

EASTLEIGH BOROUGH COUNCIL

One Horton Heath

Appendix 10.13 – Biodiversity Net Gain

1 NON-TECHNICAL SUMMARY

1.1.1 Summary Conclusions

This assessment of Biodiversity Net Gain (BNG) conducts and assessment following the DEFRA 2.0 Biodiversity Metric and has been informed by a suite of detailed Phase 1 Habitat Survey carried out by Johns Associates in July/August 2018 with additional areas surveyed and revisited as required through 2019 and 2020 as described in detailed in Chapter 10 Appendix 10.2 – Phase 1 Habitat Survey.

The revised metric calculations show that:

- the outline development will deliver a minimum value of +7.68% in habitat units and +10.26% hedgerow units (excluding GCN habitat area) (Figure 7) but has the potential to deliver >10% BNG for both habitats and hedgerows within the red line boundary. and Figure 8)
- Phase 1 will deliver +12.22% habitat area units and +22.9% hedgerow units (Figure 9)

This has been calculated on the following basis:

- Feedback from the Principal Advisor on Net Gain for Natural England supports the use of the Great Crested Newt (GCN) mitigation areas for the purpose of BNG. The GCN mitigation area has the potential to contribute a further 6.18% BNG and is already at an advanced stage of delivery.
- The current total for the OPA uses an estimate for the “in-parcel” delivery of habitats (primarily vegetated gardens, amenity grassland and street trees) based on the detailed designs of Phase 1 (Table 1 OPA In Parcel Habitat Creation Calculations). As, due to its specific circumstances, this is one of the densest parcels, this is a very precautionary approach and is therefore likely to underestimate the extent of habitat provision in subsequent parcels. Therefore, there is significant scope to increase this value through positive ecology/landscape led design up to, and possibly exceeding, a 10% overall net gain.
- An identical approach is taken to hedgerows (considered separately in the metric as linear features) to deliver a minimum of 10% BNG. This figure excludes hedgerows in the GCN mitigation area and other opportunities for new hedgerows (such as the landscaping of the link road) but includes in-parcel hedgerows– subject to

detailed design, again estimated based on phase 1).

- River habitats are excluded from the BNG metric at this stage as a more detailed assessment has been conducted to support the EIA and this will be applied once further detail is available on the construction of the link road.
- The site habitat succession feature has not been used in these calculations
- SuDS as ecological features. Despite the inclusion of ecologically valuable SuDS, these features have been included using the standard SuDS allocation provided within the calculator tool only rather than allocating higher wetland habitat values.

Consultation with EBC Ecologist Phil Lomax, (19 April 2021) has shown support for this approach, and in line with received advice, the calculations include BNG ranges to demonstrate that:

- The development will deliver a positive BNG on site of at least 7%
- The OPA could achieve +10% BNG for both habitat areas and hedgerows subject to the sensitive design of subsequent parcels and a coordinated approach to BNG assessment and delivery
- This would be supported by a detailed habitat specification and relies on a detailed LEMP to deliver habitats of the target type and condition.

It is therefore clear that the application demonstrates a net biodiversity gain, as calculated using the DEFRA Metric 2.0.

The application of this assessment and the principles of the delivery and allocation of BNG throughout the phases of this development has been subject to regular consultation with the project Ecological Steering Group (comprised of Natural England). This approach allows for the delivery of new and compensatory habitats in advance of construction phases, in accordance with ecological best practice, to minimise the time between habitat loss and the provision of functional replacement and enhanced habitats within the wider site. There is an acknowledgement that each development phase may not be able to deliver a net gain within the phase boundary and allows flexibility to deliver the required measures for any given phase within the wider 'site' to create larger and more diverse areas of habitats in more appropriate locations.

Recent confirmation of the principal supporting the inclusion of habitat measures included within European Protected Species licences for the purpose of the calculation of biodiversity net gain has led to the inclusion of the great crested newt habitat measures in the north west of the OPA area.

1.1.2 Precautionary Approach to Calculating Biodiversity Net Gain

This assessment has quantified the key areas of habitat gain and loss that result from the development as shown in the site masterplan.

The assessment contained herein outlines the broad approach taken to maximise the delivery of biodiversity gain through the creation and enhancement of habitats within the allocated and protected ecological areas across the site. These areas have been identified as having strong connectivity to the wider ecological network and complement existing habitat areas to increase the size, and thereby resilience, of existing high value habitats on and adjacent to the site.

The created habitats have been allocated a condition score on a precautionary basis to reflect the possible effects of recreation on the long-term condition of these habitats, where public access is unrestricted (e.g. grassland habitats)

although the impact of recreation is unlikely to compromise the delivery of habitats satisfying the prescriptions as described within the Technical Supplement accompanying the DEFRA 2.0 Metric.

A large portion of the most strategic woodland, grassland and pond habitats created on site will not be accessible by the public.

