



UNIVERSAL DESTINATIONS & EXPERIENCES UK PROJECT

Former Kempston Hardwick Brickworks
and adjoining land, Bedford

Environmental Statement Volume 3

Appendix 6.5 - Outline Landscape and Ecology Management Plan

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CONTENTS

1	INTRODUCTION	1
1.1	INTRODUCTION	1
2	BASELINE (FOR INFORMATION ONLY)	3
2.1	ECOLOGICAL BASELINE	3
3	LANDSCAPE AND ECOLOGY VISION	5
3.1	AIM AND GENERAL PRINCIPLES	5
3.2	GENERAL PRINCIPLES AND POLICIES	5
3.3	TARGETS AND PERFORMANCE INDICATORS	6
3.4	DESIGNATED SITES	7
4	MANAGEMENT PROPOSALS	8
4.1	OVERVIEW	8
4.2	RESPONSIBILITIES	8
4.3	ESTABLISHMENT AND INITIAL MAINTENANCE (YEARS 0 - 5)	10
4.4	LONG TERM MANAGEMENT (YEARS 6 +)	14
4.5	PROGRAMME AND TIMETABLE FOR ACTIONS	19
5	MONITORING REQUIREMENTS	23
5.1	GENERAL MONITORING	23

TABLES

Table 4-1 – Responsibilities and Management Programme	9
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Table 4-2 - Programme of establishment/maintenance works	19
Table 4-3 - Programme of long-term management and monitoring tasks	21
Table 5-1 - Monitoring requirements	24

1 INTRODUCTION

1.1 INTRODUCTION

- 1.1.1. This Outline Landscape and Ecology Management Plan (OLEMP) has been prepared in support of the planning proposal for the Proposed Development as described in **Chapter 2: Description of the Proposed Development (Volume 1)** of the Environmental Statement. The OLEMP presents objectives, management actions and prescriptions for the establishment and long-term management of the landscape and ecological mitigation required for the Operational Phase of the Proposed Development. The OLEMP sets out measures for the maintenance and management of habitat and landscaping with the exception of Section 2 which is intended to be for information only. Section 2 describes baseline information, which is included only to provide context to the measures described in the rest of the report.
- 1.1.2. The Proposed Development is located on the land shown within the Site boundary presented in the **Site Location Plan (Document Reference 1.6.0)** (hereafter referred to as 'the Site'). The spatial extent of the OLEMP extends to all land within the Site.
- 1.1.3. This OLEMP deals with the Operational Phase aspects of ecological mitigation. The Outline Construction Environmental Management Plan (OCEMP) provided as **Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)** deals with the Construction Phase ecological mitigation measures. The Outline Habitat Creation and Enhancement Plan (OHCEP) (**Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**) provides information about the proposed habitat creation and enhancement measures for the Proposed Development. The OHCEP demonstrates the intended spatial configuration of new habitat, drainage and landscape elements across the operational Proposed Development (**Figure 1: Indicative Habitat Creation and Enhancement Plan of Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**) and forms the spatial framework for the OLEMP.
- 1.1.4. The primary aim of the OLEMP is to ensure that habitat or species-specific mitigation or enhancement measures are managed and monitored to ensure their successful establishment and integration within the surrounding landscape in the short and long-term.
- 1.1.5. Once the detailed Habitat Creation and Enhancement Plan (as set out in **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**) has been provided for approval, the LEMP will be updated to include species specific ground preparation, planting and seeding guidance. It will also provide maintenance and management procedures specific to the cultivation and long term maintenance of the chosen species for planting.
- 1.1.6. It is proposed that the Proposed Development be subject to a five-year creation and initial maintenance period relevant to each Zone or sub-Zone as it is planted to facilitate establishment of habitats and species-specific mitigation features. Following this period, subject to a review by a suitably qualified ecologist and landscape architect, if the retained and newly created habitats and species-specific mitigation features within that location of the Site are sufficiently well established then the habitat will be subject to the long term monitoring and management measures.
- 1.1.7. The LEMP will be closely associated with **Figure 7.9: Landscape Mitigation Plan (Volume 2)**, as well as the detailed Habitat Creation and Enhancement Plan (as required by **Appendix 6.4: Outline**

Habitat Creation and Enhancement Plan (Volume 3)) which will be produced at the detailed design stage of the Proposed Development.

- 1.1.8. The OLEMP has been informed by the baseline ecological features (provided for information in Section 2 below) and the Outline Habitat Creation and Enhancement Plan (**Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**).
- 1.1.9. The structure of this document is as follows:
- Section 2: the baseline for the existing landscape typologies, species, and habitats within the Site (Provided for information only);
 - Section 3: the landscape and ecological vision of the OLEMP;
 - Section 4: the management prescriptions per habitat type and species-specific feature; and
 - Section 5: the monitoring requirements per habitat type and species-specific feature.

2 BASELINE (FOR INFORMATION ONLY)

2.1 ECOLOGICAL BASELINE

OVERVIEW

- 2.1.1. The ecological baseline condition within the Site is detailed in **Chapter 6: Ecology and Nature Conservation (Volume 1)** and Appendices 6.1-6.3, 6.7-6.18 (Volume 3), with a summary provided below to provide appropriate context to the remainder of the measures outlined in this OLEMP.

DESIGNATED SITES

- 2.1.2. No National Site Network sites, Ramsar sites or statutory designated sites of national importance are present within the study area (10km from the Site boundary).
- 2.1.3. Ten non-statutory designated sites are located entirely or partially within the study area, as shown in **Figure 6.1: Ecological Destinations Plan (Volume 2)**. The closest non-statutory sites to the Site are Kempston Hardwick Pit County Wildlife Site (CWS) and Coronation Pit CWS. The Site overlaps these designations by 26.7ha and 5.0ha respectively. The next nearest CWS site is Stewartby Lake CWS, located approximately 0.2km south of the Site.

HABITATS OF CONSERVATION IMPORTANCE

- 2.1.4. The following Habitats of Principal Importance (HPI) are present on-Site (see **Figure 6.2: UK Habitat Plan (Volume 2)**):

- Lowland Mixed Deciduous Woodland;
- Native Hedgerow;
- Open Mosaic Habitats on Previously Developed Land (OMoPDL);
- Reedbed; and
- Ponds.

- 2.1.5. One veteran tree (a multi-stemmed willow (*Salix* sp.) located at OS Grid Reference: TL 02081 43996) is present on-Site within the West Gateway Zone, which will be retained and protected.

OTHER HABITATS

- 2.1.6. The majority of the habitats present within the Site comprise arable fields bounded by hedgerows and grassland margins. Large waterbodies which were originally brick claypits are present in the Lake Zone, with surrounding reedbeds and other neutral grassland present. OMoPDL, pockets of woodland, varying densities of successional scrub, tracks and associated hardstanding associated with the long disused Kempston Hardwick brick works in the Lake Zone are also present on Site. **Figure 6.2: UK Habitat Plan (Volume 2)** presents the habitat baseline for the Site (pre-development).

