

# Dinting Vale, Glossop

BIODIVERSITY NET GAIN (BNG) STRATEGY

& 30 YEAR MANAGEMENT PLAN

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784-B039096 Rev 4

Wain Homes

February 2024




Prepared on Behalf of Tetra Tech Group Limited.



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## GLOSSARY

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BNG	Biodiversity Net Gain
CEcol	Chartered Ecologist
CEnv	Chartered Environmentalist
CIEEM	Chartered Institute of Ecology & Environmental Management
DEFRA	Department for the Environment, Food and Rural Affairs
DWT	Derbyshire Wildlife Trust
EA	Ecological Assessment
HPI	Habitat of Principal Importance
JNCC	Joint Nature Conservation Committee
LBAP	Local Biodiversity Action Plan
MCIEEM	Member of Chartered Institute of Ecology & Environmental Management
NE	Natural England
NVC	National Vegetation Classification
POS	Public Open Space
SUDs	Sustainable Urban Drainage
TEP	The Environment Partnership
TT	Tetra Tech

## 1.0 INTRODUCTION

### 1.1 BACKGROUND

Tetra Tech was commissioned by Wain Homes in December 2022 to prepare a Biodiversity Net Gain (BNG) Strategy (using “The Statutory Biodiversity Metric” (Defra, 2024)) and 30 Year Management Strategy, for the site known as Dinting Vale, Glossop and the off-site off-setting area Chinley, High Peak. The Biodiversity Net Gain (BNG) Strategy & 30 Year Management Plan is hereafter referred to as the ‘management plan’.

Following a draft publication of the document, this version details the management plan following further NVC surveys and includes the off-site bespoke compensation discussed with Derbyshire Wildlife Trust (DWT).

The purpose of this document is to provide a 30-year management plan for both onsite habitats (Dinting Vale, Glossop) and the off-site habitats within a designated off-setting area (Chinley, High Peak). This document accompanies the Biodiversity Net Gain Assessment report (Tetra Tech, 2023e).

This report has been prepared by Tetra Tech Consultant Ecologist Harriet Lowery and the conditions pertinent to it are provided in Appendix A. The management plan is to continue for **30 years** following the completion of the construction and landscaping programme.

### 1.2 SITE LOCATION

The development site is located south of A57 Dinting Vale, Glossop, east Manchester and centered at Ordnance Survey National Grid Reference SK 01926 94214 (see Figure 1). This will hereafter be referred to as ‘the site’.

The development site includes other woodland; broad-leaved in the north with scattered broad-leaved trees throughout the site. The southern area of the site is a mixture *Lolium-Cynosurus* neutral grassland (Seasonally wet), Neutral grassland (Tall herb), Other neutral grassland, *Deschampsia* neutral grassland, *Holcus-Juncus* neutral grassland, Lowland dry acid grassland, and Purple moor grass and rush pastures. To the south of the site there is an area of wet woodland. To the north of the site there is also a hard standing road forming access to existing adjacent residential properties and ditches on the northeast and northwest corners of the site.

The site is bordered to the north by the A57 Dinting Vale; to the west by woodland and a rail corridor; and to the east and south by woodland and residential dwellings.

The areas proposed to be used for biodiversity off-site offsetting and bespoke compensation are located at Chinley High Peak, centred at Ordnance Survey National Grid References SK 04616 82268 and SK 04417 82058. This will hereafter be referred to as ‘Chinley’. These sites include a parcel of wet woodland, grazed modified grassland, areas of blackthorn and hawthorn scrub and a hedgerow with ditch. Chinley lies approximately 12km south of the site (as shown in Figure 2) and they lie within the same local authority.

### 1.3 DEVELOPMENT PROPOSALS

The proposal includes a new residential development with 92 properties, associated infrastructure, and landscaping (Appendix B - Site drawing: 4263 101K Landscape Masterplan, Planting plans 4263 2011 parts 1-4). A new access road will be created to the north of the site providing access from Dinting Vale Road (A57).

## 1.4 PURPOSE OF THE REPORT

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The aim of this management plan is to:

- Provide specification for of created and enhanced habitats within both the development site and off-site off-setting area;
- Detail measures to manage and maintain any new, retained and enhanced habitats for the 30 years following completion of construction and associated landscaping; and,
- Provide a monitoring schedule which outlines the commitment to oversee that prescribed measures are implemented, reviewed and adjusted as appropriate.

Any significant changes to the site layout or planting plans, will require that this management plan be reviewed and updated accordingly.

## 1.5 ROLES AND RESPONSIBILITIES

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### 1.5.1 Contractor Responsibilities

A Biodiversity Champion (BC) will be nominated by the lead contractor team to influence site activities during construction and landscaping works in line with the recommendations of this report. The Biodiversity Champion will be familiar with this report as well as the site and have sufficient authority and presence on site to influence activities.

During the construction and landscaping phase the role of Biodiversity Champion is to provide advice to the construction and landscaping teams on all pertinent ecological issues as highlighted by this document as well as preceding documents and to check that the ecological protection and mitigation measures, as specified in this document, are correctly implemented.

General responsibilities of the Biodiversity Champion during the construction and landscaping phase are:

- Overseeing that all site contractors know to report any ecological concerns/issues to him/her/them;
- Check and document that an overview of the site's ecological constraints are included within the contractor inductions as appropriate;
- Undertaking weekly checks of the retained habitats;
- Supervising and monitoring the implementation and habitat creation measures as set out in this document;
- Contacting an ecologist with uncertainties about ecological issues surrounding the development; and
- Advising that contractors are aware of and are able to recognise the invasive species present on site and implementing appropriate biosecurity measures to ensure that invasive species are not spread around the site or off site.

The lead contractor will also appoint a suitably qualified ecologist to act as an Ecological Clerk of Works (ECoW) to conduct a site walkover with the Biodiversity Champion at the beginning of the project to point out features and points of interest.

This 30-year management strategy will be distributed to all relevant personnel involved in the construction and landscaping works.

The contractor responsibilities include the following:

- To adhere to the relevant provisions made within this document and the Construction Management Plan prepared by the contractor;
- Provide a toolbox talk based on information provided in ECoW walkover;



- To adhere to the biosecurity procedures for invasive species under the advice of the ECoW / Biodiversity Champion; and
- To contact the Biodiversity Champion, and/or if necessary, the ECoW, regarding any uncertainties or activities that may impact on ecological features on site.

## 1.5.2 Land Manager / Owner Responsibilities

The land manager / owner responsibilities include the following:

- To adhere to the relevant provisions made within this document for at least 30 years as required.
- To ensure / secure ongoing funding is available to be able to adhere to the relevant provisions made within this document for at least 30 years as required.
- To adhere to the biosecurity procedures for invasive species for at least 30 years as required.
- Overseeing that the created habitats on site and off site are managed as per the management plan for at least 30 years as required.
- To appoint a suitably qualified ecologist to annually monitor the condition of habitats and report on success/failure of establishment, including making recommendations for any remedial action.
- Ensuring that remedial action is taken where necessary for at least 30 years as required.

Where additional issues are identified, or where it is considered that revised maintenance regimes are needed, the suitably qualified ecologist can make changes to management prescriptions as appropriate.

The suitably qualified ecologist will take photographs, make logbook entries of inspections and produce progress reports as appropriate to evidence that the above responsibilities are being upheld. This monitoring and review process will be carried out as an integral part of the overall management plan.

Monitoring timescales are provided in Appendices C and D.

## 1.6 FUNDING & LEGAL AGREEMENTS

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The management plan will be delivered in accordance with the s106 for the development where the 30-year management costs have been included in the contributions required. The s106 agreement is a legally binding agreement and acts alongside a maintenance contract with the appointed managing agent to secure the delivery of the management plan.

### **Onsite:**

Landowner Wain Homes (and will be transferred to a resident management company on completion of the site, all obligations go with the land). Managing Agent: To be decided.

### **Offsite:**

Landowner Wain Homes (or if transferred, all obligations go with the land). Managing Agent: To be decided.

## 2.0 HABITAT PLAN OVERVIEW

Habitat plans are summarised below and described in Section 4.0 and Appendices C and D. Onsite habitats are shown in Figures 3 and 4 and Appendix B (Site drawing: 4263 101K Landscape masterplan and Planting plans 4263 2011 parts 1-4). Offsite habitats are shown in Figures 5 and 6.

Where 'condition' is referred to, this refers to the condition as per Statutory Biodiversity Metric Habitat Condition Assessment Sheets (Defra, 2024).

### On Site (Dinting)

Dinting will see some retention/enhancement of habitats, plus the creation of houses, associated infrastructure, and amenity areas. 0.51ha of bespoke compensation area comprising Lowland dry acid grassland and Purple moor grass and rush pasture will be translocated off-site to Chinley.

Retained and enhanced:

- 0.02ha of other neutral grassland retained is to be retained along the southwestern boundary and kept in 'Good' condition
- 0.05ha bramble scrub in the northwest of the site enhanced to mixed scrub in 'Moderate' condition through partial clearance and supplementary planting
- 0.03ha mixed scrub enhanced to 'Good' condition wet woodland through supplementary planting to merge into the wet woodland surrounding it
- 0.10ha wet woodland to the south to be retained in 'Good' condition
- 0.47ha other woodland; broadleaved enhanced to 'Good' condition
- 0.13km of ditches to be retained. Currently in 'Poor' condition, with enhancements recommended.

Newly created habitats:

- 0.58ha\* total area of 'Moderate' condition modified grassland throughout amenity areas
- 0.32ha total areas of 'Moderate' condition other neutral grassland throughout the site
- 0.48ha total area 'Moderate' condition other woodland; broadleaved, to replace areas affected by construction
- 1.84ha\* of developed land; sealed surface including housing, roads and paths
- 0.04ha introduced shrub in amenity areas
- 0.01ha ground level planters in amenity areas
- 0.03ha of 'Moderate' condition sustainable urban drainage feature, including translocation of orchid patches to surrounding grassland
- 0.74ha\* vegetated garden in rear gardens
- 139 Urban trees of 'Poor' and 'Moderate' condition, including trees in communal areas but not including back garden trees.
- 0.047km of 'Moderate' condition native hedgerow and 0.19km of 'Poor' condition ornamental non-native hedge

\* Note: For the purpose of this management plan, the actual areas are used. The bespoke compensation areas are not dealt with within the metric calculator as they are removed from the baseline.

## Off Site (Chinley)

Habitats will be retained and enhanced at Chinley, with the addition of newly created Other neutral grassland and 0.51ha of bespoke compensation area comprising Lowland dry acid grassland and Purple moor grass and rush pasture translocated from on-site (Dinting).

Retained and enhanced:

- 0.05ha other neutral grassland (*Deschampsia* neutral grassland) to the south enhanced to 'Good' condition
- 0.08ha other swamp enhanced to 'Good' condition
- 0.41ha hawthorn scrub enhanced to 'Good' condition
- 0.02ha blackthorn scrub retained in 'Poor' condition
- 0.01ha blackthorn scrub enhanced to mixed scrub in 'Moderate' condition
- 0.01ha artificial unvegetated, unsealed surface retained
- 0.16ha wet woodland to the west of the site enhanced to 'Good' condition
- 0.44ha wet woodland to the south of the site retained in 'Moderate' condition
- 0.24km native hedgerow associated with ditch enhanced to 'Good' condition

Newly created habitats:

- 1.02ha other neutral grassland in 'Good' condition
- 0.05ha mixed scrub in 'Moderate' condition
- 0.10km of ditch in 'Poor' condition

### 2.1.1 Existing Ecological Information

The site has previously undergone the following surveys and reports issued alongside this management plan:

- Ecological Appraisal (The Environment Partnership, 2022)
- Tree climbing assessment for bat presence or likely absence surveys (Tetra Tech, 2022a);
- Bat activity surveys (Tetra Tech, 2022b);
- GCN eDNA letter report (Tetra Tech, 2022c);
- Invasive non-native species report (Tetra Tech, 2022d)
- Breeding bird survey report (Tetra Tech, 2022e);
- Reptile report (Tetra Tech, 2022f);
- Badger report (Tetra Tech, 2022g)
- Biodiversity Net Gain Assessment (Tetra Tech, 2022h), V1, V2, V3
- Biodiversity Net Gain Assessment (Tetra Tech, 2023a) V4, V5 V6
- Local Wildlife Site Criteria Letter Report (Tetra Tech, 2023b)
- NVC Survey Report Dinting Vale (Tetra Tech, 2023c)
- NVC Survey Report Dinting Vale - Chinley (Tetra Tech, 2023d)
- **Biodiversity Net Gain Assessment (Tetra Tech, 2023e) V7**
- Soil Resources Survey Chinley and Dinting Vale (Land Research Associates, 2023)
- Dinting Vale, Glossop - Arboricultural Impact Assessment Version 3.0 (The Environment Partnership, 2023)

### 3.0 LANDSCAPE PLAN INTERPRETATION

The recommendations made within this report are based upon the landscape plans (see Appendix B) provided. Table 1 documents how the habitats as detailed on the landscape plans (Appendix B) have been interpreted into UKHab habitat types i.e., the habitat types that have been documented within the BNG assessment this management plan supports.

**Table 1: Proposed planting types on-site at Dinting Vale, Glossop interpreted from the 4263 101 K Landscape Masterplan and Planting plans 4263 201I parts 1-4 (Appendix B)**

Proposed landscaping	Interpreted UK Hab habitat type	UK Hab / NE (2019c) Description of habitat	Further detail (where available) taken from landscape and planting plans
Existing trees and hedges to be retained	Other woodland; broadleaved/ Mixed scrub	Broadleaved mixed and yew woodland/ Dense scrub comprising a mixture of species without a single species dominant.	Taken from pre-development plan habitats (Figure 3).
Proposed spine road trees	Urban – Urban tree	The Statutory Biodiversity Metric considers Urban trees to include individual street trees, linear blocks and perimeter blocks of trees within the urban setting.	Trees to be planted as 20-25cm girth, Semi-Mature, 6-7m high with 2m clear stem. Trees to be secured with underground guying system. Ornamental varieties as per Planting plan 4263 204 I (part 4 of 4, see Appendix B).
Proposed Public Open Space (POS) trees	Urban – Urban tree	The Statutory Biodiversity Metric considers Urban trees to include individual street trees, linear blocks and perimeter blocks of trees within the urban setting.	Trees to be planted as 16-18cm, Extra Heavy Standard, 4.5-6m high with 2m clear stem. Trees to be secured with underground guying system. Native varieties as per Planting plan 4263 204 I (part 4 of 4) including <i>Alnus glutinosa</i> , <i>Betula pendula</i> , <i>Fagus sylvatica</i> , <i>Salix cinrea</i> and <i>Tilla cordata</i> .
Proposed ornamental trees	Urban – Urban tree	The Statutory Biodiversity Metric considers Urban trees to include individual street trees, linear blocks and perimeter blocks of trees within the urban setting.	Heavy Standard, 12-14cm girth, 3-4m high to be planted with a double timber stake secured with a rubber tree tie. Ornamental varieties as per Planting plan 4263 204 I (part 4 of 4, see Appendix B).
Proposed trees in hard landscape	Urban – Urban tree	The Statutory Biodiversity Metric considers Urban trees to include individual street trees, linear blocks and perimeter blocks of trees within the urban setting.	Trees to be planted as Heavy Standard, 12-14cm girth, 3-4m high. Trees to be planted with a tree grill, protected by an ornamental tree guard, and secured with underground guys and underground cell system. Ornamental varieties as per Planting plan 4263 204 I (part 4 of 4, see Appendix B).