The estimated habitat areas provided within the OPA residential parcels has been based on the following area as per the detailed design of Phase 1:

- Amenity Grassland – 2.01ha
- Vegetated gardens – 1.78ha
- Street Trees – 2.144ha (129no. small, 257no. medium, 92 large)

Table 1 OPA In Parcel Habitat Creation Calculations

Habitat	Phase 1	Phase 1 residential area	% habitat ha per residential ha	OPA residential Area	OPA Habitat estimate
Amenity Grassland	2.01	9.3	22	53.47	11.76
Vegetated Gardens	1.78	9.3	19	53.47	10.23
Street Trees	2.144	9.3	23	53.47	12.3

2 INTRODUCTION

The Biodiversity Metric 2.0 is described as “a way of measuring and accounting for biodiversity losses and gains resulting from development or land management change” that has been developed with input from a wide range of environmental NGOs, developers, land managers, Government agencies and other interested parties.

The version used to complete this assessment is the Biodiversity Metric 2.0 which updates and replaces the original Defra biodiversity metric incorporating the knowledge and experience gained across a variety of different sectors since the original Defra biodiversity metric 1.0 was first launched as part of Defra’s biodiversity offsetting pilots.

The Biodiversity Metric 2.0 has been published as a 'beta test' version to enable wider user feedback, however this is the most robust mechanism available at the time of submission and has been widely adopted as a tool to assess the biodiversity change presented by development since its release pending the final version scheduled for release in late 2020.

The premise of this metric is to use habitat as a proxy for wider biodiversity with different habitat types scored according to their relative biodiversity value. This value is then adjusted depending on the condition and location of the habitat, to calculate 'biodiversity units' for that specific project or development.

The Biodiversity metric 2.0 incorporates similar but separate calculations for habitats that require a different method of measurement such as hedgerows, lines of trees, rivers and streams and street trees and these have been included in discreet sections within this appendix, as required.

The metric sets out the following key principles and rules for its application:

- **Principle 1:** The metric does not change the protection afforded to biodiversity. Existing levels of protection afforded to protected species and to habitats are not changed by use of this or any other metric. Statutory obligations will still need to be satisfied.

- **Principle 2:** Biodiversity metric calculations can inform decision-making where application of the mitigation hierarchy and good practice principles⁶ conclude that compensation for habitat losses is justified.
- **Principle 3:** The metric's biodiversity units are only a proxy for biodiversity. While it is underpinned by ecological evidence the metric is only a proxy for biodiversity and to be of practical use has been kept deliberately simple. The numerical values generated by the metric represent relative, not absolute, values.
- **Principle 4:** The metric focuses on widespread species and typical habitats. Area based habitats are considered a suitable proxy for widespread species found in typical examples of different habitat types.
 - Protected and locally important species needs are not considered through the metric,
 - Impacts on protected (e.g. SSSIs) and irreplaceable habitats are not adequately measured by this metric and will likely require separate consideration.
- **Principle 5:** The metric design aims to encourage enhancement, not transformation, of the natural environment. Where possible, habitat created to compensate for loss of a natural or semi-natural habitat should be of the same broad type (e.g. new woodland to replace lost woodland) unless there is a good ecological reason to do otherwise (e.g. to restore a heathland habitat that was converted to woodland for timber in the past).
- **Principle 6:** The metric is designed to inform decisions. Decisions and management interventions need to take account of available expert ecological advice and not just the biodiversity unit outputs of the metric.
- **Principle 7:** Compensation habitats should seek, where practical, to be local to the impact. They should aim to replicate the characteristics of the habitats that have been lost, taking account of the structure and species composition that give habitats their local distinctiveness. Where possible compensation habitats should contribute to England's ecological network by creating more, bigger, better and joined areas for biodiversity
- **Principle 8:** The metric does not enforce a mandatory minimum 1:1 habitat size ratio for losses and compensation. A difference can occur because of a difference in quality between the site impacted and the compensation provided. For example, if a habitat of low distinctiveness is impacted and is compensated for by the creation of habitat of high distinctiveness, the area needed to compensate for losses can potentially be less than the area impacted. Consideration should be given to whether reducing the size of compensation is an appropriate outcome.

Figure 1 Biodiversity Metric "Rules"

Rules	
Rule 1	Where the metric is used to measure change biodiversity unit values need to be calculated prior to the intervention and post-intervention for all parcels of land / linear features affected.
Rule 2	Compensation for habitat losses can be provided by creating new habitat, by restoring or enhancing existing habitats, or by accelerating successional processes. Measures to improve existing habitats must provide a significant and demonstrable uplift in distinctiveness and/or condition to record additional biodiversity units.
Rule 3	'Trading down' must be avoided. Losses of habitat are to be compensated for on a "like for like" or "like for better" basis. Ideally, new or restored habitats should aim to achieve a higher distinctiveness and / or condition than habitats lost.
Rule 4	Biodiversity unit values generated by biodiversity metric 2.0 are unique to this metric and cannot be compared to unit outputs from the original Defra metric or any other biodiversity metric. Furthermore, the units generated by the each module of biodiversity metric 2.0 (for area, hedgerow and river habitats) are unique and cannot be summed.
Rule 5	It is not the area of habitat created that determines whether ecological equivalence or better has been achieved but the net change in biodiversity units. Risks associated with enhancing or creating habitats mean that it may be necessary to enhance or create a larger area of habitat than lost to fully compensate for impacts on biodiversity.
Rule 6	Deviations from the published methodology of biodiversity metric 2.0 need to be ecologically justified. While the methodology is expected to be suitable in the majority of circumstances it is recognised that there may be exceptions. Any local or project-specific adaptations of the metric must be transparent and fully justified.

