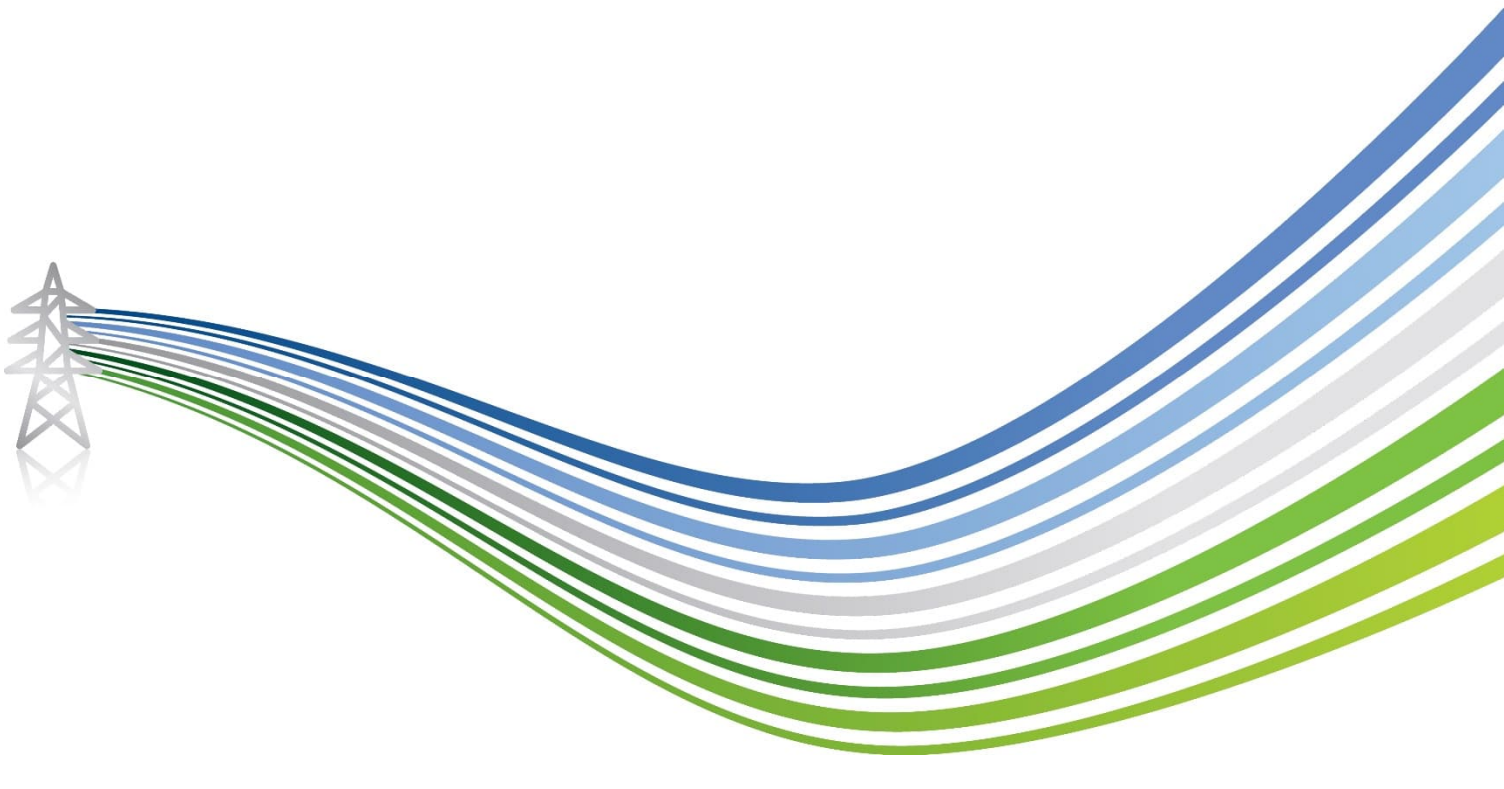
SSEN Transmission

Cambushinnie 400 kV Substation

Haul Track

Appendix C Landscape and Habitat Management Plan

June 2025



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1. INTRODUCTION

The Landscape and Habitat Management Plan (LHMP) is an operational guide to the maintenance and management of the landscape and ecological mitigation measures associated with the Cambushinnie haul track (hereafter referred to as the 'Proposed Development').

