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Date
December 2024

NORTH HYKEHAM RELIEF ROAD
LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN (BNG)

TRANSPORT

NORTH HYKEHAM RELIEF ROAD
LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN (INC BNG) - CONDITION 14

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P05	25/10/2024	SB	RM	IG	Amendments following council commentsUpdates to resolve comments from National Highways
P04	17/12/24	SB	RM	IG	Amendments following council comments
P03	07/11/24	AB	BW	AV	Update following BB comments
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BNG AUDIT AND MONITORING SCHEDULE

1. INTRODUCTION

1.1 Purpose of the Management Plan

This Landscape and Ecological Management Plan (LEMP) has been produced by The Environment Partnership (TEP) Limited on behalf of Ramboll UK Limited. This plan provides a framework for the long-term landscape management and maintenance of the proposed development. This plan details the appropriate maintenance of both retained and newly created habitats at North Hykeham Relief Road (NHRR) (hereby referred to as the 'Site').

The proposed development of hard landscape infrastructure will take 3 years to complete with several soft landscape elements to follow. These landscape and habitat features have been delayed within the metric calculation to account for the 3-year delay period. Therefore, these habitats should start after the first planting period following development year 3. To ensure the 30-year management and monitoring period is completed the 3-year commencement delay extends this to 33 years in total.

1.2 Scope of the Management Plan

This LEMP covers all areas of landscaping within the Site including amenity grassland, woodland planting and hedgerow planting.

The LEMP has been prepared to support the delivery of Biodiversity Net Gain (BNG) across the proposed and retained habitats on and off Site for a period of 30 years.

The BNG commitment is articulated in Biodiversity Metric Calculation Tool (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30015), the Biodiversity Design Stage Report (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30014) and current and target conditions of each habitat is detailed in Chapter 3.0.

1.3 Structure of the Management Plan

Chapter 2.0 provides a summary of the factors influencing management and a Site analysis. Chapter 3.0 outlines the long-term aims and objectives for management and Chapter 4.0 sets out how the success of the plan will be monitored, reviewed and updated over time.

The following documents are appended to this LEMP:

- Appendix 1 provides a table of Maintenance Operations;
- Appendix 2 summarises relevant legislation; and
- Appendix 3 contains the summary of the BNG commitment for the Site and BNG Audit and Monitoring Schedule.

1.4 Site Location

The application Site can be seen in Figure 1 below (Ref: NHRR-TEP-VES-MP-LE-30030) (estimated central grid reference: SK 96193 64375). It is approximately 8km in length. The proposed NHRR, previously known as the Lincoln Southern Bypass, will connect the recently constructed Lincoln Eastern Bypass with the Lincoln Western Bypass. The NHRR will complete a full circular ring around Lincoln city centre completing the A46 - Strategic Road Network.

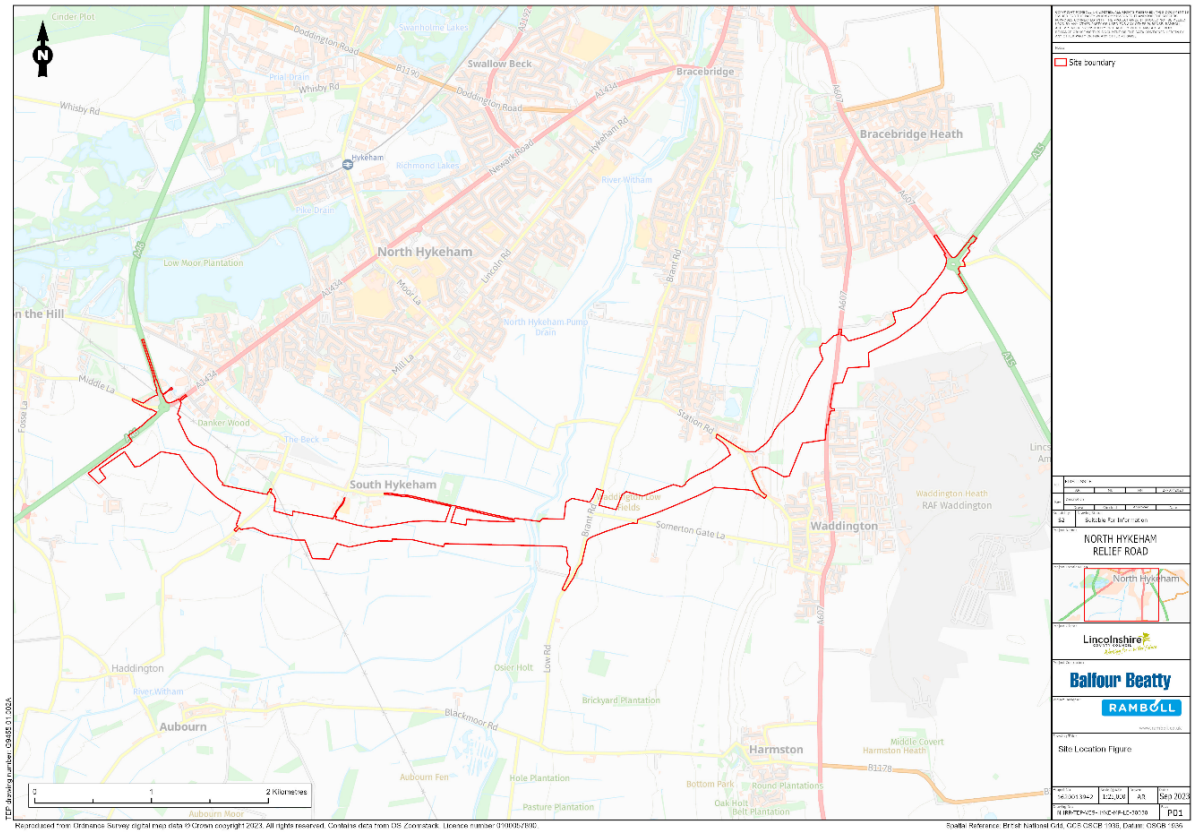

Figure 1: Site Location and Context

1.5 Planning and Development Context

A full planning application (planning application reference: 23/1447/CCC) was submitted to Lincolnshire County Council (LCC) on the 31st October 2023 for the construction of a relief road between the A46 Hykeham Roundabout and the A15 Sleaford Road Roundabout at the end of the Lincoln Eastern Bypass, with junctions at South Hykeham Road, Brant Road and Grantham Road. Full details of the proposals are documented in Chapter 4 of the Environmental Statement (Ref: NHRR-RAM-EGN-HYKE-RP-LA-30009).

The full planning application was subsequently granted permission on the 13th May 2024, subject to conditions, including Condition 14.

"Condition 14 - Notwithstanding the details in the documents and drawings hereby approved, prior to the commencement of development a Biodiversity Gain Plan and a Landscape and Ecological Management Plan shall be submitted to and approved in writing by the County Planning Authority. The required plans shall accord with the national Biodiversity Metric (3.1) and the Delivering

Biodiversity Net Gain in Central Lincolnshire (April 2023) good practice requirements for biodiversity net gain assessment, and shall set out (with appropriate supporting evidence):

> *a. details, including planting specifications, aftercare and long-term management, of the steps to be taken to minimise the adverse effect of the development on the biodiversity of the on-site habitat and any other habitat;*
> *b. the pre-development biodiversity value of the onsite habitat;*
> *c. details, including planting specifications, species, numbers, spacing and positions, aftercare and long-term management, of all landscape and biodiversity net gain measures;*
> *d. the post-development biodiversity value of the onsite habitat;*
> *e. any registered off-site biodiversity gain allocated to the development and the biodiversity value of that gain in relation to the development; and*
> *f. any biodiversity credits purchased for the development.*

The approved Biodiversity Gain Plan and Landscape and Ecological Management Plan shall be implemented in full in the first available planting season following the confirmation of the written approval from the County Planning Authority and the required habitats maintained for a period of not less than 30 years.

Reason: To secure landscaping and biodiversity net gain; in the interest of the visual amenity of the area; to ensure that the planting/landscaping implemented at the site does not attract or provide a habitat for those large and/or flocking bird species hazardous to aviation safety; and to address the requirements of Lincolnshire County Council Highways, National Highways, North Kesteven District Council and the Ministry of Defence"

This LEMP has been written to part discharge Condition 14 alongside the Biodiversity Gain Plan (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30024).

1.6 Biodiversity Net Gain

TEP has prepared a Biodiversity Metric Calculation Tool (DEFRA 3.1) for the Site, summarised in Appendix 3.

The aims of the Biodiversity Metric Calculation Tool are to:

- Quantify and score the baseline habitat, linear (hedgerows) and river/stream biodiversity units on the Site; and
- Identify and score the Biodiversity Units (BU) to be lost due to the proposed development;
- Identify and score the BU to be created through Site landscaping.

A Biodiversity Gain Plan has been produced to part discharge Condition 14 alongside this LEMP, the Biodiversity Gain Plan (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30024) demonstrates how the Site will achieve BNG.

The BU within the Site will be delivered as follows:

1.6.1 Habitat Creation

New woodland and woodland edge planting, native tree planting, native hedgerow planting, wildflower enriched grassland, wet grassland, wildlife ponds and marginal planting is proposed within the new development. Habitat creation will be undertaken on land that is currently predominantly used for agriculture. Each new habitat has a target condition that should be achieved

within the lifetime of this 30-year LEMP. Some habitats reach their target condition quickly, others take considerably longer.

1.6.2 Habitat Retention

Several existing habitats will be retained at their current baseline condition and will not provide a net gain contribution. However, as these habitats contribute to the overall BU at the Site, they are considered in this LEMP to ensure they do not degrade and impact on the total BU on Site.

1.7 Baseline Calculation

A baseline biodiversity calculation of the Site was undertaken by TEP in March 2024 in line with the UK Habitat Classification User Manual (2020) and the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).

Table 1 below summarises the baseline calculation for habitat on the Site.

