Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Environmental Statement
Volume 2: Appendices

Appendix 12.4A: Woodland Management Plan

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Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 Regulation 14

This document forms a part of the Environmental Statement for the Hinckley National Rail Freight Interchange project.

Tritax Symmetry (Hinckley) Limited (TSH) has applied to the Secretary of State for Transport for a Development Consent Order (DCO) for the Hinckley National Rail Freight Interchange (HNRFI).

To help inform the determination of the DCO application, TSH has undertaken an environmental impact assessment (EIA) of its proposals. EIA is a process that aims to improve the environmental design of a development proposal, and to provide the decision maker with sufficient information about the environmental effects of the project to make a decision.

The findings of an EIA are described in a written report known as an Environmental Statement (ES). An ES provides environmental information about the scheme, including a description of the development, its predicted environmental effects and the measures proposed to ameliorate any adverse effects.

Further details about the proposed Hinckley National Rail Freight Interchange are available on the project website:

http://www.hinckleynrfi.co.uk/

The DCO application and documents relating to the examination of the proposed development can be viewed on the Planning Inspectorate's National Infrastructure Planning website:

https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/hinckley-national-rail-freight-interchange/

Section 1 ◆ Introduction

INTRODUCTION

1.1 This Woodland Management Plan (WMP) has been prepared by The Environmental Dimension Partnership (EDP) on behalf of Tritax Symmetry (Hinckley) Limited (hereafter referred to as "the Applicant"). It has been produced in relation to the proposed National Rail Freight Interchange on land north-east of Hinckley, which is to be the subject of a Development Consent Order (DCO) application. The full extent of the DCO Order Limits is hereafter referred to as the 'DCO Site'.

1.2 The land between the M69 motorway and the Leicester to Hinckley railway on which the proposed Hinckley National Rail Freight Interchange (HNRFI) would be developed is identified as the 'Main HNRFI Site'.

1.3 The DCO Site contains the Main HNRFI Site and also includes contiguous areas to the north-west, south and east, to contain: the corridor of a proposed link road that would cross the Leicester to Hinckley railway and connect to the B4668/A47 Leicester Road (the 'A47 Link Road'); the proposed works to M69 Junction 2; and a section of the B4669 Hinckley Road towards the village of Sapcote, respectively. These are hereafter referred to as the 'Main Order Limits'.

1.4 The DCO Site also includes additional non-contiguous areas of land associated with roads and junctions for which highway enhancements and traffic management measures are proposed, in addition to pedestrian level crossings on the Leicester to Hinckley railway that are subject to proposed works and restrictions.

SITE CONTEXT

1.5 The Main Order Limits are located 3km north-east of Hinkley, in an area of mixed farmland to the north-west of M69 Junction 2, and is centred on National Grid Reference (NGR) SP 46314 94858. The Main Order Limits support predominantly arable land and comprises field parcels delineated with hedgerows and ditches, ponds, several small blocks of woodland, three complexes of farm buildings and an unnamed stream which flows north-eastward through the southern portion of the Main Order Limits.

1.6 To the immediate west of the Main Order Limits lies four parcels of Ancient and Semi-Natural Woodland - Burbage Wood, Aston Firs, Freeholt Wood and Sheepy Wood.

Planning Status

1.7 The Developer has applied to the Secretary of State for Transport for a Development Consent Order for the Hinckley National Rail Freight Interchange. The DCO Site falls across four Local Planning Authority (LPA) areas, namely: Blaby District, Hinckley and Bosworth

Borough, Harborough District and Rugby Borough Councils.

Development Proposals

1.8 Development on the DCO Site would include:

a) The demolition of Woodhouse Farm, Hobbs Hayes, Freehold Lodge and the existing bridge over the Leicester to Hinckley railway on Burbage Common Road;

b) New rail infrastructure including points off the existing Leicester to Hinckley railway providing access to a series of parallel sidings at the DCO Site, in which trains would be unloaded, marshalled and loaded;

c) An intermodal freight terminal or 'Railport' capable of accommodating up to 16 trains up to 775m in length per day, with hard-surfaced areas for container storage and HGV parking and cranes for the loading and unloading of shipping containers from trains and lorries;

d) Up to 850,000 square metres (gross internal area or GIA) of warehousing and ancillary buildings with a total footprint of up to 650,000 square metres;

e) An energy centre incorporating an electricity substation connected to the local electricity distribution network and a gas-fired combined heat and power plant;

f) A lorry park with welfare facilities for drivers and HGV fuelling facilities;

g) A site hub building providing office, meeting space and marketing suite for use in connection with the management of the HNRFI and ancillary car parking;

h) Terrain remodelling, hard and soft landscape works, amenity water features and planting;

i) Noise attenuation measures, including acoustic barriers up to six metres in height;

j) Habitat creation and enhancement and the provision of publicly accessible amenity open space at the south-western extremity of the HNRFI near Burbage Wood and to the south of the proposed A47 Link Road between the railway and the B4668/A47 Leicester Road;

k) Pedestrian, equestrian and cycle access routes and infrastructure, including a new dedicated route for pedestrians, cyclists and horse riders from a point south of Elmesthorpe to Burbage Common;

l) Utility compounds, plant and service infrastructure;

m) Security and safety provisions inside the HNRFI including fencing and lighting; and

n) Drainage works including groundwater retention ponds, underground attenuation tanks and swales.

