservation status, and species assemblage. When each habitat type was translated from the Phase 1 survey and entered into the Biodiversity Metric, the distinctiveness band was automatically assigned (**Table 2.1)**.

Habitat condition

2.2.39 Once a habitat type and distinctiveness has been assigned, an assessment is made on the baseline condition of each habitat parcel by following the condition assessment method issued by Natural England for the Biodiversity Metric 3.1. For the condition assessment, each habitat parcel is assessed as passing or failing criteria, and the number of passes is then totalled to score the habitat parcel as either good, moderate, or poor condition. Some habitats must pass certain criteria to score as being in good condition (called essential criteria). There are also habitats that are automatically set in poor condition or where condition is N/A (as determined by Natural England and automatically set in the Biodiversity Metric 3.1).

2.2.40 A full condition assessment of each habitat parcel was not possible for this application stage BNG calculation because of various constraints including site access limitations. The following approach described in the following paragraphs was adopted to assign condition to the baseline habitat parcels.

Condition Assessment: pre-assigned by Natural England

2.2.41 For habitats already pre-assigned a condition score by Natural England (for example as poor condition or when the condition assessment is N/A), occurrences of these habitats within the Order Limits were given the pre-assigned condition scores set as per Natural England guidance. These habitats and their pre-assigned condition scores were:

- Cereal crops: condition n/a.
- Introduced shrub: condition n/a.
- Actively worked sand pit quarry or open cast mine: condition n/a.
- Developed land; Sealed surface: condition n/a.

Condition Assessment: assumed to be Poor

2.2.42 For all remaining habitat types, the target notes and site photographs from the Phase 1 surveys were reviewed. There were habitats that incurred high levels of disturbance or management and showed evidence of criteria that are typical of habitat in poor condition. Parcels of these habitats were assumed to be in poor condition, and these habitats were:

- Modified grassland;
- Vacant/derelict/bare ground;
- Ruderal/Ephemeral; and
- Other coniferous woodland.

Condition Assessment: assumed to be Moderate

2.2.43 For the remaining habitats, parcels across the route appeared to range in condition from good to moderate to poor. An average of moderate condition was assigned to these habitats for this application stage BNG calculation. The following habitats were assumed to be in moderate condition:

- Mixed scrub;
- Other neutral grassland;

- Floodplain wetland mosaic (CGFM);
- Arable field margins; tussocky;
- Lowland mixed deciduous woodland;
- Other woodland: broadleaved;
- Other woodland: mixed;
- Ponds (priority habitat);
- Native species-rich hedgerow with trees;
- Ditch; and
- Other Rivers and Streams.

2.2.44 These assumptions of habitat condition are noted as a limitation of this application stage BNG calculation, and targeted habitat condition assessments would be carried out as part of update BNG assessment at detailed design stage and post construction stage (see **Section 4 Next Steps & Recommendations**).

Strategic significance

Area-based habitats and hedgerows

2.2.45 For area-based habitats and linear habitats (hedgerows/lines of trees), there are three categories of strategic significance that can apply to each parcel or feature within the Biodiversity Metric:

- **High strategic significance:** Formally identified in local strategy as defined by the local planning authority.
- **Medium strategic significance:** Location ecologically desirable but not in local strategy as defined by the local planning authority.
- **Low strategic significance:** Area/compensation not in local strategy/no local strategy as defined by the local planning authority.

2.2.46 An initial assessment was made of High strategic significance via a desk-based study to search for published maps and spatially referenced plans of local and regional conservation priorities. The aim was to support updated BNG assessment at detailed design stage and final assessment post construction stage to determine whether a habitat parcel was located within an area of strategic significance for biodiversity, as mapped within a formally published local plan or conservation strategy.

2.2.47 The following sources were checked (by referring to available online documentation) for spatially referenced local conservation priorities, which are noted in the Recommendations section of this report (note that, in addition to these sources, the desk-study for all statutory and non-statutory sites within the Order Limits is described in **ES Biodiversity Chapter 8 Biodiversity, Volume 5, Document 5.2.8**:

- Leeds City Region Green Infrastructure Strategy[32];
- Harrogate District Local Plan – Supplementary Planning Document (SPD) on providing net gain for biodiversity and associated map of habitats of strategic significance[3334];
- Harrogate District Local Plan – Supplementary Planning Document (SPD) on green infrastructure[35];
- Hambleton Local Plan and Policies Map[36];
- Hambleton District Council Local Green Space Assessment[37];
- Leeds Local Plan and associated Natural Environment Map[38];
- City of York Local Plan Topic Paper on defining York's Green Belt (City of York Council, 2019[39]);
- City of York Green Infrastructure Corridors maps and Green Corridors technical paper (City of York Council, 2020[40] & 2011[41]); and

[32] Leeds City Region Enterprise Partnership & West Yorkshire Combined Authority (2018). Leeds City Region Green Infrastructure Strategy 2017 – 2036. (online) Available at: https://www.westyorks-ca.gov.uk/media/8791/leeds-city-region-gbi-strategy.pdf (Accessed October 2022).
[33] Harrogate Borough Council (2021). Harrogate District Local Plan - Providing Net Gain for Biodiversity Supplementary Planning Document (SPD). (online) Available at: https://www.harrogate.gov.uk/downloads/file/4127/providing-net-gain-for-biodiversity-spd-2021 (Accessed October 2022).
[34] Harrogate Borough Council (2021). Habitats of Strategic Significance in Harrogate District (ArcGIS online). (online) (Accessed October 2022).
[35] Harrogate Borough Council (2014). Green Infrastructure Supplementary Planning Document (SPD). (online) Available at: https://www.harrogate.gov.uk/local-planning-guidance-spds/green-infrastructure-spd (Accessed October 2022).
[36] Hambleton District Council (2022). Hambleton Local Plan (Adopted February 2022). (online) Available at: https://www.hambleton.gov.uk/local-plan-1 (Accessed October 2022).
[37] Hambleton District Council (2018). Local Green Space Assessment. (online) Available at: https://www.hambleton.gov.uk/downloads/file/1119/sd25-local-green-space-assessment---combined-recommendations-report-november-2018 (Accessed October 2022).
[38] Leeds City Council (2019). Leeds Local Plan - Core Strategy (as amended by the Core Strategy Selective Review 2019). (online) Available at: https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/core-strategy-introduction (Accessed October 2022).
[39] City of York Council (2019). City of York Local Plan Topic Paper TP1 Approach to defining York's Green Belt. (online) Available at: https://www.york.gov.uk/downloads/file/6318/ex-cyc-50-topic-paper-1-approach-to-defining-green-belt-addendum-january-2021 (Accessed October 2022).
[40] City of York Council (2020). Green Infrastructure Corridors (Dataset). (online) Available at: https://www.data.gov.uk/dataset/798da340-3db6-489e-a558-6b42e1da82d5/green-infrastructure-corridors (Accessed October 2022).
[41] City of York Council (2011). LDF Core Strategy – Green Corridors Technical Paper. (online) Available at: https://www.york.gov.uk/downloads/file/1711/sd088-city-of-york-council-technical-paper-green-corridors-2011- (Accessed October 2022).

- Selby Local Plan and associated Planning Policy Biodiversity Map[42].

2.2.48 While an assessment was undertaken based on online information, this was not readily available in GIS compatible format for a Project of this extent, and therefore a complete assessment of strategic significance for each area-based habitat and hedgerow parcel was not possible to be included in this application stage BNG calculation. Subsequently, all area-based habitats and hedgerows were assigned as Low strategic significance, in both the baseline and post works. This will be updated as part of BNG assessment at detailed design stage when construction detail is available and will be finalised at post construction stage once as-built information is available.[43]

River strategic significance

2.2.49 In accordance with Natural England's guidance, river habitats are assigned either high or low strategic significance in Biodiversity Metric 3.1 based the following criteria:

- **High strategic significance** – Delivery of river restoration actions within a Local Plan, River Basin Management Plan, Catchment Plans, Catchment Planning System, or Priority Habitats for Restoration.
- **Low strategic significance** – Low potential; action not identified in any plan.

2.2.50 Strategic significance for river habitats within the Order limits was checked against the Humber River Basin Management Plan (RBMP)[44], with specific reference to the objectives for ecological status and ecological potential.

2.2.51 The Humber RBMP sets statutory objectives for all water bodies within the Humber River Basin, with the default objective to achieve good ecological status (or good ecological potential in the case of heavily modified or artificial waterbodies). In some cases, less stringent ecological objectives are set (in terms of timeframe or target condition), based on location and feasibility factors.

2.2.52 Given that an ecological objective has been set for all waterbodies within the Humber RMBP, it was assumed that all habitats classed as the Phase 1 type 'G2: running water' (translated to 'Other rivers and streams' within the Biodiversity Metric 3.1) were of high strategic significance.

2.2.53 Habitats classed as 'ditches were assumed as having low strategic significance. This was on the basis that these are man-made drainage ditches that would not have the ecological objectives set in the RMBP for rivers and streams.

2.2.54 These assessments for river strategic significance are based on assumptions, and further assessment will be required for subsequent BNG assessments to check the

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[42] Selby District Council (2019). Interactive Planning Policy Maps: Biodiversity Map. (online) Available at: https://www.selby.gov.uk/interactive-planning-policy-map (Accessed October 2022).

[43] Strategic significance has a smaller impact on the final biodiversity unit score compared to habitat distinctiveness or condition (for example, scores for habitat distinctiveness range between 0-8, whereas scores for strategic significance range between 1-1.15). This assumption is therefore unlikely to significantly affect overall results.

[44] Defra and Environment Agency (2016). Humber river basin district - River basin management plan. (online) Available at: https://www.gov.uk/government/publications/humber-river-basin-district-river-basin-management-plan (Accessed October 2022).

specific ecological objectives against each river habitat within the Order Limits to fully assess the Strategic Significance score.[43]

Riparian and in-watercourse encroachment

2.2.55 The Biodiversity Metric applies additional unit modifiers to river habitats (both before and after works) to account for levels of riparian zone and watercourse encroachment.

2.2.56 The riparian zone is defined in the Biodiversity Metric user guide as a 10m zone from the top of the riverbank that would naturally be periodically flooded, and directly influences the hydrological, geomorphological, and biological functions and processes within the river channel (Natural England, 2022e). The riparian zone is an intrinsic part of the river system and is considered as part of the linear river feature within the Biodiversity Metric for rivers and streams.

2.2.57 Riparian encroachment is defined in the Biodiversity Metric 3.1 guidance as: "*A reduction in the quantity/quality and 'use' of available habitat that forms a specific ecological function for riparian or aquatic specialist species. Whereby, 'use' is defined as the ability of a species to: commute, forage, rest/ dwell, or access as part of its life cycle between aquatic and terrestrial phases*."

2.2.58 The level of riparian encroachment was categorised based on the location of development relevant to the riparian zone, with development being defined as "*the presence of any habitats of very low distinctiveness found within the riparian zone (as listed within the Biodiversity Metric e.g., hard standing etc.*)". Categories of riparian encroachment include:

- **No encroachment** - No development within 10m of bank top.
- **Minor encroachment** - Any development 8-10m from bank-top (up to 100% of area), or where development footprint occupies 0-10% of the riparian zone area 4-10m from bank-top.
- **Moderate encroachment** - Any development where footprint occupies between 10-25% of the riparian zone area 4-10m from bank top.
- **Major encroachment** - Any development 0-4m from bank-top (except for existing towpaths and river crossings), or where development footprint occupies more than 25% of the total riparian zone area.

2.2.59 Site survey information and photographs were reviewed to check for evidence of riparian zone encroachment (using the definition of riparian zone encroachment in the Biodiversity Metric user guide). From the information available, no riparian zone encroachment was evident as works will take place above the rivers and do not require access into the channel or riparian zone. On this basis, an assumption was made that there was no existing riparian zone encroachment associated with rivers within the Order limits for the baseline. It is noted that this assumption should be verified by site surveys as part of update BNG assessments.

2.2.60 In-watercourse encroachment accounts for development that occurs within the banks or the river channel. It is defined as: "*An intervention that adversely affects hydrological and geo-morphological processes, creating localised changes in flow (e.g., eddying, erosion) and/or sediment dynamics and riverine connectivity - longitudinal, lateral or vertical. The result is localised changes in habitat, species, and the use of migratory pathways*."

2.2.61 The level of in-watercourse encroachment was categorised as one of the following:

- **No encroachment** less than 5% bank length comprising an engineered bank revetment and no encroachment into channel.
- **Minor encroachment** - 5% to 20% bank length comprising engineered bank revetment or encroachment up to 10% channel width.
- **Major encroachment** – more than 20% bank length comprising an engineered bank revetment or encroachment of more than 10% of the channel width.

2.2.62 It was not possible to survey all river habitats for watercourse encroachment because of constraints that included site accessibility. From the information that was gathered (e.g., survey data and site photographs), none of the river habitats showed any watercourse encroachment for the on-site baseline. For this application stage BNG calculation, an assumption was made that there was no watercourse encroachment for any type of baseline river habitat recorded within the Order Limits. It is noted that this assumption will be verified by site surveys as part of update BNG assessments.

2.2.63 Note: For dry ditches, which are man-made drainage systems without a riparian zone, riparian encroachment is not applicable and was set to 'no riparian encroachment'.

2.3 BNG Impacts: habitat clearance

Temporary and permanent clearance of habitats

2.3.1 To account for impacts, the Biodiversity Metric 3.1 calculation requires information on the amount of retained habitats, and of temporary and permanent habitat clearance.

2.3.2 Information on temporary and permanent clearance of individual habitat parcels and timeframes for construction/landscaping is based on the design of the Project as submitted as part of the application for a DCO. Each habitat parcel (or subsection of a habitat parcel) was categorised according to one of the five categories described in **Table 2.2** (all in accordance with Natural England's guidance), which determined how impacts to habitats were assigned in this application stage BNG calculation.

Table 2.2 - Types of impacts per habitat parcel and the associated data entry into the Biodiversity Metric 3.1 calculation

Type of impact per habitat parcel	Data entry into Biodiversity Metric 3.1
1. Retained	The baseline habitat is marked as retained.
2. Temporary loss and full reinstatement to the baseline habitat type and condition within 2 years	The baseline habitat is marked as retained.
3. Temporary loss and full reinstatement to the baseline habitat type and condition more than 2 years	The baseline habitat is marked as loss. The reinstated habitat type and baseline condition is then entered as habitat creation.
4. Loss of the baseline habitat and creation of a different habitat	The baseline habitat is marked as loss. The new habitat to be created with its target

Type of impact per habitat parcel	Data entry into Biodiversity Metric 3.1
	condition is then entered as habitat creation.
5. Permanent loss	The baseline habitat is marked as loss. The post-works land-cover is entered in the habitat creation tab as developed land (e.g., 'Urban - developed land; sealed surface')

2.3.3 Areas of habitat loss, habitat reinstatement, and estimated timeframe for reinstatement were determined for each of the Project elements within the Order Limits. The assumptions regarding permanent and temporary losses enable flexibility for the final detailed design which will have overestimated potential losses as a precaution, for example this approach assumes temporary loss of habitats beneath existing and proposed overhead lines within a 30m swathe.

2.3.4 Temporary and permanent losses per Project element are described in **Table 2.3.** Habitats within the Order Limits that were not included within the elements described in **Table 2.3** were assumed to be retained.

Table 2.3 - Type of impact on habitats within the Order Limits for each Project element

Project element	Impact for the application stage BNG calculation	If Temporary loss, estimated number of years between habitat clearance and habitat reinstatement (rounded to the nearest year)*
Terrestrial element		
Substation footprint	Permanent Loss	n/a
New Substation Working Area	Temporary Loss	5 – but note that proposals include some permanent screening landscaping which will be implemented in advance of all other reinstatement works
CSEC footprint	Permanent Loss	n/a
Temporary construction compounds	Temporary Loss	5
Stringing areas	Temporary Loss	5
New pylons – working areas	Temporary Loss	5
New pylons – legs	Permanent Loss	n/a
Dismantled pylon legs	Permanent Loss	n/a
Temporary pylon legs	Temporary Loss	5
New overhead line	Temporary Loss	5

Project element	Impact for the application stage BNG calculation	If Temporary loss, estimated number of years between habitat clearance and habitat reinstatement (rounded to the nearest year)*
Existing pylons (repaired) – working areas	Temporary Loss	5
Existing pylons (dismantled)	Temporary Loss	5
Existing overhead line – reconductoring	Temporary Loss	5
Existing overhead line – dismantled	Temporary Loss	5
Scaffolding	Temporary Loss	5
Temporary access routes	Temporary Loss	5
Permanent access routes	Permanent Loss	n/a
Visibility splays	Temporary Loss	5
Bellmouths	Permanent Loss	n/a
Bridge working areas	Temporary Loss	5
Culverts	Temporary Loss	5
Utility diversions (and bell mouth working areas)	Temporary Loss for full area, but permanent loss on top of UGCs	5
Riparian element		
Bridge working areas	Temporary Loss	5
Culverts	Temporary Loss	5

*based on the Project programme

2.3.5 On the basis of the impacts and timescales described in **Table 2.3**, no temporarily cleared habitats could be reinstated to the original type and condition within a two-year period following habitat clearance, instead an estimation of 4.5 years has been used. As such, all areas of permanent and temporary habitat clearance were entered as habitat loss within the metric. For instances where habitats were cleared temporarily and then planting was undertaken to reinstate the original type and condition of the habitat, the reinstatement habitat was entered into the habitat creation tab (as described in row 3 of **Table 2.2)**.

2.3.6 The impacts in terms of the area of habitat lost or retained was entered into the Biodiversity Metric 3.1 to calculate the deficit in biodiversity units and habitat extent predicted to occur as a result of the Project.

2.3.7 The approach to estimating impacts for this application stage BNG calculation represents a worst-case scenario based on temporary and permanent impact GIS

layers agreed based on the project components as submitted as part of the DCO Application. For example, habitats beneath all overhead lines are assumed as temporarily lost, when in reality, a percentage of these is likely to be retained. Update BNG assessment at detailed design and post construction will take into account location and habitat-specific impacts to refine and update the metric calculation.

Permanent impacts on terrestrial habitats

2.3.8 Permanent losses to terrestrial habitats were assumed for the following:

- Substation footprints;
- New pylon legs and dismantled pylon legs – assumed to be $2m^2$ per leg;
- CSEC footprint;
- Permanent access routes with a 12m buffer assumed;
- Bellmouths – an 8m buffer assumed;
- Utility diversions (and bellmouth working areas)- permanent losses are assumed on top of UGCs as no planting can be installed here; and
- Field gates - a 4m buffer assumed for permanent removal of habitat and replacement with access gate.

Temporary impacts on terrestrial habitats

2.3.9 For all other Project elements, clearance of habitats is assumed to be temporary. Timeframes for reinstatement of temporary habitat loss have all be assigned as 5[45] years based on the Project programme.

2.3.10 For areas of landscaping that will surround the new substation, some elements of the landscaping may be delivered sooner than for the rest of the Order Limits – approximately 3 years rather than 5 years (e.g., where woodland and scrub planting have a screening purpose). While a precautionary approach has been taken for this application stage BNG calculation, detailed timescales should be captured in subsequent BNG calculations.

Impacts on river habitats

2.3.11 Discussions with National Grid and the wider Project team indicated that all impacts on river habitats would be temporary, and in most cases would not affect the watercourse itself but may impact riparian zones.

2.3.12 It was not possible to accurately calculate all temporary impacts to riparian zones at this stage. However, temporary losses of linear river habitats could be estimated, and these were included in the metric. Such estimates of temporary losses should be updated as more Project information becomes available, as it is likely that construction working footprints will avoid such impacts.

2.3.13 It is noted that area-based habitats or hedgerows occurring within the riparian zones were recorded within the area-based and hedgerow tabs.

[45] 4.5 years is rounded to 5 years in the metric

2.3.14 To calculate the length of river that was assumed as temporarily impacted, the following working lengths were used for each Project element relating to river habitats:

- New bridge crossings – Length of temporary impact assumed to be 12m;
- New culverts – Length of temporary impact assumed to be 6m; and
- Upgrade to existing culverts – Length of temporary impact assumed to be 6m.

2.3.15 These assumed temporary impacts were applied to all river habitats (including ditches and Other rivers and streams).

Calculations of permanent and temporary habitat clearance

2.3.16 The extent (ha or km) of habitat parcels temporarily or permanently cleared was identified using ArcGIS ArcMap software by overlaying the baseline habitat data within the Order limits with GIS data on the footprint of Project components and their associated temporary and permanent clearance estimates. The measurements of area and length for clearance of habitat parcels were then measured automatically within ArcMap, from the associated polygon and linear features.

2.4 Post-intervention: Habitat creation and enhancement as designed

2.4.1 For the Project as designed at DCO submission, all post-intervention habitat creation and enhancement included in this application stage BNG calculation comprises on-site habitat (within the Order Limits). Off-site BNG measures have not yet been detailed for the Project as designed, but options are considered as part of BNG modelling (see **Section 2.5**).

2.4.2 The Project as currently designed includes the following initial proposals for habitat creation. These measures fall into two broad categories:

- **Reinstatement** of habitats marked as temporary loss throughout the Order Limits (marked as habitat loss and then habitat creation within the metric).
- **Landscaping** at substations and Tadcaster CSECs.

2.4.3 Information on habitat creation was taken from **Chapter 6: Landscape and Visual Amenity, Volume 5, Document 5.2.6** with reference to the Outline landscape mitigation plans for Overton Substation, Monk Fryston Substation, and Tadcaster CSEC (**Figures 3.10 – 3.12, Volume 5, Document 5.4.3**).

2.4.4 This information was used to ‘translate’ landscape habitat types into metric habitats, and to set assumptions for the application stage BNG calculation, such as on target habitat condition.

