Whitcher Wildlife Ltd.
Ecological Consultants.

LAND SOUTH OF DONCASTER ROAD, DARFIELD, DEVELOPMENT PHASE ONE.

OS REF: SE 40239 04991.

BIODIVERSITY NET GAIN ASSESSMENT.

Ref No: **240123/PHASE1/BNG/2.**

Date: **6th March 2026.**

Unit 34, The Business Village, Cudworth, Barnsley, S72 8RP.
info@whitcher-wildlife.co.uk www.whitcher-wildlife.co.uk
Company No. 4401613.

TABLE OF CONTENTS.

	Page Number
1. INTRODUCTION.	**3**
2. SURVEY METHODOLOGY.	**4**
3. SITE DESCRIPTION.	**5**
4. BIODIVERSITY NET GAIN ASSESSMENT.	**30**
5. REFERENCES.	**39**
Appendix I. ANNOTATED MAP OF PHASE ONE – BASELINE.	**40**
Appendix I. ANNOTATED MAP OF BASIN – BASELINE.	**41**
Appendix III. ANNOTATED MAP OF PHASE ONE – POST WORKS.	**42**
Appendix IV. ANNOTATED MAP OF BASIN – POST WORKS.	**43**
Appendix V. DEVELOPMENT PLAN.	**44**

1. INTRODUCTION.

1.1. A hybrid planning application is being submitted for the development of a large residential estate to the south of Doncaster Road, within the village of Darfield, Barnsley. The application is for full planning permission within the northern section of the site, known as 'Phase one', and for outline planning permission within the southern section of the site, known as 'Phase two'. Phase one also includes a drainage basin which will be situated to the south of the development.

1.2. Whitcher Wildlife Ltd were therefore commissioned to undertake a Biodiversity Net Gain (BNG) assessment of the entire site, to determine the baseline calculations of the entire survey area and determine what is required to allow the development to achieve a net gain.

1.3. Development plans for phase one are now finalised and this report shows both the baseline and post-works score of this section of the site.

1.4. An initial site visit was carried out on 17th January 2024 when a Preliminary Ecological Appraisal (PEA) was carried out. This ascertained rough baseline calculations including broad habitats and sizes, but detailed calculations could not be done due to survey being carried out well outside the optimum survey season.

1.5. Repeat visits were therefore undertaken throughout June 2024 to allow for an updated assessment of the habitats, including for condition assessments of each habitat parcel. A Rivers Condition Assessment (RCA) was also carried out on 21st March 2025 to allow a full BNG assessment of the watercourses across the site. A combination of both the initial survey and these updated surveys make up the findings of this assessment. Details of all condition assessments can be found within the accompanying condition assessment sheets.

1.6. Certain habitats on site span across both phase one and two of the development and therefore, their habitat descriptions are included in both the phase one and phase two reports. However, only their relevant areas have been included within the calculations. The included the following habitats: **W1**, **W2**, **W4**, **S2**, **S4** and both watercourses.

1.7. Two further BNG reports will accompany this one. One of which will cover phase two of the development, and the final one will cover the site as a whole. All will be accompanied by the relevant statutory metric.

****

2. SURVEY METHODOLOGY.

2.1. All surveys were carried out in line with the Chartered Institute of Ecological and Environmental Management (CIEEM) survey standards and advice.

2.2. A baseline survey was carried out of the site to establish the baseline biodiversity value of the area. Prior to visiting the site, the survey area was cross referenced to maps and aerial photographs to give a general idea of the habitats and potential issues within the area and to identify potential access and walking routes.

2.3. The survey area was walked where access was agreed. All habitats within and immediately around the survey area were documented and the dominant species within that habitat listed in line with the UK Habitat Classification methodology to identify the primary habitat types throughout the survey area. All primary habitats are accompanied by secondary codes which are used to add further specific details where necessary. Each primary habitat and unique set off secondary codes will be shown individually in the appended annotated map.

2.4. All habitat surveys, including the initial Preliminary Ecological Appraisal were undertaken by Mitchel Greenhalgh, Managing Director of Whitcher Wildlife, and an Ecological Consultant with an array of experience in conducting surveys on a variety of flora and fauna in a professional capacity. Mitchel holds a level two Natural England survey licence in respect of both bats and great crested newts, a NatureScot licence in respect of bats and Natural England class licences for various invertebrates. He is also FISC level 4. He has attended courses run by CIEEM, the Species Recovery Trust and the FSC and also holds a BSc in environmental science attained from the University of Leeds. He is an Associate member of CIEEM and he is therefore committed to continuous professional development.

2.5. The River Condition Assessments (RCA) were carried out by Ruth Georgiou BSc, MCIEEM. Since 2004 Ruth has had experience in a professional capacity as a Wildlife Consultant carrying out ecology surveys and phase I habitat surveys. As a full member of CIEEM Ruth is subject to peer review on an annual basis. Ruth holds Natural England survey licences in respect of bats, great crested newts and white clawed crayfish and has held her own or has been named ecologist on site specific licences for badgers, great crested newts and bats. She also holds a degree in Environmental Science (BSc) and has successfully completed a number of courses run by CIEEM, BCT and FSC in the relative protected species, carrying out phase I habitat surveys and BNG

assessments. Ruth is also accredited to undertake MoRPh assessments to establish the condition of flowing watercourses to inform BNG assessments.

****

3. SITE DESCRIPTION.

3.1. The Survey Area.

3.1.1. The overall survey area comprises mainly arable land, separated into two main fields. It is located to the west of the north end of the village of Darfield, south of Doncaster Road and west of Upperwood Road and the 'Italian' estate.

3.1.2. Historic aerial imagery and maps show that the bulk of the site has been arable for a considerable length of time, having never been shown as land used for any other purpose.

3.1.3. Within the centre of the site is the old Darfield Quarry, which was then used as landfill for a number of years before being capped and left undisturbed.

3.1.4. The aerial map below shows the approximate location of the entire survey area, marked by the red shape. This covers both phase one and phase two of the development.

3.1.5. However, phase one comprises only the northern section, which is shown as 'Area 1' on the below drawing, and the basin which is shown as 'basin location'. The red line of these areas has been adjusted slightly since the drawing was produced but is still broadly accurate.

3.1.5. The further surroundings comprise predominantly arable land, residential housing estates, scattered woodland and grassland pockets.

3.2. Description of Habitats.

3.2.1. Appendices I and II of this report contain maps marked up with the varying habitats within phase one. The habitats within phase one are: -

- c1c – Cereal Crops
- g4 – Modified Grassland
- g3c – Other Neutral Grassland
- w1f7 – Other Lowland Mixed Deciduous Woodland
- w1g – Other Woodland; Broadleaved.
- h3h – Mixed Scrub
- h2a5 – Species-rich Native Hedgerow
- r1g – Other Standing Water
- r2 – Other Rivers and Streams

3.2.2. c1c – Cereal Crops.

3.2.2.1. Secondary codes: 516 active management.

3.2.2.1.1. A large part of phase one is made up by a large arable field, which is used for producing wheat.

3.2.2.1.2. The southern part of this field is also considered to be arable, but the crop appears to have failed, and likely does so consistently. This area of the site is nominated by black grass (*Alopecurus myosuroides*), with some other arable weeds present.

3.2.2.2. Secondary codes: 517 recent management.

Within the proposed basin location, to the west of the footpath, is a parcel of land which has been cropped in the past but at present is barren with arable weeds. To the further south and west, a barley crop is present within the field.