Proposed landscaping	Interpreted UK Hab habitat type	UK Hab / NE (2019c) Description of habitat	Further detail (where available) taken from landscape and planting plans
Proposed back garden trees	Built-up areas and gardens (garden, vegetated garden)	Land within the curtilage of a residential property, managed for leisure, visual amenity, wildlife or food production, or unmanaged. Garden that is principally vegetated, for example with large areas of grass and flower beds.	Trees to be planted as 10-12cm girth or 50L containers, 2-3m high and secured with single stake and suitable rubber ties. Ornamental varieties as per Planting plan 4263 204 I (part 4 of 4, see Appendix B).
Proposed Ornamental Hedgerows	Other hedgerows	Hedgerows that do not consist predominantly (i.e. 80% or more cover) of at least one woody UK native species.	Hedgerows to be planted in 10L containers at a rate of 3-4 per lin. metre. Ornamental varieties as per Planting plan 4263 204 I (part 4 of 4, see Appendix B).
Proposed Native Hedgerows	Hedgerow (priority habitat)	Hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species, where each UK country can define the list of woody species native to their respective country.	Hedgerows to be planted in 10L containers, double staggered, 300mm centres, at a rate of 5 per lin. metre. Hawthorn <i>Crataegus monogyna</i> , Hazel <i>Corylus avellana</i> , Holly <i>Ilex aquifolium</i> , Blackthorn <i>Prunus spinosa</i> , Dog rose <i>Rosa canina</i> .
Proposed shrub planting	Urban (Introduced shrub)	Non-native tall phanerophytes, mid phanerophytes or low phanerophytes planted in a garden or park setting e.g. winter jasmine.	Ornamental shrub planting, to be planted in 3-4L containers at 3-4 p/m <sup>2</sup> and enhanced by feature specimens in 10-20L pots. Ornamental varieties as per Planting plan 4263 204 I (part 4 of 4, see Appendix B).
Proposed woodland planting mix	Other woodland; broadleaved	Broadleaved mixed and yew woodland	Proposed Woodland Planting Mix Broadleaved woodland planting mix including Alder <i>Alnus glutinosa</i> , Grey alder <i>Alnus incana</i> , Hazel <i>Corylus avellana</i> , Birch <i>Betula pubescens</i> , Rowan <i>Sorbus aucuparia</i> , Hawthorn <i>Crataegus monogyna</i> . The planning plan also references pedunculate oak <i>Quercus robur</i> , and ground flora Scaly male fern <i>Dryopteris affinis</i> , Honeysuckle <i>Lonicera periclymenum</i> ,

Proposed landscaping	Interpreted UK Hab habitat type	UK Hab / NE (2019c) Description of habitat	Further detail (where available) taken from landscape and planting plans
			Trees planted as 8-10cm girth, half standard. To be planted as whips with selected standards at 1p/m <sup>2</sup>
Proposed understory mix native	Other woodland; broadleaved (this will expand the woodland edge with additional tree planting within)	Broadleaved mixed and yew woodland	To be planted as bare root stock, 60-80cm, at 2p/m <sup>2</sup> , and protected with spiral guards. To be planted in groups of 3-5 plants. Including Hazel <i>Corylus avellana</i> , Dogwood <i>Cornus sanguinea</i> , Hawthorn <i>Crataegus monogyna</i> , Blackthorn <i>Prunus spinosa</i> , Dog rose <i>Rosa canina</i> , Crack willow <i>Salix fragilis</i> and Guelder rose <i>Viburnum opulus</i> .
Proposed bulbs	Urban - Ground level planters	Plants in pots or other planters at ground level.	Planting to POS areas to create unique areas of seasonal interest. Ornamental varieties as per Planting plan 4263 204 I (part 4 of 4, see Appendix B).
Proposed grass POS and verges	Grassland – Modified grassland	Vegetation dominated by a few fast-growing grasses on fertile, neutral soils. It is frequently characterised by an abundance of Ryegrass <i>Lolium</i> spp. and White Clover <i>Trifolium repens</i> .	
Proposed Wildflower Meadow	Other neutral grassland	Neutral grassland that does not meet the definition of either g3a or g3b. Perennial Ryegrass <i>Lolium perenne</i> is likely to be present at <30% with between 9 and 15 further species (m <sup>2</sup> ) also present. Many of the more species rich swards that were previously described as “semi-improved neutral grassland” will fall here, together with	To be Emorsgate EM3 Meadow Mixture, supplied by Emorsgate or similar approved as well as additional planting for pollinators including the large garden bumblebee ( <i>Bombus ruderatus</i> ) in edge areas.

Proposed landscaping	Interpreted UK Hab habitat type	UK Hab / NE (2019c) Description of habitat	Further detail (where available) taken from landscape and planting plans
		rank and unmanaged swards on neutral soils.	
Proposed grass - gardens	Built-up areas and gardens (garden, vegetated garden)	Land within the curtilage of a residential property, managed for leisure, visual amenity, wildlife or food production, or unmanaged. Garden that is principally vegetated, for example with large areas of grass and flower beds.	Front gardens to be turfed with a general amenity grass from a local supplier.
Proposed wildflower meadow attenuation pond	Urban – SUDs / Other neutral grassland	Elements designed to manage surface water to aid in reducing flooding and increasing water quality, which are also open with vegetation and/or open water. /Neutral grassland that does not meet the definition of either g3a or g3b. Perennial Ryegrass <i>Lolium perenne</i> is likely to be present at <30% with between 9 and 15 further species (m2) also present. Many of the more species rich swards that were previously described as “semi-improved neutral grassland” will fall here, together with rank and unmanaged swards on neutral soils.	Areas surrounding SUDs to have mixture of translocated areas of MG10a containing orchids and other aquatic plants. Orchids present on site to be translocated will require marking out during the flowering season. Turves will be as large as possible to increase chances of success. Species of interest and Emorsgate EM8 Meadow Mixture for Wetland, supply by Emorsgate or similar approved. Sowing rate 4/gm2
Proposed edge mixture EP1 or EM8	Urban – SUDs / Other neutral grassland	Elements designed to manage surface water to aid in reducing flooding and increasing water quality, which are also open with vegetation and/or open water. /Neutral grassland that does not meet the definition of either g3a or g3b. Perennial Ryegrass <i>Lolium perenne</i> is likely to be present at <30% with between 9 and 15 further species (m2) also present. Many of the more species	Wildseed or similar approved (dependent on water-table) 4g/m2. Proposed Aquatic and Marginal Planting Aquatic and marginal species to be planted 1m. from the waters edge directly into the Greenfix Covamat surfacing on the banks immediately adjacent to the watercourse. Yellow flag iris <i>Iris pseudacorus</i> , Soft rush <i>Juncus effusus</i> ,



Proposed landscaping	Interpreted UK Hab habitat type	UK Hab / NE (2019c) Description of habitat	Further detail (where available) taken from landscape and planting plans
		rich swards that were previously described as “semi-improved neutral grassland” will fall here, together with rank and unmanaged swards on neutral soils.	Ragged robin <i>Lychnis flos-cuculi</i> , Purple loosestrife <i>Lythrum salicaria</i> , Marsh woundwort <i>Stachys palustris</i> .
Buildings, Footpath, Shared surface, Road	Urban – Developed land; sealed surface	Soil surface sealed with impervious materials as a result of urban development and infrastructure construction.	Proposed buildings, parking, tarmac and block paving.

Unless otherwise stated, post-development habitats will be created to a standard that will comply with the condition assessment descriptions (Defra, 2024).

The expected target conditions of post-development habitats as input into the Statutory Biodiversity Metric are shown in Appendices C and D. The establishment and management of them is detailed in Section 4.0.

## 4.0 MANAGEMENT STRATEGY

This section provides details of the proposed management of the new and retained ecological features for **30 years** following the completion of the construction and landscaping programme. All retained and enhanced habitats must be marked out and be protected from traffic during construction, ideally with fencing.

Target conditions are in Appendices C-D. The Biodiversity Champion is to do an annual check to inform upcoming management and dynamic ecological monitoring recommendations are to be provided at the intervals as listed in Appendices C-E.

Establishment and ongoing management are described in this section, with ongoing management actions summarised in checklist Tables 1 and 2 in Appendix F.

### 4.1 ON-SITE RETAINED AND ENHANCED HABITATS

#### 4.1.1 Other Neutral Grassland (Retained)

Other neutral grassland will be managed to meet target 'Good' condition as per Appendix C and Defra Statutory Biodiversity Metric condition assessment criteria.

##### **Ongoing Management (see checklist Table 1 Appendix F)**

The best results are usually obtained by traditional meadow management based around **an annual** main summer hay cut.

Meadow grassland is not cut from spring through to late July/August to give species an opportunity to flower. After flowering in July or August take a 'hay cut': cut back with a scythe, petrol strimmer or tractor mower to c 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site. Mow the re-growth through in late autumn/winter to c 50mm, removing arisings.

To increase biodiversity value of the grassland, the following measures will be adopted:

- All arisings removed to prevent nutrient level increase in the soil and added to compost piles away from the habitat or taken off site;
- No cuts below 50mm to allow flowers to seed;
- Avoidance of use of herbicide and fertiliser; and
- Trim or remove undesirable species such as creeping thistle, spear thistle, curled dock, broad-leaved dock and common nettle.

#### 4.1.2 Bramble scrub (Enhanced to mixed scrub)

The bramble scrub will be enhanced to mixed scrub to meet target 'Moderate' condition as per Appendix C and Defra Statutory Biodiversity Metric condition assessment criteria.

Bramble scrub is present in the north-west of the site. The intention is to enhance this through planting of native shrub species and appropriate management to encourage development into mixed scrub at moderate condition.

##### **Prior to planting**

A litter pick of the area is recommended before planting. Prior to planting additional shrubs, bramble will be selectively cleared to create glades of around 3/5<sup>th</sup> of the area. This will increase the length of edge habitats available for invertebrates and increase diversity through planting. The above ground scrub clearance should be carried out in the winter to avoid nesting bird constraints, if completed during the breeding bird season (March – September inclusive), clearance works will be completed under ECoW supervision. The ECoW will also identify suitable areas of scrub that can be removed for glade creation and will advise contractors on appropriate levels and methods of clearance. All arisings from bramble scrub clearance are to be removed from site.

After above ground vegetation clearance, the rootstocks of scrub will be removed to avoid scrub recolonizing the same area and to create a suitable area for new planting. Rootstocks will be grubbed out mechanically and this will be supervised by an ECoW, who will conduct hand searches prior to works. All removal of the below-ground parts of cleared vegetation must be undertaken between mid-March and October (inclusive) to avoid impacts on hibernating reptiles and amphibians.

### Ground preparation

- All excavations will be undertaken in accordance with BS 3882:2015, BS 8601:2013 and the 2009 DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.
- All extraneous rubbish (concrete, metal, grass, decayed vegetation, contaminated topsoil) should be removed. Stones larger than 50mm in dimension should be removed.
- All vegetation should be cleared to ground level and arisings removed and ideally, planting into bare soil is achieved.
- Any compacted topsoil should be broken up to full depth, and within a few days of planting the top 450mm of soil should be loosened, aerated, and broken up into particles of 2-8mm.
- Backfilling material used will be previously removed topsoil plus additional if required. Backfilling will reinstate 300mm over 600mm profile.
- The overuse of chemical herbicides will be avoided.

### Planting

After selective clearance of bramble scrub, shrub whips can be planted. Shrubs to be planted as bare root stock, 60-80cm, at 2p/m<sup>2</sup>. No invasive plant species (such as rhododendron, as listed on Schedule 9 of the Wildlife and Countryside Act 1981) will be included and if encountered during works, must be removed during management.

Shrubs to be planted include Hazel *Corylus avellana*, Dogwood *Cornus sanguinea*, Hawthorn *Crataegus monogyna*, Blackthorn *Prunus spinosa*, Dog rose *Rosa canina* and Guelder rose *Viburnum opulus*.

Shrubs will not be planted in waterlogged or frozen soil and should receive regular water when the earth is dry.

Additionally, whips should be protected with spiral guards, tubes or stakes and ties (ideally plastic-free) as necessary. To be planted in groups of 3-5 plants, in autumn and winter (October - April).

### Ongoing management (see checklist Table 1 Appendix F)

Corrective pruning may be required, and any weeds should be removed to prevent competition. Corrective light pruning of shrubs during winter (January and February) will encourage denser growth, which is favourable for wildlife. Replacement of any failed plantings, during the next suitable planting period for that species, for the first 5 years.

Guards, tubes, stakes and ties should be checked in spring and adjusted in autumn to prevent constriction of the stem or plant. After two growing seasons the plants should have made sufficient root growth to anchor the plant and supporting stakes can be removed. Tree guards should also be removed when beginning to split.

Once established, rotational clearing of 1/5<sup>th</sup> of the area every 3 years to maintain structural diversity is recommended. No one species should dominate, therefore bramble may need to be selectively cleared and overplanted where required.

Scrub is to be monitored for the presence of invasive species which can spread very rapidly once established, and remedial action taken as per Section 5.0. This will be done both through the ecological monitoring and through annual checks (April-September, ideally in April to allow remedial action to be taken the same year) for Himalayan balsam by the Biodiversity Champion.

### 4.1.3 Mixed scrub (Enhanced to wet woodland)

Mixed scrub to be enhanced to woodland to meet target 'Good' condition as per Appendix C and Defra Statutory Biodiversity Metric condition assessment criteria.

The mixed scrub abuts the current wet woodland, following development the areas will be managed as one piece of wet woodland (see Section 4.1.5) through additional tree and ground flora planting. Leaf litter should be retained over the winter period to benefit invertebrates.

#### Prior to planting

A litter pick of the area is recommended before planting. Prior to planting, 1/3<sup>rd</sup> of the scrub will be selectively cleared. The above ground scrub clearance should be carried out in the winter to avoid nesting bird constraints, if completed during the breeding bird season (March – September inclusive), clearance works will be completed under ECoW supervision. The ECoW will also identify suitable areas of scrub that can be removed and will advise contractors on appropriate levels and methods of clearance. Arisings may be used to create habitat piles on site.

After above ground vegetation clearance, the rootstocks of scrub will be removed to avoid scrub recolonizing the same area and to create a suitable area for new planting. Rootstocks will be grubbed out mechanically and this will be supervised by an ECoW, who will conduct hand searches prior to works. All removal of the below-ground parts of cleared vegetation must be undertaken between mid-March and October (inclusive) to avoid impacts on hibernating reptiles and amphibians.

#### Ground preparation

- All excavations will be undertaken in accordance with BS 3882:2015, BS 8601:2013 and the 2009 DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.
- All extraneous rubbish (concrete, metal, grass, decayed vegetation, contaminated topsoil) should be removed. Stones larger than 50mm in dimension should be removed.
- All vegetation should be cleared to ground level and arisings removed and ideally, planting into bare soil is achieved.
- Any compacted topsoil should be broken up to full depth, and within a few days of planting the top 450mm of soil should be loosened, aerated, and broken up into particles of 2-8mm.
- Backfilling material used will be previously removed topsoil plus additional if required. Backfilling will reinstate 300mm over 600mm profile.
- The overuse of chemical herbicides will be avoided.

#### Planting

After selective clearance of scrub, whips can be planted. Should invasive plant species (such as rhododendron, as listed on Schedule 9 of the Wildlife and Countryside Act 1981) be encountered during works they will be removed during management. See Section 5.0 for further detail on invasive control.

Native species matching the adjacent woodland should be planted, including Alder *Alnus glutinosa*, grey willow *Salix cinerea*, goat willow *Salix caprea* and downy birch *Betula pubescens*.

