WATERWAY DRAINAGE ENGINEERING

BIODIVERSITY NET GAIN ASSESSMENT

Scalegill Hall
Moor Row
Cumberland
CA24 3JY

February 2025
2025-005
Rev A

CONTENTS

APPENDICES

1.0 INTRODUCTION

1.1 PURPOSE OF THIS REPORT

Waterway Drainage Engineering Ltd were requested to undertake a Biodiversity Net Gain (BNG) assessment for the erection of 22 new dwellings at Scalegill Hall, on land to the west of Moor Row, adjacent to the A595.

The report sets out the policy background for Biodiversity Net Gain, the baseline conditions of the 'Site', the proposed site layout and the results of the net gain calculations.

Each habitat type was mapped using the standard habitat mapping convention using Phase 1 habitat survey (JNCC, 2010) which was subsequently converted into the UK Habitat Classification (Butcher *et al*., 2020) for the purposes of using the DEFRA metric.

Using the findings of the baseline surveys, pre-construction ecology was measures against the proposed habitat changes arising from future ecological enhancements based on the proposed landscape plan produced by Architects Plus.

This report presents the results of this desk-based study to assess net change in biodiversity 'units' in connection with the removal of habitat for the proposed development at Scalegill Hall.

1.2 ECOLOGICAL CONTEXT

The proposed 1.34ha development site is located to the west of Moor Row village in Cumbia and is centred on Ordnance Survey (OS) grid reference (NX 99666 14407). The town of Whitehaven lies 1.4 km to the north-west and the West Lakes Science and Technology Park lies 150 m to the north. The Site Plan is illustrated within *Figure 1*.

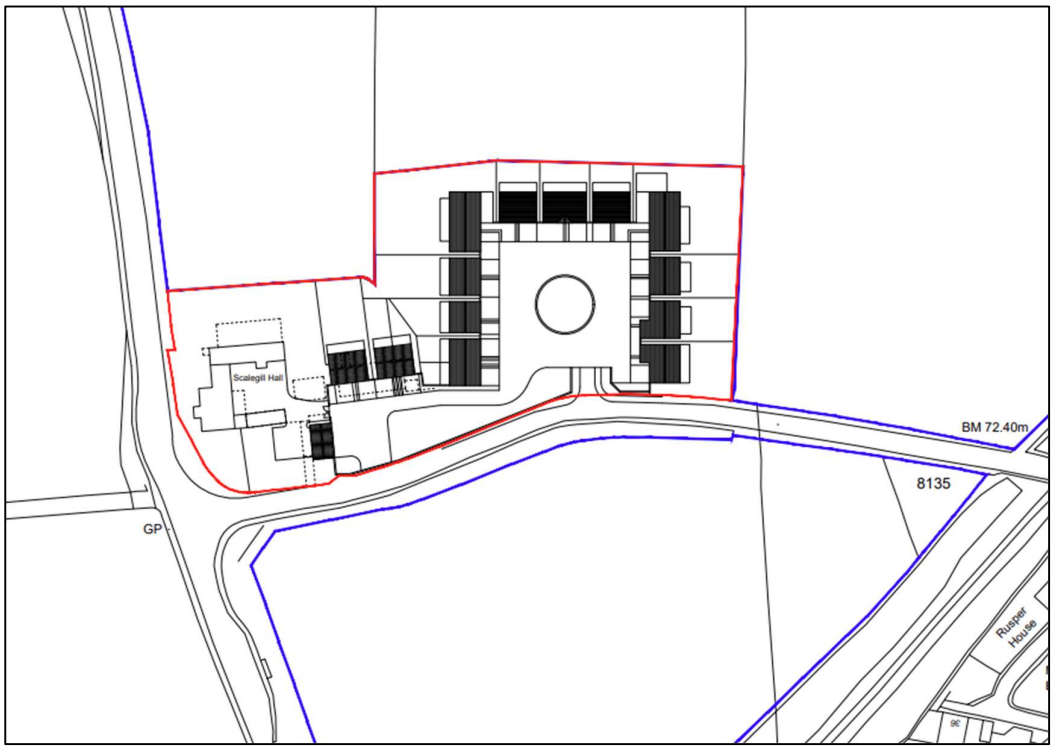

Figure 1: Site Location Plan

1.3 BIODIVERSITY NET GAIN POLICY CONTEXT

1.3.1 Guidance

This guidance has been produced in line with the template for a 'BNG Feasibility Report' in the CIEEM Biodiversity Net Gain Report and Audit Templates (CIEEM, 2021). It utilises the BNG Good Practice Principles for Development (CIRIA, 2019) (including the checklist for Biodiversity Net Gain design) and BS8683, the British Standard for Biodiversity Net Gain (British Standards Institute, 2021), to inform outputs and recommendations.