3.2.3. g4 – Modified Grassland.

At the northern and northwestern end of the survey area, there is an area of grassland that is left uncropped and contains a species-poor sward. The dominant species within the habitat is Yorkshire fog (*Holcus lanatus*), which is accompanied by cocksfoot (*Dactylis glomerata*), timothy (*Phleum pratense*), rough meadow grass (*Poa trivialis*), perennial rye grass (*Lolium perenne*), Italian rye grass (*Lolium multiflorum*), false oat grass (*Arrhenatherum elatius*) and barren brome (*Anisantha sterilis*). Forbs such as creeping thistle (*Cirsium arvense*) and common poppy (*Papaver rhoeas*) are also present but rare within the habitat.

3.2.4. g3c – Other Neutral Grassland.

3.2.4.1. Secondary codes: 10 scattered scrub, 104 other grazed. – **ONG1.**

3.2.4.1.1. Within the old tip area of the site, there are still some relatively open areas which remain as grassland, although likely not for much longer as the scrub is encroaching heavily. The sward is short in places, likely due to rabbit grazing, but this varies across the habitat parcel.

3.2.4.1.2. Species composition varies throughout the habitat but is generally diverse and includes the following species: red fescue (*Festuca rubra* agg.), false oat grass (*Arrhenatherum elatius*), cocksfoot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), annual meadow grass (*Poa annua*), rough meadow grass (*Poa trivialis*), meadow foxtail (*Alopecurus pratensis*), creeping bent (*Agrostis stolonifera*), common knapweed (*Centaurea nigra*), weld (*Reseda luteola*), biting stonecrop (*Sedum acre*), ragwort (*Jacobaea vulgaris*), nettle (*Urtica dioica*), common vetch (*Vicia sativa*), rosebay willowherb (*Chamaenerion angustifolium*), mugwort (*Artemisia vulgaris*), creeping cinquefoil (*Potentilla reptans*), tansy (*Tanacetum vulgare*), feverfew (*Tanacetum parthenium*), false fox sedge (*Carex otrubae*), black medick (*Medicago lupulina*), bird's foot trefoil (*Lotus corniculatus*), hogweed (*Heracleum sphondylium*), cleavers (*Galium aparine*), hedge bedstraw (*Galium album*), cutleaf cranesbill (*Geranium dissectum*), dove's foot cranesbill (*Geranium molle*), hedgerow cranesbill (*Geranium pyrenaicum*), meadow cranesbill (*Geranium pratense*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), lesser trefoil (*Trifolium dubium*), smooth hawksbeard (*Crepis capillaris*), white campion (*Silene latifolia*), lesser burdock (*Arctium minus*), teasel (*Dipsacus fullonum*), broadleaved dock (*Rumex obtusifolius*), willowherbs (*Epilobium* spp.), toad rush (*Juncus bufonius*), sheep's sorrel (*Rumex acetosella*), broadleaved plantain (*Plantago major*), ribwort plantain (*Plantago lanceolata*), common centaury (*Centaurium erythraea*), common mouse-ear (*Cerastium fontanum*), red bartsia (*Odontites vernus*), ox-eye daisy (*Leucanthemum vulgare*), creeping buttercup (*Ranunculus repens*), meadow buttercup (*Ranunculus acris*), creeping thistle (*Cirsium arvense*), spear thistle (*Cirsium vulgare*), black horehound (*Ballota nigra*), early forget-me-not (*Myosotis ramosissima*), field forget-me-not (*Myosotis arvensis*), wood forget-me-not (*Myosotis sylvatica*), hemlock (*Conium maculatum*), yarrow (*Achillea millefolium*) and ground ivy (*Glechoma hederacea*).

3.2.4.1.3. The scrub within this grassland is taking over the habitat, with open grassland extremely limited. Without any management, the site is likely to succeed to scrub within the coming years regardless of the development.

3.2.4.1.4. The scrub is described further on in this report, but within the grassland, species typically include Japanese knotweed (*Reynoutria japonica*), Japanese rose (*Rosa rugosa*), dog rose (*Rosa canina*), sweetbriar (*Rosa rubiginosa*), *Rubus* spp., including *R. armeniacus* and *R. Caesius*, hawthorn (*Crataegus monogyna*), sycamore (*Acer pseudoplatanus*), crab apple (*Malus sylvestris*), gorse (*Ulex europeaus*), whitebeam (*Sorbus aria*), plum (*Prunus domestica*) and bracken (*Pteridium aquilinum*).

3.2.4.2. Secondary codes: 10 scattered scrub, 128 tall or tussocky sward. – **ONG2.**

Just south of the grassland described above, is a parcel of rank grassland that has a taller sward. This was also being heavily encroached upon by scrub and included species such as Yorkshire Fog (*Holcus lanatus*), false oat grass (*Arrhenatherum elatius*), curled dock (*Rumex crispus*) creeping thistle (*Cirsium arvense*), rosebay willowherb (*Chamerion angustifolium*), nettle (*Urtica dioica*) and common poppy (Papaver rhoeas). The scrub within this habitat comprises mainly bramble (*Rubus* sp.), gorse (*Ulex europeaus*), hawthorn (*Crataegus monogyna*) and oak (*Quercus robur*) saplings.

3.2.4.3. Secondary codes: 32 scattered trees, 128 tall or tussocky sward. – **ONG5.**

Within the proposed basin area to the east of the footpath is a grassland with a tall sward dominated by coarse grasses. Species include false oat grass (*Arrhenatherum elatius*), cocksfoot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), common knapweed (*Centaurea nigra*), white campion (*Silene latifolia*), red campion (*Silene dioica*), great willowherb (*Epilobium hirsutum*), creeping thistle (*Cirsium arvense*), spear thistle (*Cirsium vulgare*), curled dock (*Rumex crispus*), broadleaved dock (*Rumex obtusifolius*), sorrel (*Rumex acetosa*), cleavers (*Galium aparine*), common field speedwell (*Veronica persica*), mugwort (*Artemisia vulgaris*) and dandelion (*Taraxacum officinale* agg.). Two medium sized oak (*Quercus robur*) trees are present on the eastern boundary.

3.2.5. w1f7 – Other Lowland Mixed Deciduous Woodland

3.2.5.1. Secondary codes: 12 scattered bracken, 60 long continuity habitat. – **W1.**

3.2.5.1.1. To the northwest of the survey area, there is a section of mature woodland which is shown on historic maps from at least the mid-1800s, although smaller than it is now. Its age is evident due to the size of the trees and ground flora.

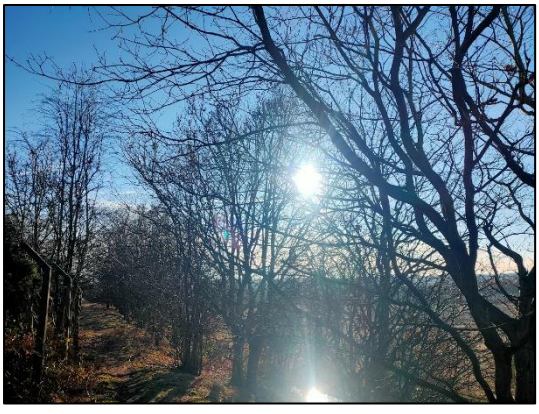
3.2.5.1.2. Species generally comprise sycamore (*Acer pseudoplatanus*), which is the dominant species, field maple (*Acer campestre*), oak (*Quercus robur*), lime (*Tilia* x *europaea*) and crack willow (*Salix fragilis*), with smaller species such as elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*) and hazel (*Corylus avellana*) also present. The understory comprises bluebells (*Hyacinthoides non-scripta*) which carpet the woodland in spring, bracken (*Pteridium aquilinum*), nettle (*Urtica dioica*), willowherbs (*Epilobium* spp.) and foxglove (*Digitalis purpurea*). Bittersweet (*Solanum dulcamara*) and creeping Jenny (*Lysimachia nummularia*) are present with the damper flushes.