SPECIES

2.1.7. Species or species groups that have been identified to be present, or considered likely to be present, within or near the Site of relevance to this OLEMP comprise:

- Bats;
- Badger;
- Otter;
- Birds (breeding and wintering);
- Reptiles;
- Amphibians;
- Invertebrates;
- Non-native invasive plant species;
- Fish;
- Aquatic macroinvertebrates; and
- Aquatic macrophytes.

3 LANDSCAPE AND ECOLOGY VISION

3.1 AIM AND GENERAL PRINCIPLES

- 3.1.1. The overriding intention of the OLEMP is to reduce the impact of the Proposed Development through design, to conserve, restore and enhance landscape character, and to enhance biodiversity. This OLEMP document focuses on providing the principles for management, maintenance and monitoring requirements for habitats and landscape features once created, and measures for protected or notable species.
- 3.1.2. General landscape and ecological principles are as follows:
- To retain, protect and enhance existing vegetation whenever practicable and appropriate;
 - To retain, protect and enhance existing landscape features where practicable;
 - To create new compensatory habitats of high ecological value;
 - To provide soft landscaping and new planting where practicable; and,
 - For all proposed planting to use native species of local provenance, where possible.

3.2 GENERAL PRINCIPLES AND POLICIES

General Principles

- 3.2.1. Specific landscape and ecological principles, which seek to guide long-term management, are as follows:
- On-Site ecology and landscape mitigation, compensation and enhancement will be undertaken within the Ecological Enhancement Areas (EEAs) as shown on **Figure 1: Indicative Habitat Creation and Enhancement Plan** of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**;
 - Environmental gain is to be promoted as an intrinsic part of the detailed design;
 - To promote the capacity of wildlife and landscape to cope with climate change, a planting palette of species resilient to drought and disease, that are less reliant on irrigation measures will be used where practicable;
 - Materials such as logs, rocks, rubble and earth should be re-used where practicable during the creation of species-specific mitigation features;
 - All works outlined within this OLEMP shall be carried out in accordance with the current British Standards with particular reference to:
 - BS 3998:2010 Recommendations for tree work¹;

¹ British Standards Institution (2010) *BS 3998:2010 - Tree work. Recommendations*. Available at: <https://knowledge.bsigroup.com/products/tree-work-recommendations> [Accessed: 23 April 2025].

- BS 5837:2012 Trees in relation to design, demolition and construction²;
- BS 3882:2015 Specification for topsoil³; and
- BS 4428:1989 Code of practice for general landscape operations⁴.

3.2.2. UDX will exercise appropriate oversight over all aspects of development of the ERC, including initial planning and design, coordination of the infrastructure, construction and setting the framework for the long-term management of the ERC. This “unified control” approach will ensure that the landscape planting and ecological features will be maintained, managed, and monitored as appropriate throughout Operational Phases of the Proposed Development to achieve the desired communities and quality.

Habitat Retention

3.2.3. In addition to the management, maintenance and monitoring of newly created and enhanced habitat, the measures within this OLEMP also apply to areas of retained vegetation. Areas of existing trees, hedgerows and vegetation will be retained and/or enhanced as shown on **Figure 1: Indicative Habitat Creation and Enhancement Plan of Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**.

Habitat Creation

3.2.4. Habitat creation proposals are detailed in **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**.

Disturbance

3.2.5. A series of measures will be documented in the detailed HCEP when prepared. Ongoing maintenance and checks of these measures established to reduce disturbance will be completed during the operational phase as detailed in **Table 5-1**, Section 5.

3.3 TARGETS AND PERFORMANCE INDICATORS

3.3.1. Targets and performance indicators for habitats and species-specific mitigation measures are provided in **Table 5-1**, Section 5.

² British Standards Institution (2012) *BS 5837:2012 - Trees in relation to design, demolition and construction. Recommendations*. Available at: <https://knowledge.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations> [Accessed: 23 April 2025].

³ British Standards Institution (2015) *BS 3882:2015 - Specification for topsoil*. Available at: <https://knowledge.bsigroup.com/products/specification-for-topsoil> [Accessed: 23 April 2025].

⁴ British Standards Institution (1989) *BS 4428:1989 - Code of practice for general landscape operations (excluding hard surfaces)*. Available at: <https://knowledge.bsigroup.com/products/code-of-practice-for-general-landscape-operations-excluding-hard-surfaces> [Accessed: 23 April 2025].

3.4 DESIGNATED SITES

- 3.4.1. Measures detailed in the **Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)** to protect the retained areas of Kempston Hardwick Pit CWS and Coronation Pit CWS during the Construction Phase and avoid hydrological pollution must be continued into the Operational Phase. The boundaries of these CWSs should be delineated with appropriate fencing (or other appropriate demarcation) with signage displayed to ensure that these sensitive areas are protected.

4 MANAGEMENT PROPOSALS

4.1 OVERVIEW

- 4.1.1. Management procedures must be reviewed annually to ensure management prescriptions are aligned with the status of habitat creation measures being implemented, therefore addressing any changes to baseline conditions.
- 4.1.2. Access for maintenance must accommodate any machinery required for managing woodland and grassland habitats.
- 4.1.3. In the event of unexpected discoveries or issues, for example confirmation of additional protected species or invasive non-native species (INNS) within the Site, advice from an ecologist will be sought. Measures for managing and monitoring invasive species are set out in Section 4.4 and Section 5.1. Detailed designs will be reviewed by UDX or the relevant Undertakers⁵ to ensure designs take account of new discoveries or issues.

4.2 RESPONSIBILITIES

- 4.2.1. **Table 4-1** describes the indicative roles of individuals and organisations in both establishing and maintaining the habitats, and for meeting the establishment⁶ and completed habitat condition objectives. The timescales provided below assume commencement of initial preparatory works in the year prior to Primary Construction Phase. The programme and timescales will be subject to revision during the detailed design process as new information emerges.
- 4.2.2. It is proposed that the Proposed Development be subject to a five-year creation and initial maintenance period relevant to each Zone or sub-Zone as it is planted to facilitate establishment of habitats and species-specific mitigation features. Following this period, subject to a review by a suitably qualified ecologist and landscape architect, if the retained and newly created habitats and species-specific mitigation features within that location of the Site are sufficiently well established then the habitat will be subject to the long term monitoring and management measures.

⁵ The persons (corporate or otherwise) who are permitted to carry out the Proposed Development (including their contractors and other persons appointed by them in connection with the carrying out of the Proposed Development).

⁶ The establishment of a habitat would be considered the point in time at which the habitat adopts the characteristics of the habitat type in accordance with UK Habitat Classification criteria. This will be different timeframes for different habitats.