1.3.2 Legislation

The Environment Act 2021 was granted Royal Assent on the 9 November 2021 and contains provisions which will mandate achieving a 10% BNG for most developments (including Nationally Significant Infrastructure Projects). These provisions came into effect in November 2023 for developments requiring planning permission and in 2025 for Nationally Significant Infrastructure Projects.

They will legally require developers to ensure sites are improved for biodiversity, with a 10% increase in habitat value for wildlife compared with the pre-development baseline. All biodiversity enhancements will be required to be maintained for a minimum of 30 years (UK Parliament, 2021).

1.3.3 Planning Policy

The legal requirement for BNG is embedded in national planning policy. The National Planning Policy Framework (Ministry of Housing, Communities & Local Government, 2021a) states in paragraph 170 that:

"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 states:

"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."

2.0 METHODOLOGY

2.1 METHODOLOGY

The pre-development (baseline) and post development (proposed) value of the habitat at the proposed development site in Scalegill Hall has been calculated using DEFRA / Natural England's Biodiversity Metric 3.1 calculator. The methodology for determining habitat distinctiveness and condition value follows the guidelines set out by the User Guide and Technical Supplement for Biodiversity Metric 3.1.

2.2 MITIGATION HIERARCHY

The ecological mitigation hierarchy is central to the BNG process and is the first of the BNG Good Practice Principles. The ecological mitigation hierarchy, as set out in the National Planning Policy Framework (NPPF, 2021), and the National Planning Policy Practice Guidance (NPPG) sets out the order in which the following measures should be implemented, in which avoidance of impacts should always be the priority.

Avoidance – development should be designed to avoid significant harm to valuable wildlife habitats and species.

Mitigation – where significant harm cannot wholly or partially avoided, it should be minimised through the use of effective mitigation measures.

Compensation – where, despite whatever mitigation would be effective, there would still be significant residual harm, as a last resort, compensation should be used to provide an equivalent value of biodiversity.

2.3 DATA SOURCES

The following data sources have been used to define the boundary for the BNG calculation and determine the relevant attributes for BNG (e.g. size, habitat type and condition) for the pre and post development habitats.

2.3.1 Boundary

The boundary used for the BNG assessment is the red line application boundary for the project shown within *Appendix A* of this document.

2.3.2 Baseline Habitats

In order to generate the Site baseline habitat data (e.g. habitat type, condition) the following data were used:

A Preliminary Ecological Survey was undertaken by Nevis Environmental Ltd in October 2020. The report consisted of an assessment of the potential ecological features present, any constraints they pose to development of the site and any recommendations for further surveys, avoidance, mitigation, compensation or enhancement measures that are needed (as appropriate). In addition, a desk study was undertaken to obtain existing information on statutory and non-statutory sites of nature conservation interest and relevant records of protected/notable species within the site and its zone of influence. A Preliminary Ecological Appraisal (PEA) of the site was produced to map and record habitat types and dominant vegetation, including any invasive species, and an assessment for evidence of protected fauna or habitats capable of supporting such species. This information is included within *Appendix B*.

The broad habitat types within the site were mapped in accordance with the categories specified in the *Handbook for Phase 1 Habitat Survey* (Joint Nature Conservation Committee 2016). Dominant plant species were recorded for each habitat present using nomenclature according to the 4th edition of New Flora of the British Isles (Stace, 2019). The site was also appraised for its potential to support notable flora.

The site was searched for invasive non-native species, primarily those included on Schedule 9 Wildlife and Countryside Act 1981 (as amended), such as Japanese knotweed *Reynoutria japonica*, Himalayan balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum*, wall cotoneaster *Cotoneaster horizontalis* and rhododendron *Rhodendron ponticum*.

The site was assessed for the possible presence of, and the likely importance of its habitats for, protected or notable species, especially those listed under the Schedule 2 of the Habitat Regulations 2017, Schedule 5 of the Wildlife and Countryside Act 1981, the Countryside and Rights of Way (CRoW) Act 2000, those given extra protection under the Natural Environment and Rural Communities Act 2006, and species included in the Cumbria LBAP.