3.2.5.1.3. Just outside phase one but partially within phase 2, the ground flattens and becomes wetter. Here, crack willow (*Salix fragilis*) is the dominant species, accompanied by silver birch (*Betula pendula*) and alder (*Alnus glutinosa*).

3.2.5.1.4. This woodland is covered by a grouped Tree Preservation Order (TPO).

3.2.5.2. Secondary codes: 10 scattered scrub, 528 walking or cycling route. – **W2.**

Extending southwards from W1 described above, is further woodland that is evidently younger. Oak (*Quercus robur*) is the dominant species here. Tree density is lower and the trees are largely immature or semi-mature. A footpath runs through this section of woodland.



3.2.5.3. Secondary codes: 10 scattered scrub, 12 scattered bracken. 60 long continuity habitat. – **W4.**

3.2.5.3.1. Within the centre of the site, extending from the eastern boundary inwards is another large parcel of woodland. This again shows on historic maps and has therefore been present for some time. This woodland has a dense scrubby understory within its southern section, but is sparser on the east towards Upperwood Road, likely reflecting the difference in public accessibility. The woodland comprises oak (*Quercus robur*), sycamore (*Acer pseudoplatanus*), silver birch (*Betula pendula*), lime (*Tilia* x *europaea*), hawthorn (*Crataegus monogyna*) and small amounts of yew (*Taxus baccata*). The understory comprises bramble (*Rubus* sp.), holly (*Ilex aquifolium*), elder (*Sambucus nigra*), wild cherry (*Prunus avium*) saplings, bracken (*Pteridium aquilinum*), wood millet (*Milium effusum*), ivy (*Hedera helix*), cleavers (*Galium aparine*) and daffodils (*Narcissus* sp.). One of the hawthorns within this woodland is classed as a veteran tree.

3.2.5.3.2. Selected trees within this woodland are covered by TPOs.

3.2.5.4. Secondary codes: 33 line of trees.

There are numerous individual lines of trees within phase one. The first of these, known as **LOT1**, is a row of mostly cherry (*Prunus avium*) trees which form part of the northwestern boundary, between the site and neighbouring field. Hawthorn (*Crataegus monogyna*) is also frequent.

3.2.5.5. Secondary codes: 34 Ecologically valuable line of trees.

3.2.5.5.1. The second, known as **LOT2**, is a line of deciduous trees that link to the woodland to the west of the survey. This line of trees includes oak (*Quercus robur*), hawthorn (*Crataegus monogyna*), cherry (*Prunus avium*), sycamore (*Acer pseudoplatanus*) and elder (*Sambucus nigra*).

3.2.5.5.2. The third, known as **LOT4**, is a line of trees which extends around the eastern perimeter of the old tip. It comprises sycamore (*Acer pseudoplatanus*), hawthorn (*Crataegus monogyna*), silver birch (*Betula pendula*), crab apple (*Malus sylvestris*), ash (*Fraxinus excelsior*), oak (*Quercus robur*) and whitebeam (*Sorbus aria*).

3.2.5.5.3. The fourth and final in phase one, known as **LOT5**, is located at the north of the old tip and comprises purely sycamore (*Acer pseudoplatanus*).

3.2.6. w1g – Other Woodland; Broadleaved.

Secondary codes: 10 scattered scrub, 31 secondary woodland. – **W3.**

There is a small section of woodland which has established within a triangle of land, south of Darfield Garden Centre. Tree species include sycamore (*Acer pseudoplatanus*), oak (*Quercus robur*), buckthorn (*Rhamnus cathartica*), elder (*Sambucus nigra*), lime (*Tilia* x *europaea*), hazel (*Corylus avellana*) and crack willow (*Salix fragilis*), with understory species comprising sea buckthorn (*Hippophae*

rhamnoides), bramble (*Rubus* sp.), holly (*Ilex aquifolium*), deutzia (*Deutzia scabra*), cuckoo pint (*Arum maculatum*), nettle (*Urtica dioica*), honeysuckle (*Lonicera periclymenum*), rose (*Rosa* sp.), dogwood (*Cornus* sp.) and garlic mustard (*Alliaria petiolata*). Many trees have a sparse covering of ivy (*Hedera helix*).

3.2.7. h3h - Mixed Scrub.

3.2.7.1. Secondary codes: 524 invasive non-native species. – **S1.**

3.2.7.1.1. The largest section of scrub is located within the old tip area and dominates much of the centre of the site. This section of scrub is varied in its maturity and species composition, but it is difficult to separate into smaller parcels.

3.2.7.1.2. Species present within this scrub include species described before in ONG1, along with elder (*Sambucus nigra*), blackthorn (*Prunus spinosa*), buddleia (*Buddleja davidii*), oak (*Quercus robur*) saplings, willow-leaved cotoneaster (*Cotoneaster salicifolius*), elder (*Sambucus nigra*) and silver birch (*Betula pendula*) along with an understory of a variety of species previously described in ONG1.

3.2.7.2. Secondary codes: None - **S2.**

A smaller parcel of dense scrub is present between the southern arable field and the woodlands. Species within this include gorse (*Ulex europeaus*), broom (*Cytisus scoparius*), bramble (*Rubus* sp.), oak (*Quercus robur*), turkey oak (*Quercus cerris*) and elder (Sambucus nigra).

3.2.7.3. Secondary codes: 532 scattered grass – **S3.**

Up the western side of phase two, beneath the line of trees described above and extending eastwards is dense scrub with ruderals and grasses. Species include predominantly bramble (*Rubus* sp.) and willows (*Salix* spp.). Other species include a mixture of this described in ONG3.

3.2.8. h3d – Bramble Scrub.

Secondary codes: None – S4.

To the southeast of phase one, merging between phases 1 and 2, is a fringe of bramble scrub.

3.2.9. h2a5 – Species-rich Native Hedgerow.

3.2.9.1. Secondary codes: 317 recent management. – **H1.**

3.2.9.1.1. The longest hedgerow on site is the one that comprises most of the northern and lies between the survey area and Barnsley Road / Doncaster Road. This hedgerow comprises hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), wild cherry (*Prunus avium*), wych elm (*Ulmus glabra*), hazel (*Corylus avellana*) and elder (*Sambucus nigra*). Leading along Barnsley Road, species-richness reduces as it becomes predominantly hawthorn.

3.2.9.1.2. The understorey of the hedgerow comprises false oat grass (*Arrhenatherum elatius*), rough meadow grass (*Poa trivialis*), cocksfoot (*Dactylis glomerata*), barren brome (*Anisantha sterilis*), creeping thistle (*Cirsium arvense*), dog's mercury (*Mercurialis perennis*), nettle (*Urtica dioica*), yarrow (*Achillea millefolium*), common vetch (*Vicia sativa*), hogweed (*Heracleum sphondylium*), hemlock (*Conium maculatum*), garlic mustard (*Alliaria petiolata*), mugwort (*Artemisia vulgaris*) and broadleaved dock (*Rumex obtusifolius*).