Table 1: Biodiversity Baseline Calculation

Primary Habitat Description (UK Habitat Classification)	Total BU (Baseline)
Habitat Units	
Cereal Crops	241.33
Cereal Crops Winder Stubble	0.80
Non-Cereal Crops	70.58
Temporary Grass and Clover Keys	33.68
Modified Grassland	96.73
Other Neutral Grassland	28.55
Blackthorn Scrub	0.11
Bramble Scrub	4.04
Hawthorn Scrub	1.81
Mixed Scrub	7.43
Ornamental Lake or Pond	0.00
Ponds (Non-Priority Habitat)	0.67
Developed Land; Sealed Surface	0.00
Introduced Shrub	0.04
Vacant/Derelict Land/Bare Ground	1.21
Vegetated Garden	2.83
Other Woodland; Broadleaved	14.38
Other Woodland; Mixed	0.10
Urban Tree	9.14

Hedgerow Units	
Native Species Rich Hedgerow – Associated with a Bank or Ditch	17.10
Native Hedgerow with Trees – Associated with Bank or Ditch	2.09
Native Hedgerow	14.05
Native Hedgerow with Trees	67.05
Native Species Rich Hedgerow	68.13
Native Species Rich Hedgerow with Trees	3.98
Hedge Ornamental Non-Native	0.51
Native Species Rich Hedgerow with Trees – Associated with a Bank or Ditch	16.29
Line of Trees (Ecologically Valuable)	1.98
Line of Trees	1.84
River Units	
Ditches	44.57
Other Rivers and Streams	2.28
Total on-site baseline Habitat Units	513.41
Total on-site baseline Hedgerow Units	192.98
Total on-site baseline River/Ditch Units	46.84

1.8 Units Retained

Table 2 summarises the habitats retained at their current condition within the development.

Table 2: Biodiversity Retained Calculation

Primary Habitat Description (UK Habitat Classification)	Total BU (Retained)
Habitat Units	
Cereal Crops	98
Cereal Crops Winder Stubble	0.8
Non-Cereal Crops	29.52
Temporary Grass and Clover Keys	12.55
Modified Grassland	35.44
Other Neutral Grassland	9.77
Blackthorn Scrub	0.11
Bramble Scrub	1.50

Hawthorn Scrub	1.56
Mixed Scrub	2.66
Ornamental Lake or Pond	0.00
Ponds (Non-Priority Habitat)	0.23
Developed Land; Sealed Surface	0.00
Introduced Shrub	0.04
Vacant/Derelict Land/Bare Ground	0.79
Vegetated Garden	0.54
Other Woodland; Broadleaved	1.78
Other Woodland; Mixed	0.10
Urban Tree	0.97
Hedgerow Units	
Native Species Rich Hedgerow – Associated with a Bank or Ditch	10.03
Native Hedgerow with Trees – Associated with Bank or Ditch	13.73
Native Hedgerow	5.71
Native Hedgerow with Trees	0.87
Native Species Rich Hedgerow	27.55
Native Species Rich Hedgerow with Trees	26.17
Hedge Ornamental Non-Native	0.20
Native Species Rich Hedgerow with Trees – Associated with a Bank or Ditch	10.03
Line of Trees (Ecologically Valuable)	0.00
Line of Trees	0.57
River Units	
Ditches	11.86
Other Rivers and Streams	0.00
Total on-site baseline Habitat Units Retained	196.22
Total on-site baseline Hedgerow Units Retained	84.88
Total on-site baseline River/Ditch Units	11.86

1.9 Post-Development BNG Calculation

A post development biodiversity calculation of the Site was undertaken by TEP in March 2024 in line with the UK Habitat Classification User Manual (2020) and the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).

Table 3 below summarises the post development biodiversity calculation for habitat on the Site.

Table 3: Post Development Biodiversity Calculation

Primary Habitat Description (UK Habitat Classification)	Total BU (Post-Development)
Habitat Units	
Cereal Crops	20.41
Developed Land; Sealed Surface	0.00
Mixed scrub	11.26
Modified Grassland	1.06
Non-Cereal Crops	2.07
Other Neutral Grassland	442.07
Other Woodland; Broadleaved	40.11
Ponds (Non-Priority Habitat)	0.45
Temporary Grass and Clover Keys	1.27
Urban Tree	14.81
Hedgerow Units	
Native Species Rich Hedgerow	140.72
River/Ditch Units	
Culvert	1.43
Ditch	43.38
Total on-site baseline Habitat Units	564.40
Total on-site baseline Hedgerow Units	140.72
Total on-site baseline River/Ditch Units	44.81

1.11 BNG Summary

The BNG Summary for the whole site is shown below in Figure 2.

On-site baseline	*Habitat units*	513.41
	Hedgerow units	192.98
	River units	46.84
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	730.38
	Hedgerow units	225.60
	River units	55.25
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	42.26%
	Hedgerow units	16.90%
	River units	17.94%
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	216.97
	Hedgerow units	32.61
	River units	8.40
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	42.26%
	Hedgerow units	16.90%
	River units	17.94%
Trading rules Satisfied?		Yes ✓

Figure 2: BNG Summary

Based on the Scheme footprint alone, the headline results indicate a gain of 42.26% which equates to 216.97 Biodiversity Units (BU) (42.26) for area-based habitats, a net gain of 32.61 BU (16.90%) for linear habitats/hedgerows, and a net gain of 8.40 BU (17.94%) for river units.

1.12 Review and Formalisation of this Management Plan

This LEMP has been prepared to demonstrate that measurable BNG can be delivered through Site landscaping.

This LEMP is a key part of delivery of the intended BU. It requires the landscape manager to certify that:

- newly created habitats are on course to meet their target condition;
- existing habitats have been retained; and
- any remedial measures are in place to address shortfalls in target condition.

Further details of how the LEMP will be reviewed and updated are provided in Chapter 4.0.

2. SITE MANAGEMENT CONSIDERATIONS

2.1 Responsibility for Site Management

During the defect's liability period, landscape maintenance and replacement of failed planting will be completed by the landscape contractor who has implemented the scheme.

Following the defects liability period, Lincolnshire County Council (LCC) Highways Department will be responsible for operational management and maintenance of the landscape within the Site.

LCC Highways Department will be responsible for operational management and maintenance of the landscape within the Site. LCC Highways Department will ensure that management complies with the guidelines set out in this LEMP. LCC Highways Department will have a contractual responsibility to ensure the site is maintained appropriately to deliver the BU committed to as part of the long-term management of the site.

The River Witham (main river) runs centrally through the Site; this is to be solely maintained and managed by the Environment Agency.

2.1.1 Health and Safety

Balfour Beatty will retain ultimate responsibility for the health and safety of the Site until such time as the open space and landscaping associated is transferred to LCC Highways Department. The Site will be subject to informal inspections and a formal quarterly inspection by LCC Highways Department.

Whenever the Site is visited, any deficiencies in safety provision will be noted and acted upon.
The appointed managing organisation is responsible for complying with the provisions of the Health and Safety at Work Act 1974.

All machinery and apparatus brought onto the Site shall be safe and maintained to a standard that will not breach provisions within the Health and Safety at Work Act 1974 or any other statutory obligations.

LCC Highways Department shall be adequately trained and sufficiently competent to carry out maintenance operations without causing a Health and Safety risk to themselves or other uses of the Site.

All works shall be undertaken in accordance with the relevant codes of practice. Appropriate machinery shall be used inclusive of adequate personal protective equipment to avoid harm to themselves or any other persons.

2.1.2 Biosecurity

LCC Highways Department should have a sufficient awareness of new and ongoing biosecurity threats, and the necessary precautions to avoid their spread should be undertaken on Sites where they are known or suspected.

New findings of suspected non-indigenous plant pests and diseases should be reported to the Plant Heath and Seeds Inspectorate or Forestry Commission - Forest Research Tree Health Diagnostic and Advisory Service or both.

2.2 Management Objectives

The long-term management objectives of this LEMP are:

- To maximise the BU delivered by newly created habitats;
- To ensure the scheme is successfully maintained;
- To safeguard and enhance the biological and physical integrity of the Site;
- To ensure that retained and newly created habitats and green bridge are managed to enhance their biodiversity and connectivity as foraging and commuting habitat for high value wildlife; and
- To comply with legal obligations and constraints.

2.3 Ecological Factors

2.3.1 Designations

2.3.1.1 Statutory

There is one statutory designation within 1km of the Site:

- Whisby Park Nature Reserve (Local Nature Reserve (LNR)) – 1km north of the red line boundary.

2.3.1.2 Non-Statutory

There are three non-statutory locally designated wildlife sites (Local Wildlife Sites (LWS)) and nine non-statutory recommended locally designated wildlife sites (Recommended Local Wildlife Sites (RLWS)), located within the Site or within 1km:

Non-Statutory:

- River Witham, Bracebridge to South Hykeham (LWS) – within the red line boundary;
- Brant Washlands (LWS) – 227m south of the red line boundary; and
- North Hykeham Meadows (LWS) – 596m north of the red line boundary.

Non-Statutory:

- Witham Corridor, South of Bracebridge (RLWS) – within the red line boundary;
- Bloxholm Lane (RLWS) – within the red line boundary;
- Waddington Grassland (Viking Way) (RLWS) – within the red line boundary;
- Ski World (RLWS) – 126m northwest of the red line boundary;
- North Hykeham Gravel Pit (RLWS) – 153m northwest of the red line boundary;
- North Hykeham Hayfield (RLWS) – 465m north of the red line boundary;
- Teal's Lake (RLWS) – 707m northwest of the red line boundary;
- Whisby Nature Park, Whisby Pits Complex (RLWS) – 709m northwest of the red line boundary; and
- Hykeham Railway Line, Whisby Nature Park (RLWS) – 976m northwest of the red line boundary.

2.3.2 Habitats and Species of Principle Importance in England

Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006) requires a list of habitats and species of principal importance in England to be drawn up.

Local Biodiversity Action Plans provide an indication of the relative value given to existing habitats and species. The Lincolnshire Biodiversity Action Plan (LBAP) has been used when assessing the value of the habitats and species present within the Site.

The following priority species and habitats listed in the LBAP will be sustained within the Site.

Priority Habitats (LBAP):

- Ponds, lakes and reservoirs;
- Arable field margins;
- Rivers, canals and drains;
- Lowland mixed deciduous woodland; and,
- Hedgerows and hedgerow trees.

Priority Species (LBAP):

- Grey Partridge;
- House Sparrow;
- Reed Bunting;
- Song Thrush;
- Swift;
- Yellow Wagtail;
- European Water Vole;
- Soprano Pipistrelle;
- Barbastelle Bat;
- Brown Long Eared Bat;
- European Eel;
- Spined Loach;
- Barn Owl;
- White Clawed Crayfish;
- Skylark;
- Turtle Dove;
- Yellowhammer;
- Bullfinch;
- Linnet;
- Starling; and
- Tree Sparrow.

2.3.3 Ecological Surveys

Below is a list of the ecological surveys carried out at the Site:

- Phase 1 Habitat Survey (TEP, September 2022, updated June 2023);
- Amphibian Survey (TEP, June 2022, updated September 2023 and updated in August 2024);
- Badger Survey (TEP, September 2022, updated August 2023 and updated in August 2024);
- Breeding Bird Survey (TEP, March 2022, updated September 2023 and updated in August 2024);
- Bat Survey (TEP, September and October 2022, updated March 2023);
- Hedgerow Survey (TEP, September 2023);
- Winter Bird Survey (TEP, October 2022 - March 2023); and,
- Water Vole and Otter Survey (TEP, September 2022, updated March 2023 and updated August 2024).

