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APPENDIX 9.10 - BNG FINAL ASSESSMENT

A technical note has been added to the front to note the additional hedgerow included in the revised Landscape Strategy means the Scheme achieves 10% BNG

WSP

A29 Realignment Biodiversity Net Gain Addendum

TO	Elaine Martin	FROM	Laura Moody
DATE	**28 April 2021**	CONFIDENTIALITY	**Confidential**
SUBJECT	**A29 Realignment Biodiversity Net Gain Addendum**		
Author	**Jess Grimbley**		
Approver	**Laura Moody**		

BACKGROUND

WSP UK Ltd. was commissioned by West Sussex County Council to undertake a Biodiversity Net Gain (BNG) assessment of the A29 Realignment (hereafter referred to as the 'Proposed Development').

The BNG assessment was undertaken in October 2020[1] and was based upon the Soft Landscape Plan[2]. The BNG assessment determined that the Proposed Development as assessed would result in a net gain of +44.53% for area-based habitat units (AHBU) and a no net loss of +3.85% for hedgerow units (HBU). It was determined that to achieve a quantitative 10% net gain for the Proposed Development, an additional 0.05km (50 metres) of native species-rich hedgerow within the red line boundary (RLB) would be required.

The Proposed Development as assessed complied with the majority of the Biodiversity Net Gain Good Practice Principles[3]. However, four of the ten Good Practice Principles were yet to be achieved. In order to comply with all principles, it was recommended that quantitative net gain in HBU was achieved, and consideration was made for longer-term management of habitats in the Landscape Maintenance and Monitoring Plan.

LANDSCAPE DESIGN AMENDMENTS

Following the BNG assessment, amendments to the landscape design were undertaken in October 2020[4]. These included additional hedgerow provision, and the relocation of a substation with other minor amendments included. The amendments were designed to address the deficit in HBU and address sight-line issues for the roundabout approach. It was not considered necessary to re-run the BNG calculations due to the minor amendments to the Proposed Development, and the limited anticipated impacts to the overall positive position (+44.53% net gain for area-based habitats).

The landscape design amendments proposed an additional 52 metres of native-species rich hedgerow (based on a review of the revised landscape design carried out by the WSP Landscape Architects Team).This would be sufficient for the Proposed Development to achieve 10% net gain in HBU.

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[1] WSP (2020). A29 Realignment Biodiversity Net Gain Assessment.
[2] WSP (2020). Soft Landscape Plan drawing no. A29-WSP-LA-GA-001 - Version 7-06.10.20.
[3] CIEEM, CIRIA & IEMA (2016). Biodiversity Net Gain: Good practice principles for development.
Available: https://cieem.net/resource/biodiversity-net-gain-good-practice-principles-for-development/ [Accessed 30.03.21].
[4] Jackson (2020). A29 Realignment Scheme. Landscape Planting and Seeding. Drawing Identifier: A29-CAP-EXX-00-DR-L-0066-0069.

The relocation of the substation was not anticipated to have significant impacts to the AHBU. Although the substation was relocated to an area of proposed woodland planting, woodland planting was revised to encircle the building. Therefore, overall woodland provision was not considered likely to be affected by the new substation location. In addition, it was considered that there would be little difference in the impact to baseline habitat due to a minor change in the RLB. Therefore the BNG position for area-based habitats was not considered to be significantly impacted by the amendments to the landscape design, and the Proposed Development would achieve over 10% net gain in AHBU.

CONCLUSION

The amendments to the landscape design of the Proposed Development would meet the requirements to achieve quantitative and qualitative net gain in biodiversity. It is recommended that further consideration is made to positively manage habitats for the benefit of biodiversity for a minimum of 30 years.

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West Sussex County Council

A29 REALIGNMENT

Biodiversity Net Gain Assessment

West Sussex County Council

A29 REALIGNMENT

Biodiversity Net Gain Assessment

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CONTENTS

TABLES

APPENDICES

APPENDIX A

CIEEM, CIRIA AND IEMA GOOD PRACTICE PRINCIPLES

APPENDIX B

BASELINE AND POST-DEVELOPMENT HABITAT MAPS

APPENDIX C

BIODIVERSITY NET GAIN POLICY AND LEGISLATION

APPENDIX D

BIODIVERSITY NET GAIN ASSESSMENT CALCULATIONS

EXECUTIVE SUMMARY

WSP UK Ltd. was commissioned by West Sussex County Council to undertake a Biodiversity Net Gain (BNG) assessment of the A29 Realignment Scheme. Current scheme design comprises construction of a new road to replace the existing A29 and is divided into two Phases; this BNG assessment covers Phase 1 of the A29 Realignment Scheme.

BNG is the desired result of a process applied to development so that overall, there is a positive outcome for biodiversity. The process itself follows the mitigation hierarchy, which sets out that everything possible must be done to firstly avoid, secondly minimise and thirdly compensate for unavoidable impacts on or off site.

To demonstrate a positive biodiversity outcome using this process, the project is assessed against the Construction Industry Research and Information Association (CIRIA), the Chartered Institute of Ecology and Environmental Management (CIEEM), and the Institute of Environmental Management and Assessment (IEMA) Biodiversity Net Gain Good Practice Principles (**Appendix A**).

The Natural England Biodiversity Metric 2.0 (hereafter referred to as the Metric) (Natural England, 2019) has been used to quantify the biodiversity value of existing habitats present on site (**Appendix B,** Figure 1) and those proposed under the current design of the post-development landscape design (**Appendix B,** Figure 2).

The Proposed Development will result in a net gain in AHBU (+44.53%) and a no net loss in HBU (+3.85%). Furthermore, the Proposed Development does not full comply with the Good Practice Principles. **Therefore, the Proposed Development does not achieve a scheme-wide biodiversity net gain.**

Biodiversity Units	Baseline Value	Post-development Value	Change in Units	Quantitative Outcome
Area-based Habitat Units (AHBU)	28.69	41.46*	+12.77	**Net Gain (+44.53%)**
Hedgerow Units (HBU)	4.50	4.67	+0.17	**No Net Loss (+3.85%)**

*These units are generated from retained and created habitats

In order to achieve a 10% biodiversity net gain position across the Proposed Development, an additional 0.05 km of Native Species Rich Hedgerow should be included in the landscape design. This would bring the total HBU to 4.95 and will achieve 10.10% net gain.