Landscape mitigation measures comprise of seeding of verges and embankments and areas disturbed by construction to help integrate the Proposed Development into the surrounding landscape.

This LHMP sets out the details of habitat creation, maintenance and management actions required for the next five years, a detailed summary of the management requirements for the following five years, and an overview of the longer-term management requirements. As part of this it sets out requirements both for operational works and for monitoring and reporting.

It has been designed to provide Scottish Hydro Electric Transmission PLC, operating and known as Southern and Scottish Electricity Networks Transmission (SSEN Transmission), a clear picture of its soft landscape estate and to be used by their appointed contractor and advisors as an operational manual for undertaking management and maintenance works, including monitoring, and reporting back to SSEN Transmission.

1.1 Document Structure

This report comprises of the following sections:

- Site Context - a brief description of the Site, its location context and history;
- Landscape and Ecology condition - describes the key aspects of the environmental baseline relevant to the maintenance and management of the works at the Site;
- Restoration and Design Principles - sets out the design principles followed to develop the scheme and sets out the function of each habitat type / landscape element; and
- Maintenance and Management - including establishment maintenance and long-term management strategy.

2. PROPOSED DEVELOPMENT AND SITE CONTEXT

2.1 Summary of Proposed Development

Location

The Proposed Development Site ('the Site') is located approximately 3 km east of the existing Braco West Substation and 50 m south of Braco village and will route between the A822 and the existing access track to Braco West Substation. The location of the Site is shown on **Figure 2-1, Appendix A Figures** of the Cambushinnie 400 kV Substation Haul Track Environmental Appraisal (EA).

2.2 Proposed Development Components

A description of the individual Proposed Development elements is provided below:

The haul track will be approximately 1.2 km in length and 6.5 m wide between the A822 and the existing access track to the Braco West Substation and will cross the B8033 south of Braco;

- A temporary bridge spanning the Keir Burn, which will be approximately 48 m in length and 4.1 m in height from the existing ground level to the parapet. The bridge will be clear span with permanent bridge abutments at either side of the burn;
- Two temporary compounds, three potential areas for bridge fabrication including crane pads, and topsoil storage areas;
- Temporary wooden noise (acoustic) barriers east of Loaning View and Gamekeepers Cottage;
- Temporary fencing surrounding the works area, with additional temporary Heras fencing around temporary compound areas;
- Temporary culverts located adjacent to the eastern temporary construction compound, to the north and south of the haul track, and adjacent to the access control compound where it runs alongside the haul track; and
- The modification of an existing flood embankment downstream of the proposed haul track.

2.3 Landscape Context

A Landscape and Visual Appraisal (LVA) has been undertaken for the Proposed Development (**Chapter 4 Landscape Character and Visual Amenity** of the EA), identifying potential for adverse landscape and visual impacts. Reinstatement of areas temporarily occupied during construction and measures to help integrate the Proposed Development have been identified to reduce potential impacts.

2.4 Ecology Context

An Ecological Appraisal has been completed to inform the EA for the Proposed Development, see **Chapter 5 Ecology and Nature Conservation** of the EA. The Ecological Appraisal recommended mitigation and enhancement measures pertaining to habitats, including completion of a Biodiversity Net Gain (BNG) Assessment to ensure that the Proposed Development meets the requirement of National Planning Framework 4 (NPF4), which includes the following statements of policy intent: "*To protect, restore and enhance natural assets making best use of nature-based solutions*" and "*To protect biodiversity, reverse biodiversity loss, deliver positive effects from development and strengthen nature networks.*" NPF4 also states that national developments will only be supported where nature networks "*are in a demonstrably better state than without*

intervention" using best practice and including future monitoring and management where appropriate. By carrying out a BNG Assessment and implementing habitat mitigation measures to achieve net gain, the Proposed Development will achieve compliance with this aspect of NPF4.