Trading Rules

2.4.5 Even if a development provides the required net change in biodiversity units, it would not meet the BNG requirements unless the proposed habitat enhancement/creation is compliant with the Biodiversity Metric 3.1 trading rules. The trading rules are designed around the good practice principles for BNG (see **Appendix A**) and require that any loss of habitat is replaced on a ‘like for like’ or ‘like for better’ distinctiveness basis as outlined in **Table 2.4.**

Table 2.4 - Biodiversity Metric 3.1 habitat distinctiveness trading rules

Baseline habitat distinctiveness	Distinctiveness of replacement habitat required by trading rules
Very high	**Losses are unacceptable**
High	Must be replaced with biodiversity units of the **same habitat type**
Medium	Must be replaced with either: • **Medium distinctiveness** habitat from the **same broad habitat type**; or • Any habitat from a **higher distinctiveness band**
Low	Must be replaced with either: • **Same distinctiveness** habitat; or • Any habitat from a **higher distinctiveness band**
Very low	Replacement **not required**

Risk factors

2.4.6 Biodiversity Metric 3.1 applies risk factors to post-intervention habitat change, which can have either no impact or a reduction in terms of the number of biodiversity units yielded for a given habitat parcel. In broad terms, the risk multipliers apply to the level of difficulty and time taken to achieve target condition for a given habitat change and, for off-site BNG delivery, the proximity to the loss site. The risk multipliers and their effects as per the Metric[46], are summarised in **Table 2.5**.

Table 2.5 - Risk multipliers in Biodiversity Metric 3.1

Risk multiplier	Summary	On-site and/or off-site
Difficulty – of creation and enhancement/ restoration	• Applied based on the level of uncertainty of achieving the target outcome for a given habitat type[47]. • Varies between habitat type. • A separate multiplier applied for creation and enhancement/restoration. • Preassigned in Biodiversity Metric 3.1 based on habitat type and target condition.	On-site and off-site
Temporal risks	• Applied based on the time to achieve target condition for a habitat change. • Two components applied separately:	On-site and off-site

[46] It should be noted that additional risk could arise where habitats take more than 30 years to establish and an agreement can only be secured via non-standard arrangements.
[47] For example, a modified grassland is comparatively easy to create and manage and is assigned a 'low' difficulty multiplier, compared to an upland calcareous grassland which is assigned a 'high' difficulty multiplier.

Risk multiplier	Summary	On-site and/or off-site
	– Standard time to target condition: preassigned in Biodiversity Metric 3.1 based on habitat type and target condition; and – Advance or delay in starting creation/enhancement following the date of habitat clearance: user-defined in terms of number of years, with 0 years added when undertaken in advance, otherwise the number of years of delay is added cumulatively to the standard time to target condition.	
Spatial risk	• Applied based on location of biodiversity loss compared off-site habitat compensation. User-defined based on: – Compensation inside Local Planning authority (LPA) or Natural Character Area (NCA), or Marine Plan Area (MPA) for intertidal habitat, or waterbody (for river habitat), of impact site; – Compensation outside of LPA/NCA/MPA/catchment of impact site but in neighbouring LPA/NCA/MPA/catchment; or – Compensation outside of LPA/NCA/MPA/catchment of impact site and beyond neighbouring LPA/NCA/MPA/catchment.	Off-site only

Estimating gains from habitat reinstatement

2.4.7 In the absence of further detail available at this stage of the Project, for this application stage BNG calculation, habitats that had been marked as temporarily lost within the agreed BNG impacts GIS layers (as described in **Table 2.3**) were assumed to be reinstated to their original (baseline) habitat type, condition, and strategic significance following completion of the construction period. For river habitats, watercourse and riparian encroachment were assumed to be the same post-works as in the baseline.

2.4.8 The period between habitat clearance and habitat reinstatement was assumed to be 4.5 years for all temporarily lost habitats, which was rounded to the nearest year (5 years) and entered into the Biodiversity Metric 3.1 as the number of years' delay (increasing the temporal risk multiplier). As described in paragraph 2.3.3, estimated timeframes for reinstatement were determined for each of the Project elements within the Order Limits.

2.4.9 As noted previously (see paragraph 2.3.5), the area of temporary habitat loss and associated reinstatement is a worst-case estimate for the purposes of this application stage BNG calculation.

Estimating gains from landscaping at substations and CSECs

2.4.10 At this stage of the Project, the outline landscape design (described in **Chapter 3: Description of the Project, Volume 5, Document 5.2.3,** and shown in **Figures 3.10 to 3.12, Volume 5, Document 5.4.3**) has been used for the application stage calculations. These designs provided estimates of hedgerow, woodland, scrub, and grassland creation/enhancement at the Overton Substation, Monk Fryston Substation, and Tadcaster CSEC Sites. Landscape management has not yet been finalised as part of these plans but will be secured by Requirement 8 of the DCO (**Volume 3, Document 3.1**). In order to set the habitat type and target condition for this application stage BNG calculation, the following was undertaken:

2.4.11 From the landscape information available, the habitats to be created were "translated" into the assumed best-fit habitat type (and associated distinctiveness score) within the Biodiversity Metric 3.1 as presented in **Table 2.6** below:

Table 2.6 - Translation of habitats in initial landscaping plans into Biodiversity Metric 3.1 habitat types

Habitat type in initial landscape plans	Translated BNG habitat type	Assumed habitat creation or enhancement	Estimated hectares or km of proposed landscaping				Ha or km
			Overton	*Tadcaster*	*Monk Fryston*	*Total*	
Species rich grassland	Other neutral grassland (medium distinctiveness)	Creation	4.73	0.62	7.20	12.55	ha
Woodland	Other woodland; broadleaved (medium distinctiveness)	Creation	1.04	n/a[48]	3.19	4.22	ha
Woodland edge (scrub)	Mixed scrub (medium distinctiveness)	Creation	1.56	n/a	2.01	3.57	ha
Scrub	Mixed scrub (medium distinctiveness)	Creation	n/a	0.08	n/a	0.08	ha

[48] n/a: this habitat type is not present at the location and has not been proposed as part of the habitat creation and enhancement plans

Habitat type in initial landscape plans	Translated BNG habitat type	Assumed habitat creation or enhancement	Estimated hectares or km of proposed landscaping				Ha or km
			Overton	*Tadcaster*	*Monk Fryston*	*Total*	
New or replacement Hedgerows	Native Species Rich Hedgerow (medium distinctiveness)	Creation	n/a	0.55	0.47	1.03	km
Existing Hedgerow lengths reinforced	Native Species Rich Hedgerow with Trees (high distinctiveness)	Enhancement	0.43	0.42	n/a	0.85	km

2.4.12 The following assumptions were applied to the areas of landscaping in **Table 2.6**:

- The target habitat condition was set at an assumed moderate for all landscape habitats within the habitat creation tab.
- For habitat enhancements ('existing hedgerow lengths reinforced'), it was assumed that baseline hedgerows were enhanced from moderate condition to good condition.
- It was not possible to fully assess Strategic Significance due to the landscape design being an outline only at this stage of the Project, so this was set as Low for all landscaped habitats.
- The delay between habitat clearance and habitat creation/enhancement was set to 5 years as a precaution for all landscaping measures, noting that delivery of some aspects of landscaping (such as tree/scrub intended for screening purposes) may occur sooner and this will be incorporated into subsequent detailed BNG assessments.
- Areas marked for landscaping at Overton, Tadcaster, and Monk Fryston were also marked as 'temporary loss' within the BNG impacts GIS layers. To avoid double counting of habitat creation measures, all areas of landscaping were subtracted from areas of cropland reinstatement, given that most landscaping described in **Table 2.6** will take place on arable land. This assumption was made for the purposes of this application stage BNG calculation, and will be updated to account for small areas of other baseline habitats (e.g., semi-improved grassland and coniferous woodland plantation) through update BNG assessment.
- At this stage of the Project it was noted that the proposed landscaping provide indicative areas of scrub and woodland landscaping, and that the exact areas will be

dictated by site factors and the design, for example the slopes of the bunds, these are to be developed through further design post-consent.

- For the permanent and temporary access routes and utility diversions, where habitat reinstatement will take place following construction activities, it is understood that this would be undertaken to reinstate habitat back to its original type and condition.

Data entry and calculation of biodiversity units at the post-intervention stage: as designed

2.4.13 To prepare the post-intervention data for entry into the Biodiversity Metric 3.1 Calculation Tool, a master spreadsheet was compiled. Following a final quality assurance check, data was added into the Biodiversity Metric 3.1 calculation tool creation and enhancement tabs for area-based, linear and river habitats.

2.4.14 At this stage, the calculation tool produced a post-intervention biodiversity unit value for each habitat parcel, with results of the change in biodiversity units between the baseline and post-intervention stages across area-base/linear/river habitats, and analysis of whether the trading rules were satisfied. This can be viewed in the Biodiversity Metric 3.1 tool (**Appendix B**).

2.5 Post Intervention: BNG modelling

2.5.1 The application stage BNG calculation of the Project, as designed, included on-site habitats only (i.e., habitats within the Order Limits, landscaping and reinstatement). The approximated net change in biodiversity units for area-based, linear and river habitats provided as part of the Project design would not be sufficient to provide BNG, based on the results of this application stage calculation (see **Results Section 3.3**).

2.5.2 Therefore, as a worst-case, it is assumed that no BNG delivery in addition that set out in **Section 2.5** would be possible within the Order Limits. If this were the case, additional off-site habitat interventions would be required to deliver BNG for the Project. The mechanism for delivering this is yet to be defined, although early discussions are ongoing with regard to further BNG measures (both on-site and off-site).

2.5.3 BNG modelling was undertaken to identify the approximate scale and type of additional off-site habitat creation/enhancement needed to achieve the minimum 10% BNG in area-based, hedgerow, and river habitats.[49]

2.5.4 Modelled off-site measures were determined based on the deficit in area-based, hedgerow, and river units for the Project as designed, as well as meeting the minimum requirements to satisfy the Biodiversity Metric 3.1 trading rules.

2.5.5 Given that the mechanism for delivering off-site measures is still to be identified, estimates given here are based on several assumptions that would need to be further assessed for feasibility and updated once the BNG design has been finalised for the Project.

[49] This follows a precautionary approach to estimating land requirements for BNG delivery, since greater levels of risk are factored into the calculation of off-site habitat creation/enhancement compared to on-site.

Area-based habitats

2.5.6 For area-based habitats, BNG modelling was considered only in terms of habitat creation (as opposed to enhancement measures), following a precautionary approach to approximate the area needed for off-site BNG delivery. This approach also helps to avoid reductions in habitat area, which is possible even if there is a gain in units when applying habitat enhancements.

2.5.7 At this stage in the Project, some discussions have taken place indicating that there may be nearby opportunities for important habitat enhancements that would contribute to local nature priorities and BNG – for example, enhancing areas of ancient and/or high distinctiveness woodland, or restoring habitats previously designated as SINCs. These should be considered for BNG (see **Section 4: Next Steps and Recommendations**).

2.5.8 The off-site baseline for area-based habitats was assumed to be poor condition modified grassland of low strategic significance. All modelled off-site area-based habitats were assumed to be able to reach a moderate target condition and were assumed to be of low strategic significance.

2.5.9 All off-site provision of area-based habitats was assumed to occur within the same Local Planning Authorities as where losses were incurred, resulting in no negative impact of the spatial risk multiplier.

2.5.10 For all habitat types, it was also assumed that all modelled off-site measures would commence within the same year as the commencement of habitat clearance on site (i.e., zero years' delay), minimising time to target condition and associated negative impact of the temporal risk multiplier. However, habitats with a time to target condition of 30+ years (e.g., lowland mixed deciduous woodland) are required within the Biodiversity Metric 3.1 to be initiated at least 1 year in advance of on-site (within the Order Limits) habitat clearance in order to be achievable within the required 30-year period for BNG. As such, it was assumed for this BNG modelling that this 1-year advance would apply where such habitats were included in the BNG design[50]. For on-site measures, they can only commence once construction is completed

Hedgerows/lines of trees

2.5.11 As with area-based habitats, only off-site hedgerow creation has been considered at this stage, rather than any enhancement, following a precautionary approach (although enhancement should be considered for the BNG design).

2.5.12 It is noted that, while hedgerows are linear features, creation of new off-site hedgerows might require a loss of underlying area-based habitat. In this application stage calculation, it is assumed that off-site hedgerows would be planted on what was a modified grassland habitat (poor condition, low strategic significance).

2.5.13 To calculate this area of modified grassland loss, hedgerow creation was precautionarily assumed to have a width of 4.99m which was multiplied by the hedgerow length required to achieve 10% net gain in hedgerow/line of tree units[29]. The subsequent loss of modified grassland area was then included in the off-site baseline area-based habitat.

2.5.14 All off-site provision of hedgerow habitats was assumed to occur within the same Local Planning Authorities as where losses were incurred, resulting in no negative impact of the spatial risk multiplier. Off-site hedgerow creation was also assumed to occur in the

[50] This approach is required in order for the metric to be able to calculate biodiversity units.

same year as on-site habitat clearance (zero years' advance or delay relative to habitat clearance).

River habitats

2.5.15 It was considered more feasible to model off-site BNG measures in terms of river enhancement as opposed to new river creation[5152]. It was assumed that off-site baseline river habitats would be in poor condition, and that enhancements would involve improving the condition of the watercourse (assumed as 'other rivers and streams') from 'poor' to 'good'.

2.5.16 It was assumed for this BNG modelling that both baseline and enhanced off-site watercourses would have no watercourse or riparian encroachment, and that all watercourses would be of high strategic significance (given that all watercourses are addressed within the Humber River Basin Management Plan[52]).

2.5.17 Finally, all river enhancements were modelled as occurring within the same waterbody in which negative impacts from the Project occur, resulting in no negative impact of the spatial risk multiplier, and were assumed to occur within the same year as negative impacts from the Project occur (zero years' advance or delay relative to habitat clearance).

Off-site BNG delivery

2.5.18 All assumptions made for off-site BNG delivery would need to be assessed for feasibility based on discussions with landowners and offset providers[53] and based on detailed long-term BNG management and monitoring plans. For example, determining target condition for off-site habitats would require assessing each of the Biodiversity Metric 3.1 habitat condition criteria against detailed 30-year habitat management plans. Exact locations, baseline habitat types, and timescales for habitat creation/enhancement would also need to be determined, as well as offset providers where appropriate (see **Section 4 Recommendations**).

2.6 Limitations

2.6.1 In addition to the assumptions described throughout this methodology, the following limitations apply to this application stage BNG calculation:

2.6.2 **Areas de-scoped because of a lack of access or lack of survey data:** Within land that was accessible to surveyors (~89% of the Order Limits) there were occasions when fully mapping the land parcel was not possible, for example because of obscured views or where unsafe conditions prevented full access[54]. As far as possible, data on habitats within these inaccessible locations were mapped using binoculars where appropriate from adjacent land parcels/Public Rights of Way/nearby roads, and a review of recent satellite imagery to assist in habitat identification within inaccessible land parcels. However, survey data was not available for ~0.3% (~1.6 ha) of land within the Order

[51] Environment Agency (2021). Draft river basin management plan: maps. Environment Agency; Bristol.
[52] For instance, see the draft Humber River Basin Management Plans, which highlight that many rivers within the district are below their 'good' target condition
[53] Meetings are ongoing with relevant local landowners, land managers and consultees to investigate opportunities for on and off-site BNG delivery
[54] This included the presence of livestock, steep, slippery or flooded areas

Limits (total area within Order Limits is 527.5 ha) and so was de-scoped and excluded from the application stage BNG calculation. The BNG calculation will be updated once all areas have been accessed to capture the UKHab category and other BNG required data (see **Section 4 Recommendations**). At that stage it will be possible to undertake an evaluation of the habitat condition assessment, identification of any irreplaceable habitats, strategic significance, and subsequently update the BNG calculations.

2.6.3 **Design-based limitations**: The baseline, impacts, post-intervention habitat creation and enhancement, and outcome of this application stage BNG calculation are based on the Project as designed at the DCO submission stage. The BNG calculation will be refined as the Project design is developed in more detail. The assumptions described in this methodology will be verified and the applicable BNG metric calculation updated accordingly. Subsequent BNG assessment based on detailed design and post construction as-built information will also require assessment of progress against each of the BNG Good Practice Principles (summarised in **Appendix A**) including an assessment of additionality (CIEEM, IEMA and CIRIA, 2016[16]).

- It is noted that BNG metric calculations throughout DCO and design stages are predictions of the Project's biodiversity outcomes based on the information available at the time. An "as-built" BNG metric calculation should be completed at the end of construction using as-built data of habitat clearance and landscaping, in order to capture any changes from the design.
- **Mapping tolerances**: ArcGIS ArcMap version 10.8.1 uses an 'x,y tolerance' default precision level of 0.001 metres; the minimum distance between coordinates before they are considered equal. The habitat polygons and linear features were clipped to the Order Limits boundary so that only habitats within the Limits were included in this application stage BNG calculation. This tolerance difference can create very small differences between the area of the Order limits and the total area of the baseline habitat polygons.
- **Exclusion of off-site evaluation**: The BNG modelling that comprises this application stage BNG calculation did not account for any environmental assessment that would be required for off-site BNG delivery. For example, archaeology, landscape, contaminated land etc.

3. Application Stage BNG Calculation Results

3.1 Baseline

3.1.1 A summary of the baseline habitat parcels, and associated baseline units calculated within the Biodiversity Metric 3.1 Calculation Tool, are presented in the following sections for area-based, hedgerow, and river units respectively. The Biodiversity Metric 3.1 Calculation Tool for the Project and the Calculation Tool for the BNG modelling scenario is provided in **Appendix B** and **Appendix C.**

3.1.2 The baseline for the Project as designed includes on-site habitats only (i.e., within the Order limits).

3.1.3 The Order Limits are located outside of any statutory biodiversity sites and lie within two non-statutory biodiversity sites: Overton Borrow Pits SINC and Rover Ouse candidate SINC. In addition, two deleted SINCs are also within the Order Limits (Field nr Healaugh Manor Farm deleted SINC and Disused Quarry, Newthorpe deleted SINC).

3.1.4 As noted in paragraph 2.2.15, any impacts upon irreplaceable and very high distinctiveness habitats cannot be accounted for through the Biodiversity Metric 3.1. The below describes such habitat types, the areas of which are not included within this application stage BNG calculation.

Irreplaceable habitats

3.1.5 The desk-based study identified one parcel of ancient woodland (an irreplaceable habitat) within the Order Limits, where the south-western corner of Huddleston Old Wood (an ancient, replanted woodland) overlaps with the Order Limits (approximate OS Grid Reference: SE 47065 33181).

3.1.6 No direct impacts on this parcel of ancient woodland would occur as a result of the Project. It is noted that due to the position of the existing XC 275kV Monk Fryston to Poppleton overhead line, a scaffold to facilitate a railway crossing and an access route to facilitate reconductoring work are required within 15m of Huddleston Old Wood as this existing line is within this Ancient Woodland. In practice the scaffolding will be achieved with the minimum impact to trees within the buffer zone and will be erected and installed working around tree positions where possible.

3.1.7 At this stage, the design intention is to avoid all ancient woodland and to locate access routes in proximity to Overton Wood and Redhouse Wood outside the 15m buffer zone thereby avoiding any effects on these woodlands.

3.1.8 A total of 12 veteran trees lie within the Order Limits; with a further 14 veteran trees that are not within the Order Limits, but the RPA of these trees do overlap the Order Limits (**Arboricultural Impact Assessment, Appendix 5.3.3I, Volume 5, Document 5.3.3I**). In discussions with the arborists, the design intention is to avoid impacts on veteran trees.

3.1.9 Ancient woodland and veteran trees will not be impacted by the Project and are therefore not included in this BNG calculation. No other irreplaceable habitats were

identified within the Order Limits. It is noted that enhancing irreplaceable habitats is possible as part of a BNG design when no impacts to the irreplaceable habitats occur (following Natural England's current guidance[7].

Very high distinctiveness habitats

3.1.10 No habitats of very high distinctiveness were identified within the Order Limits.

3.1.11 The desk study identified a potential area of lowland fens (a very high distinctiveness habitat) was located beyond, but in close proximity, to the Order Limits within the Overton Borrow Pits SINC. The Phase 1 survey indicated the habitat was degraded (and the category of SINC has been deleted), indicating that at this location the habitat no longer meets the lowland fens HPI criteria. While not within the Order Limits and not subject to direct impacts from the Project, this location - if confirmed to be in a degraded state - could present an opportunity for off-site habitat enhancement. A habitat condition assessment at this location would confirm any such opportunities for BNG.

3.1.12 Habitats meeting (or assumed to meet) criteria for HPIs were recorded within the Order Limits. These are described within **ES Appendix 5.3.8B Extended Phase 1 Report (Volume 5, Document 5.3.8B),** and comprise two areas of deciduous woodland, one area of coastal and floodplain grazing marsh, all hedgerows greater than 20m in length, all ponds, and arable field margins in five locations. These HPIs were categorised as high distinctiveness within the Biodiversity Metric 3.1, apart from arable field margins which are medium distinctiveness habitats within the Biodiversity Metric 3.1.

Area-based habitats baseline

Hectares of habitat

3.1.13 There were approximately 501ha of area-based habitats and ~26ha of hard-standing within the Order Limits before works (**Table 3.1**).

3.1.14 Cropland was the dominant habitat type, covering 76% of the total number of hectares (excluding hard standing). All croplands were assumed to be cereal crops of a low distinctiveness, except for ~2 ha of arable field margins (medium distinctiveness). Grasslands covered 18%, with modified grasslands being dominant although there were small areas of other neutral grassland and floodplain wetland mosaic (CFGM). Woodlands covered 3% and there were small areas of scrub, sparsely vegetated land, and ponds. Most of the woodland was plantation although there was approximately 1.5ha of semi-natural woodland of a high distinctiveness.

Habitat Units

3.1.15 Area-based habitats generated approximately 1177 units before works (**Table 3.1**). Approximately 65% of these units were generated by croplands given the large area of cropland within the Order Limits. Approximately 18% of the units were generated by grasslands, 10% by woodlands and 5% by scrub. Ponds, urban habitats, and sparsely vegetated land each generated approximately 1% of the total number of area-based units.

Table 3.1 - Estimated hectares and units of area-based habitats within the Order Limits before works

Biodiversity Metric 3.1 Broad Habitat Type*	Estimated Hectares	Estimated Units
Cropland	382	767
Grassland	88	208
Heathland and Shrub*	7	55
Lakes*	1	11
Sparsely Vegetated Land	4	7
Urban	30	8
Woodland and Forest	16	121
ESTIMATED TOTAL	527	1177

*Scrub is within the broad metric habitat type of Heathland and Shrub, and ponds are within the broad metric habitat type of Lakes. The broad habitat type of 'Urban' includes hard-standing as well as urban habitats.