Consideration should be made to secure appropriate management of both retained and created habitats, such as the wildflower grasslands, and woodlands, to maintain biodiversity net gain over the long term.

1 INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1. WSP UK Ltd. was commissioned by West Sussex County Council to undertake a Biodiversity Net Gain (BNG) assessment of the A29 Realignment scheme (hereafter referred to as the "Proposed Development").

1.1.2. Current scheme design comprises construction of a new road to replace the existing A29 and is divided into two Phases; this BNG assessment covers Phase 1 of the Proposed Development. Proposed works include a single carriageway running to the north-east of Eastergate, which connects a new roundabout on the existing A29 Fontwell Avenue with a new roundabout on the existing Barnham Road.

1.1.3. The 'Site', measuring 11.83ha in extent based on its design at the time of this assessment, is defined by the Proposed Development's boundary which is shown on the baseline and post-development maps provided in **Appendix B.**

1.1.4. The Site is comprised of several semi-natural habitats including semi-improved neutral grassland, broadleaved woodland, orchard, hedgerows and scrub.

1.2 BIODIVERSITY NET GAIN

1.2.1. BNG is the end result of a process applied to development so that overall, there is a positive outcome for biodiversity. The process itself follows the mitigation hierarchy, which sets out that everything possible must be done to firstly avoid, secondly minimise and thirdly restore / rehabilitate losses of biodiversity on-site. Only as a last resort, residual losses are compensated for using biodiversity offsets, which are distinguished from other forms of mitigation in that they are off the development site. BNG assessment reports are intended to provide a detailed insight into the adherence of a Proposed Development to the BNG Good Practice Principles (**Appendix A**).

1.2.2. The benefit of undertaking a BNG assessment at this stage in the planning process is that results can be used to:

- Inform the ongoing design of ecological and landscape mitigation;
- Identify whether current Proposed Development design will likely achieve a net gain, net loss, or no net loss (NNL) for biodiversity; and,
- Demonstrate policy compliance in support of any decision-making.

1.2.3. Adopting a BNG approach can account for biodiversity losses which were previously not fully assessed and mitigated for, via legal and planning systems. Whilst some species are extensively protected, many are not; with the consequence that development can be 'legally compliant' but still result in biodiversity loss. The BNG approach guards against this, enabling development to contribute towards the national and global target of halting biodiversity loss by 2020 (DEFRA, 2011), and towards local and national strategies (listed below; detail provided in **Appendix C**) for conserving and enhancing wildlife. BNG assessments allow stakeholders to demonstrate adherence to national legislation and local policy concerning biodiversity.

1.2.4. Details of the legislation, policy and strategic documents relevant to the Proposed Development are provided in **Appendix C**, and are listed below:

1.3 RELEVANT LEGISLATION AND POLICY

1.3.1. This BNG assessment has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in England including:

- UK Government's 25 Year Environmental Plan (DEFRA, 2018);
- Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services (DEFRA, 2011);
- National Planning Policy Framework (NPPF) (MHCLG, 2019);
- National Policy Statement for National Networks (NPSNN) (Department for Transport, 2014);
- The Natural Environment and Rural Communities (NERC) Act (HMSO, 2006);
- West Sussex Structure Plan 2001-2016 (2005);
- West Sussex Transport Plan 2011-2026 (2011); and,
- Adoption Arun Local Plan 2011-2031 (2018).

2 METHODS

A summary of the BNG assessment methods and details of project-specific data sources, assessment limitations, and assumptions are provided in the following section.

2.1 DATA SOURCES

2.1.1. Several data sources informed the BNG assessment:

1. A Phase 1 habitat survey was undertaken in July 2018 by an experienced WSP ecologist following best practice guidelines (Joint Nature Conservation Committee (JNCC), 2010). This survey provided a baseline habitat database which details the habitat types present on Site, their area (ha) and their geographic distribution (**Appendix B,** Figure 1).

2. A thorough retrospective condition assessment of habitats was undertaken in June 2020 by an experienced habitat ecologist following consultation with the Phase 1 habitat surveyors. The condition assessment followed Farm Environment Plan (FEP) guidelines (Natural England, 2010).

3. Publicly available Open Source Natural England datasets for Habitats of Principal Importance (HPI)[1], ancient woodland (classed as irreplaceable habitat), and statutory designated sites for nature conservation.

4. The post-development landscape design (Soft Landscape Plan drawing no. A29-WSP-LA-GA-001 - Version 7-06.10.20 (WSP, 2020)) provided by WSP landscape architects received on 05 October 2020 and digitised into GIS for use in BNG calculations (**Appendix B**, Figure 2).

2.2 BNG ASSESSMENT

2.2.1. This BNG assessment uses the following industry recognised best practice methodologies:

- **CIEEM, IEMA & CIRIA** (2016). Biodiversity Net Gain: Good Practice Principles for Development;
- **CIEEM, IEMA & CIRIA** (2019). Biodiversity Net Gain. Good Practice Principles for Development. A Practical Guide;
- **Natural England** (2010). Higher Stewardship, Farm Environment Plan (FEP) Manual, 3rd Edition; and,
- **Natural England** (2019). The Biodiversity Metric 2.0: auditing and accounting for biodiversity user guide (Beta Version).

2.2.2. BNG assessment calculations are separated into four key sections which are used to produce the quantitative outcomes of the assessment. They are:

---

[1] Statutory lists of priority habitats in England as required under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, available at http://www.legislation.gov.uk/ukpga/2006/16/contents

1. Separating out irreplaceable baseline habitats and any mitigation proposed for impacts to irreplaceable habitats, from the main data set;

2. Quantification of baseline biodiversity units using Phase 1 habitat data and habitat condition assessment data;

3. Quantification of post-development biodiversity units using Phase 1 habitat data translated from the post-development landscape design; and

4. Assessing the net change in biodiversity value as a result of the Proposed Development.

2.2.3. The quantitative outcomes of the BNG assessment calculations can then be categorised as achieving one of the outcomes listed in **Table 2-1**. The quantitative outcome awarded to the Proposed Development will be dependent on the Area-based Habitat Units (AHBU) or Hedgerow Units HBU) value with the lowest net percentage change.