Whips will not be planted in waterlogged or frozen soil and should receive regular water when the earth is dry.

Additionally, whips should be protected with spiral guards, tubes or stakes and ties (ideally plastic-free) as necessary. To be planted in groups of 3-5 plants, in autumn and winter (October - April).

#### Ongoing management (see checklist Table 1 Appendix F)

Replacement of any failed plantings, during the next suitable planting period for that species, for the first 5 years.

Guards, tubes, stakes and ties should be checked in spring and adjusted in autumn to prevent constriction of the stem or plant. After two growing seasons the plants should have made sufficient

root growth to anchor the plant and supporting stakes can be removed. Tree guards should also be removed when beginning to split.

Wet woodland will require that water levels are maintained. Where ongoing monitoring identifies that the area is dry, areas of open water will be created within the woodland, such as open channels and / or ponds. The need for this will be further informed through ongoing monitoring.

Wet woodland is to be monitored for the presence of invasive species which can spread very rapidly once established, and remedial action taken as per Section 5.0. This will be done both through the ecological monitoring and through annual checks (April-September, ideally in April to allow remedial action to be taken the same year) for Himalayan balsam by the Biodiversity Champion.

#### 4.1.4 Broadleaved Woodland (Enhanced)

Broadleaved woodland to be enhanced from 'Poor' to meet target 'Good' condition as per Appendix C and the Defra Statutory Biodiversity Metric condition assessment criteria.

All trees should be protected during construction phase as per BS 5837 (2012) and root protection areas observed as detailed in the Tree Constraints Plan (Drawing D9131.001 (TEP, 2022)). Trees and scrub will not be removed or severely thinned during the bird nesting season (March–September inclusive) to avoid possible breaching of legislation which protects breeding birds and their nests. Trees will be assessed for their bat potential by an ECoW before works are undertaken on them.

##### Initial Management

- Removal of non-native invasive species such as *Impatiens glandulifera*, *Rhododendron* sp. and *Prunus laurocerasus*. See Section 5.0 for further detail on invasive control.
- Removal of shrub should be done October-February (avoiding nesting bird season) for above ground clearance, otherwise under ECoW. All removal of the below-ground parts of cleared vegetation must be undertaken between mid-March and October (inclusive) to avoid impacts on hibernating reptiles and amphibians.
- The age distribution of trees can be diversified through thinning, coppicing, pollarding or supplementary planting depending on dynamic management recommendations. Non-natives such as *Acer pseudoplatanus* and *Acer platanoides* to be preferentially removed. An arborist should be consulted on a woodland management schedule for coppicing/thinning to achieve the necessary condition following completion of adjacent tree removal to facilitate the access road.
- Where supplementary planting is appropriate, the species specified in the woodland creation section (Section 4.2.3) are to be used to increase the diversity of native trees and native understory shrubs to at least 80% of the total.
- Ground flora to be supplementary planted with *Lonicera periclymenum*, *Pteridium aquilinum*, *Anemone nemorosa* and *Hedera helix*.

##### Ongoing Management (see checklist Table 1 Appendix F)

- Health status checks to be made annually. Any plants with signs of disease must be replaced to prevent the disease spreading. Browsing extent to be monitored and controlled where necessary. Any ash infected with ash-dieback should be removed, monitoring any remaining ash trees will take place to assess the condition of the trees with the intention to promote trees that are resistant to the disease. An arborist should be consulted on these matters.
- Woodland management schedule followed for thinning/coppicing/pollarding and supplementary woody planting.
- Deadwood can be increased by allowing non-diseased felled trees to remain on the ground and fallen deadwood left in situ as a resource for invertebrates and fungi. Standing deadwood should also be retained (unless dangerous) as roosting resource for bats and birds.
- Woodland is to be monitored for the presence of invasive species which can spread very rapidly once established, and remedial action taken as per Section 5.0. This will be done both

through the ecological monitoring and through annual checks (April-September, ideally in April to allow remedial action to be taken the same year) for Himalayan balsam by the Biodiversity Champion.

#### 4.1.5 Wet woodland (Retained)

Wet woodland should be managed to retain 'Good' condition as per Appendix C and BNG 3.1 Habitat Condition Assessment Sheets. All trees should be protected during construction phase as per BS 5837 (2012) and root protection areas observed as detailed in the Tree Constraints Plan (Drawing D9131.001 (TEP, 2022)). Trees and scrub will not be removed or severely thinned during the bird nesting season (March–September inclusive) to avoid possible breaching of legislation which protects breeding birds and their nests. Trees will be assessed for their bat potential by an ECoW before works are undertaken on them.

Coppicing/pollarding of the woodland would benefit invertebrate and bird species diversity as well as controlling the spread of willow. This is a small area of carr and would only require a 10-year rotation of small units if this management option is pursued. An arborist should recommend targeted trees for coppicing or thinning through a woodland management schedule to achieve the necessary condition.

#### Ongoing Management (see checklist Table 1 Appendix F)

Follow coppicing/pollarding schedule as set out by a woodland management schedule.

Wet woodland should be monitored annually for its water levels to ensure it does not dry out over time due to changes in drainage. Typical plant indicators of this are an increase in ruderal species such as nettle *Urtica dioica* and bramble *Rubus fruticosus agg.*

The wet woodland is to be monitored for the presence of invasive species which can spread very rapidly once established, and remedial action taken as per Section 5.0. This will be done both through the ecological monitoring and through annual checks (April-September, ideally in April to allow remedial action to be taken the same year) for Himalayan balsam by the Biodiversity Champion.

To maintain the current 'Good' condition:

- Any non-native species such as *Acer pseudoplatanus* and *Acer platanoides* should be preferentially removed when thinning is required.
- Ground flora can be supplementary planted with *Iris pseudacorus*, *Phalaris arundinacea* and *Solanum dulcamar*, Lady fern *Athyrium filix-femina*, opposite leaved-golden saxifrage *Chrysosplenium oppositifolium*, meadowsweet *Filipendula ulmaria* and Yellow pimpernel *Lysimachia nemorum*.
- Health status checks to be made annually. Any plants with signs of disease must be replaced to prevent the disease spreading. Browsing extent to be monitored and controlled where necessary. Any ash infected with ash-dieback should be removed, monitoring any remaining ash trees will take place to assess the condition of the trees with the intention to promote trees that are resistant to the disease. An arborist should be consulted on these matters.
- Deadwood can be increased by allowing non-diseased felled trees to remain on the ground and fallen deadwood left in situ as a resource for invertebrates and fungi. Standing deadwood should also be retained (unless dangerous) as roosting resource for bats and birds.

#### 4.1.6 Ditches (Retained)

Ditches are currently 'Poor' condition as per Appendix C and BNG 3.1 Habitat Condition Assessment Sheets. Whilst not a requirement of the BNG assessment, ditch enhancement is a general good practice to support biodiversity. At a minimum, the current condition of the ditches should be maintained. Where ownership allows, enhancement will be achieved by the following:

### North ditch

Any non-native species such as water fern *Azolla spp.*, Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides*, Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glanulifera*, should be removed.

Reducing shading, where appropriate with adjacent woodland management schedule, will encourage emergent, submerged and floating leaved plants. Supplementary planting is not advised in areas with invasives until invasives have been successfully eradicated. Suitable supplementary native bankside and emergent vegetation includes marsh marigold *Caltha palustris*, meadowsweet *Filipendula ulmaria* and yellow flag iris *Iris pseudacorus*.

### South ditch

Reducing shading, where appropriate with adjacent woodland management schedule, will encourage emergent, submerged and floating leaved plants. Suitable supplementary native bankside and emergent vegetation includes marsh marigold *Caltha palustris*, meadowsweet *Filipendula ulmaria* and yellow flag iris *Iris pseudacorus*.

Ditches should retain water for most of the year. The water level of the ditches is essential to surrounding habitat, such as the wet woodland.

## 4.2 ON-SITE HABITAT CREATION

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Details of habitat creation and outline maintenance are described below, target conditions and frequency of monitoring can be found in Appendices C - D.

A full list of post-development habitat interpretations are in Section 3.0 Table 1. Urban developed land areas, buildings, ground level planters and vegetated gardens are not discussed in this section as they are not subject to condition assessment targets.

**If, during monitoring it is observed that created habitats and vegetation (or parts thereof) have failed, then remedial action should be taken to re-establish them in the next annual cycle under the guidance of the landscaping/ ecological consultant.**

### 4.2.1 Modified Grassland

Modified grassland in Public Open Space (POS) and verges should be managed to meet at least target 'Moderate' condition as per Appendix C and Defra Statutory Biodiversity Metric condition assessment criteria.

Modified grassland will be present in POS areas and on road verges. A suitable grassland mix, such as Flowering Lawn Mixture EL1 (wildseed.co.uk), will be used at a rate of 25g/m<sup>2</sup>. The following establishment advice is given:

#### Ground Preparation

First remove weeds using repeated cultivation. Plough or dig to bury any surface weeds, then cultivate the soil with a rotovator, harrow or rake to produce a medium tilth. Ideally after this initial cultivation and levelling leave the ground to settle for several days or weeks. This will allow the soil to settle, after which any unevenness can be corrected. It also gives another opportunity to control any residual weeds which emerge during this time ('stale seedbed technique').

Getting an even surface is important for a good lawn, especially for close-mown ornamental lawns. Lightly re-cultivate the surface, pick off any large stones or bricks, then rake and roll (or tread) the soil surface repeatedly in different directions, moving soil if needed to smooth out minor humps and depressions until you have a firm even surface. The final raking and rolling should produce a seed bed with a medium-fine tilth ready for seeding.

### **Sowing**

Seed is best sown in the autumn or spring but can be sown at other times of the year if there is sufficient warmth and moisture in the soil. Moisture may be supplied artificially by watering but must be thorough enough to penetrate at least 100mm, and continued after sowing if dry weather follows. Seed should be surface sown onto a freshly prepared seed bed and can be applied by machine or broadcast by hand. To get an even distribution, divide the seed into two or more parts and sow in overlapping sections.

After sowing lightly, rake or harrow the surface to settle the seed in. Take care not to bury the seed at depth. Firm with a roll, or by treading, to give good soil/seed contact.

### **First Season Management**

Once seedling grasses are established, (typically in good growing conditions about three to four weeks after sowing), lightly roll or tread to firm and level the soil around the grass roots ready for the first cut (do not roll however if the ground is saturated with water).

After a few days, when the grass has picked up again, the lawn will be ready for its first cut. Cut with the mower set on a high setting (50mm +), aiming to trim the sown grass back by about one-third of its height and cut back any weeds. Thereafter mow the new lawn regularly as needed, progressively reducing the mowing height over its first spring/summer to the desired height.

A new sown lawn will take a full year or more to reach full strength and ground cover and knit together as a turf. It can be walked on during establishment but avoid heavy use that might cause wear and tear.

### **Ongoing Management (see checklist Table 1 Appendix F)**

Mow lawns regularly as required throughout the growing season (generally March – October).

The modified grassland can be cut regularly throughout the first growing year and subsequent years after, as required to maintain its function. The Biodiversity Champion should check annually for cover of scrub, bracken and bare ground compared to the desired condition (Appendix C) and take remedial action where required.

To increase biodiversity value of the grassland, the following measures will also be adopted:

- All arisings removed to prevent nutrient level increase in the soil and added to compost piles;
- No cuts below 50mm to allow flowers to seed;
- Avoidance of use of herbicide and fertiliser; and
- Trim or remove undesirable species such as creeping thistle, spear thistle, curled dock, broad-leaved dock and common nettle.

## **4.2.2 Other Neutral Grassland**

Other neutral grassland should be managed to meet target 'Moderate' condition as per Appendix C and Defra Statutory Biodiversity Metric condition assessment criteria.

Multiple pockets of other neutral grassland will be planted throughout the site. We recommend a seed mix such as Emorsgate EM8: Meadow Mixture for Wetlands or similar as well as additional planting for pollinators including the large garden bumblebee *Bombus ruderatus* (details below).

EM8 mixture provides a 20% wild flower and 80% grasses mix and is available from Emorsgate Seeds (Meadow Mixture for Wetlands EM8 - Emorsgate Seeds (wildseed.co.uk)) and should be sown at a rate of 4g/m<sup>2</sup>.

The composition of EM8 is listed below:

### **Wildflowers**

2.0% *Achillea millefolium* – Yarrow



- 0.1% *Betonica officinalis* – Betony
- 2.4% *Galium verum* – Lady's Bedstraw
- 0.6% *Leucanthemum vulgare* – Oxeye Daisy – (Moon Daisy)
- 4.0% *Plantago lanceolata* – Ribwort Plantain
- 0.1% *Rumex acetosa* – Common Sorrel
- 0.1% *Silaum silaus* – Pepper Saxifrage
- 0.2% *Primula veris* – Cowslip
- 1.0% *Silene flos-cuculi* – Ragged Robin
- 1.4% *Ranunculus acris* – Meadow Buttercup
- 0.8% *Lotus pedunculatus* – Greater Bird's-foot Trefoil
- 0.4% *Lathyrus pratensis* – Meadow Vetchling
- 0.1% *Succisa pratensis* – Devil's-bit Scabious
- 1.0% *Sanguisorba officinalis* – Great Burnet
- 0.1% *Vicia cracca* – Tufted Vetch
- 0.1% *Angelica sylvestris* – Wild Angelica
- 4.0% *Centaurea nigra* – Common Knapweed
- 1.0% *Filipendula ulmaria* – Meadowsweet
- 0.6% *Leontodon hispidus* – Rough Hawkbit

#### **Grasses**

- 2.0% *Agrostis capillaris* – Common Bent
- 2.0% *Anthoxanthum odoratum* – Sweet Vernal-grass
- 4.0% *Briza media* – Quaking Grass
- 48.0% *Cynosurus cristatus* – Crested Dog's tail
- 2.0% *Deschampsia cespitosa* – Tufted Hair-grass
- 22.0% *Festuca rubra* – Red Fescue

**In addition, to the species included in seedmix EM8, Foxglove *Digitalis purpurea* and Comfrey *Symphytum* spp. will be included for large garden bumblebee and other pollinators. These species should be included in edge habitats, such as areas adjacent to woodland and scrub, and can either be included as seed sown at the same time as the EM8 seed mix or as plug plants. If plug plants are used these should be ideally of local provenance and supplied by locally based suppliers.**

The following establishment advice is given:

#### **Ground Preparation**

To prepare a seed bed first remove weeds using repeated cultivation. Then plough or dig to bury the surface vegetation, harrow or rake to produce a medium tilth, and roll, or tread, to produce a firm surface.

#### **Sowing**

Sowings on ground prone to winter flooding are safest either in the early autumn or in spring once the land has drained. Most plants need time to grow mature enough to withstand flooding. Plug plants should be planted in the spring, either onto a bare seed bed with the seed mix or if the wildflower

grassland has been planted in autumn, the plug plants should be introduced after the grassland has been cut and the arisings taken off site.

The seed must be surface sown and can be applied by machine or broadcast by hand. To get an even distribution and avoid running out, divide the seed into two or more parts and sow in overlapping sections. Do not incorporate or cover the seed but firm in with a roll, or by treading, to give good soil/seed contact.

### First Year Management

Most of the sown meadow species are perennial and are slow to establish. Soon after sowing there will be a flush of annual weeds, arising from the soil seed bank. These weeds can look unsightly, but they will offer shelter to the sown seedlings, are great for bugs, and they will die before the year is out, so resist cutting the annual weeds until mid to late summer (early August is a good time). These weeds should be cut, removed, and composted. This will reveal the young meadow, which can then be kept short by mowing through to the end of March of the following year. Dig out any residual perennial weeds such as docks and thistles.