SSEN Transmission has committed to delivering a 10% BNG on all its projects that are granted consent. The Proposed Development is predicted to achieve a 14% net loss in area based habitat Biodiversity Units (BUs). Full details are in the EA **Appendix E Biodiversity Net Gain Assessment**.

3. LANDSCAPE AND ECOLOGY CONDITION

3.1 Landscape and Visual Condition

The Proposed Development would be located within the Broad Valleys Lowlands – Tayside Landscape Character Type (LCT) and in close proximity to the Lowland Hills – Tayside LCT.

The Broad Valleys Lowlands – Tayside LCT is characterised by a series of broad straths, loosely enclosed by low foothills and hill ridges. Within the LVA 1 km Study Area (as defined in **Chapter 4 Landscape Character and Visual Amenity** of the EA) the landscape is defined by gently undulating landform and a mix of agricultural land use, woodland, and forestry. There is a variable sense of openness and enclosure, with relatively expansive open views from elevated locations and more restricted views where trees, woodland and topography provide containment. Settlement is focused on the village of Braco and a number of scattered rural properties and farmsteads. The A822 and B8033 are the main transport routes, although a number of farm tracks and access tracks are also present within the landscape.

The Lowland Hills – Tayside LCT is characterised by a series of broad straths, loosely enclosed by low foothills and hill ridges. Within the LVA 1 km Study Area the landscape is defined by gently undulating landform and a mix of agricultural land use, woodland, and forestry. There is a variable sense of openness and enclosure, with relatively expansive open views from elevated locations and more restricted views where trees, woodland and topography provide containment. Settlement is focused on the village of Braco and a number of scattered rural properties and farmsteads. The A822 and B8033 are the main transport routes, although a number of farm tracks and access tracks are also present within the landscape.

Potential visual receptors likely to experience views of the Proposed Development include several scattered farmsteads, walkers and recreational users along the local core path network and road users on the B8033 to the A822. Outward views from these locations are variable and often restricted and enclosed by topography, trees, and woodland, although with more open and distant views available from select locations.

3.2 Ecological Condition

The majority of the habitats within the area of the Proposed Development are low ecological value habitats such as species-poor Modified grassland and Other neutral grassland, and immature Other coniferous woodland used for the production of Christmas trees, (e.g. Nordmann fir *Abies nordmanniana* and Norway spruce *Picea abies*). The most notable habitat of moderately high ecological value is Other broadleaved woodland, associated with the Keir Burn (a notable watercourse), the A822 and the B8033 roads. These woodlands possess mature trees with suitability for roosting bats. Mixed scrub and Willow scrub habitats, of moderate ecological value, are associated with these woodlands to the east of the Site. Habitats within the wider area comprise Other woodland - mixed and Other broadleaved woodland, Standing open water (artificial waterbodies) and minor watercourses / artificial drainage ditches, Other neutral grassland, Buildings (private residences) and grazing pasture (for horses).

Table 1 below summarises the baseline (existing condition) of the Proposed Development. Priority habitats present (i.e. those on the Scottish Biodiversity List (SBL)) are highlighted in bold.

Full details of the ecological and ornithological baseline present along the Proposed Development can be found in the relevant EA chapters.