2.4 ASSESSMENT STEPS

The following steps were taken to estimate the BNG value:

2.4.1 Calculation of Baseline Habitat Species

The UK Hab types used within the Biodiversity Metric 3.1 were used, with reference to guidance in the User Guide and Technical Supplement and the G-1 All Habitat Tab in the 3.1 metric which details which metric habitat types corresponds to each UK Hab habitat. In the case of the habitats on the Site, these were simple one to one conversions. The metric includes three broad categories of habitats and biodiversity units for which scores are calculated differently. These are:

- Area habitats (such as grasslands, woodlands and ponds).
- Liner hedgerows and lines of trees.
- Linear rivers and ditches.

Given the limited nature / footprint of the Site, no linear rivers / ditches were present.

Distinctiveness and condition scores were assigned to habitats based on the results of the UK Habs habitat classification survey and guidance in the Biodiversity Metric 3.1 User Guide and Technical Supplement (including the Condition Assessment Sheets for each habitat type).

2.4.2 Calculation of the Post Development Units

Quantification of post development biodiversity units were undertaken using habitat data derived from surveys in these areas. Precautionary habitat scores were assigned based on the management feasibility. Once the calculation had been completed the outputs were reviewed to understand the losses and gains for each type of habitat and understand whether the development complies with the Biodiversity Metric 3.1 trading rules (no trading of habitat value).

Rule 3 of the Biodiversity Metric 3.1 relates to the trading down and states that this must be avoided. Replacement of lost habitat should be on a ‘like for like’ or ‘like for better’ basis, in terms of distinctiveness, condition and total units. New, or restored, habitats should aim to achieve a higher distinctiveness and / or condition than those lost. This rule intends to prevent the development of BNG plans that compensate for the loss of biodiverse habitats with larger areas of less biodiverse habitats. Rule 4 states that ‘losses and deterioration of irreplaceable habitat cannot be accounted for through the metric’. Separate, bespoke consideration is required if there is a loss or deterioration of any irreplaceable habitat. The presence of irreplaceable habitat was determined from the desk study and field survey results.

2.5 LIMITATIONS AND ASSUMPTIONS

Post development condition scores are indicative and are dependent on the appropriate management and maintenance of the post development habitats. In general, the management of created, enhanced and restored habitats is important within the BNG metric because the metric accounts for some of the risks associated with the difficulty in doing this as well as the time it takes the habitat type to establish and reach a target condition. In committing to the BNG process, the landowners are committed to the management and maintenance requirements that will be necessary to ensure the enhanced / created habitats achieve their target condition and beyond, to a minimum of 30 years post-construction.

The identified option for achieving BNG assumes that the habitats enhanced / created / retained will be maintained for a minimum of 30 years post development as required to satisfy the conditions for biodiversity net gain in the best practice guidelines (CIEEM, IEMA & CIRCA, 2019). A BNG Management and Monitoring Plan (MMP) would need to be implemented by the appointed contractor and then adopted by the Site operator to ensure that all BNG is delivered to the required condition. This MMP would need to include the following details:

- Aftercare maintenance and long-term habitat management and monitoring of created and enhanced features.
- How management will be implemented for a minimum period of 30 years.
- What monitoring will be implemented during and after construction.

3.0 BASELINE CONDITIONS

3.1 VALUE OF BASELINE HABITATS

The baseline habitat has been calculated using the Biodiversity Metric 3.1, as having a baseline habitat value of 2.64. A map of the pre-development habitats is shown within *Appendix C*. The information is summarised in *Table 1*.

The Site is already largely developed through its previous usage as a car garage and other industrial uses, with existing buildings and tarmac surfacing throughout. Current management of the Site comprises semi-regular ad-hoc toppings of vegetation with cuttings left in situ.

Broad Habitat	Habitat Type	Area (ha)	Distinctiveness	Condition	Habitat Units	Strategic Significance
Urban	Built Linear Features	0.337	V. Low	N/A Other	0.00	Low Strategic Significance
Urban	Bare ground	0.207	Low	Poor	0.41	Low Strategic Significance
Heathland and Scrub	Bramble Scrub	0.110	Medium	Condition Assessment N/A	0.44	Low Strategic Significance
Grassland	Other Neutral grassland	0.149	Medium	Moderate	1.19	Low Strategic Significance
Grassland	Modified Grassland	0.132	Low	Poor	0.26	Low Strategic Significance
Sparsely Vegetated Land	Ruderal / Ephemeral	0.167	Low	Poor	0.33	Low Strategic Significance

Table 1: Summary of the pre-development baseline habitat units

3.2 VALUE OF BASELINE HEDGEROWS

The baseline hedgerow has been calculated using the Biodiversity Metric 3.1, as having a baseline habitat value of 1.48. The information is summarised in *Table 2*.