Table 2-1 – Quantitative Outcomes of BNG Calculations (Taken from GN36 BREEAM 2018)

Post-development Biodiversity Value	Predicted Scheme-wide Outcome
Less than 95% of the baseline value	Net loss (NL) of biodiversity
95% - 104% of baseline value	No net loss (NNL) of biodiversity
105% or more of baseline value	Biodiversity net gain (BNG)

2.2.4. Collectively these elements of the BNG assessment are used in conjunction with qualitative information relating to the BNG Good Practice Principles to produce a scheme wide BNG assessment outcome. Further detail can be found on the Natural England website (Natural England, 2019).

2.2.5. It is important to recognise that the quantification of biodiversity is one of several factors to be considered when assessing the impact of the Proposed Development on biodiversity. Please note that this BNG assessment report does not cover potential impacts of the Proposed Development on protected species and designated sites. These are covered within the Preliminary Ecological Appraisal (PEA) (WSP, 2018)

2.2.6. JNCC Phase 1 habitat types determined in the habitat survey were translated to UK Habitat Classification (UKHab) (UKHab, 2018) habitat types using the habitat translation information provided in the Metric toolkit, to allow use in the Metric calculations. Retained habitats in the post-development landscape design maintained the UKHab type assigned to the baseline.

2.2.7. In the Metric, distinctiveness is pre-assigned for each habitat based upon the UKHab system.

2.2.8. Habitat connectivity values were assigned according to the Metric assumptions of medium (1.1 multiplier score) connectivity assigned to high and very high distinctiveness habitats, and low (1 multiplier score) for all other habitats.

2.3 LIMITATIONS AND ASSUMPTIONS

The following assumptions and limitations were applied when using the above methodologies. None of the present limitations were considered to be significant.

BASELINE

2.3.1. Identification of some baseline habitats was undertaken using aerial imagery due to inaccessibility to surveyors during the Phase 1 habitat survey. These habitats included small parcels of scrub, grassland, tall ruderal and hardstanding.

2.3.2. Three parcels of traditional orchard HPI were identified within the Site boundary during the initial BNG assessment. Due to a lack of management in recent years, two of these parcels that were once orchard habitat have developed into scrub or woodland habitat, and no longer qualify as traditional orchard HPI. This was identified during the retrospective condition assessment activity in June 2020. Within the baseline habitat assessment these two parcels were instead captured as "woodland and forest - lowland mixed deciduous woodland" and "heathland and shrub - mixed scrub". One parcel of traditional orchard HPI remains within the Site boundary.

2.3.3. It was assumed that the pond within the Site boundary did not qualify as an HPI. The pond was in poor condition, being primarily filled via irrigation run-off from adjacent horticulture, and set within a non-natural landscape. Presence/absence surveys determined there to be an absence of great crested newts (*Triturus cristatus*) (WSP, 2019). As such it was determined by an experienced habitat ecologist that this waterbody did not meet the criteria to qualify as pond HPI.

2.3.4. The condition assessment of habitats was undertaken retrospectively. However, it was considered to be a robust assessment of habitat condition as the assessment was undertaken by an experienced habitat ecologist. The task was supplemented via consultation with the Phase 1 habitat surveyors, in combination with information from satellite imagery and information provided in the PEA (WSP, 2018).

2.3.5. Only direct impacts within the red line boundary of the Proposed Development were considered at this time. Any impacts on protected species, and indirect habitat impacts (including dust, shading and nutrient deposition) should be addressed separately from this assessment. These have been addressed in the Environmental Statement (WSP, 2020) and are not considered within this report.

2.3.6. Identification of additional baseline habitats following an update to the redline boundary was undertaken using aerial imagery and existing Phase 1 data from neighbouring habitats. Where habitat is temporarily lost, it is assumed that habitats would be reinstated back to the original habitat type and condition on completion of construction.

2.3.7. Upon review of the WSCC Structure Plan: Strategic Policy, all habitats were assigned a low strategic significance score as the site is not located in areas identified for biodiversity or green infrastructure importance. Documents reviewed included the WSCC Transport Plan and Arun Adopted Local Plan.

POST-DEVELOPMENT

2.3.8. Wet grassland and wildflower meadow have been translated from the post-development landscape design into UKHab. Analysis of the proposed location and species list of this habitat by an experienced habitat ecologist has resulted in the translation of this habitat into "grassland - other neutral grassland" for the purpose of the BNG calculations. This is to ensure that the biodiversity value likely to be produced from the planting scheme is adequately captured. All areas of "grassland - other neutral grassland" have been assumed to achieve "moderate" condition.

2.3.9. It is assumed that all other grassland to be created or returned is assumed to be "Urban – Amenity Grassland" and will achieve a poor condition if used for agricultural purposes.

2.3.10. It has been assumed that attenuation ponds included within the post-development landscape design will have sufficient water levels to classify as a pond but will achieve a moderate condition, as the ponds will be lined, and will be set within a managed habitat.

2.3.11. The woodland creation across the scheme is assumed to meet the criteria of a high distinctiveness "woodland and forest – lowland mixed deciduous woodland" habitat in good condition. This was chosen due to the location of the woodland as well as its size and shape.

2.3.12. It is assumed that the proposed orchard habitat will be managed in a traditional manner in order to meet like-for-like habitat replacement to compensate for loss of traditional orchard HPI. A target condition of "poor" is assumed to be achievable due to the presence of scrub between trees and a density of trees of less than 50 per ha.

2.3.13. Habitat connectivity values were assigned according to the Metric default assumptions, based on habitat distinctiveness scores. Connectivity is assumed to be medium for high and very high distinctiveness habitats and low for low and medium distinctiveness habitats.

3 RESULTS

A summary of the BNG assessment calculation quantitative outcomes are presented in this results section.

3.1 BASELINE BIODIVERSITY

3.1.1. The biodiversity baseline for the Site is based on habitat types and areas, their distinctiveness and condition scores, and the number of biodiversity units each type of habitat generated (**Appendix D,** Table D-1, Table D-2). The baseline biodiversity map showing the habitats within the Site is included in **Appendix B,** Figure 1**.**

3.1.2. There were no irreplaceable habitats or statutory designated sites within the Site, therefore these are not discussed further within this report.

3.1.3. The HPI habitats identified within the Site are summarised in **Table 3-1** below and shown in **Appendix B,** Figure 1. Like-for-like habitat compensation is required for the loss of HPI.