Hedgerow baseline

3.1.16 There were ~30km of hedgerow within the Order Limits before works, generating ~355 hedgerow units. All were categorised as the high distinctiveness habitat 'Native species rich hedgerow with trees', given the assumption that all existing hedgerows within the Order Limits were habitats of principle importance (see **Section 2 Methods**).

River baseline

3.1.17 There were ~8km (rounded from 8.3km) of river habitats within the Order Limits before works, generating ~89 river units. This included an estimated ~4km of Other rivers and streams (~52 units), and ~5km of Ditches (~21 units).[55]

3.2 Impacts and post-intervention

Area-based habitats

3.2.1 This section describes results of the 'after works' BNG metric calculation. This was based on information known at the time on the retention, clearance, and creation of area-based habitats. The results represent a prediction of outcomes with regards to changes in hectares and in area-based units, and should be updated as more details of the Project design and of the construction programme becomes available. Results are based on scheme information as currently available and are estimated to be a realistic worst-case scenario.

[55] Difference in the sum of all river habitats and length of individual river habitat types is due to number rounding

Hectares of habitat

3.2.2 Based on GIS measurements, during construction, the Project is predicted to retain approximately ~156ha of area-based habitats. Habitats retained include ~7ha of woodland, ~2ha of scrub, ~23ha of grassland (of which ~22ha is modified grassland) and ~118ha of cropland. Of the 26Ha of hardstanding within the Order Limits, approximately 18ha would fall within the areas of temporary habitat loss, however in reality these areas of hardstanding would be retained throughout the construction of the Project (rather than removed then reinstated).

3.2.3 The Project is also predicted to result in the loss of ~345ha of area-based habitats from permanent and temporary habitat clearance. Most of this habitat loss (~307 ha) is temporary, with the Project design showing reinstatement of habitats to their original type and condition pre-works. There is also predicted to be ~20ha of habitat creation through landscaping, for example landscaping of soil bunds for screening purposes.

3.2.4 Recommendations have been made to minimise the impacts of temporary habitat clearance (for example, translocating hedgerows to plant-up gaps within existing hedgerows) and for habitat reinstatement to contribute towards achieving BNG (for example by planting habitats of a higher distinctiveness and/or condition than the baseline depending on land-owner agreement); see **Section 4 Recommendations**.

3.2.5 In summary:

- **Before works:** ~501ha of baseline area-based habitats and ~26ha of hard-standing.
- During construction:
  - ~156ha of area-based habitats retained;
  - ~345ha of area-based habitats cleared permanently (18ha) and temporarily (327ha);
  - ~35ha of hard-standing (including existing and newly created areas as part of construction); and
  - ~327ha of landscaping (20ha) and of habitat reinstatement (307ha).
- **Post works:** ~483ha of post-works area-based habitats.

3.2.6 Considering change in hectares of individual habitats from before to after works, the key decreases are predicted to be:

- Hectares of croplands would reduce by approximately 30ha, which equates to -8% loss;
- Hectares of ponds would reduce by approximately 0.001ha, which equates to -0.1% loss; and
- Hectares of ruderal/ephemeral habitat would reduce by approximately 0.08ha, which equates to a 2% loss.

3.2.7 The key increases are predicted to be:

- Hectares of grassland would increase by approximately 5ha. This consists of a decrease in hectares of modified grassland from ~84ha before works to ~77ha after works, and an increase in hectares of other neutral grassland from landscaping at CSECs and substations from ~3ha before works to ~16ha post works. As other

neutral grassland is a medium distinctiveness habitat, this increase would contribute towards achieving BNG.

- Hectares of scrub would increase by approximately 3ha. As scrub is an ecologically valuable habitat in the medium distinctiveness band, this increase would contribute towards achieving BNG.
- Overall, hectares of woodland would increase by approximately 4ha although this would include a small net loss of high distinctiveness broadleaved woodland (~0.0001 ha).
- While hectares of the broad habitat type 'Urban' increase from ~30ha before works to ~47ha after works, this increase is mainly in hardstanding resulting in permanent losses of other habitats (e.g., at substations, CSECs, and access routes).

3.2.8 In summary, when considering individual habitats, hectares of medium distinctiveness grasslands and scrub increase, which would contribute towards achieving BNG. There would be a small net loss of hectares of high-distinctiveness woodland and, overall, the Project is predicted to cause an overall loss of hectares of area-based habitats within the Order Limits. There were ~501ha of habitats before works but there would be ~483ha after works (i.e., a loss of ~18ha).

Area-based habitat units

3.2.9 During construction, the retention of habitats equates to ~392 baseline units being retained.

3.2.10 The clearance of habitats (both permanent and temporarily) results in a loss of ~785 units. Of this, the greatest loss of units is from cropland (a loss of ~529 units) with ~147 units loss in grassland, ~67 units loss in woodland, ~35 units loss in scrub, and 0.01 units loss of ponds.

3.2.11 Landscaping and habitat reinstatement (following temporary clearance) is predicted to generate ~637units.

3.2.12 Considering individual habitats, there are overall gains in units for grasslands (+23 units) and scrub (+9 units) although losses in units for other habitats that include an approximate loss of ~0.01 units from ponds of ~27 units from woodlands.

3.2.13 Overall, the Project is predicted to result in an overall ~13% net loss of area-based units, which equates to a deficit of ~149 units (**Table 3.2**).

Table 3.2 - Estimated net change in hectares and units of area-based habitats from before to after works

Biodiversity Metric V3.1 Broad Habitat Type	Estimated Net Change	
	Hectares	Units
Cropland	-30	-150
Grassland	5	23
Heathland and Shrub	3	9
Lakes	0.001	-0.01

Biodiversity Metric V3.1 Broad Habitat Type	Estimated Net Change	
	Hectares	Units
Sparsely Vegetated Land	-0.1	-0.8
Urban	18	-0.9
Woodland and Forest	4	-27

Hedgerows

3.2.14 Based on information known at this time, ~10km of hedgerow (~117 hedgerow units; ~33% of the hedgerow baseline) is predicted to be retained during construction, with an additional ~1km (~14 units) of baseline hedgerow proposed for enhancement (proposed hedgerow reinforcement at Overton and Tadcaster sites).

3.2.15 A total length of ~19km (222 units) of hedgerow is estimated to be lost from clearance, of which most (~18km) is estimated to be temporary loss, with the remaining ~1km estimated as permanent loss.

3.2.16 The ~18km of hedgerows marked as temporary loss are assumed to be reinstated to the same length, type, and condition post-works, generating ~124 units post-works.

3.2.17 In addition to hedgerow reinstatement, a further ~1km of new hedgerow is proposed for habitat creation as part of landscaping proposals, generating ~5 units. This brings the estimated total length of hedgerows post-works to ~29km and 264 units. When compared with the pre-works baseline, this results in an approximate net loss in hedgerow units of 25% (**Table 3.3**).

3.2.18 In summary:

- **Before works:** ~30km of baseline hedgerow habitats.
- During construction:
  - ~10km of hedgerows retained;
  - ~1km of hedgerow retained and enhanced;
  - ~18km of hedgerows cleared temporarily and 1km cleared permanently; and
  - ~18km of hedgerow landscaping and reinstatement.
- **Post works:** ~29km of post-works hedgerow habitats.

Table 3.3 - Estimated net change in kilometres and units of hedgerows from before to after works

Estimated Net Change in Hedgerows	
Kilometres	Units
-1	-90

River habitats

3.2.19 Based on information known at the time, ~8.2km of river habitats (~87 river units; ~98% of the river baseline) is predicted to be retained during construction.

3.2.20 A total length of ~0.1km (~1 unit) of river habitat is estimated to be temporarily lost (through temporary culverting) within the Order Limits, with no permanent loss of river habitats predicted at this stage. This consists of ~0.05km of Other rivers and streams, and ~0.08km of ditches.

3.2.21 The ~0.1km of river habitats marked as temporary loss is assumed to be reinstated to the same length, type, and condition post-works, generating ~0.6 units. This brings the estimated total length of river habitats post-works to ~8.2km and ~88 units. When compared with the pre-works baseline, this results in an approximate net loss in river units of ~1% (**Table 3.4**).

3.2.22 In summary:

- **Before works:** ~8.3km of baseline river habitats.
- During construction:
  - ~8.2km of rivers retained;
  - ~0.1km of rivers affected temporarily; and
  - ~0.1km of river reinstatement following temporary works.
- **Post works:** ~8.3km of post-works river habitats.

Table 3.4 - Estimated net change in kilometres and units of river habitats from before to after works

Biodiversity Metric 3.1 Broad River Type	Estimated Net Change	
	Kilometres	Units
Other Rivers and Streams	0	-0.5
Ditches	0	-0.2

3.3 Overall results: Project (DCO submission design)

3.3.1 Overall, based on this application stage BNG calculation using currently available data, the Project as designed is estimated to result in a **~13% net loss of area-based habitat units, ~25% net loss of hedgerow units,** and a **~1% net loss in river units** (**Figure 3.1**). On this basis, the Project would not achieve the minimum 10% net gains without further measures to create or enhance area-based, hedgerow, and river habitats. Full detailed results can be viewed in the Biodiversity Metric 3.1 (**Appendix B**).

3.3.2 Trading rules are not estimated to have been met, with deficits predicted to include high distinctiveness woodland habitat (lowland mixed deciduous woodland), high distinctiveness floodplain wetland mosaic grassland (CFGM; assumed HPI), high distinctiveness ponds (priority habitat), as well as medium distinctiveness woodland and

medium distinctiveness arable field margins (assumed HPI). Deficits also include losses of high distinctiveness hedgerows (assumed HPI) and river habitats.

3.3.3 It is again noted that these results are based on mapped temporary and permanent impacts agreed with National Grid and based on a series of worst-case assumptions. Habitat clearance will likely be reduced through application of embedded environmental measures throughout Project design. However, unless further opportunities for habitat gains within the Order Limits are identified, it is likely that off-site BNG measures will be needed to meet the minimum 10% net gain for area-based habitats, hedgerows, and rivers.

Figure 3.1 - Screenshot from the application stage Biodiversity Metric 3.1 calculation: headline results for the Project as currently designed at DCO submission stage

On-site baseline	*Habitat units*	1176.80
	Hedgerow units	354.80
	River units	88.79
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	1028.93
	Hedgerow units	264.42
	River units	88.08
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	-12.57%
	Hedgerow units	-25.47%
	River units	-0.80%
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-147.87
	Hedgerow units	-90.38
	River units	-0.71
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-12.57%
	Hedgerow units	-25.47%
	River units	-0.80%

Figure 3.2 - Screenshot from the application stage Biodiversity Metric 3.1 calculation: detailed results tab indicating change in units for broad area-based habitats

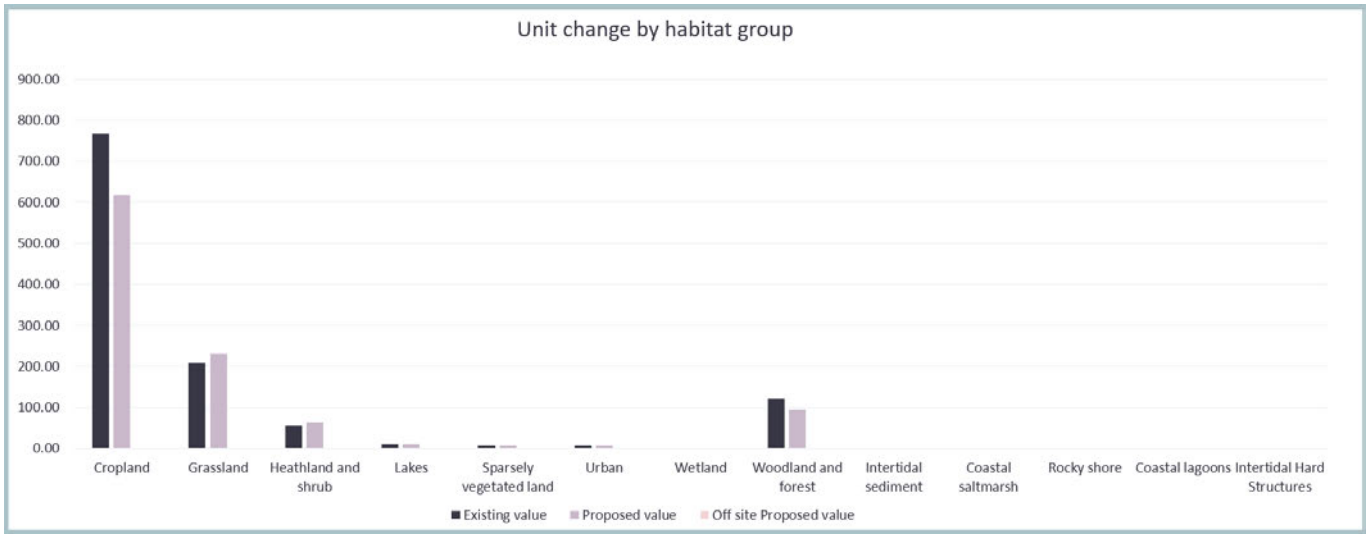
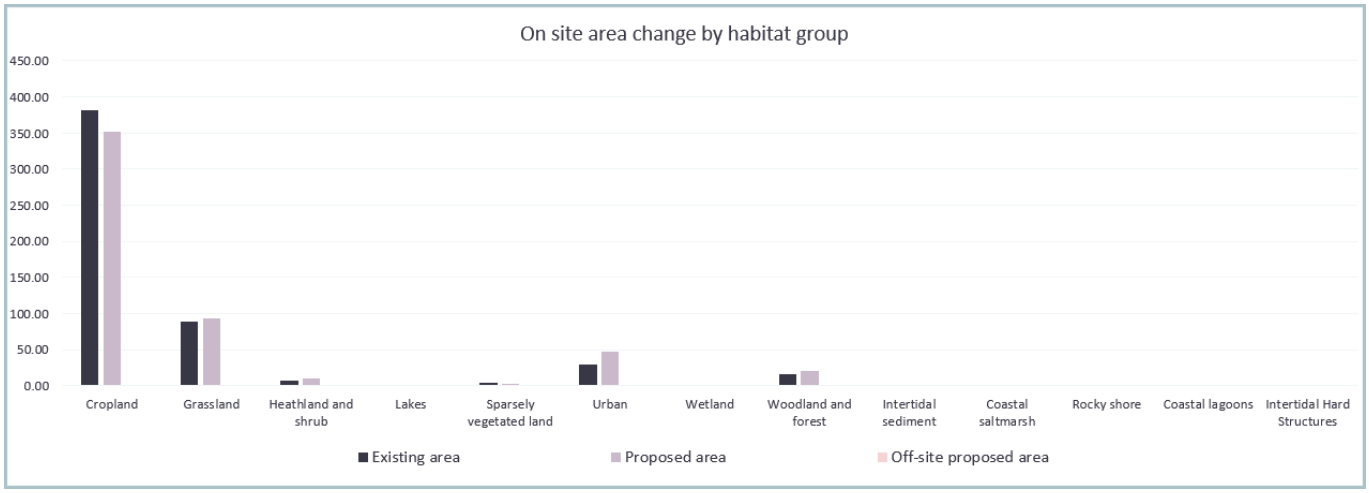


Figure 3.3 - Screenshot from the application stage Biodiversity Metric 3.1 calculation: detailed results tab indicating change in area for broad area-based habitats



3.4 BNG Modelling

3.4.1 Based on the assumption that no further on-site BNG measures within the Order Limits are possible in line with current designs, modelling was undertaken to identify possible off-site habitat creation and enhancement scenarios to achieve a minimum 10% increase in area-based, hedgerow, and river units while satisfying the trading rules (**Appendix C, Calculation Tool**).

3.4.2 It is noted that this represents a high-level estimation of possible areas needed for habitat creation/enhancement in order to achieve BNG. Assuming these are off-site means this is a precautionary estimate, because additional risks will be factored into the calculation (see **Methods Section 2.4**). The feasibility of all habitat creation and enhancement measures should be fully assessed as part of subsequent detailed BNG design, prioritising any further on-site opportunities where possible.

Area-based unit modelling

3.4.3 Given the assumptions described in Methods **Section 2.5** and estimated losses in habitat areas and units described in Results **Section 3.3**, off-site creation of ~8 ha of high distinctiveness woodland (lowland mixed deciduous woodland), ~45 ha of medium distinctiveness woodland (other broadleaved woodland), ~1 ha of ponds (priority habitat), and ~35 ha of medium distinctiveness grassland (other neutral grassland) might achieve a **~10% net gain** in units while meeting the trading rules for area-based habitats (**Table 3.1)**.

3.4.4 The largest off-site gains in habitat creation (~53 ha) are proposed to be woodland in order to meet trading rules around losses of high and medium distinctiveness woodland, which require gains in the same habitat type or same broad habitat type of equal or higher distinctiveness, respectively.

3.4.5 In the case of high distinctiveness lowland mixed deciduous woodland, the standard time to target condition is set to 30+ years within the Biodiversity Metric 3.1. Creation of this habitat type would need to be delivered a minimum 1-year in advance of on-site habitat clearance in order to meet the required 30-year timeframe for BNG (possible in case of purchase of habitat units from providers) or the management plan / aftercare would need to cover a period longer than 30 years to achieve the target condition.

3.4.6 Alternatively, it would be advantageous to identify existing areas of poor or moderate condition woodland with opportunities for enhancement that could more feasibly be delivered within the 30-year timeframe. Many of the woodland areas occurring within or adjacent to the Order Limits extend beyond the Order Limits, meaning there could be opportunities to take advantage of existing discussions with landowners to explore opportunities for habitat enhancement in these sites.

3.4.7 Further, Natural England have highlighted that where there are no impacts on irreplaceable habitats, enhancements to these habitats can contribute towards BNG. Given that an area of ancient woodland was identified within the Order Limits (excluded from this application stage BNG metric calculation, see **Results Section 3.1**), which extends beyond the Order Limits, there may be an opportunity for this Project to enhance areas of ancient woodland and for this to contribute to the BNG score, subject to landowner approval.

3.4.8 In addition to woodland, ~5ha of off-site floodplain wetland mosaic grassland (CFGM) creation is estimated to compensate for losses of this assumed HPI habitat, and ~1 ha of off-site pond creation is estimated to compensate for the loss of one pond.

3.4.9 Other losses of low distinctiveness area-based habitats were identified for the Project as designed (e.g., of cropland, and modified grassland), which would require unit gains from creation or enhancement of a habitat of the same or better distinctiveness. Here, this has been modelled as a creation of 30 ha of medium distinctiveness neutral grassland, although it is noted that there may be opportunities to explore BNG measures within agricultural land – such as creation/enhancement of biodiversity-rich arable field margins (a medium distinctiveness habitat). This would be subject to landowner discussions and approval.

Table 3.5 - Off-site habitat creation estimated to achieve net gains in area-based habitat units while meeting the trading rules

Broad Habitat Type	Proposed Biodiversity Metric 3.1 Habitat type	Habitat distinctiveness	Modelled Off-site Area of Habitat Creation (hectares)	Approximate Habitat Units Delivered
Woodland and forest	Lowland mixed deciduous woodland*	High	8	11
Woodland and forest	Other woodland; broadleaved	Medium	45	211
Lakes	Ponds (Priority Habitat)	High	1	7
Grassland	Other neutral grassland	Medium	35	234
Grassland	Floodplain wetland mosaic (CFGM)	High	5	14
Total			**94**	**478**

*Lowland mixed deciduous woodland has a standard time to target condition of 30+ years, meaning that any habitat creation measures should be instigated at least 1-year in advance of on-site habitat clearance.

Hedgerow unit modelling

3.4.10 Given the assumptions described in Methods **Section 2.5** and estimated losses in hedgerow length and units described in Results **Section 3.3,** off-site creation of ~15 km of high distinctiveness hedgerow (modelled as native species rich hedgerow with trees) could achieve a **~10% net gain** in hedgerow units while meeting the trading rules (**Table 3.6**).

3.4.11 This ~15 km of new hedgerow was assumed to be planted on ~7.5 ha of modified grassland, with the associated loss of grassland captured in the area-based habitat modelling (as described in paragraph 3.4.3 onwards).

3.4.12 As with area-based habitats, subsequent detailed BNG calculations will explore options for hedgerow enhancements, in addition to/instead of hedgerow creation. This can generate hedgerow units more efficiently and, in some cases, lead to better outcomes for biodiversity. For example, enhancing ~9km of poor condition 'species-rich native hedgerow' to good condition 'species-rich native hedgerow with trees' would also achieve a ~10% net gain in hedgerow units, while also avoiding a loss of underlying area-based habitat.

Table 3.6 - Off-site hedgerow creation estimated to achieve net gains in hedgerow units while meeting the trading rules

Proposed Biodiversity Metric 3.1 Hedgerow type	Hedgerow Distinctiveness	Modelled Length of Hedgerow Creation (km)	Approximate Hedge Units Delivered
Native Species Rich Hedgerow with trees	High	15	126

River unit modelling

3.4.13 Given the assumptions described in Methods **Section 2.5** and estimated losses in river habitat described in Results **Section 3.3**, off-site enhancement of ~3 km of 'Other rivers and streams' could achieve a **~10% net gain** in river units while meeting the trading rules (**Table 3.7**).

3.4.14 This enhancement was modelled based on the assumption of improving off-site river habitat condition from poor to good. Other potential avenues for river enhancement would also include reductions of watercourse and riparian encroachment (defined development within the watercourse/riparian zone), which could contribute to BNG. As with all other habitats, this would be subject to identifying applicable watercourses with the relevant LPA, and subject to agreement from relevant landowners/regulatory bodies.

Table 3.7 - Off-site river enhancement estimated to achieve net gains in river units while meeting the trading rules

Proposed Biodiversity Metric River Type	River Distinctiveness	Modelled length (km)	Approximate River Units Delivered
Other Rivers and Streams	High	3	31

Overall results of the BNG modelling scenario

3.4.15 In summary, the BNG modelling described here would result in the Project achieving an estimated **~10% gain in area-based habitat units, hedgerow units, and river units**. This would also meet the trading rules of the Biodiversity Metric 3.1 (**Figure 3.4**).

