



HAVANT THICKET RESERVOIR PROJECT - PIPELINE SCHEME

Landscape and Ecology Management Plan

Portsmouth Water

15 October 2025

HTR-ATK-PI-ZZ-RP-L-40001

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This document has 45 pages including the cover.

Document history

Document title: Landscape and Ecology Management Plan

Document reference: HTR-ATK-PI-ZZ-RP-L-0001

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
P01	For Portsmouth Water review	DB/HJ	DB/NL	VG/SD	JF	18/06/2025
P02	Final issue	DB/HJ	DB/NL	VG/SD	JF	03/07/2025
P03	Final issue and update	DB/JF	DB	VG	JF	15/10/2025

Client signoff

Client	Portsmouth Water
Project	HAVANT THICKET, PIPELINE APPLICATION
Job number	100108788
Client signature/date	



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1. Introduction

1.1. Purpose

The hybrid planning application for Havant Thicket Reservoir was approved by Havant Borough Council and East Hampshire District Council on 15th October 2021. Additionally, an outline planning application for the associated pipeline, connecting the reservoir to Bedhampton springs and pumping station, was approved by Havant Borough Council on the same date.

Full planning permission for a revised pipeline scheme (APP/24/00405) was granted on 22nd September 2025.

Planning Condition 22 of the revised pipeline scheme permission requires that:

“Prior to the commencement of development, a Landscape & Ecological Management Plan (LEMP) shall be submitted to and approved in writing by the Local Planning Authority. The LEMP shall be in accordance with the ecological avoidance, mitigation, compensation and enhancement measures as detailed in the Havant Thicket Reservoir - Pipeline Planning Application Technical Note and Biodiversity Net Gain Statement (both Portsmouth Water, 19 February 2025) unless otherwise agreed in writing by the Local Planning Authority. It shall include, but not necessarily be restricted to: full details of all measures to avoid and mitigate the potential impacts of proposed development; full details of proposed habitat impacts and habitat creation, including location, area, composition, establishment and ongoing management, monitoring and responsibilities. The development shall be carried out in accordance with the approved details and retained thereafter.

Reason: To provide ecological protection and enhancement in accordance with the Environment Act 2021, Conservation Regulations 2017, Wildlife & Countryside Act 1981, NPPF, NERC Act 2006 and Policy CS 11 of the Havant Borough Core Strategy March 2011.”

The Havant Borough Council Ecologist confirmed (email dated 24 June 2025) that as the on-site net gain is being delivered via reinstatement of existing habitat types, this is essentially landscape reinstatement and it is therefore subject to a LEMP condition entailing a five-year post-completion plan for management and monitoring by relevant persons.

This document outlines how the landscape and ecological mitigation, compensation, and enhancement will be managed following the construction of the pipeline between Bedhampton and the Havant Thicket Reservoir site (hereafter referred to as the Pipeline Scheme).

1.2. Associated Documents

The Landscape and Ecology Management Plan has been informed by the following drawings and documents and therefore should be read alongside them:

- Pipeline Ecological Management and Monitoring Plan: ES Vol 4 – Appendix 9 - A9.17.
- Arboricultural Impact Assessment: ES Vol 4 – Appendix 9 - Appendix A9.18.
- Bedhampton Pipeline Final Biodiversity Net Gain (BNG) Assessment (HTR-ATK-PI-ZZ-RP-Y-0001)
- Landscape reinstatement Plans:
 - HTR-ATK-PI-ZZ-DR-L-0001
 - HTR-ATK-PI-ZZ-DR-L-0002
 - HTR-ATK-PI-ZZ-DR-L-0003
 - HTR-ATK-PI-ZZ-DR-L-0004
 - HTR-ATK-PI-ZZ-DR-L-0005
 - HTR-ATK-PI-ZZ-DR-L-0006



- HTR-ATK-PI-ZZ-DR-L-0007
 - HTR-ATK-PI-ZZ-DR-L-0008
 - HTR-ATK-PI-ZZ-DR-L-0009
 - HTR-ATK-PI-ZZ-DR-L-00010
 - HTR-ATK-PI-ZZ-DR-L-00011
- Landscape reinstatement Plan – Planting Schedule and Specification: HTR-ATK-PI-ZZ-DR-L-00012.

2. Project Team Roles and Responsibilities

2.1. Roles and Organisations Involved in the Delivery of the Environmental Management Plan

The Outline Environmental Management Plan (OEMP), originally included in the Environmental Statement, has now been developed into a full Construction Environment Management Plan (CEMP), by Ward & Burke (the Principal Contractor for the Pipeline Scheme). Future Water MJJV Ltd, acting as the Principal Contractor for the Reservoir Scheme, has also prepared CEMPs to cover their activities at both the reservoir and the Bedhampton pumping station sites.

The CEMPs will be live documents and will be maintained by the Principal Contractors and updated as required throughout the life of the Pipeline Scheme.

The CEMPs will be developed into Handover Environmental Management Plans (HEMP) upon completion of the Pipeline Scheme, to pass crucial environmental information to those bodies responsible for future maintenance and operation of the asset (Portsmouth Water). The Principal Contractors will also be responsible for preparing the Construction Phase Health and Safety Plans alongside the HEMPs, for handover to the managing agent.

An Ecological Clerk of Works (ECoW) shall be appointed, to be full time on site during site preparation and clearance and during any works in sensitive areas, and to undertake regular monitoring visits throughout the duration of the Pipeline Scheme. Additional relevant roles and responsibilities are provided in Table 2-1.

Table 2-1 - Roles and Responsibilities

Owner	Responsibilities
Principal Contractor	Accountable for legal and contractual compliance. Responsible for the provision of adequate resources to maintain legal compliance.
Principal Contractor's Environmental Manager	Responsible for programming and managing activities, e.g. obtaining and maintaining environmental consents and licences. Advising Construction Manager, Site Engineers, Site Supervisors and Site Operatives on requirements of undertaking specialist environmental works and remedial action where necessary.
Principal Contractor's ECoW	Provide support to the Environmental Manager. Provide site induction for other ecologists, toolbox talks, organise specialist ecological surveys. Monitor Principal Contractor site ecological compliance, supervising works and construction activities on site, auditing/reviewing works and procedures including method statements as required. Record and report the progress of ecological works. Report any product or service ecological non-conformances

Owner	Responsibilities
Principal Contractor's Landscape Sub-Contractor	<p>Deliver the reinstatement of all habitats impacted by the Pipeline Scheme.</p> <p>Provide aftercare for reinstated areas over a five-year period.</p> <p>Monitoring newly reinstated areas during the aftercare period and deal with any issues or defects arising, including removal and replacement of any tree and shrub planting failures.</p>
Principal Contractors Arboricultural Consultant	<p>The arboricultural consultant will check that all measures detailed within the AIA (such as tree fencing/ground protection for root zones) have been installed correctly and works are being carried out as required. For full details of the responsibilities of this role refer to the AIA in Appendix A9.18 of the Environmental Statement.</p>

2.2. Post-construction Management and Monitoring Responsibilities

The Principal Contractor will be responsible for all aftercare and monitoring of reinstated areas for a period of five years, starting immediately after planting¹. This includes the ongoing maintenance and oversight of both landscape and ecological works.

In addition, the Principal Contractor will appoint an ecological consultant to carry out post-reinstatement monitoring of habitats associated with the Pipeline Scheme over the same five-year period.

Portsmouth Water will maintain the pipeline for its lifetime as part of the infrastructure associated with the new Havant Thicket Reservoir.

All landscape and ecological works will be undertaken by suitably qualified and experienced professionals in landscape and ecological construction activities. Specialists in horticulture, arboriculture, and/or ecology will be appointed for both construction and maintenance activities.

Refer to HTR-ATK-XX-XX-RP-Z-0035: ES Vol 4 – Appendix 9 - A9.17: Pipeline Ecological Management and Monitoring Plan, for further information about ecological requirements pre-construction (i.e. pre-construction surveys), during construction (i.e. ecological watching briefs) and post construction (i.e. botanical surveys).

3. General Objectives Overview

3.1. Key Management Objectives

Whilst the creation of optimum planting conditions combined with high standards of implementation are essential to give properly specified plant material the best start in life, the establishment and future success of the landscape will be dictated by the quality and frequency of the subsequent maintenance and management it receives. This involves not only regular care but also adapting to the evolving needs of the landscape over time.

The following key objectives for maintenance and management have been informed directly by best practice guidance to ensure a robust regime will be adopted for the site both during the establishment period and thereafter.

¹ This will commence once the grassland has been seeded, hedgerows planted, or turf reinstated. For simplicity, the term 'planting' is used throughout this document to refer collectively to all of these activities.

These objectives aim to create a sustainable and thriving environment that benefits both the ecology and the users of the site.

Key objectives for maintenance and management include:

- **Efficient and Sustainable Management:** To facilitate an efficient and sustainable landscape management and maintenance regime through the lifetime of the scheme, avoiding intensive long-term maintenance requirements. This includes planning for the future and ensuring that the landscape can be maintained with minimal intervention while still thriving.
- **Balancing Multiple Objectives:** To balance the objectives of ecology, hydrology, recreation, and amenity functions. This means considering the needs of wildlife, water management, recreational use, and aesthetic appeal in the maintenance plan.
- **Safe and High-Quality Environment:** To provide a safe, high-quality external environment for all site users. This involves regular inspections and maintenance to ensure that the landscape is safe and enjoyable for everyone.
- **Adherence to Design Intentions:** To ensure that the landscape develops in a manner commensurate with the original design intentions. This includes maintaining the aesthetic and functional aspects envisioned in the initial design.
- **Public Use Accommodation:** To accommodate appropriate public use of the site by promoting a management regime which is appropriate to the site's role. This involves creating spaces that are accessible and enjoyable for the public while preserving the integrity of the landscape.
- **Successful Establishment and Growth:** To ensure the successful establishment and continued growth through to maturity of the trees and other planting identified on the Landscape Proposals. This includes providing the necessary care and resources for plants to thrive.
- **Long-Term Visual and Ecological Goals:** To secure a long-term future for the new trees and grasslands with particular emphasis upon achieving visual amenity and, where native & wildlife-friendly planting is proposed, the enhancement of its ecological potential. This involves creating a landscape that is both beautiful and beneficial for local wildlife.
- **Safety and Surveillance:** To manage the landscape in a manner which ensures the safety of site users, such as maintaining visibility splays, maintaining good surveillance, and removal of dead, dying, or diseased trees and plants. This ensures that the landscape remains safe and secure for all users.
- **Flexibility and Adaptability:** To be flexible and adaptable to changing needs of the landscape through its establishment and long-term management. This involves being responsive to the evolving requirements of the landscape and making adjustments as necessary.
- **Habitat and Connectivity:** To ensure suitable habitat and connective corridors (either continuous or 'stepping-stones') across the site to allow natural dispersal and exchange of wildlife, both flora and fauna. This promotes biodiversity and supports the movement and interaction of wildlife within the landscape.