Table 3-1 – HPI Habitat Summary

HPI Habitat	Area / Length	Biodiversity Units
Traditional Orchards	0.67 ha	4.42 AHBU
Woodland and forest - Lowland mixed deciduous woodland	0.18 ha	1.19 AHBU
Native Hedgerow	0.41 km	2.46 HU

3.1.4. There were no watercourses present within the baseline or Proposed Development, therefore watercourse units were not assessed and are not discussed further within this report.

3.1.5. Within the Site, AHBU total 11.83 ha and generates 28.69 AHBU. Linear hedgerow habitat totals 0.82km and generates 4.50 HBU (**Appendix D,** Table D-1, Table D-2).

3.1.6. For the purpose of the BNG calculations, habitats are translated from JNCC Phsae 1 into UKHab. The translations for the baseline (**Appendix B,** Figure 1) are summarised in **Table 3-2** below.

Table 3-2 – Habitat Translations from Landscape to UKHab – Baseline

JNCC Phase 1 Habitat	UKHab Habitat
J1.1 - Cultivated/disturbed land - arable	Cropland - Horticulture
A1.1.2 Broadleaved woodland – plantation	Cropland - Traditional orchards
B2.2 - Neutral grassland - semi-improved	Grassland - Modified grassland
A2.1 – Scrub – dense/continuous; A2.2 – Scrub – scattered	Heathland and shrub - Mixed scrub
Standing water	Lakes - Ponds (Non- Priority Habitat)
C3.1 - Other tall herb and fern - ruderal	Sparsely vegetated land - Ruderal/Ephemeral
J1.2 - Cultivated/disturbed land - amenity grassland	Urban - Amenity grassland

J3.6 – Buildings; HS - Hard standing	Urban - Developed land; sealed surface
J4 - Bare ground	Urban - Vacant/derelict land/ bareground
A1.1.1 Broadleaved woodland – semi-natural	Woodland and forest - Lowland mixed deciduous woodland
A3.1 Broadleaved Parkland/scattered trees	Woodland and forest - Other woodland; broadleaved
A3.1 Broadleaved Parkland/scattered trees	Line of trees (ecologically valuable)
A3.2 Coniferous Parkland/scattered trees	Line of trees
J2.1.2 Intact hedge – species-poor	Species-poor intact hedgerow

3.2 POST-DEVELOPMENT BIODIVERSITY

3.2.1. The post-development habitats expected on Site after construction are based on the landscape design (**Appendix B**, Figure 2). The landscape design identified the retention of some baseline habitats as well as the creation of new habitats.

3.2.2. Post-development, the retained and created area-based habitats total 11.83ha and generate a total of 41.46 AHBU. Retained habitats total 0.45ha and generate 2.77 AHBU and created habitats total 11.38ha and generate 38.69 AHBU (**Appendix D,** Table D-1, Table D-3).

3.2.3. The post-development created linear hedgerow habitat totals 0.83km and generates a total of 4.67HBU (**Appendix D,** Table D-2, Table D-4).

3.2.4. The habitat translations from JNCC Phase 1 into UKHab for the post-development (**Appendix B,** Figure 2) are summarised in **Table 3-3** below.

Table 3-3 – Habitat Translations from Landscape to UKHab – Post-development

JNCC Phase 1 Habitat	UKHab Habitat
A1.1.1 - Broadleaved woodland - semi-natural	Cropland - Traditional orchards
A1.1.2 - Broadleaved woodland - plantation	Woodland and forest - Lowland mixed deciduous woodland
A2.1 - Scrub - dense/continuous	Heathland and shrub - Mixed scrub
B2.2 - Neutral grassland - semi-improved F2.2 - Marginal and inundation - inundation vegetation	Grassland - Other neutral grassland
G1 - Standing Water	Lakes - Ponds (Non- Priority Habitat)
J1.1 - Cultivated/disturbed land – arable J1.2 - Cultivated/disturbed land - amenity grassland	Urban - Amenity grassland
J1.4 - Introduced shrub	Urban - Introduced shrub
J4 - Bare ground HS - Hard standing	Urban - Developed land; sealed surface
J2.1.1 - Intact hedge - native species-rich	Native Species Rich Hedgerow

3.3 SUMMARY OF OVERALL BIODIVERSITY CHANGE

3.3.1. **Table 3-4** summarises the overall biodiversity change from the baseline and post-development landscape design (**Appendix D,** Table D-5).

Table 3-4 – Summary of Results

Biodiversity Units	Baseline Value	Post-development Value	Change in Units	Percentage Outcome
Area-based Habitat Units (AHBU)	28.69	41.46*	+12.77	**Net Gain (+44.53%)**
Hedgerow Units (HBU)	4.50	4.67	+0.17	**No Net Loss (+3.85%)**

*These units are generated from retained and created habitats.

3.4 BIODIVERSITY NET GAIN PRINCIPLES

3.4.1. **Table 3-5** discusses adherence of the Proposed Development to each of the BNG Good Practice Principles.

Table 3-5 - Evidence of Project Compliance with BNG Good Practice Principles

Principle	Description	Evidence	Current Outcome
1. Apply the mitigation hierarchy	Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.	The landscape design for the Proposed Development will: • Compensate for negative impacts by creating new, biologically valuable habitats on Site. This will be achieved by adherence to monitoring techniques set out in the Landscape Maintenance and Monitoring Plan (LMMP). • Achieve net gain via on-site habitat compensation. • Retain scattered trees where possible, and an appropriate root protection zone was implemented around them. Ensure like-for-like compensation of HPI.	Achieved
2. Avoid losing biodiversity that cannot be offset by gains elsewhere	Avoid impacts on irreplaceable biodiversity – these impacts cannot be offset to achieve No Net Loss or Net Gain.	No irreplaceable habitats will be impacted by the Proposed Development.	Achieved
3. Be inclusive and equitable	Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to Net Gain. Achieve Net Gain in partnership with stakeholders where possible and share the benefits fairly among stakeholders.	The BNG outcome is to be shared with relevant stakeholders through delivery of the Proposed Development.	Achieved

