Land off Keresforth Road, Dodworth, Barnsley

Biodiversity Net Gain (BNG) Evidence

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Contents

1 Introduction

1.1.1.1 This report presents Biodiversity Net Gain (BNG) evidence to support an outline planning application for housing on land off Keresforth Road, Dodworth, Barnsley. The site is approximately 2 km west-south-west of Barnsley town centre. The site extends to approximately 7.4 hectares and is centred at approximate grid reference SE324052.

1.1.1.2 The GNB evidence is presented in the form of DEFRA Biodiversity Metric calculations for the site based on an assessment undertaken in accordance with the standard methodologies[1] [2].

1.1.1.3 The proposed development comprises residential development and access at the site as shown on the following drawing:

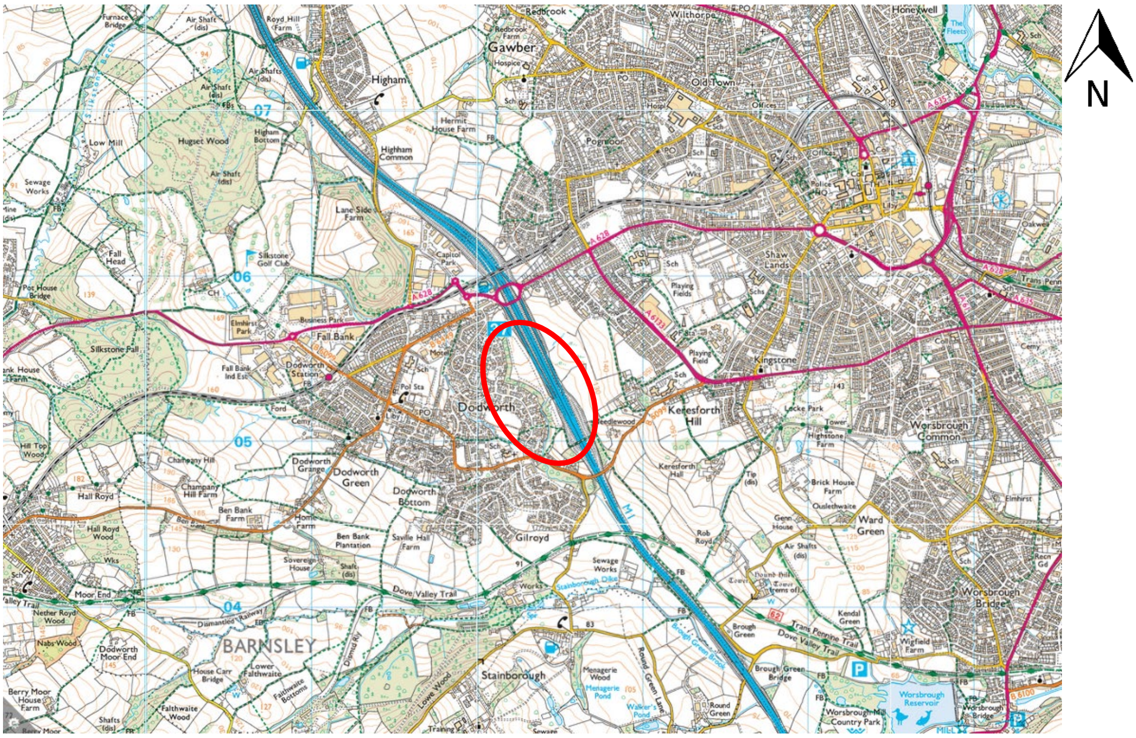
- *Viability Layout. Dodworth. Drawing no. KM-V2020-003. Rev I.*

Figure 1. Site Area (aerial imagery dated 2021)

[1] Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1 at http://www.ukhab.org/

[2] STEPHEN PANKS, NICK WHITE, AMANDA NEWSOME, JACK POTTER, MATT HEYDON, EDWARD MAYHEW, MARIA ALVAREZ, TRUDY RUSSELL, SARAH J. SCOTT, MAX HEAVER, SARAH H. SCOTT, JO TREWEEK, BILL BUTCHER and DAVE STONE. (2021). Biodiversity metric 3.0: Auditing and accounting for biodiversity – User Guide. Natural England Natural England. ISBN 978-1-78354-779-1.