3.2. Amenity Management Objectives

Existing trees are to be managed to ensure the safety of all site users. The trees should be maintained to promote healthy growth, good form, and continued longevity to contribute to the amenity value of the site. This involves regular inspections, pruning, and care to prevent any potential hazards and to keep the trees in optimal condition.

- **New Tree and Woodland Planting:** Ensure all new tree and woodland planting is given the necessary care required to establish successfully, promote healthy growth and form, and reach independence and maturity in the landscape. This includes proper planting techniques, regular watering, mulching, and protection from pests and diseases.
- **Hedgerow and Scrub Planting:** Ensure all new hedgerow and scrub planting receive appropriate maintenance to achieve good establishment and create a dense and bushy form to maximize amenity value. This involves regular trimming, weeding, and monitoring for any signs of stress or disease.



- **Grassed and Planted Areas:** Maintain the whole of the grassed and planted areas to ensure the establishment of healthy and vigorous plants and a close-textured, weed-free sward, creating a tidy appearance. Keep all shrub beds and tree planting areas weeded and cleared of litter. This involves regular mowing, edging, and mulching to keep the areas looking their best.
- **Regular Maintenance Operations:** Establish a regular pattern of maintenance operations throughout the season according to best practice. This includes scheduling tasks such as mowing, pruning, weeding, and fertilising at appropriate times to ensure the landscape remains healthy and attractive.
- **Fertilisation:** Ensure all areas are regularly fertilised with appropriate fertilisers. Note that other neutral grassland areas are not to be fertilised. This involves selecting the right type of fertiliser for each plant type and applying it at the correct times to promote healthy growth.
- **Watering:** Water as required to provide optimum conditions for early establishment of all planting and seeding. Following the establishment phase, water during prolonged dry periods, particularly in spring, focusing water on the roots of trees and shrubs. This includes setting up irrigation systems or hand-watering as needed to ensure plants receive adequate moisture.
- **Prolific Growth Management:** Allow for extra maintenance during periods of unusually prolific grass and weed growth. This involves increasing the frequency of mowing, weeding, and other maintenance tasks during times of rapid growth to keep the landscape under control.
- **Defect Correction:** Correct any defects that become apparent during the earliest suitable weather conditions or planting season. This includes addressing issues such as damaged plants, poor growth, or pest infestations promptly to prevent further problems. Any failed plants, trees or grass will be replaced.
- **Tree Accessories:** Check all tree ties, stakes, and other accessories, and remove them when appropriate. This involves regular inspections to ensure that supports are not causing damage to the trees and removing them once the trees are established.
- **Skilled Workforce:** The Maintenance Contractor shall employ skilled supervisors and operatives who deliver a high-quality level of workmanship. Where necessary, employ specialists, such as arboriculturists, where specialist workmanship and knowledge are required. This ensures that all maintenance tasks are carried out to a high standard and that any complex issues are handled by experts.

3.3. Ecological Management Objectives

- a. Create an environment that supports an ecological community of enhanced quality and character compared to the situation prior to development. This means improving the diversity and health of plant and animal species within the site, making it a more vibrant and sustainable ecosystem.
- b. Enhance the quality of the retained habitats through appropriate ecological management. This includes activities such as controlling invasive species, promoting native vegetation, and ensuring habitats are maintained in a way that supports biodiversity.
- c. Create new habitats within the development, ensuring they are connected through infrastructure and green corridors via appropriate design, planting, and management. These new habitats should be designed to complement existing ones and provide additional resources and connectivity for wildlife.
- d. Identify specific management prescriptions to provide suitable conditions for protected and notable species known to be present on site. This involves tailoring management practices to the needs of specific species, ensuring their habitats are preserved and enhanced.
- e. Manage the site using the principle of adaptive management to ensure the prescribed management meets objectives and incorporates any additional objectives into ongoing management. Adaptive management involves regularly reviewing and adjusting management practices based on monitoring results and changing conditions.
- f. Undertake regular monitoring to evaluate the success of management plans. This includes conducting surveys and assessments to track the health and diversity of habitats and species, and using this information to inform future management decisions.

- g. Delivering all on-site habitats according to the commitments made within the BNG assessment.

4. Management Review, Monitoring and Updates

Areas and elements of landscape and ecology within the scheme will, in some cases, take an extensive period of time to fully develop into the proposed landscape vision and provide the required ecological habitats. Over this time period, the management of the site will likely involve many different individuals and organisations. Consequently, management may sometimes depart from the key objectives and vision originally set out for the development, focusing instead on small-scale specific issues rather than a holistic site view. This can result in certain areas not achieving the intended outcomes required to meet the landscape and ecology vision.

To prevent this, it is essential that the management plan is reviewed regularly. This ensures that the key objectives and design intent for the site are understood by all involved in the site's management, who are ultimately critical in accomplishing the long-term vision.

It is intended that this Management Plan should form the basis of a long-term management plan for the site. This plan should be updated as needed to respond to site-specific issues that only become apparent through day-to-day management on-site. It should also address any management and maintenance practices that have failed to achieve the desired outcome. Through this monitoring, review, and update process, the long-term management will be successful in accomplishing the design aspiration and biodiversity net gain. The management plan will eventually become a reference manual for the long-term maintenance and management of all green spaces and ecological features across the sites.

Monitoring the establishment success of landscape and ecological features needs to take place regularly, ranging from month to month to year to year. This ensures that management practices can be tailored appropriately to achieve establishment and long-term success. Monitoring will assess the success of particular areas or items as set out below. These targets provide time frames for when successful establishment should be achieved. If targets are not being met, measures will need to be taken to remedy the situation through the adaptation of management practices.

Some potential remediation solutions that could be explored are also provided below. However, the list is not exhaustive, as it is impossible to foresee all situations or issues that may arise during the establishment period or the long term. Therefore, it is critical that issues are discussed with all involved in the maintenance and management process. Any method adopted on-site as a remedy should be recorded within an updated management plan as a future reference for the duration of the scheme.

In addition to updates informed by monitoring progress against targets, the plan should be reviewed annually to ensure that any changes in maintenance and management practices are properly recorded. Updates should also reflect the latest good practice guidance, helping to ensure the management plan remains relevant, effective, and sustainable in the long term.

For further details of Ecological Management and Monitoring refer to the 'Pipeline Ecological Management and Monitoring Plan: ES Vol 4 - Appendix 9 - A9.17.'

5. Ecological Considerations

Full details of ecological mitigation required for legally protected and / or notable species / habitats is detailed in the Pipeline Ecological Management and Monitoring Plan (EMMP): ES Vol 4 - Appendix 9 - A9.17. A summary is provided below.



5.1. Badgers

Badgers and their setts are protected under several pieces of legislation:

- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996
- Wildlife and Countryside Act 1981 (as amended) (Schedule 6), strengthened through the Countryside and Rights of Way Act 2000

This suite of legislation protects badgers from cruel ill-treatment, wilful killing, injuring, and taking. It also safeguards them from disturbance while occupying setts and the intentional infliction of unnecessary suffering. Their setts are protected from intentional or reckless damage, obstruction, destruction, and having dogs sent down. A licence is required to disturb or close badger setts. Pre-construction badger surveys will be carried out at least six months prior to construction commencing to determine whether any mitigation or licensing is required for badgers.

5.2. Bats

Bats are protected under both European and UK wildlife legislation:

- Conservation of Habitats and Species Regulations 2017 – Schedule 2
- Wildlife and Countryside Act 1981 (as amended): Schedule 5, Section (9)(4b, 4c) and (5)

Some bat species are also designated as Priority Species under the Natural Environment and Rural Communities Act 2006 – Section 40, listed in accordance with Section 41. A licence is required to disturb or destroy a bat roost site. Pre-felling check of trees with potential roosting features (PRFs) for bats will be carried out prior to tree felling. Precautionary methods of working will be implemented for works to Bedhampton 1 pumping house to ensure bat roosts are not impacted.

5.3. Dormice

Dormice are strictly protected under the following legislation:

- Conservation of Habitats and Species Regulations 2017 – Schedule 2
- Wildlife and Countryside Act 1981 (as amended) – Schedule 5

This legal protection makes it an offence to deliberately capture, kill, injure or disturb dormice, or to damage or destroy their breeding or resting places. Their habitats, including hedgerows, scrub and woodland, are also protected. Dormice are present within Staunton Country Park only and site clearance will be carried out under a licence from Natural England which details all mitigation measures that must be implemented. Full details are provided in the Dormouse licence for the scheme (REF: PSS A016358 Havant Thicket Reservoir Bedhampton Pipeline, final licence to be submitted once full planning consent is received).

Post-construction monitoring of installed dormouse boxes is a requirement of the licence.

5.4. Fish

Fish are protected under the Salmon and Freshwater Fisheries Act 1975. The legal protection makes it an offence to wilfully disturb spawn, spawning fish or spawning areas, to use specified instruments to take or kill fish, and to introduce or remove fish or fish spawn from or to a fishery. Depending on the circumstances (e.g. moving fish) licences and/or permits may be required from the Environment Agency: <https://www.gov.uk/guidance/permission-to-move-live-fish-to-or-from-a-fishery>.

Eel are protected under the Eel (England and Wales) Regulations 2009. The legal protection makes it an offence to remove eels by instruments other than rod and line during the closed season, and to construct, alter or maintain a



dam or structure that amounts to (or is likely to amount to) an obstruction without first notifying the Environment Agency.

5.5. High Lawn and Thicket Lawn

These are Sites of Importance for Nature Conservation (SINCs) are full details of the mitigation for these sites (which involves a turf translocation and appropriate management of soils, and bespoke reinstatement and monitoring approach) is detailed in the EMMP.

5.6. Invasive Non-native Plant Species

There is a requirement for an Invasive Species Management Plan, informed by an updated INNPS survey, to be produced by Principal Contractor and to be followed at all times to minimise the risk of spreading INNPS. The INNPS present are detailed in the EMMP.