Figure 2: OPA Baseline - Phase 1 Habitat Survey

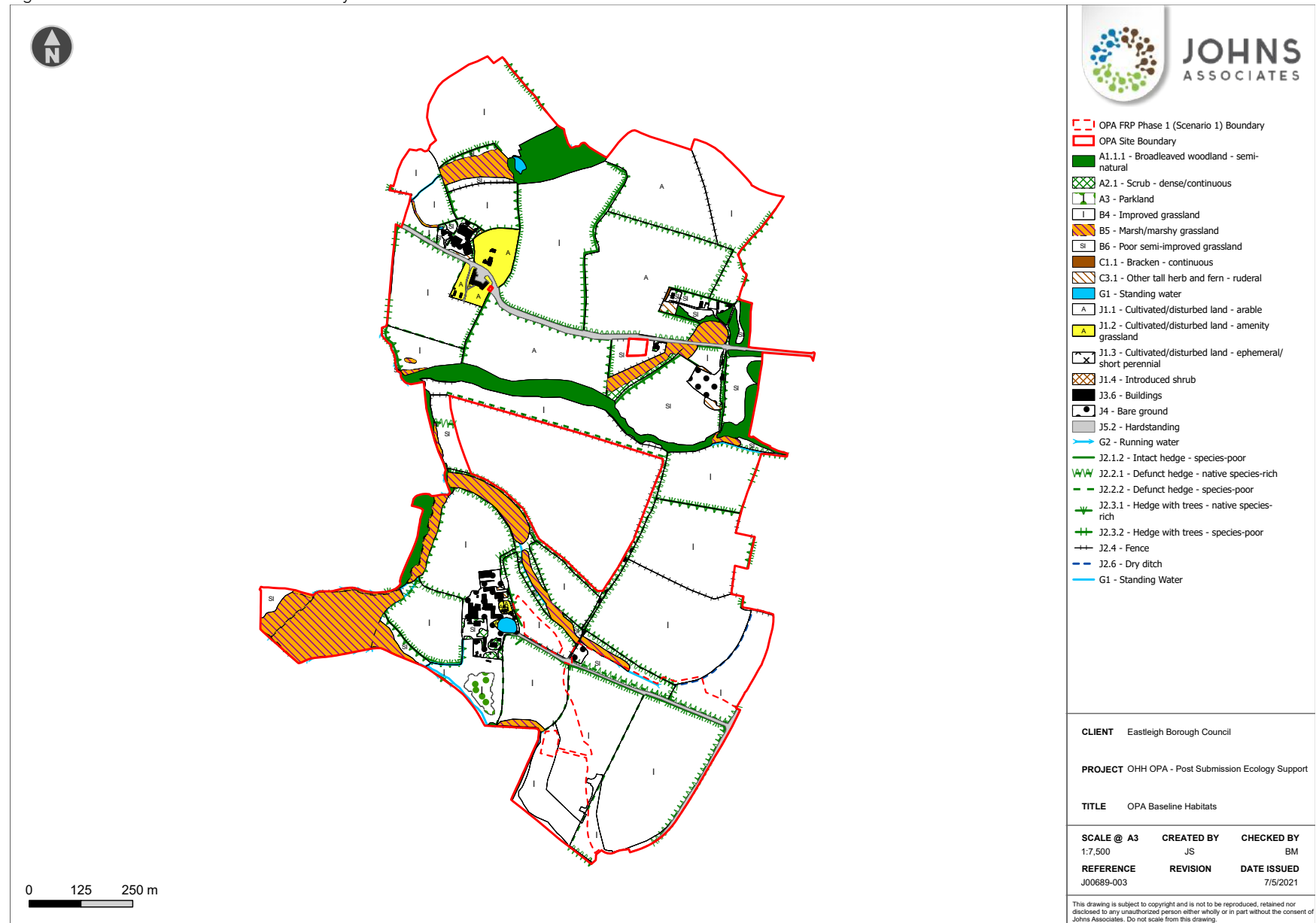