4. Address risks	Mitigate difficulty, uncertainty and other risks to achieving Net Gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.	The BNG assessment used industry recognised risk multipliers from the Metric.	Achieved
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.	The BNG assessment determined a quantitative: • Net gain for habitats AHBU (+44.53% AHBU). • No net loss for hedgerows HBU (+3.85% HBU). Consideration should be made to include an additional 0.05km of hedgerow habitat within the landscape design.	Not Achieved
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 when: • Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses; • Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation; • Achieving Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels; and, • Enhancing existing or creating new habitat. Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity.	At the time of writing, this BNG assessment used the most recent data and followed a rigorous method and QA process. Area-based habitat types have been compensated for using the "like-for-like or better approach" with the exception of hedgerow habitats. Net gain will be achieved for these habitats via on-site habitat compensation. Linear habitat types have not been compensated for using the "like-for-like or better approach". Consideration should be made to include an additional 0.05km of hedgerow habitat within the landscape design. Creation of linear medium-distinctiveness habitats along roadsides supports ecological connectivity. Attenuation ponds have been designed to appear as natural as possible.	Not Achieved

| 7. Be additional | Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e. do not deliver something that would occur anyway). | The nature conservation outcomes within legislation and policy (**Appendix C**) have been met and exceeded for area-based and hedgerow habitats.

Required provision of like-for-like traditional orchard and lowland woodland HPI creation has been met and exceeded.

Required provision of like-for-like native hedgerow HPI creation has not been met. | Not Achieved |
|---|---|---|---|
| 8. Create a Net Gain legacy | Ensure Net Gain generates long-term benefits by:
• Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity;
• Planning for adaptive management and securing dedicated funding for long-term management;
• Designing Net Gain for biodiversity to be resilient to external factors, especially climate change;
• Mitigating risks from other land uses;
• Avoiding displacing harmful activities from one location to another; and
• Supporting local-level management of Net Gain activities. | The LMMP associated with the Proposed Development will include measures to maintain the created habitat, however this is currently proposed for a period of 5 years.

Consideration should be made to include to carry out appropriately designed habitat management practices to ensure habitat target conditions are met and maintained in the longer term.

Inclusion of attenuation ponds mitigates for the risk of flooding.

Provision of pathways, benches and wayfinders will result in the created habitats being accessible for the general public to enjoy. | Not Achieved |
| 9. Optimise sustainability | Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy. | This BNG assessment is being used to inform the Proposed Development's design to provide better outcomes for biodiversity. The landscape design considers the BNG requirements as well as sustainability requirements and aims to address the two so that they are delivered together where possible. Wider environmental and sustainability benefits of the Proposed Development are discussed in the Environmental Statement. | Achieved |

10. Be transparent	Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.	The BNG outcome is to be shared with relevant stakeholders through delivery of the Scheme.	Achieved

4 DISCUSSION

4.1.1. The Proposed Development will result in a net gain in AHBU (+44.53%) and a no net loss in HBU (+3.85%). Furthermore, the Proposed Development does not full comply with the Good Practice Principles. Therefore, the Proposed Development does not achieve a quantitative scheme-wide biodiversity net gain.

4.1.2. In order to achieve a 10% biodiversity net gain position across the Proposed Development, an additional 0.05 km of Native Species Rich Hedgerow should be included in the landscape design. This would bring the total HBU to 4.95 and will achieve 10.10% net gain.

4.1.3. In order to meet compliance with the Good Practice Principles, securing appropriate management of both retained and created habitats, such as the wildflower grasslands, and woodlands, should be considered to maintain biodiversity net gain over the long term.

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Appendix A

CIEEM, CIRIA AND IEMA GOOD PRACTICE PRINCIPLES

WSP

Biodiversity Net Gain
Good practice principles for development

Biodiversity Net Gain is development that leaves biodiversity in a better state than before. It is also an approach where developers work with local governments, wildlife groups, land owners and other stakeholders in order to support their priorities for nature conservation. These ten principles set out good practice for achieving Biodiversity Net Gain and must be applied all together, as one approach.

Principle 1. Apply the Mitigation Hierarchy

Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.

Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere

Avoid impacts on irreplaceable biodiversity – these impacts cannot be offset to achieve No Net Loss or Net Gain.

Principle 3. Be inclusive and equitable

Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to Net Gain. Achieve Net Gain in partnership with stakeholders where possible, and share the benefits fairly among stakeholders.

Principle 4. Address risks

Mitigate difficulty, uncertainty and other risks to achieving Net Gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.

Principle 5. Make a measurable Net Gain contribution

Achieve a measurable, overall gain[1] for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.

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[1] Net Gain has been described as a measurable target for development projects where impacts on biodiversity are outweighed by a clear mitigation hierarchy approach to first avoid and then minimise impacts, including through restoration and / or compensation. Adhering to these Net Gain principles (i.e. pursuing all principles together) will help in under-pinning good practice for achieving and sustaining Net Gain.

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 when:

- Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses

- Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation

- Achieving Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels

- Enhancing existing or creating new habitat

- Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity

---

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 Net Gain generates long-term benefits by:

- Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity[2]

- Planning for adaptive management and securing dedicated funding for long-term management

- Designing Net Gain for biodiversity to be resilient to external factors, especially climate change

- Mitigating risks from other land uses

- Avoiding displacing harmful activities from one location to another

- Supporting local-level management of Net Gain activities

Principle 9. Optimise sustainability

Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.

Principle 10. Be transparent

Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

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2 Biodiversity compensation should be planned for a sustained Net Gain over the longest possible timeframe. For development in the UK, the expectation is that compensation sites will be secured for at least the lifetime of the development (e.g. often 25-30 years) with the objective of Net Gain management continuing in the future.