5.7. Nesting Birds

All birds are protected from harm while building or using a nest. The nesting season is typically from March to August, although some species, such as barn owls and pigeons, nest year-round. If vegetation is being removed within nesting season it will be checked within a 24 hour period prior to clearance. Certain species, like kingfishers, are afforded additional protection from disturbance. Pre-construction surveys for kingfisher and Cetti's warbler are required if construction is planned within the respective breeding seasons².

5.8. Otter

Otter are strictly protected under the following legislation:

- Conservation of Habitats and Species Regulations 2017 – Schedule 2
- Wildlife and Countryside Act 1981 (as amended) – Schedule 5

This legal protection makes it an offence to deliberately capture, kill, injure or disturb otter, or to damage or destroy their breeding or resting places. Pre-construction surveys for otters will be undertaken as detailed in full in the EMMP.

5.9. Priority Plants

Wall bedstraw is listed as a nationally scarce plant and is listed as vulnerable on the Great British and English Red List. Small-flowered buttercup is listed as 'Least Concern' on the Great Britain Red List. Both species are present within impacted grassland in Bedhampton Pumping Station. Mitigation measures including appropriate management of soil and a five-year monitoring program are detailed in the EMMP.

5.10. Reptiles

While licences are not required for works related to reptiles, they are protected against harm. The reptile species occurring on site, such as grass snakes and common lizards, are protected under the Wildlife and Countryside Act

² The main breeding season for kingfisher typically runs from March to early July, whilst the Cetti's warbler breeding season typically runs from April to August.

1981 (as amended) (Section 9 (1)) against intentional killing and injury. Activities such as site clearance that could predictably kill or injure reptiles may legally constitute intentional killing or injuring. As such mitigation including the use of habitat manipulation and provision of an ECoW to conduct hand searches will be implemented when clearing suitable habitats. No re-seeding will take place in the areas where the species are present and the areas will be left to naturally regenerate from the seed bank.

6. Landscape and Ecology Features

The landscape and ecology features of the Scheme are described below.

6.1. Habitat Retention

Vegetation removal will be limited to only what is necessary to carry out the works. During the detailed design stage, the Principal Contractor will review opportunities to further reduce habitat loss and will explore alternative working methods to minimise vegetation clearance wherever possible.

Habitat retention is fundamental to achieving BNG, and those areas to be retained are shown on the figures that accompany the BNG report (see Appendix B)

Any retained habitat will be clearly demarcated with no allowance of vehicles or storage of materials within these areas. The root zones and canopies of trees and areas of woodland to be retained will be protected during construction. In accordance with the Scheme AIA and BS 5837.

6.2. Habitat Creation and Enhancement

Table 6-1 below lists the habitats to be created and enhanced. In the following sections of the LEMP, each habitat type is described with their targets and associated management and monitoring requirements.

For each habitat type, the UKHab Classification system/metric habitat type is provided. Where there is a commitment to create a specific habitat type to achieve BNG, habitat condition targets are set out. Habitat condition is based on habitats meeting a series of criteria specific to the type of habitat, with habitats passing most or all criteria rating as good condition, those passing few or none rating as poor condition, and those passing some rating as moderate condition. The habitat condition target and criteria required to meet the condition target referred to in this report are based on definitions in the Biodiversity Metric 3.0 Technical Supplement.

Areas of each habitat type to be created and the target condition are shown in Table 6-1 There will also be enhancement of some habitats, which are described in the relevant sections below.

Table 6-1 - Habitat Creation and Enhancement Areas

UKHab/metric habitat type	Area (ha)/length (km) /number (Nr)	Target condition
Urban trees	0.1 ha / 26 Nr	Moderate
Line of trees	0.3 km	Moderate
Species-rich native hedgerow	0.31 km	Moderate
Mixed scrub	0.214 ha	Poor
Modified grassland	1.559 ha	Moderate

Other neutral grassland	1.651 ha	Moderate
Other woodland; broadleaf	0.159 ha	Moderate
Wet woodland	0.118 ha	Moderate

6.3. Urban Trees

6.3.1. Habitat Description

Young trees over 7.5 cm in diameter at breast height whose canopies are not touching.

Groups or stands of trees (size requirement as defined above) within and around the perimeter of urban land. This includes those along urban streets, highways, railways and canals, and also former field boundary trees incorporated into developments. Canopies should predominantly overlap continuously. Groups of urban trees that don't match the descriptions for woodland may be assessed within this category.

6.3.2. Objectives and Targets

Trees should have a natural shape and form. Trees will mostly be species rather than clonal cultivars, so canopies will likely be more open, varied, and asymmetrical. The form of the same species growing adjacent to each other will most likely naturally vary in shape and size. Clear stems do not need to be maintained unless the tree's location requires this, such as next to footpaths, roads, etc. Where space allows, some species' natural tendency to droop their branches down to the ground should be allowed.

The relevant condition sheet is: Individual Trees (Urban Trees) Habitat Type which lists the following six condition assessment criteria:

1. The tree is a native species (or at least 70% within the block are native species).
2. The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).
3. The tree is mature (or more than 50% within the block are mature).
4. There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.
5. Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.
6. More than 20% of the tree canopy area is oversailing vegetation beneath.

The target condition for this habitat type is 'moderate' which requires three or four of six criteria to be met.

6.3.3. Translocated Trees

Trees identified for potential translocation are shown on the Tree Protection Plans, Landscape Reinstatement Plans in Appendix A and BNG figures in Appendix B. The final selection of trees for translocation should be agreed upon prior to any felling works.

The method for translocation should be confirmed with the contractor, but the general approach is outlined below:

- Mark out a 2m square around the base of the tree stem using white marker paint.
- Excavate the sides of the square to a depth of 1m using a trenching bucket, taking care to identify and preserve any significant roots. Arboricultural supervision is required during this process.

- Using a 2m-wide ditching bucket, begin grading from one side of the tree. Adjust the bucket as needed to gradually scoop beneath the rootball, working in stages from either side of the stem until the rootball is loosened.
- Once loosened, lift the tree using strops and suitable lifting equipment, ensuring all gear is rated for the expected load.
- Relocate the tree to the agreed planting position, ensuring the pit is adequately sized to accommodate the rootball.
- Place the rootball into the pit and set the tree so that the base of the stem is level with the surrounding ground.
- Backfill around the rootball and firm in using the grading bucket to gently compress the soil.

Following translocation, the tree should be managed and maintained in line with the requirements for all newly planted trees.

Translocated trees have been shown as 'retained' in the BNG metric as their condition will still meet the Individual Tree (Urban) condition assessment criteria despite their movement.

6.3.4. Creation and Management

Typical management and maintenance requirements for the initial five-year establishment period are listed below:

- **Bird Nesting Season Precautions:** Any tree management operations will be carried out outside of the main bird nesting season (March to September). If any essential works need to occur within this time period, a qualified Ecologist will carry out a check to ensure no nesting birds are present. If an active nest is found, no works will take place. Weekly checks by a qualified Ecologist can be carried out until it is confirmed nests are no longer active. Only then should any works commence.
- **Risk Assessment:** Existing mature trees retained should be risk assessed annually by qualified Arboriculturists using approved industry methods. Where risks are identified, remedial actions must be taken to eliminate any risk.
- **Weed-Free Maintenance:** Maintenance of a weed-free area around the base of each tree. Trees in grass should have a circular area of bark mulch and be maintained weed-free and topped up regularly to keep a 75mm layer. Trees within planting should have all weeds around the trunk removed by hand or application of herbicide.
- **Watering:** Ensure moisture levels are maintained appropriate for optimum growth.
- **Fertiliser Application:** Application of a slow-release fertiliser in spring around the base of all trees to ensure soil fertility is maintained.
- **Replacement of Failed Specimens:** The removal of any vandalised, unhealthy, or dead specimens as soon as possible and replacement with trees of the same size to those adjacent where practicable, during the next available planting season.
- **Anchors, Stakes, and Ties:** Inspection, adjustment, and maintenance of anchors, stakes, and ties. Remove tree protection (stakes, tubes, guards, ties etc) by year five and dispose off-site.
- **Removal of Attached Items:** Removal of any items that have been attached to trees, such as posters, signage, cable ties, or bike locks/chains.
- **Re-firming Trees:** Re-firming of trees after strong winds, frost heave, or other disturbances.
- **Pruning:** Inspect trees for dead, dying, or diseased wood. Prune back to living wood, good growing points, or main branches. Do not leave any snags; cut back to branch collars avoiding any flush cutting. Avoid making any large spring cuts which could cause excessive bleeding.
- **Remove suckers/epicormic growth.**
- **Formatively prune if necessary to achieve natural shape, healthy growth, remove crossing or rubbing branches, correct any potential weak attachments or narrow V crotches, and favour a strong single leader. Crown lift if needed to maintain clearance of circulation routes and visibility splays.**



- **Deadwood Management:** Any deadwood should be used to create small log piles to provide habitat in areas inaccessible or out of view of the public.
- **Pest and Disease Inspection:** Inspect trees for signs of pest and disease. In cases of serious attack, employ appropriate control measures.

A maintenance schedule for urban trees is provided in Table 6-2 below.

6.3.5. Additional Tree Removal at Bedhampton

Following approval of planning permission, a discrepancy was identified between the approved public right of way diversion planning drawing³ at Bedhampton and the approved AIA. The planning drawing identifies a multi-stem clump of sycamore for removal (tree ref G218), however this tree was shown as being retained in the AIA tree protection plans.

The tree loss has been accounted for through the onsite and offsite BNG provisions, in addition, a commitment has been made to provide 3no. extra heavy standard replacement trees. The species (potentially Common Alder) and location will be agreed with the Havant Borough Council Tree Officer. This was agreed with the Tree Officer on 8th October 2025.

Table 6-2 - Urban Trees Maintenance Schedule

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	J	F	M	A	M	J	J	A	S	O	N	D
Weed control around base of each tree	4 x Annually				1		1		1		1		
Health and safety check of existing and mature trees	1 x Annually		1										
Re-firming of trees	As required			1									
Apply slow release fertiliser to base of tree	Annually	All Year											
Pruning works													
Removal of items attached to trees (except bird & bat boxes)	As required	All Year											
Pruning (general)	As required												
Replace damaged / vandalised / unhealthy stock	Annually												
Watering of area to ensure moisture levels are appropriate	As required												
Inspect trees for pest and disease	2 x Annually	1					1						
Check for nesting bird presence prior to any necessary remedial action	As required												

Trees are expected to have established and be largely independent in the landscape by 5 years after planting. Monitor trees at quarterly intervals. Check for healthy growth and form, and review dieback and disease.