Table 4-1 – Responsibilities and Management Programme

Task	Responsible Party	Start date for responsibility	End date for responsibility
Construction and Initial Maintenance (Year 0 ⁷ – Year 5)			
Ecological Clerk of Works	UDX or relevant Undertakers/ Landowners	Year 0	Year 5
Protection of existing vegetation to be retained		Year 0	Year 5
Protected species and INNS licensing requirements/pre-works check/precautionary methods of working. Ecological Clerk of Works for protected species, as appropriate.		Year 0	Year 5
Habitat establishment		Year 0	Year 5
Construction of ponds		Year 0	Year 5
Construction of reptile hibernacula		Year 0	Year 5
Habitat management		Year 1	Year 5
Maintenance of rabbit and deer guards		Year 1	Year 5
Long Term Management (Year 6 – 50)			
Habitat management	UDX or relevant Undertakers/ Landowners (To be kept under review as part of the annual management review)	Year 5	To be kept under review as part of the annual management review
Monitoring			
Habitat monitoring	UDX or relevant Undertakers/ Landowners (To be kept under review as part of the annual management review)	Year 1	To be kept under review as part of the annual management review
Condition of hibernacula		Year 1	
Condition of invertebrate log piles and hotels		Year 1	
Scrub encroachment		Year 1	
Presence of Schedule 9 species		Year 1	
Presence of pollutants and rubbish within ponds		Year 1	

⁷ Year 0 is defined as the year in which works commence on site and therefore will vary between Zones and sub-Zones across the Site.

4.3 ESTABLISHMENT AND INITIAL MAINTENANCE (YEARS 0 - 5)

HABITATS

Overview

- 4.3.1. When the detailed Habitat Creation and Enhancement Plan has been provided for approval, the detailed LEMP will also be updated with information pertaining to species specific ground preparation, planting and seeding guidance. It will also provide maintenance and management procedures specific to the cultivation and long term maintenance of the chosen species for planting.
- 4.3.1. Vegetation removal has been specified to be outside the nesting bird season where possible. However, if an active bird's nest is suspected in an area to be cut (even outside the general nesting season) an ecologist should be contacted to advise on whether vegetation may be removed.

Woodland

- 4.3.2. Appropriate targeted weed control would be undertaken where weed growth impedes tree development. Aside from occasional thinning, the management of woodland areas will be largely non-intervention. Occasional thinning will maintain structural diversity and promote the growth of ground flora.
- 4.3.3. Rotational coppicing will be undertaken for certain areas (where existing species and growth forms of trees allow). A cutting cycle of between three and 15 years is appropriate depending on what species are involved. Different compartments will be coppiced in different years to maximise woodland structure and diversity.
- 4.3.4. Management will ensure that sufficient water is applied to maintain healthy growth.

Individual Trees

- 4.3.5. Unless planted in a hedgerow, a 1m diameter area around each tree shall be mulched with bark mulch and cleared of all weeds on the first routine visit at the start of the growing season (and between April and October thereafter).
- 4.3.6. Where appropriate, management will target the establishment of a balanced crown, character and shape that is typical of the species. A clear stem (minimum 1.5m above the ground) will be maintained where trees are next to footpaths and roads. Remedial pruning/tree surgery will be undertaken in accordance with *BS 3998:2010*¹. Any cut wood should be re-used on Site for biodiversity purposes, for example as piles of deadwood for invertebrates within non-guest facing locations.
- 4.3.7. Tree stakes and ties shall be checked, adjusted and replaced as necessary during the establishment period, and removed when redundant.
- 4.3.8. Dead or damaged trees shall be replaced in accordance with the original specification in the next available planting season (generally November to March inclusive).
- 4.3.9. Clearance, pruning and trimming operations during the bird nesting periods shall be avoided.
- 4.3.10. Management will ensure that sufficient water is applied to maintain healthy growth.

Hedgerows

- 4.3.11. Weed control will be undertaken to maintain a weed-free area of approximately 0.6m either side of the hedgerow during the establishment period.
- 4.3.12. Newly planted sections of hedgerow will be trimmed in years one to three to encourage dense growth. Cutting will be undertaken in late January or February to avoid the nesting bird season.
- 4.3.13. Management will ensure that sufficient water is applied to maintain healthy growth.

Amenity and Ornamental Planting

- 4.3.14. Amenity and ornamental planting within guest facing locations will be specified as part of the package of detailed design drawings. The emphasis of any such planting will be the appearance to guests and the promotion of an 'atmosphere' or 'theme' appropriate to the location.
- 4.3.15. Planting should be in accordance with the detailed design drawing package and specifications. Guards will be removed once plant stock is established.
- 4.3.16. Planting should take place at a time appropriate to the species/varieties, to weed free locations.
- 4.3.17. Newly planted areas will be pruned or trimmed appropriate to their species to encourage vigour and growth. Where required, pruning will be undertaken in late January or February to avoid the nesting bird season.
- 4.3.18. Management will ensure that sufficient water is applied to maintain healthy growth.

Scrub

- 4.3.19. Management will ensure that sufficient water is applied to maintain healthy growth.
- 4.3.20. The re-shaping of scrub species will be undertaken at the appropriate time according to species requirements. Dead or dying wood will be removed to promote healthy growth, and scrub should be prevented from becoming overgrown.
- 4.3.21. Weed control will be undertaken to maintain weed-free area planting beds during the establishment period.
- 4.3.22. Failed planting should be replaced with new equivalent plants between November and March.
- 4.3.23. Clearance, pruning and trimming operations during the bird nesting periods shall be avoided.

Grassland

- 4.3.24. Where areas of grassland are retained, they should be overseeded and a regime of cutting will take place at least one year before sowing to reduce coarser grasses and develop a more diverse sward structure.
- 4.3.25. The developing sward would be topped or mown in mid-summer to remove annual weeds during the first year. Traditional hay meadow management should be undertaken from the second year, with a hay cut in late July/August. Regrowth would be mown through to late autumn/winter and again in spring if required.

Wetland

- 4.3.26. Wetland features (ponds, watercourses) will be created within relevant EEAs within groundwater basins and excavated to a sufficient depth to ensure they remain permanently wet.

- 4.3.27. Wetland features will be managed to maintain their structure and function and prevent the natural process of succession, where appropriate.
- 4.3.28. Newly planted reedbeds will be protected from grazing pressures via measures such as deer fencing for at least the first year. Reedbed management via cutting will be undertaken where required. The control of species such as nettles and willowherbs will be undertaken to maintain the desired species composition.
- 4.3.29. The indicative reedbed cutting regime will comprise a cut of one third in year three, one third in year five and one third in year eight.
- 4.3.30. Water levels will be managed to support the successful establishment of wetland features. Where the extent of open water drops below required levels, action will be required to increase the extent of water. The scale and nature of action will be reactive to the drop in water level. In the event of a severe drought where water levels drop below the required levels, necessary remedial action will be taken where feasible but may have to be delayed for when water levels and supply are more favourable.