Figure 3.4 - Screenshot of the Biodiversity Metric 3.1 showing the headline results for BNG modelling scenario

On-site baseline	*Habitat units*	1176.80
	Hedgerow units	354.80
	River units	88.79
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	1028.93
	Hedgerow units	264.42
	River units	88.08
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	-12.57%
	Hedgerow units	-25.47%
	River units	-0.80%
Off-site baseline	*Habitat units*	203.00
	Hedgerow units	0.00
	River units	20.70
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	477.64
	Hedgerow units	126.05
	River units	30.97
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	126.78
	Hedgerow units	35.67
	River units	9.56
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	10.77%
	Hedgerow units	10.05%
	River units	10.77%
Trading rules Satisfied?	Yes ✓	

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4. Next Steps and Recommendations

4.1 Pre-works surveys

4.1.1 It is recommended that the following surveys are completed to inform the BNG calculations based on impacts at once the detailed construction working area design is available:

- Update the UKHabs survey data and condition assessments of rivers and terrestrial habitats using the Biodiversity Metric 3.1 condition assessment sheets at targeted locations within the Order Limits (including the ~1.6 ha not surveyed and areas marked as 'other habitat' within the Phase 1 survey data).
- Use this updated UKHabs data to update assumptions made on habitat type translation from Phase 1 habitats to Biodiversity Metric 3.1 habitats (as in **Table 2.1**) where relevant.
- Use updated UKHabs data to confirm assumptions regarding Habitats of Principle Importance (HPI).

4.2 Calculations and assessments

4.2.1 The following calculations and assessments are to be updated as applicable based on the updated survey data and final detailed construction working area design and finalised post-construction based on as-built information:

- Update calculations for areas of scrub and scattered tree RPAs within the Order Limits including those RPAs that partially overlap the Order Limits
- Refine calculations of temporary and permanent habitat losses, which currently are based on a worst-case precautionary approach, to reflect location-specific proposals and embedded environmental measures (as opposed to assumptions made per Project element). In particular, areas of temporary loss are likely to be overestimated (e.g., habitats beneath overhead lines, and river/ditch habitats).
- Related to the point above, losses of baseline habitats in areas proposed for landscaping at substations and CSECs should be updated to account for possible small losses of habitats other than cropland.
- As the **Arboricultural Impact Assessment** (**Volume 5, Document 5.3.3I**) was available only in draft form at the time of undertaking this application stage BNG calculation, update BNG assessment would include a check to align the BNG assessment (especially any impacts) and design with the final Arboricultural Impact Assessment report.
- Strategic significance assessments, including medium strategic significance (with justifications) would be undertaken, checking assumptions made regarding the Humber River Basement Management Plans using maps from local authorities to do spatial analysis. Based on the review of sources described in the Methods section

(paragraph 2.2.47) Mapping resources could be sourced from local authority online GIS mapping[56].

- Timeframes for habitat reinstatement and landscaping have all been assigned as 5 years based on the overall Project programme, but it is likely that some elements of the landscaping will be delivered sooner (e.g., where this has a screening purpose). This should be captured in updated BNG calculations based on impacts at detailed design.

4.3 BNG design and management

4.3.1 The following actions will be undertaken to further develop the BNG design for the Project and update the assessment based on the final detailed construction working area design and finalise the assessment post-construction based on as-built information.

- Minimise the impacts of temporary habitat clearance (for example, by translocating hedgerows to plant-up gaps within existing hedgerows) and identify opportunities for habitat reinstatement to contribute towards achieving BNG (for example by planting habitats of a higher distinctiveness and/or condition than the baseline depending on land-owner agreement).
- Identify any further opportunities for habitat (including area-based, hedgerow, and river habitats) enhancement and creation within/adjacent to the Order Limits, making use of ongoing liaisons with landowners where possible. Any opportunities to enhance ancient woodland, high distinctiveness habitats, or sites previously designated as SINCs would be prioritised, as well as any enhancement/creation that contributes to locally strategic significant nature sites/initiatives.
- Recommendations and planting schedule examples to be provided for landscaping proposals that maximise benefits for BNG in the long-term.
- Further liaison with local stakeholders such as the host local authorities, local Wildlife Trusts, or local nature partnerships to support contributions to strategic local nature conservation initiatives.

[56] Harrogate District Council (2022). Habitats of Strategic Significance in Harrogate District. (online) (Accessed August 2022).

Leeds City Council (2022). Leeds Habitat Network. (online) (Accessed August 2022).

West Yorkshire Combined Authority (2022). Leeds City Region Green Infrastructure Design Corridors. (online) (Accessed August 2022).

Leeds City Council (2022). Leeds City Council Great Crested Newt Opportunity areas. (online) (Accessed August 2022)

- Determine feasible post-intervention habitat target conditions, with reference to habitat descriptions and condition assessment criteria[25], and update 30-year management plans accordingly.
- Once the on-site BNG deficit is finalised, liaise with landowners/offset providers to determine the mechanism for provision of off-site BNG measures. Ideally, off-site measures should be provided within the same LPA in which on-site impacts occur and should be assessed for other forms of impact (e.g., the historic environment).
- Design management of post-intervention habitats (including those retained, created, and enhanced) to achieve target type and condition. This would be under a BNG Management and Monitoring Plan for a minimum of 30 years. This would be based on adaptative management principles especially with regards to measures to adapt to climate change.
- Management interventions should be guided by appropriate expert ecological advice throughout the 30-year management period. Ecological principles need to be applied so that proposed long-term habitat creation and enhancement remain realistic and deliverable based on local conditions such as geology, hydrology, nutrient levels, etc. and the complexity of future management requirements. Good management practice does not, by itself, constitute restoration or enhancement, though reinstating certain management practices may contribute to achieving it, for example by improving condition.
- Assess BNG design against the BNG Good Practice Principles (**Appendix A**), including an assessment of additionality (Principle 7).
- Once final choices have been made for BNG delivery, in consultation with relevant local authorities and Natural England as required, an updated BNG calculation using the Biodiversity Metric 3.1 is to be produced reflecting detailed design post-consent. A final post construction BNG calculation will also be produced based on the as-built information following completion of the works.

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Appendix A Summary of the Biodiversity Net Gain Good Practice Principles for Development

Principle	Description
Principle 1. Apply the Mitigation Hierarchy	First avoid and then minimise biodiversity impacts from development wherever possible. As a last resort, unavoidable impacts should then be compensated for on-site or, if necessary to generate adequate benefits for nature, offset by biodiversity gains elsewhere.
Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere	Avoid impacts on irreplaceable biodiversity that cannot feasibly be offset (e.g., ancient woodland or active peatland)
Principle 3. Be inclusive and equitable	Engage stakeholders early and involve them throughout the BNG process, achieving BNG in partnership with stakeholders where possible.
Principle 4. Address risks	Mitigate difficulty, uncertainty, and other risks to achieving BNG. Add contingency and compensate for time lags to account for risks when calculating biodiversity losses and gains.
Principle 5. Make a measurable Net Gain contribution	Achieve a measurable overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.
Principle 6. Achieve the best outcomes for biodiversity	Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly justified choices that deliver the best outcomes for nature.
Principle 7. Be additional	Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e., do not deliver something that would occur anyway).
Principle 8. Create a Net Gain legacy	Ensure BNG generates long-term benefits (e.g., through stakeholder engagement and local-level management, planning for adaptive management and climate resilience, avoiding displacement of harmful activities, and mitigating risks from other land uses).
Principle 9. Optimise sustainability	Prioritise BNG and, where possible, optimise the wider environmental benefits for a sustainable society and economy.
Principle 10. Be transparent	Communicate all BNG activities in a transparent and timely manner, sharing the learning with all stakeholders.

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Appendix B Biodiversity Metric 3.1 Calculation Tool: Project as designed

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The Biodiversity Metric 3.1 - Calculation Tool
Start page

Project details	
Planning authority:	ork Council, Harrogate Borough Council, Selby District Council, Leeds City Council
Project name:	Yorkshire GREEN (DCO Submission - as designed)
Applicant:	
Application type:	DCO
Planning application reference:	n/a
Assessor:	Isobel Taylor
Reviewer:	Julia Baker
Metric version:	3.1
Assessment date:	21/10/2022
Planning authority reviewer:	n/a

Instructions

Main menu

Results

Cell style conventions
Enter data
Automatic lookup
Result

View all

Reset view

On-site baseline map: Insert

Phase 1 Area and Line Available at:
https://ukgisportal01.woodplc.com/portal/apps/webappviewer/index.html?id=9b25ced839ae4908b5338a14a7ee83f0

On-site post intervention map: Insert

BNG Temporary and Permanent Loss Available a
https://ukgisportal01.woodplc.com/portal/apps/webappviewer/index.html?id=9b25ced839ae4908b5338a14a7ee83f0

Off-site baseline map Insert

Off-site post intervention map Insert

Yorkshire GREEN (DCO Submission - as designed)

Headline Results

Return to results menu

On-site baseline	*Habitat units*	1176.80
	Hedgerow units	354.80
	River units	88.79
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	1028.93
	Hedgerow units	264.42
	River units	88.08
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	-12.57%
	Hedgerow units	-25.47%
	River units	-0.80%
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-147.87
	Hedgerow units	-90.38
	River units	-0.71
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-12.57%
	Hedgerow units	-25.47%
	River units	-0.80%
Trading rules Satisfied?	No - Check Trading Summary ▲	

Yorkshire GREEN (DCO Submission - as designed)
Detailed Results

Return to results menu

Summary Figures

Net project biodiversity units (including all on-site & off-site habitat retention/creation)		
	Habitat units	-147.87
	Hedgerow units	-90.38
	River units	-0.71

Total project biodiversity % change (including all On-site & Off-site Habitat Creation + Retained Habitats)		
	Habitat units	-12.57%
	Hedgerow units	-25.47%
	River units	-0.80%

Combined habitat retention and enhancement

	Habitats	Hedgerows	Rivers
Total on-site and off-site baseline area / length	527.19	29.57	8.37
Total on-site and off-site baseline units	1176.80	354.80	88.79
Total on-site and off-site baseline area / length retained	164.52	10.19	8.23
Total on-site and off-site baseline units retained	391.87	122.28	87.46
Area / length proposed for enhancement	0.00	0.85	0.00
Baseline units proposed for enhancement	0.00	10.19	0.00
Total on-site and off-site baseline area / length lost	362.67	18.53	0.13
Total on-site and off-site baseline units lost	784.93	222.34	1.33

Area Habitats

Area habitats

On site change by broad habitat type

Habitat group	Baseline		Post development on site		Onsite Change	
	Existing area	Existing value	Proposed area	Proposed value	Area change	Onsite Unit change
Cropland	381.70	767.36	351.63	617.03	-30.07	-150.33
Grassland	88.49	207.73	93.64	230.56	5.16	22.83
Heathland and shrub	6.84	54.71	10.27	63.34	3.43	8.62
Lakes	0.96	11.48	0.96	11.47	0.00	-0.01
Sparsely vegetated land	3.56	7.11	3.48	6.30	-0.08	-0.81
Urban	29.75	7.70	47.33	6.80	17.58	-0.90
Wetland	0.00	0.00	0.00	0.00	0.00	0.00
Woodland and forest	15.91	120.71	19.89	93.44	3.97	-27.27
Intertidal sediment	0.00	0.00	0.00	0.00	0.00	0.00
Coastal saltmarsh	0.00	0.00	0.00	0.00	0.00	0.00
Rocky shore	0.00	0.00	0.00	0.00	0.00	0.00
Coastal lagoons	0.00	0.00	0.00	0.00	0.00	0.00
Intertidal Hard Structures	0.00	0.00	0.00	0.00	0.00	0.00

Off site change by broad habitat type

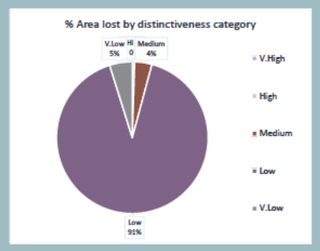
Habitat group	Baseline		Post development Off-site		Off-site Change	
	Existing area	Off-site Existing value	Off-site proposed area	Off site Proposed value	Off-site area change	Off-site unit change
Cropland	0.00	0.00	0.00	0.00	0.00	0.00
Grassland	0.00	0.00	0.00	0.00	0.00	0.00
Heathland and shrub	0.00	0.00	0.00	0.00	0.00	0.00
Lakes	0.00	0.00	0.00	0.00	0.00	0.00
Sparsely vegetated land	0.00	0.00	0.00	0.00	0.00	0.00
Urban	0.00	0.00	0.00	0.00	0.00	0.00
Wetland	0.00	0.00	0.00	0.00	0.00	0.00
Woodland and forest	0.00	0.00	0.00	0.00	0.00	0.00
Intertidal sediment	0.00	0.00	0.00	0.00	0.00	0.00
Coastal saltmarsh	0.00	0.00	0.00	0.00	0.00	0.00
Rocky shore	0.00	0.00	0.00	0.00	0.00	0.00
Coastal lagoons	0.00	0.00	0.00	0.00	0.00	0.00
Intertidal Hard Structures	0.00	0.00	0.00	0.00	0.00	0.00

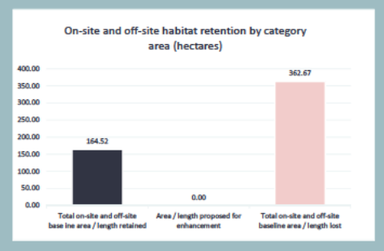
Combined on site and off site change by broad habitat type

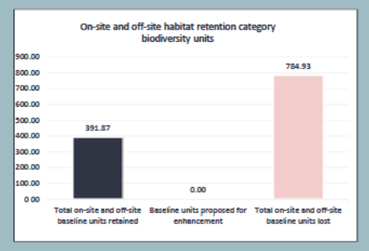
Habitat group	Baseline		On-site and Off-site post development		Combined change	
	Existing area	Existing value	Combined proposed area	Combined proposed value	Proposed area	Proposed value
Cropland	381.70	767.36	351.63	617.03	-30.07	-150.33
Grassland	88.49	207.73	93.64	230.56	5.16	22.83
Heathland and shrub	6.84	54.71	10.27	63.34	3.43	8.62
Lakes	0.96	11.48	0.96	11.47	0.00	-0.01
Sparsely vegetated land	3.56	7.11	3.48	6.30	-0.08	-0.81
Urban	29.75	7.70	47.33	6.80	17.58	-0.90
Wetland	0.00	0.00	0.00	0.00	0.00	0.00
Woodland and forest	15.91	120.71	19.89	93.44	3.97	-27.27
Intertidal sediment	0.00	0.00	0.00	0.00	0.00	0.00
Coastal saltmarsh	0.00	0.00	0.00	0.00	0.00	0.00
Rocky shore	0.00	0.00	0.00	0.00	0.00	0.00
Coastal lagoons	0.00	0.00	0.00	0.00	0.00	0.00
Intertidal Hard Structures	0.00	0.00	0.00	0.00	0.00	0.00

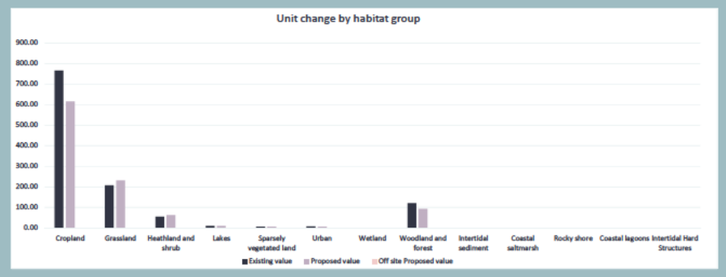
Combined area lost by distinctiveness band

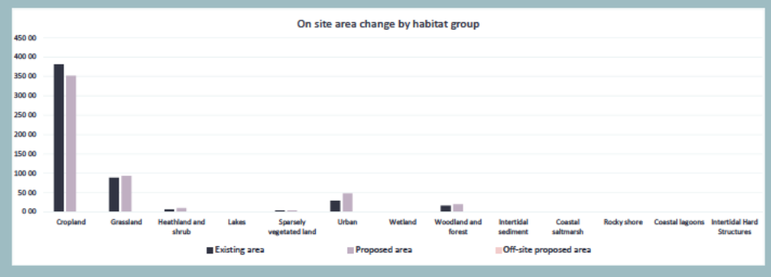
Category	Area lost (hectares)	Area lost (%)
V.High	0	
High	1.783	0
Medium	13.346	4
Low	330.023	91
V.Low	17.518	5

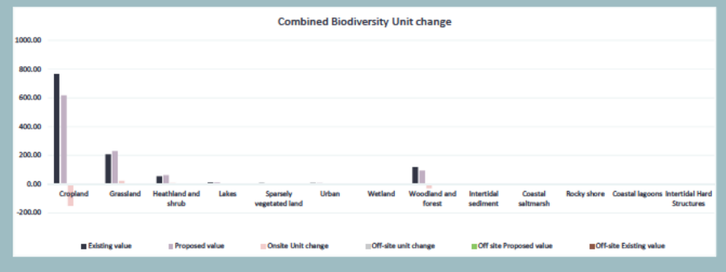


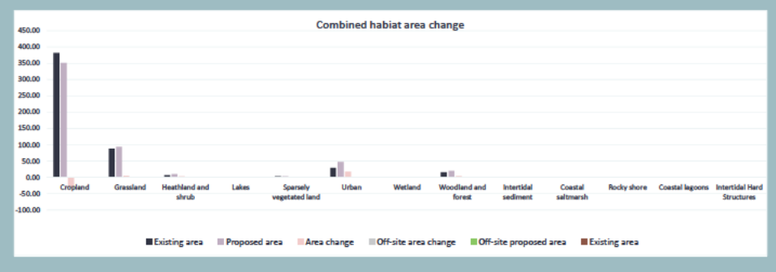












Hedgerows and Lines of Trees

Hedgerows and lines of trees

On site change by hedgerow type

Hedgerow type	Baseline		Post development on site		Onsite Change	
	Existing length on-site	Existing value	Proposed length on-site	Proposed value on-site	On-site length change	On-site Unit change
Native Species Rich Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow with trees	29.57	354.80	28.62	259.77	-0.95	-95.03
Native Species Rich Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow	0.00	0.00	0.83	4.66	0.83	4.66
Native Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable)	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable) - with Bank or Ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Hedge Ornamental Non Native	0.00	0.00	0.00	0.00	0.00	0.00

Off site change by hedgerow type

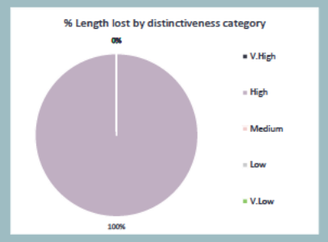
Hedgerow type	Off site baseline		Post development off site		Off site Change	
	Existing length off-site	Existing value off-site	Proposed length off-site	Proposed value off-site	Off-site length change	Off site Unit change
Native Species Rich Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow with trees	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable)	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable) - with Bank or Ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Hedge Ornamental Non Native	0.00	0.00	0.00	0.00	0.00	0.00

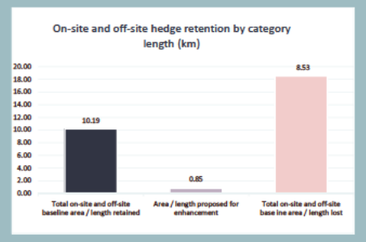
Combined on and off site change by hedgerow type

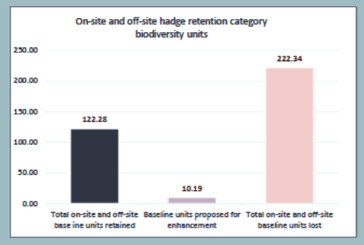
Hedgerow type	Baseline		Post development on site		Onsite Change	
	Existing length	Existing value	Proposed length	Proposed value	length change	Onsite Unit change
Native Species Rich Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow with trees	29.57	354.80	28.62	259.77	-0.95	-95.03
Native Species Rich Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow	0.00	0.00	0.83	4.66	0.83	4.66
Native Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable)	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable) - with Bank or Ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Hedge Ornamental Non Native	0.00	0.00	0.00	0.00	0.00	0.00

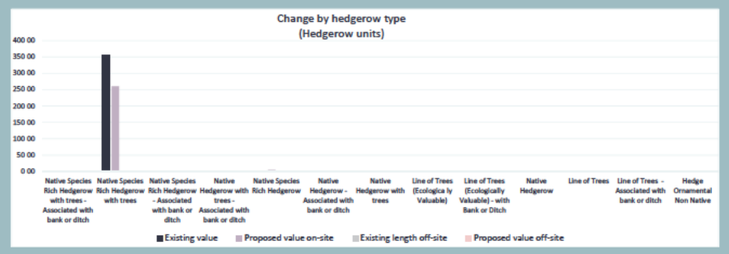
Combined length lost by distinctiveness band

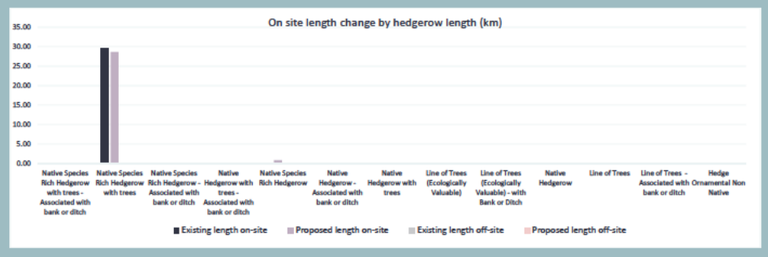
Category	Length lost (KM)	Length lost (%)
V.High	0	
High	18.528	100
Medium	0	
Low	0	
V.Low	0	