1.9 The associated highway proposals include:

a) Works to M69 Junction 2 comprising the reconfiguration of the existing roundabout and its approach and exit lanes, the addition of a southbound slip road for traffic joining the M69 motorway and the addition of a northbound slip road for traffic leaving the M69 motorway at Junction 2;

b) A new road ('the A47 Link Road') from the modified M69 Junction 2 to the B4668/A47 Leicester Road with a new bridge over the railway, providing vehicular access to the proposed DCO boundary from the strategic highway network;

c) Modifications to several junctions and amendments to Traffic Regulation Orders on the local road network in response to the different traffic flow pattern resulting partly from the trips generated by the HNRFI development and principally from the change in movements as a result of the M69 Junction 2 upgrade; and

d) Works affecting existing pedestrian level crossings on the Leicester to Hinckley railway at Thorney Fields Farm north-west of Sapcote, at Elmesthorpe and at Outwoods between Burbage and Hinckley. In addition, pedestrian level crossings serving footpaths that connect Burbage Common Road to Earl Shilton and Barwell are proposed for closure with the associated footpaths being diverted.

1.10 These junctions and rail and highway works affect areas of land at some distance from the Main Order Limits and are currently considered to be of negligible ecological importance, with no potential adverse impacts to ecology currently identified.

Purpose

1.11 This WMP specifically deals with the retention, protection, creation and management of woodland within the Main Order Limits.

1.12 This WMP should be read in conjunction with the Illustrative Landscape Strategy (Figure 11.20, document reference 6.3.11.20). This WMP should also be read in conjunction with the Landscape and Ecological Management Plan (LEMP) (document reference 17.2, APP-360) which sets out details of habitat to be retained and created within the Main Order Limits, alongside management recommendations to deliver ecological and landscape benefits.

1.13 Of pertinence to the development proposals described above, several woodland units are located within the Zone of Influence (ZoI) of the DCO Site including Burbage Wood and Aston Firs Site of Special Scientific Interest (SSSI), Burbage Common and Woods Local Nature Reserve (LNR), Burbage Common and Woods Local Wildlife Site (LWS), and Freeholt Wood potential Local Wildlife Site (pLWS).

1.14 Given the proximity of woodland units to the DCO Site there is the potential for negative effects to arise associated with the damage/degradation of woodland habitat during construction and operation, the latter as a result of increased recreational pressure upon sensitive woodland communities. As such, the strategy established in this WMP also

ensures that the construction and operation of the authorised development will be undertaken in such a way that off-site woodland habitat will be protected. The woodland creation, management and maintenance measures outlined within this WMP are designed to fully mitigate any potential adverse impacts to off-site woodland which may arise through the construction and operational phases of the development.

1.15 The aim of this WMP is to provide an outline management framework for the conservation and enhancement of woodland habitat within the Main Order Limits. In so doing, this WMP incorporates those recommendations documented within the Ecology Chapter of the Environmental Statement (ES) submitted with the DCO application. It establishes the principles upon which the detailed WMP (secured via Requirement) will be based.

Section 2 ◆ Scope, Aims and Responsibilities

SCOPE

2.1 The WMP sets out the management tasks to be undertaken during the construction phase and post-construction phase of the development to ensure the protection of woodland habitat with in the ZoI of the DCO Site.

2.2 This WMP will cover the first 30-years following the completion of the development (with monitoring and review of all operations set out within this WMP at five-year intervals post-development, so as to take account of any changes to mitigation areas or other influencing factors which may become evident as new landscape and ecological features become established.

2.3 During the initial five years of development, an onsite meeting between the client, LPA, Principal Contractor/Management Company and Project Landscape Architect will be undertaken on an annual basis to review progress, monitor establishment and undertake inspections of planted areas and managed habitats to ensure compliance with this WMP and to ensure remedial measures are identified and actioned appropriately.

2.4 The management scheme defined within this WMP is structured to take into account the following phases of the development works:

- Construction; and
- Long-term management and maintenance.

AIMS

2.5 The rationale for this WMP is to facilitate the maintenance and management of existing woodland habitat in addition to the establishment of new proposed planting necessary for maintaining its ecological integrity. Specifically, this WMP aims to:

- Ensure the appropriate management of any tree/vegetation works including clearance, planting and establishment during development; and
- Set out measures for the long-term management and maintenance of retained woodland and associated new planting to ensure that such features are protected and enhanced over the long-term, and in so doing continue to deliver benefits to biodiversity, recreation and visual amenity.

RESPONSIBILITIES

2.6 The responsibility for carrying out the functions of this WMP will vary throughout the duration of the management period as follows:

- Construction Works Phase: All management and maintenance works of all features and species of ecological importance are the responsibility of TSH, and are to be continued through to practical completion; and

- Long-term Management: The responsibility for the management and maintenance works of all features and species of ecological importance associated with the Development Site will be the responsibility of a Private Management Company appointed by TSH.