³ HTR-WAB-PI-BD-DR-T-0002_PUBLIC RIGHT OF WAY DIVERSION_A4.P06

If any issues are identified, action should be taken to remedy them before tree failure.

6.4. Line of Trees

6.4.1. Habitat Description

A line of trees is defined as a linear feature consisting of trees that are spaced closely enough to form a continuous canopy but not so close as to be classified as a woodland or hedgerow. These trees are typically planted or naturally occurring along boundaries, roadsides, or field edges.

6.4.2. Objectives and Targets

Trees should have a natural shape and form. Trees will mostly be species rather than clonal cultivars, so canopies will likely be more open, varied, and asymmetrical. The form of the same species growing adjacent to each other will most likely naturally vary in shape and size. Clear stems do not need to be maintained unless the tree's location requires this, such as next to footpaths, roads, etc. Where space allows, some species' natural tendency to droop their branches down to the ground should be allowed.

The relevant condition sheet is: Line of Trees Habitat Type which lists the following five condition assessment criteria:

1. At least 70% of trees are native species
2. Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.
3. One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.
4. There is an undisturbed naturally vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice.
5. At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.

The target condition for this habitat type is 'moderate' which requires three or four of five criteria to be met.

6.4.3. Creation and Management

Typical management and maintenance requirements for the initial five-year establishment period are listed below:

- Bird Nesting Season Precautions: Any tree management operations will be carried out outside of the main bird nesting season (March to September). If any essential works need to occur within this time period, a qualified Ecologist will carry out a check to ensure no nesting birds are present. If an active nest is found, no works will take place. Weekly checks by a qualified Ecologist can be carried out until it is confirmed nests are no longer active. Only then should any works commence.
- Risk Assessment: Existing mature trees retained should be risk assessed annually by qualified Arboriculturists using approved industry methods. Where risks are identified, remedial actions must be taken to eliminate any risk.
- Weed-Free Maintenance: Maintenance of a weed-free area around the base of each tree. Trees in grass should have a circular area of bark mulch and be maintained weed-free and topped up regularly to keep a 75mm layer. Trees within planting should have all weeds around the trunk removed by hand or application of herbicide.
- Watering: Ensure moisture levels are maintained appropriate for optimum growth.



- **Fertiliser Application:** Application of a slow-release fertiliser in spring around the base of all trees to ensure soil fertility is maintained.
- **Replacement of Failed Specimens:** The removal of any vandalised, unhealthy, or dead specimens as soon as possible and replacement with trees of the same size to those adjacent where practicable, during the next available planting season.
- **Anchors, Stakes, and Ties:** Inspection, adjustment, and maintenance of anchors, stakes, and ties. Remove tree protection (stakes, tubes, guards, ties etc) by year five and dispose off-site.
- **Removal of Attached Items:** Removal of any items that have been attached to trees, such as posters, signage, cable ties, or bike locks/chains.
- **Re-firming Trees:** Re-firming of trees after strong winds, frost heave, or other disturbances.
- **Pruning:** Inspect trees for dead, dying, or diseased wood. Prune back to living wood, good growing points, or main branches. Do not leave any snags; cut back to branch collars avoiding any flush cutting. Avoid making any large spring cuts which could cause excessive bleeding.
- **Remove suckers/epicormic growth.**
- **Formatively prune** if necessary to achieve natural shape, healthy growth, remove crossing or rubbing branches, correct any potential weak attachments or narrow V crotches, and favour a strong single leader. Crown lift if needed to maintain clearance of circulation routes and visibility splays.
- **Deadwood Management:** Any deadwood should be used to create small log piles to provide habitat in areas inaccessible or out of view of the public.
- **Pest and Disease Inspection:** Inspect trees for signs of pest and disease. In cases of serious attack, employ appropriate control measures.

A maintenance schedule for line of trees is provided in Table 6-3 below.

Table 6-3 - Line of Trees Maintenance Schedule

		Time of year when maintenance operation is required or number of operations required											
Maintenance Operation	Frequency	J	F	M	A	M	J	J	A	S	O	N	D
Weed control around base of each tree	4 x Annually				1		1		1		1		
Health and safety check of existing and mature trees	1 x Annually		1										
Re-firming of trees	As required			1									
Apply slow release fertiliser to base of tree	Annually	All Year											
Pruning works													
Removal of items attached to trees (except bird & bat boxes)	As required	All Year											
Pruning (general)	As required												
Replace damaged / vandalised / unhealthy stock	Annually												
Watering of area to ensure moisture levels are appropriate	As required												
Inspect trees for pest and disease	2 x Annually	1					1						
Check for nesting bird presence prior to any necessary remedial action	As required												

Trees are expected to have established and be largely independent in the landscape by 5 years after planting. Monitor trees at quarterly intervals. Check for healthy growth and form, and review dieback and disease. If any issues are identified, action should be taken to remedy them before tree failure.

6.5. Species-rich Native Hedgerow

6.5.1. Habitat Description

As defined by the UKHab – UK Habitat Classification: h2a5 Species-rich native hedgerow.

Definition: Native hedgerows with >5 native or archaeophyte woody species in a 30m section.

6.5.2. Objectives and Targets

To create a diverse species rich hedgerow with a similarly diverse associated ground flora. Hedgerow will be free from any gaps.

The relevant condition sheet is: Hedgerow Habitat Type (hedgerows without trees which lists the following eight condition assessment criteria:

- A1. Height: >1.5 m average along length.
 - The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees.
 - Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).
 - A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).
- A2. Width: >1.5 m average along length.
 - The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.
 - Outgrowths (such as blackthorn *Prunus spinosa* suckers) are only included in the width estimate when they are >0.5 m in height.
 - Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).
- B1. Gap - hedge base: Gap between ground and base of canopy <0.5 m for >90% of length
 - This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth.
 - Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).
- B2. Gap - hedge canopy continuity: Gaps make up <10% of total length; and No canopy gaps >5 m
 - This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small).
 - Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).
- C1. Undisturbed ground and perennial vegetation: >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: Measured from outer edge of hedgerow; and Is present on one side of the hedgerow (at least).
 - This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow.



- Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow.
- This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.
- C2. Nutrient-enriched perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.
 - The indicator species used are nettles *Urtica spp.*, cleavers *Galium aparine* and docks *Rumex spp.* Their presence, either singly or together, does not exceed the 20% cover threshold.
- D1. Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA) and recently introduced species.
 - Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website, as well as the BSBI website where the 'Online Atlas of the British and Irish Flora'6 contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website.
- D2. Current damage: >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.
 - This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (for example, excessive hedgerow cutting).

The target condition for this habitat type is 'moderate' which requires no more than four failures in total and does not fail both attributes in more than one function group (A, B, C and D).

6.5.3. Creation and Management

All new hedgerows will be planted with at least five woody species per 30 m section/s. Refer to Planting Schedule and Specification on drawing: HTR-ATK-PI-ZZ-DR-L-00012.

Plants to be appropriately staked and guarded against rabbits. Individual guards should be biodegradable non-plastic. Consideration should be given to using mesh fencing around hedge sections rather than individual guards to reduce waste where appropriate.

Typical management and maintenance requirements for the initial five-year establishment period are listed below:

- Provide irrigation as required during the first five years of establishment to ensure plants survive and thrive.
- Check timber stakes/guards/shelters/mulch annually and adjust, repair or replace as necessary.
- Re-firm soil around roots as necessary to ensure plants are supported and upright, especially following periods of extreme winds.
- Keep areas full width of hedgerow weed free and remove weeds from tubes and shelters.
- Control and removal of weeds by hand weeding or application of herbicide.
- Application of a slow-release fertiliser in spring.
- Regular trimming in the first three years to:
 - Maintain a neat appearance.
 - Encourage bushy growth down to ground level.
 - Maintain hedge at a desired height of at least 2m, preferably 3m.
- Beyond three years, hedgerows should be cut on a three-year rotation, with identified sections cut in different years to:
 - Provide varied age and structure.



- Maximise flowering and fruiting.
- Hedgerows to be cut to form an A shape or a flat-topped A shape, other than formal hedgerows. Only cut either one half or one side of the hedgerows in any one year.
- Hedgerow cutting to be carried out outside of the bird nesting season (March-September). If additional cuts are required within the bird nesting season, a suitably qualified and experienced Ecologist shall inspect the hedgerow prior to cutting to ensure no nesting birds are present.
- Remove any failed, vandalised, unhealthy, or dead specimens as soon as possible and provide replacements of the same size to those adjacent, where practicable during the next available planting season.
- Watering of plants to ensure moisture levels are maintained appropriate for optimum growth.
- Removal of litter to maintain the site in a tidy condition.
- Inspect and restock areas where hedgerows have become thin. Species and stock size to match the original specification.

A maintenance schedule for species rich native hedgerow is provided in Table 6-4 below.

Table 6-4 - Species-rich Native Hedgerow Maintenance Schedule

Maintenance Operation	Frequency	Time of year when maintenance operation is required or number of operations required											
		J	F	M	A	M	J	J	A	S	O	N	D
Weed control and removal	4 x Annually				1		1		1		1		
Apply slow release fertiliser.	Annually			1									
Trimming & cutting	Annually												
Replace damaged / vandalised / unhealthy stock	Annually												
Watering of areas to ensure moisture levels are appropriate	As required												
Removal of litter	4 x Annually	1			1		1				1		
Check for Hedgehogs prior to cutting	As required												
Check for nesting bird presence prior to any necessary remedial action.	As required												

Hedgerows are expected to be reasonably established by year three however five years of maintenance will be provided as agreed with the LPA. Bushy growth should be evident down to ground level, and hedgerows should be mostly free from any large gaps.

Monitor hedgerow progress twice annually. Check for healthy growth, density of cover, failed plants, dieback, and disease. Note any damage from the public via high attrition areas and desire lines.

If any issues are identified, action should be taken to remedy them as soon as possible. Review soil fertility, check for soil compaction and employ soil de-compaction methods, ensure adequate watering is provided, carry out restocking to plug gaps where needed, and provide temporary fencing to protect high attrition areas until fully established.



6.6. Mixed Scrub

6.6.1. Habitat Description

As defined by the UKHab – UK Habitat Classification: h3h Mixed scrub

Definition: Dense scrub comprising a mixture of species without a single species dominant or stands with a dominant species not listed in h3a-h3k.