3.2.9.2. Secondary codes: 11 hedgerow with trees, 317 recent management. – **H2.**

As the above hedgerow extends westwards along Doncaster Road, mature trees become more frequent. Hawthorn (*Crataegus monogyna*) is the dominant hedgerow species with five sycamore (*Acer pseudoplatanus*) and individual ash (*Fraxinus excelsior*) and lime (*Tilia* x *europaea*) trees present within.

3.2.9.3. Other hedgerows make up the boundary of the site, particularly along the northeastern section of the survey area, but these all appear to belong to the residents of the neighbouring houses and comprise largely ornamental species. Example photographs of these are shown below.

3.2.10. r1b – Other Standing Water.

Secondary codes: 50 ditch.

3.2.10.1. A ditch, which lies just north and east of the boundary between much of phase one and phase two, begins to the south of W1. Some sections are almost dry whilst others hold approximately 50cm of water. The resurvey in summer found it to be almost totally dry. The ditch varies in its width throughout the site.

3.2.11. r2 – Other Rivers and Streams.

3.2.11.1. There is flowing watercourse that extends along part of the eastern boundary of the phase one area, but it is culverted underground.

3.11.2. This watercourse eventually flows into a second watercourse, which flows along the northern and eastern boundaries of the area where it is proposed to construct a new drainage basin.

3.11.3. Where it flows along the northern boundary of the proposed drainage basin, between what is currently two arable fields, the channel is narrow, and the banks are very much undercut (Photo 1). The channel then opens up again where it flows along the eastern boundary of the proposed new drainage basin area (Photo 2).

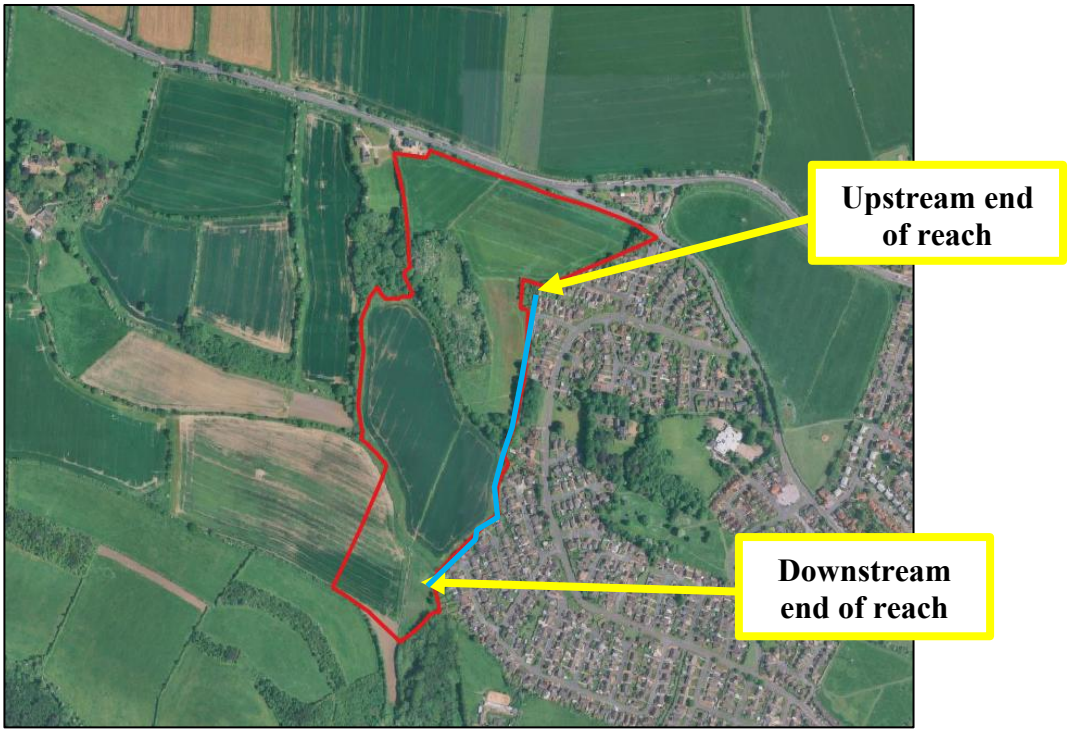
3.3. River Condition Assessment.

3.3.1. MoRPh baseline assessments were carried out of the two watercourses by an accredited surveyor. Both watercourses are unnamed, but for the purpose of the

condition assessment are referred to as the 'Italian Estate Watercourse' and 'Brookfield Watercourse', named after the names of houses / housing estates they flow near.

3.3.2. Italian Estate Watercourse.

3.3.2.1. The length of the river reach in relation to the red line boundary of the site is shown on the map below. The upstream end of the reach is defined where the watercourse appears to start underground, shown on both recent and historic maps. The downstream end is defined by where it flows into the Brookfield Watercourse.



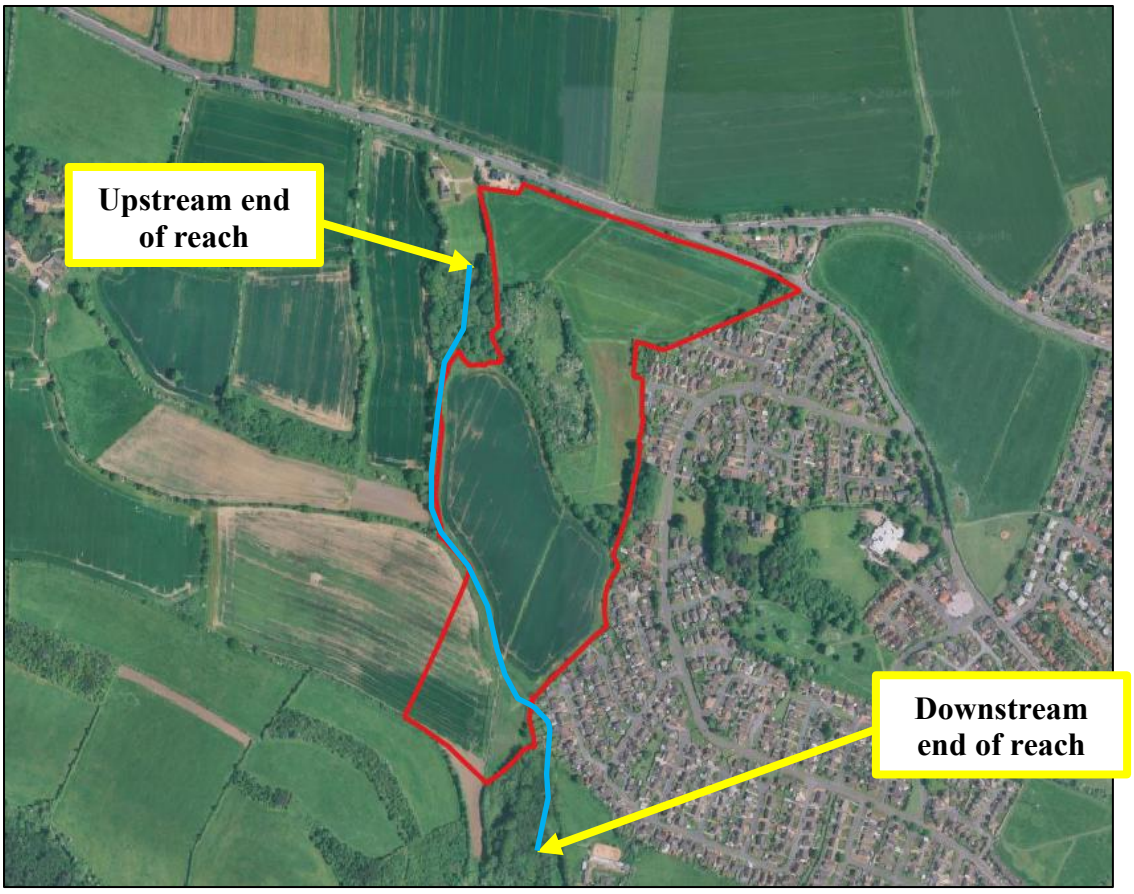
3.3.2.2. One MoRPh5 survey was carried out at the location shown in the map below. The length of this watercourse within or adjacent to the site is measured at approximately 410m, however approximately 170m of this length is culverted and only 240m is open watercourse. The MoRPh5 survey comprised five consecutive ten metre sections (50m total), which covered just short of 21% of the length of the sub reach adjacent to the red line boundary.