Section 3 ◆ Ecology and Recreation Baseline

3.1 The WMP incorporates pertinent baseline information and recommendations documented within the Ecology and Biodiversity Chapter 12 (document reference 6.1.12) and the Landscape and Visual Effects Chapter 11 (document reference 6.1.11) of the ES, both prepared by EDP to be submitted with the DCO application.

PERTINENT ECOLOGICAL BASELINE

3.2 To inform the ecological baseline of the DCO Site, a desk study assessment was initially undertaken by EDP during February 2016. The desk study involved the collation and review of contextual information such as designated sites and past records of protected and Priority[1] Species. The full results of a desk study assessment are provided within the Ecology Baseline submitted as Appendix 12.1 (document reference 6.2.12.1) to the Ecology and Biodiversity Chapter 12 of the ES. Pertinent to this WMP, a desk study identified several statutory and non-statutory designations within the ZoI of the DCO Site.

3.3 Statutory designations represent the most significant ecological receptors, being of recognised importance at an international and/or national level. Statutory designations of National importance include SSSI and National Nature Reserves (NNR). Although LNRs are statutory, their level of importance is typically at the County level or less, consistent with non-statutory designations, and are therefore considered alongside non-statutory sites.

3.4 Non-statutory designations are commonly referred to in planning policies as 'local sites', although these designations are typically considered to be of importance at a County level. In Leicestershire, such designations are named LWS. Leicestershire also uses a system of candidate Local Wildlife Sites (cLWSs) and Potential Local Wildlife Sites (pLWSs). Additionally, Ancient Semi-Natural Woodland (ASNW) should be considered at this level where it is not covered by other designations, such as LNRs.

3.5 The following designations were identified within the ZoI of the DCO Site and are pertinent to this WMP:

- Burbage Wood and Aston Firs SSSI – adjacent to western boundary of DCO Site;
- Burbage Common and Woods LNR – adjacent to western boundary;
- Burbage Common and Woods LWS - adjacent to western boundary;
- Freeholt Wood pLWS and ASNW – adjacent to southern boundary;

[1] Species of Principal Importance for the purpose of maintaining and enhancing biodiversity in England, as listed under Section 41 of the *Natural Environment and Rural Communities Act* (NERC) 2006.

- Burbage Wood ASNW – 30m west overlapping with Burbage Wood and Aston Firs SSSI;
- Aston Firs ASNW – adjacent to western boundary overlapping with Burbage Wood and Aston Firs SSSI; and
- Sheepy Wood ASNW circa 20m west.

3.6 The location and extent of these designations are illustrated within Figure 12.1 and 12.2 (document reference 6.3.12.1 and 6.3.12.2) to Chapter 12 of the ES. Further details, where available, are provided below.

Burbage Wood and Aston Firs SSSI

3.7 Burbage Wood and Aston Firs SSSI sits to the immediate south-west of the DCO Site centred at OS Grid Reference SP 453941 and measures approximately 51ha in size. The majority of the SSSI is also designated as ASNW.

3.8 With reference to the SSSI citation[2]:

'*Burbage Wood and Aston Firs has developed on rather poorly-drained soils derived from the underlying Glacial Boulder Clay. The woodland canopy is dominated by ash Fraxinus excelsior and oak Quercus robur and contains some wych elm Ulmus glabra and English elm Ulmus procera. The shrub layer is dominated by hazel Corylus avellana and hawthorn Crataegus monogyna, but also includes field maple Acer campestre, privet Ligustrum vulgare, dogwood Swida sanguinea and rowan Sorbus aucuparia. The ground vegetation is characterised by an abundance of honeysuckle Lonicera periclymenum, bramble Rubus fruticosus, bluebell Endymion non-scriptus, false brome Brachypodium sylvaticum, rough meadow-grass Poa trivialis and tufted hair-grass Deschampsia cespitosa, and includes a large number of plant species typical of semi-natural woodland such as sweet woodruff Asperula oderata, moschatel Adoxa moschatellina, yellow archangel Galeobdolon luteum, water avens Geum rivale and several species of woodland orchids.*'

3.9 The SSSI comprises a total of 4 management units, all of which are listed by Natural England as 'Unfavourable – Recovering' as of 2011. This classification is defined by Natural England as '*units/features are not yet fully conserved but all the necessary management mechanisms are in place. At least one of the designated feature(s) mandatory attributes are not meeting their targets (as set out in the site specific* [Favourable Condition Tables]. *Provided that the recovery work is sustained, the unit/feature will reach favourable condition in time*'.

3.10 Prior to 2011, the SSSI was classified as 'Unfavourable', however it appears the woodland in receipt of a Woodland Improvement Grant (WIG) which may explain its current status. It is considered that current management is therefore appropriate.

[2] Available at: https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1003526.pdf. [Accessed on 1 December 2022]

Burbage Common and Woods LNR and LWS

3.11 The SSSI overlaps with the larger Burbage Common and Woods LNR which extends further to the west of the DCO Site. The LNR, in turn, overlaps with Burbage Common and Woods LWS and also encompasses part of the Aston Firs ASNW and the entirety of the Burbage Wood ASNW and Sheepy Wood ASNW. The LWS is notified for its transitional mesotrophic/acid grassland and ancient semi-natural woodland supporting significant bird and amphibian assemblages and Red Data Book species.