Open Mosaic Habitat

- 4.3.31. The following principles of habitat management should be applied (adapted from Whitehouse, 2008⁸):
 - **Ground disturbance** - homogeneous blocks of habitat may offer less resources to plants and invertebrates than varied mosaics of vegetation. This can be achieved by implementing a programme of physical disturbance. Either using mechanical techniques (e.g. soil scraping) or by low-level cutting/strimming or by grazing;
 - **Bare ground** - bare ground heats up quickly in the sun to provide ideal conditions for warmth-loving invertebrates. It also provides nesting sites for burrowing species;
 - **Abundant wildflowers** – to provide nectar and pollen sources for bees and butterflies. A greater variety of plant species is likely to support a higher number of invertebrates. This may be achieved by introducing wildlife seed from suitable donor sites (e.g. nature reserves);
 - **Delayed succession** - Harsh environmental conditions such as dry, low-nutrient mineral soils can delay vegetation succession to closed grassland and scrub. Equally measures to prevent dominance by scrub and trees (e.g. cutting, coppicing) may be valuable;
 - **Varied topography** - a wide range of topographical features from the macro (e.g. cliffs) to the micro (e.g. wheel ruts) is likely to be beneficial to invertebrate and plant diversity;
 - **Water** – inclusion of ponds, scrapes and depressions, where appropriate, will be provided in EEAs which would generate the conditions required by a diverse array of plants and invertebrates;
 - **Rotational control of scrub** – a programme of cutting/coppicing to support a shifting mosaic of scrub within the relevant EEAs representing all major age classes from mature to regenerating; and

⁸ Whitehouse, A.T. (2008) *Managing Aggregates Sites for Invertebrates: a best practice guide*. Peterborough: Buglife - The Invertebrate Conservation Trust.

- **Mowing/grazing** – implementation of a programme of mowing/strimming or grazing to maintain a patchwork of different vegetation structures.

YEARS TO TARGET CONDITION

- 4.3.32. The approximate years to target condition (when a habitat acquires properties of a mature example of its type) for areas of newly created habitat are as follows:
- Ponds: five years;
 - Grasslands: 15 years;
 - Native species-rich hedgerows with trees: 10 years;
 - Scrub: seven years;
 - Open mosaic habitat: 10 years; and
 - Woodland and trees: 30+ years.
- 4.3.33. The long-term management period covered by this document comprises years 6 to 50 of the Proposed Development, where year 0 is the start of construction.

PROTECTED SPECIES CONSIDERATIONS

- 4.3.34. Protected species constraints, licences and precautionary methods of working must be adhered to during the Construction Phase of the Proposed Development. Detail regarding these construction related measures is provided in **Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)** for the Proposed Development. Outline measures for species specific habitat/mitigation feature creation is provided in the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**.
- 4.3.35. Maintenance and monitoring measures relevant to the first five years are outlined below. Works will be undertaken in line with the conditions and methods stated in licence documentation for protected species, where relevant.

Amphibians and Reptiles – hibernacula, banks, and egg-laying sites

- 4.3.36. Artificial hibernacula shall be checked once per annum and managed by replacing or depositing additional stones, logs, or soil cap (or other suitable material) to maintain the original dimensions. Vegetation shall be managed to prevent these features becoming 'overrun' with tall grassland and scrub.
- 4.3.37. Reptile basking banks shall be maintained to 1m height, ensuring 100% grass cover of grassland on top and holes for access around the base are retained. Vegetation shall be managed to prevent these features becoming 'overrun' with tall grassland and scrub.
- 4.3.38. Remediation works shall be reactive to the annual monitoring for the first five years to maintain hibernacula and artificial egg-laying sites as suitable for use by reptiles.

Invertebrate log piles, hotels and banks

- 4.3.39. Log piles and invertebrate 'hotels' shall be checked once per annum and managed by replacing or depositing additional stones, logs, or soil cap (or other suitable material) to maintain the original dimensions.

Birds

- 4.3.40. Bird boxes should not require regular maintenance, however annual checks of the bird boxes are recommended. The checks would assess the boxes condition and identify where remedial action may be required.
- 4.3.41. Vegetation removal has been specified outside the nesting bird season where possible. However, if an active bird's nest is suspected in an area to be cut (even outside the general nesting season) an ecologist should be contacted to advise on whether vegetation may be removed, or if any other mitigation measures are appropriate.

Bats

- 4.3.42. Bat boxes should be monitored annually for the first five years by a survey licenced ecologist to determine the physical presence and integrity of the bat boxes, check for evidence of use, and assess the requirement to replace any that are damaged or lost. If required to be delivered as part of the Proposed Development (this would depend on the results of additional bat surveys being completed in 2025) replacement roosting structures for bats would also be subject to annual monitoring and maintenance.

4.4 LONG TERM MANAGEMENT (YEARS 6 +)

INVASIVE SPECIES AND WEED CONTROL

- 4.4.1. Weed control relates to infestations of injurious weeds such as broad-leaved dock *Rumex obtusifolius*, curled dock *Rumex crispus*, common ragwort *Senecio jacobaea*, creeping thistle *Cirsium arvense* and spear thistle *Cirsium vulgare*.
- 4.4.2. Injurious weed control must use mechanical means of control such as topping or pulling. Where weed control by pulling/hand-weeding, the work must consist of the removal of the entire weed, including roots, by digging, forking, hoeing or pulling. Weeds must be removed prior to flowering and the arisings removed from Site.
- 4.4.3. Chemical treatments must only be used as a last resort and must not be used in areas accessible to the public without appropriate controls in place.
- 4.4.4. In the event that invasive weeds are found on Site, specialist advice must be sought for any occurrences of invasive species and an appreciate management strategy for their avoidance or control prepared. These most commonly these include:
 - Japanese knotweed;
 - Giant hogweed;
 - Himalayan balsam (a particular problem for river bank erosion);
 - Rhododendron; and
 - New Zealand Pygmyweed;

- 4.4.5. It is not an offence to have these plants growing on your land or in your garden. However, it is an offence to cause those listed in Schedule 9 of the Wildlife and Countryside Act 1981⁹ to grow in the wild.
- 4.4.6. In the event that species listed under Schedule 9 of the Wildlife and Countryside Act 1981⁹ (as amended) are found on Site during the monitoring, the management strategy will include details of suitable treatment methods and measures to prevent the spread of these species must be implemented.
- 4.4.7. Herbicides must not be used for any maintenance or management operations that may cause harm to existing land uses (i.e., publicly accessible areas, or agricultural areas) or existing habitats, or could spill into watercourses/water bodies.
- 4.4.8. Mink control measures would be implemented during the operational phase of the Proposed Development. Mink control measures would comprise operations in accordance with established mink control protocols following necessary safety and welfare procedures and would likely involve trapping and humanely dispatching individual mink from habitats across the Site. These measures would seek to provide future potential enhanced opportunities for other species re-colonisation or introductions such as water vole.