3.3.2.3. The photographs below show the nature of the Italian Estate Watercourse throughout the area included in the MoRPh5.

3.3.2.4. The MoRPh field survey information was put into the Cartographer online application, along with the necessary desktop exercise to establish the river type. This had an outcome of 'moderate' condition.

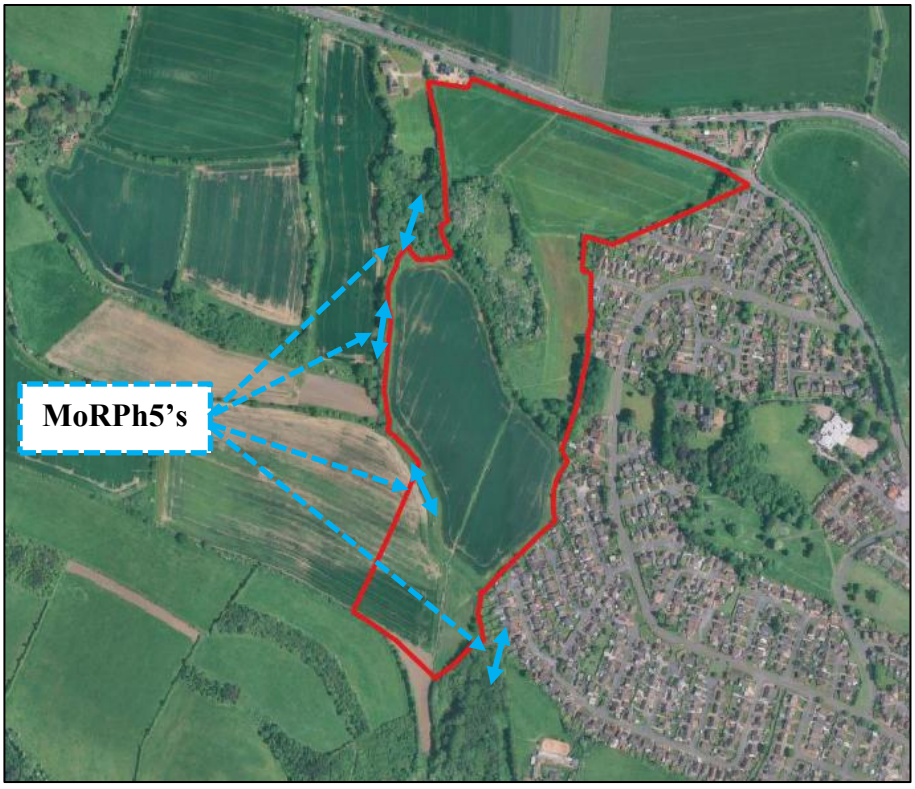
3.3.3. Brookfield Watercourse.

3.3.3.1. The length of the river reach in relation to the red line boundary of the site is shown on the map below. The upstream end of the reach is defined by the source of the watercourse, which is a pond in the woodland adjacent to the site. The downstream end is defined by where it appears to flow underground for the remainder of its length.



3.3.3.2. Four MoRPh5 surveys were carried out at the locations shown in the map below. It was deemed necessary to undertake four surveys as the nature of the watercourse changes as it flows along the survey area. The first section is where it flows through the woodland habitat and does not have a well-defined channel, the second where it flows through a defined open channel along a tree line between two arable fields, the third is where it flows between two arable fields where the channel is more enclosed with undercut banks, and the fourth is where it opens up again and flows along the edge of a housing estate.

3.3.3.3. The length of Brookfield Watercourse adjacent to or within the red line boundary is measured at approximately 580m. The MoRPh5 surveys comprised five consecutive ten metre sections, in four locations, therefore covered a total of 200m, which covered just over 34% of the length of the sub reach adjacent to the red line boundary.



3.3.3.4. The photographs below show the nature of the Italian Estate Watercourse throughout the areas included in the MoRPh5's.

3.3.3.5. The MoRPh field survey information was put into the Cartographer online application, along with the necessary desktop exercises to establish the river type. This had an outcome of 'moderate' condition for where the watercourse flows through the central areas, along the treeline and between the two arable fields, and a 'fairly good' condition for where is flows through the woodland and along the housing estate. This is demonstrated in the map below.

****

4. BIODIVERSITY NET GAIN ASSESSMENT.

4.1. Baseline Biodiversity Value.

The below tables demonstrate the baseline units of the entire site using the Statutory Metric, which is the current metric at the time of this report. A Rivers Condition Assessment (RCA) was carried out by an accredited ecologist, to determine the condition of the watercourse on the site and any sections of watercourse within 10m of the red line boundary. A copy of the metric will be provided alongside this report.

4.1.1. *Area habitats:*

Habitat Type	Area (hectares)	Distinctiveness	Condition	Total habitat units
Cereal crops	4.1771	Low	N/A	9.61
Cereal crops	0.8071	Low	N/A	1.86
Modified grassland	2.63	Low	Poor	6.05
Other neutral grassland	0.5	Medium	Good	6.90
Other neutral grassland	0.3661	Medium	Poor	1.68
Other neutral grassland	0.0885	Medium	Moderate	0.81
Other neutral grassland	0.6354	Medium	Moderate	5.85
Other woodland; broadleaved	0.1116	Medium	Moderate	1.03
Lowland mixed deciduous woodland	0.1168	High	Good	2.42
Lowland mixed deciduous woodland	0.1045	High	Moderate	1.44

Lowland mixed deciduous woodland	0.0464	High	Moderate	0.64
Lowland mixed deciduous woodland	0.4182	High	Moderate	5.77
Mixed scrub	1.5309	Medium	Moderate	14.08
Mixed scrub	0.0222	Medium	Moderate	0.20
Bramble scrub	0.0027	Medium	N/A	0.01
Urban tree	0.0326	Medium	Good	0.45
Other neutral grassland	0.1323	Medium	Moderate	1.22
Cereal crops	1.0362	Low	N/A	2.38
Total (exc. Trees)	**12.73**			**62.41**