Freeholt Wood pLWS and ASNW

3.12 Freeholt Wood pLWS represents a distinct woodland unit spatially separated from the other aforementioned designations and is similarly notified for its broadleaved and ancient woodland habitat.

Recreation Baseline

3.13 To establish the landscape and visual conditions of the DCO Site, and thus identify potential effects of the Proposed Development on landscape features, a desktop assessment was undertaken by EDP which included reviews of aerial photographs, web searches, LPA publications and landscape character assessments in addition to information about relevant landscape and other designations such as Areas of Outstanding Natural Beauty (AONBs), conservation areas and gardens and parks listed on Historic England's 'Register of Historic Parks and Gardens of Special Historic Interest in England' (RPG). The full results of the desk study are provided within the Landscape and Visual Baseline Assessment, submitted as Appendix 11.1 (document reference 6.2.11.1) to the Landscape and Visual Effects Chapter 11 of the ES.

3.14 Pertinent to this WMP, a desk study assessment identified several existing Public Rights of Way (PROW) which pass through the DCO Site (illustrated at Figure 11.3, document reference 6.3.11.3). Whilst there are a number within the local context of the DCO Site, these PRoWs generally provide links between local settlements and scattered farms across the area.

3.15 One promoted route, the Leicestershire Round, runs through the study area (defined as 5km from the Main Order Limits excluding the separate redlines of the M69 signage works to the south), passing c.30m west of the Order Limits as it passes through Burbage Common and Woods. No National Trails or European long-distance footpaths pass through the broad study area.

3.16 Two National Cycle Routes (NCR) pass through the 5km study area, however they are both located at the far eastern and far western extents of the study area, with NCR52 located c.6km west of the Main HNRFI Site. NCR is located 9.6km north-east of the Main HNRFI Site.

3.17 Of further relevance, Burbage Common and Woods Country Park and area of Open Access Land is located adjacent to the western boundary of the Main HNRFI Site (illustrated at Figure 11.3, document reference 6.3.11.3).

3.18 Such features provide recreational opportunities to the local residential and employment population within the ZoI of the DCO Site.

Impact Assessment

3.19 Statutory and non-statutory designations comprising ancient and broadleaved woodland habitat is excluded from the DCO Site and its subsequent development, such that no direct impacts associated with their loss are anticipated. However, the ES identifies the potential for damage/degradation of retained woodland habitat as a results of soil compaction, encroachment by machinery or pollution events during the construction phase of development.

3.20 In addition, there is the potential for further damage/degradation of the woodlands during the operational phase of development as a result of increased recreational pressure. Given the commercial nature of proposed development which would not give rise to an increase in the area's resident population, such impacts are considered minimal. However, development of the DCO Site may result in the displacement of existing footpath users from the Site towards designated sites following closure and re-routing of PROWs during the construction and operation phase of development.

3.21 There also remains the potential for long-term disturbance of woodland habitat and protected species therein as a result of increased lighting, noise and traffic during the operational phase of development.

Ecological Features to be Retained, Enhanced and Created

3.22 In line with those recommendations detailed within the Ecology and Biodiversity ES Chapter 12, and further documented with the Illustrative Landscape Strategy (ES Figure 11.20, document reference 6.3.11.20) and LEMP (document reference 17.2) submitted with a DCO application, the development has been sensitively designed to retain and protect valued woodland habitat, whilst avoiding negative effects upon these features during the construction and operation phase of development. This will be achieved through the following design principles:

- Management of retained woodland parcels through ongoing viability/safety of tree stock maintenance, pruning as necessary, clearance of successional scrub, creation of deadwood piles, litter picking and fencing where appropriate;
- The provision of new native planting along woodland edges designed to deter unauthorised public access whilst enhancing opportunities for biodiversity;
- The provision and long-term management of alternative PROWs and permitted routes, directing visitors to the site away from sensitive woodland habitats;
- The installation of appropriate information and signage along PROWS in addition to litter and dog waster bins to reduce littering and pollution of the local environment;
- The creation of informal open space comprising grassland and shrub planting to provide

alternative recreational opportunities whilst delivering further visual amenity benefits to employees and recreational visitors to the site; and

- The design and implementation of a sensitive lighting scheme to avoid light spill upon adjacent woodland edges.

Section 4 ◆ Habitat Creation, Management and Maintenance

4.1 Woodland habitat retained and newly created woodland/shrub/ecotone habitats along the boundaries of the DCO Site (illustrated at ES Figure 11.20, document reference 6.3.11.20) will be subject to an appropriate management, maintenance and monitoring regime, to be delivered by a Private Management Company over the lifetime of the development.

4.2 Prior to commencement of habitat management works, it is recommended that talks are held with the management bodies responsible for relevant areas of off-site woodland, so that any existing access management, invasive species or disease related issues can be identified. Where access allows, these talks may be informed by habitat surveys undertaken by an Arboricultural Association (AA) approved contractor or professional Arboriculturist in consultation with an ecologist. These talks/surveys will identify additional management measures which may be required to help ensure the long-term viability of off-site woodland, in addition to ensuring proposed management does not conflict with any existing off-site management regimes. The talks with relevant management bodies will inform the preparation of the detailed WMP (secured via Requirement) which will have due regard to best practise and relevant guidance.