WOODLAND

- 4.4.9. Removal of nurse species, where planted to shelter the ultimate canopy tree species, shall be necessary 7 to 10 years after planting, where they have outgrown their intended use. However, to avoid drastic interventions which cause abrupt changes in light regimes a phased approach to the removal of nurse species is recommended (i.e., no more than a third of total nurse species removed in any one year).
- 4.4.10. Thinning and felling of selected woodland trees shall remove the less healthy or less desirable trees and give the remaining trees more space to develop.
- 4.4.11. Where proposed, coppicing of suitable species, once established, should be carried out in areas on a rotation of between 7 to 10 years.
- 4.4.12. Where a shrub edge to the woodland has been planted, management of the shrub edge species shall be implemented on a rotational cycle. This will commence after the five-year establishment period (starting year 5 with a rotation being completed every subsequent five years until year 35).
- 4.4.13. Any trees that fail or become damaged or diseased must be removed and replaced in the next planting season with others of similar size and species. This should be undertaken in the planting season (November to March).
- 4.4.14. The re-growth of competing vegetation will be controlled by non-chemical means such as mulches or mulch mats to maintain weed free conditions. This should continue until the plants are established.

⁹ HM Government (1981) *Wildlife and Countryside Act 1981*. Available at: <https://www.legislation.gov.uk/ukpga/1981/69> [Accessed: 23 April 2025].

HEDGEROWS

- 4.4.15. For native style hedgerow, margins of a minimum 2m must be left undisturbed other than one cut annually in late summer (late July/early August), after the flowers have seeded.
- 4.4.16. The re-growth of competing vegetation will be controlled by non-chemical means such as mulches or mulch mats to maintain weed free conditions. This should continue until the plants are established.
- 4.4.17. Hedgerows shall be cut in the dormant period (November to February) on a two- or three-year rotation. Adjacent lengths of hedge shall be cut in different years leaving short sections of shrubs untrimmed. Hedgerow trees shall not be cut, unless there are visibility splay and other road safety issues, or the hedge contains fast growing species, the same length of hedge shall not be cut every year because this would reduce the amount of food provided for wildlife.
- 4.4.18. Hedge laying shall be carried out generally between eight and 15 years (during November to February on a two- or three-year rotation), depending on soil and climatic conditions, when untrimmed stems reach 2.4-5m high with a stem diameter at base of between 50-100mm.

GRASSLAND

- 4.4.19. Mowing/strimming shall be carried out at least once a year, ideally in late summer/early autumn, after the flowering plants have set seed, but if required a spring cut can also be made to control the rank species.
- 4.4.20. Wherever possible, cutting should be done in a wildlife friendly way by starting from the inside of the plot and working towards the outside in a weaving or closing fashion to leave a small-scale mosaic of cut and uncut patches. It is also beneficial to leave a 2m wide uncut wildlife refuge strip at the field edge. A different random pattern of cutting can be adopted on the next occasion resulting in some areas being cut more often than others and to reduce erosion or wear at frequently used areas.
- 4.4.21. Cuttings should be left to dry before being raked and placed into compost heaps on Site. Compost heaps should be placed on the south sides of woodland planting (i.e., in sun) to approximately 1m³ volume. If large volumes of grass cuttings are to be generated consideration should be given to cut and lift practices where cut material is taken off-Site to prevent excessive build-up of nutrients which suppress wildflower diversity.
- 4.4.22. Where required, scrub will be managed or removed during September to February inclusive (outside the breeding bird season) to promote an open grassland sward where this is desired. Scrub will not be removed where it is required for screening, or where it provides a boundary habitat.
- 4.4.23. Road verge grassland areas will be cut regularly from March – October to maintain a short sward height.

WETLAND

- 4.4.24. Leaf litter shall be collected during the autumn each year to prevent build-up of decaying material.
- 4.4.25. The balance of open water to aquatic/marginal vegetation must be monitored in June every two years. Clearance of vegetation must be undertaken on a rotational basis in December-January annually (five to seven years or as required).

- 4.4.26. Scrub encroachment around banks should be monitored every two years in June to ensure scrub does not dominate and overshadowing the lake and marginal habitats. Scrub should be cut back every two years in November to ensure the shading of waterbodies is less than 25%.
- 4.4.27. Monitor every two years (as part of other maintenance operations) for signs of eutrophication or poor water quality (for example resulting from pollution). Should signs of poor water quality be noted remedial measures should be identified and implemented.
- 4.4.28. Water/sediment/vegetation must not be transferred from other waterbodies. Ponds must be inspected for invasive aquatic species. Non-native aquatic vegetation must be removed immediately if noted.
- 4.4.29. The whole area of reedbed will be cut at least once every 10 years. An indicative rotation for wet reed will be to cut one third in year three, one third in year five and one third in year eight, subject to review of development of structure and function (i.e., species supported). However, the need for cutting will be kept under review and may not need to commence until at least year eight.
- 4.4.30. The Elstow Brook will be managed by the Internal Drainage Board. Other retained and created watercourses shall be managed to prevent silting up and choking with vegetation, with a protected 10m riparian buffer maintained from the watercourse channels, where within the Site.
- 4.4.31. Clearance works shall be completed once vegetation has already begun to naturally die back, in preparation for increased winter flows. A rotational plan for management of watercourse margins shall be implemented to ensure continuity of habitat and a good source for natural re-colonisation of managed ditches is maintained. It is recommended to cut up to just above the water level on one side leaving the waterside fringe of the bank uncut. Arisings shall be collected and removed to prevent contamination of the watercourse or causing blockages downstream.

Open Mosaic Habitat

- 4.4.32. Long-term management of open mosaic habitat will be confirmed once the detailed design for where this habitat will be created is finalised by the Habitat Creation and Enhancement Plan. However, a key tenet of long-term management will be to maintain the patchwork of scrub, tall herbaceous plants, short grassland, tussocky grassland, bare earth and ponds and wet depressions.

PROTECTED SPECIES CONSIDERATIONS

- 4.4.33. Works will be undertaken in line with the conditions and methods stated in protected species licence documentation, where applicable.

Amphibians and Reptiles – Hibernacula and basking banks

- 4.4.34. Artificial hibernacula and basking banks shall be checked once per annum and managed by replacing or depositing additional stones, logs, or soil cap (or other suitable material) to maintain the original dimensions and features. Vegetation shall be managed to prevent these features becoming 'overrun' with tall grassland and scrub.

Invertebrate log piles, hotels and banks

- 4.4.35. Log piles and invertebrate 'hotels' shall be checked once per annum and managed by replacing or depositing additional stones, logs, or soil cap (or other suitable material) to maintain the original dimensions. Vegetation shall be managed to prevent these features becoming 'overrun' with tall

grassland and scrub. Invertebrate hotels should be included in regular asset inspections across the Site and replaced/repaired if damaged/decayed.

Breeding birds

- 4.4.36. Vegetation removal has been specified outside the nesting bird season where possible. However, if an active bird's nest is suspected in an area to be cut (even outside the general nesting season) an ecologist should be contacted to advise on whether vegetation may be removed. Bird boxes would continue to be subject to annual monitoring and maintenance, with replacement if necessary, during this period.