Figure 2. Site Location



2 Policy Background

2.1 National Planning Policy Framework (NPPF)

2.1.1.1 Paragraph 174 of the NPPF[3] states:

- *"174. 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…"*

2.2 Local Plan

2.2.1.1 Policy BIO1 Biodiversity and Geodiversity of the Barnsley Local Plan[4] states:

- *"Policy BIO1 Biodiversity and Geodiversity. Development will be expected to conserve and enhance the biodiversity and geological features of the borough by:*
  - *Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified via Section 41 of the Natural Environment & Rural Communities Act 2006 (for list of the species and habitats of principal importance) and in the Barnsley Biodiversity Action Plan;*
  - *Maximising biodiversity and geodiversity opportunities in and around new developments;*
  - *Conserving and enhancing the form, local character and distinctiveness of the boroughs natural assets such as the river corridors of the Don, the Dearne and Dove as natural floodplains and important strategic wildlife corridors;*
  - *Proposals will be expected to have followed the national mitigation hierarchy (avoid, mitigate, compensate) which is used to evaluate the impacts of a development on biodiversity interest;*
  - *Protecting ancient and veteran trees where identified;*
  - *Encouraging provision of biodiversity enhancements."*

2.3 Supplementary Planning Document

2.3.1.1 Barnsley Metropolitan Borough Council's Supplementary Planning Document on Biodiversity and Geodiversity[5] states:

- *"4.1 Any development proposal which may do harm to a biodiversity or geodiversity interest should follow the mitigation hierarchy thus: avoid, mitigate, compensate. If it is not possible to avoid damage to the interest and planning permission is still requested for then the developer/applicant should seek to mitigate impacts by good design which not only retains as much of the value in situ as possible, but also reduces impacts during the construction phase and leaves behind value which is protected and maintained. On occasion, the LPA may allow compensatory works on other sites outside of the development where avoidance or mitigation are not possible/sufficient, but this should be seen as a last resort. The LPA will not support applications that would damage the ecological network and cause a net-loss in biodiversity in line with the NPPF. Whilst the Environment Agency is the lead authority regarding implementation of the Water Framework Directive and the Humber River Basin District Management Plan, the LPA must have regards to them when determining development proposals.*
- *4.2 At present there is no nationally-agreed system for measuring biodiversity or geodiversity losses proposed on a site through a development and creating a comparable biodiversity element off-site (biodiversity compensation). It is likely that one will be made available in the near future. The LPA may choose to adopt such a 'metric' and apply it in cases where compensation works are the only possible solution – in which case a new policy will be produced*

[3] Ministry of Housing, Communities and Local Government. (2021). National Planning Policy Framework.

[4] Barnsley Metropolitan Borough Council. (2019). Barnsley Local Plan. Adopted January 2019.

[5] Barnsley Metropolitan Borough Council. (2019). Supplementary Planning Document. Biodiversity and Geodiversity. Adopted May 2019.

and publicised. Until such time the LPA will continue to use its best judgement, based on precedents, as to what the appropriate compensation amount, as a monetary value, should be."

3 Methodology

3.1 Habitat Condition Survey to inform BNG Calculations

3.1.1.1 To inform the Biodiversity Net Gain (BNG) Calculations, the habitat types and condition of the habitats within the site were assessed on 13th December 2021 in accordance with the standard methodology[6] [7].

3.2 BNG Calculations

3.2.1.1 The DEFRA Biodiversity Metric 3.0 [8] has been used to calculate the baseline value of the site (before development) and the post-development value in order to calculate the Total Net Unit Change.

3.3 Personnel

3.3.1.1 The Habitat Condition Survey and BNG Calculations were undertaken by Toby Fisher CEnv MCIEEM and Morgane Accault ACIEEM.

3.4 Limitations

3.4.1.1 The survey was undertaken outside the optimum season for habitat surveys (May to September/October). During the survey it was possible to identify a significant proportion of the plant species present and to categorise the habitat types. It is noted that a survey during the optimal season would enable a more robust assessment of habitat conditions; therefore where habitat condition is uncertain a precautionary approach has been adopted and the higher value condition has been used in this assessment. There were no access restrictions.

[6] Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1 at http://www.ukhab.org/

[7] STEPHEN PANKS, NICK WHITE, AMANDA NEWSOME, JACK POTTER, MATT HEYDON, EDWARD MAYHEW, MARIA ALVAREZ, TRUDY RUSSELL, SARAH J. SCOTT, MAX HEAVER, SARAH H. SCOTT, JO TREWEEK, BILL BUTCHER and DAVE STONE. (2021). Biodiversity metric 3.0: Auditing and accounting for biodiversity – User Guide. Natural England Natural England. ISBN 978-1-78354-779-1.