2.3.4 Chemical Use

The use of herbicide will be minimised wherever possible. Hand weeding will be utilised when feasible and the use of biodegradable mulch matts around new planting will assist with suppressing weeds.

Glyphosate formulations containing the surfactant Polyethoxylated tallow amine (POEA) should not be used within proximity to waterbodies or other wetland habitats as it can cause high amphibian larvae mortality.

2.3.5 Habitats

The following habitats will be created within the Site:

- Woodland planting;
- Hedgerow planting;
- Amenity grassland;
- Wildflower enriched grassland;
- Wet grassland;
- Wildlife pond;
- Sustainable Urban Drainage Systems (SuDS) and swales; and
- Marginal planting.

2.3.5.1 Trees and Woodland

Various trees will be retained within the Site. In addition, further native trees and woodland planting (including edge planting) is proposed, which will increase the habitat connectivity by providing important foraging and commuting habitat for birds and bats. The proposed planting will be used to mitigate the loss of scattered trees and areas of woodland. The planting mix will include a mix of non-native and native species including species such as hawthorn, blackthorn, field maple, downy birch and common oak.

The Arboricultural Impact Assessment (TEP ref: NHRR-TEP-ELS-HYKE-DR-LE-30001), confirmed that 30 trees and tree groups across the Site are protected by tree preservation orders (TPO).

The following TPOs are present within the red line boundary:

- Waddington (40 Station Road) TP0 2007- N722;
- Waddington (The Lodge) TPO 1969 - NK28; and

- Waddington (Station Road) TPO 1994 - N363.

Where a TPO is in place, lopping, topping, felling, uprooting or wilful damage caused to a tree is prohibited and such actions may be prosecuted and incur an unlimited fine. Works to TPO protected trees must only be undertaken with the written consent of the local authority.

An Arboricultural Method Statement (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30023) has been written and details appropriate instructions relating to tree works and tree protection measures to be implemented during the construction process.

2.3.5.2 Hedgerows

Several hedgerows will be retained as part of the scheme which are largely associated with the field boundaries and where the Site adjoins neighbouring properties. Further native hedgerows are proposed as part of the landscaping scheme, providing a buffer and screening for the surrounding settlements. Native hedgerows will increase the habitat connectivity by providing important foraging and commuting habitat for birds and bats. The planting mix will include a mix of non-native and native species including hazel, common hawthorn, common honeysuckle, blackthorn and elder.

Hedgerows are a S41 habitat of principal importance under the Natural Environment and Rural Communities (NERC) Act (2006).

2.3.5.3 Grassland

Amenity, wildflower enriched, and wet grasslands are proposed throughout the development and within the ponds. Diverse grasslands will offer potential habitat to a wide range of species including birds, bats, small mammals and amphibians.

2.3.5.4 Water Bodies

One wildlife pond and ten attenuation basins are proposed across the development, forming part of the Site's SuDS systems in addition to providing suitable habitat for several species. The attenuation basins, swales and catch-pits will prevent run off and silt entering any wet ditches as well as providing important habitats for amphibians such as common toads across the Site.

The River Witham is a main river is in the centre of the Site, the river is approximately 20m wide and flows in a southerly direction. The River Witham is identified on the Environment Agency's Statutory Main River Map, therefore the Environment Agency will be responsible for all maintenance, improvement, flood risk and construction works associated with the River Witham. As identified in the LBAP, rivers, streams and canals are a local priority habitat for Lincolnshire.

2.3.5.5 Invasive Non-Native Species

The Phase 1 Habitat Survey (Ref: Ref: NHRR-TEP-VES-HYKE-MP-LE-30003.11 Rev P02) identified a series of Invasive Non-Native Species (INNS) including Japanese knotweed *Reynoutria japonica* and variegated yellow archangel *Lamiastrum galeobdolon subsp. argentatum* along Station Road, and wall cotoneaster *Cotoneaster horizontalis* within a hedgerow to the east of Hykeham Roundabout.

An INNS Method Statement (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30029) will be implemented to identify the preferred treatment method prior to works commencing on Site.

INNS are defined as those which are either listed on Part II Schedule 9 of the Wildlife and Countryside Act (1981) as amended, Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019 and/or listed as an Invasive Alien Species of Union concern under Regulation

(EU) 1143/2014. Under both the Wildlife and Countryside Act (1981) and the Invasive Alien Species (Enforcement and Permitting) Order 2019, it is an offence to allow plants referenced to grow in the wild (including via moving contaminated soil or plant cuttings). Liability may also extend in situations where a landowner has knowingly permitted the spread of invasive non-native species on to neighbouring land.

2.4 Species

2.4.1.1 Amphibians

The Ecology Desktop Study (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30004), returned forty records of common toad and no records of great crested newt (GCN) within 2km of the Site. No records of class licence returned or pond survey data for GCN was returned from between 2017 and 2019 and within 2km of the Site. Additionally, no Natural England mitigation licences were identified within 2km of the Site. TEP undertook an Amphibian Survey in June 2022, updated in September 2023– details of the Survey can be found in Ref: NHRR-TEP-EGN-HYKE-RP-LE-30003. Additional surveys were conducted in April 2024, results can be found in Ref: NHRR-TEP-EGN-HYKE-RP-LE-30025.

Great crested newts are protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended and the Conservation of Habitats and Species Regulations 2017 (as amended). Under this legislation it an offence to intentionally kill, injure or capture GCN. It is also an offence to intentionally or recklessly damage, destroy or obstruct access to places used by GCN for shelter or protection or to disturb them whilst they are occupying these habitats.

Common toads are listed as a species of principal importance under Section 41 of the NERC Act (2006) alongside other native amphibian species.

2.4.1.2 Water Voles and Otter

The Ecological Desktop Study (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30004) returned sixty-two records of water vole and seventy-two records of otter within 2km of the site. The closest record for water vole was 177m and otter was 38m from the Site. TEP undertook Water Vole and Otter Surveys in September 2022, June 2023, September 2023 and August 2024 – details of the Survey can be found in Ref: NHRR-TEP-EGN-HYKE-RP-LE-30009. The survey concluded no evidence of water vole within any of the ditches, watercourses and within a 200m buffer of the Site.

Both species are fully protected under Schedule 5 of the Wildlife and Countryside Act (1981) and are listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities Act (2006). Otters are also protected under the Conservation of Habitats and Species Regulations 2017 (as amended). The deliberate capturing, disturbing, injuring or killing of either species is prohibited, as is damaging or destroying a breeding site or resting place.

2.4.1.3 Birds

The Ecological Desktop Study returned ninety-four notable species within 2km of the site. This includes for fifty-five Wildlife and Countryside Act Schedule 1 (WCA 1) species, however most of these species do not have the correct habitat type to be able to breed on site (e.g., reeds or waterbodies).

<u>Breeding Bird Survey:</u>

TEP undertook a Breeding Bird Survey in March 2022 which was then updated in September 2023 – details of the Survey can be found in Ref: NHRR-TEP-EGN-HYKE-RP-LE-30008. Additional tree aerial inspection and nocturnal bat surveys were undertaken in July 2024 around Station Road, although no additional species were found.

Winter Bird Survey:
TEP undertook a Winter Bird Survey from October 2022 to March 2023 – details of the Survey can be found in Ref: NHRR-TEP-EGN-HYKE-RP-LE-30007. The survey confirmed the habitat on site provides nesting and foraging opportunities for birds which will be enhanced through further habitat creation. In addition, several bird boxes will be installed across the Site to provide further habitat opportunities for nesting. No additional surveys were undertaken in 2024.

All UK wild birds are protected while at the nest under the Wildlife and Countryside Act (1981). Effectively, this means that if removal of habitats (which can include buildings, trees, hedges, scrub and grassland) cannot be timed to avoid the bird breeding season (March to August inclusive), then a survey by a suitably experienced ecologist will be required to ensure no nesting birds will be affected. There is generally no process to gain a licence to disturb nesting birds; therefore, if active nests are present works will need to avoid the area of the nest until the young have fledged.

Due to the presence of birds and the site being near RAF Waddington a Bird Hazard Management Plan (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30022) has been prepared to mitigate the risk of bird strike as a direct result of the development does not significantly increase.

2.4.1.4 Bats

TEP undertook a Bat Survey in September and October 2022, which was updated in March 2023 – details of the Survey can be found in Ref: NHRR-TEP-EGN-HYKE-RP-LE-30013.

Barbastelle bats were recorded across the site but not in all static monitoring locations, the survey concluded that barbastelles are utilizing the site at a sustained level in 2022 and 2023. A Barbastelle Bat Technical Note was produced in 2023, see Ref: NHRR-TEP-EGN-HYKE-RP-LE-30019. No additional surveys were undertaken in 2024. In addition, several bat boxes will be installed across the Site to provide further habitat opportunities for roosting.

Existing hedgerows proposed woodland and woodland edge planting and the River Witham, which runs through the centre of the Site, provides important habitat for foraging and commuting bat species. Additional hedgerow planting will provide further opportunities for bats. A green bridge is proposed named 'South Hykeham Bat Bridge' which is part of the embedded mitigation to reduce impacts on Barbastelle bats.

Bats and their roosts are protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended and the Conservation of Habitats and Species Regulations 2017 (as amended).

2.4.1.5 Badger

TEP undertook a Badger Survey in September 2022, which was subsequently updated in August 2023 and in August 2024 details of the survey can be found in Ref: NHRR-TEP-EGN-HYKE-RP-LE-30011.

Proposed trees, woodland, woodland edge and hedgerows planting will mitigate for the loss of foraging habitat and will provide a corridor for badger movement.

Badgers and their sets are safeguarded under the Protection of Badgers Act (1991). Under this legislation it is illegal to interfere, damage or destroy a sett, obstruct access to a sett, or disturb a badger whilst it is occupying a sett.

If intrusive or works likely to cause disturbance are required within 30 m of any active sett, a licence will be required from Natural England. In addition to obtaining a licence, a precautionary working method statement should also be implemented during future Site works to ensure no harm or injury comes to foraging or ranging badger within the Site.

2.5 Social Factors

2.5.1 Public Amenity

The following Public Rights of Way (PRoWs) are present within the Site and are being retained as part of the Scheme:

- PRoW Public Footpath - 7030 (Provides access on foot from the roundabout at A46 to South Hykeham village, in a west-east direction);
- PRoW Public Footpath - 7571 (Provides access on foot from Hill top road to Bracebridge health, in a south-north direction);
- PRoW Public Footpath - 5921 (Provides access on foot from Waddington town centre to Bracebridge Heath in a north-south direction); and
- PRoW Public Footpath - 5922 (Provides access on foot from Somerton Gate Lane to Waddington town centre in a north-south direction).