6.6.2. Objectives and Targets

The relevant condition sheet is: Scrub Habitat Type, which lists the following five point condition assessment criteria:

1. The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range).
 - At least 80% of scrub is native.
 - There are at least three native woody species.
 - No single species comprises more than 75% of the cover (except hazel *Corylus avellana*, common juniper *Juniperus communis*, sea buckthorn *Hippophae rhamnoides* (only in its restricted native range), or box *Buxus sempervirens*, which can be up to 100% cover).
2. Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.
3. There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.
4. The scrub has a well-developed edge with scattered scrub and tall grassland and/or forbs present between the scrub and adjacent habitat.
5. There are clearings, glades or rides present within the scrub, providing sheltered edges.

The target condition for this habitat type is 'Moderate' which requires 3 or 4 of the 5 criteria to be passed.

6.6.3. Creation and Management

New scrub will be created using a mixture of native, locally sourced shrubs and trees.

Primary target species will reflect the native species recorded within local areas. Ash is not recommended for use in planting due to the risk of importing ash dieback disease and the ability of the species to readily colonise.

Trees and shrubs will be planted in random naturalistic formation, with appropriate individual staking and rabbit protective guards. Where possible plant guards should be non-plastic and biodegradable. Consideration should be given to protecting areas of planting with wire mesh fencing rather than individual guard. Confirmation of the likelihood of deer grazing shall be undertaken and consideration of deer fencing to be used as appropriate to protect new planting.

Typical management and maintenance requirements for the initial five year establishment period are listed below:

- Provide irrigation as required during the first five years to ensure plants survive and thrive.
- Replace any dead or damaged trees annually with replacement stock during the next available planting season.
- Check timber stakes/guards/shelters/mulch annually and adjust, repair or replace as necessary.
- Re-firm soil around roots as necessary to ensure plants are supported and upright, especially following periods of extreme winds.
- Keep areas 0.5 m in diameter around each new plant weed free and remove weeds from tubes and shelters.
- Cut grassland between planting (arising to be spread evenly across the plot) twice a year in early spring and late summer.



- Remove protection (stakes, tubes, guards, ties etc) by year five and dispose off-site.

A maintenance schedule for mixed scrub is provided in Table 6-5 below.

Table 6-5 – Mixed Scrub Maintenance Schedule

Maintenance Operation	Frequency	Time of year when maintenance operation is required or number of operations required											
		J	F	M	A	M	J	J	A	S	O	N	D
Weed control around base of each plant	4 x Annually				1		1		1		1		
Health and safety check of plants	1 x Annually		1										
Re-firming of plants	As required			1									
Apply slow release fertiliser	Annually	All Year											
Pruning works													
Pruning (general)	As required												
Replace damaged / vandalised / unhealthy stock	Annually												
Watering of area to ensure moisture levels are appropriate	As required												
Inspect for pest and disease	2 x Annually	1					1						
Check for nesting bird presence prior to any necessary remedial action	As required												

6.7. Modified Grassland

6.7.1. Habitat Description

As defined by the UKHab – UK Habitat Classification: g4 Modified Grassland

Definition: Species-poor vegetation (<9 species per m²) dominated by a few fast-growing grasses on fertile, neutral soils. It is frequently characterised by an abundance of Rye-grasses (*Lolium spp.*) and White Clover (*Trifolium repens*). Most broadleaved species present will be associated with high fertility.

6.7.2. Objectives and Targets

Grass areas are to be maintained to establish a healthy, vigorous sward free of moss, thatch, weeds, casts, discoloration, scorch, litter, or leaves. Grass areas should remain attractive year-round, providing important greenery in every season. Areas are to be maintained in a tidy condition within specified height ranges.

Maintenance operations should aim to deliver high-quality grasslands with optimum use of fertilisers and minimal use of pesticides and herbicides.

The relevant condition sheet is: Grassland Habitat Type (low distinctiveness), which lists the following seven point condition assessment criteria:

- There are 6-8 vascular plant species per m² present, including at least 2 forbs (these may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition.



- Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.
 3. Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus agg.* may be present).
 - Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.
 4. 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.
 5. Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).
 6. Cover of bracken (*Pteridium aquilinum*) is less than 20%.
 7. There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA).

The target condition for this habitat type is 'Moderate', which requires 4 or 5 of the 7 criteria to be passed.

6.7.3. Creation and Management

Typical management and maintenance requirements for the initial five-year establishment period are listed below:

- Regular mowing between March and October to a maximum height of 50mm (except mowing strips).
- Mowing strips to be maintained adjacent to all paths and hard landscape areas, cut to a maximum height of 35mm.
- Trim edges to hard standing, planting beds, and tree pit mulch circles.
- Do not cut areas containing bulbs until 6 weeks after flowering has finished.
- Control and removal of aggressive self-seeded weeds.
- Reform edges once per year with an edging tool to create clean straight lines and flowing curves, form clean edges, and remove soil as required.
- Application of a slow-release fertiliser as necessary to ensure soil fertility is maintained at appropriate levels.
- Watering to ensure moisture levels are maintained appropriate for optimum growth.
- Repair damaged or failed areas by re-seeding and top dressing or turfing.
- Removal of litter to maintain the site in a tidy condition.
- Aerate soil by spiking or hollow tines once a year to a depth of 75mm. Spike when needed to relieve compaction and areas of ponding.
- Scarifying to be carried out in spring to remove excess thatch and moss.
- Remove leaves regularly in autumn.

A maintenance schedule for modified grassland is provided in Table 6-6 below.

Table 6-6 – Modified Grassland Maintenance Schedule

Maintenance Operation	Frequency	Time of year when maintenance operation is required or number of operations required											
		J	F	M	A	M	J	J	A	S	O	N	D
Mowing of grass areas	As required or every two weeks in growing season												
Trim edges to hard standing and tree	As required or every two weeks in growing season												
Reform edges	1x Annually			1									
Apply slow release fertiliser	2x Annually				1					1			
Aerate soil by spiking or hollow tines	1x Annually or as required			1									
Scarify	1x Annually				1								
Replacement of damaged or worn grass areas by seeding and top dressing or turfing	As required												
Application of selective herbicide	1x Annually				1								
Weed removal by hand	As required												
Watering of area to ensure moisture levels are appropriate	As required												
Removal of Litter	At time of each grass cut or maintenance visit												
Removal of leaves	As required												

Grass should be fully established within 12 months after seeding. A dense sward should be evident and no bare ground visible. Grass will be free of weeds or moss. Edges will be well formed and crisp.

Establishment should be monitored every two weeks in the first growing season. Check for good seed germination rate and healthy establishment growth afterwards. Bare or sparse areas should be noted. Review if soil compaction, waterlogging, or dry conditions are apparent.

Action will be required for areas where grass establishment is unsatisfactory or has failed. Remediation could require soil de-compaction, additional drainage, reseeding, and an amended watering schedule.

Grass should be in moderate condition by year 5. A dense sward will have been maintained that is free of weeds and moss. No areas of compaction or bare patches from wear will be visible. All edges will be in a neat and tidy condition, with straight lines and clean flowing curves.



All areas should be reviewed regularly in accordance with the cutting schedule. Problem areas subject to compaction, wear and tear, or waterlogging should be noted. Measures can then be put in place as part of the regular maintenance schedule, avoiding total failure in these areas. A general review should also be taken twice yearly, in spring and autumn, in line with the seasonal maintenance requirements.

Remediation could require additional fertiliser application, change to fertiliser type, soil de-compaction/aeration, scarification to remove dead thatch, providing additional drainage, regular reseeding, or change to seeding species mix specification.

6.8. Other Neutral Grassland

6.8.1. Habitat Description

As defined by the UKHab – UK Habitat Classification: g3c Other neutral grassland

Definition: A neutral grassland that does not meet the definition of either g3a or g3b and that meets at least three of these four criteria:

- >20% cover of broadleaved herbs and sedges.
- >8 species per m² (including forbs, grasses, sedges, and rushes, and excluding bryophytes).
- ≥1 grass species that is not generally sown for intensive agricultural production (i.e., Ryegrasses *Lolium spp.*, Timothy *Phleum pratense*, Cock's-foot *Dactylis glomerata*, Meadow fescue *Festuca pratensis*) is at least abundant.
- Cover of Rye-grasses (*Lolium spp.*) and White Clover (*Trifolium repens*), where present, is <30%.

6.8.2. Objectives and Targets

An area of grassland where a single species or few species of grass will not dominate the sward. Species will be structurally diverse, comprising a variety of grass and herb species that flower, providing nectar and pollen resources throughout the growing season. A varied micro-topography, e.g., localised hollows and rises, will be created rather than a consistent, even, and flat surface.

The relevant condition sheet is: Grassland Habitat Type (medium-high distinctiveness), which lists the following six point condition assessment criteria:

1. The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type.
 - Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.
2. Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds, and small mammals to live and breed.
3. Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.
4. Cover of bracken (*Pteridium aquilinum*) is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.
5. Combined cover of species indicative of suboptimal condition 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.
 - If any invasive non-native plant species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.
6. There are 10 or more vascular plant species per m² present, including forbs that are characteristic of the habitat type.



- Note - this criterion is essential for achieving Good condition for non-acid grassland types only.

The target condition for this habitat type is 'Moderate', which requires 3 or 4 of the 6 criteria to be passed including the essential criterion 1.

6.8.3. Creation and Management

Typical management and maintenance requirements for the initial five-year establishment period are listed below:

- Regular mowing within the first growing season to a height of 50-75mm.
- Bird Breeding Season Precautions: Where works are required within the bird breeding season (March to September), a qualified Ecologist will carry out a check to ensure no nesting birds are present or would be disturbed by works. Appropriate buffer zones of no disturbance can be set up to protect nests. Within these areas, no cutting can take place. No works to take place in the buffer zone until a qualified Ecologist has confirmed that the nests are no longer active.
- Cutting Schedule: Cutting 2x annually after the first growing season to a height of 50-75mm. The cutting regime should vary, with sections cut at different times ranging from late July to late August. An additional cut should take place before November to ensure grassland is left short over winter.
- Reptile Protection: To protect reptiles, only cut grassland during conditions when reptiles are active and able to move away from machinery (air temperatures above 9°C). Cut from the centre outwards to encourage movement of reptiles into adjacent suitable habitat and avoid trapping reptiles in the path of machinery.
- Trim edges to hard standing and tree pit mulch circles.
- Arisings Management: Arisings to be left in situ for several days to allow seed to fall, before removing. Arisings to be used to create nesting piles for grass snakes in damp grassland areas.
- Weed Control: Undesirable weed species will be removed or managed by spot treatment with herbicides.
- Watering: Ensure moisture levels are maintained appropriate for optimum growth.
- Repair damaged or failed areas by re-seeding.
- Litter Removal: Maintain the site in a tidy condition.
- Scrub Management: Review and remove areas of encroaching scrub.