Table 1 Existing Condition

Subject	Existing Condition
Habitats	The following (UK Habitat Classification (UKHab)) habitats are present within the Site: • Broadleaved, mixed and yew woodland (w1g Other woodland; broadleaved) • Broadleaved, mixed and yew woodland (w1h Other woodland; mixed) • Coniferous woodland (w2c Other coniferous woodland) • Dense scrub (h3h Mixed scrub) • Dense scrub (h3j Willow scrub) • Hedgerow (h2b non-native and ornamental hedgerow) • Neutral grassland (g3c Other neutral grassland) • Modified grassland (g4 Modified grassland) • Built-up areas and gardens (u1b5 Buildings, u1b6 Other developed land, u1c Artificial unvegetated, unsealed surface) • Rivers & streams (r2a Rivers (priority habitat)) Of those habitats present (including groundwater dependent terrestrial ecosystems (GWDTE)), the following are considered to be of Local (at most) Importance: • Other Broadleaved Woodland • Dense scrub • Priority Rivers / Streams
Protected / Notable Species	The following protected/notable species may be present on the Site: • Bats - moderate habitat suitability for activity such as commuting and foraging, roosting potential in mature trees in Other Broadleaved woodland; • Otter *Lutra lutra* – some evidence of presence (spraints/feeding remains) across the Site (on the Keir Burn and the tributary to the Allan Water, and also artificial waterbodies to the northwest of the Site outside of the boundary of the Site) but no refuges present; • Water vole *Arvicola amphibius* – no evidence on Site but sub-optimal habitat present; • Pine marten *Martes martes* - known to be in the area, but no evidence on Site and sub-optimal habitat present; • Red squirrel *Sciurus vulgaris* – known to be in the area, but no evidence on Site, mostly sub-optimal habitat present; • Badger *Meles meles* - no evidence on Site, sub-optimal habitat present, the fields are good for badger foraging but there is only limited potential for sett creation in relatively small parcels of plantation woodland with immature trees, whereas most of the land is plantation woodland with small trees; • Reptiles – no incidental sightings during field surveys, habitat suboptimal; and, • Fish and aquatic invertebrates - likely that notable fish occur in the Keir Burn and it is possible for notable fish to occur within the small watercourses and / or artificial drainage ditches on Site.

Subject	Existing Condition
	All protected / notable species listed above are considered to be of Local or Site Importance. The terms of importance as defined in Chartered Institute of Ecology and Environmental Management (CIEEM) Guidance and described in detail in **Chapter 5 Ecology and Nature Conservation**.
Ornithology	Only common and widespread ornithological features of Local importance are present on Site. These include common breeding birds (including important/notable birds listed on the SBL and Birds of Conservation Concern (BoCC) Red and Amber lists).
Invasive non-native species of plant (INNS)	Giant hogweed *Heracleum mantegazzianum* was recorded within the area of the Proposed Development, in the west where the haul track meets the existing access track. Rhododendron *Rhododendron ponticum* is present in woodlands outside of the Site, to the north of the central section. Dogwood *Cornus sanguinea* (outside of its natural range in Scotland) and cherry laurel *Prunus laurocerasus* (non-native to Britain) are present to the east of the Site and should be controlled as INNS.

4. RESTORATION AND DESIGN PRINCIPLES

4.1 Introduction

The landscape mitigation measures have been designed to integrate landscape, ecology, and BNG requirements arising from site survey and analysis, the findings of the EA and the environmental commitments made by SSEN Transmission. The primary focus of the LHMP is to best assimilate the Proposed Development into the host landscape and habitats.

The landscape and habitat vision is to integrate the Proposed Development into the landscape, while seeking to maximise biodiversity and avoid undue consequences to the wider environmental fabric. **Table 2** below sets out the specific restoration and design objectives.