[8] http://publications.naturalengland.org.uk/publication/6049804846366720

4 Baseline Conditions

4.1 Habitats and Habitat Condition

4.1.1 Urban - Developed Land, Sealed Surface - N/A

DEFRA Condition Assessment: No assessment required – automatically assigned score of 0.

4.1.2 Urban - Introduced Shrub – Poor

DEFRA Condition Assessment: No assessment required – condition fixed at 'Poor'.

4.1.3 Heathland And Shrub - Mixed Scrub

Table 1. DEFRA Condition Assessment: GOOD (meets 5 of 5 criteria):

Condition Assessment Criteria – SCRUB habitat type		Meets criteria?
1	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover).	Yes
2	There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.	Yes
3	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species (Creeping Thistle, Common Nettle, Cherry Laurel, Snowberry, Buddleia, Cotoneaster, Spanish bluebell) make up less than 5% of ground cover.	Yes
4	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).	Yes
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.	Yes

Condition Assessment Result	Condition Assessment Score
Passes 5 of 5 criteria	Good (3)
Passes 3 or 4 of 5 criteria	Moderate (2)
Passes 0, 1 or 2 of 5 criteria	Poor (1)

4.1.4 Grassland - Modified Grassland

Table 2. DEFRA Condition Assessment: MODERATE (meets 4 of 7 criteria):

Condition Assessment Criteria – MODIFIED GRASSLAND habitat type		Meets criteria?
1	6-8 species per m2.	No
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm).	No
3	Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area.	Yes

4	Physical damage evident in less than 5% of total grassland area, such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities.	Yes
5	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	No
6	Cover of bracken less than 20%.	Yes
7	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species[1] make up less than 5% of ground cover.	Yes
Footnote 1 - Species considered undesirable for this habitat type include: Creeping thistle Cirsium arvense, spear thistle Cirsium vulgare, curled dock Rumex crispus, broad-leaved dock Rumex obtusifolius, common nettle Urtica dioica, greater plantain Plantago major, white clover Trifolium repens, cow parsley Anthriscus sylvestris.		

Condition Assessment Result	Condition Assessment Score
Passes 6 or 7 of 7 criteria including non-negotiable criterion 7	Good (3)
Passes 4 or 5 of 7 criteria; OR Passes 6 of 7 criteria excluding non-negotiable criterion 7	Moderate (2)
Passes 0, 1, 2 or 3 of 7 criteria	Poor (1)

4.1.5 Grassland - Other Neutral Grassland

Table 3. DEFRA Condition Assessment: GOOD (meets 5 of 5 criteria):

Condition Assessment Criteria – OTHER NEUTRAL GRASSLAND habitat type		Meets criteria?
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.	Yes
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Yes
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.	Yes
4	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.	Yes
5	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of undesirable species[1] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.	Yes
Footnote 1 - Species considered undesirable for this habitat type include: Creeping thistle Cirsium arvense, spear thistle Cirsium vulgare, curled dock Rumex crispus, broad-leaved dock Rumex		

obtusifolius, common nettle Urtica dioica, creeping buttercup Ranunculus repens, greater plantain Plantago major, white clover Trifolium repens, cow parsley Anthriscus sylvestris.	
Condition Assessment Result	Condition Assessment Score
Passes 5 of 5 criteria	Good (3)
Passes 3 or 4 of 5 criteria	Moderate (2)
Passes 0,1 or 2 of 5 criteria	Poor (1)

4.1.6 Woodland And Forest - Other Woodland, Broadleaved

Table 4. DEFRA Condition Assessment: GOOD (scores 36 out of 39):

Condition Assessment Criteria – WOODLAND habitat type					
No	Indicator	Good (3 points)	Moderate (2 points)	Poor (1 points)	Score per indicator
1	Age distribution of trees	Three age classes present	Two age classes present	One age class present	3
2	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland	Evidence of significant browsing pressure is present in 40% or less of whole woodland	Evidence of significant browsing pressure is present in 40% or more of whole woodland	3
3	Invasive plant species	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover	3
4	Number of native tree species	Five or more native tree or shrub species found across woodland parcel	Three to four native tree or shrub species found across woodland parcel	None to two native tree or shrub species across woodland parcel	3
5	Cover of native tree and shrub species	> 80% of canopy trees and >80% of understory shrubs are native	50-80% of canopy trees and 50-80% of understory shrubs are native	< 50% of canopy trees and <50% of understory shrubs are native	3
6	Open space within woodland	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space	3