Figure 3 OPA Post Construction Habitat Plan

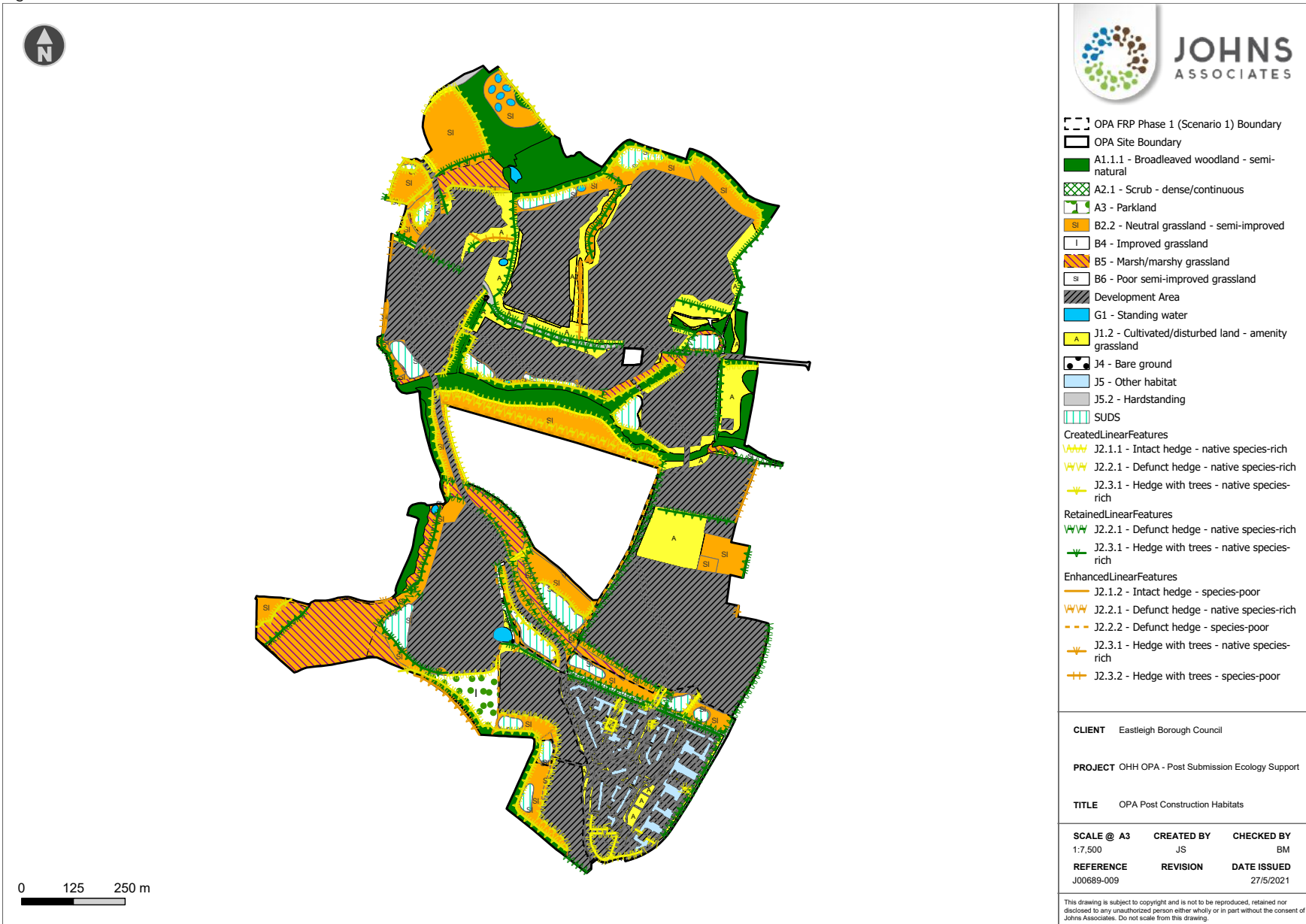


Figure 4 OPA Ecological