The balance of both wildlife conservation and public amenity interests must be carefully managed in places due to areas of public access.

2.6 Legal Factors

Management of the Site must be in line with all legislation relating to health and safety and the environment and information detailed in the planning permission. A review of the relevant legislation affecting Site management is at Appendix 2.

3. MANAGEMENT INTENTIONS AND OPERATIONS

3.1 Landscape Elements

The Site will comprise the following landscape elements as shown on the Landscape Masterplan: Sheets 1 - 17 (Ref: NHRR-TEP-ELS-HYKE-DR-LS-30001-30018), all landscape elements will be maintained in line with the Planting Plans: Sheets 1-17 (Ref: NHRR-TEP-ELS-HYKE-DR-30020-30037):

- Retained Trees;
- Tree Planting;
- Woodland and Woodland Edge Planting;
- Retained Hedgerow;
- Hedgerow Planting;
- Amenity Grassland;
- Wildflower Enriched Grassland;
- Wet Grassland & SuDS;
- Swales and Ditches;
- Wildlife Pond and Marginal Planting;
- Insect Mounds;
- Amphibian Hibernacula;
- Bat Boxes;
- Bird Boxes;
- Fencing; and
- Gates.

A breakdown of each landscape element is provided below including key management intentions, the Target Condition in relation to BNG, and key issues which require addressing to achieve the Target Condition.

Habitat units provided on site are shown in Table 3 which demonstrates the collective unit value across the site.

3.2 Site Wide

3.2.1 Management Intention

The Site will be kept free from litter through regular cleansing.

The proposed development of hard landscape infrastructure will take 3 years to complete with several soft landscape elements to follow. These landscape and habitat features have been delayed within the metric calculation to account for the 3-year delay period.

Therefore, these habitats should start after the first planting period (year 3). To ensure the 30-year management and monitoring period is completed, the 3-year commencement delay extends this management plan to 33 years in total.

It is important that the landscape and habitat areas are closely monitored within the first 5 years of establishment, and intervention measures are included as required to ensure successful establishment.

Regular inspections will ensure any health and safety hazards are identified and made safe.

Large areas of cropland are being used as temporary storage areas up to year 3, following this they will be re-instated as cropland and managed under agricultural land use. Croplands contribute to overall biodiversity unit value for the scheme. The management of the cropland areas will be completed in line with suitable operations to yield crop, therefore no management prescriptions are included within this LEMP.

This LEMP should be ready in conjunction with the Construction Environmental Management Plan (Ref: NHRR-RAM-EGN-HYKE-RP-LE-00010) and the Soils Management Plan (Ref: NHRR-RAM-EGT-HYKE-RP-CE-00001).

3.2.2 Chemical Use

It should be recognised that plants considered as weeds can provide suitable habitat for invertebrates.

Weed control where feasible should be undertaken by hand pulling. However, in certain instances, herbicide may be the most effective measure to remove unwanted species during the planting establishment period. Where herbicide application is needed this should be in small, controlled areas and should only target the undesirable species. Herbicides should comply with the Control of Pesticides Regulations as amended (1997) and be on the current list of approved products.
Consideration would need to be given to the fact that chemicals can prevent growth of grasses and woody species in landscape schemes.

Where herbicides are to be used within 10m of waterbodies only formulations of Glyphosate which are approved for use close to water must be used. The Environment Agency must be notified, and an authorisation letter obtained (Form AqHerb01: Agreement to use herbicides in or near water).

Fertiliser is not to be applied to any of the meadow areas as down on the Landscape Masterplan: Sheets 1 - 17 (Ref: NHRR-TEP-ELS-HYKE-DR-LS-30001-30018) to conserve the development of a diverse sward.

3.2.3 Maintenance Operation

3.2.3.1 Site Cleansing

For areas of the Site which have public access, a litter pick will be carried out quarterly. Foreign Objects will be removed as part of this site cleanse especially around RAF Waddington, to ensure there is no interference with the RAF Waddington Site.

The remaining areas of the Site which have limited public access will be carried out bi-annually once in January and once in September. All litter will be removed and disposed of in an authorised manner.

Fly tipping will be removed as soon as practicable.

3.2.3.2 Site Inspections

An inspection of the whole Site will be undertaken quarterly to identify any health and safety hazards and arrange for them to be made safe as far as is practicable.

Results from the quarterly Site inspections will be compiled and presented within the annual report which will be used in the review of the LEMP as detailed in Chapter 4.0.

3.3 Retained Trees

3.3.1 Management Intention

Trees will be retained where possible throughout the Site as part of the development and will be incorporated within the landscape proposals. The retention of trees within the Site will safeguard existing habitat which will support habitat connectivity for several species.

The Arboricultural Method Statement addresses root protection areas for retained vegetation near earthworks.

An Arboriculturist must be consulted prior to undertaking any major tree works.

3.3.2 Maintenance Operation

3.3.2.1 Tree Survey

A trained arboriculturist will carry out an inspection of mature trees within or adjacent to areas of public access to check for damage and disease and to maintain appropriate height clearances for safe pedestrian access. The survey will be carried out every three years or following a storm. Tree inspections will also include trees within falling distance of the carriageway and third party property.

3.3.2.2 Cyclical Maintenance

Maintenance to mature trees will be informed by the tree survey.

Wood under 250mm diameter collected from thinning, pruning, brashing and vegetation clearance will, wherever possible, be chipped and used sustainably on Site for mulching.

Wood greater than 250mm diameter will be logged and used to create deadwood piles in suitable woodland locations.

The deadwood following cyclical maintenance can be used within the Site for upkeeping Insect Mounds.

Maintenance will be undertaken on an annual cyclical programme (5 - 10-year cycle) and will be carried outside of bird nesting season. If works are required to any trees with bat roosting potential, advice must be sought from a licensed bat ecologist prior to any works commencing.

Trees covered by a Tree Preservation Order (TPO) are protected by law from felling or uprooting, pruning including 'topping/lopping' and wilful damage or destruction. Prior to any tree surgery and/or felling being carried out it will be necessary to apply to the local planning authority to gain consent for the works.

3.4 Tree Planting

3.4.1 Management Intention

Tree planting is proposed across the whole Site mainly at each junction and within the woodland planting. Trees will provide connectivity to the wider environment and will provide additional habitat for several species.

Tree planting has been designed to follow the requirements of the Design Manual for Roads and Bridges (DMRB) LD 117 (Landscape Design) in relation to proximity to carriageway planting.

The target condition of tree planting is detailed within the BNG Metric Calculation Tool (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30015).

Table 4 summarises the Target Condition and Timeframe to achieve the target condition, and details key management considerations.

Table 4: BNG Target Condition for Tree Planting

Biodiversity Metric Calculation Summary	Current Condition	Target Condition	Timeframe to achieve Target Condition	Key Considerations
Urban Tree	N/A	Moderate	30 (3-year delay)	- Monitor tree health to ensure there is no adverse effects from herbicide use and vandalism. - Where possible micro-habitats for birds, mammals and insects will be created from maintenance operations these should be near the proposed trees.

3.4.2 Maintenance Operation

3.4.2.1 Weed Control

To reduce excessive competition, a weed free area will be retained around all trees and will be maintained through the installation of biodegradable mulch mats around the base of the trees.

Mulch mats will be inspected annually if found to be damaged, replacement will be completed as required.

3.4.2.2 Re-firming

Newly planted trees will require re-firming, as required.

3.4.2.3 Stakes and Ties

Proposed trees will be double staked, where required, the stakes and ties will be checked bi-annually and where required ties will be adjusted. Any broken or damaged stakes will be replaced and ties re-fixed at a slightly lower position, allowing for growth since planting. Remove stakes as necessary, when the tree is suitably established, approximately in Year 5.

3.4.2.4 Formative Pruning

Young trees will require formative pruning following a growth of 3m from their planting height, this will maintain a desirable shape as well as maintain health and vigour. Pruning and thinning of trees will be in accordance with BS 7370-4:1993 Recommendations for Maintenance of Soft Landscape (Other Than Amenity Turf).

Once the growth of 3m from their planted height has been obtained, crown pruning is desirable, and any dead or severely damaged trees will be felled and replaced accordingly.

3.4.2.5 Replacement of Failed Planting

Failed planting will be removed and replaced with the same species between November and March.

If there is a continuous failure of a certain species, this will be reviewed and, if appropriate, an alternate appropriate species will be planted instead.

3.4.2.6 Watering

Watering may be required during periods of drought in the first couple of years following planting.

Water should be applied to the base of the tree and should not be more than 20 litres, as required, between April and September.

3.4.2.7 Fertiliser

Apply slow-release multi-purpose plant food and soil improver in Autumn during the first 5 years after planting.

Any mulch matt used should be carefully lifted, and fertilizer applied direct to the top layer of soil at the manufactures recommended rate before mulch mats are refitted.

3.4.2.8 Post Establishment Maintenance

See Retained Trees.

3.5 Woodland and Woodland Edge Planting

3.5.1 Management Intention

Small parcels of woodland are proposed across the Site at each junction along the NHRR. The woodland edge planting areas will serve as a dynamic interface between the woodland creation and field layer, providing a gradation of habitat typologies and edge zones.

The woodland will provide suitable terrestrial habitat, and recreational opportunities for nearby residents, using the pedestrianised paths.

The woodland edge planting will provide suitable terrestrial habitat and wildlife value for birds and bats. Ground flora will be encouraged to provide a diverse habitat for nesting birds and amphibians. The target condition of woodland and woodland edge planting is detailed within the BNG Metric Calculation Tool (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30015).

The Target Condition, Timeframe to achieve its target condition and details key management considerations for are detailed in Table 5 for Woodland, and Table 6 for Woodland Edge Planting.

Table 5: BNG Target Condition for Woodland

Biodiversity Metric Calculation Summary	Current Condition	Target Condition	Timeframe to achieve Target Condition	Key Management Considerations
Other Woodland; Broadleaved	N/A	Moderate	18 (3-year delay)	- Ensure that there are no INNS present within the Woodland. - Monitor tree health to ensure there is no adverse effects from herbicide use and vandalism. - Where possible micro-habitats for birds, mammals and insects will be created from maintenance operations these should be near the proposed trees.

Table 6: BNG Target Condition for Woodland Edge Planting

Biodiversity Metric Calculation Summary	Current Condition	Target Condition	Timeframe to achieve Target Condition	Key Management Considerations
Mixed Scrub	N/A	Moderate	8 (3-year delay)	- Ensure that there are no INNS present within the Woodland. - Monitor tree health to ensure there is no adverse effects from herbicide use and vandalism. - Where possible micro-habitats for insects will be created from maintenance operations these should be near the proposed trees.
Other Woodland; Broadleaved	N/A	Moderate	18 (3-year delay)	- Ensure that there are no INNS present within the Woodland. - Monitor tree health to ensure there is no adverse effects from herbicide use and vandalism. - Where possible micro-habitats for insects will be created from maintenance operations these should be near the proposed trees.