### Ongoing Management (see checklist Table 1 Appendix F)

In the second and subsequent years EM8 sowings can be managed in a number of ways which, in association with soil fertility, will determine the character of the grassland. The best results are usually obtained by traditional meadow management based around an annual main summer hay cut.

Meadow grassland is not cut from spring through to late July/August to give the sown species an opportunity to flower. After flowering in late July or August take a 'hay cut': cut back with a scythe, petrol strimmer or tractor mower to c 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site. Mow the re-growth through to late autumn/winter to c 50mm.

To increase biodiversity value of the grassland, the following measures will also be adopted:

- All arisings removed to prevent nutrient level increase in the soil and added to compost piles;
- No cuts below 50mm to allow flowers to seed;
- Avoidance of use of herbicide and fertiliser; and
- Trim or remove undesirable species such as creeping thistle, spear thistle, curled dock, broad-leaved dock and common nettle.

## 4.2.3 Broadleaved Woodland and Understorey Planting

Broadleaved woodland planting should be managed to meet target 'Moderate' condition as per Appendix C and Defra Statutory Biodiversity Metric condition assessment criteria.

It is proposed that a native broadleaved woodland planting mix will be planted in areas where woodland has had to be removed to facilitate the works (see Figure 4).

All trees should be protected during construction phase as per BS 5837 (2012) and root protection areas observed as detailed in the Tree Constraints Plan (Drawing D9131.001 (TEP, 2022)). Trees and scrub will not be removed or severely thinned during the bird nesting season (March–September inclusive) to avoid possible breaching of legislation which protects breeding birds and their nests. Trees will be assessed for their bat potential by an ECoW before works are undertaken on them.

Alder *Alnus glutinosa* and grey alder *Alnus incana* benefit the alder leaf beetle *Agelastica alni* found on this site. It is recommended that existing plants within the site are retained along with the surrounding leaf litter over the winter period. In addition to alder *Alnus glutinosa* and grey alder *Alnus incana*, downy birch *Betula pubescens*, hazel *Corylus avellana*, honeysuckle *Lonicera periclymenum*, pedunculate oak *Quercus robur* and rowan *Sorbus aucuparia* are to be planted.

New native shrub planting is proposed as underplanting to the new broadleaved woodland in the north of the site. Native shrubs will provide food and shelter for wildlife and aid the development of a structurally diverse and species-rich woodland. Berry-bearing and nectar producing species should be given preference. No invasive plant species (such as rhododendron, as listed on Schedule 9 of the Wildlife and Countryside Act 1981) should be included and should be removed during management.

Shrubs to be planted include Hazel *Corylus avellana*, Dogwood *Cornus sanguinea*, Hawthorn *Crataegus monogyna*, Blackthorn *Prunus spinosa*, Dog rose *Rosa canina*, Crack willow *Salix fragilis* and Guelder rose *Viburnum opulus*.

### Ground preparation

- All excavations will be undertaken in accordance with BS 3882:2015, BS 8601:2013 and the 2009 DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.
- All extraneous rubbish (concrete, metal, grass, decayed vegetation, contaminated topsoil) should be removed. Stones larger than 50mm in dimension should be removed.
- All vegetation should be cleared to ground level and arisings removed and ideally, planting into bare soil is achieved.
- Any compacted topsoil should be broken up to full depth, and within a few days of planting the top 450mm of soil should be loosened, aerated, and broken up into particles of 2-8mm.
- Backfilling material used will be previously removed topsoil plus additional if required. Backfilling will reinstate 300mm over 600mm profile.

### Planting

- Tree planting will be undertaken in accordance with BS 8545:2014 Tree – From Nursey to Independence.
- Trees should be watered immediately, thoroughly and without damaging or displacing plants or soil in accordance with an irrigation plan as per BS 8545:2014. Lightly firming soil around plants and fork or rake the soil without damaging the roots.
- Deciduous trees will be planted in late October to late March, however, any container grown plants can be planted at any time of year if ground conditions are favourable (e.g., not frozen and not within a drought).
- Shrubs will not be planted in waterlogged or frozen soil and should receive regular water when the earth is dry.

Trees will be planted as 8-10cm girth, half standard as whips with selected standards at 1p/m<sup>2</sup> as per the planting plans. Shrubs to be planted as bare root stock, 60-80cm, at 2p/m<sup>2</sup>.

Additionally, whips should be protected with spiral guards, tubes or stakes and ties (ideally plastic-free) as necessary. To be planted in groups of 3-5 plants, in autumn and winter (October - April).

### Ongoing Management (see checklist Table 1 Appendix F)

Light pruning of shrubs during winter (January and February) will encourage denser growth, which is favourable for wildlife, and any weeds should be removed to prevent competition. Replacement of any failed plantings, during the next suitable planting period for that species, for the first 5 years.

Guards, tubes, stakes and ties should be checked in spring and adjusted in autumn to prevent constriction of the stem or plant. After two growing seasons the plants should have made sufficient root growth to anchor the plant and supporting stakes can be removed. Tree guards should also be removed when beginning to split.

Where pruning is required, this will not be done more than every two to three years as most shrub flowers (and therefore also berries and nuts) are produced on year-old twigs.

Trees are relatively maintenance free after year 5, but care should be taken so that they establish successfully.

Once established, the woodland can be managed alongside the retained woodland through thinning, coppicing or supplementary planting depending on dynamic management recommendations and woodland management schedule.

#### 4.2.4 Introduced Shrub

Introduced shrub should be managed to meet target 'Poor' condition as per Appendix C and Defra Statutory Biodiversity Metric condition assessment criteria.

Ornamental shrub planting is mainly concentrated around housing, in front gardens and as screening for the houses from roads. No invasive plant species (as listed on Schedule 9 of the Wildlife and Countryside Act 1981) or vigorous ornamentals should be included in the planting scheme (e.g. cotoneasters, snowberry, periwinkle) to safeguard adjacent habitats.

##### Planting

Ornamental shrub planting, to be planted in 3-4L containers at 3-4 p/m<sup>2</sup> and enhanced by feature specimens in 10-20L pots. Where the planting plan mentions containers, containerised stock may be used but should not be planted with the containers in situ.

The ground will be prepared thoroughly to allow new plants to establish more easily, with excavation depths of 300 x 300 x 300mm. Good soil conditions will be provided with little competition from other vegetation. Container grown ornamental and specimen shrubs can be planted at any time if weather conditions are favourable. i.e. no frost expected. Mulch should be applied on planting and topped up when necessary, within the first year. Mulch should not come above ground level in order to protect the stems from moisture damage.

##### First Year Management

Following planting, the shrubs should be maintained as often as is necessary throughout the first year to ensure survival.

The maintenance will comprise the following tasks:

- All planting beds to be kept weed-free through hand weeding;
- All litter to be picked and removed;
- Mulch to be topped up as required;
- Shrubs to be pruned at appropriate times of year for each species to promote healthy growth and desirable ornamental features;
- Watering of ornamental shrub planting as required. Soil should be checked for dryness using either a soil moisture sensor or by observing the appearance of the soil. The full depth of topsoil should be wet without loosening or damaging plants. Any compacted soil should be broken up sufficiently to allow water to reach the rootzone;
- Replacement of any failed plants.

##### Ongoing Management (see checklist Table 1 Appendix F)

Maintenance schedule can be adapted to the number of required visits in order to keep on top of the maintenance tasks listed above. Replacement of failed plants should be done at least once a year for the first five years.

#### 4.2.5 Sustainable Urban Drainage Feature

SUDS should be managed to meet target 'Moderate' condition as per Appendix C and Defra Statutory Biodiversity Metric condition assessment criteria.

Wetland habitats are characteristically quite variable in composition, reflecting local drainage and management. Localized differences may require a targeted approach. Any seed mixes used must be native and relevant.

Proposed Aquatic and Marginal Planting Aquatic and marginal species to be planted 1m from the waters edge directly into the Greenfix Covamat surfacing on the banks immediately adjacent to the watercourse. Yellow flag iris *Iris pseudacorus*, Soft rush *Juncus effusus*, Ragged robin *Lychnis flos-cuculi*, Purple loosestrife *Lythrum salicaria*, Marsh woundwort *Stachys palustris*.

The SUDs will collect water which has run off from surrounding features. They will be positioned in the central part of the site and will comprise a series of depressions. Either the depressions or the surrounding area will be seeded with Emorsgate EM8: Meadow Mixture for Wetlands or similar, depending on the water table. This mixture provides a 20% wildflower and 80% grasses mix and is available from Emorsgate Seeds (Meadow Mixture for Wetlands EM8 - Emorsgate Seeds (wildseed.co.uk)) and should be sown at a rate of 4g/m<sup>2</sup> (see Section 4.2.2 for species list).

Areas of translocation of orchids from species rich neutral grassland (MG10) and existing aquatic species already present within the pond on site are to supplement seeding in the surrounding area. Orchids present on site will require marking out during the flowering season. Transplanting 30cm diameter around orchids including topsoil to at least root depth will allow translocation of beneficial mycorrhizae, soil condition, and other species of interest for species rich neutral grassland establishment, however, turves should be as large as possible to increase chance of success. General principles for ground preparation for translocation of turves can be followed in Section 4.3.2.

### **SUD / Pond creation and Sowing**

The optimal timing for pond creation works is between October and February inclusive. Pond planting should be completed between mid-spring to early summer, as this is when the water is beginning to warm up.

The planting for the pond should be monitored in Year 1 to confirm whether or not the vegetation is establishing and growing healthily.

### **Ongoing Management (see checklist Table 1 Appendix F)**

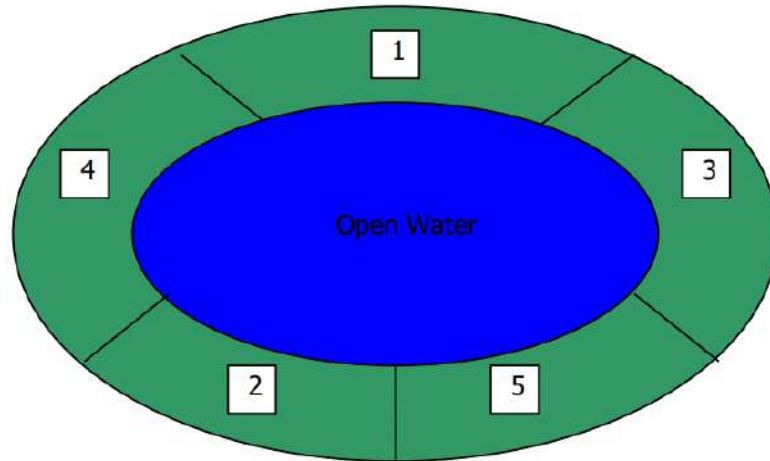
No management will be necessary in Years 1-3, other than to replace specimens that have failed on a like-for-like basis or as a result of dynamic recommendations following monitoring.

Management should primarily undertaken in autumn, when there is less activity but before dormancy, to limit impacts to species including amphibians which may use the pond to breed in the spring/summer.

After year 3, emergent vegetation in the pond should be cleared on a 5-year rotation to open up an equivalent of 20% of the perimeter area. This will create clear channels into the main open water areas, helping to maintain a diversity of marginal conditions within the SUDs. Following each clearance, plant material should be left for no less than 48 hours to allow invertebrates and amphibians to move back into the water prior to their removal.

An example of the proposed emergent vegetation management scheme is provided below: if the Areas 1 to 5 below represent the areas of emergent vegetation to be cut, then in Year 1: Section 1 is cut and removed; in Year 2: Section 2 is cut and removed etc. This cutting rotation will continue such that each section is cut once every 5 years.

**Illustration 1:**  
Waterbody  
maintenance



It will also be necessary to monitor vegetation encroachment into the open water habitat annually to maintain important open water habitat within the pond. This will be for both the potential establishment of fast-growing native species such as common reed *Phragmites australis* and any invasive non-native species such as Canadian Pondweed *Elodea canadensis*, floating pennywort *Hydrocotyle ranunculoides*; and New Zealand Pygmyweed *Crassula helmsii*. These non-native species can spread rapidly and choke small waterbodies. Should any such encroachment by invasive non-native species be identified, it will be necessary to remove these species as soon as feasibly possible.

The pond should be checked annually for litter and any found should be removed and disposed of appropriately.

The pond should be dredged under ecological supervision once every five to ten years if needed to prevent the build-up of silt and maintain favourable condition. This should be undertaken by an excavator of a suitable size for the waterbody and primarily undertaken in autumn.

#### 4.2.6 Urban trees

139 urban trees should be managed to meet target 'Moderate' condition as per Appendix C and Defra Statutory Biodiversity Metric condition assessment criteria.

Non-native trees are expected to meet 'Poor' condition.

The following plantings are to be created onsite post-development:

##### **Proposed Spine Road trees:**

Trees to be planted as 20-25cm girth, semi-mature 6-7m high with 2m clear stem. Trees to be secured with underground guying system.

##### **Proposed POS trees:**

Trees to be planted as 16-18cm, Extra Heavy Standard, 4.5-6m high with 2m clear stem. Trees to be secured with underground guying system. Native varieties as per Planting plan 4263 204 I (part 4 of 4) including *Alnus glutinosa*, *Betula pendula*, *Fagus sylvatica*, *Salix cinrea* and *Tilla cordata*.

##### **Proposed ornamental trees:**

Heavy Standard, 12-14cm girth, 3-4m high to be planted with a double timber stake secured with a rubber tree tie.

##### **Proposed small ornamental trees and back garden fruit trees:**

Heavy Standard, 12-14cm girth, 3-4m high to be planted with a double timber stake secured with a rubber tree tie.

### **Proposed trees in hard landscape:**

Trees to be planted as Heavy Standard, 12-14cm girth, 3-4m high. Trees to be planted with a tree grill, protected by an ornamental tree guard and secured with underground guys and underground cell system.

### **Planting**

Ground should be prepared, and planting guidance followed as in Section 4.2.3.

All trees are to be planted to the original root collar and the proposed spine road trees and POS trees are to be secured in place with an underground guying system. If trees are planted outside of the planting season, then containerised stock should be used. However, containerised stock should be of the same specifications (including height) as root balled stock.

Irrigation/aeration pipes should be installed around the base of trees and stem in accordance with manufacturers instructions, to ensure that the water reaches tree roots. Soil dryness should be monitored and adjusted as necessary.

### **Ongoing Management (see checklist Table 1 Appendix F)**

Corrective pruning may be required, and any weeds should be removed to prevent competition. A weed / grass free ring around each new tree should be maintained at approximately 1 m for the first two to three years. This can be achieved through physical weeding, fitting a mulch mat or mulching with materials such as straw after planting. Chemical applications should be avoided where possible. Mulch should not come above ground level to protect trunks from moisture damage.

Guards, tubes, stakes and ties should be checked in spring and adjusted in autumn to prevent constriction of the stem or plant. After two growing seasons if the trees have made sufficient root growth to anchor the tree then above ground supporting stakes and ties can be removed. Tree guards should also be removed when beginning to split.

Replacement of any failed plantings, during the next suitable planting period for that species, for the first 5 years.

Where pruning is required, this will not be done more than every two to three years as most shrub flowers (and therefore also berries and nuts) are produced on year-old twigs.

Trees are relatively maintenance free from year 5 onwards, but care should be taken so that they establish successfully. Trees and scrub will not be removed or severely thinned during the bird nesting season (March–September inclusive) to avoid possible breaching of legislation which protects breeding birds and their nests.