Bats

- 4.4.37. Bat boxes and (if required as part of the Proposed Development) bat roosting structures should be included in regular asset inspections across the Site and replaced/repaired if damaged/decayed.

4.5 PROGRAMME AND TIMETABLE FOR ACTIONS

Table 4-2 and **Table 4-3** below details the programme of works for habitat establishment and initial maintenance, and then for long term management at the Site. Open mosaic habitat is not yet included in the programme until the creation plan for this habitat is finalised at the detailed design stage.

Table 4-2 - Programme of establishment/maintenance works

(C = Contractor under instruction of UDX or relevant Undertaker, E = Ecologist, S = Spring, Su = Summer, A = Autumn, W = Winter)

Task	Responsibility	Season	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Woodland, tree, scrub and hedgerow planting	C	A, W, S	X					
Grassland sowing	C	S, A	X					
Weed control	C	Su		X	X	X		
Grassland cutting	C	Au		X	X	X	X	X
Hedgerow cutting to promote dense growth	C	W		X	X	X		
Reedbed creation	C	Au	X					
Reedbed reinforcement planting	C	Au		X	X	X		
Reedbed cutting	C	W				X		X
Ditch slubbing	C	A, W	X					X
Ditch vegetation management	C	A, W		X	X	X	X	X
Mink control	C/E	S, Su, A, W			X	X	X	X
Protected species licenced works/method statements/pre-works surveys	E	Su/A	X	X				
Hibernacula, reptile basking banks, and invertebrate log piles and hotels construction	C	A/W	X					
Hibernacula, reptile basking banks, and invertebrate log piles and hotels maintenance	C	S or Su		X	X	X	X	X
Bird box maintenance and replacement where necessary	E	A, W		X	X	X	X	X

Task	Responsibility	Season	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Bat box maintenance/replacement and monitoring, bat roost structures maintenance and monitoring	E	A, W		X	X	X	X	X
Review and update of LEMP	E	S, Su, A, W						X

Table 4-3 - Programme of long-term management and monitoring tasks

(C = Contractor under instruction of UDX or relevant Undertaker, E = Ecologist, S = Spring, Su = Summer, A = Autumn, W = Winter)

Task	Responsibility	Season	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Years 15-19	Year 20	Years 21-24	Year 25	Years 26-29	Year 30	Years 31-34	Year 35
Mink control (indicative)	TBC	N/A	X	X	X	X	X				X		X		X		X		X
Review and update of LEMP	TBC	N/A					X					X	X		X		X		X
Grassland mowing	TBC	S/Su/A	X	X	X	X	X	X	X	X	X	X							
Woodland planting weed control monitoring	TBC	A		X						X		X		X		X		X	
Woodland nurse species removal including stump treatment	TBC	W		X	X	X	X												
Woodland nurse species removal including stump treatment monitoring	TBC	A	X	X	X	X	X												
Woodland thinning and felling (frequency in subsequent years to be reviewed)	TBC	W					X		X			X		X					
Woodland thinning and felling monitoring	TBC	A		X			X			X		X		X		X		X	
Woodland coppicing/rotation	TBC	W		X			X			X		X		X		X		X	
Woodland coppicing/rotation monitoring	TBC	A		X			X			X		X		X		X		X	
Scrub edge management	TBC	W		X			X			X		X		X		X		X	
Hedgerow rotational cutting (three-year rotation)	TBC	W	X			X			X			X							
Hedgerow rotational cutting monitoring	TBC	A		X			X												
Hedge laying	TBC	W			X	X	X	X	X	X									
Hedge laying monitoring	TBC	A			X	X	X	X	X	X									
Maintenance of hibernacula, reptile basking banks, and	TBC	S, Su	X	X	X	X	X	X	X	X	X	X							

Task	Responsibility	Season	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Years 15-19	Year 20	Years 21-24	Year 25	Years 26-29	Year 30	Years 31-34	Year 35
invertebrate log piles and hotels																			
Monitoring of hibernacula, reptile basking banks, and invertebrate log piles and hotels	TBC	S, Su	X	X	X	X	X	X	X	X	X	X							
Bird box maintenance and replacement where necessary	TBC	A, W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bat box maintenance/replacement and monitoring, bat roost structures maintenance and monitoring	TBC	A, W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Waterbody maintenance	TBC	A	X	X	X	X	X	X	X	X	X								
Pond life quality and water regimes monitoring	TBC	S			X			X			X								
Reedbed cutting	TBC	W			X														

5 MONITORING REQUIREMENTS

5.1 GENERAL MONITORING

- 5.1.1. Monitoring inspections will be used to measure the success of the management measures and determine if interventions are required to deliver the landscape and ecology vision.
- 5.1.2. The desired distinctiveness and condition of habitat is presented in **Table 5-1**. Monitoring the progress of habitats towards the desired communities will be undertaken.
- 5.1.3. During the initial establishment period of twelve months after planting, inspections must take place by a suitably qualified specialist biannually in spring and late summer. After the first twelve months inspections must be carried out annually in late summer.
- 5.1.4. The monitoring requirements are set out in **Table 5-1**, however specific monitoring prescriptions will be provided in the detailed LEMP once habitat specifications are confirmed by the detailed Habitat Creation and Enhancement Plan.
- 5.1.5. The ecological monitoring of species must be carried out in accordance with this OLEMP and protected species licences as granted by Natural England.
- 5.1.6. Monitoring will be in place throughout the creation and establishment stages to measure the successful development of mitigation habitats. Data collected during monitoring will seek to inform annual management reviews of the LEMP, for example if supplementary planting is required or if suitable management measures change.
- 5.1.7. Should the monitoring determine that remedial actions are required, the following steps will be undertaken (as appropriate to the remedial works required):
 - Establish a committee or board of decision-makers from UDX and relevant stakeholders to review progress;
 - Formulate a costed response plan and programme for resolution;
 - Set aside necessary resources to address identified risks of failure for at least the establishment phase; and
 - Independent audit of management progress.
- 5.1.8. In addition to those referenced within **Table 5-1** of this plan, the following monitoring measures will be implemented:
 - There will be regular checks of operational lighting to monitor and correct for any excessive light spill into the surrounding habitats, therefore confirming continued compliance with the lighting Design Standards CZ5.1, LZ5.1, LZ5.2, LZ5.3 and SW5.5 in the **Design Standards (Document reference 6.3.0)**. Checks for compliance with lighting standards to be undertaken upon initial installation of the lighting, and every five years thereafter.

The Operational noise limits and details of how compliance with these noise limits is demonstrated is set out in **Appendix 9.5: Demonstration of Compliance with Operational Phase noise limits (Volume 3)**.