Appendix B

BASELINE AND POST-DEVELOPMENT HABITAT MAPS
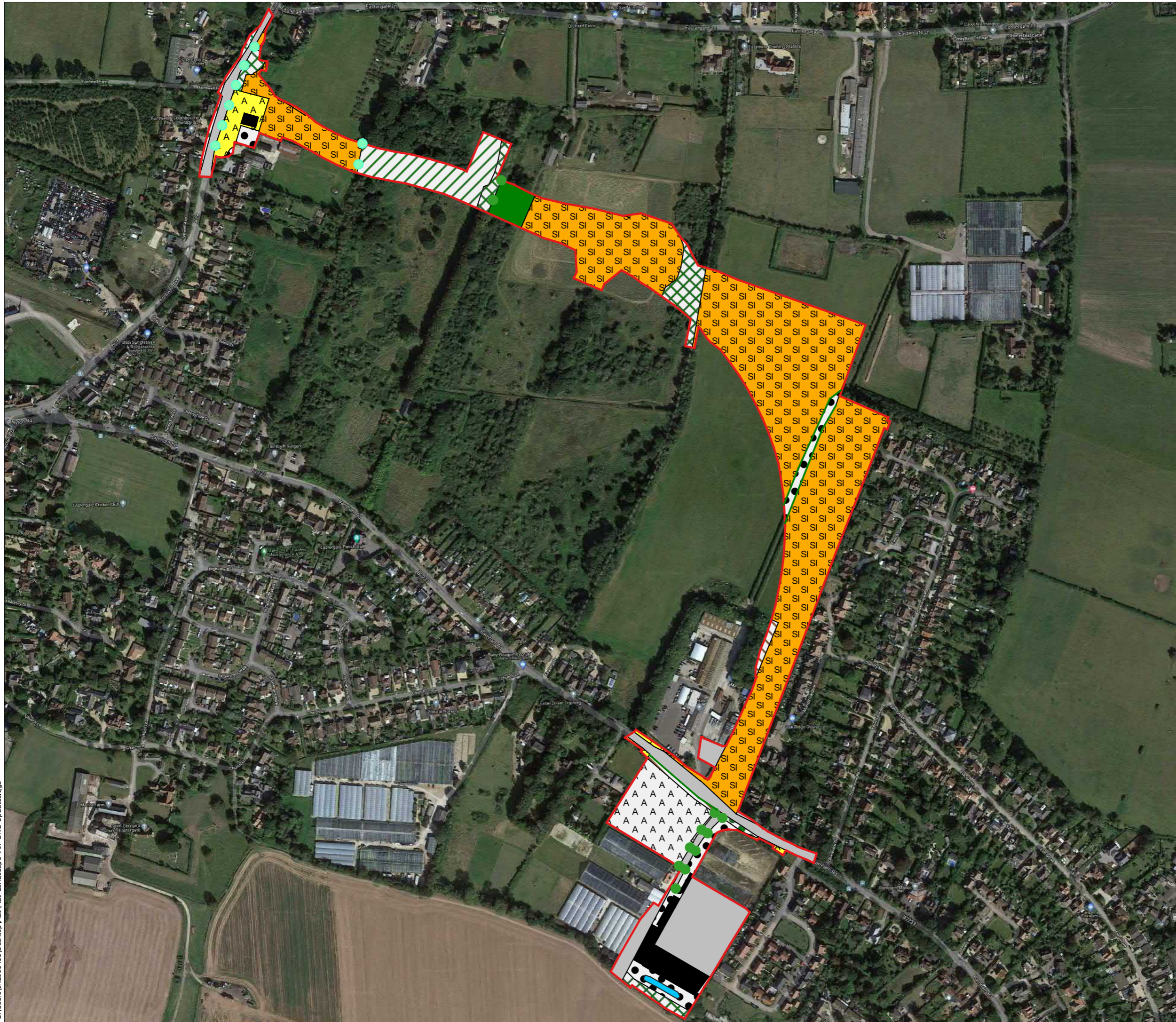
LEGEND:

| | Red Line Boundary |

Phase 1 Habitat Type

	A1.1.1 - Broadleaved woodland - semi-natural
	A1.1.2 - Broadleaved woodland - plantation
	A2.1 - Scrub - dense/continuous
	A2.2 - Scrub - scattered
	A3.1 - Broadleaved Parkland/scattered trees
	B2.2 - Neutral grassland - semi-improved
	C3.1 - Other tall herb and fern - ruderal
	Standing Water
	J1.1 - Cultivated/disturbed land - arable
	J1.2 - Cultivated/disturbed land - amenity grassland
	J3.6 - Buildings
	J4 - Bare ground
	HS - Hard standing
	Broadleaved Parkland/scattered trees
	Coniferous Parkland/scattered trees
	Intact hedge - species-poor

STATUS:

FOR INFORMATION ONLY

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PROJECT:

A29 Phase 1 Planning Application

TITLE:

Phase 1 Habitat Plan

SCALE @A3:	DRAWN:	APPROVED:
1:4200	SJ	VA
VERSION:	DATE:	DATE:
01	09/10/20	16/10/20
PROJECT No:	DRAWING No:	
70055091	01	

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LEGEND:

☐ Red Line Boundary

Habitat Type

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.1.2 - Broadleaved woodland - plantation
- A2.1 - Scrub - dense/continuous
- B2.2 - Neutral grassland - semi-improved
- F2.2 - Marginal and inundation - inundation vegetation
- G1 - Standing Water
- J1.1 - Cultivated/disturbed land - arable
- J1.2 - Cultivated/disturbed land - amenity grassland
- J1.4 - Introduced shrub
- J4 - Bare ground
- HS - Hard standing
- J2.1.1 - Intact hedge - native species-rich

STATUS:

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PROJECT:

A29 Phase 1 Planning Application

TITLE:

Post Development Plan

SCALE @A3:	DRAWN:	APPROVED:
1:4200	SJ	VA

VERSION:	DATE:	DATE:
01	09/10/20	16/10/20

PROJECT No:	DRAWING No:
70055091	02

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Appendix C

BIODIVERSITY NET GAIN POLICY AND LEGISLATION

BIODIVERSITY NET GAIN POLICY AND LEGISLATION

NATIONAL LEGISLATION

UK GOVERNMENT'S 25 YEAR ENVIRONMENT PLAN

The UK Government's 25 Year Environment Plan (DEFRA, 2018) states a desire to '*embed a 'net environmental gain' principle for development to deliver environmental improvements locally and nationally*' and plans to consult on making Biodiversity Net Gain a mandatory requirement.

On 14th March 2019, Her Majesty's Treasury confirmed that following consultation, the government will use the forthcoming Environment Bill to mandate BNG for development in England, ensuring that the delivery of much-needed infrastructure and housing is not at the expense of vital biodiversity.

BIODIVERSITY 2020: A STRATEGY FOR ENGLAND'S WILDLIFE AND ECOSYSTEM SERVICES

Biodiversity 2020: A strategy for England's wildlife and ecosystem services (DEFRA, 2011) is the national strategy for biodiversity. This sets out an ambition to halt the loss of biodiversity and see an increase in the area of priority habitats by 200,000 ha by 2020. Biodiversity 2020 sets in policy the objectives to improve our wildlife sites, make them bigger, develop more of them and join them up (summarised as 'Bigger, Better, More and Joined').