## **4.2.7 Hedgerow Planting (native and ornamental)**

Hedgerow planting should be managed to meet target 'Moderate' (native hedgerow) and 'Poor' (ornamental hedgerow) condition as per Appendix D and Defra Statutory Biodiversity Metric condition assessment criteria.

Ornamental: hedgerows to be planted in 10L containers at a rate of 3-4 per linear metre consisting of ornamental varieties as per Planting plan 4263 204 I (part 4 of 4).

Native: hedgerows to be planted in 10L containers, double staggered, 300mm centres, at a rate of 5 per linear metre. Hawthorn *Crataegus monogyna*, Hazel *Corylus avellana*, Holly *Ilex aquifolium*, Blackthorn *Prunus spinosa*, Dog rose *Rosa canina*.

Additional or alternative shrubs used should fall under the Schedule 3 list of woody species in the Hedgerow Regulations 1997.

Where the planting plan mentions containers, containerised stock may be used but should not be planted with the containers in situ.

It is recommended that honeysuckle *Lonicera periclymenum* is also planted in the hedgerows to enhance the site for large garden bumblebee.

The ground will be prepared thoroughly to allow new plants to establish more easily, with excavation depths of 300 x 300 x 300mm. Good soil conditions will be provided with little competition from other vegetation. To prepare the ground for planting the above steps for tree planting also apply as well as the advice for hedgerow and understory planting below:

- Plant specifications will be in accordance with the HTA National Plant Specification: 03/02;
- All whips to be protected by spiral bound shrub guard secured into place with a timber cane; and
- Compostable bark mulch will be added to all planting to a depth of 50mm. Mulching will be free from toxins, pathogens and other extraneous substances harmful to the plants. Mulch should not come above ground level to protect stems from moisture damage.

The appropriate time of year for planting container grown plants is considered to be any time of the year if the weather is favourable. However, the optimal time to plant would be October and March to avoid periods of frost. For herbaceous plants the optimal time to plant would be September/October or March/April.

#### **Ongoing Management (see checklist Table 1 Appendix F)**

Any tree stakes and ties will be inspected in spring and adjusted in autumn to prevent constriction of the stem or plant. After two growing seasons the shrubs should have made sufficient root growth to anchor the plant and the supporting stake can be removed.

Replacement of any failed plantings, during the next suitable planting period for that species, for the first 5 years.

Where pruning is required, this will not be done more than every two to three years as most shrub flowers (and therefore also berries and nuts) are produced on year-old twigs.

Shrubs are relatively maintenance free from year 5 onwards, but care should be taken so that they establish successfully. Shrubs will not be removed or severely thinned during the bird nesting season (March–September inclusive) to avoid possible breaching of legislation which protects breeding birds and their nests.

### **4.3 OFFSITE HABITATS - CHINLEY**

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This plan assumes that grassland transplanting from Dinting to Chinley will take place as part of ground preparation prior to construction starting. Bespoke compensation has been designed using input soil (Land Research Associates, 2023), topographical and hydrological investigations (Tetra Tech Engineering team 2023) to determine the feasibility of the offsite compensation and maximise probability of successful habitat establishment.

#### **4.3.1 Ditch (Created)**

To manipulate the hydrological flow through the site to support the proposed compensation a ditch is to be created parallel to the north of the site (see Figure 6) in advance of grassland translocation. Following topographical investigation (Tetra Tech, 2023) the ditch will run from east to west and will be lined to prevent nutrient leaching into the translocated acid grassland area. The ditch is expected to be shaded due to the scrub to the north and also to lack significant riparian vegetation due to the lining of the ditch. The ditch is therefore expected to achieve 'Poor' condition as per Appendix E and Defra Statutory Biodiversity Metric condition assessment criteria.



### Ongoing Management (see checklist Table 2 Appendix F)

The ditch will be managed to ensure the following conditions are met:

- The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.
- Physical damage evident along less than 5% of the ditch, such as excessive poaching, damage from machinery use or storage, or any other damaging management activities.
- There is an absence of non-native plant and animal species.

### 4.3.2 Transplanted grasslands – bespoke compensation

The transplanted grasslands will be managed to meet target ‘Good’ condition as per Appendix E and Defra Statutory Biodiversity Metric condition assessment criteria.

Soil sampling results (Land Research Associates, 2023) indicated similar compositions of soils at both Chinley and Dinting with differing pH and nutrient concentrations. Differing water content was thought to be controlled more by topography than soil type. Results are summarized in Table 2 below.

**Table 2: Soil sampling summary**

	Chinley	Dinting
Topsoil	Medium loamy	Medium or fine loamy. High organic matter content in depressions.
Upper subsoil	Loamy	Loamy
Lower layers	Poorly structured	Dense clay loam or clay
Waterlogging	Prolonged seasonal (early autumn-late spring) waterlogging indicated.	Poorly draining. Depressions very poorly draining - near constant waterlogging
pH	5.8-6.2	5.0-6.0. Higher ground more acidic with remainder neutral
Nutrient	High phosphate levels in topsoil. Upper subsoil has low nutrient concentration. Organic matter concentrations high.	Nutrient concentrations low. Organic matter concentrations high.

It is proposed to transplant the relatively species-rich f2b purple moor grass and rush pasture (=M23b *Juncus effusus/acutiflorus* – *Galium palustre* rush-pasture, *Juncus effusus* sub-community grassland) and the g1a lowland dry acid grassland (=U4a *Festuca ovina* – *Agrostis capillaris* – *Galium saxatile* grasslands, both sub-communities) from Dinting (Tetra Tech, 2023c) to Chinley and then effectively manage them to form one large area of grassland of value for nature conservation (as per habitats on Figure 6).

To reduce nutrient rich water run-off entering site from neighboring fields to the north, a ditch will be created parallel to the northern boundary running east to west. Details on hydrology and topography related to ditch creation are detailed in an Outline Levels and Volumes Model by Tetra Tech (2023).

The f2b purple moor grass and rush pasture can be transplanted to Chinley on the southwest side to fit with the existing wet grassland/swamp where the water regime is suitable. Prior to planting of f2b purple moor grass and rush pasture, the topsoil at Chinley with high nutrient concentrations is to be removed and taken off site. When transplanting the area from Dinting, the topsoil should be transported along with the grassland as turves.

Purple moor grass and rush pasture suggested location is, in combination with topographical investigations, estimated to be in the wettest part of the site (see Figure 6). A clay bund will be included on the western boundary, to prevent nutrient rich water entering the site from the west of the site near the purple moor grass and rush pasture. This will be covered in nutrient poor topsoil and allowed to colonize naturally.

The g1a acid grassland is to be transplanted to the north end of the Chinley site. To maintain it in a free-draining state, will require addition of a permeable base of a 0.5 m layer of coarse sand/gravel/fine ballast of pH 5.5 or lower to elevate it above the water table.

It is recommended that both grassland types are transplanted as set out below following site preparation activities as follows:

### **Year 1 August-September**

Prepare transplant receptor area at Chinley (where acid grassland and purple moor grass and rush pasture is shown on Figure 6) of 0.51ha total area by removing topsoil to a depth of 15-20cm (Land Research Associates, 2023) and remove any scrub if present at edges.

At the northern edge of the site, create a bund with a 0.5 m base layer of sand/gravel (pH 5.5 or lower) for the acid grassland area (see Figure 6). Roll sand/gravel to compress but not compact. To minimize runoff/erosion this should be timed closely prior to transplanting operation.

### **Year 1 September**

For the timing of translocation there is a trade-off between soils being too wet (risking compaction) and soils being too dry (where roots will struggle to establish). Therefore, September is recommended for translocation of turves, allowing the roots to bed in over the wetter Autumn and Winter.

At Dinting, turves of f2b and g1a should be cut as large as practical (c. 2-2.5 m × 1-1.5 m; the aim is to maintain them in as large blocks as possible), cut using a flat-tined fork with integral cutter bar at a depth of 200–300 mm.

Cut turves should be transported to Chinley as a single layer on a trailer to minimise fragmentation. If soils are damp and turves are cut and taken straight to Chinley, there will be no need to cover them to prevent desiccation for the 19-mile journey.

Turves should be re-laid at Chinley as soon as possible (always within 24 h) by a similar machine onto the prepared bases and gently firmed onto the substrate using the fork. Use of crawler boards or bog mats may be required on the sand base of g1a acid grassland area to minimize compaction. Once laid, turves can be manually adjusted if needed with a spade and any gaps filled with similar subsoil from Dinting to achieve a flat ground surface. They should be lightly rolled after they have been laid to ensure contact with sub-soil and to remove air gaps.

Areas of transplanted turves should have temporary barrier tape fences and signs to indicate no/minimum access until the turves are established.

Monitor transplant and revise actions if needed.

### **Years 1-2**

Turves should be checked and refilled due to settlement for gaps and filled every three months for the first year after transplanting.

Spot herbicide treat of any weeds (such as brambles and creeping thistle) or dig out by hand.

As the transplantation of turves is likely to result in a burst of nutrient-release, the grassland will be cut to 50 mm **three times in the first year** (April, July, September) and the arisings removed. If the soils are wet this may need to be done by hand with strimmers and rakes rather than machine to avoid compaction.

Monitor transplant and initiate remedial actions if needed. Once turves established, the tape fencing can be removed.

### **Year 3 onwards - Ongoing Management (see checklist Table 2 Appendix F)**

Manage as part of the adjacent grassland with light grazing. Lowland acid grassland and wet/marshy grassland are recommended to be grazed at 0.2 Livestock Units per ha per year (Crofts & Jefferson, 1999) to be dynamically re-assessed as a result of monitoring. Horses or ponies are preferable to ensure continuity of management, but cattle can also be used. A low stocking rate over a longer period is preferable. Grazing is to be avoided Spring-August to allow flowering to finish. Monitor transplant to at least 30 years as required under BNG and initiate remedial actions if needed.

Experience of translocating grasslands is varied (JNCC, 2003). It is considered that transplanting the grassland will reduce the value in the short term, but this is better than complete loss as Dinting. In the longer term the combined larger area of appropriately managed grassland will compensate for the short-term reduction in quality.

### **4.3.3 Other neutral grassland (Created and Enhanced)**

Modified grassland is present within the northern field at Chinley (Figure 5). As per Appendix C the grassland should be managed to meet 'Good' condition as per Defra Statutory Biodiversity Metric condition assessment criteria. It is expected that there will be a temporary loss of grassland at Chinley in order to ensure the correct ground conditions on site for the transplanted grasslands above. There is therefore opportunity to reseed the grassland with a species rich neutral grassland mix.

To reduce the nutrient status and productive grasses seedbank of the grassland to make it more likely to sustain a species rich sward, the soil can be inverted to a depth of 300mm at the same time as groundworks occur for the transplanted grasslands or reduced over a period of 2-3 years.

The intention is to create two different types of other neutral grassland, a g3c8 *Holcus-Juncus* neutral grassland and a more typical neutral g3c Other neutral grassland community and integrate them into management with the transplanted grasslands (see Section 4.3.2). The exact proportion of these two areas will depend on water level. The rush pasture would be developed on the western boundary of the site in existing areas of damp grassland adjacent to the f2b transplanted grasslands (see Figure 6).

#### **g3c Other neutral grassland**

The current grassland does not meet the criteria for 'other neutral grassland' based on the number of species present. The first priority is to increase the diversity of the grassland.

Where the soil is bare, either due to damage or inversion, seed mixture should be applied first. We recommend a seed mix such as Emorsgate EM3: Special General Purpose Meadow Mixture or similar.

To reduce vigorous grass growth the area should be mown with removal of all arisings to create a short sward, followed by shallow rotovation and over-sowing with an appropriate native meadow seed mix such as EM3 mentioned above. This may need to be repeated over 2-3 years, depending on species composition, and can be done at the same time as mowing of transplanted grasslands in April, July and September. In order to reduce the competitive advantage of the existing coarse grass species introduction of yellow rattle *Rhinanthus minor* is recommended as this is hemi-parasitic on roots of grasses, so helps to reduce grass vigour. It may be advantageous to introduce plug/potted plants at a later date (years 3-5 or as required) to diversify the structure and species content of the sward creating microhabitats within the grassland and providing a more diverse habitat for invertebrates, small mammals and birds.

### **Year 3 onwards - Ongoing Management (see checklist Table 2 Appendix F)**

Once the grassland diversity has been increased, a grazing regime should be adopted from year 3 onwards matching the rest of the site; light grazing (0.2 Livestock Units per ha per year) to be

dynamically re-assessed as a result of monitoring. Other neutral grassland may require a higher stocking rate than the other grassland on site, this can be achieved either through supplementary mowing or fencing off and a higher stocking rate of 0.4 Livestock Units per ha per year used. Ecological monitoring should advise whether additional mowing is required. Grazing/mowing is to be avoided Spring-August to allow flowering to finish.

The following are recommended to increase biodiversity value when mowing is employed:

- All arisings should be removed after leaving to dry and shed seed for 1-7 days, to prevent nutrient level increase in the soil and added to the compost piles;
- Do not cut below 50mm to allow flowers to seed;
- Trim, hand-pull or spot treat undesirable species such as Creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius* and common nettle *Urtica dioica*;
- As mowing cuts the grass to a uniform height which is less beneficial to invertebrate species, efforts should be made to vary the cutting height across the area of grassland on a 50%/25%/25% basis; and
- After the main cut in August, additional cutting in late summer/autumn is very effective at removing excessive grass growth and encouraging flowers, particularly on more fertile soils. Aim to cut the grass twice between the August cut and the end of November, leaving the sward short over winter.

The monitoring regime will include assessment of the presence and extent of invasive species, bracken and scrub encroachment. Remedial action should be taken to control the extent of invasive/undesirable species as necessary.

### **g3c8 *Holcus-Juncus* neutral grassland**

In the first year the grassland sward should be allowed to develop, without any mowing, grazing or other management, to allow any species present in the seed bank to establish and the natural sward to develop. Mowing is not recommended unless the grassland becomes overgrown and tussocky, however, may be required in years 2 and 3 until grazing is introduced across the site. If needed, mowing is to be avoided Spring-August to allow flowering to finish.

The following are recommended to increase biodiversity value when mowing is employed:

- All arisings should be removed after leaving to dry and shed seed for 1-7 days, to prevent nutrient level increase in the soil and added to the compost piles;
- Do not cut below 50mm to allow flowers to seed;
- Trim, hand-pull or spot treat undesirable species such as Creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius* and common nettle *Urtica dioica*;
- As mowing cuts the grass to a uniform height which is less beneficial to invertebrate species, efforts should be made to vary the cutting height across the area of grassland on a 50%/25%/25% basis; and
- After the main cut in August, additional cutting in late summer/autumn is very effective at removing excessive grass growth and encouraging flowers, particularly on more fertile soils. Aim to cut the grass twice between the August cut and the end of November, leaving the sward short over winter.

### **Year 3 onwards - Ongoing Management (see checklist Table 2 Appendix F)**

From year 3 onwards, the ideal management of marshy grassland is light grazing (0.2 Livestock Units per ha per year, to be dynamically re-assessed as a result of monitoring) over a long period. Horses or ponies are preferable to ensure continuity of management, but cattle can also be used. Grazing is to be avoided Spring-August to allow flowering to finish. Where the grass is particularly productive, a mowing/grazing regime more similar to g3c Other neutral grassland above may be required.