A maintenance schedule for other neutral grassland is provided in Table 6-7 below.



Table 6-7 – Other Neutral Grassland Maintenance Schedule

Maintenance Operation	Frequency	Time of year when maintenance operation is required or number of operations required											
		J	F	M	A	M	J	J	A	S	O	N	D
Mowing in first growing season	As required												
Cutting after first growing season and for existing grasslands	2 x Annually							1			1		
Trim edges to hard standing and planting beds	As required or every two weeks in growing season												
Removal of weeds	As required												
Watering of area to ensure moisture levels are appropriate	As required												
Repair of damaged & failed areas	As required												
Removal of Litter	At time of each maintenance visit												
Removal of scrub	1x Annually											1	
Check for nesting birds prior to any management works	As required												
Harrowing and seeding of yellow rattle	1x Annually												

Grassland should be on its way to establishment by 24 months after seeding. A good ground covering should be evident, without excessively large bare patches. Grassland will show a mixture of perennial plants and grasses, being free of undesirable weeds and invasive non-natives.

Establishment should be monitored every two months in the first growing season. Check for good seed germination rate and healthy establishment growth afterwards. Review the amount of grass and perennial flowering plants in general, ensuring that grass growth is not dominating. Bare or sparse areas should be noted. Review if soil compaction, waterlogging, or dry conditions are apparent.

Action will be required for areas where establishment is unsatisfactory or has failed. Excessive and aggressive grass growth should be controlled in the first growing season. Remediation could require increased cutting frequency, soil de-compaction, additional drainage, reseeding, reseeding areas with perennial flower plants only, and amending the watering schedule.

Monitoring to be carried out every year, starting 3 years after seeding. Survey by conducting a site walkover to assess the percentage of species present within grasslands. Invasive plants and weeds will be monitored year-round at scheduled maintenance visits.

Where any invasive plants or weeds are identified, control and removal methods will be employed. Other remediation methods will depend on the monitoring survey results and will likely include replacement or reintroduction of certain species through seeding and/or plug planting.



6.9. Other Broadleaved Woodland

6.9.1. Habitat Description

As defined by the UKHab – UK Habitat Classification: w1g Other broadleaved woodland

Definition: Broadleaved and mixed woodland (as per w1 Broadleaved and mixed woodland) that does not meet the definition of w1a–w1f. (see UKHab for definitions)

W1 Broadleaved and mixed woodland is defined as: vegetation dominated by trees that are >5 m high when mature, which form a distinct, although sometimes open, canopy with a canopy cover of >25%. It includes stands of both native and non-native broadleaved tree species and Yew (*Taxus baccata*) where the percentage cover of these trees in the stand is >20% of the total cover of the trees present.

6.9.2. Objectives and Targets

The long-term vision is to create a self-sustaining native woodland. The woodland should have a diverse canopy with shrub and ground layers, featuring a 3D vertical structure and a range of age classes.

The woodland will include a range of sub-habitats, such as:

- Glades
- Deadwood habitat (standing and fallen)
- Edge transition

The woodland should be maintained as a dark area with minimal lighting. Lighting should only be provided in areas dictated by health and safety requirements or personal security.

The relevant condition sheet is: Woodland Habitat Type, which lists the following thirteen point condition assessment criteria:

1. Age Distribution of Trees:
 - Three age-classes present. Good (3 points)
 - Two age-classes present. Moderate (2 points)
 - One age-class present. Poor (1 point)
2. Wild, Domestic, and Feral Herbivore Damage
 - No significant browsing damage evident in woodland. Good (3 points)
 - Evidence of significant browsing pressure is present in less than 40% of whole woodland. Moderate (2 points)
 - Evidence of significant browsing pressure is present in 40% or more of whole woodland. Poor (1 point)
3. Invasive Plant Species
 - No invasive species present in woodland. Good (3 points)
 - Rhododendron (*Rhododendron ponticum*) or cherry laurel (*Prunus laurocerasus*) not present, and other invasive species <10% cover. Moderate (2 points)
 - Rhododendron or cherry laurel present, or other invasive species ≥10% cover. Poor (1 point)
4. Number of Native Tree Species
 - Five or more native tree or shrub species found across woodland parcel. Good (3 points)
 - Three to four native tree or shrub species found across woodland parcel. Moderate (2 points)
 - Two or less native tree or shrub species across woodland parcel. Poor (1 point)
5. Cover of Native Tree and Shrub Species
 - >80% of canopy trees and >80% of understory shrubs are native. Good (3 points)



- 50 - 80% of canopy trees and 50 - 80% of understory shrubs are native. Moderate (2 points)
 - <50% of canopy trees and <50% of understory shrubs are native. Poor (1 point)
6. Open Space Within Woodland
- 10 - 20% of woodland has areas of temporary open space. Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted. Good (3 points)
 - 21 - 40% of woodland has areas of temporary open space. Moderate (2 points)
 - <10% or >40% of woodland has areas of temporary open space. But if woodland <10ha has <10% temporary open space, please see Good category. Poor (1 point)
7. Woodland Regeneration
- All three classes present in woodland; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth. Good (3 points)
 - One or two classes only present in woodland. Moderate (2 points)
 - No classes or coppice regrowth present in woodland. Poor (1 point)
8. Tree Health
- Tree mortality 10% or less, no pests or diseases and no crown dieback. Good (3 points)
 - 11% to 25% tree mortality and/or crown dieback or low-risk pest or disease present. Moderate (2 points)
 - Greater than 25% tree mortality and/or any high-risk pest or disease present. Poor (1 point)
9. Vegetation and Ground Flora
- Recognisable NVC plant community at ground layer present, strongly characterised by ancient woodland flora specialists. Good (3 points)
 - Recognisable woodland NVC plant community at ground layer present. Moderate (2 points)
 - No recognisable woodland NVC plant community at ground layer present. Poor (1 point)
10. Woodland Vertical Structure
- Three or more storeys across all survey plots, or a complex woodland. Good (3 points)
 - Two storeys across all survey plots. Moderate (2 points)
 - One or less storey across all survey plots. Poor (1 point)
11. Veteran Trees
- Two or more veteran trees per hectare. Good (3 points)
 - One veteran tree per hectare. Moderate (2 points)
 - No veteran trees present in woodland. Poor (1 point)
12. Amount of Deadwood
- 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and/or stems, branch stubs and stumps, or an abundance of small cavities. Good (3 points)
 - Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and/or stems, stubs and stumps, or an abundance of small cavities. Moderate (2 points)
 - Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and/or stems, stubs and stumps, or an abundance of small cavities. Poor (1 point)
13. Woodland Disturbance
- No nutrient enrichment or damaged ground evident. Good (3 points)
 - Less than 1 hectare in total of nutrient enrichment across woodland area, and/or less than 20% of woodland area has damaged ground. Moderate (2 points)

- 1 hectare or more of nutrient enrichment, and/or 20% or more of woodland area has damaged ground. Poor (1 point)

The target condition for this habitat type is 'moderate' which requires a total score of between 26 to 32 points.

6.9.3. Creation and Management

New woodland will be created using a mixture of native, locally sourced trees. Refer to Planting Schedule and Specification on drawing: HTR-ATK-PI-ZZ-DR-L-00012.

Ash is not recommended for use in planting due to the risk of importing ash dieback disease and the ability of the species to readily colonise.

Trees will be planted in random naturalistic formation, with appropriate individual staking and rabbit protective guards. Where possible plant guards should be non-plastic and biodegradable. Consideration should be given to protecting areas of planting with wire mesh fencing rather than individual guard. Confirmation of the likelihood of deer grazing shall be undertaken and consideration of deer fencing to be used as appropriate to protect new planting.

Typical management and maintenance requirements for the initial five-year establishment period are listed below:

- **Bird Breeding Season Precautions:** Management will be carried out outside of the main bird breeding season (March to September). Where works are required within this time frame, a qualified Ecologist will carry out a check to ensure no nesting birds are present or would be disturbed by works. 5m buffer zones of no disturbance can be set up to protect nests. Within these areas, no cutting can take place. No works to take place in the buffer zone until a qualified Ecologist has confirmed that the nests are no longer active.
- **Weed Control:** Control and removal of weeds by hand weeding or application of herbicide.
- **Invasive Species Monitoring:** Monitoring of any invasive or unwanted non-native species, carrying out control measures according to best practice at the time.
- **Re-firming Plants/Trees:** Re-firming of plants/trees after strong winds, frost heave, or other disturbances.
- **Shelter and Guard Inspection:** Inspect and replace any missing or defective shelters, guards, and stakes.
- **Soil Fertility Tests:** Carry out soil fertility tests to determine if an application of a slow-release fertiliser is required.
- **Tree/Shrub Inspection:** Inspect trees/shrubs for dead, dying, or diseased wood. Prune back to living wood, good growing points, or main branches. Do not leave any snags; cut back to branch collars avoiding any flush cutting. Avoid making any large spring cuts which could cause excessive bleeding.
- **Pruning:** Prune if necessary to achieve natural shape, healthy growth, remove crossing or rubbing branches, correct any potential weak attachments or narrow V crotches, and favour a strong single leader.
- **Deadwood Management:** Any deadwood should be used to create small log piles to provide habitat in areas inaccessible or out of view of the public. Any fallen deadwood should be left in situ unless this poses a risk to the public.
- **Replacement of Failed Specimens:** The removal of any failed, vandalised, unhealthy, or dead specimens as soon as possible and provide replacements of the same size to those adjacent, where practicable during the next available planting season.
- **Watering:** Watering of plants to ensure moisture levels are maintained appropriate for optimum growth.
- **Litter Removal:** Removal of litter from all planting areas to maintain the site in a tidy condition.
- **Pest and Disease Inspection:** Inspection for signs of pest and disease. In cases of serious attack, employ appropriate control measures.
- **Cut grassland between planting** (arisings to be spread evenly across the plot) twice a year in early spring and late summer.
- **Remove tree protection** (stakes, tubes, guards, ties etc) by year five and dispose off-site.



A maintenance schedule for other broadleaved woodland is provided in Table 6-8 below.