Table 2 Schedule of Mitigation

Objective	Restoration Objective
Landscape and Visual Integration	Landscape restoration should seek to re-naturalise the Site, including the haul track embankments and temporary compounds following removal of all temporary infrastructure required to enable the construction of the Proposed Development. Where appropriate and acceptable to landowners, tree and hedgerow planting should be incorporated to enhance landscape and visual integration and provide an element of screening.
Biodiversity Net Gain	The Ecological Appraisal recommends mitigation and enhancement measures pertaining to habitats in order to meet the requirements of NPF4. SSEN Transmission has committed to delivering a 10% BNG on all projects gaining consent and this is the target value for BNG for the Proposed Development. The key biodiversity objective of the restoration proposals is to provide habitats of a higher value to those which are being lost, to achieve a overall net gain for biodiversity.
Habitats	The following further embedded and specific mitigation measures are detailed in the EA in relation to habitats. These are key objectives when considering restoration and design principles: • Loss of woodland and native trees will be minimised, or losses compensated for by planting. Retained native trees and their root zones should be avoided and protected during the works in accordance with standard guidance in British Standard 5837:2012; and If works will be carried out that directly affect trees or woodland, or will take place within 50 m of any trees or woodland, then carry out red squirrel pre-construction surveys (within 5 m of Site in the non-breeding season or 50 m of Site in the breeding season). For full details of proposed embedded mitigation refer to the relevant EA chapter(s).
Protected / Notable species	As noted in **Table 1**, important species such as bats, otter, pine marten, red squirrel, badger, and fish may be present on Site and therefore the following embedded and specific mitigation measures are detailed in the in the EA relating to Protected / Notable species. These are key objectives when considering restoration and design principles: • Pre-commencement surveys will be conducted. If otter refuges, water vole burrows, pine marten dens, red squirrel dreys (or

Objective	Restoration Objective
	other protected breeding / resting sites) and / or badger setts are found that would be subject to disturbance or damage, there would be a constraint to the Proposed Development. If this becomes the case, obtain an appropriate licence from NatureScot, which will require proportionate mitigation; • It is advisable to carry out removal of trees with potential for squirrel dreys or actual squirrel dreys outside of the breeding season. If red squirrel dreys are present, licensing through NatureScot is more difficult in the breeding season, and it is not normally permitted to destroy likely breeding dreys in the breeding season. The red squirrel breeding season is February to September, inclusive; and • Fish will be safeguarded by minimising works in or beside all watercourses and open water, and adoption of measures to ensure waterbodies are protected from pollution (by adhering to SEPA Guidance on Pollution Prevention). Water crossings must be constructed in accordance with authorisations and Method Statements granted / accepted by SEPA. For full details of proposed embedded mitigation refer to the relevant EA chapter(s).
Ornithology	There is no proposed habitat creation / enhancement specifically for ornithological features. Note however that any vegetation removal / certain habitat management actions require to be carried out outside the nesting bird season (March to August, inclusive) to avoid impacts upon nesting birds. If felling / vegetation clearance works are to be conducted within the breeding bird season, then bird nest checks will be conducted to ensure that no vegetation removal occurs that could cause an offence (e.g. the destruction of an active or habitually used bird nest). Bird nest checks remain valid for a period of 48 hours following the check, during which time felling and vegetation clearance can commence (provided that the vegetation to be removed is deemed to be free of nesting birds with a reasonable level of certainty).
INNS	Appropriate actions (such as avoidance, standard best practice, specific treatment and / or removal from site) require to be integrated into any works which may affect INNS to manage the risks and avoid potential breaches of legislation. Such actions should be compiled in a Biosecurity Management Plan (BMP) or, at minimum, a Method Statement (MS). These actions would include avoiding disturbance INNS as far as possible, cleaning of heavy plant, machinery and PPE used in the vicinity of these species, and careful management of any arisings (including potentially contaminated substrate) should they need to be removed. The above must be considered when assessing restoration and design principles and all works for landscape and habitat management must be subject to control within the BMP or MS.

4.2 Landscape and Habitat Proposals

Figure 4-5, Appendix A Figures, illustrates the spatial arrangement of the LHMP, providing details of the different planting and seeding types and restoration proposals. The planting and seeding schedules detailed below, and included on **Figure 4-5, Appendix A**

Figures, have been designed to improve landscape and visual integration, provide an element of ecological enhancement, while also complying with landowner requirements.

Proposed Standard Tree Planting

Standard tree planting will comprise a number of individual trees, included to infill gaps within existing tree planting alongside the B8033.