Table 5-1 - Monitoring requirements

Habitat type or feature	Party responsible	Timing of Monitoring	Requirements
Establishment	UDX or relevant Undertakers	Various	<p>There is always uncertainty where new habitat is being established. This is impacted by weather conditions, the quality of seed stock or green hay, variations in the conditions of the Site, and problems with pernicious weeds. Therefore, the management and monitoring of the target habitats must be intensive during the first year and frequent over the subsequent four years to ensure any problems are identified early and resolved quickly.</p> <p>Inspections must be undertaken by a suitably qualified specialist.</p> <p>The inspections must be undertaken to assess the establishment of habitats and the effectiveness of the LEMP and aftercare prescriptions, paying particular attention to:</p> <ul style="list-style-type: none"> ■ The success of establishment including disease, damage or failure of planting; ■ Inappropriate use or vandalism; ■ General appearance and condition; ■ The presence of invasive or non-native species that require treatment; and ■ Any evidence of protected species that could have implications for future management. ■ Safety issues reported by the public must be investigated as soon as practically possible and remedial works undertaken as necessary public engagement. ■ Public engagement must be undertaken to keep users of the Site informed of the works.
Target Communities	UDX or relevant Undertakers	<p>Check twice per year for years 0, 1 and 2.</p> <p>Check annually year 3 – 5.</p> <p>Years 5 – 10: A review of monitoring requirements must be undertaken in year 5 to detail timings for years 5-10. If objectives are not met, then the LEMP must be amended.</p>	<p>Before and after enhancement, reinstatement, or creation a full botanical species list and condition assessment must be carried out to monitor the success of restoration and as a baseline for monitoring. This must include the presence and abundance of species. The National Vegetation Classification may be an appropriate method for collecting data for monitoring or this may be bespoke to the target communities.</p> <p>This must also include monitoring with regards to achieving the desired communities and quality.</p> <p>Monitoring is essential to track the development of the target habitat(s) and troubleshoot any problems.</p> <p>Success must be monitored via the yearly monitoring surveys and reporting.</p> <p>Success shall be considered as the botanical assemblage achieving the desired communities and condition.</p>
Woodland	UDX or relevant Undertakers	<p>Check twice per year for years 0, 1 and 2.</p> <p>Check annually year 3 – 5.</p> <p>Years 5 – 10: A review of monitoring requirements must be undertaken in year 5 to detail timings for years 5-10. If objectives are not met, then the LEMP must be amended.</p>	<p>Checks to replace dead or diseased specimens, control weeds, re-stake plants as necessary and check deer/rabbit fencing.</p> <p>Monitoring must follow the Common Standards Monitoring Guidance for Woodland Habitats¹⁰.</p> <p>The watering programme will be monitored to ensure that sufficient water is applied to maintain healthy growth as required.</p> <p>By the end of the 32+ year establishment period (regular management, monitoring and maintenance will determine progress towards this target at 10 years):</p>

¹⁰ Joint Nature Conservation Committee (2004) *Commons Standards Monitoring Guidance for Woodland Habitats*. Available at: <https://data.jncc.gov.uk/data/6df1057b-5357-400b-a363-c8748298180a/CSM-WoodlandHabitats-2004.pdf> [Accessed: 23 April 2025].

Habitat type or feature	Party responsible	Timing of Monitoring	Requirements
			<ul style="list-style-type: none"> These habitats are predicted to align with the ‘other woodland, mixed’ typology; Through positive management, high distinctiveness and moderate condition is considered to be achievable; The establishment of a typical W10 community woodland; Complete vegetation cover (excluding thinned or coppiced areas and fruit tree planting) to be achieved; and Ensure that some standing and fallen dead trees of over 20 centimetres diameter are present through either natural degeneration or veteranisation of trees.
Individual Trees	UDX or relevant Undertakers	<p>Check twice per year for years 0, 1 and 2. Check annually year 3 – 5.</p> <p>Years 5 – 10: A review of monitoring requirements must be undertaken in year 5 to detail timings for years 5-10. If objectives are not met, then the LEMP must be amended.</p>	<p>Regular checks, at least one per annum, must be made during the first five years of establishment to replace dead or diseased specimens, control weeds, re-stake plants as necessary and check deer/rabbit fencing.</p> <p>The watering programme will be monitored to ensure that sufficient water is applied to maintain healthy growth as required.</p> <p>By the end of the establishment period:</p> <ul style="list-style-type: none"> Through positive management, low distinctiveness and moderate condition is considered to be achievable; Trees to develop a crown with healthy foliage and which flower/fruit as appropriate and are managed in accordance with BS 39981; and The aim is to protect individual trees that are healthy and maintain as valued assets that enhance the environment.
Scrub	UDX or relevant Undertakers	<p>Check twice per year for years 0, 1 and 2. Check annually year 3 – 5.</p> <p>Years 5 – 10: A review of monitoring requirements must be undertaken in year 5 to detail timings for years 5-10. If objectives are not met, then the LEMP must be amended.</p>	<p>Regular checks, at least one per annum, must be made during the first five years of establishment to replace dead or diseased specimens, control weeds, re-stake plants as necessary and check deer/rabbit fencing.</p> <p>The watering programme will be monitored to ensure that sufficient water is applied to maintain healthy growth as required.</p> <p>By the end of the 7 year establishment period:</p> <ul style="list-style-type: none"> Through positive management, medium distinctiveness and good condition is considered to be achievable.
Hedgerows	UDX or relevant Undertakers	<p>Check twice per year for years 0, 1 and 2. Check annually year 3 – 5.</p> <p>Years 5 – 10: A review of monitoring requirements must be undertaken in year 5 to detail timings for years 5-10. If objectives are not met, then the LEMP must be amended.</p>	<p>Regular checks, at least one per annum, must be made during the first five years of establishment to replace dead or diseased specimens, control weeds, re-stake plants as necessary and check deer/rabbit fencing.</p> <p>Monitoring must follow the Hedgerow Survey Handbook¹¹.</p> <p>The watering programme will be monitored to ensure that sufficient water is applied to maintain healthy growth as required.</p> <p>By the end of the 10-year establishment period:</p> <ul style="list-style-type: none"> the ‘Native Species Rich Hedgerow’ typology is predicted; Through positive management, medium distinctiveness and good condition is considered to be achievable;

¹¹ Department for Environment, Food and Rural Affairs (2011) *Hedgerow survey handbook*. Available at: <https://assets.publishing.service.gov.uk/media/5a7589a8ed915d6faf2b3c2a/pb11951-hedgerow-survey-handbook-070314.pdf> [Accessed: 23 April 2025].