NATIONAL PLANNING POLICY FRAMEWORK

The revised National Planning Policy Framework (NPPF) (MHCLG, 2019) refers to conserving and enhancing the natural environment. This requires Local Authorities in England to take measures to:

- Conserve and enhance biodiversity;
- Protect the habitats of these species from further decline;
- Protect the species from the adverse effect of development; and
- Refuse planning permission for development, if significant harm resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for.

Although not currently a legal obligation, the revised NPPF refers to biodiversity and environmental net gains in the following paragraphs:

- Transport Infrastructure
  - Paragraph 102. "*Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:*
    *d) the environmental impacts of traffic and transport infrastructure can be identified assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for **net environmental gains.**"*

- Planning decisions
  - Paragraph 118. "*Planning decisions and planning policy should a) encourage multiple benefits from both urban and rural land … and taking opportunities to **achieve net environmental gains - such as developments that would enable new habitat creation**.*"

- Paragraph 170. *"Planning policies and decisions should contribute to and enhance the natural and local environment by: … d) minimising impacts on and **providing net gains** for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures."*
- Paragraph 174. "*To protect and enhance biodiversity and geodiversity plans should b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing **measurable net gains for biodiversity**.*"
- Paragraph 175. "*When determining planning applications, local planning authorities should apply the following principles: a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts) adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; … and d) … opportunities to incorporate biodiversity improvements in and around developments, especially where this can secure **measurable net gains for biodiversity**.*"

NATIONAL POLICY STATEMENT FOR NATIONAL NETWORKS

The National Policy Statement for National Networks (NPSNN) (Department for Transport, 2014) paragraph 5.23 states that:

- "*The applicant should show how the project has taken advantage of opportunities to **conserve and enhance biodiversity** and geological conservation interests.*"

Maintaining no net loss of biodiversity as a result of the Proposed Development is consistent with the policy aims of Paragraph 5.25 of the NPSNN, which states:

- "*As a general principle, and subject to the specific policies below, development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. The applicant may also wish to make use of **biodiversity offsetting** in devising compensation proposals to counteract any impacts on biodiversity which cannot be avoided or mitigated. Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought.*"

This sets out that any loss should be compensated for to achieve no net loss or net gain by replacing habitats, exploring the potential for enhancing them, and managing retained features.

NATURAL ENVIRONMENT AND RURAL COUNTRYSIDE ACT

The Natural Environment and Rural Countryside (NERC) Act (HMSO, 2006) requires public bodies, including local authorities, '*to have regard to the conservation of biodiversity in England when carrying out their normal functions*'.

Section 40 sets out that:

- Paragraph 1. *"Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity";* and that
- Paragraph 3. *"Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat".*

Section 41 sets out that:

- Paragraph 1. *"The Secretary of State must… publish a list of the living organisms and types of habitat … of principal importance for the purpose of conserving biodiversity"* based on consultation with Natural England*;* and that
- Paragraph 3a. Every planning authority must *"a) take such steps… to further the conservation of the living organisms and types of habitat included in any list published under this section, or (b) promote the taking by others of such steps".*

LOCAL POLICY

WEST SUSSEX STRUCTURE PLAN: STRATEGIC POLICY

The West Sussex Structure Plan (WSCC, 2005) was referenced. This document has no formal status, but '*Though the Plan has no formal status in the current planning system, it remains our strategic policy statement for future development and land-use planning'*.

- Policy ERA2 relates to Nature Conservation, stating; *"Development should not be permitted unless the wide range of habitats, species and geological features of the County will be protected, conserved and, where possible, enhanced particularly through long-term management mechanisms and habitat creation schemes."*

- The Structure Plan aims to *"Protect the environment and use the natural resources and assets of West Sussex wisely by:… safeguarding biodiversity and geology and, where possible, increasing biodiversity."*

WEST SUSSEX TRANSPORT PLAN

The West Sussex Transport Plan (2011) was subject to a Strategic Environmental Assessment (SEA) at the time of publishing which identified that;

- '*Mitigation is required to avoid negative impacts on biodiversity. This will include using green infrastructure to improve the connectivity of hedge lines to reconnect habitats, for example a 'Notable Verge' strategy is already in place*; and

- *The impact of the* [Local Transport Plan] *is dependent on taking opportunities to improve green infrastructure, particularly in new development, and in the* [South Downs National Park] *where existing green infrastructure can be disjointed.'*

ARUN ADOPTED LOCAL PLAN

- The Adopted Arun Local Plan (Arun District Council, 2018) contains a number of policies relating to biodiversity, of which Policy ENV SP1 Natural Environment and Policy ENV DM5 Development and Biodiversity are the most pertinent.

- Policy ENV SP1, Natural Environment States '*Arun District Council will encourage and promote the preservation, restoration and enhancement of biodiversity and the natural environment through the development process and particularly through policies for the protection of both designated and non-designated sites. Where possible it shall also promote the creation of new areas for habitats and species. In relation to designated sites, development will be permitted*

where it protects sites listed in Tables 17.1-17.6 that are recognised for the species and habitats contained within them'.

- Policy ENV DM5 Development and Biodiversity states '*Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement.*' And;

- '*Where there is evidence of a protected species on a Proposed Scheme site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person.*'

At a local level, the West Sussex Transport Plan 2011-2026, the West Sussex Structure Plan 2001-2016 and the Adoption Arun Local Plan 2011-2031 all include specific reference to the requirement for proposals to include enhancement measures. For example, Policy ENV DM5 of the Adoption Arun Local Plan states;

- '*Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement.*'