4.3 Surveys of off-site woodland (in liaison with off-site management bodies) may also identify any off-site remedial management measures which may be required to ensure the long-term viability of off-site woodland parcels. Where such remedial management measures are identified, it is considered that as an enhancement measure, contributions may be provided by the applicant. Discussions with off-site management bodies regarding potential contributions to off-site management are underway. Any such off-site arrangements will be included within future iterations of this document.

4.4 The detailed WMP will have due regard for best practise and relevant guidelines. For example, the Forestry Commission produces practice guides for the management of semi-natural woodland, including lowland mixed broadleaved woods of which these statutory/non-statutory woodland designations are quite typical. These guides outline the Forestry Commission policy aims for woods of this type which include:

- Maintain and wherever suitable restore the natural ecological diversity;
- Maintain and where appropriate improve their aesthetic value; and
- Maintain the genetic integrity of populations of native species, so far as is practicable.

4.5 For the onsite woodlands within the Main Order Limits, the management will seek to enhance the condition of existing woodland habitat, promoting a non-uniform structure which encourages the establishment of trees of differing ages and species whilst also

maximising the value of food, dispersal, breeding, and hibernation resources for protected/priority species potentially present. This will be achieved through the following principles:

- Encourage structural diversity with creation of graded and transitional habitat edges to maximise fruiting and flowering ability. Mature and veteran trees will be retained and sensitively managed to maximise their viability and longevity. Active management, to include crown reduction, rotational thinning/coppicing and scrub management, will be introduced to increase light penetration and allow the establishment of trees and shrubs of differing ages and species necessary to create a species-rich understorey/shrub layer;

- Any connecting/boundary native hedgerows to be sensitively managed where necessary to achieve a dense, continuous (<10% gaps) and bushy 'A' shaped structure, reaching heights of between 2-5m through rotational cutting and/or laying;

- Scrub habitats to comprise a mosaic of stands varying in age, size and structure, managed through rotational cutting/coppicing to avoid excessive shading and encroachment whilst encouraging regrowth;

- Eradication and/or control of pests and diseases, such as Chalara (*Hymenoscyphus fraxineus*), to maintain a healthy tree stock, increase resilience and reduce the rate of spread;

- The protection of tree specimens from damage from, for example, grazing deer and rabbits, fencing off specific areas to regenerate, where necessary;

- The retention of deadwood to provide habitat for saproxylic invertebrates, increasing biodiversity whilst maintaining, natural woodland processes;

- The control of invasive species in accordance with the advice of a specialist contractor where found to be present;

- The avoidance of herbicide unless considered necessary to inhibit re-growth of non-native and invasive species; and

- The inclusion of litter bins across adjacent open green space to deter littering and attraction of vermin including rats and corvids which could otherwise predate wildlife; and

- The incorporation of a sensitive lighting strategy to avoid light spill greater than 1 lux upon woodland boundaries and peripheral vegetation.

4.6 In addition to the above, new tree, shrub and ecotone planting is proposed across the southern and western extents of the DCO Site (Illustrative Landscape Strategy (ES Figure 11.20, document reference 6.3.11.20) to strengthen woodland boundaries, reduce edge effects and maintain wildlife corridors across the DCO Site whilst avoiding negative effects associated with disturbance and recreational impacts. Planting mixes will include a

mixture of native trees and shrubs to encourage diversity within the woodland. Thorny species will be incorporated at the interface of public areas with woodland habitat to deter public access.

4.7 Woodland and woodland edge species mixes recommended are listed within Table 4.1.

Table 4.1: Proposed 'Specimen Tree Planting'.

Latin Name	**Common Name**
Acer campestre	Field maple
Alnus glutinosa	Common alder
Betula pendula	Silver Birch
Castanea sativa	Sweet chestnut
Juglans regia	Walnut
Populus nigra	Black Poplar
Prunus avium	Wild cherry
Quercus ilex	Holm Oak
Quercus palustris	Pin Oak
Quercus robur	English oak
Salix Alba	White Willow
Salix Fragilis	Crack Willow
Tilia cordata	Small-leaved Lime

4.8 Woodland edge and shrub planting will form areas of scrub throughout the Main Order Limits adding species and structural interest within the meadow areas and transitional ecotones at woodland edges whilst providing opportunities for foraging and shelter for a range of fauna. Species are again selected to provide suitability across a range of conditions. Species are as listed in Table 4.2.

Table 4.2: Proposed Shrub /Woodland Edge Species

Latin Name	**Common Name**
Acer campestre	Field maple
Cornus sanguinea	Common dogwood
Corylus avellana	Hazel
Crataegus monogyna	Hawthorn
Euonymus europeaus	Spindle
Frangula Alnus	Alder Buckthorn
Ilex aquifolium	Holly
Salix caprea	Goat Willow
Salix Viminalis	Osier
Sambucus Niger	Elder
Viburnum Opulus	Guelder Rose

4.9 New woodland areas will be created around the peripheries of the Main Order Limits including within the areas of public open space in the west of the Main Order Limits. The 'Woodland planting mix' includes native species to complement surrounding native vegetation whilst providing opportunities for foraging and shelter for a range of fauna.