Hedge Number	Habitat Type	Length (km)	Distinctiveness	Condition	Habitat Units	Strategic Significance
1	Native Hedgerow	0.74	Low	Poor	1.48	Low strategic significance

Table 2: Summary of the pre-development baseline hedgerow units

4.0 POST DEVELOPMENT HABITAT

4.1 ON-SITE HABITAT PROPOSALS

The proposed development habitat has been identified within the *Appendix D*. This plan determines that there will be:

- A single improved linear habitat of hedgerow running in parallel to Scalegill Road. The hedgerow is to be improved from a poor condition to include a wider variety of species including Hawthorn *Crataegus* and Hornbeam *Carpinus betulus*.
- The planting of native species of trees and shrubs for an area of 0.04ha, such as silver birch *Betula pendula*, hazel *Corylus avellana*, holly *Ilex aquifolium* and rowan *Sorbus aucuparia*.
- 1ha of lowland dry acid grassland. The acid grassland is to be characterised by a range of plant species such as heath bedstraw *Galium saxatile*, sheep's-fescue *Festuca ovina*, common bent *Agrostis capillaris*, sheep's sorrel *Rumex acetosella*, sand sedge *Carex arenaria*, wavy hair-grass *Deschampsia flexuosa*, bristle bent *Agrostis curtisii*, and tormentil *Potentilla erecta*, with presence and abundance depending on community type and locality. Dwarf shrubs such as heather *Calluna vulgaris* and bilberry *Vaccinium myrtillus* can also occur but at low abundance.

These figures have been inputted into the Biodiversity Metric 3.1 and would comprise an area of 1.10 ha.

4.2 CHANGE IN BIODIVERSITY VALUE

Under the current proposals set out within the Site Plan, located within *Appendix D*, there will be a gain of Habitat Area Units of 0.50 (19.08%), and a gain of 1.42 (95.64%) of Terrestrial Linear Hedgerow Units. This is shown within *Table 3*.

On-site baseline	Habitat units	2.64	
	Hedgerow units	1.48	
	Watercourse units	0.00	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	3.15	
	Hedgerow units	2.90	
	Watercourse units	0.00	
On-site net change (units & percentage)	Habitat units	0.50	19.08%
	Hedgerow units	1.42	95.64%
	Watercourse units	0.00	0.00%
Off-site baseline	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.50	
	Hedgerow units	1.42	
	Watercourse units	0.00	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
FINAL RESULTS			
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.50	
	Hedgerow units	1.42	
	Watercourse units	0.00	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	19.08%	
	Hedgerow units	95.64%	
	Watercourse units	0.00%	
Trading rules satisfied?	Yes ✓		

Table 3: Summary of the post-development units

5.0 RECOMMENDATIONS AND CONCLUSIONS

5.1 SUMMARY

The post development plan within this report is sufficient to achieve an area based Biodiversity Net Gain, comprising a net area gain of 19.08% and a liner gain of 95.64% when compared to the baseline assuming the habitat creation starts in the year construction commences.

Given the nature of the development it was not possible to avoid all habitat impacts by re-siting the development; however, none of the habitats lost are high distinctiveness, very high distinctiveness or irreplaceable and they will be compensated for in order to provide a gain in the metric.

5.2 CONTINUED OBSERVATIONS

To ensure compliance with the BNG conditions outlined within this report, an ecologist should attend the site periodically throughout 2025 and 2026, both before and during construction works, to collect evidence that BNG conditions are being adhered to and the management strategy is being followed.

During these visits, National Vegetation Classification (NVC) surveys should be carried out by the Ecologists to appropriately update the species list on site, so to best provide the most up to date information and recommendations for the ongoing BNG management.

6.0 REFERENCES

Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1. Available at: https://www.ukhab.org/ukhab-documentation/. Accessed 02/02/25.

CIEEM. (2019). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. V1.1. Chartered Institute of Ecology and Environmental Management, Winchester. Accessed 03/02/2025.

DEFRA. (2020). Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services. DEFRA. London. Available at https://www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services. Accessed 03/02/25.

Ministry of Housing, Communities & Local Government. (2021). National Planning Policy Framework, available at: https://www.gov.uk/guidance/national-planning-policy-framework. Accessed 03/02/25.

The British Standards Institution (BSI). (2013). BS 42020:2013; Biodiversity – Code of Practice for Planning and Development. Available at: https://www.n-somerset.gov.uk/sites/default/files/2022-06/I6%20-%20biodiversity%20-%20code%20of%20practice%20for%20planning%20and%20development%20%282013%29%20BS%20420202013.pdf. Accessed 03/02/25.