Areas - Access plan

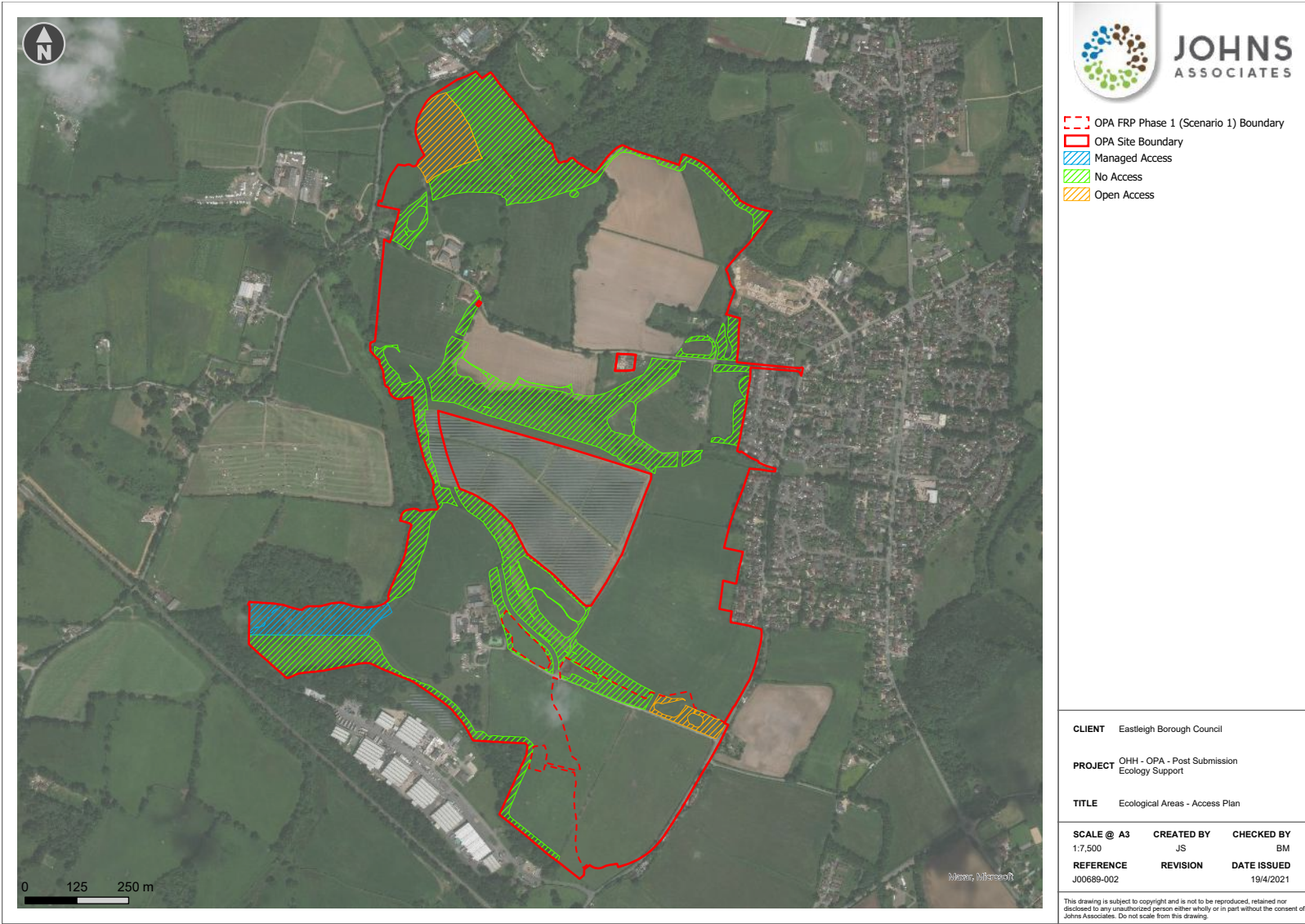


Figure 5 Phase 1 - Baseline