4.1.2. Hedgerow habitats:

Hedgerow Type	Length (km)	Distinctiveness	Condition	Biodiversity units
Species-rich native Hedgerow	0.285	Medium	Moderate	2.62
Species-rich native hedgerow with trees	0.123	High	Moderate	1.7
Line of trees	0.069	Low	Moderate	0.32
Ecologically valuable line of trees	0.077	Medium	Moderate	0.71

Ecologically valuable line of trees	0.249	Medium	Moderate	2.29
Ecologically valuable line of trees	0.038	Medium	Moderate	0.35
Total	**0.84**			**7.99**

4.1.3. Watercourse habitats:

Watercourse Type	Length (km)	Distinctiveness	Condition	Biodiversity units
Culvert	0.17	Low	Poor	0.27
Other rivers and streams	0.052	High	Moderate	0.72
Culvert	0.002	Low	Poor	0.00
Other rivers and streams	0.061	High	Moderate	0.77
Culvert	0.002	Low	Poor	0.00
Other rivers and streams	0.065	High	Fairly Good	0.98
Ditches	0.138	Medium	Poor	0.63
Total	**0.49**			**3.37**

4.2. Post Development Biodiversity Value.

4.2.1. Due to the scale of the development and the number of proposed units, it is not possible to achieve a net gain on site. Discussions are currently underway regarding additional land where the units for phase one can be offset but at this time, no agreements have been made.

4.2.2. Much of the land on site is to be lost to facilitate the development, although some sections, crucially most of the woodland, are to be retained. This also includes the central belt of vegetation between phase one most of the hedgerows.

4.2.3. The arable section of the basin will be utilised to create further habitat in the form of a basin and other neutral grassland.

4.2.4. The development has small areas known as ‘pocket parks’ and public open space which allow for a small amount of units to be gained through the creation of new amenity grasslands.

4.2.5. There are also two further undeveloped areas of land which can be dedicated to planting. These will be committed to the sowing of a species-rich grassland.

4.2.6. Approximately one hundred trees are to be planted across phase one and the basin of the development which will not be in public ownership and therefore allow for the achievement of a small amount of units.

4.2.7. The remainder of the site is mostly to comprise a suburban mosaic of housing, roads, gardens, verges and other typical features of a residential estate. The development is too large to allow for the mapping of each individual feature so a 70:30 split between developed land; sealed surface and vegetated gardens have been used as per the Statutory Metric User Guide.

4.2.8. The remainder of the biodiversity units will require offsetting, and providing that the land is close to the current site, and of an arable baseline as it is expected to be, a total of 6.3 hectares are required. This can be reduced to 5.2 hectares if a commitment can be made to achieve ‘good’ condition other neutral grassland.

4.2.9. The tables below show what will be achieved on site.

4.2.9.1. *Area Habitats.*

Habitat Type	**Area (hectares)**	**Distinctiveness**	**Condition**	**Total habitat units**
Retained Habitat				
Other neutral grassland	0.0441	Medium	Moderate	0.41
Other neutral grassland	0.6354	Medium	Moderate	5.85
Other woodland; broadleaved	0.1116	Medium	Moderate	1.03

Lowland mixed deciduous woodland	0.1168	High	Good	2.42
Lowland mixed deciduous woodland	0.1045	High	Moderate	1.44
Lowland mixed deciduous woodland	0.0464	High	Moderate	0.64
Lowland mixed deciduous woodland	0.3995	High	Moderate	5.51
Mixed scrub	0.0205	Medium	Moderate	0.19
Bramble scrub	0.0027	Medium	N/A	0.01
Urban tree	0.0326	Medium	Good	0.45
Other neutral grassland	0.1213	Medium	Moderate	1.12
Created Habitat				
Developed land; sealed surface	6.0504	V.Low	N/A	0.00
Vegetated garden	2.5931	Low	N/A	5.76
Modified grassland	0.1971	Low	Poor	0.44
Modified grassland	0.0276	Low	Poor	0.06
Other neutral grassland	0.3164	Medium	Moderate	2.44
Other neutral grassland	0.0396	Medium	Moderate	0.30

Sustainable drainage system	0.7098	Low	Good	2.75
Urban tree	0.4072	Medium	Moderate	1.43
Other neutral grassland	1.1888	Medium	Moderate	7.96
Total (exc. Trees)	**12.76**			**40.19**

4.2.9.2. *Hedgerow Habitats.*

Hedgerow Type	Length (km)	Distinctiveness	Condition	Biodiversity units
Retained Habitat				
Species-rich native Hedgerow	0.264	Medium	Moderate	2.43
Species-rich native hedgerow with trees	0.091	High	Moderate	1.26
Line of trees	0.069	Low	Moderate	0.32
Ecologically valuable line of trees	0.077	Medium	Moderate	0.71
Total	**0.501**			**4.71**

4.2.9.3. *Watercourse habitats*.

There will be no change to the watercourse units for both the flowing watercourses and the ditch habitats, as the encroachment of the new development will not increase any more than the current encroachment on the site. This is demonstrated in the table below.

Watercourse Type	Length (km)	Distinctiveness	Condition	Biodiversity units
Retained Habitat				
Culvert	0.17	Low	Poor	0.27

Other rivers and streams	0.052	High	Moderate	0.72
Culvert	0.002	Low	Poor	0.00
Other rivers and streams	0.061	High	Moderate	0.77
Culvert	0.002	Low	Poor	0.00
Other rivers and streams	0.065	High	Fairly Good	0.98
Ditches	0.138	Medium	Poor	0.63
Total	**0.49**			**3.37**

4.2.10. Based on the above, phase one of the development will result in a net loss of 22.22 habitat biodiversity units, which is equivalent to a 35.6% loss and a net loss of 3.28 hedgerow biodiversity units, equivalent to a 41.01% loss. There will be no loss, or gain, of watercourse units. Therefore, off-site habitat creation will be required to make up the losses and achieve the statutory 10% net gain.

4.2.11. An example of how this could be achieved is shown in the table below.

4.2.11.1. *Area habitats off site (baseline):*

Habitat Type	Extent (Ha)	Distinctiveness	Condition	Biodiversity units
Cereal crops	6.3	Low	N/A	14.49
Total	**6.3**			**14.49**

4.2.11.2. *Area habitats off site (post development):*

Habitat Type	Extent (Ha)	Distinctiveness	Condition	Biodiversity units
Created Habitats				
Other neutral grassland	4.1	Medium	Moderate	31.57
Mixed Scrub	2	Medium	Moderate	15.4
Lowland mixed deciduous woodland	0.2	High	Moderate	0.29

Total	**6.3**			**47.25**

4.2.11.3. *Hedgerow habitats off site (post development):*

Hedgerow Type	Length (km)	Distinctiveness	Condition	Biodiversity units
Species-rich native hedgerow with trees	0.5	High	Medium	4.83
Total	**0.5**			**4.83**

4.2.12. If the above is achieved, the development will result in a net gain of 2.48 habitat biodiversity units, which is equivalent to a 10.33% gain and a net gain of 1.56 hedgerow biodiversity units, equivalent to a 19.49% gain.

4.2.13. There are a number of options for creating watercourse units to achieve the 10% net gain. The following options can be explored to try and achieve this:

- The creation of new ditches on the site.
- Creation of additional water channels.
- Enhancement in the condition of the sections of watercourse that are currently in 'moderate' condition.
- Removal of the culverted section of the watercourse that flows along the eastern boundary of phase one to open up the watercourse.