Species are listed in Tables 4.4 and 4.5 below.

Table 4.3: Species included in 'Woodland planting mix'.

Latin Name	**Common Name**
Acer campestre	Field maple
Betula pendula	Silver Birch
Malus sylvestris	Crab Apple
Populus Tremula	Aspen
Prunus Avium	Wild Cherry
Quercus Robur	Common Oak
Sorbus torminalis	Wild Service Tree
Tilia cordata	Small-leaved Lime

4.10 To further protect retained woodland habitat from damage/degradation as a result of increased recreational pressure, new PROWs and areas of informal open space are proposed across the DCO Site directing visitors away from sensitive habitat features and providing alternative recreational opportunities respectively. Proposed measures include:

- Provision of new permissive shared use routes to create direct access across the Proposed Development on the Main HNRFI Site;
- Provision of a shared use green route connection between Burbage Common Road North and Burbage Common and Woods Country Park, around the eastern and southern boundaries of the Main HNRFI Site, connecting to the Bridleway network in the eastern area of the Main HNRFI Site;
- The upgrade of a number of footpath routes to bridleway status to allow a connection between the bridleway networks north-west, south-west and south-east of the Main HNRFI Site;

- Enhancement of the existing network through improved marking of routes, appropriate vegetation management and the removal of gates/stiles;
- Creation of informal open green space along the southern and western boundaries of the DCO Site, adjacent to woodland boundaries, encompassing new grassland, tree and shrub planting providing further benefits to visual amenity and recreation;
- Provision of interpretation boards at key locations to educate and inform visitors of the areas wildlife value and ensure people walk dogs responsibly; and
- Provision of a well-being area and associated picnic benches.

4.11 Further details in relation to the PROW network and proposed mitigation are provided at Appendix 11.2 (document reference 6.2.11.2) to Chapter 11 of the ES).

4.12 Outline management and maintenance prescriptions in relation to woodland habitat are detailed below. Management prescriptions for the wider DCO Site, including public open space, is provided within the LEMP (document reference 17.2) and will not be repeated here.

Retained Habitats

4.13 Selective habitat clearance and management works across retained habitats within the DCO boundary (excluding the management of any invasive species identified), will be restricted to above-ground habitats only, with all works undertaken with consideration to both statute controls and ecological constraints across the DCO Site and woodland habitats. All management works will be undertaken by an appropriately qualified contractor under the guidance and supervision of an appropriately qualified ecologist. Such works will seek to maximise habitat structure, further details of which are provided below.

Implementation of Coppice Works Programme

4.14 Where onsite woodland parcels support species suitable for management under a coppicing system (i.e. hazel, blackthorn, sycamore and willow), a coppice regime will be re-established to be undertaken on a circa 7-year cycle, with approximately 33% of stools suitable for coppice management to be cut on each management cycle.

Implementation of Thinning Works Programme

4.15 The aim of this program is to actively select and promote the development of succession trees through the selective thinning and phased removal of trees of low quality and poor form within the onsite woodland units. Additionally, the program will seek to promote the diversification and enhancement of ground flora through the creation of clearings and glades to allow light to the woodland floor.

4.16 Where larger, more mature stems are to be removed later into the thinning regime, consideration should be given to the undertaking of monolithing, fracture pruning and

ring barking (where appropriate) to retain these trees as standing deadwood within the structure of the woodland.

4.17 The thinning works are to be undertaken on a 30-year cycle. The percentage of trees to be removed within each woodland unit should be determined by an initial condition assessment and site survey.

4.18 Further to the recommendations made above, it is also recommended that, where possible, the works facilitate the respacing of naturally regenerating stems, enabling succession and maturation over the lifetime of the management plan.

Understory Management Works

4.19 To facilitate continued natural regeneration across retained habitats it is recommended that understory management is undertaken. This will be achieved through the control and selective removal of bramble on a biennial basis around establishing young trees for the first 5 years initially. Thereafter, bramble will be controlled through cutting every 2-3 years.

Hedgerow/Scrub Management Works

4.20 Management of hedgerows will seek to achieve a continuous (<10% gaps), dense and bushy 'A' shaped structure whilst maintaining heights at no less than 3m and widths of at least 2m.

4.21 Long cutting cycles will be implemented, with hedgerow cutting to occur approximately every three years in rotation, with a maximum of 30% of the hedgerow resource cut at any one time (thereby enabling a minimum of 30% left to grow for 7-10 years). This will ensure that a proportion of cut versus un-cut hedgerows exists onsite at any one time so as to be sympathetic to the annual lifecycle of the fauna which use them.

4.22 Coppicing and/or traditional laying of the hedgerow where appropriate according to species will be undertaken, to encourage the formation of a more dense and continuous hedgerow which is not excessively tall or wide. Where stands of hazel, willow and other coppice-tolerant species are present, then such species will be subject to coppicing regimes on a 15-20 year rotation or where appropriate to species.