Phase 1 Habitats

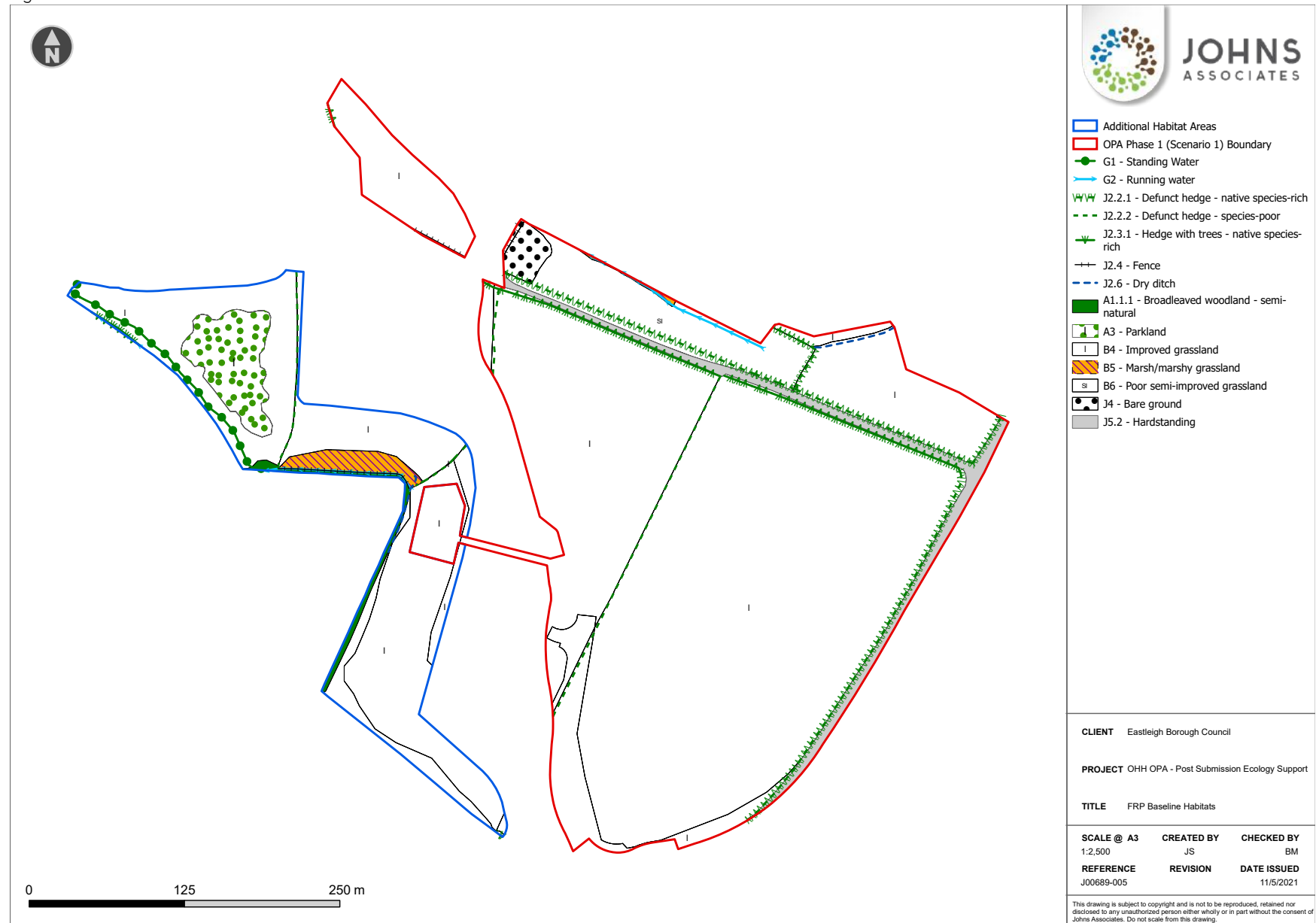
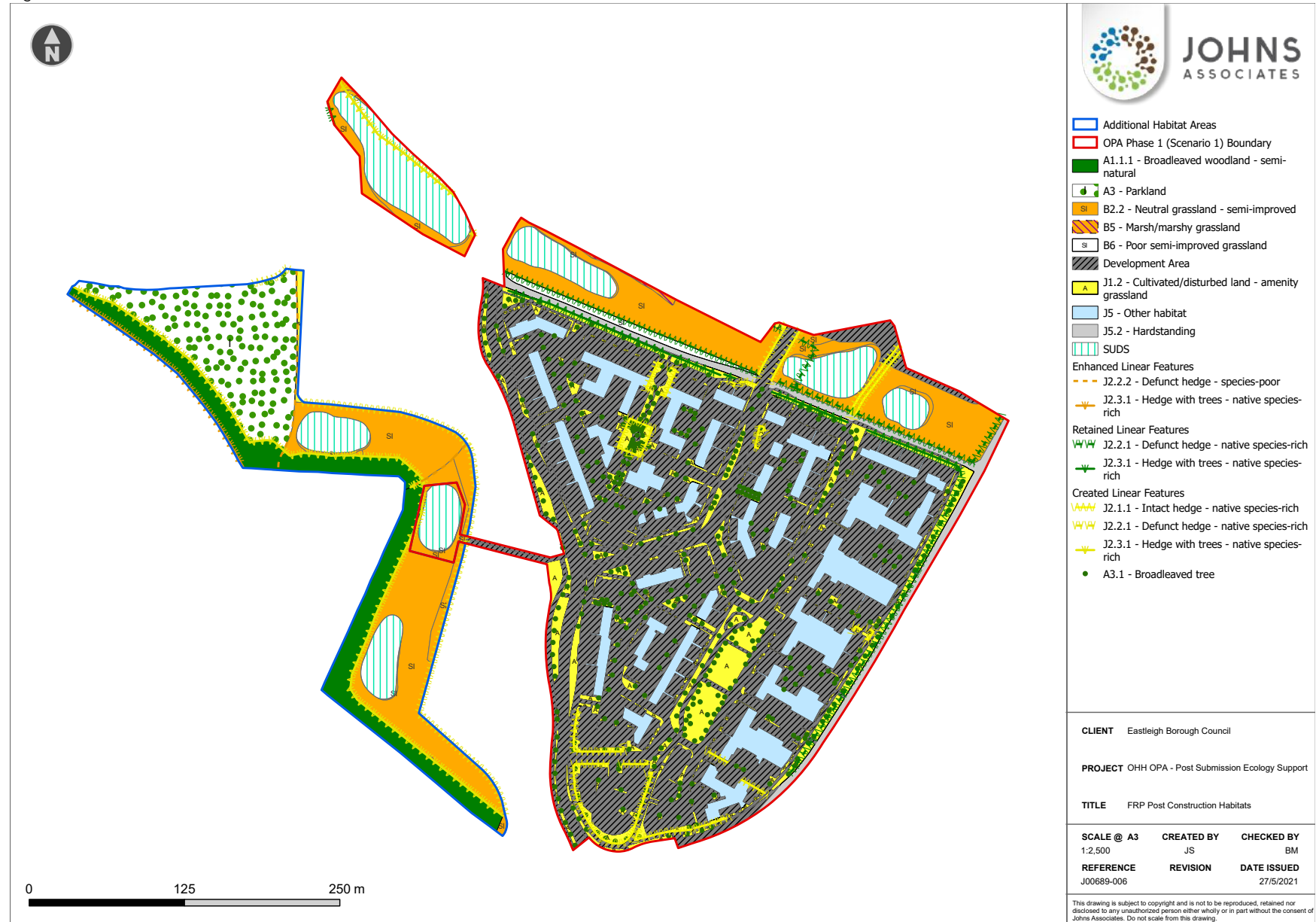