4.3. Biodiversity Net Gain Results.

4.3.1. Based on the on-site change only, phase one of the development, including the basin area, will result in the below final results.

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-22.22
	Hedgerow units	-3.28
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-35.60%
	Hedgerow units	-41.01%
	Watercourse units	0.00%

4.3.2. However, with the above off-site proposals in place and carefully managed, the scheme will achieve above the 10% net gain which is required to support the application. However, this will require significant additional land and significant to ensure that both on-site and off-site habitat conditions are achieved. If this is done, the final results will be as shown below. It is yet to be agreed how the 10% uplift in watercourse units will be achieved.

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	6.07
	Hedgerow units	1.56
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	10.33%
	Hedgerow units	19.49%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

4.3.3. To ensure the above is achieved, a Habitat Management and Monitoring Plan (HMMP) will be required which details how the proposed habitats will be both implemented and managed for a minimum of a thirty-year period.

4.3.4. Whilst an off-site gain should be achievable, the amount of land needed may differ from the above dependant on mitigation that is recommended upon completing of protected species surveys.

****

Prepared by:	
Mitchel Greenhalgh BSc ACIEEM.	Date: 6th March 2026

Checked by:	
Ruth Georgiou. BSc, MCIEEM.	Date: 6th March 2026

5. REFERENCES.

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2017) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

Natural England (2014) Protected species and development: advice for local planning authorities. (updated 2021) Available at: https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications (Accessed: 05/03/2024).

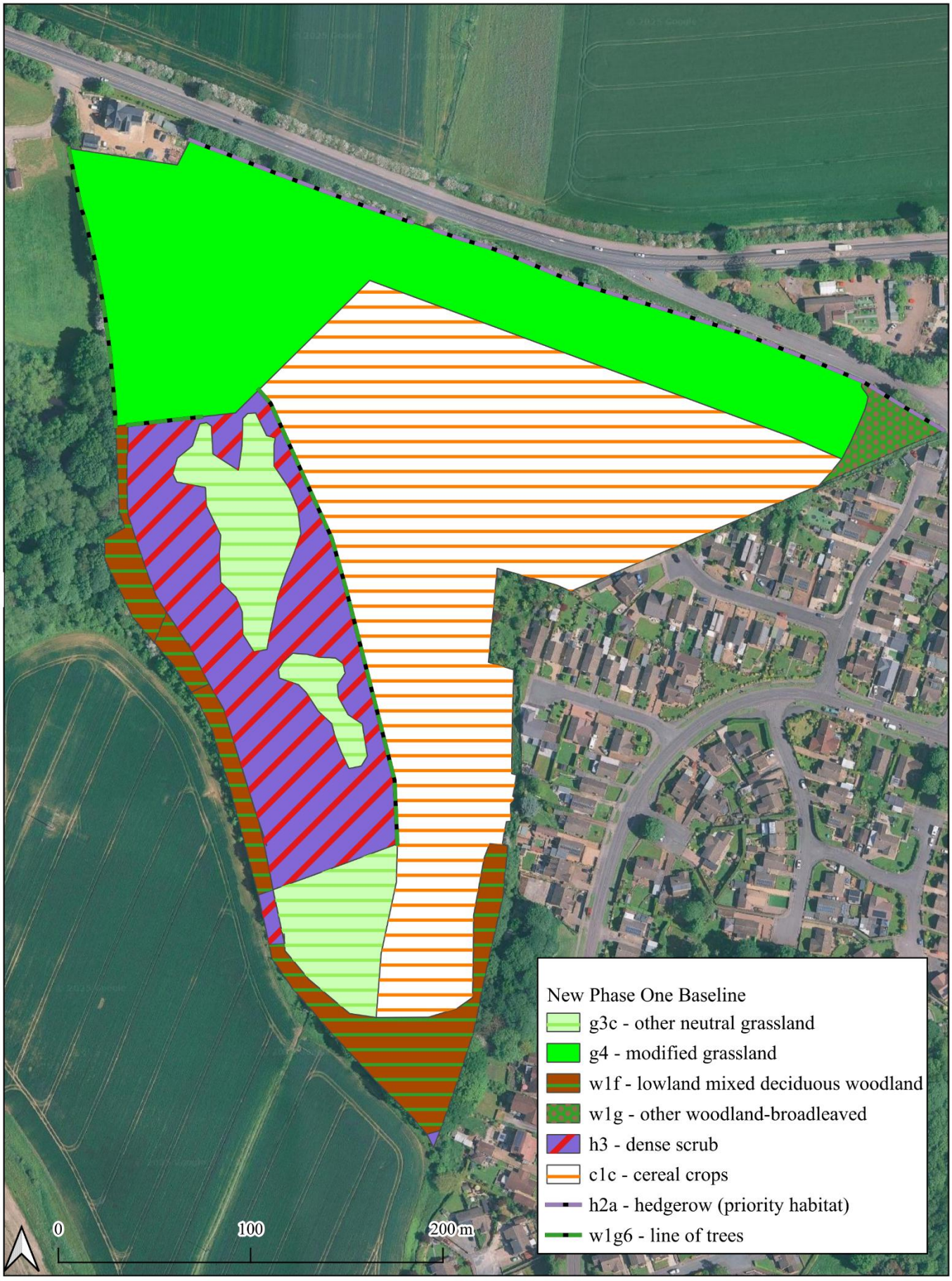
UKHab Ltd (2023) UK Habitat classification Version 2.0 Available at https://www.ukhab.org.

Department for Environment, Food & Rural Affairs (2024) Biodiversity Net Gain. Available at https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides (Accessed: 15/04/2024)

Department for Environment, Food & Rural Affairs (2024) Statutory Net Biodiversity Metric User Guide. Available at https://www.gov.uk/government/collections/biodiversity-net-gain (Accessed: 15/04/2024)

Department for Levelling Up, Housing and Communities (2023) National Planning Policy Framework (NPPF). Available at https://www.gov.uk/government/publications/national-planning-policy-framework--2 (Accessed: 15/04/2024)

Appendix I. ANNOTATED MAP OF PHASE ONE – BASELINE.