The following are also recommended to increase its biodiversity value:

- Trim or hand-pull undesirable species such as creeping thistle, spear thistle, curled dock, broad-leaved dock and common nettle;
- Monitor the presence of invasive species and control the extent of these as necessary;
- Monitor scrub encroachment and control as necessary;
- Varying the cutting height across an area of grassland to encourage structural diversity and create habitats for different invertebrate and bird species; and
- Maintenance of water levels including management of any ditches.

#### 4.3.4 Other swamp/reedbed (Enhanced)

Swamp on site (f2f – Other swamp) (Figure 6) is proposed to be enhanced from ‘Moderate’ to ‘Good’ as per Appendix E and Defra Statutory Biodiversity Metric condition assessment criteria.

To improve the current condition:

- Increase water retention of area when manipulating for the transplanted Purple moor grass and rush pasture.
- Reduce the cover of *Urtica* and *Cirsium arvense* through a combination of mechanical pulling (disposing of arisings off-site) and where feasible through reducing the nutrient input to the site. Mechanical pulling should be done annually for the first 3 years.

#### Year 3 onwards - Ongoing Management (see checklist Table 2 Appendix F)

Cover of scrub and scattered trees should remain below 10%, with *Buddleja davidii* preferentially removed if needed. *Urtica* and *Cirsium arvense* should also be removed if re-establish to over 5% of cover.

All arisings should be taken off-site to avoid additional nutrient input.

#### 4.3.5 Hawthorn scrub (Enhanced)

Hawthorn scrub on site (Figure 6) is proposed to be enhanced from ‘Moderate’ to ‘Good’ condition as per Appendix E and Defra Statutory Biodiversity Metric condition assessment criteria.

To enhance the condition, nutrient input to the site should be reduced over time. Reduce the cover of *Urtica* and *Cirsium arvense* through a combination of mechanical pulling (disposing of arisings off-site) and where feasible through reducing the nutrient input to the site. Mechanical pulling should be done annually for the first 3 years.

#### Year 3 onwards - Ongoing Management (see checklist Table 2 Appendix F)

The current conditions of at least 3 woody species, a diverse age range of shrubs, a ride running through, and a well-developed edge should be maintained.

Dynamic management following survey results may include recommendations to maintain these characteristics such as rotational cuts to maintain age range.

*Urtica* and *Cirsium arvense* should also be removed if re-establish to over 5% of cover. All arisings should be taken off-site to avoid additional nutrient input.

#### 4.3.6 Blackthorn scrub (Retained and Enhanced)

Blackthorn scrub on the west of the site (Figure 6) is proposed to be retained in ‘Poor’ condition as per Appendix E and Defra Statutory Biodiversity Metric condition assessment criteria. The area should remain free of invasive and undesirable species and retain a good age range. Rotational clearing may be recommended as a dynamic management solution to maintain this.

A small area to the north is to be enhanced to mixed scrub planting as per Section 4.3.7 below.

### 4.3.7 Mixed Scrub (Created)

Mixed scrub (see Figure 6) is to be created along the northern boundary with target 'Moderate' condition. The area currently contains areas of scrub and tall ruderal vegetation, which would revert to scrub with no grazing north of the ditch. Therefore, additional woody planting will occur to create an area of mixed scrub. Mixed scrub creation and management is to follow Section 4.1.2, without the need for significant bramble clearance.

### 4.3.8 Wet woodland (Retained and Enhanced)

Wet woodland is present in two locations, both on the main body of the Chinley site and over the road. Wet woodland onsite should be managed as per Appendix C to achieve 'Good' condition as per BNG 3.1 Habitat Condition Assessment Sheets and wet woodland over the road to the southwest should be maintained in 'Moderate' condition. All trees should be protected during construction phase as per BS 5837 (2012) and root protection areas observed as detailed in the Tree Constraints Plan (Drawing D9131.001 (TEP, 2022)).

#### Planting

Ground flora can be supplementary planted to better match the NVC ground flora. It is recommended to be done within years 1-5, whilst other habitat management is ongoing, to ensure successful establishment. Species include:

- Iris pseudacorus, *Phalaris arundinacea* and *Solanum dulcamar* for the wet woodland on the main Chinley site (w6b)
- Lady fern *Athyrium filix-femina*, Opposite leaved-golden saxifrage *Chrysosplenium oppositifolium*, meadowsweet *Filipendula ulmaria*, Yellow pimpernel *Lysimachia nemorum* for the woodland over the road at Chinley (w7a)

Plants will be planted in the suitable planting season for the species and will not be planted in waterlogged or frozen soil. Plants should receive regular water when the earth is dry until established.

#### Ongoing Management (see checklist Table 2 Appendix F)

Small rotations of coppicing of the woodland would benefit invertebrate and bird species diversity as well as controlling the spread of willow. As small areas of carr they would only require a 10-year rotation of small units if this management option is pursued. An arborist can recommend targeted trees for coppicing or thinning through a woodland management schedule to achieve the necessary condition.

To improve on the current condition:

- Health status checks to be made annually. Any plants with signs of disease must be replaced to prevent the disease spreading. Browsing extent to be monitored and controlled where necessary. Any ash infected with ash-dieback should be removed, monitoring any remaining ash trees will take place to assess the condition of the trees with the intention to promote trees that are resistant to the disease. An arborist should be consulted on these matters.
- Wet woodland should be monitored annually for its water levels to ensure it does not dry out over time due to changes in drainage, typical indicators of this are an increase in ruderal species such as nettle *Urtica dioica* and bramble *Rubus fruticosus* agg. Remedial action should be taken if signs of drying out are noted.
- Any non-native species such as *Acer pseudoplatanus* and *Acer platanoides* should be preferentially removed when thinning is required.
- Control nutrient input to the main site generally through the use of ditch or similar (see Section 4.3.1).
- Deadwood can be increased by allowing non-diseased felled trees to remain on the ground and fallen deadwood left in situ as a resource for invertebrates and fungi. Standing deadwood will also be retained (unless dangerous) as roosting resource for bats and birds.

### 4.3.9 Hedgerow (Enhanced)

The defunct hedgerow will be enhanced per Appendix C to meet target 'Good' condition as per Defra Statutory Biodiversity Metric condition assessment criteria. A suitable buffer as per BS5837 (2012) will be in place during the construction phase.

#### Planting

Enhancement planting in year 1 will comprise native species such as honeysuckle *Lonicera periclymenum*, holly *Ilex aquifolium*, common hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, guelder-rose *Viburnum opulus* and elder *Sambucus nigra*. Any additional or alternative shrubs used will fall under the Schedule 3 list of woody species in the Hedgerow Regulations 1997. Planting is to be focused within 'gappy' areas of the hedgerow and once established should form an intact hedgerow. Hard pruning or coppicing adjacent shrubs may be required to remove shading and allow new plants to establish without competition from existing plants. It is recommended that 4-6 plants are planted per meter within 'gappy' areas.

Shrubs will be planted in the suitable planting season for the species and will not be planted in waterlogged or frozen soil. Shrubs should receive regular water when the earth is dry until established. Advice regarding native hedgerow planting and ground preparation can be found in Section 4.2.7.

#### Ongoing Management (see checklist Table 2 Appendix F)

Any failed plantings will be replaced for the first 5 years.

## 5.0 CONTROL OF INVASIVES

Himalayan balsam and variegated yellow archangel *Lamium galeobdolon* subsp. *Argentatum* are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended); the location of these have been included within the Dinting Vale, Glossop – Invasive non-native species report (Tetra Tech, 2022d). Recommendations for EcoW, toolbox talks, marking out of areas, haulage routes, disposal of species and washdown areas for biosecurity are included in the report and will be referred to.

Management options recommended in the Dinting Vale, Glossop – Invasive non-native species report (Tetra Tech, 2022d) include:

- Hand pulling (Himalayan balsam only)
- Mechanical control
- Chemical control
- Excavation (Himalayan balsam only)

Execution of INNS control is to be done by a specialist invasive species contractor who may update the recommended methods based on their methods of working. Species specific approaches will be taken, recorded, and an aftercare period detailed. Table 3 below shows an example recording table.



Table 3: Record of invasive species actions

Location (8 figure grid reference)	Species	Extent	Date marked out on ground	Date updated on map	Control measure and date implemented	Follow up actions and date
<i>e.g.</i> SK00000000	<i>e.g.</i> Himalayan balsam	<i>e.g.</i> 4*5m stand	<i>e.g.</i> 01/01/24	<i>e.g.</i> 01/01/24	<i>e.g.</i> Hand pulling and disposal of whole stand 01/05/24	<i>e.g.</i> , Remove regrowth 01/08/23. Repeat removal for at least next two years

## REFERENCES

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- Land Research Associates (2023) *Soil Resources Survey Chinley and Dinting Vale*
- Defra (2024) *Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Methodology*
- Tetra Tech (2022a). *Bat Survey Report (Activity) – Dinting Vale, Glossop*.
- Tetra Tech (2022b). *Bat Survey Report (Trees) – Dinting Vale, Glossop*.
- Tetra Tech (2022c). *eDNA Results Letter Report – Dinting Vale, Glossop*.
- Tetra Tech (2022d). *Invasive non-native species report – Dinting Vale, Glossop*.
- Tetra Tech (2022e). *Breeding Bird Survey Report – Dinting Vale, Glossop*.
- Tetra Tech (2022f). *Reptile Report – Dinting Vale, Glossop*.
- Tetra Tech (2022g). *Badger Report – Dinting Vale, Glossop*.
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- Tetra Tech (2023a) *Biodiversity Net Gain Assessment V4 & V5 – Dinting Vale, Glossop*
- Tetra Tech (2023b) *Local Wildlife Site Criteria Letter Report – Dinting Vale, Glossop*
- Tetra Tech (2023c) *NVC Survey Report Dinting Vale*
- Tetra Tech (2023d) *NVC Survey Report Dinting Vale – Chinley*
- Tetra Tech (2023e) *Biodiversity Net Gain Assessment V4 & V5 – Dinting Vale, Glossop*

## FIGURES

**Figure 1 – Site Location Plan**

**Figure 2 – On-site and Off-site Location Plan**

**Figure 3 – On-site Pre-Development Habitats**

**Figure 4 – On-site Post-Development Habitats**

**Figure 5 – Off-site Pre-Intervention Habitats**

**Figure 6 – Off-site Post-Intervention Habitats**



# Site Location Plan

Dinting Vale

Wain Homes



## Legend

Site boundary

## Notes:

Drawn by: CD  
 Checked by: JA  
 Office: Southampton

Figure No. 1  
 Revision No. A

0 50 100 150 200 250 Meters 11 July 2022

Scale 1:5,000 @A3 NGR: 401924E 394224N

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# Site Location Plan: Glossop and Chinley

Dinting Vale



Wain Homes Ltd

## Legend

 Site boundary

## Notes:

Drawn by: EC  
Checked by: JA  
Office: Southampton

Figure No. 2  
Revision No. A

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Scale 1:50,000 @A3 NGR: 404054E 388427N

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# BNG Habitat Plan Pre-Development Dinting Vale



Wain Homes Ltd

## Legend

- Site Boundary
- f2b - purple moor grass and rush pastures
- g1a - lowland dry acid grassland
- g3 - neutral grassland
- g3c - other neutral grassland
- g3c6 - Lolium-Cynosurus neutral grassland
- g3c7 - Deschampsia neutral grassland
- g3c8 - Holcus-Juncus neutral grassland
- h3d - bramble scrub
- h3h - mixed scrub
- u1b - developed land, sealed surface
- w1d - wet woodland
- w1g - other woodland, broadleaved
- r1 - standing open water and canals
- h2 - hedgerow
- Scattered Tree

Secondary Habitat Codes:  
 10 - Scattered scrub  
 16 - Tall herb  
 119 - Seasonally wet

Drawn by: C.DAWE  
 Checked by: HL  
 Office: Southampton

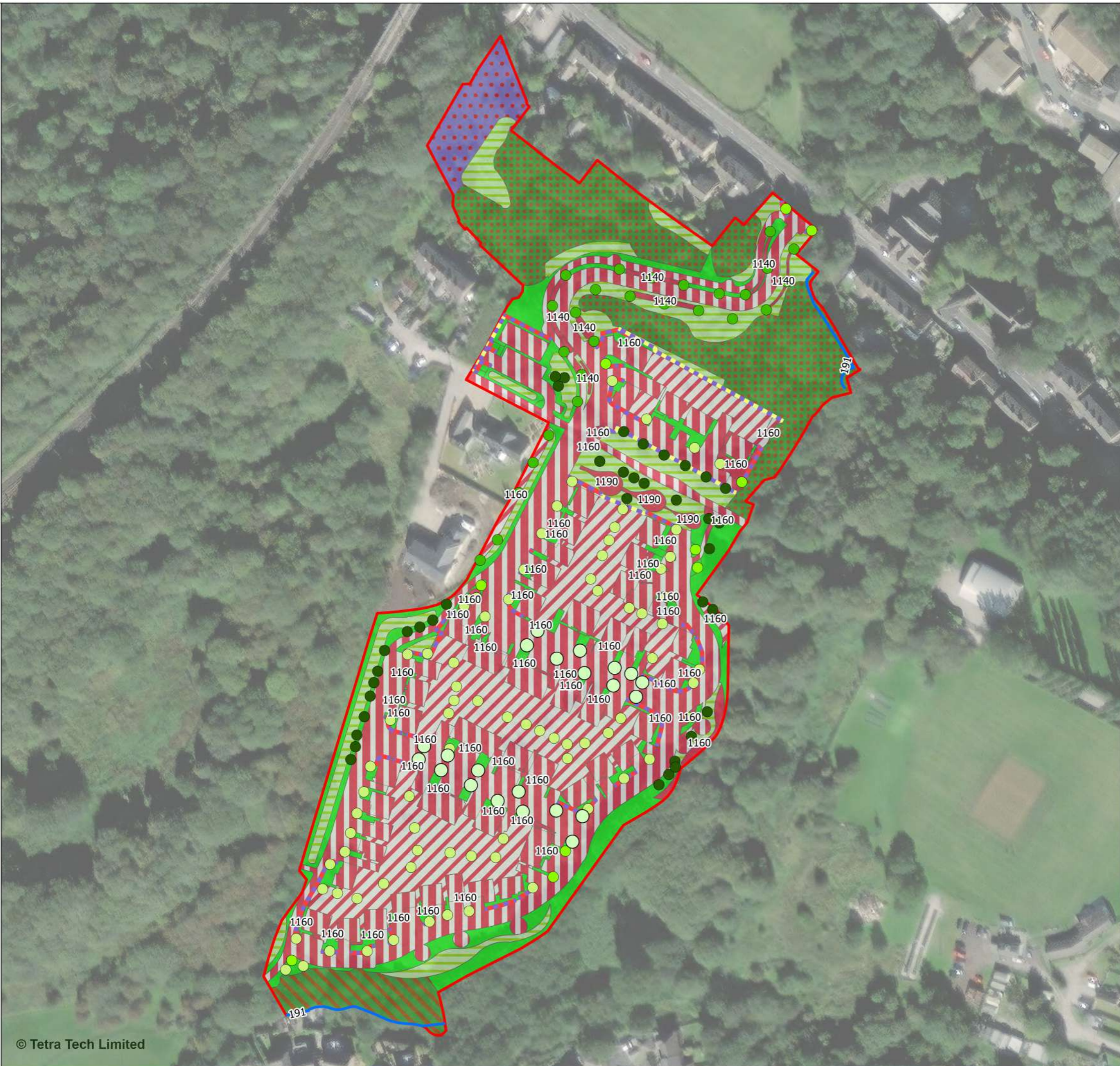
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 Revision No. A