Figure 6 Phase 1 - Post Construction Habitat Plan



3 METHODOLOGY

3.1 THE BIODIVERSITY METRIC 2.0

3.1.1 General

The Biodiversity metric 2.0 uses habitat, the places in which species live, as a proxy to describe biodiversity. These habitats are converted into measurable 'biodiversity units'. These biodiversity units are the 'currency' of the metric.

Biodiversity units are calculated using the size of a parcel of habitat and its quality. The metric uses habitat area as its core measurement, except for linear habitats where habitat length is used (see supplementary modules section 2.8). To assess the quality of a habitat the metric scores habitats of different types, such as woodland or grassland, according to their relative biodiversity value. Habitats that are scarce or declining typically score highly relative to habitats that are more common and widespread. The metric also takes account of the condition of a habitat. The metric accounts for the location of the habitat relative to other similar habitats to measure its connectedness in the landscape. Being 'better' and 'more joined-up' are important facets of habitats that can contribute to halting and reversing biodiversity declines. Last, the metric also accounts for whether or not the habitat is sited in an area identified locally, typically in a relevant policy of plan, as being of significance for nature.

Where new habitat is created, or existing habitat is enhanced the difficulty and associated risks of doing so are taken into account by the metric. If habitat is created to compensate for losses elsewhere, then the metric also takes account of its proximity to the impact site. The metric incentivises delivery that is on or close to the impact site.

The following assessment was conducted in accordance with the guidance CIEEM, CIRIA, IEMA. 2016 Biodiversity Net Gain – Good Practice Principles for Development¹

This assessment uses the latest version of the Biodiversity Metric 2.0 - Calculation Tool - Beta Test December 2019 Update² and draws on the guidance documents and tools available on the Natural England website for The Biodiversity Metric 2.0 (JP029)³

3.2 ASSESSMENT OF EXISTING AND PROPOSED HABITATS

3.2.1 Habitat Classification

The habitats present on sites were recorded using the standardised system for classifying and mapping British Habitats Handbook for Phase 1 Habitat survey – a technique for environmental audit⁴. These were then transformed into corresponding UK Habitat Classification (UKHAB) habitat types⁵ for use within the metric.

3.2.2 Distinctiveness

This is applied from fixed values within the calculation tool based on the habitat types

¹ https://www.cieem.net/data/files/Publications/Biodiversity_Net_Gain_Principles.pdf (accessed 28/10/2020)

² <http://publications.naturalengland.org.uk/publication/5850908674228224> (accessed 28/10/2020)

³ <http://publications.naturalengland.org.uk/publication/5850908674228224> (accessed 28/10/2020)

⁴ British Habitats Handbook for Phase 1 Habitat survey – a technique for environmental audit (Joint Nature Conservancy Council, 2010)

⁵ UK Habitat Classification: <http://ecountability.co.uk/ukhabworkinggroup-ukhab/> (Accessed 28/10/2020)

3.2.3 Condition

A score based on the quality of the habitat. This is determined by condition criteria set out in the Biodiversity Metric 2.0 Technical Supplement⁶

The created habitats have been allocated a condition score on a precautionary basis to reflect the possible effects of recreation in these habitats, where public access is unrestricted.

3.2.4 Strategic Significance

A score based on whether the location of the development and or off-site work has been identified locally as significant for nature. The habitats on site have been allocated the value "Location ecologically desirable but not in local strategy," based on the following rationale.

An assessment based on the landscape network mapping conducted by the Hampshire Biodiversity Information Centre including the following data:

- Ecological Network Mapping - Core Non statutory [© Hampshire Biodiversity Information Centre and the Local Nature Partnership]
- Ecological Network Mapping - Core Statutory [© Hampshire Biodiversity Information Centre and the Local Nature Partnership]
- Ecological Network Mapping - Network Opportunities [© Hampshire Biodiversity Information Centre and the Local Nature Partnership]

The site is also adjacent to strategic locations identified in the Eastleigh Borough Council Biodiversity Action Plan 2012-22.