Table 6-8 – Other Broadleaved Woodland Maintenance Schedule

Maintenance Operation	Frequency	Time of year when maintenance operation is required or number of operations required											
		J	F	M	A	M	J	J	A	S	O	N	D
Weed control around base of each tree	4 x Annually				1		1		1		1		
Health and safety check of existing and mature trees	1 x Annually		1										
Re-firming of trees	As required			1									
Apply slow release fertiliser to base of tree	Annually	All Year											
Pruning works													
Removal of items attached to trees (except bird & bat boxes)	As required	All Year											
Pruning (general)	As required												
Replace damaged / vandalised / unhealthy stock	Annually												
Watering of area to ensure moisture levels are appropriate	As required												
Inspect trees for pest and disease	2 x Annually	1						1					
Check for nesting bird presence prior to any necessary remedial action	As required												

Felled trees/dead wood from native broadleaves (mixture) will be retained during construction and placed into the woodland areas. Dead wood within woodland will be left in situ and not disturbed as much as possible to provide habitat for invertebrates.

Woodland to be well on the way to successful establishment by 5 years after planting.

Monitor woodland progress annually. Check for healthy growth, density of cover, and review dieback and disease.

If any issues are identified, action should be taken to remedy them before areas of woodland fall behind on the timescale to establishment. Review soil fertility, review soil compaction and employ soil de-compaction methods, ensure adequate watering is provided, and carry out selective thinning and restocking.

6.10. Wet Woodland

6.10.1. Habitat Description

As defined by the UKHab – UK Habitat Classification: w1d Wet woodland.

Definition: occurs on poorly drained or seasonally wet soils, usually with Alder (*Alnus glutinosa*), Birch (*Betula spp.*), and Willows (*Salix spp.*) as the predominant tree species, but sometimes including Ash (*Fraxinus excelsior*), Oak (*Quercus spp.*), Scots Pine (*Pinus sylvestris*), and Beech (*Fagus sylvatica*) on the drier riparian areas.



6.10.2. Objectives and Targets

The long-term vision is to create a self-sustaining native woodland. The woodland should have a diverse canopy with shrub and ground layers, featuring a 3D vertical structure and a range of age classes.

The woodland will include a range of sub-habitats, such as:

- Glades
- Deadwood habitat (standing and fallen)
- Edge transition

The woodland should be maintained as a dark area with minimal lighting. Lighting should only be provided in areas dictated by health and safety requirements or personal security.

The relevant condition sheet is: Woodland Habitat Type, which lists the following thirteen point condition assessment criteria:

1. Age Distribution of Trees:
 - Three age-classes present. Good (3 points)
 - Two age-classes present. Moderate (2 points)
 - One age-class present. Poor (1 point)
2. Wild, Domestic, and Feral Herbivore Damage
 - No significant browsing damage evident in woodland. Good (3 points)
 - Evidence of significant browsing pressure is present in less than 40% of whole woodland. Moderate (2 points)
 - Evidence of significant browsing pressure is present in 40% or more of whole woodland. Poor (1 point)
3. Invasive Plant Species
 - No invasive species present in woodland. Good (3 points)
 - Rhododendron (*Rhododendron ponticum*) or cherry laurel (*Prunus laurocerasus*) not present, and other invasive species <10% cover. Moderate (2 points)
 - Rhododendron or cherry laurel present, or other invasive species ≥10% cover. Poor (1 point)
4. Number of Native Tree Species
 - Five or more native tree or shrub species found across woodland parcel. Good (3 points)
 - Three to four native tree or shrub species found across woodland parcel. Moderate (2 points)
 - Two or less native tree or shrub species across woodland parcel. Poor (1 point)
5. Cover of Native Tree and Shrub Species
 - >80% of canopy trees and >80% of understory shrubs are native. Good (3 points)
 - 50 - 80% of canopy trees and 50 - 80% of understory shrubs are native. Moderate (2 points)
 - <50% of canopy trees and <50% of understory shrubs are native. Poor (1 point)
6. Open Space Within Woodland
 - 10 - 20% of woodland has areas of temporary open space. Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted. Good (3 points)
 - 21 - 40% of woodland has areas of temporary open space. Moderate (2 points)
 - <10% or >40% of woodland has areas of temporary open space. But if woodland <10ha has <10% temporary open space, please see Good category. Poor (1 point)
7. Woodland Regeneration
 - All three classes present in woodland; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth. Good (3 points)



- One or two classes only present in woodland. Moderate (2 points)
 - No classes or coppice regrowth present in woodland. Poor (1 point)
8. Tree Health
- Tree mortality 10% or less, no pests or diseases and no crown dieback. Good (3 points)
 - 11% to 25% tree mortality and/or crown dieback or low-risk pest or disease present. Moderate (2 points)
 - Greater than 25% tree mortality and/or any high-risk pest or disease present. Poor (1 point)
9. Vegetation and Ground Flora
- Recognisable NVC plant community at ground layer present, strongly characterised by ancient woodland flora specialists. Good (3 points)
 - Recognisable woodland NVC plant community at ground layer present. Moderate (2 points)
 - No recognisable woodland NVC plant community at ground layer present. Poor (1 point)
10. Woodland Vertical Structure
- Three or more storeys across all survey plots, or a complex woodland. Good (3 points)
 - Two storeys across all survey plots. Moderate (2 points)
 - One or less storey across all survey plots. Poor (1 point)
11. Veteran Trees
- Two or more veteran trees per hectare. Good (3 points)
 - One veteran tree per hectare. Moderate (2 points)
 - No veteran trees present in woodland. Poor (1 point)
12. Amount of Deadwood
- 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and/or stems, branch stubs and stumps, or an abundance of small cavities. Good (3 points)
 - Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and/or stems, stubs and stumps, or an abundance of small cavities. Moderate (2 points)
 - Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and/or stems, stubs and stumps, or an abundance of small cavities. Poor (1 point)
13. Woodland Disturbance
- No nutrient enrichment or damaged ground evident. Good (3 points)
 - Less than 1 hectare in total of nutrient enrichment across woodland area, and/or less than 20% of woodland area has damaged ground. Moderate (2 points)
 - 1 hectare or more of nutrient enrichment, and/or 20% or more of woodland area has damaged ground. Poor (1 point)

The target condition for this habitat type is 'moderate' which requires a total score of between 26 to 32 points.

6.10.3. Creation and Management

New woodland will be created using a mixture of native, locally sourced trees. Refer to Planting Schedule and Specification on drawing: HTR-ATK-PI-ZZ-DR-L-00012.

Ash is not recommended for use in planting due to the risk of importing ash dieback disease and the ability of the species to readily colonise.

Trees will be planted in random naturalistic formation, with appropriate individual staking and rabbit protective guards. Where possible plant guards should be non-plastic and biodegradable. Consideration should be given to



protecting areas of planting with wire mesh fencing rather than individual guard. Confirmation of the likelihood of deer grazing shall be undertaken and consideration of deer fencing to be used as appropriate to protect new planting. Native ground flora is also being plug planted into the area to restore the herbaceous understorey.

Typical management and maintenance requirements for the initial five-year establishment period are listed below:

- **Bird Breeding Season Precautions:** Management will be carried out outside of the main bird breeding season (March to September). Where works are required within this time frame, a qualified Ecologist will carry out a check to ensure no nesting birds are present or would be disturbed by works. 5m buffer zones of no disturbance can be set up to protect nests. Within these areas, no cutting can take place. No works to take place in the buffer zone until a qualified Ecologist has confirmed that the nests are no longer active.
- **Weed Control:** Control and removal of weeds by hand weeding or application of herbicide. Note that the proposals include plug planting of native herbaceous species, these must not be removed in weeding activities. Weeding activities shall focus on invasive species and pernicious weeds species and retain desirable self seeded native species. To be confirmed on site with the Ecological Clerk of Works.
- **Invasive Species Monitoring:** Monitoring of any invasive or unwanted non-native species, carrying out control measures according to best practice at the time. To be confirmed on site with the Ecological Clerk of Works.
- **Re-firming Plants/Trees:** Re-firming of plants/trees after strong winds, frost heave, or other disturbances.
- **Shelter and Guard Inspection:** Inspect and replace any missing or defective shelters, guards, and stakes.
- **Soil Fertility Tests:** Carry out soil fertility tests to determine if an application of a slow-release fertiliser is required.
- **Tree/Shrub Inspection:** Inspect trees/shrubs for dead, dying, or diseased wood. Prune back to living wood, good growing points, or main branches. Do not leave any snags; cut back to branch collars avoiding any flush cutting. Avoid making any large spring cuts which could cause excessive bleeding.
- **Pruning:** Prune if necessary to achieve natural shape, healthy growth, remove crossing or rubbing branches, correct any potential weak attachments or narrow V crotches, and favour a strong single leader.
- **Deadwood Management:** Any deadwood should be used to create small log piles to provide habitat in areas inaccessible or out of view of the public. Any fallen deadwood should be left in situ unless this poses a risk to the public.
- **Replacement of Failed Specimens:** The removal of any failed, vandalised, unhealthy, or dead specimens as soon as possible and provide replacements of the same size to those adjacent, where practicable during the next available planting season.
- **Watering:** Watering of plants to ensure moisture levels are maintained appropriate for optimum growth.
- **Litter Removal:** Removal of litter from all planting areas to maintain the site in a tidy condition.
- **Pest and Disease Inspection:** Inspection for signs of pest and disease. In cases of serious attack, employ appropriate control measures.
- **Cut grassland between planting** (arising to be spread evenly across the plot) twice a year in early spring and late summer.
- **Remove tree protection** (stakes, tubes, guards, ties etc) by year five and dispose off-site.

A maintenance schedule for wet woodland is provided in Table 6-9 below.



Table 6-9 – Wet Woodland Maintenance Schedule

Maintenance Operation	Frequency	Time of year when maintenance operation is required or number of operations required											
		J	F	M	A	M	J	J	A	S	O	N	D
Weed control around base of each tree	4 x Annually				1		1		1		1		
Health and safety check of existing and mature trees	1 x Annually		1										
Re-firming of trees	As required			1									
Apply slow release fertiliser to base of tree	Annually	All Year											
Pruning works													
Removal of items attached to trees (except bird & bat boxes)	As required	All Year											
Pruning (general)	As required												
Replace damaged / vandalised / unhealthy stock	Annually												
Watering of area to ensure moisture levels are appropriate	As required												
Inspect trees for pest and disease	2 x Annually	1						1					
Check for nesting bird presence prior to any necessary remedial action	As required												

Felled trees/dead wood from native broadleaves (mixture) will be retained during construction and placed into the woodland areas. Dead wood within woodland will be left in situ and not disturbed as much as possible to provide habitat for invertebrates.