4.23 Bramble and other scrub establishment/encroachment across hedgerows will be controlled where necessary through additional cutting every 2-3 years between October and February and undertaken on a rotational basis such that no more than half of the area is cut in any one year.

Deadwood Retention

4.24 The retention of deadwood provides an abundance of valuable habitat, and the cosmetic cleansing of this resource should be avoided. Retention, and conversely removal, should be proportionate and informed by a risk management process. Opportunities for the retention of standing deadwood within the compartments should be exploited.

New Planting Areas: Planting and Establishment

4.25 To protect woodland habitat from damage/degradation during the operation phase of development, whilst enhancing its integrity and promoting the movement of wildlife across the DCO Site, new native tree and shrub planting is proposed along the western and southern boundaries of the Main Order Limits (as detailed within the Illustrative Landscape Strategy).

4.26 Planting will commence as soon as possible during the first appropriate season following commencement of construction, allowing vegetation to mature as construction progresses. All new planting is to be undertaken during the optimum planting season as determined by the Chartered Landscape Architect/Contractor appointed by the Developer (i.e. between October and March). Planting outside of this time will require the use of containerised stock and may involve additional irrigation arrangements.

4.27 Newly planted areas of trees, shrubs and hedgerows, have been designed to be ecologically and structurally diverse and include: native species of local provenance; species which offer a flower and fruiting resource; those suitable for the environmental conditions of the Application Site; and species which have some resilience to climate change.

4.28 All planting material will incorporate native species and be of local or at least UK origin. Such stock will be handled in accordance with the Horticulture Trade Association guidelines and should follow landscape specifications as provided by a Chartered Landscape Architect/Contractor appointed by the Developer.

4.29 All products will be supplied and fitted in accordance with the manufacture's guidelines and whips protected using stakes and durable rubber ties.

4.30 The condition of all tree stakes, ties and/or guards will be checked by the appointed Landscape Contractor or Developer, and all broken items replaced and items regularly adjusted to accommodate plant growth and prevent rubbing. Any bark damage will be cut back neatly with a sharp knife. All plants will be straightened and the ground at the base to be firmed up. All shelters will be hand weeded.

4.31 Watering will be undertaken as necessary by the appointed Landscape Contractor or Developer to ensure the establishment and thriving of all planted and translocated areas. Watering will be to the full depth of the topsoil. If supply is restricted by emergency legislation, watering will not be carried out unless instructed to do so.

4.32 All areas where plants or trees have failed to thrive (through death, damage or disease), will be identified by the appointed Landscape Contractor or Developer, with specimens removed and replaced with equivalent or more appropriate native species to match the size of adjacent nearby plants in the next appropriate planting season, as frequent as necessary. Any variation of this will only occur upon consent by the LPA.

4.33 All plants will be pruned to promote healthy growth and natural shape, and any dead, dying or diseased wood and suckers will be removed. Pruning should be undertaken

annually or as appropriate to each species between October and February inclusive, to avoid the main bird breeding season and undertaken according to best practice. All arisings will be removed for composting.

4.34 Any maintenance pruning required will be undertaken in accordance with good horticultural and arboricultural practice with thinning, trimming and shaping of specimens undertaken as appropriate to species, location, and stage of growth.

4.35 Pests will be identified and eradicated, and litter will be removed.

4.36 All planting and seeding will be subject to a five-year maintenance defects rectification period during which all dead, missing, dying or defective plants and areas of seeding will be replaced (or reinstated) annually with the same species and size of plants as per the original plant specification.

4.37 Cultivation adjacent to established vegetation will take care to ensure no damage to existing root systems, with disturbance kept to the minimum necessary to expose fresh.

New Planting Areas: Long-term Maintenance and Management

4.38 During the establishment period (years 1-5), newly created shrub, ecotone, understorey and hedgerow planting will be subject to an annual assessment for the first five years from the first spring following planting. The assessment will aim to ensure: the adequate establishment of all planted material necessary to be ecologically and structurally diverse; identify the presence of any undesirable species or disease; and determine any remedial action necessary, including replacement planting for any lost/damaged specimens and additional management prescriptions necessary to ensure its successful development. Additional monitoring will also be necessary during prolonged dry periods when new planting has a greater chance of failure.

4.39 Specific to any areas of woodland, trees and shrubs abutting construction areas or access routes, an annual inspection for damage will also be undertaken throughout the construction period. Where damage has occurred, appropriate and immediate action will be necessary, together with the revision and reinstatement of buffer zones and protective fencing, alongside the provision of toolbox talks to contractors.