Appendix D

BIODIVERSITY NET GAIN ASSESSMENT CALCULATIONS

wsp

A-1 Site Habitat Baseline

Ref	Broad Habitat	Habitat type	Area (hectares)	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Suggested action to address habitat losses	Total habitat units	Area retained	Area enhanced	Area succession	Baseline units retained	Baseline units enhanced	Baseline units succession	Area lost	Units lost	Bespoke compensation agreed for unacceptable losses	Assessor comments	Reviewer comments
1	Cropland	Cropland - Horticulture	0.81	Low	2	N/A - Agricultural	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	1.62				0.00	0.00	0.00	0.81	1.62			
2	Cropland	Cropland - Traditional orchards	0.67	High	6	Poor	1	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required	4.42	0.25			1.65	0.00	0.00	0.42	2.77			
3	Grassland	Grassland - Modified grassland	6.82	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	13.64	0.03			0.06	0.00	0.00	6.79	13.58			
4	Heathland and shrub	Heathland and shrub - Mixed scrub	0.29	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	2.32	0.12			0.96	0.00	0.00	0.17	1.36			
5	Heathland and shrub	Heathland and shrub - Mixed scrub	0.28	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	3.36				0.00	0.00	0.00	0.28	3.36			
6	Lakes	Lakes - Ponds (Non- Priority Habitat)	0.03	High	6	Poor	1	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required	0.20				0.00	0.00	0.00	0.03	0.20			
7	Sparsely vegetated land	Sparsely vegetated land - Ruderal/Ephemeral	0.1	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.20				0.00	0.00	0.00	0.10	0.20			
8	Urban	Urban - Amenity grassland	0.28	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.56				0.00	0.00	0.00	0.28	0.56			
9	Urban	Urban - Developed land; sealed surface	1.88	V.Low	0	N/A - Other	0	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Compensation Not Required	0.00				0.00	0.00	0.00	1.88	0.00			
10	Urban	Urban - Vacant/derelict land/ bareground	0.47	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness or better habitat required	0.94	0.05			0.10	0.00	0.00	0.42	0.84			
11	Woodland and forest	Woodland and forest - Lowland mixed deciduous woodland	0.18	High	6	Poor	1	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same habitat required	1.19				0.00	0.00	0.00	0.18	1.19			
12	Woodland and forest	Woodland and forest - Other woodland; broadleaved	0.02	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same broad habitat or a higher distinctiveness habitat required	0.24				0.00	0.00	0.00	0.02	0.24			
13																										
14																										
15																										
16																										
17																										
		Total site area ha	11.83												Total Site baseline 28.69	0.45	0.00	0.00	2.77	0.00	0.00	11.38	25.92			

A-2 Site Habitat Creation

| Condense / Show Columns | Condense / Show Rows |
| Main Menu | Instructions |

| | | | | | | Post development/ post intervention habitats | | | | | | | | | | | Comments | | |
| Proposed habitat | Area (hectares) | Distinctiveness | Score | Condition | Score | Ecological connectivity | | | Strategic significance | | | Temporal multiplier | | Difficulty multipliers | | Habitat units delivered | | | |
						Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier	Difficulty of creation category	Difficulty of creation multiplier		Assessor comments	Reviewer comments	
Cropland - Traditional orchards	1.62	High	6	Poor	1	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	5	0.837	Low	1	8.95			
Grassland - Other neutral grassland	1.16	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10	0.700	Low	1	6.50			
Heathland and shrub - Mixed scrub	1.9	Medium	4	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	3	0.899	Low	1	13.66			
Lakes - Ponds (Non- Priority Habitat)	0.35	High	6	Moderate	2	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	3	0.899	Low	1	4.15			
Urban - Amenity grassland	1.35	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	2.61			
Urban - Developed land; sealed surface	3.61	V.Low	0	N/A - Other	0	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	0	1.000	Low	1	0.00			
Urban - Introduced shrub	0.47	Low	2	Poor	1	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	1	0.965	Low	1	0.91			
Woodland and forest - Lowland mixed deciduous woodland	0.92	High	6	Good	3	Medium	Moderately connected habitat	1.1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	32+	0.320	High	0.33	1.92			
Totals	11.38															Total Units	38.69		

B-1 Site Hedge Baseline

Condense / Show Columns | Condense / Show Rows
Main Menu | Instructions

Baseline ref	Hedge number	Hedgerow type	length KM	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Suggested action to address habitat losses	Total hedgerow units	Length retained	Length enhanced	Units retained	Units enhanced	Length lost	Units lost	Assessor comments	Reviewer comments
1		Line of Trees	0.36	Low	2	Moderate	2	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	1.44			0	0	0.36	1.44		
2		Line of Trees (Ecologically Valuable)	0.05	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Like for like or better	0.6			0	0	0.05	0.6		
3		Native Hedgerow	0.41	Low	2	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	Same distinctiveness band or better	2.46			0	0	0.41	2.46		
4																							
5																							
6																							
7																							
8																							
		Total Site length/KM	0.82											Total Site baseline	4.50	0.00	0.00	0.00	0.00	0.82	4.50		

B-2 Site Hedge Creation

Condense / Show Columns   Condense / Show Rows

Main Menu   Instructions

Baseline ref	New hedge number	Proposed habitats		Habitat distinctiveness		Habitat condition		Multipliers						Temporal multiplier		Difficulty of creation multiplier	Hedge units delivered	Comments	
								Spatial quality											
								Ecological connectivity			Strategic significance								
		Habitat type	Length km	Distinctiveness	Score	Condition	Score	Ecological connectivity	Connectivity	Connectivity multiplier	Strategic significance	Strategic significance	Strategic position multiplier	Time to target condition/years	Time to target multiplier			Assessor comments	Reviewer comments
1		Native Species Rich Hedgerow	0.83	Medium	4	Good	3	Low	Unconnected habitat	1	Area/compensation not in local strategy/ no local strategy	Low Strategic Significance	1	10	0.700	0.67	4.67		
2																			
3																			
4																			
5																			
		Creation Length/KM	0.83														4.67		

Return to
results menu

On-site baseline	Habitat units	28.69
	Hedgerow units	4.50
	River units	0.00

On-site post-intervention	Habitat units	41.46
(Including habitat retention, creation, enhancement & succession)	Hedgerow units	4.67
	River units	0.00

Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00

Off-site post-intervention	Habitat units	0.00
(Including habitat retention, creation, enhancement & succession)	Hedgerow units	0.00
	River units	0.00

Total net unit change	Habitat units	12.77
(including all on-site & off-site habitat retention/creation)	Hedgerow units	0.17
	River units	0.00

Total net % change	Habitat units	44.53%
(including all on-site & off-site habitat creation + retained habitats)	Hedgerow units	3.85%
	River units	0.00%