Habitat type or feature	Party responsible	Timing of Monitoring	Requirements
			<ul style="list-style-type: none"> No more than 10% of the hedgerow length should be occupied by gaps and no one gap should be greater than 5m wide (excluding access points and gates). No introduction of pests and diseases; Establish a fully functional hedgerow community and including the development of ground cover species with a perennial sward that will suppress annual weeds; and The aim is to create and maintain hedgerows that are composed of more than 80% native hedgerow woody species from Schedule 3 of the <i>Hedgerows Regulations 1997</i>¹² and contain, on average, five or more native woody species within a 30 metre length.
Grassland	UDX or relevant Undertakers	<p>Check twice per year for years 0, 1 and 2.</p> <p>Check annually year 3 – 5.</p> <p>Years 5 – 10: A review of monitoring requirements must be undertaken in year 5 to detail timings for years 5-10. If objectives are not met, then the LEMP must be amended.</p>	<p>Regular checks, at least one per annum, of the newly established areas of grassland must be made during the first five years of establishment.</p> <p>By the end of the 12-year establishment period:</p> <ul style="list-style-type: none"> The 'other neutral grassland' typology is predicted; Through positive management, medium distinctiveness and fairly good condition is considered to be achievable; Sward which has less than 5% cover of undesirable species; Bare ground does not extend to more than 5% of the area (including localised areas, for example, rabbit warrens); and Develop and maintain structural diversity by encouraging a range of vegetation types and heights including very early successional stages, bare ground and short turf.
Watercourses	UDX or relevant Undertakers	<p>Check twice per year for years 0, 1 and 2.</p> <p>Check annually year 3 – 5.</p> <p>Years 5 – 10: A review of monitoring requirements must be undertaken in year 5 to detail timings for years 5-10. If objectives are not met, then the LEMP must be amended.</p>	<p>Regular checks, at least one per annum, of the retained and created watercourses must be made during the first five years of establishment.</p> <p>Monitoring to confirm any requirements for vegetation control (to include in-channel aquatic and marginal vegetation) or sediment removal. These checks will also identify any pollution/eutrophication issues.</p> <p>Monitoring must follow the Common Standards Monitoring Guidance for Ditches¹³ and Common Standards Monitoring Guidance for Rivers¹⁴.</p> <p>By the end of the 5 year establishment period:</p> <ul style="list-style-type: none"> No obvious signs of pollution or of inappropriate quality of the water supply; Maintain an absence of damaging non-native plant or animal species; Create and maintain watercourse/ditch habitats that support a diverse vascular plant and fauna assemblage; Less than 5% cover of filamentous algae to be present; and Water to maintain a pH of approximately pH 5.5-7.5.

¹² HM Government (1997) *The Hedgerows Regulations 1997*. Available at: <https://www.legislation.gov.uk/ukxi/1997/1160/contents> [Accessed: 23 April 2025].

¹³ Joint Nature Conservation Committee (2005) *Common Standards Monitoring Guidance for Ditches*. Available at: <https://data.jncc.gov.uk/data/1b15dd18-48e3-4479-a168-79789216bc3d/CSM-Ditches-2005.pdf> [Accessed: 23 April 2025].

¹⁴ Joint Nature Conservation Committee (2016) *Common Standards Monitoring Guidance for Rivers*. Available at: <https://data.jncc.gov.uk/data/1b15dd18-48e3-4479-a168-79789216bc3d/CSM-Rivers-2016-r.pdf> [Accessed: 23 April 2025].

Habitat type or feature	Party responsible	Timing of Monitoring	Requirements
Wetland habitat	UDX or relevant Undertakers	<p>Check twice per year for years 0, 1 and 2. Check annually year 3 – 5.</p> <p>Years 5 – 10: A review of monitoring requirements must be undertaken in year 5 to detail timings for years 5-10. If objectives are not met, then the LEMP must be amended.</p>	<p>Regular checks of the newly established wetland habitat must be made during the first five years of establishment.</p> <p>Monitoring to confirm any requirements for vegetation control (to include scrub and aquatic/marginal vegetation) or sediment removal. These checks will also identify any pollution/eutrophication issues.</p> <p>Water and silt levels must be monitored in June annually.</p> <p>Monitoring must follow the Common Standards Monitoring Guidance for Ditches¹³ and Common Standards Monitoring Guidance for Rivers¹⁴.</p> <p>By the end of the 5 year establishment period:</p> <ul style="list-style-type: none"> At least one third of a pond's surface to be free from floating plants; Up to 50% marginal vegetation over pond margin after three years (no encroachment of marginal vegetation beyond 3m inward of original pond edge). Tree and scrub cover not to exceed 25% of pond perimeter; No obvious signs of pollution or of inappropriate quality of the water supply; Maintain an absence of damaging non-native plant or animal species; Ponds should not be stocked with fish or support damaging numbers of wildfowl; Create and maintain wet reed habitat, incorporating up to 30% of open water habitat (channels and pools) and later succession habitats that support a characteristic assemblage of reedbed plant and animal species. Reedbed areas should include at least 60% common reed, with no more than 10% scrub in reedbeds; Create and maintain ditch habitat that supports a diverse vascular plant and fauna assemblage; Less than 5% cover of filamentous algae to be present; and Water to maintain a pH of approximately pH 5.5-7.5.
Badger	UDX or relevant Undertakers	To be agreed with NE during the licensing process.	Comply with measures required by relevant licence documentation.
Otter	UDX or relevant Undertakers	To be agreed with NE during the licensing process.	Comply with measures required by relevant licence documentation.
Bat boxes	UDX or relevant Undertakers	Annually	Monitoring by a licensed ecologist to establish if they are in use. Moving or disturbing a box used by roosting bats may be a legal offence, even when bats are not in the box, therefore the ecologist should advise on necessary maintenance if identified as a requirement by monitoring.
Bird boxes	UDX or relevant Undertakers	Annually	To be checked each autumn/winter, after the breeding bird season, to clear out old nests and debris, and ensure the boxes are still located correctly and in good condition. Where necessary boxes should be replaced or repositioned prior to the following breeding season (March to August inclusive).
Hibernacula	UDX or relevant Undertakers	Annually	To review structure and suitability to support reptiles. To ensure habitat features remain in functional condition, and subsequent replacement of materials to maintain structural integrity will be completed where necessary.
Invertebrate log piles and hotels	UDX or relevant Undertakers	Annually	To review structure and suitability to support invertebrates. To ensure habitat features remain in functional condition, and subsequent maintenance/replacement will be completed where necessary.

Habitat type or feature	Party responsible	Timing of Monitoring	Requirements
Fish	UDX or relevant Undertakers	Years 2 and 5	Environmental DNA (e-DNA) monitoring by a suitably qualified aquatic ecologist of the created watercourse to establish if it supports a fish population.
Year five survey and review	UDX or relevant Undertakers	Year 5	<p>The following surveys, at a minimum, must be included in the year five review:</p> <ul style="list-style-type: none"> Protected species surveys (including any protected species licensing conditions); and Monitoring surveys of the reptile population. <p>The results of the surveys must be reviewed to identify any revisions to the management measures deemed to be required to meet the objectives for the medium and long-term. Revised measures must be produced to guide the next five years. This information must be presented as a 'Five Year Monitoring Report'.</p>
Disturbance management measures	UDX or relevant Undertakers	Annually	<p>Measures to reduce operational disturbance on ecological features would be monitored as follows:</p> <ul style="list-style-type: none"> Visual Inspection of wayfinding and fencing provision within the EEAs; and Monitoring checks to review the effectiveness of disturbance reduction measures upon species and habitats. Review of condition and establishment of created and enhanced habitats within EEAs, particularly where there is public access.



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