4.40 Thereafter, all retained, translocated and newly planted trees, shrubs, hedgerows and woodland habitat will be subject to long-term management and monitoring so as to maximise the long-term viability of the resource, and in particular, the value of food, nesting and hibernation resources for protected/priority species potentially present through the following measures, all described above:

- Rotational coppicing over longer cycles (i.e. coppicing on a 7 year rotation cycle, whereby a maximum of 33% of the resource is cut at any one time, thereby enabling at least 33% of the habitat resource left to grow for 15 to 20 years), will also be implemented. Additionally, woodland rides, glades and scalloped edges will be created where appropriate and necessary to maximise species and structural diversity;

- Woodland blocks will be stratified and managed through crown reduction, selective thinning and scrub management necessary to ensure: that the canopy is not sufficiently dense so as to prevent light reaching the forest floor; that overcrowding is reduced with increasing species maturity; that slower growing climax species are not outcompeted; and that diseased and dying plants are removed. Thinning is to be undertaken between October and February inclusive to avoid the main bird breeding season;

- Bramble and other scrub development across woodland, hedgerow, ecotone and shrub habitats will be controlled where necessary through additional cutting every 2-3 years following establishment between October and February and undertaken on a rotational basis such that no more than half of the area is cut in any one year;

- Management of newly created hedgerows will seek to achieve a continuous (<10% gaps), dense and bushy 'A' shaped structure whilst maintaining heights at no less than 3m and widths of at least 2m. Following establishment of new hedgerow planting, new growth will be topped by approximately 30% on two sides on an annual cycle for up to the first three years after planting to encourage low lateral growth of branches necessary to establish a thick hedgerow at its base. Thereafter, hedgerows will be cut back on a three-year rotation, with a maximum of 30% of the hedgerow resource cut at any one time (thereby enabling a minimum of 30% left to grow for 7-10 years) to ensure that a proportion of cut versus un-cut hedgerows exists onsite at any one time so as to be sympathetic to the annual lifecycle of the fauna which use them;

- The implementation of appropriate hedgerow management, including coppicing and/or traditional laying of the hedgerow where appropriate according to species, to encourage the formation of a more dense and continuous hedgerow which is not excessively tall or wide;

- The avoidance of herbicide use unless considered necessary to inhibit re-growth of non-native and invasive species; and

- The completion of condition assessments of all woodland, tree, shrub, ecotone and hedgerow habitats at years 1, 3 and 5 post development to identify, prioritise and implement those management measures specified above so as to achieve their desired habitat condition whilst maximising their long-term viability, having regard for its existing condition and intended purpose of the habitat area. Condition assessments will be carried out by an AA, approved arboricultural contractor or professional arboriculturist, and will further ensure that the tree stock is managed for its health and safety and its lifespan and coverage optimised. Key indicators of the desired condition of the habitat areas will be monitored along with the presence of any undesirable species and disease necessary to determine remedial action.

4.41 In addition to the above, any maintenance pruning required should be undertaken in accordance with good horticultural and arboricultural practice with thinning, trimming and shaping of specimens undertaken as appropriate to species, location, and stage of growth. Pruning should be confined to the months of October and February inclusive, so as to avoid the main bird breeding season. All arisings from any vegetation clearance will

be taken away from the vicinity of the development footprint no later than the day after vegetation clearance.

4.42 Management and monitoring measures detailed above will require subsequent assessment and review at 5 yearly intervals to determine the success of habitat enhancement measures and to ensure they remain appropriate.

4.43 The management and maintenance of all retained, enhanced and newly created habitats is proposed to be undertaken by a Private Management Company over the lifetime of the development.

Public Rights of Way

4.44 PRoWs will be maintained free of invasive vegetation, litter and fallen timber. Unsafe overhanging vegetation will be removed. All tree works are to be undertaken in accordance with BS 3998:2010 Tree Work.

4.45 Soft landscaped public footpaths will be cut as and when necessary, between March and the end of October/November to required heights of circa 30-50mm. During summer, cutting may be required more frequently. Cutting will be suspended in periods of drought. All litter and debris is to be removed before each cut.

4.46 Where maintenance of public open space within ecological mitigation areas and/or informal open space is required, precautionary measures will be adopted during clearance to ensure the avoidance of harm/injury and disturbance to protected species (e.g. a common reptile population) potentially present.

4.47 In this instance, grassland habitat will be subject to directional mowing over two phases. Specifically, an initial cut of grassland habitat will be undertaken using hand-held machinery, reducing vegetation height down to a minimum of 175mm. A second cut of soft landscaped public footpaths will be undertaken immediately thereafter, with vegetation cut to ground level and no greater than 30mm in height.

Hard Landscape Features

4.48 Hard landscape features including litter bins, benches, fencing in the public domain and information boards will be inspected annually for the first five years with any damaged features repaired or replaced as necessary.

Section 5 ◆ Summary and Conclusions

5.1 This WMP details the management and maintenance measures specific to the proposed development considered necessary to protect and conserve statutory and non-statutory designated woodland habitats whilst providing alternative recreational opportunities to visiting members of the public and site employees.

5.2 Management prescriptions for the maintenance of the viability of retained and newly created habitats located across the southern and western extents of development footprint with respect to the woodland have been provided. Such prescriptions are considered to be in line with the broader recommendations made for the continued long-term maintenance and protection of the DCO's ecological interests documented within the LEMP (document reference 17.2).

5.3 The responsibility of the undertakings set out within this WMP rests with the Developer for the pre-construction and construction works phases and for the period up to handover to the private management company. Any deviation from that prescribed within this WMP is to be agreed in writing with the Local Planning Authority.

5.4 The provisions and responsibilities for the plan will be reviewed on an annual basis during the first five years (known as the establishment period) by those responsible for landscape management and maintenance, and every five years thereafter (or as required). Any substantial amendments will be approved in writing by the LPA.