3.5.2 Maintenance Operation

3.5.2.1 Weed Control

To reduce excessive competition, a weed free area will be retained around all trees and will be maintained through the installation of biodegradable mulch mats around the base of the trees. Mulch mats will be inspected annually if found to be damaged, replacement will be completed as required.

3.5.2.2 Re-firming

Newly planted trees will require re-firming as required.

3.5.2.3 Guards, Canes, and Ties

Where planting is protected by spiral guards and shelter guards, these will be checked annually alongside the canes or stakes. Any broken or damaged spiral guards and/or shelter guards will be replaced. Information relating to tree guards is detailed in the Landscape Specification (Ref: NHRR-TEP-ELS-HYKE-SP-LS-00002).

Remove guards as necessary, when the planting is suitably established, approximately in Year 5.

3.5.2.4 Pruning

Pruning will be undertaken to clear deadwood, promote healthy growth and produce desired growth of flowers, fruit, foliage, or winter colour as appropriate.

Dead, broken, damaged, diseased branches will be removed. Pruning will also include for clearing out crossing branches and branches growing toward the middle of the plant. Pruning will be carried out between December and February.

The material collected from pruning can be re-used and recycled on site to provide and upkeep the Insect Mounds. See management Operation of Insect Mounds below.

Any plants subject to vandalism or storm damage should be pruned straight away.

In the long term, consideration will be given to active management, e.g., cyclical thinning and coppicing to create greater structural diversity.

3.5.2.5 Watering

Young single stem trees (whips) planted during the dormant season will need little or no watering. This will allow the tree to naturally acclimatise to the location and will encourage roots to spread down in search of water.

Watering may be required during periods of drought in the first couple of years following planting.

3.5.2.6 Replacement of Failed Planting

Failed planting will be removed and replaced with the same species between November and March for deciduous and coniferous species, and between September and April for evergreen species.

If there is a continuous failure of a certain species, this will be reviewed and, if appropriate, an alternate appropriate species will be planted instead.

3.5.2.7 INNS

During the quarterly Site inspections, the presence of INNS will be assessed. If found to be present a treatment plan will be drawn up as required for each identified species.

3.5.2.8 Constraints

Any works required will be undertaken outside of the bird nesting season, between September and February. Should any works be required within the bird nesting season (March to August inclusive) an assessment will be undertaken by a suitably qualified ecologist before any works commence.

3.6 Retained Hedgerows

3.6.1 Management Intentions

Hedgerows will be retained around Station Road Bridge and will be maintained for their amenity and aesthetic value. The hedgerows will provide nesting, shelter and foraging opportunities for bats and birds. They will also provide a visual buffer from the surrounding towns and villages. Annual cuts in an 'A' shape will create a neat and formal structure within the landscape scheme.

3.6.2 Maintenance Operation

3.6.2.1 Hedgerow Cutting

Hedgerows will be cut in an 'A' shape to maintain a wide base for bird nesting and roosting. Hedgerow cutting will be cut on a rotational basis with one third cut every three years to retain foraging and sheltering opportunities. If possible, a 1m grass strip of species rich tussock grass will be left uncut next to the hedgerow to increase habitat potential and increasing connectivity.
The grass strip is to be cut simultaneously with the hedge cutting regime. Arisings will be collected and removed from Site.

Any hedgerow management will be carried out outside of the bird nesting season (between March and August inclusive). Should any works be required within the bird nesting season an assessment will be undertaken by a suitably qualified ecologist before any works commence.

Additional hedgerow cutting may be required from a health and safety perspective should there be a good growing season.

3.7 Hedgerow Planting

3.7.1 Management Intention

Two types of hedgerows mixes are proposed within the Site including a shrubby, and native hedgerow mix to provide suitable habitat for nesting birds and commuting bats. In addition, the hedgerows will provide additional screening for the surrounding landscape.

The target condition of hedgerow planting is detailed within the BNG Metric Calculation Tool (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30015).

Table 7 summarises the Target Condition, Timeframe to achieve its target condition and details key management considerations for Hedgerow Planting.

Table 7: BNG Target Condition for Hedgerow Planting

Biodiversity Metric Calculation Summary	Current Condition	Target Condition	Timeframe to achieve Target Condition	Key Management Considerations
Native Species Rich Hedgerow	N/A	Moderate	8 (3-year delay)	- Ensure hedgerows are in a healthy condition and grow to a width of 1.5m width and 1.5m height. - Ensure gaps in the hedgerows are replanted as required and mulch matts are replaced as required. - Ensure all hedgerows are free from INNS presence. - Adequate management and choice of planting location will ensure >90% of hedgerow is free from damage caused by human activities.

3.7.2 Maintenance Operation

3.7.2.1 Weed Control

To reduce excessive competition, a weed free area will be retained around all hedgerows and will be maintained through the installation of 1m wide biodegradable mulch mat sheet along the base of all hedgerows.

Mulch mat sheets will be inspected annually if found to be damaged, replacement will be completed as required.

3.7.2.2 Formative Pruning

Formative 'facing up' the hedgerow will establish dense branch growth annually in September for the first couple of years.

3.7.2.3 Spiral Guards

Where planting is protected by spiral and shelter guards, these will be checked annually alongside the canes or stakes. Any broken or damaged spiral and/or shelter guards will be replaced.

Remove guards as necessary, when the planting is suitably established, approximately in Year 5.

3.7.2.4 Re-firming

Newly planted hedgerow plants will require re-firming as required.

3.7.2.5 Replacement of Failed Planting

Failed planting will be removed and replaced with the same species between November and March for deciduous species and between September and April for evergreen species.

If there is a continuous failure of a certain species, this will be reviewed and, if appropriate, an alternate appropriate species will be planted instead.

3.7.2.6 Invasive Non-Native Species

During the quarterly Site inspections, the presence of INNS will be assessed. If found to be present a treatment plan will be drawn up as required for each identified species.

3.7.2.7 Hedgerow Cutting

The first cut to newly planted hedgerows is recommended within year 3 (dependant on growth) and will consist of cutting the hedgerow in an 'A' shape annually to provide suitable nesting habitats for birds. All hedge cuts must be undertaken using appropriate tools or machinery.

3.8 Amenity Grassland

3.8.1 Management Intention

Amenity grassland is proposed within the SuDS basins and roadside verges. Open areas of amenity grassland will be managed as required to maintain a tidy appearance.

The target condition of amenity grassland is detailed within the BNG Metric Calculation Tool (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30015).

Table 8 summarises the Target Condition, Timeframe to achieve its target condition and details key management considerations for Amenity Grassland.

Table 8: BNG Target Condition for Amenity Grassland

Biodiversity Metric Calculation Summary	Current Condition	Target Condition	Timeframe to achieve Target Condition	Key Management Considerations
Other Neutral Grassland	N/A	Moderate	8 (3-year delay)	- Ensure bracken is managed to reduce scrub encroachment. - Re-seed as required to ensure bare ground does not exceed 5%.
Modified Grassland	N/A	Poor	4 (3-year delay)	- Ensure bracken is managed to reduce scrub encroachment. - Re-seed as required to ensure bare ground does not exceed 5%.

3.8.2 Maintenance Operation

3.8.2.1 Grass Cutting

The grass within the SuDS area will be kept to a length of 25-50 mm 'walk on length' and arisings will be removed from site appropriately, where feasible. Bracken will be managed to reduce scrub encroachment.

Within the wider site 75mm will be achieved, all arisings will be removed from site where feasible.

3.8.2.2 Cultivating and Re-seeding

Any bare ground will be cultivated and re-seeded as required to successfully establish sward. This will be carried out annually between August and October.

3.9 Wildflower Enriched Grassland

3.9.1 Management Intention

Areas of wildflower enriched grassland are proposed throughout the Site to introduce ecological diversity and valuable wildlife habitats. The timing and frequency of grass cuts will be determined by management procedures required to maximise conservation benefits of desirable flora species and maintaining grassland habitats.

Species-rich grassland specified can be maintained as low intervention grassland with only occasional cutting.

The target condition of wildflower enriched grassland is detailed within the BNG Metric Calculation Tool (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30015).

Table 9 summarises the Target Condition, Timeframe to achieve its target condition and details key management considerations for Wildflower Enriched Grassland.

Table 9: BNG Target Condition for Wildflower Enriched Grassland

Biodiversity Metric Calculation Summary	Current Condition	Target Condition	Timeframe to achieve Target Condition	Key Management Considerations
Other Neutral Grassland	N/A	Moderate	8 (3-year delay)	- Ensure bracken is managed to reduce scrub encroachment. - Re-seed as required to ensure bare ground does not exceed 5%. - Remove and cut arising to reduce nutrient enrichment of the soil.

3.9.2 Maintenance Operation

3.9.2.1 Grass Cutting

The wildflower sward will be cut to a height of no less than 60mm every 6-8 weeks between April and September in the first year. Bracken will be managed to reduce scrub encroachment.

From year two onwards, the grass will be cut annually (150mm) once seed heads have dropped in late September.

Arisings will be left in situ for 24 hours to allow flower seed to disperse. The arisings will then be raked and removed from the Site to prevent nutrient enrichment and to retain the desired species composition.

Grass cutting will be avoided between March and August (inclusive) to prevent risk of disturbance and destruction to nesting birds.

The grass on top of the Amphibian Hibernacula will be left uncut to avoid disturbance to the refuge feature. See Amphibian Hibernacula maintenance below for further detail.

3.9.2.2 Cultivating and Re-seeding

Any bare ground will be cultivated and re-seeded as required to successfully establish sward. This will be carried out annually between August and October.

3.9.2.3 Fertiliser Use

Fertiliser is not to be applied to any of the wildflower areas to conserve the development of a diverse sward.

3.10 Wet Grassland and SuDS Systems

3.10.1 Management Intention

Wet Grassland will be implemented to the banks of the SuDS, including both the attenuation basins providing botanical diversity and additional habitat for a range of species.

The target condition of wet grassland is detailed within the BNG Metric Calculation Tool (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30015).

Table 10 summarises the Target Condition, Timeframe to achieve its target condition and details key management considerations for Wet Grassland and SuDS systems.

Table 10: BNG Target Condition for Wet Grassland and SuDS Systems

Biodiversity Metric Calculation Summary	Current Condition	Target Condition	Timeframe to achieve Target Condition	Key Management Considerations
Other Neutral Grassland	N/A	Moderate	8 (3-year delay)	- Remove self-set scrub and undesirable weed species. - Ensure bracken is managed to reduce scrub encroachment. - Re-seed as required to ensure bare ground does not exceed 5%. - Remove cut arisings to reduce nutrient enrichment of the soil.