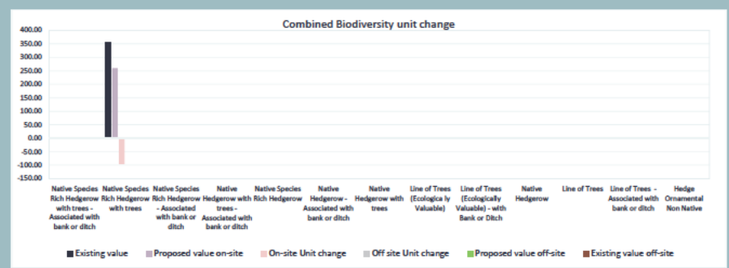


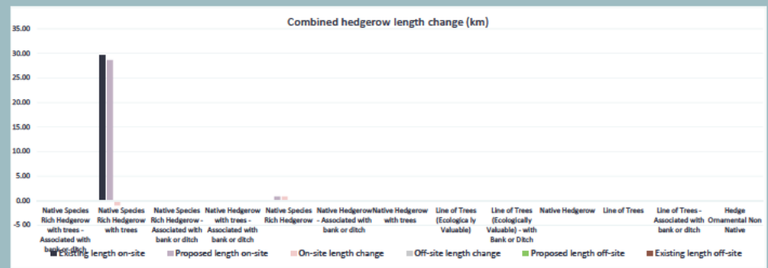












Rivers and Streams

Rivers and Streams

On site change by river type

River type	Baseline		Post development on site		Onsite Change	
	Existing length	Existing value	Proposed length	Proposed value	length change	Onsite Unit change
Priority Habitat	0.0	0.0	0.0	0.0	0.0	0.0
Other Rivers and Streams	3.8	52.0	3.8	51.5	0.0	-0.5
Ditches	4.6	36.8	4.6	36.6	0.0	-0.2
Canals	0.0	0.0	0.0	0.0	0.0	0.0
Culvert	0.0	0.0	0.0	0.0	0.0	0.0

Off site change by river type

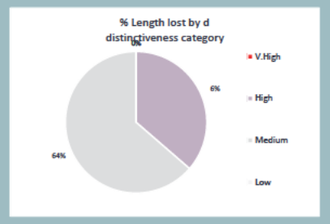
River type	Baseline		Post development off-site		Off-site Change	
	Existing length off-site	Existing value off-site	Proposed length off-site	Proposed value off-site	Off-site length change	Off-site unit change
Priority Habitat	0.0	0.0	0.0	0.0	0.0	0.0
Other Rivers and Streams	0.0	0.0	0.0	0.0	0.0	0.0
Ditches	0.0	0.0	0.0	0.0	0.0	0.0
Canals	0.0	0.0	0.0	0.0	0.0	0.0
Culvert	0.0	0.0	0.0	0.0	0.0	0.0

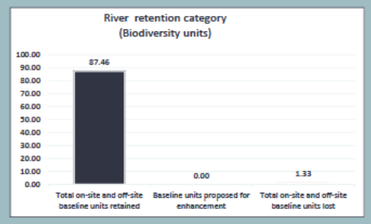
Combined on and off site change by river type

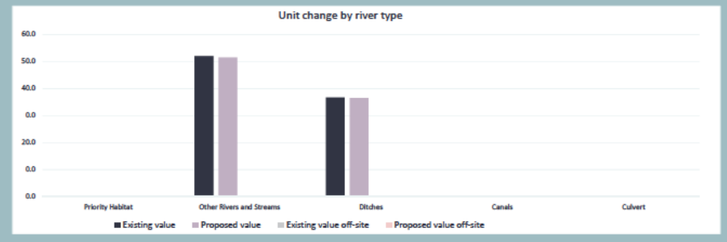
River type	Baseline		Post development on site		Onsite Change	
	Existing length	Existing value	Proposed length	Proposed value	length change	Onsite Unit change
Priority Habitat	0.0	0.0	0.0	0.0	0.0	0.0
Other Rivers and Streams	3.8	52.0	3.8	51.5	0.0	-0.5
Ditches	4.6	36.8	4.6	36.6	0.0	-0.2
Canals	0.0	0.0	0.0	0.0	0.0	0.0
Culvert	0.0	0.0	0.0	0.0	0.0	0.0

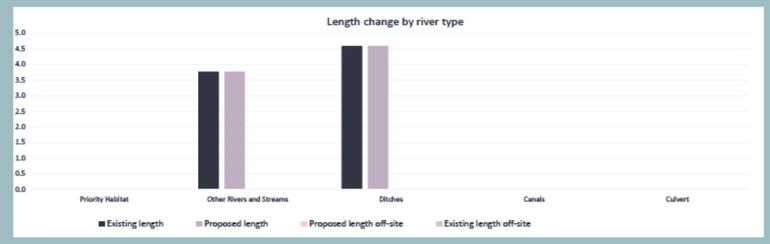
Combined length lost by distinctiveness band

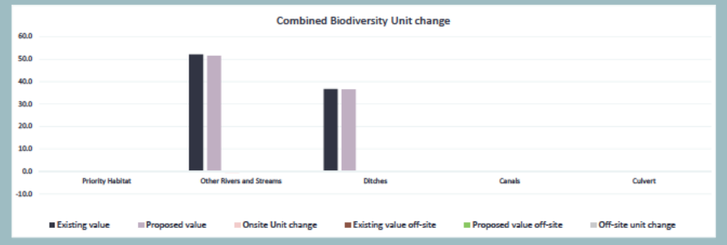
Category	Length lost (KM)	Length lost (%)
V.High	0	
High	0.048	36
Medium	0.084	64
Low	0	

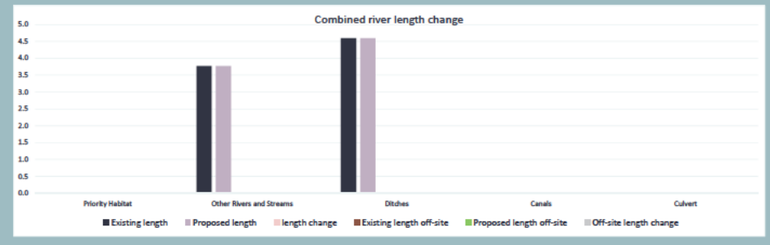












Trading Summary

Distinctiveness Group	Trading Rule	Trading Satisfied?
Very High	Bespoke compensation likely to be required 🛠	Yes ✓
High	Same habitat required =	No ▲
Medium	Same broad habitat or a higher distinctiveness habitat required (≥)	No ▲
Low	Same distinctiveness or better habitat required ≥	No ▲

Very High Distinctiveness

Habitat group	Group	On Site Unit Change	Off Site Unit Change	Project wide Unit Change	Unit Losses
Grassland - Lowland dry acid grassland	Grassland	0.00	0.00	0.00	
Grassland - Lowland meadows	Grassland	0.00	0.00	0.00	
Grassland - Upland hay meadows	Grassland	0.00	0.00	0.00	
Heathland and shrub - Mountain heaths and willow scrub	Heathland and shrub	0.00	0.00	0.00	
Lakes - Aquifer fed naturally fluctuating water bodies	Lakes	0.00	0.00	0.00	
Sparsely vegetated land - Calaminarian grasslands	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Limestone pavement	Sparsely vegetated land	0.00	0.00	0.00	
Wetland - Blanket bog	Wetland	0.00	0.00	0.00	
Wetland - Depressions on Peat substrates (H7150)	Wetland	0.00	0.00	0.00	
Wetland - Fens (upland and lowland)	Wetland	0.00	0.00	0.00	
Wetland - Lowland raised bog	Wetland	0.00	0.00	0.00	
Wetland - Oceanic Valley Mire[1] (D2.1)	Wetland	0.00	0.00	0.00	
Wetland - Purple moor grass and rush pastures	Wetland	0.00	0.00	0.00	
Wetland - Transition mires and quaking bogs (H7140)	Wetland	0.00	0.00	0.00	
Woodland and forest - Wood-pasture and parkland	Woodland and forest	0.00	0.00	0.00	
Rocky shore - High energy littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Rocky shore - Moderate energy littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Rocky shore - Low energy littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Rocky shore - Features of littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Intertidal sediment - Littoral seagrass on peat, clay or chalk	Intertidal sediment	0.00	0.00	0.00	
		0.00	0.00	0.00	0.00

Very High Distinctiveness Summary

Very High Distinctiveness Units available to offset lower distinctiveness defecit	0.00

High Distinctiveness

Habitat group	Group	On Site Unit Change	Off Site Unit Change	Project wide Unit Change	Losses not yet accounted for
Grassland - Traditional orchards	Grassland	0.00	0.00	0.00	
Grassland - Floodplain Wetland Mosaic (CFGM)	Grassland	-7.84	0.00	-7.84	-7.84
Grassland - Lowland calcareous grassland	Grassland	0.00	0.00	0.00	
Grassland - Tall herb communities (H6430)	Grassland	0.00	0.00	0.00	
Grassland - Upland calcareous grassland	Grassland	0.00	0.00	0.00	
Heathland and shrub - Lowland Heathland	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Sea buckthorn scrub (Annex 1)	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Upland Heathland	Heathland and shrub	0.00	0.00	0.00	
Lakes - High alkalinity lakes	Lakes	0.00	0.00	0.00	
Lakes - Low alkalinity lakes	Lakes	0.00	0.00	0.00	
Lakes - Marl Lakes	Lakes	0.00	0.00	0.00	
Lakes - Moderate alkalinity lakes	Lakes	0.00	0.00	0.00	
Lakes - Peat Lakes	Lakes	0.00	0.00	0.00	
Lakes - Ponds (Priority Habitat)	Lakes	-0.01	0.00	-0.01	-0.01
Lakes - Temporary lakes, ponds and pools	Lakes	0.00	0.00	0.00	
Sparsely vegetated land - Coastal sand dunes	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Coastal vegetated shingle	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Inland rock outcrop and scree habitats	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Maritime cliff and slopes	Sparsely vegetated land	0.00	0.00	0.00	
Urban - Open Mosaic Habitats on Previously Developed Land	Urban	0.00	0.00	0.00	
Wetland - Reedbeds	Wetland	0.00	0.00	0.00	
Woodland and forest - Felled	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Lowland beech and yew woodland	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Lowland mixed deciduous woodland	Woodland and forest	-10.43	0.00	-10.43	-10.43
Woodland and forest - Native pine woodlands	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Upland birchwoods	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Upland mixed ashwoods	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Upland oakwood	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Wet woodland	Woodland and forest	0.00	0.00	0.00	
Coastal lagoons - Coastal lagoons	Coastal lagoons	0.00	0.00	0.00	
Rocky shore - High energy littoral rock	Rocky shore	0.00	0.00	0.00	
Rocky shore - Moderate energy littoral rock	Rocky shore	0.00	0.00	0.00	
Rocky shore - Low energy littoral rock	Rocky shore	0.00	0.00	0.00	
Rocky shore - Features of littoral rock	Rocky shore	0.00	0.00	0.00	
Intertidal sediment - Littoral mud	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Littoral mixed sediments	Intertidal sediment	0.00	0.00	0.00	
Coastal saltmarsh - Saltmarshes and saline reedbeds	Coastal Saltmarsh	0.00	0.00	0.00	
Intertidal sediment - Littoral biogenic reefs - Mussels	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Littoral biogenic reefs - Sabellaria	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Features of littoral sediment	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Littoral muddy sand	Intertidal sediment	0.00	0.00	0.00	
		-18.29	0.00	-18.29	-18.29

High Distinctiveness Summary

High Distinctiveness Units available to offset lower distinctiveness defecit	0.00
Unit Defecit; Like for like not satisfied	✕ -18.29

Medium Distinctiveness

Habitat Group	Group	On site unit change	Off Site unit Change	Project wide unit change	Cumulative Broad Habitat Change
Cropland - Arable field margins cultivated annually	Cropland	0.00	0.00	0.00	-0.63
Cropland - Arable field margins game bird mix	Cropland	0.00	0.00	0.00	
Cropland - Arable field margins pollen & nectar	Cropland	0.00	0.00	0.00	
Cropland - Arable field margins tussocky	Cropland	-0.63	0.00	-0.63	
Grassland - Other lowland acid grassland	Grassland	0.00	0.00	0.00	66.76
Grassland - Other neutral grassland	Grassland	66.76	0.00	66.76	
Grassland - Upland acid grassland	Grassland	0.00	0.00	0.00	
Heathland and shrub - Blackthorn scrub	Heathland and shrub	0.00	0.00	0.00	8.62
Heathland and shrub - Bramble scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Gorse scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Hawthorn scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Hazel scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Mixed scrub	Heathland and shrub	8.62	0.00	8.62	
Lakes - Ponds (Non- Priority Habitat)	Lakes	0.00	0.00	0.00	0.00
Lakes - Reservoirs	Lakes	0.00	0.00	0.00	
Sparsely vegetated land - Other inland rock and scree	Sparsely vegetated land	0.00	0.00	0.00	0.00
Urban - Cemeteries and churchyards	Urban	0.00	0.00	0.00	0.00
Urban - Biodiverse green roof	Urban	0.00	0.00	0.00	
Urban - Urban Tree	Urban	0.00	0.00	0.00	
Woodland and forest - Other Scot's Pine woodland	Woodland and forest	0.00	0.00	0.00	-15.78
Woodland and forest - Other woodland; broadleaved	Woodland and forest	4.57	0.00	4.57	
Woodland and forest - Other woodland; mixed	Woodland and forest	-20.36	0.00	-20.36	
Intertidal sediment - Littoral coarse sediment	Intertidal sediment	0.00	0.00	0.00	0.00
Intertidal sediment - Littoral sand	Intertidal sediment	0.00	0.00	0.00	
Intertidal Hard Structures - Artificial hard structures with Integrated Greening of Grey Infrastructure (IGGI)	Intertidal	0.00	0.00	0.00	
		58.97	0.00	58.97	

Medium Distinctiveness Summary

Medium Distinctiveness Units available to offset lower distinctiveness defecit	75.38
Medium Distinctiveness Broad Habitat Deficit to be offset by trading up	-16.41
Higher distinctiveness surplus units minus Medium Distinctivenss Broad Habitat Defecit	0.00
Cumulative surplus of units	75.38

Low Distinctiveness

Habitat group	Group	On site unit change	Off Site Unit Change	Project wide unit change
Cropland - Cereal crops	Cropland	-149.70	0.00	-149.70
Cropland - Horticulture	Cropland	0.00	0.00	0.00
Cropland - Intensive orchards	Cropland	0.00	0.00	0.00
Cropland - Non-cereal crops	Cropland	0.00	0.00	0.00
Cropland - Temporary grass and clover leys	Cropland	0.00	0.00	0.00
Cropland - Cereal crops winter stubble	Cropland	0.00	0.00	0.00
Grassland - Modified grassland	Grassland	-36.09	0.00	-36.09
Grassland - Bracken	Grassland	0.00	0.00	0.00
Heathland and shrub - Rhododendron scrub	Heathland and shrub	0.00	0.00	0.00
Lakes - Ornamental lake or pond	Lakes	0.00	0.00	0.00
Sparsely vegetated land - Ruderal/Ephemeral	Sparsely vegetated land	-0.81	0.00	-0.81
Urban - Bioswale	Sparsely vegetated land	0.00	0.00	0.00
Urban - Allotments	Urban	0.00	0.00	0.00
Urban - Facade-bound green wall	Urban	0.00	0.00	0.00
Urban - Ground based green wall	Urban	0.00	0.00	0.00
Urban - Ground level planters	Urban	0.00	0.00	0.00
Urban - Other green roof	Urban	0.00	0.00	0.00
Urban - Intensive green roof	Urban	0.00	0.00	0.00
Urban - Introduced shrub	Urban	-0.03	0.00	-0.03
Urban - Rain garden	Urban	0.00	0.00	0.00
Urban - Actively worked sand pit quarry or open cast mine	Urban	-0.02	0.00	-0.02
Urban - Sustainable urban drainage feature	Urban	0.00	0.00	0.00
Urban - Vacant/derelict land/ bareground	Urban	-0.85	0.00	-0.85
Urban - Vegetated garden	Urban	0.00	0.00	0.00
Woodland and forest - Other coniferous woodland	Woodland and forest	-1.05	0.00	-1.05
Coastal saltmarsh - Artificial saltmarshes and saline reedbeds	Coastal saltmarsh	0.00	0.00	0.00
Intertidal sediment - Artificial littoral coarse sediment	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral mud	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral sand	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral muddy sand	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral mixed sediments	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral seagrass	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral biogenic reefs	Intertidal sediment	0.00	0.00	0.00
Intertidal Hard Structures - Artificial hard structures	Intertidal	0.00	0.00	0.00
Intertidal Hard Structures - Artificial features of hard structures	Intertidal	0.00	0.00	0.00
Heathland and shrub - Sea buckthorn scrub (other)	Heathland and shrub	0.00	0.00	0.00
		-188.55		-188.55

Low Distinctiveness Summary

Low Distinctiveness Net Change in Units	-188.55
Cumulative surplus of units	-113.17

Yorkshire GREEN (DCO Submission - as designed)

A-1 Site Habitat Baseline

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Ref	Habitats and areas: Broad Habitat	Habitats and areas: Habitat Type	Habitats and areas: Area (hectares)	Distinctiveness: Distinctiveness	Distinctiveness: Score	Condition: Condition	Condition: Score	Strategic significance: Strategic significance	Strategic significance: Strategic significance	Strategic significance: Strategic Significance multiplier	Suggested action to address habitat losses	Ecological baseline: Total habitat units	Retention category biodiversity value: Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost	Bespoke compensation agreed for unacceptable losses	Comments: Assessor comments	Comments: Reviewer comments
1	Woodland and Forest	Lowland mixed deciduous woodland	1.497	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required =	17.96	0.525		6.30	0.00	0.97	11.66		Phase 1 - A1.1.1: Broadleaved woodland - semi-natural	
2	Woodland and Forest	Other woodland; broadleaved	6.576	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2c)	52.61	3.937		31.50	0.00	2.64	21.11		A1.1.2: Broadleaved woodland - plantation	
3	Woodland and Forest	Other coniferous woodland	2.096	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	4.19	0.75		1.50	0.00	1.35	2.69		A1.2.2: Coniferous woodland - plantation	
4	Woodland and Forest	Other woodland; mixed	1.389	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2c)	11.11	0.141		1.13	0.00	1.25	9.98		A1.3.2: Mixed woodland - plantation	
5	Heathland and shrub	Mixed scrub	2.287	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2c)	18.30	0.911		7.29	0.00	1.38	11.01		A2.1: Scrub- Dense/Continous	
6	Heathland and shrub	Mixed scrub	4.552	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2c)	36.42	1.501		12.01	0.00	3.05	24.41		A2.2: Scrub- Scattered	
7	Woodland and Forest	Other woodland; broadleaved	0.159	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2c)	1.27	0.085		0.68	0.00	0.07	0.59		A3.1: Parkland and scattered trees- broad-leaved	
8	Woodland and Forest	Other woodland; mixed	3.963	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2c)	31.70	1.481		11.85	0.00	2.48	19.86		A3.3: Parkland and scattered trees- mixed	
9	Grassland	Other neutral grassland	2.977	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2c)	23.82	1.501		12.01	0.00	1.48	11.81		B2.2: Neutral grassland - semi-improved	
10	Grassland	Modified grassland	35.948	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	71.90	8.195		16.39	0.00	27.75	55.51		B4: Improved grassland	
11	Grassland	Modified grassland	47.188	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	94.38	12.755		25.51	0.00	34.43	68.87		B6: Poor semi-improved grassland	
12	Sparsely Vegetated Land	Ruderal/Ephemeral	3.181	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	6.36	1.52		3.04	0.00	1.66	3.32		C3.1: Tall ruderal	
13	Lakes	Ponds (priority habitat)	0.957	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required =	11.48	0.956		11.47	0.00	0.00	0.01		G1: Standing water	
14	Urban	Developed land; Sealed surface	25.493	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00	8.105		0.00	0.00	17.39	0.00		Hardstanding	
15	Urban	Actively worked sand pit quarry or open cast mine	0.025	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	0.05	0.007		0.01	0.00	0.02	0.04		I2.1: Quarry	
16	Cropland	Cereal crops	379.718	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	759.44	116.997		233.99	0.00	262.72	525.44		J1.1: Arable	
17	Grassland	Modified grassland	1.082	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	2.16	0.513		1.03	0.00	0.57	1.14		J1.2: Amenity grassland	
18	Sparsely Vegetated Land	Ruderal/Ephemeral	0.374	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	0.75	0.256		0.51	0.00	0.12	0.24		J1.3: Ephemeral/short perennial	
19	Urban	Introduced shrub	0.116	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	0.23	0.035		0.07	0.00	0.08	0.16		J1.4: Introduced shrub	
20	Urban	Developed land; Sealed surface	0.407	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00	0.277		0.00	0.00	0.13	0.00		J3.6: Buildings	
21	Urban	Vacant/derelict land/ bareground	3.707	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required ≥	7.41	2.384		4.77	0.00	1.32	2.65		J4: Bare ground	
22	Woodland and Forest	Other woodland; broadleaved	0.232	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2c)	1.86	0.052		0.42	0.00	0.18	1.44		J5: Other habitat	
23	Grassland	Floodplain Wetland Mosaic (CFGM)	1.29	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required =	15.48	0.48		5.76	0.00	0.81	9.72		HPI: Coastal and floodplain grazing marsh	
24	Cropland	Arable field margins tussocky	1.98	Medium	4	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2c)	7.92	1.16		4.64	0.00	0.82	3.28		HPI: Arable field margins	
25																					
26																					
27																					
		Total habitat area	527.19									1176.80	164.52	0.00	391.87	0.00	362.67	784.93			

Total area lost (excluding area of Urban trees and Green walls)	362.67

Yorkshire GREEN (DCO Submission - as designed)

A-2 Site Habitat Creation

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Note; Habitat selected has a time to target condition greater than 30 years. Non standard agreement may be required.