Woodland to be well on the way to successful establishment by 5 years after planting.

Monitor woodland progress annually. Check for healthy growth, density of cover, and review dieback and disease.

If any issues are identified, action should be taken to remedy them before areas of woodland fall behind on the timescale to establishment. Review soil fertility, review soil compaction and employ soil de-compaction methods, ensure adequate watering is provided, and carry out selective thinning and restocking.

6.11. Special Ecological Features

6.11.1. Habitat Description

Habitats on site, notably at Bedhampton and Staunton Country Park support a range of protected species, including dormice and several species of bats, which are known to roost in mature trees and forage along hedgerows and woodland edges.

To enhance ecological connectivity and roosting opportunities, dormouse nest boxes and bat boxes will be installed. Bat Boxes will be installed at Bedhampton Pumping Station and Dormice boxes at Staunton Country Park. Number and locations of bat boxes are to be agreed with the Ecological Clerk of Works. The location of dormouse boxes is shown in the dormouse licence and has been agreed with Natural England.

6.11.2. Objectives and Targets

The primary objective is to ensure the provision and long-term maintenance of suitable nesting and roosting habitats for protected species, specifically dormice and various bat species. These species are highly dependent on stable, undisturbed environments with appropriate shelter and foraging opportunities. By installing and managing dormouse and bat boxes, the aim is to mitigate habitat loss and fragmentation, while enhancing ecological connectivity across the sites. This objective supports broader biodiversity goals and aligns with statutory obligations under the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species Regulations 2017.

A second key objective is to maintain the ecological functionality and physical integrity of all installed boxes through a structured programme of inspection, cleaning, and repair. Over time, natural wear, weather exposure, and biological activity can degrade the condition of artificial roosts and nests. Regular maintenance ensures that these features remain viable and attractive to target species, reducing the risk of abandonment or injury. This objective also includes the management of surrounding vegetation to prevent overgrowth that could obstruct access or reduce habitat quality.

The third objective is to implement a robust monitoring regime that tracks the usage and effectiveness of the installed boxes. This includes recording signs of occupancy, species presence, and any notable behavioural observations. The data collected will inform adaptive management strategies, allowing for responsive changes to box placement, design, or maintenance frequency. Furthermore, this monitoring contributes valuable information to local and national biodiversity records, supporting conservation research and policy development.

Targets:

- Maintain a minimum of 80% box suitability: At least 80% of all dormouse and bat boxes should remain in a condition suitable for occupancy throughout the five-year period. This includes structural integrity, appropriate placement, and absence of obstructions or hazards.
- Achieve confirmed usage in at least 30% of boxes by Year 3: By the end of the third year, monitoring should confirm signs of dormouse or bat activity—such as nesting material, droppings, or direct sightings—in at least 30% of the installed boxes. This will indicate successful uptake and habitat integration.
- Repair or replace 100% of damaged boxes within 3 months: Any box found to be damaged, degraded, or otherwise unsuitable during inspections must be repaired or replaced within three months of identification to ensure continuous habitat availability.
- Conduct and document all inspections and maintenance activities: All scheduled inspections, cleaning, and repairs must be logged with dates, findings, and actions taken. This documentation will support compliance and inform future management decisions.
- Submit comprehensive ecological reports in Years 3 and 5: These reports should summarise monitoring data, assess progress against targets, and recommend any necessary adjustments to the management plan. Reports should be prepared by a qualified ecologist and shared with relevant stakeholders.

6.11.3. Creation and Management

The creation and management of dormouse and bat boxes will follow a structured and phased approach to ensure their successful integration into the landscape and long-term ecological value. Post construction, dormouse and bat boxes will be installed in carefully selected locations as agreed on site with the ECoW.

- Dormouse boxes will be mounted on trees or within dense hedgerows at a height of 1.5 to 2 metres, with entrances facing the tree trunk to provide shelter and reduce predation risk.
- Bat boxes will be installed at heights of 4 to 5 metres on mature trees or built structures, using a mix of crevice and cavity designs to cater to different bat species.
- Ongoing management will include regular inspections of all boxes to assess their condition and detect signs of use. These inspections will help identify any maintenance needs and provide valuable data on species presence and box occupancy.



- Dormouse boxes will be inspected twice annually—once in spring and once in autumn—outside of the breeding season to minimise disturbance.
- Bat boxes will be inspected once annually in late summer or early autumn, by a licensed bat ecologist, as internal inspections require specialist handling.
- Cleaning and repair activities will be carried out annually in late autumn, after the active season for both dormice and bats. This will involve removing old nesting material, clearing debris, and repairing or replacing any damaged boxes. All maintenance will be conducted with minimal disturbance to surrounding vegetation and wildlife.
- Vegetation around the boxes and access routes will be managed twice a year to prevent overgrowth that could obstruct access or reduce habitat quality. This includes selective trimming and removal of invasive species, ensuring that the ecological integrity of the site is maintained.
- Each inspection and maintenance activity will be logged, including the date, observations, and any actions taken. This record-keeping will support adaptive management and ensure compliance with ecological commitments.
- Comprehensive ecological reports will be prepared at the end of Years 3 and 5, summarising monitoring results, evaluating progress against targets, and recommending any necessary adjustments to the plan.

A maintenance schedule for the boxes is provided in Table 6-10 below.

Table 6-10 – Special Ecological Features Maintenance Schedule

Maintenance Operation	Frequency	Time of year when maintenance operation is required or number of operations required											
		J	F	M	A	M	J	J	A	S	O	N	D
Inspect dormouse boxes					1					1			
Inspect bat boxes										1			
Clean and repair boxes											1		
Vegetation management				1					1				
Record box usage											1		
Submit ecological report												1	

7. Watercourses

7.1.1. Habitat Description

Watercourses on-site will be retained and managed to ensure the long-term provision of these aquatic habitats and the vital role that they play in the maintenance of the wider ecological landscape as a water resource and green corridor. The Hermitage Stream, Riders Lane Stream and the Lake Stream intersect the pipeline at various locations across the Scheme requiring riparian vegetation removal to allow for construction. In addition, the Scheme requires Culvert upgrades at Shafts 5, 6 and 8 (Purbrook Way, Dunsbury Way and Middle Park Way) and an open cut crossing of the Lake Stream at Section 9 which require in-channel alterations. The proposed vegetation reinstatement is shown on landscape reinstatement plans. The Scheme will reinstate in-channel and riparian habitats to existing conditions (where no permanent infrastructure is required) following the construction of the pipeline. Vegetation within riparian zones will be managed in accordance with the vegetation type e.g. scrub/woodlands as set out in Section 6.

7.1.2. Objectives and Targets

The primary objective is to ensure the provision and long-term maintenance of retained (and reconstructed) watercourses. This is both in terms of their intrinsic value as habitats which support aquatic flora and fauna including fish, as well as the vital role they play in the maintenance of wider ecological resources by providing a water source and green corridor offering connectivity within the landscape. The maintenance of watercourse habitats is also critical for ensuring local flood risk and water supply are well maintained.

7.1.3. Creation and Management

7.1.3.1. Culvert upgrades on Riders Lane Stream and other riparian works

Three culvert upgrades are to be implemented as part of the Pipeline Scheme. These involve in-channel works, but no specific landscaping will be required beyond reinstating riparian vegetation following installation. There are various other locations across the length of the Pipeline Scheme that require riparian vegetation removal during construction. Following construction, riparian vegetation will be reinstated as shown on the landscape reinstatement plans. Vegetation within these riparian zones should be managed in accordance with the vegetation type e.g. scrub/woodlands as set out in Section 6.

7.1.3.2. The Lake Stream Reinstatement

Construction of the Pipeline Scheme requires the adoption of an open cut trench across the Lake Stream, which is a tributary of Riders Lane Stream. Following construction, reinstatement of the channel bed and banks will be required to ensure no long-term effects to aquatic habitats and associated species. Detailed design of the channel reinstatement shall be informed by an ecologist and hydromorphologist, which shall incorporate the following:

- Shallow bank profiles (<45 degrees), avoiding over-steep bank faces to promote the growth of marginal vegetation and channel access for fauna;
- Appropriate channel bed level, set to tie in with the existing channel form;
- Addition of gravels to the channel bed; and
- Reinstatement of riparian vegetation (as shown on the landscape reinstatement plans for the Pipeline Scheme).

During construction, flows from the channel will be over-pumped using appropriately screened pumping equipment. Following construction, flows shall be reinstated fully with no change in bed level from the original state.

7.1.3.3. Monitoring

Monitoring of the channel reinstatement on the Lake Stream should take place during and post construction. Further monitoring at this location shall be undertaken annually for five years, during optimum survey season (May-October). Monitoring will involve assessing watercourse condition including the riparian zone via River Condition Assessment (RCA), comprising MoRPh5 field survey and associated river type desk assessment. RCAs will be undertaken by an accredited RCA surveyor during the optimum survey periods recommend in the MoRPh Technical Reference Manual⁴ May-September with the ideal months for survey May, June and October when all vegetation is visible but not so well developed that it makes access or observation of some physical features difficult. In addition, we recommend taking fixed point photographs annually for five years at locations where works are undertaken to monitor changes in watercourse and riparian condition.

⁴ The MoRPh Survey – Technical Reference Manual – 2025 version. Available: [River Condition Assessment for Baseline Appraisals & Forecasting – Modular River Survey](#) (accessed June 2025)

Further watercourse monitoring shall be undertaken on the Riders Lane Stream and Hermitage Stream at key points of interaction with the Scheme as listed in Table 7-1 to ensure watercourse condition and riparian character are maintained.

Table 7-1 – Watercourse Monitoring Schedule

Watercourse	Monitoring location	Monitoring method	Frequency
The Lake Stream	Open cut pipeline crossing location	River Condition Assessment Fixed point photographs	Annually for 5 years
Riders Lane Stream	Downstream of culvert upgrade works		
Hermitage Stream	At the Emergency Discharge Chamber (EDC) site		

Comprehensive ecological reports will be prepared at the end of Years 3 and 5, summarising monitoring results, evaluating progress against targets, and recommending any necessary adjustments to the plan.

Adaptive management may be required following the watercourse monitoring depending upon findings which could include vegetation management, bank reprofiling (in the case of the Lake Stream) and litter removal etc.