This assessment concluded that the habitats on site are well connected to the wider landscape via suitable, high value connective habitats and have the potential to for valuable connective habitats as part of the wider Hampshire biodiversity network.

This level of strategic significance is applied consistently to both lost and enhanced/created habitats and therefore has little real effect on the relative values.

3.2.5 Connectivity

The focus of connectivity in biodiversity metric 2.0 is the relationship of a particular habitat patch to other surrounding similar or related semi-natural habitats. These facilitate flows of species and ecosystem services increases habitat resilience.

Despite the assessment above, for the purpose of the beta version of biodiversity metric 2.0 "all High and Very High distinctiveness habitats should be assigned a Medium connectivity multiplier, other habitats are allocated a Low connectivity multiplier" irrespective of their real connectivity. This assessment observes this guidance.

⁶ The Biodiversity Metric 2.0 - Technical Supplement - Beta Test, <http://publications.naturalengland.org.uk/publication/5850908674228224> (Accessed 28/10/2020)

3.2.6 Distinctiveness

For the purpose of the metric assessment, distinctiveness refers to the relative scarcity of the habitat and its importance for nature conservation. The actual values assigned to each habitat type used in the metric are given in the Technical Supplement.

These are automatically applied by the calculator tool based on the habitat type.

4 RESULTS

4.1 DEFRA METRIC 2.0 SUMMARY TABLES

Figure 7 DEFRA Metric 2.0 Summary Table – OPA Minimim Values

Summary Figures

Net project biodiversity units (including all on-site & off-site habitat retention/creation)	Habitat units	31.02
	Hedgerow units	26.32
	River units	0.00

Total project biodiversity % change (including all On-site & Off-site Habitat Creation + Retained Habitats)	Habitat units	7.68%
	Hedgerow units	10.26%
	River units	0.00%

On-site habitat retention and enhancement

	Habitats	Hedgerows	Rivers
Total site area / length	119.70	12.66	0.00
Total site units	403.67	256.52	0.00

Area / length retained	12.86	7.65	0.00
Units Retained	121.06	174.19	0.00

Area / length enhanced	35.74	2.24	0.00
Baseline units enhanced	98.41	27.14	0.00

Area / length succession	0.00
Units succession	0.00

Area / length lost	71.10	2.77	0.00
Units lost	184.19	55.19	0.00

a lost by distinctiveness b

Category	Area lost (hectares)	Area lost (%)
V.High	0	
High	0.099	0
Medium	1.06	2
Low	68.74	98
V.Low	0	

Figure 8 DEFRA Metric 2.0 Summary Table – OPA Minimum Values Including GCN Mitigation Habitats

Summary Figures

Net project biodiversity units (including all on-site & off-site habitat retention/creation)	<i>Habitat units</i>	57.75
	<i>Hedgerow units</i>	33.13
	<i>River units</i>	0.00

Total project biodiversity % change (including all On-site & Off-site Habitat Creation + Retained Habitats)	<i>Habitat units</i>	13.86%
	<i>Hedgerow units</i>	12.91%
	<i>River units</i>	0.00%

On-site habitat retention and enhancement

	Habitats	Hedgerows	Rivers
Total site area / length	124.82	12.66	0.00
Total site units	416.63	256.52	0.00

Area / length retained	12.86	7.65	0.00
Units Retained	121.06	174.19	0.00

Area / length enhanced	40.34	2.24	0.00
Baseline units enhanced	110.07	27.14	0.00

Area / length succession	0.00
Units succession	0.00

Area / length lost	71.62	2.77	0.00
Units lost	185.50	55.19	0.00

a lost by distinctiveness b:

Category	Area lost (hectares)	Area lost (%)
V.High	0	
High	0.099	0
Medium	1.06	2
Low	69.256	98
V.Low	0	

Figure 9 DEFRA Metric 2.0 Summary Table - Phase 1

Summary Figures

Net project biodiversity units (including all on-site & off-site habitat retention/creation)	<i>Habitat units</i>	5.70
	<i>Hedgerow units</i>	8.79
	<i>River units</i>	0.00

Total project biodiversity % change (including all On-site & Off-site Habitat Creation + Retained Habitats)	<i>Habitat units</i>	12.22%
	<i>Hedgerow units</i>	22.90%
	<i>River units</i>	0.00%

On-site habitat retention and enhancement

	Habitats	Hedgerows	Rivers
Total site area / length	16.84	2.08	0.00
Total site units	46.61	38.40	0.00

Area / length retained	0.75	1.11	0.00
Units Retained	5.60	25.37	0.00

Area / length enhanced	4.19	0.42	0.00
Baseline units enhanced	10.90	5.23	0.00

Area / length succession	0.00
Units succession	0.00

Area / length lost	11.90	0.55	0.00
Units lost	30.11	7.80	0.00

Area lost by distinctiveness b

Category	Area lost (hectares)	Area lost (%)
V.High	0	
High	0	
Medium	0.007	0
Low	11.889	100
V.Low	0	

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