3.10.2 Maintenance Operation

3.10.2.1 Grass Cutting

The grass will be cut to a height of 150mm (approx.) annually in September.

Grass cutting will be avoided between March and August (inclusive) to prevent risk of disturbance and destruction to nesting birds.

Great care will be taken to avoid disturbance to amphibians or damaging refugia hidden in the grass. If the SuDS are wet an assessment should be carried out as to whether grass cutting Operation can reasonably be undertaken to avoid damaging the ground.

Bracken will be managed to reduce scrub encroachment.

3.10.2.2 Cultivating and Re-seeding

Any bare ground will be cultivated and re-seeded as required to successfully establish sward. This will be carried out annually between August and October.

3.10.2.3 Fertiliser Use

Fertiliser is not to be applied to the grassland to conserve the development of a diverse sward.

3.10.2.4 Inspections and Remedial Measures

A visual inspection of the SUDS will be carried out as part of the quarterly Site inspection. This will include an inspection of the water quality for any signs of pollutants (e.g., scum, excessive algal growth and discolouration), extent of vegetation zones and open water, presence of invasive species (including fish) and presence of rubbish and debris.

If pollutants are detected, options for remedial action will be discussed with the landowner and appropriate authorities.

In the event invasive or harmful species are identified, a treatment plan will be drawn up; spot treatment or pulling by hand will be the preferred method. Any other remedial actions will be implemented accordingly.

3.10.2.5 Herbicide Use

Use of herbicides near or within the SuDS will be avoided.

3.10.2.6 De-silting

De-silting will be carried out approximately every five years depending on the condition of the SuDS and will be undertaken between November and January.

Desilting will be undertaken by a long-armed excavator and entry and access to the attenuation basins and swale will be limited to one point or section of bank. Ground protection will be utilised to reduce damage to marginal habitats.

The top third of a metre of silt will be temporarily placed around the margins of the excavation, onto protective membrane, to allow amphibians and invertebrates to return to escape and to be used on completion of works to repopulate the invertebrate assemblage within the SUDS.

3.11 Swales and Ditches

3.11.1 Management Intentions

The Site includes swales and ditches as part of the management of surface water across the scheme. These features are designed to temporarily fill during times of high rainfall or flooding but have the added benefit of providing habitats for amphibians and other invertebrates.

An attenuation basin is a vegetated depression that is normally dry except following storm events. Constructed to store water temporarily to attenuate flows. May allow infiltration of water to the ground. A swale is a shallow vegetated channel designed to conduct and retain water, but also permit infiltration. Vegetation filters particulate matter.

The target condition of swales and ditches is detailed within the BNG Metric Calculation Tool (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30015).

Table 11 summarises the Target Condition, Timeframe to achieve its target condition and details key management considerations for Swales and Ditches.

Table 11: BNG Target Condition for Swales and Ditches

Biodiversity Metric Calculation Summary	Current Condition	Target Condition	Timeframe to achieve Target Condition	Key Management Considerations
Ditches/Culvert	N/A	Poor	4 (3-year delay)	- Ensure no pollutants are present within the ditches. - Ensure all ditches have no cover of algae or duck weed.

3.11.2 Maintenance Operation

3.11.2.1 Inspections and Remedial Measures

A visual inspection of the ditches and culverts will be carried out as part of the quarterly Site inspection. This will include an inspection of the water quality for any signs of pollutants (e.g., scum, excessive algal growth and discolouration), extent of vegetation zones and open water, presence of invasive species (including fish) and presence of rubbish and debris.

If pollutants are detected, options for remedial action will be discussed with the landowner and appropriate authorities.

In the event invasive or harmful species are identified, a treatment plan will be drawn up; spot treatment or pulling by hand will be the preferred method. Any other remedial actions will be implemented accordingly.

3.11.2.2 Vegetation Management

Depending on the design of the ditches/swales, the vegetation will be managed as per the Amenity Grassland prescriptions outlined above.

3.11.2.3 Herbicide Use

Use of herbicides near or within the ditches will be avoided.

3.11.2.4 De-silting

De-silting will be carried out approximately every five years depending on the condition of the ditches and will be undertaken between November and January.

Desilting will be undertaken by a long-armed excavator and entry and access to the ditches will be limited to one point or section of bank. Ground protection will be utilised to reduce damage to marginal habitats.

The top third of a metre of silt will be temporarily placed around the margins of the excavation, onto protective membrane, to allow amphibians and invertebrates to return to escape and to be used on completion of works to repopulate the invertebrate assemblage.

3.12 Wildlife Ponds and Marginal Planting

3.12.1 Management Intention

Two wildlife ponds are proposed to the west of the Site, specifically at A46 Horth Hykeham Roundabout and at the South Hykeham Bat Bridge. The ponds will be managed to retain at least 35-60% of the surface area as open water through the cutting back of marginal and emergent vegetation. It will also be managed to minimise health and safety issues.

The target condition of wildlife ponds and marginal planting is detailed within the BNG Metric Calculation Tool (Ref: NHRR-TEP-EGN-HYKE-RP-LE-30015).

Table 12 summarises the Target Condition, Timeframe to achieve its target condition and details key management considerations for Wildlife Pond and Marginal Planting.

Table 12: BNG Target Conditions for Wildlife Pond and Marginal Planting

Biodiversity Metric Calculation Summary	Current Condition	Target Condition	Timeframe to achieve Target Condition	Key Management Considerations
Ponds (non-priority)	N/A	Moderate	6 (3-year delay)	- Monitor the presence of INNS and treat species as required. - Remove fish as required. - De-silt as required. - Monitor self-set scrub species and overshading of the pond to ensure no more than 40% of the waterbody is covered. - Remove dominant marginal planting to ensure a diverse plant mix.

3.12.2 Maintenance Operation

3.12.2.1 Inspections and Remedial Measures

A visual inspection will be carried out as part of the site inspection. This will include an inspection of the water quality for any signs of pollutants (e.g., scum, excessive algal growth and

discolouration), extent of vegetation zones and open water, presence of invasive species (including fish) and presence of rubbish and debris.

If pollutants are detected, options for remedial action will be discussed with the landowner and appropriate authorities.

In the event invasive or harmful species are identified, a treatment plan will be drawn up; spot treatment or pulling by hand will be the preferred method. Any other remedial actions will be implemented accordingly.

3.12.2.2 Removal of Debris and Rubbish

Any debris and rubbish identified during the site inspections will be removed.

3.12.2.3 Aquatic and Emergent Vegetation Removal

Maintenance of open water and provision of dense stands of emergent vegetation, tall herbs and wet grasslands are important for maximising biodiversity.

Regular and gentle removal of aquatic and emergent vegetation will be undertaken to maintain 35% to 60% open water. Cutting or pulling by hand is the preferred method to minimise disturbance and will be carried out annually between late October and mid-November. The works will be carried out on a three-year rotation (i.e., a 1/3 each year) or as required according to pond condition.

Vegetation will be removed according to a wedge rotation and laid on terram (or similar matting) at the pond's edge for a minimum 24hrs. The vegetation and terram will then be removed from the Site.

Vegetation removal will, wherever possible, avoid the amphibian breeding and bird nesting season, between the beginning of March and the end of July

During the quarterly Site inspections, INNS will be inspected within the wildlife pond. If found to be present a treatment plan will be drawn up as required for each identified species.

3.12.2.4 Marginal Vegetation Management

The marginal vegetation around the pond will be cut to no less than 150mm on a rotation basis. The inner fringe of vegetation immediately by the water’s edge will be retained throughout the year to serve as a buffer and to maintain food and cover sources.

Arisings will be removed and disposed of appropriately.

3.12.2.5 Scrub Control

Encroachment of scrub, grassland and other vegetation will be monitored and reduced so that no more than 25% of the banks of the ponds will be covered by scrub.
Scrub to be cut back on a rotational basis between October and mid-November. All arisings will be chipped and used sustainably on the Site where possible.

3.12.2.6 Fertiliser and Herbicide Use

No fertilisers, pesticides or herbicides will be used on or around the pond.

3.12.2.7 De-silting

Should the water levels within the deepest area of the pond fall below half a metre in two consecutive years, de-silting will be required. De-silting will be carried out approximately every five

years depending on the condition of the pond and will be undertaken between November and January.

Desilting will be undertaken by a long-armed excavator and entry and access to the pond will be limited to one point or section of bank. Ground protection will be utilised to reduce damage to marginal habitats.

The top third of a metre of silt will be temporarily placed around the margins of the excavated pond, onto protective membrane, to allow amphibians and invertebrates to return to the pond and to be used on completion of works to repopulate the invertebrate assemblage within the pond.
All other materials generated will be placed on protective membrane around the pond for a minimum 48hrs to allow amphibians and invertebrates to return to the pond. After a period of 48hrs, the silt and the protective membrane will be removed from Site.

3.13 Insect Mounds

3.13.1 Management Intention

Ten insect mounds are proposed across the whole application site and will be maintained in a viable condition to function to provide shelter and winter refuge to local wildlife.

3.13.2 Maintenance Operation

3.13.2.1 Replenishment

Insect mounds will be replenished annually in August or September using wood collected during maintenance works, this will ensure there is enough cover for the hibernation period.

3.14 Amphibian Hibernacula

3.14.1 Management Intention

Two amphibian hibernacula features are located within areas of grassland with tree cover and hedgerows within the west of the application site, specific locations can be seen on the Ecological Mitigation Detail Plan (Ref: NHRR-TEP-ELS-HYKE-DR-LS-30038). These will be maintained in a viable condition to provide shelter and winter refuge for amphibians.

3.14.2 Maintenance Operation

3.14.2.1 Inspections and Remedial Measures

Amphibian Hibernacula features will be inspected annually to ensure they are in a viable condition.

In the event the condition of the refugia deteriorates to a point that maintenance cannot ensure its viability, the new hibernacula feature will be recreated nearby. The existing refuge feature will be maintained in situ in its existing condition; if this is not desirable, an ecologist licensed will be appointed to supervise the dismantling of the non-functioning refuge feature.

Grass or shrub on top of the refuge features and within 0.5m of the refuge features will be left uncut to avoid disturbance to the refuge feature.

3.15 Bat Boxes

3.15.1 Management Intention

Twenty-five bat boxes are proposed across the Site. They will be maintained in a viable condition to provide roosting habitat throughout the year. Schwegler 2F bat boxes will be utilised which are generally maintenance free.

3.15.2 Maintenance Operation

3.15.2.1 Inspections and Remedial Measures

The Bat boxes will be inspected from the ground during quarterly Site inspections to ensure they remain in viable condition; maintenance Operation will be completed in November each year. A licenced ecologist will inspect the bat boxes present on Site every two years.