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# BNG Habitat Plan Post-Development

Dinting Vale



Wain Homes Ltd

## Legend

- Site boundary
- g3c - other neutral grassland
- g4 - modified grassland
- h3h - mixed scrub
- u - urban
- u1 - built-up areas and gardens
- u1b - developed land, sealed surface
- w1d - wet woodland
- w1g - other woodland, broadleaved
- h2 - hedgerow
- h2b - other hedgerow
- r1 - standing open water and canals
- Proposed Medium Sized Ornamental Trees
- Proposed POS Trees
- Proposed Small Ornamental Trees
- Proposed Spine Road Trees
- Proposed Trees in Hard Landscape

Notes:  
 191 - Ditch  
 1140 - Ground level planters  
 1160 - Introduced shrub  
 1190 - Sustainable urban drainage feature

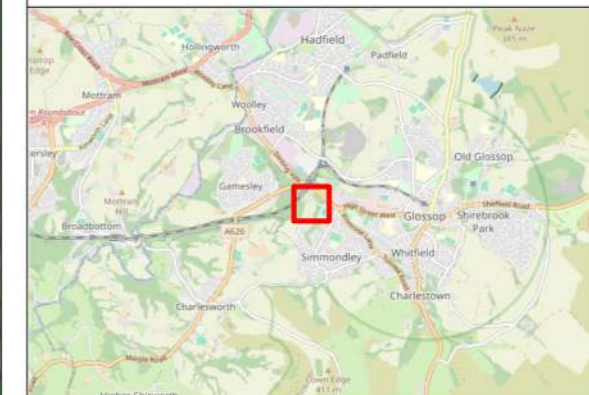
Drawn by: EG  
 Checked by: HL  
 Office: Southampton

Figure No. 4  
 Revision No. C

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11 December 2023  
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






# Offsite Offsetting Area

Dinting Vale



Wain Homes Ltd

## Legend

-  f2f - other swamp
-  g3c7 - Deschampsia neutral grassland
-  g4 - modified grassland
-  h3a6 - blackthorn scrub
-  h3f - hawthorn scrub
-  u1c - artificial unvegetated unsealed surface
-  w1d - wet woodland
-  h2 - hedgerow

Secondary Code:  
191 - hedgerow with ditch

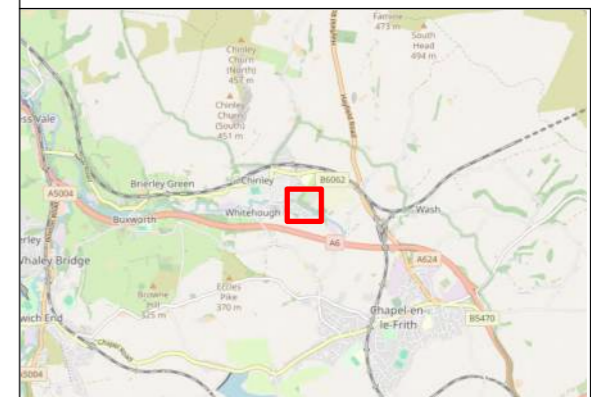
Drawn by: DG  
Checked by: HL  
Office: Southampton

Figure No. 5  
Revision No. A

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12 January 2024  
NGR: 404527E 382181N

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# Offsite Offsetting Area

Dinting Vale

Wain Homes Ltd



## Legend

-  Site Boundary
-  f2b - purple moor grass and rush pasture
-  f2f - other swamp
-  g1b - acid grassland
-  g3c - other neutral grassland
-  g3c7 - Deschampsia neutral grassland
-  h3a6 - blackthorn scrub
-  h3f - hawthorn scrub
-  h3h - mixed scrub
-  u1c - artificial unvegetated unsealed surface
-  w1d - wet woodland
-  h2 - hedgerow
-  r1e - canal or ditch

Secondary Code:  
191 - hedgerow with ditch

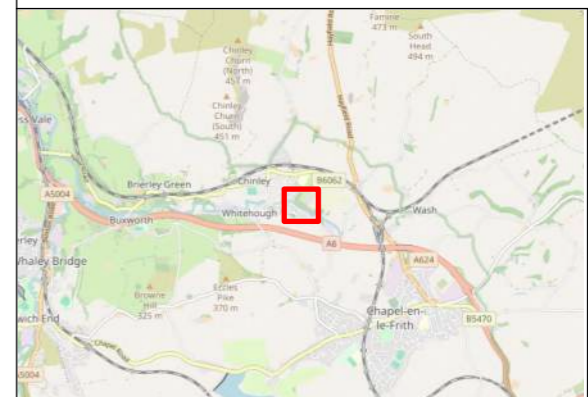
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Checked by: HL  
Office: Manchester

Figure No. 6  
Revision No. A

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12 January 2024  
NGR: 404531E 382189N

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## APPENDIX A – REPORT CONDITIONS

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections’. Environmental conditions can vary, and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including; its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any summaries.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

**APPENDIX B – PROPOSED LANDSCAPE PLAN AND PLANTING SCHEDULE (4263 101K) LANDSCAPE MASTERPLAN**

## APPENDIX C – HABITAT CREATION, RETENTION AND ENHANCEMENT

The below habitat creation and enhancements measures are based on the required management to fulfil the habitat conditions as per the Defra Technical Document (Defra, 2024). Habitat management is subject to change based on any dynamic management recommendations provided after monitoring. Monitoring is to be completed by a suitably qualified ecologist in the years stated to ensure the habitat is meeting the required UKHab category and condition, in addition to the Biodiversity Champion duties.

**Table C1. Summary of condition required and associated management for created, retained and enhanced terrestrial habitats**

Habitat type	Habitat measure	Target Condition	Time to target condition (years)	Habitat condition sheet	Condition criteria	Ecological monitoring years
On-site Dinting						
Other neutral grassland	Retained	Good	0 (maintain at current condition or better)	Grassland (Moderate, high and very high distinctiveness)	<p>Current condition should be maintained.</p> <p>In order to maintain Good condition, two essential criteria and an additional 3 criteria must be met.</p> <ul style="list-style-type: none"> <li>- Appearance of habitat closely matches characteristics of habitat. Wildflowers, sedges and indicator species are clearly and easily visible throughout sward. <b>Essential criteria</b></li> <li>- Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.</li> <li>- Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens</li> <li>- Cover of bracken less than 20% and cover of scrub less than 5%.</li> <li>- There is an absence of invasive non-native species. Combined cover of species indicative of sub-optimal condition and physical damage (e.g., 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.</li> <li>- There are greater than 9 species per metre squared.</li> </ul>	Grassland should be monitored at 6 months, years 1,2,3,4,5 8,11, 14, 17, 20, 25 and 30.
Bramble scrub to Mixed scrub	Enhancement	Moderate	5	Scrub	<p>Target condition is 'Moderate' in 5 years. In order to achieve this, at least 3 of following criteria need to be met:</p> <ul style="list-style-type: none"> <li>- Habitat is representative of UKHab description. There are at least 3 woody species, with no one species comprising more than 75% cover.</li> <li>- There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.</li> <li>- Absence of non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species make up less than 5% of ground cover.</li> <li>- The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).</li> <li>-There are clearings, glades or rides present within the scrub, providing sheltered edges.</li> </ul>	Scrub should be monitored at years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.
Mixed scrub	Enhanced	Wet woodland at Good condition	30+	Woodland	<p>Target condition is 'Good' in 30+ years. In order to achieve Good condition a total score of &gt;32 should be achieved across the following criteria:</p> <ul style="list-style-type: none"> <li>-Age distribution of trees</li> <li>-Wild, domestic and feral herbivore damage,</li> <li>-Invasive plant species,</li> <li>-No. of native tree species,</li> <li>-Cover of native tree and shrub species,</li> <li>-Open space within woodland,</li> <li>-Woodland regeneration,</li> <li>-Tree health,</li> <li>-Vegetation and ground flora,</li> <li>-Woodland vertical structure,</li> <li>-Veteran trees,</li> <li>-Amount of deadwood</li> </ul>	Scrub should be monitored at 6 months & years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.

Habitat type	Habitat measure	Target Condition	Time to target condition (years)	Habitat condition sheet	Condition criteria	Ecological monitoring years
					-Woodland disturbance.	
Wet woodland	Retained	Good	0 (Maintain at good)	Woodland	Current condition should be maintained. In order to achieve Good condition a total score of >32 should be achieved across the following criteria: -Age distribution of trees -Wild, domestic and feral herbivore damage, -Invasive plant species, -No. of native tree species, -Cover of native tree and shrub species, -Open space within woodland, -Woodland regeneration, -Tree health, -Vegetation and ground flora, -Woodland vertical structure, -Veteran trees, -Amount of deadwood -Woodland disturbance.	Woodland should be monitored at 6 months & years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.
Broadleaved woodland	Enhancement	Good	20	Woodland	Target condition is 'Good' in 20 years. Current condition is Poor with a total score of 24. Eight additional points are needed for good condition. In order to achieve this good condition should be achieved for several of the following criteria: -No invasive plant species present/ Rhododendron and laurel not present, other invasive species < 10% cover. -No significant browsing damage. -Five or more native tree or shrub species found across woodland parcel. -10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply. -Recognisable NVC plant community understory. -Between 25% - 50% of survey plots have standing deadwood, large dead branches/stems and stumps, or a high abundance of smaller cavities. -More than one age class of trees present in all plots. -More than one storey present throughout woodland.  In addition, there should be no deterioration in the condition of the existing criteria.	Woodland should be monitored at 6 months & years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.
Ditches	Retained	Poor	0	Ditch	No criteria need to be met to maintain Poor condition; however, encroachment may cause a deterioration of score as per BNG 3.1 metric.  The following criteria should be monitored as it may impact surrounding habitats:  Sufficient water levels are maintained; as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	N/A
Modified grassland	Creation	Moderate	4	Grassland (low distinctiveness)	Target condition is 'Moderate' in 4 years. In order to achieve this, at least 4 of the following criteria will be met: - Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. - Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Modified grassland should be monitored at years 1, 5, 10, 15, 20, 25 and 30. The biodiversity champion should check annually for cover of scrub,

Habitat type	Habitat measure	Target Condition	Time to target condition (years)	Habitat condition sheet	Condition criteria	Ecological monitoring years
					<ul style="list-style-type: none"> <li>- Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).</li> <li>- Cover of bracken less than 20%.</li> <li>- There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981).</li> </ul>	bracken and bare ground and take remedial action.
Other neutral grassland	Creation (with transplanting)	Moderate	5	Grassland (Moderate, high and very high distinctiveness)	<p>In order to achieve Moderate condition, one essential criterion must be met plus at least 2 other criteria:</p> <ul style="list-style-type: none"> <li>-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. <b>Essential criterion</b></li> <li>-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.</li> <li>-Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.</li> <li>-Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.</li> <li>-There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition<sup>1</sup> 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.</li> <li>- There are greater than 9 species per metre squared.</li> </ul>	Grassland should be monitored at 6 months, years 1,2,3,4,5 8,11, 14, 17, 20, 25 and 30.
Broadleaved woodland	Creation	Moderate	15	Woodland	<p>Target condition is 'Moderate' in 15 years. In order to achieve moderate a total score of 26-32 should be achieved across the following criteria:</p> <ul style="list-style-type: none"> <li>-Age distribution of trees</li> <li>-Wild, domestic and feral herbivore damage,</li> <li>-Invasive plant species,</li> <li>-No. of native tree species,</li> <li>-Cover of native tree and shrub species,</li> <li>-Open space within woodland,</li> <li>-Woodland regeneration,</li> <li>-Tree health,</li> <li>-Vegetation and ground flora,</li> <li>-Woodland vertical structure,</li> <li>-Veteran trees,</li> <li>-Amount of deadwood</li> <li>-Woodland disturbance.</li> </ul>	Woodland should be monitored at 6 months & years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.
Urban - Developed land; buildings	Creation	N/A	0	N/A	This condition is pre-set in the metric.	N/A
Urban - Developed land; sealed surface	Creation	N/A	0	N/A	This condition is pre-set in the metric.	N/A
Urban - Introduced shrub	Creation	Poor	1	Urban	<p>Target condition is 'Poor' in one year.</p> <p>This condition is pre-set in the metric.</p>	Monitor at year 1 to ensure establishment. Thereafter can be monitored annually by the Biodiversity Champion
Ground level planters	Creation	N/A	1	Urban	<p>Target condition is 'Poor' in one year.</p> <p>This condition is pre-set in the metric.</p>	Monitor at year 1 to ensure vegetated. Thereafter can be

Habitat type	Habitat measure	Target Condition	Time to target condition (years)	Habitat condition sheet	Condition criteria	Ecological monitoring years
						monitored annually by the Biodiversity Champion
Urban - Sustainable urban drainage feature	Creation	Moderate	3	Urban	Target condition is Moderate in 3 years. In order to achieve this at least 2 of the following criteria need to be passed: -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. -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. -Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area. -The water table is at or near the surface throughout the year. This could be open water or saturation of soil at the surface.	SUDS should be monitored at 6 months and in Years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.
Urban-Vegetated Garden	Creation	N/A	0	N/A	N/A	N/A
Urban trees (Non-native)	Creation	Poor	10	Urban tree	Target condition is 'Poor' in 10 years. In order to achieve this 0-2 of the following criteria need to be passed: -Tree(s) are a native species. -Tree canopy is predominantly continuous (automatically passed for single trees). -The tree is mature or veteran. -There is little or no evidence of adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. No current regular pruning regime. -Micro-habitats for birds, mammals and insects are present e.g. deadwood, cavities, ivy, loose bark. -More than 20% of the canopy is oversailing vegetation beneath.	Urban trees should be monitored at 6 months and years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.
Urban trees (Native)	Creation	Moderate	27	Urban tree	Target condition is 'Moderate' in 27 years. In order to achieve this 3 or 4 of the following criteria need to be passed: -Tree(s) are a native species. -Tree canopy is predominantly continuous (automatically passed for single trees). -The tree is mature or veteran. -There is little or no evidence of adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. No current regular pruning regime. Micro-habitats for birds, mammals and insects are present e.g. deadwood, cavities, ivy, loose bark. More than 20% of the canopy is oversailing vegetation beneath.	Urban trees should be monitored at 6 months and years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.

Habitat type	Habitat measure	Target Condition	Time to target condition (years)	Habitat condition sheet	Condition criteria	Ecological monitoring years
Off-site Chinley						
Other neutral grassland ( <i>Deschampsia</i> neutral grassland)	Enhanced	Good	15	Grassland (Moderate, high and very high distinctiveness)	<p>In order to achieve Good condition, two essential criteria must be met plus at least 3 other criteria:</p> <ul style="list-style-type: none"> <li>-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. <b>Essential criterion</b></li> <li>-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.</li> <li>-Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.</li> <li>-Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.</li> <li>-There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition<sup>1</sup> 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.</li> <li>- There are greater than 9 species per metre squared.</li> </ul> <p><b>Essential criterion</b></p>	Grassland should be monitored at 6 months, years 1,2,3,4,5 8,11, 14, 17, 20, 25 and 30.
Other swamp/reedbed	Enhanced	Good	12	Wetland	<p>Passes 5 or 6 criteria plus essential criterion:</p> <ul style="list-style-type: none"> <li>-The water table is at or near the surface throughout the year, this could be open water or saturation of soil at the surface. There is no artificial drainage, unless specifically to maintain water levels as specified above.</li> </ul> <p><b>Essential criterion</b></p> <ul style="list-style-type: none"> <li>-The appearance and composition of the vegetation closely matches characteristics of the specific wetland habitat type (see UKHab definition linked above). Indicator species for the specific wetland habitat type<sup>1</sup> are very clearly and easily visible.</li> <li>-The water supplies (groundwater, surface water and/or rainwater) to the wetland are of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.</li> <li>-Cover of scrub and scattered trees less than 10%.</li> <li>-Cover of bare ground less than 5%.</li> <li>-There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition<sup>1</sup> make up less than 5% of ground cover.</li> </ul>	Swamp should be monitored at years 1,2,3,4,5 and, 8, 11 and 14 and then every 5 years until year 30.