Post development/ post intervention habitats

Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness		Condition		Strategic significance			Temporal multiplier					Difficulty multipliers				Habitat units delivered	Comments	
			Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard time to target condition/years	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied		Assessor comments	Reviewer comments
Woodland and Forest	Lowland mixed deciduous woodland	0.972	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	30+		5	Check details- Delay in starting habitat in required condition? ⚠	30+	0.320	High	Standard difficulty applied	High	0.33	1.23	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Woodland and Forest	Other woodland; broadleaved	2.599	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15		5	Check details- Delay in starting habitat in required condition? ⚠	20	0.490	Low	Standard difficulty applied	Low	1	10.20	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Woodland and Forest	Other coniferous woodland	1.171	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	1.64	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Woodland and Forest	Other woodland; mixed	1.247	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	30		5	Check details- Delay in starting habitat in required condition? ⚠	30+	0.320	Low	Standard difficulty applied	Low	1	3.19	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Heathland and shrub	Mixed scrub	1.352	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	7.57	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Heathland and shrub	Mixed scrub	2.859	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	16.02	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Woodland and Forest	Other woodland; broadleaved	0.066	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15		5	Check details- Delay in starting habitat in required condition? ⚠	20	0.490	Low	Standard difficulty applied	Low	1	0.26	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Woodland and Forest	Other woodland; mixed	2.46	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	30		5	Check details- Delay in starting habitat in required condition? ⚠	30+	0.320	Low	Standard difficulty applied	Low	1	6.29	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Grassland	Other neutral grassland	1.474	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	8.26	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Grassland	Modified grassland	26.369	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	42.59	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Grassland	Modified grassland	28.447	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	45.94	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Sparsely Vegetated Land	Ruderal/Ephemeral	1.585	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	2.56	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Lakes	Ponds (priority habitat)	0	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	3		5	Check details- Delay in starting habitat in required condition? ⚠	8	0.752	Medium	Standard difficulty applied	Medium	0.67	0.00	Updated: no temporary loss of ponds (so no associated reinstatement)	
Urban	Developed land; Sealed surface	16.945	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0		5	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Medium	0.67	0.00	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Urban	Actively worked sand pit quarry or open cast mine	0.019	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Medium	Standard difficulty applied	Medium	0.67	0.02	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Cropland	Cereal crops	232.648	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	375.74	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Grassland	Modified grassland	0.549	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	0.89	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric) - excluding areas of landscaping at Overton, Tadcaster, and Monk Fryston which are assumed to take place on arable land. See 'new habitat' rows below	
Sparsely Vegetated Land	Ruderal/Ephemeral	0.118	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	0.19	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Urban	Introduced shrub	0.081	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	0.13	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Urban	Developed land; Sealed surface	0.128	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0		5	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Medium	0.67	0.00	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Urban	Vacant/derelict land/ bareground	1.11	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	1.79	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Woodland and Forest	Other woodland; broadleaved	0.18	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15		5	Check details- Delay in starting habitat in required condition? ⚠	20	0.490	Low	Standard difficulty applied	Low	1	0.71	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Grassland	Other neutral grassland	12.55	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	70.31	new habitat creation (landscaping) at Overton, Tadcaster, and Monk Fryston sites - species rich grassland	
Woodland and forest	Other woodland; broadleaved	4.22	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15		5	Check details- Delay in starting habitat in required condition? ⚠	20	0.490	Low	Standard difficulty applied	Low	1	16.56	new habitat creation (landscaping) at Overton, Tadcaster, and Monk Fryston sites - woodland	
Heathland and shrub	Mixed scrub	3.57	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	20.00	new habitat creation (landscaping) at Overton, Tadcaster, and Monk Fryston sites - woodland edge (scrub)	
Heathland and shrub	Mixed scrub	0.08	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	0.45	new habitat creation (landscaping) at Overton, Tadcaster, and Monk Fryston sites - scrub	
Urban	Developed land; sealed surface	18.24	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0		5	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Medium	0.67	0.00	Area of permanent habitat loss to development	
Grassland	Floodplain Wetland Mosaic (CFGM)	0.81	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? ⚠	15	0.586	High	Standard difficulty applied	High	0.33	1.88	Area assumed as floodplain grazing marsh HPI (UKHab Floodplain wetland mosaic) based on location of parcel within floodplain and historical contest of the site. Reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
Cropland	Arable field margins tussocky	0.82	Medium	4	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	2.65	Area assumed as arable field margins HPI. reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric)	
	Total habitat area	362.67																Total Units	637.06		
	Site Area (Excluding area of Urban trees and Green walls)	362.67																			

B-1 Site Hedge Baseline

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	UK Habitats - existing habitats			Habitat distinctiveness		Habitat condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value						Comments	
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		Total hedgerow units	Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost	Assessor comments	Reviewer comments
1		Native Species Rich Hedgerow with trees	9.267	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	111.20	1.417	0.849	17.00	10.19	7.00	84.01		
2		Native Species Rich Hedgerow with trees	9.254	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	111.05	4.361		52.33	0.00	4.89	58.72		
3		Native Species Rich Hedgerow with trees	1.103	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	13.24	0.343		4.12	0.00	0.76	9.12		
4		Native Species Rich Hedgerow with trees	4.246	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	50.95	1.166		13.99	0.00	3.08	36.96		
5		Native Species Rich Hedgerow with trees	3.815	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	45.78	1.904		22.85	0.00	1.91	22.93		
6		Native Species Rich Hedgerow with trees	1.882	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	22.58	0.999		11.99	0.00	0.88	10.60		
7																				
8																				
9																				
10																				
11																				
			29.57									354.80	10.19	0.85	122.28	10.19	18.53	222.34		

B-2 Site Hedge Creation

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	Proposed habitats			Habitat distinctiveness		Habitat condition		Strategic significance			Temporal multiplier						Difficulty risk multipliers				Hedge units delivered	Comments	
Baseline ref	New hedge number	Habitat type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard Time to target condition/years	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied		Assessor comments	Reviewer comments
1		Native Species Rich Hedgerow with trees	6.773	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? ⚠	15	0.586	Low	Standard difficulty applied	Low	1	47.63	Reinstatement of temporary loss	
2		Native Species Rich Hedgerow with trees	4.704	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? ⚠	15	0.586	Low	Standard difficulty applied	Low	1	33.08	Reinstatement of temporary loss	
3		Native Species Rich Hedgerow with trees	0.751	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? ⚠	15	0.586	Low	Standard difficulty applied	Low	1	5.28	Reinstatement of temporary loss	
4		Native Species Rich Hedgerow with trees	2.656	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? ⚠	15	0.586	Low	Standard difficulty applied	Low	1	18.68	Reinstatement of temporary loss	
5		Native Species Rich Hedgerow with trees	1.851	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? ⚠	15	0.586	Low	Standard difficulty applied	Low	1	13.02	Reinstatement of temporary loss	
6		Native Species Rich Hedgerow with trees	0.842	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? ⚠	15	0.586	Low	Standard difficulty applied	Low	1	5.92	Reinstatement of temporary loss	
7		Native Species Rich Hedgerow	0.831	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	4.66	Creation of new hedgerows	
8																							
9																							
10																							
11																							
12																							
			18.41																		128.26		

Yorkshire GREEN (DCO Submission - as designed)

B-3 Site Hedge Enhancement

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	Baseline Habitats									
Baseline ref	Baseline habitat	Length (km)	Baseline distinctiveness band	Baseline distinctiveness score	Baseline condition category	Baseline condition score	Baseline strategic significance category	Baseline strategic significance score	Baseline habitat units	Suggested action
1	Native Species Rich Hedgerow with trees	9.267	High	6	Moderate	2	Low Strategic Significance	1	111.206	Like for like or better

	Post development/ post intervention habitats										
		Change in distinctiveness and condition			Distinctiveness		Condition		Strategic significance		
Baseline ref	Proposed (Pre-populated but can be overridden)	Distinctiveness movement	Condition movement	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier
1	Native Species Rich Hedgerow with trees	High - High	Moderate - Good	0.969	High	6	Good	3	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1

	Temporal multiplier						Difficulty risk multipliers					Comments	
Baseline ref	Standard Time to target condition/years	Habitat enhanced in advance/years	Delay in starting habitat enhancement/years	Standard or adjusted time to target condition	Final time to target condition/years	Final Time to target multiplier	Standard difficulty of enhancement	Applied difficulty multiplier	Final difficulty of enhancement	Difficulty multiplier applied	Hedge units delivered	Assessor comments	Reviewer comments
1	4		5	Check details Delay in starting habitat in required condition? A	9	0.726	Low	Standard difficulty applied	Low	1	13.88	Proposed hedgerow reinforcement at Overton and Tadcaster	

C-1 Site River Baseline

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Existing river type			Habitat distinctiveness		Habitat condition		Strategic significance			Watercourse encroachment		Riparian encroachment		Suggested action	Ecological baseline
Baseline ref	River type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic significance multiplier	Extent of encroachment	Multiplier	Extent of encroachment	Multiplier		Total river units
1	Other Rivers and Streams	3.77	High	6	Moderate	2	Within River Basin Management Plan	High strategic significance	1.15	No Encroachment	1	No Encroachment	1	Restore	52.03
2	Ditches	2.615	Medium	4	Moderate	2	Low potential/action not identified in any plan	Low Strategic Significance	1	No Encroachment	1	No Encroachment	1	Restore	20.92
3	Ditches	1.981	Medium	4	Moderate	2	Low potential/action not identified in any plan	Low Strategic Significance	1	No Encroachment	1	No Encroachment	1	Restore	15.85
4															
5															
6															
7															
		8.37													88.79

Retention category biodiversity value						Comments	
Length retained	Length enhanced	Units retained	Units enhanced	Length Lost	Units Lost	Assessor Comments	Reviewer comments
3.722		51.36	0.00	0.05	0.66	G2: Running water	
2.531		20.25	0.00	0.08	0.67	J2.6: Dry ditch	
1.981		15.85	0.00	0.00	0.00	G1: Standing water (ditch)	
8.23	0.00	87.46	0.00	0.13	1.33		

C-2 Site River Creation

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	Proposed habitats		Habitat distinctiveness		Habitat condition		Strategic significance			Temporal multiplier						Difficulty multipliers				Watercourse encroachment		Riparian encroachment		River units delivered	Comments	
Baseline ref	River type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard Time to target condition/years	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final Time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	Extent of encroachment	Multiplier	Extent of encroachment	Multiplier		Assessor comments	Reviewer comments
1	Other Rivers and Streams	0.048	High	6	Moderate	2	Delivery within River Basin Management Plan	High strategic significance	1.15	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	High	Standard difficulty applied	High	0.33	No Encroachment	1	No Encroachment	1	0.15		
2	Ditches	0.084	Medium	4	Moderate	2	Low potential/action not identified in any plan	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	No Encroachment	1	No Encroachment	1	0.47		
3																										
4																										
5																										
6																										
7																										
		0.13																						0.62		

Appendix C Biodiversity Metric 3.1 Calculation Tool: BNG Modelling

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The Biodiversity Metric 3.1 - Calculation Tool
Start page

Project details	
Planning authority:	ork Council, Harrogate Borough Council, Selby District Council, Leeds City Counci
Project name:	Yorkshire GREEN (DCO Submission - as designed)
Applicant:	
Application type:	DCO
Planning application reference:	n/a
Assessor:	Isobel Taylor
Reviewer:	Julia Baker
Metric version:	3.1
Assessment date:	21/10/2022
Planning authority reviewer:	n/a

Instructions

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Results

Cell style conventions	
	Enter data
	Automatic lookup
	Result

View all

Reset view

On-site baseline map: Insert

Phase 1 Area and Line Available at:
https://ukgisportal01.woodplc.com/portal/apps/webappviewer/index.html?id=9b25ced839ae4908b5338a14a7ee83f0

On-site post intervention map: Insert

BNG Temporary and Permanent Loss Available a
https://ukgisportal01.woodplc.com/portal/apps/webappviewer/index.html?id=9b25ced839ae4908b5338a14a7ee83f0

Off-site baseline map Insert

Off-site post intervention map Insert

Yorkshire GREEN (DCO Submission - as designed)

Headline Results

Return to results menu

On-site baseline	*Habitat units*	1176.80
	Hedgerow units	354.80
	River units	88.79
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	1028.93
	Hedgerow units	264.42
	River units	88.08
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	-12.57%
	Hedgerow units	-25.47%
	River units	-0.80%
Off-site baseline	*Habitat units*	203.00
	Hedgerow units	0.00
	River units	20.70
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	477.64
	Hedgerow units	126.05
	River units	30.97
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	126.78
	Hedgerow units	35.67
	River units	9.56
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	10.77%
	Hedgerow units	10.05%
	River units	10.77%
Trading rules Satisfied?		Yes ✓

Yorkshire GREEN (DCO Submission - as designed)
Detailed Results

Return to results menu

Summary Figures

Net project biodiversity units (including all on-site & off-site habitat retention/creation)		
	Habitat units	126.78
	Hedgerow units	35.67
	River units	9.56

Total project biodiversity % change (including all On-site & Off-site Habitat Creation + Retained Habitats)		
	Habitat units	10.77%
	Hedgerow units	10.05%
	River units	10.77%

Combined habitat retention and enhancement

	Habitats	Hedgerows	Rivers
Total on-site and off-site baseline area / length	628.69	29.57	11.37
Total on-site and off-site baseline units	1379.80	354.80	109.49
Total on-site and off-site baseline area / length retained	164.52	10.19	8.23
Total on-site and off-site baseline units retained	391.87	122.28	87.46
Area / length proposed for enhancement	0.00	0.85	3.00
Baseline units proposed for enhancement	0.00	10.19	20.70
Total on-site and off-site baseline area / length lost	464.17	18.53	0.13
Total on-site and off-site baseline units lost	987.93	222.34	1.33

Area Habitats

Area habitats

On site change by broad habitat type

Habitat group	Baseline		Post development on site		Onsite Change	
	Existing area	Existing value	Proposed area	Proposed value	Area change	Onsite Unit change
Cropland	381.70	767.36	351.63	617.03	-30.07	-150.33
Grassland	88.49	207.73	93.64	230.56	5.16	22.83
Heathland and shrub	6.84	54.71	10.27	63.34	3.43	8.62
Lakes	0.96	11.48	0.96	11.47	0.00	-0.01
Sparsely vegetated land	3.56	7.11	3.48	6.30	-0.08	-0.81
Urban	29.75	7.70	47.33	6.80	17.58	-0.90
Wetland	0.00	0.00	0.00	0.00	0.00	0.00
Woodland and forest	15.91	120.71	19.89	93.44	3.97	-27.27
Intertidal sediment	0.00	0.00	0.00	0.00	0.00	0.00
Coastal saltmarsh	0.00	0.00	0.00	0.00	0.00	0.00
Rocky shore	0.00	0.00	0.00	0.00	0.00	0.00
Coastal lagoons	0.00	0.00	0.00	0.00	0.00	0.00
Intertidal Hard Structures	0.00	0.00	0.00	0.00	0.00	0.00

Off site change by broad habitat type

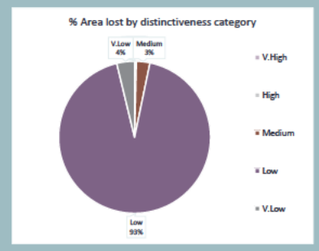
Habitat group	Baseline		Post development Off-site		Off-site Change	
	Existing area	Off-site Existing value	Off-site proposed area	Off site Proposed value	Off-site area change	Off-site unit change
Cropland	0.00	0.00	0.00	0.00	0.00	0.00
Grassland	101.50	203.00	40.00	248.18	-61.50	45.18
Heathland and shrub	0.00	0.00	0.00	0.00	0.00	0.00
Lakes	0.00	0.00	1.00	7.23	1.00	7.23
Sparsely vegetated land	0.00	0.00	0.00	0.00	0.00	0.00
Urban	0.00	0.00	0.00	0.00	0.00	0.00
Wetland	0.00	0.00	0.00	0.00	0.00	0.00
Woodland and forest	0.00	0.00	53.00	222.24	53.00	222.24
Intertidal sediment	0.00	0.00	0.00	0.00	0.00	0.00
Coastal saltmarsh	0.00	0.00	0.00	0.00	0.00	0.00
Rocky shore	0.00	0.00	0.00	0.00	0.00	0.00
Coastal lagoons	0.00	0.00	0.00	0.00	0.00	0.00
Intertidal Hard Structures	0.00	0.00	0.00	0.00	0.00	0.00

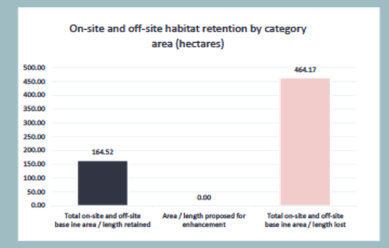
Combined on site and off site change by broad habitat type

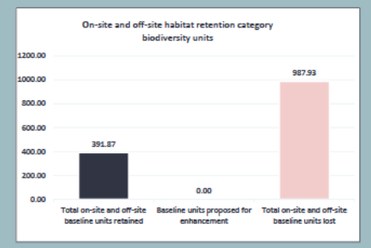
Habitat group	Baseline		On-site and Off-site post development		Combined change	
	Existing area	Existing value	Combined proposed area	Combined proposed value	Proposed area	Proposed value
Cropland	381.70	767.36	351.63	617.03	-30.07	-150.33
Grassland	189.99	410.73	133.64	478.74	-56.34	68.00
Heathland and shrub	6.84	54.71	10.27	63.34	3.43	8.62
Lakes	0.96	11.48	1.96	18.70	1.00	7.21
Sparsely vegetated land	3.56	7.11	3.48	6.30	-0.08	-0.81
Urban	29.75	7.70	47.33	6.80	17.58	-0.90
Wetland	0.00	0.00	0.00	0.00	0.00	0.00
Woodland and forest	15.91	120.71	72.89	315.68	56.97	194.97
Intertidal sediment	0.00	0.00	0.00	0.00	0.00	0.00
Coastal saltmarsh	0.00	0.00	0.00	0.00	0.00	0.00
Rocky shore	0.00	0.00	0.00	0.00	0.00	0.00
Coastal lagoons	0.00	0.00	0.00	0.00	0.00	0.00
Intertidal Hard Structures	0.00	0.00	0.00	0.00	0.00	0.00

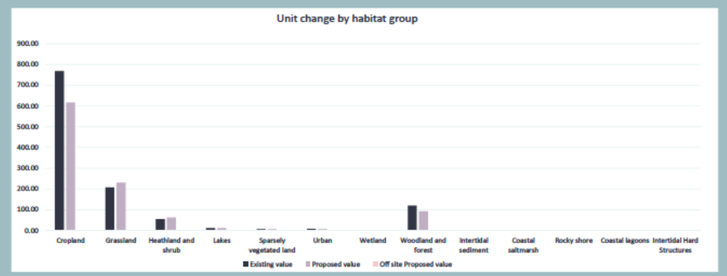
Combined area lost by distinctiveness band

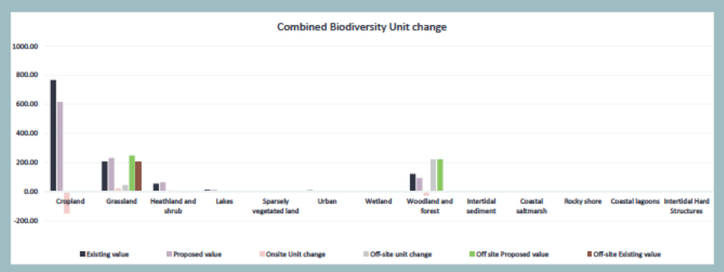
Category	Area lost (hectares)	Area lost (%)
V.High	0	
High	1.783	0
Medium	13.348	3
Low	431.523	93
V.Low	17.518	4

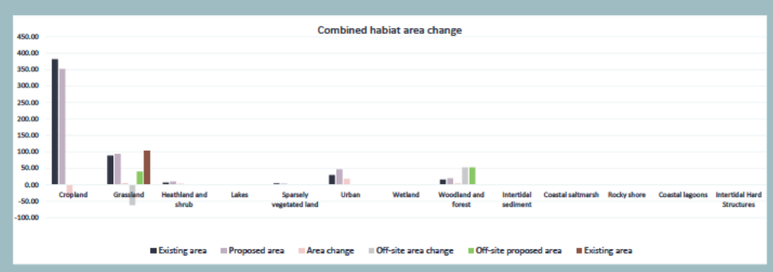












Hedgerows and Lines of Trees

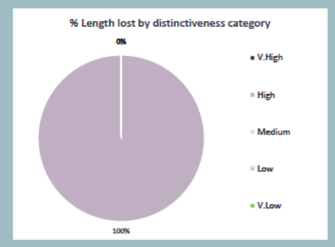
Hedgerows and lines of trees

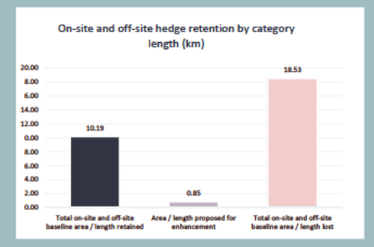
On site change by hedgerow type

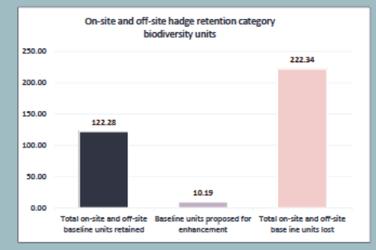
Hedgerow type	Baseline: Existing length on-site	Baseline: Existing value	Post development on site: Proposed length on-site	Post development on site: Proposed value on-site	Onsite Change: On-site length change	Onsite Change: On-site Unit change
Native Species Rich Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow with trees	29.57	354.80	28.62	259.77	-0.95	-95.03
Native Species Rich Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow	0.00	0.00	0.83	4.66	0.83	4.66
Native Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable)	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable) - with Bank or Ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Hedge Ornamental Non Native	0.00	0.00	0.00	0.00	0.00	0.00

Combined length lost by distinctiveness band

Category	Length lost (KM)	Length lost (%)
V.High	0	
High	18.528	100
Medium	0	
Low	0	
V.Low	0	