Where any bat box is found to be damaged, it will be replaced a similar model prior to the following March.

If the bat box is occupied by wasp or hornets, the box will either be relocated to a safe place away from regularly accessed public places or be removed from Site, as desired, and a replacement box will be installed.

3.16 Bird Boxes

3.16.1 Management Intention

Twenty-five bird boxes are proposed within the central and west area of the Site. The bird boxes will be maintained in a viable condition to provide nesting habitat throughout the year. Two different types of Schwegler Bird Boxes are proposed, 1B and 2H which are generally maintenance free.

3.16.2 Maintenance Operation

3.16.2.1 Inspections and Remedial Measures

The Bird boxes will be inspected from the ground during quarterly Site inspections to ensure they remain in viable condition; maintenance operations will be completed in November each year.
Where any bird box is found to be damaged, it will be replaced a similar model prior to the following February.

3.17 Fences

3.17.1 Management Intention

Acoustic fencing is proposed to mitigate the sound of the NHRR. Additional fencing is proposed across the site and will be maintained for its functionality and aesthetic value. Routine inspections will ensure that any damaged fencing is repaired or replaced as quickly as possible to prevent a risk to health and safety.

3.17.2 Maintenance Intention

3.17.2.1 Inspections and Remedial Measures

Fencing will be inspected during the quarterly site inspections.

Any fencing considered unsafe will be removed or made safe and/or replaced as soon as possible. The use of materials for repair and replacements will conform to the original design specification for external works.

Graffiti removal will be carried out as required.

3.18 Gates

3.18.1 Management Intention

Three different types of gates are proposed within the Site, including, pedestrian gates and two different sizes of field gates. Gates proposed will be maintained for their functionality and aesthetic value. Routine inspections will ensure that any damaged gates are repaired or replaced as quickly as possible to prevent a risk to health and safety.

3.18.2 Maintenance Operation

3.18.2.1 Inspections and Remedial Measures

Gates will be inspected during the quarterly site inspections.

Any gate considered unsafe will be removed or made safe and/or replaced as soon as possible. The use of materials for repair and replacements will conform to the original design specification for external works.

Graffiti removal will be carried out as required.

3.18.2.2 Re-painting

Gates will be re-painted, if required to retain a tidy appearance approximately every five years, dependent on condition.

4. MONITORING AND REVIEW

4.1 Site Monitoring

The key measures described in the table below will enable Lincolnshire County Council Highways Department to measure the appropriateness of landscape maintenance operations and whether management of the Site is meeting the long-term management objectives and delivering key target conditions for BU.

Table 13: Key Measures for Monitoring

Feature	Target Condition	Key Maintenance Measures
Site Wide	N/A	Is the landscape establishing well and attractive to residents and wildlife overall? Is the Site in a clean and tidy condition? Is public access to the Site maintained? Are there any health and safety hazards / deficiencies which require rectification? Does the Site comply with the relevant environmental and health and safety legislation (as set out in Appendix 2 of this LEMP)? Are there any instances where planting is repeatedly failing? If so, has an arboricultural consultant or landscape architect been consulted with to specify an alternative species?
Retained Trees	N/A	Carry out an inspection to note any deficiencies. Concerns about risks to public health and safety and tree health, should be reported and specialist input sought as necessary. Review arboriculture assessment for recommendations on thinning and tree works.
Tree Planting	Moderate	Stakes and ties to be inspected and newly planted trees re-firmed and kept weed free. Any dead or dying trees should be replaced as specified in the original planting plan. Review arboriculture assessment for recommendations on thinning and tree works.
Woodland and Woodland Edge Planting	Moderate	Stakes and ties to be inspected and newly planted trees re-firmed and kept weed free. Any dead or dying trees should be replaced as specified in the original planting plan. Review arboriculture assessment for recommendations on thinning and tree works.
Retained Hedgerows	N/A	Carry out an inspection to note any gaps and re-plant with suitable native species.
Hedgerow Planting	Moderate	Inspection of the general establishment of the hedges until the branches of adjacent plants fully merge to establish dense branch growth. Any dead or dying plants should be replaced as specified in the original planting plan. Inspect planting and prune as required or prune straight away if presents a hazard.
Amenity Grassland	Moderate Poor	Inspection of the grass to ensure a well-maintained weed free appearance. Re-seed as required.
Wildflower Enriched Grassland	Moderate	Inspection of the grass to ensure botanical diversity, weeds kept to a minimum, and no scrub encroachment. Re-seed as required.
Wet Grassland & SuDS	Moderate	Inspection of the grass to ensure botanical diversity, weeds kept to a minimum, and no scrub encroachment. Re-seed as required.
Swales and Ditches	Poor	Inspection to the banks and ensure any tree or shrub saplings within 5m are removed. Carry out inspection of control structure and carry out minor repairs as required. Review assessments following inspections and carry out recommended works.
Wildlife Pond and Marginal Planting	Moderate	Inspection to the banks and ensure any tree or shrub saplings within 5m are removed. Review assessments following inspections and carry out recommended works.
Insect Mounds	N/A	Carry out inspection to check that materials have been replenished in time for the hibernation period in September.

Amphibian Hibernacula	N/A	Carry out inspection to check condition and remove blockages from access points.
Bat Boxes	N/A	Inspect bat boxes to ensure they are in situ and report any missing or damaged boxes to an ecologist.
Bird Boxes	N/A	Inspect bird boxes to ensure they are in situ and report any missing or damaged boxes to an ecologist.
Fences	N/A	Carry out an inspection to note any damage which poses a risk to public health and safety and carry out repairs.
Gates	N/A	Carry out an inspection to note any damage which poses a risk to public health and safety and carry out repairs. Re-paint gates every 5-years, if required.

With respect to monitoring habitat creation, an annual habitat walkover survey will be carried out to ensure that habitats created are still viable for their intended purpose and to inform future management policies concerning potential matters such as protected species and INNS control and BNG Monitoring.

4.2 Review

The LEMP will be reviewed on an annual basis by the Lincolnshire County Council and other key partners to ensure that the LEMP is meeting the original management objectives and responding to the developing needs of the Site.

The annual review will identify the need for additional maintenance operations and inform future management decisions. This can be achieved by:

- Quarterly formal Site inspections by Lincolnshire County Council Highways Department to assess the appointed contractor's quality standards and deliverables in line with this LEMP;
- An annual Site meeting with Lincolnshire County Council Highways Department and stakeholders and the appointed contractor to assess quality standards and deliverables in line with this LEMP; and
- Ad hoc unannounced inspections by Lincolnshire County Council Highways Department to review quality of maintenance work and any potential Health and Safety issues.

The Lincolnshire County Council Highways Department will produce an annual report, summarising the management of the Site over the last year. The report will include the key measures achieved, actions going forward and any updates to the maintenance operations if required, and how this information will be communicated to stakeholders and resident/friends' groups.

It is also recommended the Lincolnshire County Council Highways Department produces a cash-flow forecast for the next 3-5 years but that can be flexible enough to respond to changing circumstances. This will ensure sufficient funds are in place to deliver long term management of the Site.

LCC or consultants on behalf of LCC will formally re-assess the LEMP and annual review information on a five yearly basis to ensure the habitats and landscaping associated with the Site are maintained for the 30 years to meet BNG requirements.

APPENDIX 1
MAINTENANCE SCHEDULE

Maintenance Schedule:
North Hykeham Relief Road

Landscape Maintenance Schedules

Key	
✓	Works to be carried out in these months.
	Works not to be carried out in these months.
*Bird breeding and nesting season (March to August inclusive) no works that may have an impact on nesting birds are to be undertaken	

Activity	Frequency per Annum	Year	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Site Wide – Inspections, Surveys and Cleansing														
Health and Safety														
Undertake a quarterly formal inspection to review hazards identified by original assessment.	4	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site Cleansing														
A litter pick of Site which has high public access, will occur quarterly (including the wildlife pond and SUDS)	4	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remaining areas to be cleansed biannually.	2	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove fly-tipping and graffiti as soon as possible.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Specific Surveys														
Undertake an annual habitat walkover survey by a licenced ecologist to ensure the habitats created are still viable for their intended purpose	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Retained Trees														

Activity	Frequency per Annum	Year	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Instruct a trained arboriculturist to undertake a tree hazard and condition survey of mature trees.	0.3	Every 3 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Undertake a cyclical programme of selective thinning, coppicing, pruning and felling. Wood under 250 mm diameter collected from thinning, pruning, brashing and scrub/vegetation clearance will, wherever possible, be chipped and used on site for mulching. Wood greater than 250 mm diameter will be logged and used to create deadwood piles to increase biodiversity within the Insect Mounds where appropriate.	N/A	Every 5 years	✓	✓							✓	✓	✓	✓
Tree Planting														
Re-firm newly planted trees as required.	1	1 to 5	✓	✓							✓	✓	✓	✓
Check mulch mats, double stakes and ties bi-annually, where required ties will be adjusted.	2	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replace any damaged or missing mulch mats, stakes and ties.	As required	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove stakes and ties.	1	Year 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Formative prune to maintain health and vigour. Once a growth height of 3m has been achieved from their planted height, crown pruning will commence, any dead/damaged trees will be felled and replaced.	N/A	5 to 10	✓	✓							✓	✓	✓	✓

Activity	Frequency per Annum	Year	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Replace failed or damaged deciduous tree species.	1	1 to 5	✓	✓	✓								✓	✓
Replace failed or damaged evergreen species	1	1 to 5				✓	✓	✓	✓	✓	✓			
Water new planting.	As required	1 to 5										✓	✓	
Assessment of condition and structure of new tree planting.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Apply slow-release multi-purpose plant food and soil improver.	1	1 to 5								✓	✓	✓		
Woodland and Woodland Edge Planting														
Check guards, canes and mulch mats annually, when required will be replaced.	1	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Re-firm new planting as required.	1	1 to 5	✓	✓							✓	✓	✓	✓
Replace any damaged shelter guards and mulch mats.	1	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove guards and shelter guards.	1	Year 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replace failed or damaged deciduous/coniferous tree species.	1	1 to 5	✓	✓	✓								✓	✓
Replace failed or damaged evergreen species	1	1 to 5				✓	✓	✓	✓	✓	✓			
Formative prune to maintain health and vigour.	N/A	1 to 5	✓	✓										✓
Water new planting.	As required	1 to 5				✓	✓	✓	✓	✓	✓			
Monitor the presence of INNS, treat as required.	4	All years				✓	✓	✓	✓	✓	✓			
Retained Hedgerows														