Condition Assessment Criteria – WOODLAND habitat type					
No	Indicator	Good (3 points)	Moderate (2 points)	Poor (1 points)	Score per indicator
		10% does not apply			
7	Woodland regeneration	All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	One or two classes only present in woodland	No classes or coppice regrowth present in woodland	3
8	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback	11% to 25% mortality and/or crown dieback or low risk pest or disease present	Greater than 25% tree mortality and or any high risk pest or disease present	3
9	Vegetation and ground flora	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community	3
10	Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland	Two storeys across all survey plots	One or less storey across all survey plots	3
11	Veteran trees	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland	3
12	Amount of deadwood	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	1
13	Woodland disturbance	No nutrient enrichment or damaged ground evident	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground	2

Condition Assessment Criteria – WOODLAND habitat type					
No	Indicator	Good (3 points)	Moderate (2 points)	Poor (1 points)	Score per indicator
Total score (out of 39)					24
Condition Assessment Result					Condition Assessment Score
Total score >32 (33 to 39)					Good (3)
Total score 26 to 32					Moderate (2)
Total score <26 (13 to 25)					Poor (1)

4.1.7 Sparsely Vegetated Land - Ruderal/Ephemeral

Table 5. DEFRA Condition Assessment: GOOD (meets 3 of 3 criteria):

Condition Assessment Criteria – URBAN habitat type		Meets criteria?
1	Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area.	Yes
2	There is a diverse range of flowering plant species, providing nectar sources for insects. These species may be either native, or non-native but beneficial to wildlife. NB - To achieve GOOD condition, criterion 2 must be satisfied by native species only (rather than non-natives beneficial to wildlife).	Yes
3	Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area. NB - To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).	Yes

Condition Assessment Result	Condition Assessment Score
Passes 3 of 3 core criteria; AND Meets the requirements for good condition within criteria 2 and 3	Good (3)
Passes 2 of 3 core criteria; OR Passes 3 of 3 core criteria but does not meet the requirements for good condition within criteria 2 and 3	Moderate (2)
Passes 0 or 1 of 3 core criteria	Poor (1)

4.1.8 *Hedgerows - Native Species Rich Hedgerows with Trees*

Table 6. DEFRA Condition Assessment (Hedgerows with Trees): GOOD (fails 0 criteria):

Condition Assessment Criteria – HEDGEROW habitat type		Meets criteria?
A1. Height	>1.5 m average along length The average height of woody growth estimated from base of stem to the top of shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees.	Yes
A2. Width	>1.5 m average along length The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.	Yes
B1. Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees').	Yes
B2. Gap - hedge canopy continuity	Gaps make up <10% of total length and No canopy gaps >5 m This is the horizontal gappiness of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). .	Yes
C1. Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length.	Yes
C2. Undesirable perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground The indicator species used are nettles (Urtica spp.), cleavers (Galium aparine) and docks (Rumex spp.). Their presence, either singly or together, should not exceed the 20% cover threshold.	Yes
D1. Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species	Yes
D2. Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	Yes
Additional group - applicable to hedgerows with trees only:		
E1. Tree age	At least one mature tree per 30m stretch of hedgerow. A mature tree is one that is at least 2/3 expected fully mature height for the species.	Yes
E2. Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	Yes

Condition Assessment Result	Condition Assessment Score
No more than 2 failures in total; AND No more than 1 failure in any functional group.	Good (3)
No more than 5 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1, C2 & E1 = Moderate condition).	Moderate (2)
Fails a total of more than 5 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	Poor (1)

5 BNG Calculations

5.1.1.1 The proposed development layout is shown in the following drawing:

- *Viability Layout. Dodworth. Drawing no. KM-V2020-003. Rev I.*

5.1.1.2 The BNG Calculations are presented separately in the DEFRA Metric 3.0 MS Excel spreadsheet.

5.1.1.3 The development will result in the following changes:

- Habitat Units: Total Net Unit Change of -177.73 (negative; equivalent to a loss of 70.57%).
- Hedgerow Units: Total Net Unit Change of -0.30 (negative; equivalent to a loss of 15.06%).