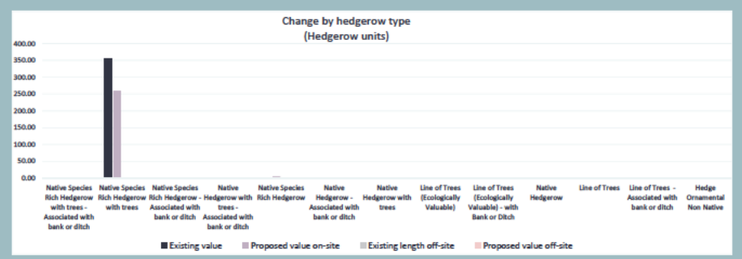


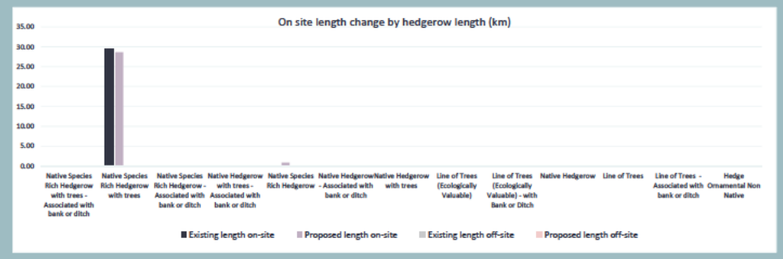




Off site change by hedgerow type

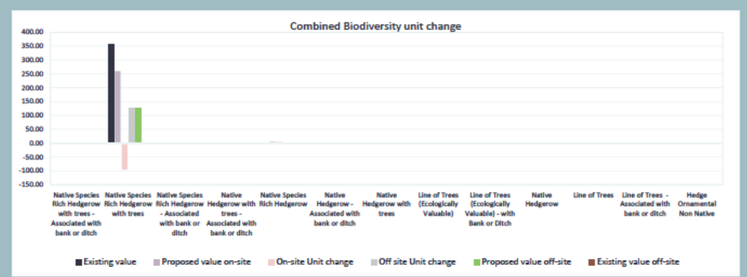
Hedgerow type	Off site baseline: Existing length off-site	Off site baseline: Existing value off-site	Post development off site: Proposed length off-site	Post development off site: Proposed value off-site	Off site Change: Off-site length change	Off site Change: Off site Unit change
Native Species Rich Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow with trees	0.00	0.00	0.00	126.05	0.00	126.05
Native Species Rich Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable)	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable) - with Bank or Ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Hedge Ornamental Non Native	0.00	0.00	0.00	0.00	0.00	0.00

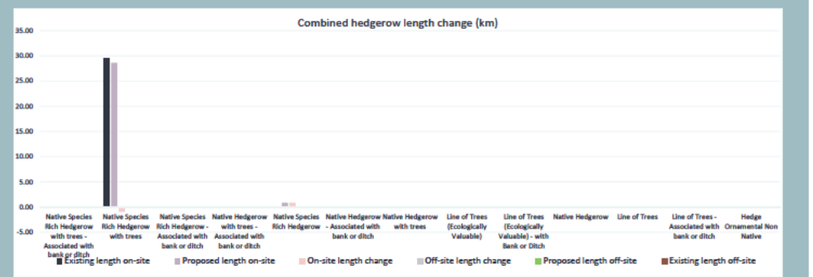




Combined on and off site change by hedgerow type

Hedgerow type	Baseline: Existing length	Baseline: Existing value	Post development on site: Proposed length	Post development on site: Proposed value	Onsite Change: length change	Onsite Change: Onsite Unit change
Native Species Rich Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow with trees	29.57	354.80	28.62	385.82	-0.95	31.02
Native Species Rich Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Species Rich Hedgerow	0.00	0.00	0.83	4.66	0.83	4.66
Native Hedgerow - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow with trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable)	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees (Ecologically Valuable) - with Bank or Ditch	0.00	0.00	0.00	0.00	0.00	0.00
Native Hedgerow	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees	0.00	0.00	0.00	0.00	0.00	0.00
Line of Trees - Associated with bank or ditch	0.00	0.00	0.00	0.00	0.00	0.00
Hedge Ornamental Non Native	0.00	0.00	0.00	0.00	0.00	0.00





Rivers and Streams

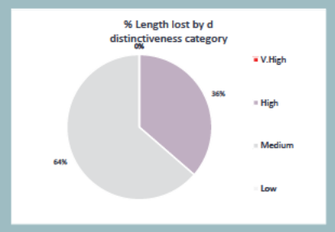
Rivers and Streams

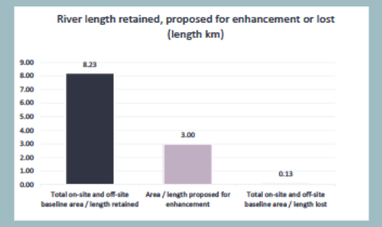
On site change by river type

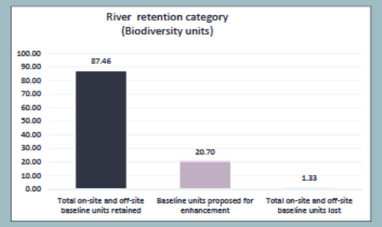
River type	Baseline		Post development on site		Onsite Change	
	Existing length	Existing value	Proposed length	Proposed value	length change	Onsite Unit change
Priority Habitat	0.0	0.0	0.0	0.0	0.0	0.0
Other Rivers and Streams	3.8	52.0	3.8	51.5	0.0	-0.5
Ditches	4.6	36.8	4.6	36.6	0.0	-0.2
Canals	0.0	0.0	0.0	0.0	0.0	0.0
Culvert	0.0	0.0	0.0	0.0	0.0	0.0

Combined length lost by distinctiveness band

Category	Length lost (KM)	Length lost (%)
V.High	0	
High	0.048	36
Medium	0.084	64
Low	0	

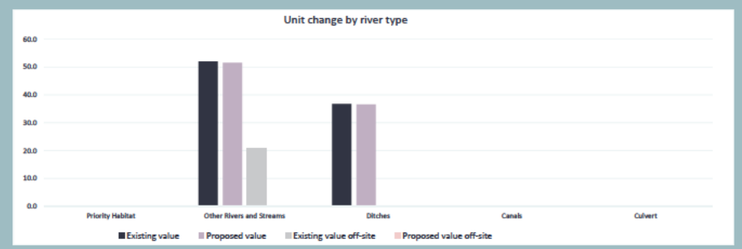


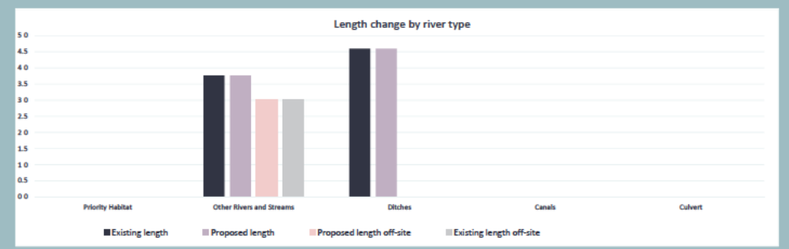




Off site change by river type

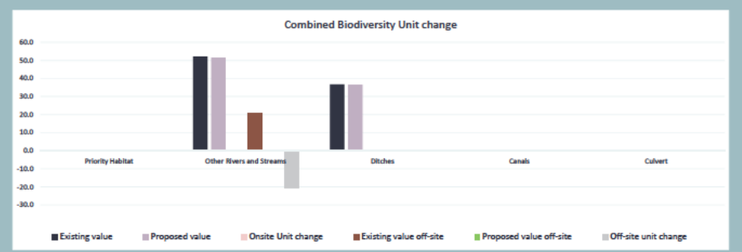
River type	Baseline		Post development off-site		Off-site Change	
	Existing length off-site	Existing value off-site	Proposed length off-site	Proposed value off-site	Off-site length change	Off-site unit change
Priority Habitat	0.0	0.0	0.0	0.0	0.0	0.0
Other Rivers and Streams	3.0	20.7	3.0	0.0	0.0	-20.7
Ditches	0.0	0.0	0.0	0.0	0.0	0.0
Canals	0.0	0.0	0.0	0.0	0.0	0.0
Culvert	0.0	0.0	0.0	0.0	0.0	0.0

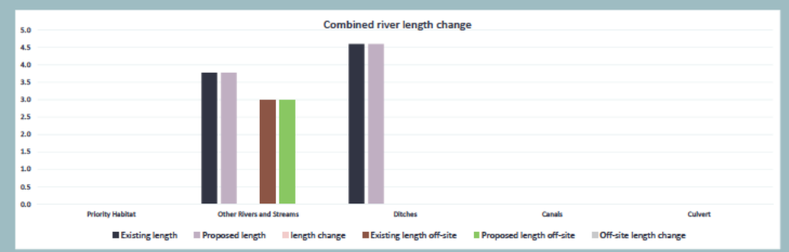




Combined on and off site change by river type

River type	Baseline		Post development on site		Onsite Change	
	Existing length	Existing value	Proposed length	Proposed value	length change	Onsite Unit change
Priority Habitat	0.0	0.0	0.0	0.0	0.0	0.0
Other Rivers and Streams	6.8	72.7	6.8	51.5	0.0	-21.2
Ditches	4.6	36.8	4.6	36.6	0.0	-0.2
Canals	0.0	0.0	0.0	0.0	0.0	0.0
Culvert	0.0	0.0	0.0	0.0	0.0	0.0





Trading Summary

Distinctiveness Group	Trading Rule	Trading Satisfied?
Very High	Bespoke compensation likely to be required 🛠	Yes ✓
High	Same habitat required =	Yes ✓
Medium	Same broad habitat or a higher distinctiveness habitat required (≥)	Yes ✓
Low	Same distinctiveness or better habitat required ≥	Yes ✓

Very High Distinctiveness

Habitat group	Group	On Site Unit Change	Off Site Unit Change	Project wide Unit Change	Unit Losses
Grassland - Lowland dry acid grassland	Grassland	0.00	0.00	0.00	
Grassland - Lowland meadows	Grassland	0.00	0.00	0.00	
Grassland - Upland hay meadows	Grassland	0.00	0.00	0.00	
Heathland and shrub - Mountain heaths and willow scrub	Heathland and shrub	0.00	0.00	0.00	
Lakes - Aquifer fed naturally fluctuating water bodies	Lakes	0.00	0.00	0.00	
Sparsely vegetated land - Calaminarian grasslands	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Limestone pavement	Sparsely vegetated land	0.00	0.00	0.00	
Wetland - Blanket bog	Wetland	0.00	0.00	0.00	
Wetland - Depressions on Peat substrates (H7150)	Wetland	0.00	0.00	0.00	
Wetland - Fens (upland and lowland)	Wetland	0.00	0.00	0.00	
Wetland - Lowland raised bog	Wetland	0.00	0.00	0.00	
Wetland - Oceanic Valley Mire[1] (D2.1)	Wetland	0.00	0.00	0.00	
Wetland - Purple moor grass and rush pastures	Wetland	0.00	0.00	0.00	
Wetland - Transition mires and quaking bogs (H7140)	Wetland	0.00	0.00	0.00	
Woodland and forest - Wood-pasture and parkland	Woodland and forest	0.00	0.00	0.00	
Rocky shore - High energy littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Rocky shore - Moderate energy littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Rocky shore - Low energy littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Rocky shore - Features of littoral rock - on peat, clay or chalk	Rocky shore	0.00	0.00	0.00	
Intertidal sediment - Littoral seagrass on peat, clay or chalk	Intertidal sediment	0.00	0.00	0.00	
		0.00	0.00	0.00	0.00

Very High Distinctiveness Summary

Very High Distinctiveness Units available to offset lower distinctiveness defecit	0.00

High Distinctiveness

Habitat group	Group	On Site Unit Change	Off Site Unit Change	Project wide Unit Change	Losses not yet accounted for
Grassland - Traditional orchards	Grassland	0.00	0.00	0.00	
Grassland - Floodplain Wetland Mosaic (CFGM)	Grassland	-7.84	13.87	6.03	
Grassland - Lowland calcareous grassland	Grassland	0.00	0.00	0.00	
Grassland - Tall herb communities (H6430)	Grassland	0.00	0.00	0.00	
Grassland - Upland calcareous grassland	Grassland	0.00	0.00	0.00	
Heathland and shrub - Lowland Heathland	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Sea buckthorn scrub (Annex 1)	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Upland Heathland	Heathland and shrub	0.00	0.00	0.00	
Lakes - High alkalinity lakes	Lakes	0.00	0.00	0.00	
Lakes - Low alkalinity lakes	Lakes	0.00	0.00	0.00	
Lakes - Marl Lakes	Lakes	0.00	0.00	0.00	
Lakes - Moderate alkalinity lakes	Lakes	0.00	0.00	0.00	
Lakes - Peat Lakes	Lakes	0.00	0.00	0.00	
Lakes - Ponds (Priority Habitat)	Lakes	-0.01	7.23	7.21	
Lakes - Temporary lakes, ponds and pools	Lakes	0.00	0.00	0.00	
Sparsely vegetated land - Coastal sand dunes	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Coastal vegetated shingle	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Inland rock outcrop and scree habitats	Sparsely vegetated land	0.00	0.00	0.00	
Sparsely vegetated land - Maritime cliff and slopes	Sparsely vegetated land	0.00	0.00	0.00	
Urban - Open Mosaic Habitats on Previously Developed Land	Urban	0.00	0.00	0.00	
Wetland - Reedbeds	Wetland	0.00	0.00	0.00	
Woodland and forest - Felled	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Lowland beech and yew woodland	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Lowland mixed deciduous woodland	Woodland and forest	-10.43	11.27	0.84	
Woodland and forest - Native pine woodlands	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Upland birchwoods	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Upland mixed ashwoods	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Upland oakwood	Woodland and forest	0.00	0.00	0.00	
Woodland and forest - Wet woodland	Woodland and forest	0.00	0.00	0.00	
Coastal lagoons - Coastal lagoons	Coastal lagoons	0.00	0.00	0.00	
Rocky shore - High energy littoral rock	Rocky shore	0.00	0.00	0.00	
Rocky shore - Moderate energy littoral rock	Rocky shore	0.00	0.00	0.00	
Rocky shore - Low energy littoral rock	Rocky shore	0.00	0.00	0.00	
Rocky shore - Features of littoral rock	Rocky shore	0.00	0.00	0.00	
Intertidal sediment - Littoral mud	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Littoral mixed sediments	Intertidal sediment	0.00	0.00	0.00	
Coastal saltmarsh - Saltmarshes and saline reedbeds	Coastal Saltmarsh	0.00	0.00	0.00	
Intertidal sediment - Littoral biogenic reefs - Mussels	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Littoral biogenic reefs - Sabellaria	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Features of littoral sediment	Intertidal sediment	0.00	0.00	0.00	
Intertidal sediment - Littoral muddy sand	Intertidal sediment	0.00	0.00	0.00	
		-18.29	32.36	14.08	0.00

High Distinctiveness Summary

High Distinctiveness Units available to offset lower distinctiveness defecit	14.08
Unit Defecit; Like for like not satisfied	0.00

Medium Distinctiveness

Habitat Group	Group	On site unit change	Off Site unit Change	Project wide unit change	Cumulative Broad Habitat Change
Cropland - Arable field margins cultivated annually	Cropland	0.00	0.00	0.00	-0.63
Cropland - Arable field margins game bird mix	Cropland	0.00	0.00	0.00	
Cropland - Arable field margins pollen & nectar	Cropland	0.00	0.00	0.00	
Cropland - Arable field margins tussocky	Cropland	-0.63	0.00	-0.63	
Grassland - Other lowland acid grassland	Grassland	0.00	0.00	0.00	301.07
Grassland - Other neutral grassland	Grassland	66.76	234.31	301.07	
Grassland - Upland acid grassland	Grassland	0.00	0.00	0.00	
Heathland and shrub - Blackthorn scrub	Heathland and shrub	0.00	0.00	0.00	8.62
Heathland and shrub - Bramble scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Gorse scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Hawthorn scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Hazel scrub	Heathland and shrub	0.00	0.00	0.00	
Heathland and shrub - Mixed scrub	Heathland and shrub	8.62	0.00	8.62	
Lakes - Ponds (Non- Priority Habitat)	Lakes	0.00	0.00	0.00	0.00
Lakes - Reservoirs	Lakes	0.00	0.00	0.00	
Sparsely vegetated land - Other inland rock and scree	Sparsely vegetated land	0.00	0.00	0.00	0.00
Urban - Cemeteries and churchyards	Urban	0.00	0.00	0.00	0.00
Urban - Biodiverse green roof	Urban	0.00	0.00	0.00	
Urban - Urban Tree	Urban	0.00	0.00	0.00	
Woodland and forest - Other Scot's Pine woodland	Woodland and forest	0.00	0.00	0.00	195.18
Woodland and forest - Other woodland; broadleaved	Woodland and forest	4.57	210.97	215.54	
Woodland and forest - Other woodland; mixed	Woodland and forest	-20.36	0.00	-20.36	
Intertidal sediment - Littoral coarse sediment	Intertidal sediment	0.00	0.00	0.00	0.00
Intertidal sediment - Littoral sand	Intertidal sediment	0.00	0.00	0.00	
Intertidal Hard Structures - Artificial hard structures with Integrated Greening of Grey Infrastructure (IGGI)	Intertidal	0.00	0.00	0.00	
		58.97	445.28	504.25	

Medium Distinctiveness Summary

Medium Distinctiveness Units available to offset lower distinctiveness defecit	504.88
Medium Distinctiveness Broad Habitat Deficit to be offset by trading up	-0.63
Higher distinctiveness surplus units minus Medium Distinctivenss Broad Habitat Defecit	13.45
Cumulative surplus of units	518.32

Low Distinctiveness

Habitat group	Group	On site unit change	Off Site Unit Change	Project wide unit change
Cropland - Cereal crops	Cropland	-149.70	0.00	-149.70
Cropland - Horticulture	Cropland	0.00	0.00	0.00
Cropland - Intensive orchards	Cropland	0.00	0.00	0.00
Cropland - Non-cereal crops	Cropland	0.00	0.00	0.00
Cropland - Temporary grass and clover leys	Cropland	0.00	0.00	0.00
Cropland - Cereal crops winter stubble	Cropland	0.00	0.00	0.00
Grassland - Modified grassland	Grassland	-36.09	-203.00	-239.09
Grassland - Bracken	Grassland	0.00	0.00	0.00
Heathland and shrub - Rhododendron scrub	Heathland and shrub	0.00	0.00	0.00
Lakes - Ornamental lake or pond	Lakes	0.00	0.00	0.00
Sparsely vegetated land - Ruderal/Ephemeral	Sparsely vegetated land	-0.81	0.00	-0.81
Urban - Bioswale	Sparsely vegetated land	0.00	0.00	0.00
Urban - Allotments	Urban	0.00	0.00	0.00
Urban - Facade-bound green wall	Urban	0.00	0.00	0.00
Urban - Ground based green wall	Urban	0.00	0.00	0.00
Urban - Ground level planters	Urban	0.00	0.00	0.00
Urban - Other green roof	Urban	0.00	0.00	0.00
Urban - Intensive green roof	Urban	0.00	0.00	0.00
Urban - Introduced shrub	Urban	-0.03	0.00	-0.03
Urban - Rain garden	Urban	0.00	0.00	0.00
Urban - Actively worked sand pit quarry or open cast mine	Urban	-0.02	0.00	-0.02
Urban - Sustainable urban drainage feature	Urban	0.00	0.00	0.00
Urban - Vacant/derelict land/ bareground	Urban	-0.85	0.00	-0.85
Urban - Vegetated garden	Urban	0.00	0.00	0.00
Woodland and forest - Other coniferous woodland	Woodland and forest	-1.05	0.00	-1.05
Coastal saltmarsh - Artificial saltmarshes and saline reedbeds	Coastal saltmarsh	0.00	0.00	0.00
Intertidal sediment - Artificial littoral coarse sediment	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral mud	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral sand	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral muddy sand	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral mixed sediments	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral seagrass	Intertidal sediment	0.00	0.00	0.00
Intertidal sediment - Artificial littoral biogenic reefs	Intertidal sediment	0.00	0.00	0.00
Intertidal Hard Structures - Artificial hard structures	Intertidal	0.00	0.00	0.00
Intertidal Hard Structures - Artificial features of hard structures	Intertidal	0.00	0.00	0.00
Heathland and shrub - Sea buckthorn scrub (other)	Heathland and shrub	0.00	0.00	0.00
		-188.55		-391.55

Low Distinctiveness Summary

Low Distinctiveness Net Change in Units	-391.55
Cumulative surplus of units	126.78

Yorkshire GREEN (DCO Submission - as designed)

A-1 Site Habitat Baseline

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	Habitats and areas			Distinctiveness		Condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value						Bespoke compensation agreed for unacceptable losses	Comments	
Ref	Broad Habitat	Habitat Type	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic Significance multiplier		Total habitat units	Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area habitat lost	Units lost		Assessor comments	Reviewer comments
1	Woodland and Forest	Lowland mixed deciduous woodland	1.497	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required =	17.96	0.525		6.30	0.00	0.97	11.66		Phase 1 - A1.1.1: Broadleaved woodland - semi-natural	
2	Woodland and Forest	Other woodland; broadleaved	6.576	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	52.61	3.937		31.50	0.00	2.64	21.11		A1.1.2: Broadleaved woodland - plantation	
3	Woodland and Forest	Other coniferous woodland	2.096	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	4.19	0.75		1.50	0.00	1.35	2.69		A1.2.2: Coniferous woodland - plantation	
4	Woodland and Forest	Other woodland; mixed	1.389	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	11.11	0.141		1.13	0.00	1.25	9.98		A1.3.2: Mixed woodland - plantation	
5	Heathland and shrub	Mixed scrub	2.287	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	18.30	0.911		7.29	0.00	1.38	11.01		A2.1: Scrub- Dense/Continous	
6	Heathland and shrub	Mixed scrub	4.552	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	36.42	1.501		12.01	0.00	3.05	24.41		A2.2: Scrub- Scattered	
7	Woodland and Forest	Other woodland; broadleaved	0.159	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	1.27	0.085		0.68	0.00	0.07	0.59		A3.1: Parkland and scattered trees- broad-leaved	
8	Woodland and Forest	Other woodland; mixed	3.963	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	31.70	1.481		11.85	0.00	2.48	19.86		A3.3: Parkland and scattered trees- mixed	
9	Grassland	Other neutral grassland	2.977	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	23.82	1.501		12.01	0.00	1.48	11.81		B2.2: Neutral grassland - semi-improved	
10	Grassland	Modified grassland	35.948	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	71.90	8.195		16.39	0.00	27.75	55.51		B4: Improved grassland	
11	Grassland	Modified grassland	47.188	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	94.38	12.755		25.51	0.00	34.43	68.87		B6: Poor semi-improved grassland	
12	Sparsely Vegetated Land	Ruderal/Ephemeral	3.181	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	6.36	1.52		3.04	0.00	1.66	3.32		C3.1: Tall ruderal	
13	Lakes	Ponds (priority habitat)	0.957	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required =	11.48	0.956		11.47	0.00	0.00	0.01		G1: Standing water	
14	Urban	Developed land; Sealed surface	25.493	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00	8.105		0.00	0.00	17.39	0.00		Hardstanding	
15	Urban	Actively worked sand pit quarry or open cast mine	0.025	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	0.05	0.007		0.01	0.00	0.02	0.04		I2.1: Quarry	
16	Cropland	Cereal crops	379.718	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	759.44	116.997		233.99	0.00	262.72	525.44		J1.1: Arable	
17	Grassland	Modified grassland	1.082	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	2.16	0.513		1.03	0.00	0.57	1.14		J1.2: Amenity grassland	
18	Sparsely Vegetated Land	Ruderal/Ephemeral	0.374	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	0.75	0.256		0.51	0.00	0.12	0.24		J1.3: Ephemeral/short perennial	
19	Urban	Introduced shrub	0.116	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	0.23	0.035		0.07	0.00	0.08	0.16		J1.4: Introduced shrub	
20	Urban	Developed land; Sealed surface	0.407	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00	0.277		0.00	0.00	0.13	0.00		J3.6: Buildings	
21	Urban	Vacant/derelict land/ bareground	3.707	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	7.41	2.384		4.77	0.00	1.32	2.65		J4: Bare ground	
22	Woodland and Forest	Other woodland; broadleaved	0.232	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	1.86	0.052		0.42	0.00	0.18	1.44		J5: Other habitat	
23	Grassland	Floodplain Wetland Mosaic (CFGM)	1.29	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required =	15.48	0.48		5.76	0.00	0.81	9.72		HPI: Coastal and floodplain grazing marsh	
24	Cropland	Arable field margins tussocky	1.98	Medium	4	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required (2)	7.92	1.16		4.64	0.00	0.82	3.28		HPI: Arable field margins	
25																					
26																					
27																					
		Total habitat area	527.19									1176.80	164.52	0.00	391.87	0.00	362.67	784.93			

Total area lost (excluding area of Urban trees and Green walls)	362.67

Yorkshire GREEN (DCO Submission - as designed)

A-2 Site Habitat Creation

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Note; Habitat selected has a time to target condition greater than 30 years.
Non standard agreement may be required.