Hawthorn scrub	Enhanced	Good	3	Scrub	<p>In order to meet Good criteria 5 out 5 criteria must be passed.</p> <ul style="list-style-type: none"> <li>-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).</li> <li>-There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.</li> <li>-There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition make up less than 5% of ground cover.</li> <li>-The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).</li> <li>-There are clearings, glades or rides present within the scrub, providing sheltered edges.</li> </ul>	Scrub should be monitored at 6 months & years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.
Blackthorn scrub	Retained	Poor	0	Scrub	<p>In order to retain Poor criteria without degradation, the current achieved conditions should continue to be met:</p> <ul style="list-style-type: none"> <li>-There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.</li> <li>-There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species<sup>1</sup> make up less than 5% of ground cover.</li> </ul>	Scrub should be monitored at 6 months & years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.
Blackthorn scrub enhanced to mixed scrub/Mixed scrub	Enhanced/Created	Moderate	5	Scrub	<p>In order to meet Moderate criteria at least 3 criteria must be passed:</p> <ul style="list-style-type: none"> <li>-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).</li> <li>-There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs.</li> <li>-There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition make up less than 5% of ground cover.</li> <li>-The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).</li> <li>-There are clearings, glades or rides present within the scrub, providing sheltered edges.</li> </ul>	Scrub should be monitored at 6 months & years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.
Artificial unvegetated, unsealed surface	Retained	N/A	N/A	N/A	N/A	N/A
Wet woodland	Enhanced	Good	15	Woodland	<p>In order to achieve Good condition a total score of &gt;32 should be achieved across the following criteria:</p> <ul style="list-style-type: none"> <li>-Age distribution of trees</li> <li>-Wild, domestic and feral herbivore damage,</li> <li>-Invasive plant species,</li> <li>-No. of native tree species,</li> </ul>	Woodland should be monitored at 6 months & years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.

					<ul style="list-style-type: none"> <li>-Cover of native tree and shrub species,</li> <li>-Open space within woodland,</li> <li>-Woodland regeneration,</li> <li>-Tree health,</li> <li>-Vegetation and ground flora,</li> <li>-Woodland vertical structure,</li> <li>-Veteran trees,</li> <li>-Amount of deadwood</li> <li>-Woodland disturbance.</li> </ul>	
Wet woodland	Retained	Moderate	0	Woodland	<p>In order to achieve Moderate condition a total score of &gt;26 should be achieved across the following criteria:</p> <ul style="list-style-type: none"> <li>-Age distribution of trees</li> <li>-Wild, domestic and feral herbivore damage,</li> <li>-Invasive plant species,</li> <li>-No. of native tree species,</li> <li>-Cover of native tree and shrub species,</li> <li>-Open space within woodland,</li> <li>-Woodland regeneration,</li> <li>-Tree health,</li> <li>-Vegetation and ground flora,</li> <li>-Woodland vertical structure,</li> <li>-Veteran trees,</li> <li>-Amount of deadwood</li> <li>-Woodland disturbance.</li> </ul>	Woodland should be monitored at 6 months & years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.
Ditches	Created	Poor	0	Ditch	<p>No criteria need to be met to maintain Poor condition; however, encroachment may cause a deterioration of score as per BNG 3.1 metric.</p> <p>The following criteria should be met as they may impact surrounding habitats:</p> <ul style="list-style-type: none"> <li>-The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.</li> <li>-Physical damage evident along less than 5% of the ditch, such as excessive poaching, damage from machinery use or storage, or any other damaging management activities.</li> <li>-There is an absence of non-native plant and animal species.</li> </ul>	N/A
Other neutral grassland	Creation	Good	10	Grassland (Moderate, high and very high distinctiveness)	<p>In order to achieve Good condition, two essential criteria must be met plus at least 3 other criteria:</p> <ul style="list-style-type: none"> <li>-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. <b>Essential criterion</b></li> <li>-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)</li> </ul>	Grassland should be monitored at 6 months, years 1,2,3,4,5, 8,11,14, 17, 20, 25 and 30.

					<p>creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.</p> <ul style="list-style-type: none"> <li>-Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.</li> <li>-Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.</li> <li>-There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition<sup>1</sup> 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.</li> <li>- There are greater than 9 species per metre squared.</li> </ul> <p><b>Essential criterion</b></p>	
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## APPENDIX D – HEDGEROW CREATION

The below habitat creation and enhancements measures are based on the required management to fulfil the habitat conditions as per the Defra Technical Document (Defra 2024).

**Table D1. Summary of condition required and associated management for created terrestrial habitats**

Habitat type	Habitat measure	Target Condition	Time to target condition (years)	Habitat condition sheet	Condition criteria	Ecological monitoring years
On-site Dinting						
Hedgerows (priority hedgerow)	Created	Moderate	5	Hedgerow	Target condition is 'Moderate' in 2 years. In order to achieve the following criteria need to be passed: >1.5 m average height along length >1.5 m average width along length Gap between ground and base of canopy <0.5m for >90% of length. >1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length. Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground. >90% of the hedgerow and undisturbed ground is free of invasive non-native and neophyte species.	Native hedgerows should be monitored at 6 months & Years 1, 3, 5, 7, 10, 15, 20, 25 and 30.
Other hedgerows (Ornamental)	Created	Poor	1	NA	Target condition is 'poor' in one year. This condition is pre-set in the metric.	Ornamental hedgerows should be monitored at 6 months & years 1, 3, 5, 10, 20 and 30.
Off-site Chinley						
Hedgerows (priority hedgerow)	Enhanced	Good	2	Hedgerow	Target condition is good in 2 years. In order to achieve good condition, 2 of the following criteria need to be achieved: Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees') Gaps make up <10% of total length and no canopy gaps >5 m Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground	Native hedgerows should be monitored at 6 months & Years 1, 3, 5, 7, 10, 15, 20, 25 and 30.

## APPENDIX E –BESPOKE COMPENSATION - TRANSPLANTING OF ACID GRASSLAND AND PURPLE MOOR GRASS AND RUSH PASTURE

**Table E1: Summary of condition required and associated management for bespoke compensation habitats**

Habitat type	Habitat measure	Target Condition	Time to target condition (years)	Habitat condition sheet	Condition criteria	Ecological monitoring years
Lowland dry acid grassland	Translocated	Good	N/A	Grassland – Medium, high and very high distinctiveness	<p>Passes 5 of 5 criteria:</p> <ul style="list-style-type: none"> <li>-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. NB - This criterion is essential for achieving moderate condition for non-acid grassland types only.</li> <li>-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.</li> <li>-Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.</li> <li>-Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.</li> <li>-There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition<sup>1</sup> 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.</li> </ul>	Grassland should be monitored at 6 months, years 1,2,3,4,5 8,11, 14, 17, 20, 25 and 30.
Purple moor grass and rush pasture	Translocated	Good	N/A	Wetland	<p>Passes both essential criterion plus at least 4 optional criterion.</p> <ul style="list-style-type: none"> <li>-The water table is at or near the surface throughout the year, this could be open water or saturation of soil at the surface. There is no artificial drainage, unless specifically to maintain water levels as specified above. <b>Essential criteria</b></li> <li>-The appearance and composition of the vegetation closely matches characteristics of the specific wetland habitat type (see UKHab definition linked above). Indicator species for the specific wetland habitat type<sup>1</sup> are very clearly and easily visible.</li> <li>-The water supplies (groundwater, surface water and/or rainwater) to the wetland are of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.</li> <li>-Cover of scrub and scattered trees less than 10%.</li> <li>-Cover of bare ground less than 5%.</li> <li>-There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition<sup>1</sup> make up less than 5% of ground cover.</li> <li>-No more than 25% of the fen area has a continuous cover of litter (i.e. dead vegetation) preventing regeneration. <b>Essential criterion</b></li> </ul>	Grassland should be monitored at 6 months, years 1,2,3,4,5 8,11, 14, 17, 20, 25 and 30.

## APPENDIX F – MANAGEMENT CHECKLIST

Summary of ongoing management actions (excluding initial establishment) are shown in Tables 1 and 2. The corresponding management plan section must be referred to before undertaking any actions. The Biodiversity Champion is to do an annual check to inform upcoming management and dynamic ecological monitoring recommendations are to be provided at the intervals as listed in Appendices C-E.

On-site

**Table F1: Onsite management checklist**

Year(s)	Time	Maintenance Actions	Additional recommendations from annual management check	Additional recommendations from ecological monitoring
Other neutral grassland (retained)				
Annually	Late July-August (After flowering)	Hay cut (see Section 4.1.1)		
Annually	Autumn/Winter	Mow re-growth to 50mm (see Section 4.1.1)		
All scrub, woodland and ditch habitats				
Annually	April – September (April optimum)	Check for Himalayan balsam and take any remedial action (see Section 5.0)		
Bramble scrub enhanced to mixed scrub				
1-3	Spring and Autumn	Adjust and/or remove guards/tubes/stakes/ties as required (see Section 4.1.2)		
1-5	January-February	Corrective pruning to encourage denser growth and/or weeding where required to reduce competition (see Section 4.1.2)		
1-5	October-April	Replacement of failed plantings (see Section 4.1.2)		
Every 3 years	October-February (avoiding nesting bird season)	Cut rotational glades (see Section 4.1.2)		
Mixed scrub enhanced to wet woodland				
1-5	October-April	Replacement of failed plantings (see Section 4.1.3)		
1-4	Spring and Autumn	Adjust and/or remove guards/tubes/stakes/ties as required (see Section 4.1.3)		
Broadleaved woodland (enhanced)				
Annually	-	Health status checks and follow up (see Section 4.1.4)		
As required	-	Follow woodland management schedule for thinning/coppicing/pollarding and supplementary planting (see Section 4.1.4)		
Wet woodland (retained)				
As required	-	Follow woodland management schedule for thinning/coppicing/pollarding and supplementary planting (see Section 4.1.5)		

Year(s)	Time	Maintenance Actions	Additional recommendations from annual management check	Additional recommendations from ecological monitoring
Annually	-	Health status checks and follow up (see Section 4.1.5)		
Ditches (retained)				
Annually	-	Check water levels and signs of eutrophication and take any remedial action. Check for invasives and success of enhancement measures (see Section 4.1.6)		
Modified grassland (Created)				
Annually	As required throughout year	Mowing and removal of undesirable species (see Section 4.2.1)		
Other neutral grassland (created)				
Annually	Late July-August (After flowering)	Hay cut (see Section 4.2.2)		
Annually	Autumn/Winter	Mow re-growth to 50mm (see Section 4.2.2)		
Broadleaved woodland (created)				
1	January-February	Corrective pruning to encourage denser growth and/or weeding where required to reduce competition (see Section 4.2.3)		
1-4	Spring and Autumn	Adjust and/or remove guards/tubes/stakes/ties as require (see Section 4.2.3)		
1-5	Next suitable planting period for the species	Replacement of failed plantings (see Section 4.2.3)		
Introduced shrub (created)				
Annually	Next suitable planting period for the species	Replacement of failed plantings (see Section 4.2.4)		
Annually	As required throughout year	Maintenance tasks (see Section 4.2.4)		
Sustainable urban drainage feature (created)				
1-3	Mid-spring-early summer	Replace failed sowing/planting (see Section 4.2.5)		
Annually	-	Monitor vegetation encroachment, remove any invasive species and litter (see Section 4.2.5)		
Every 5 years (after year 3)	Autumn	Vegetation rotational clearance (see Section 4.2.5)		
Every 5-10 years	Autumn	Dredging under ecological supervision once every five to ten years if needed to prevent the build-up of silt (see Section 4.2.5)		
Urban trees (created)				

Year(s)	Time	Maintenance Actions	Additional recommendations from annual management check	Additional recommendations from ecological monitoring
1-3	-	Physical weeding and mulching (see Section 4.2.6)		
1-5	Next suitable planting period for the species	Replacement of failed plantings (see Section 4.2.6)		
1-4	Spring and Autumn	Adjust and/or remove guards/tubes/stakes/ties as require (see Section 4.2.6)		
Hedgerow planting (created)				
1-5	Next suitable planting period for the species	Replacement of failed plantings (see Section 4.2.7)		
1-4	Spring and Autumn	Adjust and/or remove guards/tubes/stakes/ties as require (see Section 4.2.7)		

**Offsite**
**Table F2: Offsite management checklist**

Year(s)	Time	Maintenance Actions	Additional recommendations from annual management check	Additional recommendations from ecological monitoring
Ditches				
Annually	-	Check ditch for no obvious signs of pollution, physical damage and presence of Himalayan balsam (see Section 4.3.1). Take remedial action where required.		
Transplanted grasslands				
Annually (year 3 onwards)	Avoiding spring-August	Implement light grazing regime (see Section 4.3.2)		
Other neutral grassland (Created and Enhanced)				
3-5	September-October	Assess species diversity in sward and introduce plug planting where required (see Section 4.3.3)		
Annually (year 3 onwards)	Avoiding spring-August	Implement light grazing regime (see Section 4.3.3)		
Annually (year 3 onwards)	Avoiding spring-August	Supplementary mowing or increased grazing as required (see Section 4.3.3)		
2-3	Avoiding spring-August	Mowing as required to prevent becoming overgrown and tussocky before grazing regime begins (see Section 4.3.3)		
Annually (year 3 onwards)	Avoiding spring-August	Implement light grazing regime (see Section 4.3.3)		
Swamp (Enhanced)				
Annually (year 3 onwards)	-	Assess need for removal of <i>Urtica</i> , <i>Cirsium arvense</i> and Buddleja/scrub as required (see Section 4.3.4)		
Hawthorn scrub (Enhanced)				



Year(s)	Time	Maintenance Actions	Additional recommendations from annual management check	Additional recommendations from ecological monitoring
Annually	-	Assess need for removal of <i>Urtica</i> and <i>Cirsium arvense</i> as required (see Section 4.3.5)		
Blackthorn scrub (Retained)				
Annually	-	Assess need for any maintenance actions to reach target condition (see Section 4.3.6)		
Mixed scrub (created)				
1-3	Spring and Autumn	Adjust and/or remove guards/tubes/stakes/ties as required (see Section 4.1.2)		
1-5	January-February	Corrective pruning to encourage denser growth and/or weeding where required to reduce competition (see Section 4.1.2)		
1-5	October-April	Replacement of failed plantings (see Section 4.1.2)		
Every 3 years	October-February (avoiding nesting bird season)	Cut rotational glades (see Section 4.1.2)		
Wet woodland (Retained and Enhanced)				
1-5	-	Supplementary woodland planting as needed to reach target conditions (see Section 4.3.8)		
Annually	-	Health status checks and follow up (see Section 4.3.8)		
Annually (as required)	-	Follow woodland management schedule for coppicing/thinning/pollarding (see Section 4.3.8)		
Annually		Check water levels and take any remedial action (see Section 4.3.8)		
Hedgerow (Enhanced)				
1-5	-	Replacement of any failed plants. Pruning as required to reduce competition for new plantings (see Section 4.3.9)		