Activity	Frequency per Annum	Year	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Cut hedgerow in an 'A' shape. If possible, a 1m grass strip will be left uncut next to the hedgerow to increase habitat potential.	1	All years	✓	✓							✓	✓	✓	✓
Hedgerow Planting														
Inspect and sheet mulch mats annually and replace sheet mulch mats accordingly.	1	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replace any damaged spiral guards.	1	1 to 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove spiral guards.	1	Year 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Re-firm new planting as required.	1	1 to 5	✓	✓							✓	✓	✓	✓
Replace failed or damaged deciduous tree species.	1	1 to 5	✓	✓	✓								✓	✓
Replace failed or damaged evergreen spaces	1	1 to 5	✓	✓	✓	✓					✓	✓	✓	✓
Formative facing up of the hedgerow will be completed annually.	1	Year 1 to 2	✓	✓							✓	✓	✓	✓
Following Year 3, the hedgerow will be cut annually in an 'A' shape.	1	Year 2/3+	✓	✓							✓	✓	✓	✓
Monitor the presence of INNS, treat as required.	4	All years				✓	✓	✓	✓	✓	✓			
Amenity Grassland														
Cut (20-50mm) fortnightly within the SuDS and 75mm within the wider	12	All years				✓	✓	✓	✓	✓	✓			

Activity	Frequency per Annum	Year	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
site during the growing season and remove arisings from the Site.														
Cultivate and re-seed as required.	1	1 to 5								✓	✓	✓		
Wildflower Enriched Grassland														
Cut (60mm) 3 times in first year.	3	Year 1				✓	✓	✓	✓	✓	✓			
Cut (150mm) once a year and remove the arisings from the Site.	1	Year 2+									✓			
Cultivate and re-seed as required.	1	1 to 5								✓	✓	✓		
Wet Grassland and SuDS														
Cut (150mm) once a year and remove arisings from the Site.	1	All years									✓			
If the SUDS are practically or fully wet the wet grassland will be removed according and laid on terram (or similar matting) at the ponds edge for a minimum of 24 hours	1	All years									✓			
Cultivate and re-seed as required.	1	1 to 5								✓	✓	✓		
Inspect the SUDS systems and swales quarterly to assess bank stability, water quality, coverage of aquatic/marginal vegetation, drainage and depths.	4	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Activity	Frequency per Annum	Year	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Areas around the SUDS will be cut on a bi-annual rotation.	2	All years	✓	✓								✓	✓	✓
De-silting will be carried out every 5 years. Removed material will lie on terram matting or similar for 48 hours to allow species to migrate back their habitat. After 48 hours material will then be removed from site.	0.2	Every 5 Years	✓										✓	✓
Wildlife Pond and Marginal Planting														
Visual inspection, carried out as part of the Site inspection. This will assess bank stability, water quality, coverage of aquatic/marginal vegetation, drainage and depths.	4	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Debris, rubbish and dead fish will be removed from the pond, as required.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reduction of macrophytes were becoming too dominant.	As required	All years									✓	✓	✓	
Marginal vegetation around the pond will be cut annually no less than 150mm on a rotation basis. Arisings will be removed of and disposed of appropriately.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Removal of marginal/emergent vegetation in autumn to maintain 30-60% of open water. By cutting or hand pulling to minimise disturbance.	0.3	Every 3 years									✓	✓	✓	

Activity	Frequency per Annum	Year	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
If more than 25% of the pond's banks become covered by scrub, woody species will be cut back.	As required	All years										✓	✓	
Should water levels drop below 0.5 m for two consecutive years, de-silting will be carried out every 5 years. Removed material will lie on terram matting or similar for 48 hours to allow species to migrate back their habitat. After 48 hours material will then be removed from Site.	0.2	Every 5 Years	✓										✓	✓
Swales and Ditches														
Inspect the swales quarterly to assess bank stability, water quality, coverage of aquatic/marginal vegetation, drainage and depths.	4	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Areas around the swales will be cut on a bi-annual rotation.	2	All years	✓	✓								✓	✓	✓
De-silting will be carried out every 5 years. Removed material will lie on terram matting or similar for 48 hours to allow species to migrate back their habitat. After 48 hours material will then be removed from site.	0.2	Every 5 Years	✓										✓	✓
Wildlife Ponds and Marginal Planting														
Visual inspection, carried out as part of the Site inspection. This will assess bank stability, water quality, coverage of aquatic/marginal	4	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Activity	Frequency per Annum	Year	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
vegetation, drainage and depths.														
Monitor the presence of INNS, treat as required.	4	All years				✓	✓	✓	✓	✓	✓			
Debris, rubbish and dead fish will be removed from the pond, as required.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reduction of macrophytes were becoming too dominant.	As required	All years									✓	✓	✓	
Marginal vegetation around the pond will be cut annually no less than 150mm on a rotation basis. Arisings will be removed of and disposed of appropriately.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Removal of marginal/emergent vegetation in autumn to maintain 30-60% of open water. By cutting or hand pulling to minimise disturbance.	0.3	Every 3 years									✓	✓	✓	
If more than 25% of the pond's banks become covered by scrub, woody species will be cut back.	As required	All years										✓	✓	
Should water levels drop below 0.5 m for two consecutive years, de-silting will be carried out every 5 years. Removed material will lie on terram matting or similar for 48 hours to allow species to migrate back their habitat. After 48 hours material will then be removed from Site.	0.2	Every 5 Years	✓										✓	✓
Ecological Features														

Activity	Frequency per Annum	Year	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Insect Mounds														
Replenish with material from maintenance operations	1	All years								✓	✓			
Amphibian Hibernacula														
Annual inspection to check condition and clear any blockages from access points.	1	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Repairs and/or replacement as required.	As required	All years	✓	✓	✓							✓	✓	✓
The grass onto of the Hibernacula and within a 0.5m radius around the Amphibian Hibernacula will be left, no maintenance required.	–	All years												
Bat Boxes														
Annual visual inspection from the ground to check condition.	4	All years											✓	
Internal inspection of bat boxes every two years by a licensed ecologist.	0.5	Every 2 years											✓	
Replacement, as required, before March.	As required	All years	✓	✓	✓									
Bird Boxes														
Annual inspection to check condition.	1	All years											✓	
Removal of nesting debris by hand and disposal.	1	All years											✓	
Replacement, as required, before March.	As required	All years	✓	✓	✓									
Fences														

Activity	Frequency per Annum	Year	Indicative Timing of Operation											
			J	F	M	A	M	J	J	A	S	O	N	D
Fencing will be inspected during the quarterly site inspections and any repairs will be carried out as required.	4	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Repair any damaged boundary fencing.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Graffiti removal as required.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gates														
Gates will be inspected during the quarterly site inspections and any repairs will be carried out as required.	4	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Repair any damaged gates.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Graffiti removal as required.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Re-painting gates as required.	As required	All years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

NOTE Glyphosate formulations containing the surfactant Polyethoxylated tallow amine (POEA) should not be used within proximity to waterbodies or other wetland habitats as it can cause high amphibian larvae mortality.

APPENDIX 2
SUMMARY OF RELEVANT LEGISLATION

Summary of Relevant Legislation

The following legal obligations (but not limited to), among others must be considered in carrying out any management operations:

Legislation	Obligations
Health and Safety Legislation	
The Health and Safety at Work Act (1974)	All operations carried out on the Site must only be undertaken by trained personnel, using methods and equipment approved by the Health and Safety Executive (HSE).
Occupiers Liability Act (1984)	Management organisation must ensure that every reasonable care is taken to remove any risks to both legitimate visitors and to any trespassers. In compliance it will be necessary: • To make sure that all footpaths and any other structures are safe; • To remove any hazardous objects; and • To conduct an annual safety audit to identify any further hazards.
Environmental Legislation	
Conservation of Habitats and Species Regulations 2017 (as amended)	The Habitat Regulations for England and Wales assign a greater level of protection to a variety of native species of animals and plants listed. The 2017 Regulations have been amended by the 2019 EU Exit Regulations.
Wildlife and Countryside Act (1981)	There is an obligation to comply with legislation for UK species protected (including amphibians, reptiles and bats) under this Act.
Environmental Protection Act (1990)	There is an obligation to keep the Site free from litter and refuse.
Countryside and Rights of Way Act (2000)	Imposes a new right of access on foot to registered common land and other areas of 'open countryside' which under certain circumstances allows access without being confined to footpaths.

APPENDIX 3
BNG AUDIT AND MONITORING SCHEDULE

Key:	
Habitat Condition Assessment undertaken by a suitably qualified ecologist	
Habitat Delay	
Habitat Condition Target	*
Reporting and issue to LPA	

Habitat Condition Monitoring					Years																																	
Landscape Feature	**Biodiversity Metric 3.1 Habitat Feature**	**Current Condition**	**Target Condition**	**Timeframe**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Area Habitats																																						
Tree Planting	Urban Tree	-	Moderate	30 years (3 year delay)																														*				
Woodland Planting	Other Woodland; Broadleaved	-	Moderate	18 years (3 year delay)																		*																
Woodland Edge Planting	Mixed Scrub	-	Moderate	8 years (3 year delay)								*																										
	Other Woodland; Broadleaved	-	Moderate	8 years (3 year delay)								*																										
Amenity Grassland	Other Neutral Grassland	-	Moderate	8 years (3 year delay)								*																										
	Modified Grassland	-	Poor	4 (3 year delay)				*																														
Wildflower Enriched Grassland	Other Neutral Grassland	-	Moderate	8 years (3 year delay)								*																										
Wet Grassland and SuDS System	Other Neutral Grassland	-	Moderate	8 years (3 year delay)								*																										
Wildlife Pond and Marginal Planting	Ponds (Non- Priority)	-	Moderate	6 years (3 year delay)						*																												
Hedgerows																																						
Hedgerow Planting	Native Species Rich Hedgerow	-	Moderate	8 years (3 year delay)								*																										
Watercourses																																						
Swales and Ditches	Culvert	-	Poor	4 years (3 year delay)				*																														
	Ditch	-	Poor	4 years (3 year delay)				*																														
Reporting					Years																																	
Landscape and Habitat Management Plan updates									■					■					■					■					■					■				■
BNG Condition Assessment Report and updated Habitat Management Plan to submitted to the LPA								■	■	■		■		■					■			■		■					■					■				■

EXAMPLE: Habitat Condition Monitoring, Assessment Sheet							
Date of Assessment:	**Assessement number:**						
Landscape Feature	**Parcel Ref:**	**UKHab Metric 4.0 Condition assessment criteria**	**Baseline Condition**	**Target Condition**	**Monitoring Interval**	**Anticipated Timeframe to achieve BNG target**	**Biodiversity Units**
Condition assessment summary:							
Progress towards UKHab and Condition summary (is the habitat on course to meet or has met target condition?):							
Adaptive Management: Any proposed changes to Management:							