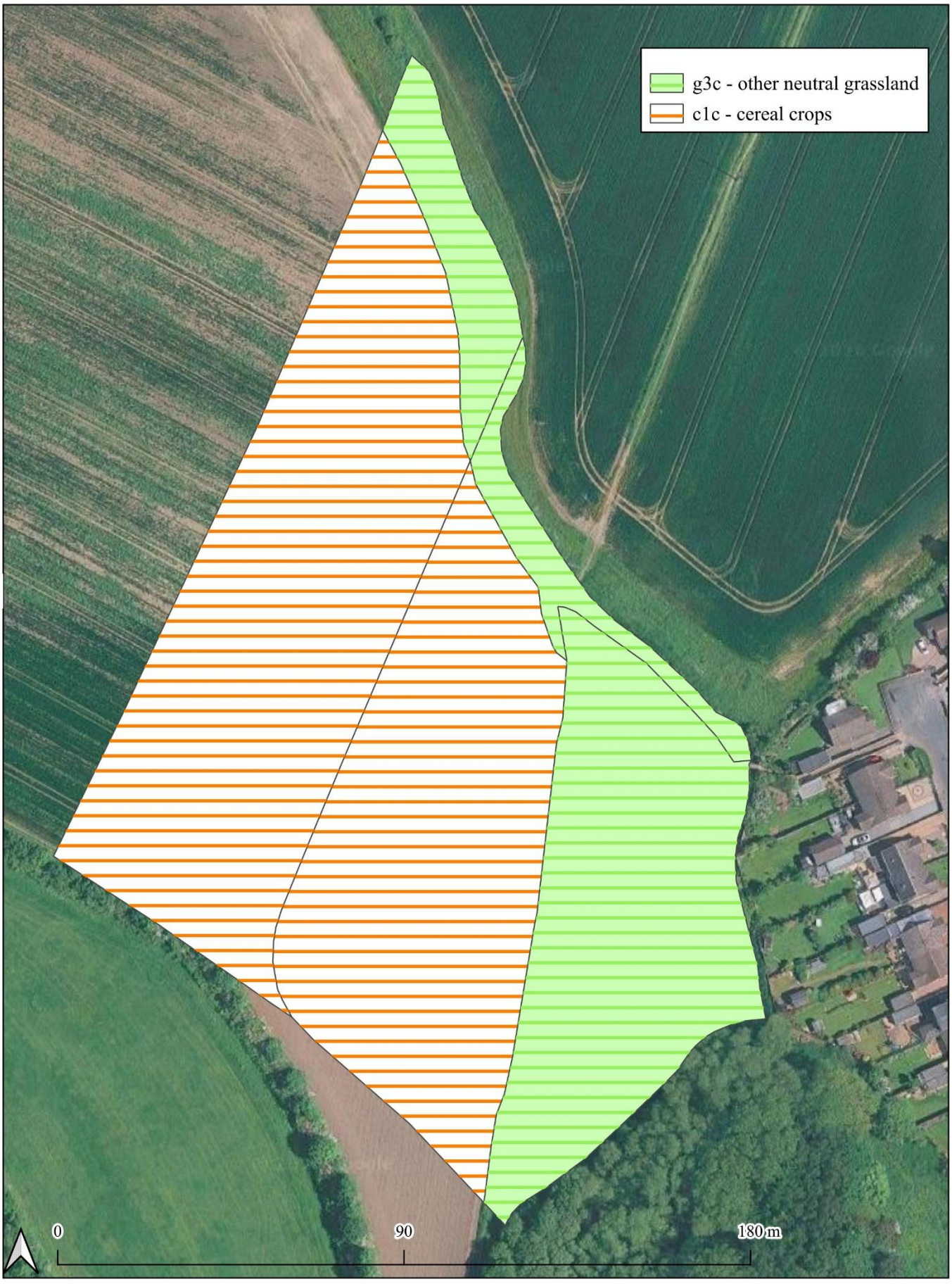
Site: Doncaster Road, Darfield, Phase One

Date: 29.03.2025

Reference:

Produced by: Mitch Greenhalgh

Appendix II. ANNOTATED MAP OF BASIN AREA – BASELINE.



Site: Doncaster Road, Darfield, Phase One

Reference: 240123

Date: 06.03.2026

Produced by: Samuel Bentley

Appendix III. ANNOTATED MAP OF PHASE ONE – POST.

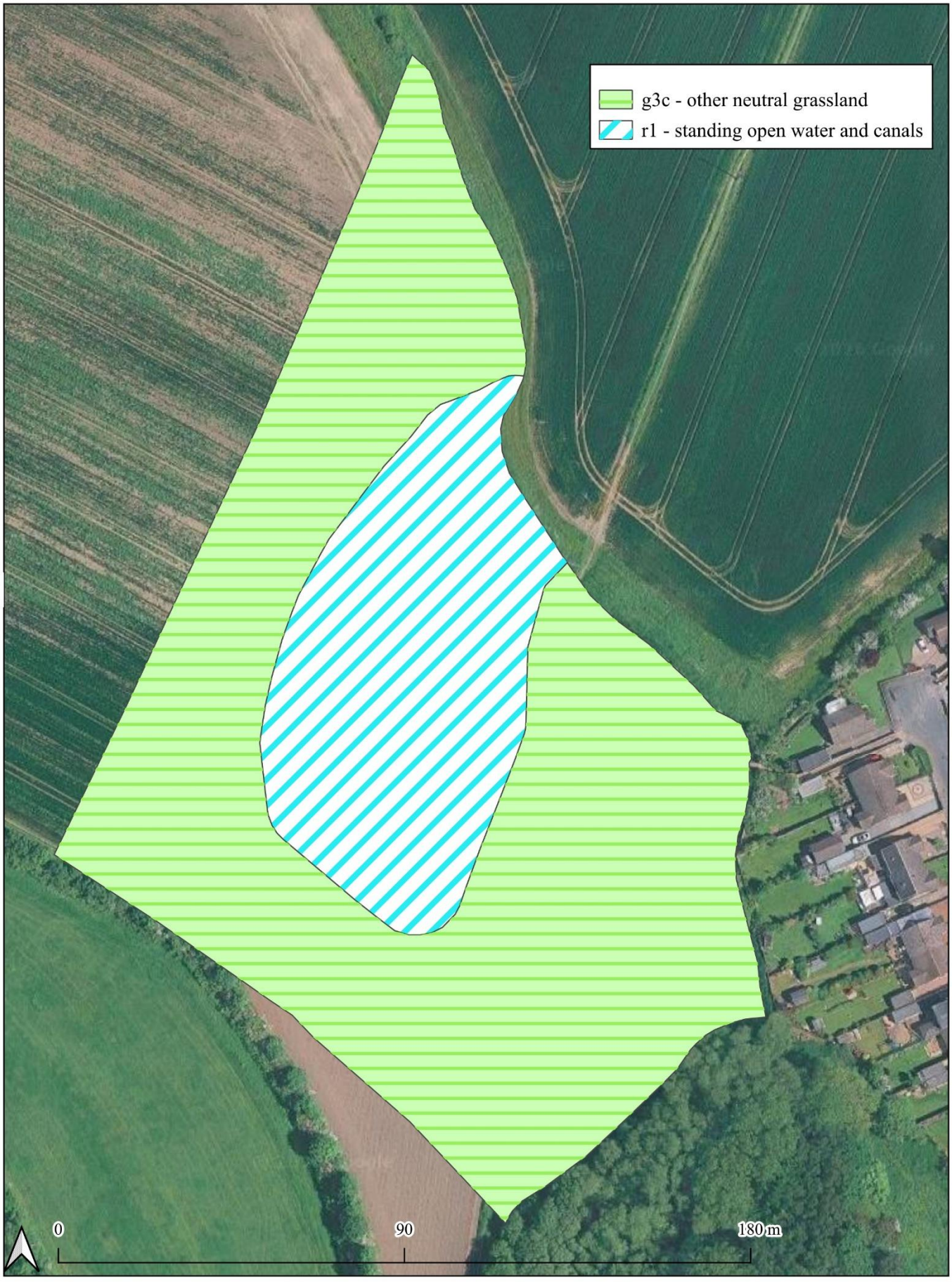
Site: Doncaster Road, Darfield, Phase One

Reference: 240123

Date: 29.03.2025

Produced by: Mitch Greenhalgh

Appendix IV. ANNOTATED MAP OF BASIN AREA – POST.



Site: Doncaster Road, Darfield, Phase One

Reference: 240123

Date: 06.03.2026

Produced by: Samuel Bentley

Appendix V. DEVELOPMENT PLAN.