



Heaton's

Planning Environment Design



1.0 INTRODUCTION

1.1 Heaton has been commissioned to undertake a Biodiversity Net Gain (BNG) assessment to determine the impact on biodiversity of the proposed mineral extraction at Lea Castle Farm, Wolverley, Kidderminster (hereafter referred to as the site).

1.2 Previously a BNG assessment was undertaken within the Ecological Impact Assessment using the Worcestershire Council Metric. However, the Defra 2.0 Metric has since been released and is therefore being used for this assessment. The Defra 2.0 Metric has since been released and is therefore being used for this assessment.





3.0 ASSESSMENT METHODOLOGY

- 3.1 The Biodiversity Net Gain calculations for the proposed scheme have been assessed using the DEFRA Biodiversity Metric 2.0 produced by Natural England and the Phase 1 Habitat Map produced as part of the PEA Report. The Biodiversity Metric 2.0 provides an updated way to measure and account for the losses, changes, and gains, in biodiversity as a result of development, or changes in land management, and includes a calculation tool to demonstrate these figures.
- 3.2 The metric has been used to calculate the baseline biodiversity units within the Site red line boundary. These calculations have then been used to help the scheme follow the mitigation hierarchy of avoidance, mitigation, and compensation, and to inform the post development management.
- 3.3 Figure 1 and Figure 2 below include the formulae used to calculate the baseline biodiversity units for habitats and linear habitats according to the Biodiversity Metric 2.0 User Guide.

Figure 1 Baseline Habitat Biodiversity Unit Formulae (taken from Biodiversity Metric 2.0 User Guide)

Equation 1: Pre-impact (t₀) biodiversity value

$$Baseline\ AHBU = \left(A_{t_0} \times Q_{t_0}^{sc} \times Q_{t_0}^{ec} \right) \times \left(Q_{t_0}^{sc} \times Q_{t_0}^{ec} \right)$$

A_{t₀} Area of habitat (a quality measure) t₀ Pre-impact
 Q_{t₀}^{sc} Connectivity (a quality measure) t₁ Post intervention
 Q_{t₀}^{ec} Ecological condition (a quality measure) H1 Habitat type pre-impact
 R_{t₀} Difficulty (a risk factor) H2 Area habitat type post intervention

Figure 2 Baseline Linear Habitat Biodiversity Unit Formulae (taken from Biodiversity Metric 2.0 User Guide)

- 2.4 The metric is then used to calculate the biodiversity units present in the post development proposal. Where the number of biodiversity units is lower/higher than the baseline calculations, an assessment can be made as to whether the scheme will achieve a net gain or a net loss for biodiversity.

Calculations of biodiversity units remaining following the construction of the proposed development take account of –

Once the post-development biodiversity units have been calculated, the mitigation hierarchy is further applied; application of the mitigation hierarchy is one of the guiding principles for biodiversity no net loss/net gain proposals. Through its application, the hierarchy highlights action to avoid, minimise or restore biodiversity losses within the Site, and account for unavoidable losses off site.

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4.0 RESULTS

4.1 Figure 5 below provides the biodiversity units for the baseline site against the post development site. This gives the unit scores for each individual habitat type. This also provides the onsite unit change from baseline to the post development phase. Figure 6 below provides the overall biodiversity units for the baseline stage, the total net unit change and the overall percentage biodiversity net change.

Figure 5 – Biodiversity unit change for each individual habitat for baseline, post development and the overall change in biodiversity units.

On-site			Baseline	Post development on site		On-site Change	
Baseline	Post development	On-site Change	Habitat/Group	Baseline	Post development	Baseline	Post development
-12.6	-15.9		Grassland	43.3	75.7	30.7	59.8
7.3	22.6		Woodland	0.1	1.1	7.4	23.6
0.0	0.0		Grassland and woodlands	0.0	0.0	0.0	0.0
0.0	0.0	0.0	Grassland and woodlands	0.0	0.0	0.0	0.0
-0.6	-2.4	-1.2	Urban	1.4	0.6	-1.0	
0.0	0.0	0.0	Wetland	0.0	0.0	0.0	0.0
118.8	2.3	93.9	Woodland and forest	1.3	24.9	3.6	
0.0	0.0	0.0	Intertidal sediment	0.0	0.0	0.0	0.0
0.0	0.0	0.0	Coastal saltmarsh	0.0	0.0	0.0	0.0
0.0	0.0	0.0	Rocky shore	0.0	0.0	0.0	0.0
0.0	0.0	0.0	Coastal lagoons	0.0	0.0	0.0	0.0

Figure 6 – Biodiversity Net Gain Summary

On-site baseline		Habitat units	124.07
		Hedgerow units	2.06
		River units	0.00
On-site post-intervention		Habitat units	232.28
		Hedgerow units	5.48
		River units	0.00
Off-site baseline		Habitat units	0.00
		Hedgerow units	0.00
		River units	0.00
Total net unit change		Habitat units	108.21
		Hedgerow units	3.42
		River units	0.00
Total net % change		Habitat units	87.21%
		Hedgerow units	166.53%
		River units	0.00%

4.2 Based on the results in Figure 5, there is an overall negative change in biodiversity units for cropland and urban areas within this site. This is due to the removal of a

5.0 CONCLUSIONS

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