							Post development/ post intervention habitats															
			Distinctiveness		Condition		Strategic significance			Temporal multiplier						Difficulty multipliers					Comments	
Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard time to target condition/years	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	Habitat units delivered	Assessor comments	Reviewer comments
Woodland and Forest	Lowland mixed deciduous woodland	0.972	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	30+		5	Check details- Delay in starting habitat in required condition? ⚠	30+	0.320	High	Standard difficulty applied	High	0.33	1.23	reinstate the area of temp loss to the orginal type and condition of habitat	
Woodland and Forest	Other woodland; broadleaved	2.599	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15		5	Check details- Delay in starting habitat in required condition? ⚠	20	0.490	Low	Standard difficulty applied	Low	1	10.20	reinstate the area of temp loss to the orginal type and condition of habitat	
Woodland and Forest	Other coniferous woodland	1.171	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	1.64	reinstate the area of temp loss to the orginal type and condition of habitat	
Woodland and Forest	Other woodland; mixed	1.247	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	30		5	Check details- Delay in starting habitat in required condition? ⚠	30+	0.320	Low	Standard difficulty applied	Low	1	3.19	reinstate the area of temp loss to the orginal type and condition of habitat	
Heathland and shrub	Mixed scrub	1.352	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	7.57	reinstate the area of temp loss to the orginal type and condition of habitat	
Heathland and shrub	Mixed scrub	2.859	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	16.02	reinstate the area of temp loss to the orginal type and condition of habitat	
Woodland and Forest	Other woodland; broadleaved	0.066	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15		5	Check details- Delay in starting habitat in required condition? ⚠	20	0.490	Low	Standard difficulty applied	Low	1	0.26	reinstate the area of temp loss to the orginal type and condition of habitat	
Woodland and Forest	Other woodland; mixed	2.46	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	30		5	Check details- Delay in starting habitat in required condition? ⚠	30+	0.320	Low	Standard difficulty applied	Low	1	6.29	reinstate the area of temp loss to the orginal type and condition of habitat	
Grassland	Other neutral grassland	1.474	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	8.26	reinstate the area of temp loss to the orginal type and condition of habitat	
Grassland	Modified grassland	26.369	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	42.59	reinstate the area of temp loss to the orginal type and condition of habitat	
Grassland	Modified grassland	28.447	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	45.94	reinstate the area of temp loss to the orginal type and condition of habitat	
Sparsely Vegetated Land	Rudera /Ephemeral	1.585	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	2.56	reinstate the area of temp loss to the orginal type and condition of habitat	
Lakes	Ponds (priority habitat)	0	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	3		5	Check details- Delay in starting habitat in required condition? ⚠	8	0.752	Medium	Standard difficulty applied	Medium	0.67	0.00	Updated: no temporary loss of ponds (so	
Urban	Developed land; Sealed surface	16.945	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0		5	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Medium	0.67	0.00	reinstate the area of temp loss to the orginal type and condition of habitat	
Urban	Actively worked sand pit quarry or open cast mine	0.019	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Medium	Standard difficulty applied	Medium	0.67	0.02	reinstate the area of temp loss to the orginal type and condition of habitat	
Cropland	Cereal crops	232.648	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	375.74	reinstate the area of temp loss to the orginal type and condition of habitat	
Grassland	Modified grassland	0.549	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	0.89	reinstate the area of temp loss to the orginal type and condition of habitat (marked as habitat creation in the metric) -	
Sparsely Vegetated Land	Rudera /Ephemeral	0.118	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	0.19	reinstate the area of temp loss to the orginal type and condition of habitat	
Urban	Introduced shrub	0.081	Low	2	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	0.13	reinstate the area of temp loss to the orginal type and condition of habitat	
Urban	Developed land; Sealed surface	0.128	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0		5	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Medium	0.67	0.00	reinstate the area of temp loss to the orginal type and condition of habitat	
Urban	Vacant/derelict land/ bareground	1.11	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	1.79	reinstate the area of temp loss to the orginal type and condition of habitat	
Woodland and Forest	Other woodland; broadleaved	0.18	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15		5	Check details- Delay in starting habitat in required condition? ⚠	20	0.490	Low	Standard difficulty applied	Low	1	0.71	reinstate the area of temp loss to the orginal type and condition of habitat	
Grassland	Other neutral grassland	12.55	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	70.21	new habitat creation (landscaping) at Overton, Tadcaster, and Monk Fryston	
Woodland and forest	Other woodland; broadleaved	4.22	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	15		5	Check details- Delay in starting habitat in required condition? ⚠	20	0.490	Low	Standard difficulty applied	Low	1	16.56	new habitat creation (landscaping) at Overton, Tadcaster, and Monk Fryston	
Heathland and shrub	Mixed scrub	3.57	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	20.00	new habitat creation (landscaping) at Overton, Tadcaster, and Monk Fryston	
Heathland and shrub	Mixed scrub	0.08	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	0.45	new habitat creation (landscaping) at Overton, Tadcaster, and Monk Fryston	
Urban	Developed land; sealed surface	18.24	V.Low	0	N/A - Other	0	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0		5	Standard time to target condition applied	5	0.837	Low	Standard difficulty applied	Medium	0.67	0.00	Area of permanent habitat loss to	
Grassland	Floodplain Wetland Mosaic (CFGM)	0.81	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? ⚠	15	0.586	High	Standard difficulty applied	High	0.33	1.88	Area assumed as floodplain grazing marsh HPI (UKHab: Floodplain wetland mosaic) based on location of parcel within floodplain and historical context of the site. Reinstate the area of temp loss to the orginal type and condition of habitat	
Cropland	Arable field margins tussocky	0.82	Medium	4	Condition Assessment N/A	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1		5	Check details- Delay in starting habitat in required condition? ⚠	6	0.808	Low	Standard difficulty applied	Low	1	2.65	Area assumed as arable field margins HPI. reinstate the area of temp loss to the orginal type and condition of habitat	
	Total habitat area	367.67																	Total Units	637.06		

B-1 Site Hedge Baseline

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	UK Habitats - existing habitats			Habitat distinctiveness		Habitat condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value						Comments	
Baseline ref	Hedge number	Hedgerow type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		Total hedgerow units	Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost	Assessor comments	Reviewer comments
1		Native Species Rich Hedgerow with trees	9.267	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	111.20	1.417	0.849	17.00	10.19	7.00	84.01		
2		Native Species Rich Hedgerow with trees	9.254	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	111.05	4.361		52.33	0.00	4.89	58.72		
3		Native Species Rich Hedgerow with trees	1.103	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	13.24	0.343		4.12	0.00	0.76	9.12		
4		Native Species Rich Hedgerow with trees	4.246	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	50.95	1.166		13.99	0.00	3.08	36.96		
5		Native Species Rich Hedgerow with trees	3.815	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	45.78	1.904		22.85	0.00	1.91	22.93		
6		Native Species Rich Hedgerow with trees	1.882	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	22.58	0.999		11.99	0.00	0.88	10.60		
7																				
8																				
9																				
10																				
11																				
			29.57									354.80	10.19	0.85	122.28	10.19	18.53	222.34		

B-2 Site Hedge Creation

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		Proposed habitats		Habitat distinctiveness		Habitat condition		Strategic significance			Temporal multiplier						Difficulty risk multipliers				Hedge units delivered	Comments	
Baseline ref	New hedge number	Habitat type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard Time to target condition/years	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied		Assessor comments	Reviewer comments
1		Native Species Rich Hedgerow with trees	6.773	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? A	15	0.586	Low	Standard difficulty applied	Low	1	47.63	Reinstatement of temporary loss	
2		Native Species Rich Hedgerow with trees	4.704	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? A	15	0.586	Low	Standard difficulty applied	Low	1	33.08	Reinstatement of temporary loss	
3		Native Species Rich Hedgerow with trees	0.751	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? A	15	0.586	Low	Standard difficulty applied	Low	1	5.28	Reinstatement of temporary loss	
4		Native Species Rich Hedgerow with trees	2.656	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? A	15	0.586	Low	Standard difficulty applied	Low	1	18.68	Reinstatement of temporary loss	
5		Native Species Rich Hedgerow with trees	1.851	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? A	15	0.586	Low	Standard difficulty applied	Low	1	13.02	Reinstatement of temporary loss	
6		Native Species Rich Hedgerow with trees	0.842	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10		5	Check details- Delay in starting habitat in required condition? A	15	0.586	Low	Standard difficulty applied	Low	1	5.92	Reinstatement of temporary loss	
7		Native Species Rich Hedgerow	0.831	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? A	10	0.700	Low	Standard difficulty applied	Low	1	4.66	Creation of new hedgerows	
8																							
9																							
10																							
11																							
12																							
			18.41																		128.26		

Yorkshire GREEN (DCO Submission - as designed)

B-3 Site Hedge Enhancement

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	Baseline Habitats									
Baseline ref	Baseline habitat	Length (km)	Baseline distinctiveness band	Baseline distinctiveness score	Baseline condition category	Baseline condition score	Baseline strategic significance category	Baseline strategic significance score	Baseline habitat units	Suggested action
1	Native Species Rich Hedgerow with trees	0.287	High	6	Moderate	2	Low Strategic Significance	1	111.304	Like for like or better
		[illegible]								

Post development/ post intervention habitats									
Proposed (Pre-populated but can be overridden)	Change in distinctiveness and condition		Length (km)	Distinctiveness		Condition		Strategic significance	
	Distinctiveness movement	Condition movement		Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance
Native Species Rich Hedgerow with trees	High - High	Moderate - Good	0.049	High	6	Good	3	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance
			[illegible]						

Post development/ post intervention habitats													Hedge units delivered	Comments	
	Temporal multiplier						Difficulty risk multipliers								
Strategic position multiplier	Standard Time to target condition/years	Habitat enhanced in advance/years	Delay in starting habitat enhancement/years	Standard or adjusted time to target condition	Final time to target condition/years	Final Time to target multiplier	Standard difficulty of enhancement	Applied difficulty multiplier	Final difficulty of enhancement	Difficulty multiplier applied		Hedge units delivered	Assessor comments	Reviewer comments
1	4		5	Check details Delay in starting habitat is required condition? ⚠	9	0.726	Low	Standard difficulty applied	Low	1		13.66	Proposed hedgerow reinforcement	
												[illegible]		

C-1 Site River Baseline

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Existing river type			Habitat distinctiveness		Habitat condition		Strategic significance			Watercourse encroachment		Riparian encroachment		Suggested action	Ecological baseline	Retention category biodiversity value						Comments	
Baseline ref	River type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic significance multiplier	Extent of encroachment	Multiplier	Extent of encroachment	Multiplier		Total river units	Length retained	Length enhanced	Units retained	Units enhanced	Length Lost	Units Lost	Assessor Comments	Reviewer comments
1	Other Rivers and Streams	3.77	High	6	Moderate	2	Within River Basin Management Plan	High strategic significance	1.15	No Encroachment	1	No Encroachment	1	Restore	52.03	3.722		51.36	0.00	0.05	0.66		
2	Ditches	2.615	Medium	4	Moderate	2	Low potential/action not identified in any plan	Low Strategic Significance	1	No Encroachment	1	No Encroachment	1	Restore	20.92	2.531		20.25	0.00	0.08	0.67		
3	Ditches	1.981	Medium	4	Moderate	2	Low potential/action not identified in any plan	Low Strategic Significance	1	No Encroachment	1	No Encroachment	1	Restore	15.85	1.981		15.85	0.00	0.00	0.00		
4																							
5																							
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7																							
		8.37													88.79	8.23	0.00	87.46	0.00	0.13	1.33		

C-2 Site River Creation

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	Proposed habitats		Habitat distinctiveness		Habitat condition		Strategic significance			Temporal multiplier						Difficulty multipliers				Watercourse encroachment		Riparian encroachment		River units delivered	Comments	
Baseline ref	River type	Length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Standard Time to target condition/years	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final Time to target multiplier	Standard difficulty of creation	Applied difficullty multiplier	Final difficulty of creation	Difficulty multiplier applied	Extent of encroachment	Multiplier	Extent of encroachment	Multiplier		Assessor comments	Reviewer comments
1	Other Rivers and Streams	0.048	High	6	Moderate	2	Delivery within River Basin Management Plan	High strategic significance	1.15	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	High	Standard difficulty applied	High	0.33	No Encroachment	1	No Encroachment	1	0.15		
2	Ditches	0.084	Medium	4	Moderate	2	Low potential/action not identified in any plan	Low Strategic Significance	1	5		5	Check details- Delay in starting habitat in required condition? ⚠	10	0.700	Low	Standard difficulty applied	Low	1	No Encroachment	1	No Encroachment	1	0.47		
3																										
4																										
5																										
6																										
7																										
		0.13																						0.62		

Yorkshire GREEN (DCO Submission - as designed)

D-1 Off Site Habitat Baseline

Condense / Show Columns | Condense / Show Rows

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	Habitats and areas			Habitat distinctiveness		Habitat condition		Strategic significance			Suggested action to address habitat losses	Ecological baseline	Retention category biodiversity value						Bespoke compensation agreed for unacceptable losses	Comments	
Baseline ref	Broad habitat	Habitat type	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier		Total habitat units	Area retained	Area enhanced	Baseline units retained	Baseline units enhanced	Area lost	Units lost		Assessor comments	Reviewer comments
1	Grassland	Modified grassland	94	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	188.00			0.00	0.00	94.00	188.00		Modelled area used for habitat area offsets	
2	Grassland	Modified grassland	7.5	Low	2	Poor	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required >	15.00			0.00	0.00	7.50	15.00		Modelled area used for hedgerow offset	
3																					
4																					
5																					
6																					
7																					
			101.50								Total Site baseline	203.00	0.00	0.00	0.00	0.00	101.50	203.00			

Total area lost (excluding area of Urban trees and Green walls)	101.50

Yorkshire GREEN (DCO Submission - as designed)

D-2 Off Site Habitat Creation

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Note; Habitat selected has a time to target condition greater than 30 years. Non standard agreement may be required. ⚠

Check Areas - Area cross check failed (Baseline habitat lost does not match area of new habitat creation)

Post development post intervention habitats

Broad Habitat	Proposed habitat	Area (hectares)	Distinctiveness	Score	Condition	Score	Strategic significance			Temporal risk multiplier					Difficulty risk multipliers				Spatial risk multiplier		Habitat units delivered	Comments	
							Strategic significance	Strategic significance	Strategic position multiplier	Standard time to target condition/years	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied	Spatial risk category	Spatial risk multiplier		Assessor comments	Reviewer comments
Lakes	Ponds (Priority Habi at)	1	High	6	Moderate	2	Area/compensation not in local strategy/ no local answers	Low Strategic Significance	1	3			Standard time to target condi ion ass ed	3	0.899	Medium	Standard d fficul y applied	Medium	0.67	Compensation inside LPA or NCA, or deemed to be su fficien ly local, to site of biodiversity loss	1	7.33		
Woodland and forest	Lowland mixed deciduous woodland	8	High	6	Moderate	2	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	30+	1		Check data la - Is there evidence habitat crea ion s ar ed and the threshold for Poor condition ach ved? A	29	0.356	High	Enhancement difficulty applied	High	0.33	Compensation inside LPA or NCA, or deemed to be su fficien ly local, to site of biodiversity loss	1	11.27		
Woodland and forest	O her woodland; broadleaved	45	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local answers	Low Strategic Significance	1	15			Standard time to target condi ion ass ed	15	0.586	Low	Standard d fficul y applied	Low	1	Compensation inside LPA or NCA, or deemed to be su fficien ly local, to site of biodiversity loss	1	210.97		
Grassland	Other neutral grassland	35	Medium	4	Moderate	2	Area/compensation not in local strategy/ no local answers	Low Strategic Significance	1	5			Standard time to target condi ion ass ed	5	0.837	Low	Standard d fficul y applied	Low	1	Compensation inside LPA or NCA, or deemed to be su fficien ly local, to site of biodiversity loss	1	234.31		
Grassland	Floodplain Wetland Mosaic (CFGM)	5	High	6	Moderate	2	Area/compensation not in local strategy/ no local answers	Low Strategic Significance	1	10			Standard time to target condi ion ass ed	10	0.700	High	Standard d fficul y applied	High	0.33	Compensation inside LPA or NCA, or deemed to be su fficien ly local, to site of biodiversity loss	1	13.87		
	Total Length	94.00																		Total Units	477.84		
	Site Area (Excluding area of Urban trees and Green walls)	94.00																					

Yorkshire GREEN (DCO Submission – as designed)

E-2 Off Site Hedge Creation

Condense / Show Columns

Condense / Show Rows

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		Proposed habitats		Habitat distinctiveness		Habitat condition		Strategic significance			Spatial risk multiplier		Temporal multiplier						Difficulty risk multipliers				Hedge units delivered	Comments	
Baseline ref	New hedge number	Habitat type	Length KM	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Spatial risk category	Spatial risk multiplier	Standard Time to target condition/years	Habitat created in advance/years	Delay in starting habitat creation/years	Standard or adjusted time to target condition	Final time to target condition/years	Final Time to target multiplier	Standard difficulty of creation	Applied difficulty multiplier	Final difficulty of creation	Difficulty multiplier applied		Assessor comments	Reviewer comments
1		Native Species Rich Hedgerow with trees	15	High	6	Moderate	2	Area compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation inside LPA or NCA or deemed to be sufficiently local to site of biodiversity loss	1	10			Standard time to target condition applied	10	0.700	Low	Standard difficulty applied	Low	1	126.05		
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F-1 Off Site River Baseline

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Existing river type			Habitat distinctiveness		Habitat condition		Strategic significance			Watercourse encroachment		Riparian encroachment		Suggested action	Ecological baseline	Retention category biodiversity value						Comments	
Baseline ref	River type	length (km)	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Extent of encroachment	Multiplier	Extent of encroachment	Multiplier		Total river units	Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost	Assessor comments	Reviewer comments
1	Other Rivers and Streams	3	High	6	Poor	1	Within River Basin Management Plan	High strategic significance	1.15	No Encroachment	1	No Encroachment	1	Restore	20.70		3	0.00	20.70	0.00	0.00		
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F-3 Off Site River Enhancement

Condense / Show Columns | Condense / Show Rows | Main Menu | Set Per Unit

Baseline ref	Baseline habitat	Length (km)	Baseline distinctiveness band	Baseline distinctiveness score	Baseline condition category	Baseline condition score	Baseline strategic significance category	Strategic significance	Baseline strategic significance	Suggested action	Total units	Proposed habitat (Pre-Populated but can be overridden)	Change in distinctiveness and condition: Distinctiveness movement	Condition movement	Length (km)	Habitat distinctiveness: Distinctiveness	Score	Habitat condition: Condition	Score	Strategic significance: Strategic significance	Strategic significance multiplier	Temporal multiplier: Standard Time to target condition/years	Habitat enhanced in advance/years	Delay in start (eg. habitat enhancement)/years	Standard or adjusted time to target condition	Final time to target condition/years	Final Time to target multiplier	Difficulty multiplier: Standard difficulty of enhancement	Applied difficulty multiplier	Fixed difficulty of enhancement	Difficulty multiplier applied	Watercourse encroachment: Extent of encroachment	Multiplier	Riparian encroachment: Extent of encroachment	Multiplier	Spatial risk category: Offset location	Multiplier	River units delivered	Comments: Assessor comments
1	Other Rivers and Streams	0	High	6	Poor	1	Within River Basin Management Plan	High significance	1.15	Secure	6.9	Other Rivers and Streams	High - High	Poor - Good	0	High	6	Good	3	Delivery with a River Basin	High significance	1.15	8			Standard time	8	0.333	High	Standard difficulty applied	High	0.33	No	1	No Encroachment	1	Within the area	1	6.347	

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National Grid plc
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United Kingdom

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No. 4031152