Function: Standard tree planting is proposed to reinforce the landscape pattern, helping integrate the Proposed Development into the landscape and providing an element of localised screening from the B8033 and nearby receptors. Table 3, below, provides details of the plant species and specification for the proposed standard tree planting.

Table 3 LHMP Elements

Scientific Name	Common Name	Girth (cm)	Root Type	Height (cm)	Clear Stem (cm)	Number
Quercus petraea	Sessile Oak	10-12	RB	300-325	175-200	**7**

Proposed Hedgerow Planting with Trees

The hedgerow planting will be comprised of Fagus sylvatica (Beech), Fagus sylvatica 'purpurea' (Copper Beech) and Crataegus monogyna (Hawthorn) at the request of the relevant landowners. Hedging to be planted at a density of 6 plants per linear metre in a double staggered row and protected by shelters. Standard trees are to be planted within the hedge at random spacings to reflect surrounding landscape.

Function: The hedgerow planting with trees is to reinforce the existing landscape pattern and field boundaries while also providing an element of screening and connectivity with other habitats and help integrate the Proposed Development into the surrounding landscape.

The hedgerow and hedgerow tree planting schedules with details of the species is shown in **Table 4** and **Table 5** overleaf.

Table 4 Hedgerow Planting

Scientific Name	Common Name	Specification	Height (cm)	Density	Mix	Number
Crataegus monogyna	Hawthorn	1+1/ 2+1 bare root transplants	60-80	6 plants per lin m	25%	398
Fagus sylvatica	Beech	1+1/ 2+1 bare root transplants	60-80	6 plants per lin m	37.5%	596
Fagus sylvatica 'purpurea'	Copper Beech	1+1/ 2+1 bare root transplants	60-80	6 plants per lin m	37.5%	596

Table 5 Hedgerow Trees

Scientific Name	Common Name	Girth (cm)	Root Type	Height (cm)	Clear Stem (cm)	Number
Alnus glutinosa	Common Alder	10-12	RB	300-325	175-200	2
Ulmus glabra	Wych Elm	10-12	RB	300-325	175-200	3

Proposed Native Woodland Planting

Woodland planting will comprise of a mix of native deciduous tree species commonly found within the area, helping integration with the existing landscape context. It is anticipated that trees would be planted as transplants/ whips at a density of approximately 1.5 m centres as these are likely to achieve the greatest success of establishment.

Function: Woodland planting is proposed to provide an element of landscape and visual integration of the Proposed Development, while also providing habitat connectivity along the Keir Burn. The planting schedule with details of the species and planting specification for the woodland planting is shown in **Table 6** below. Species mix is indicative, subject to agreement with landowners.

Table 6 Woodland Planting

Scientific Name	Common Name	Specification	Height (cm)	Density	Mix	Number
Alnus glutinosa	Common Alder	1+1 bare root transplants	60-80	1.5m centres	15%	52
Betula pendula	Silver Birch	1+1 bare root transplants	60-80	1.5m centres	15%	52
Corylus avellana	Hazel	1+1 bare root transplants	60-80	1.5m centres	10%	35
Crataegus monogyna	Hawthorn	1+1 bare root transplants	60-80	1.5m centres	10%	35
Prunus avium	Wild Cherry	1+1 bare root transplants	60-80	1.5m centres	15%	52
Sorbus aucuparia	Rowan	1+1 bare root transplants	60-80	1.5m centres	15%	52
Ulmus glabra	Wych Elm	1+1 bare root transplants	60-80	1.5m centres	10%	35
Viburnum opulus	Guelder Rose	1+1 bare root transplants	60-80	1.5m centres	10%	35

MG5 Meadow Mix

Meadow Seeding is proposed for sections of the haul track embankments and areas temporarily occupied by construction, such as temporary compounds, bridge fabrication areas etc. and includes a range of grass species (80%) and wildflowers (20%). Additional seeding will be undertaken as required to reinstate other areas affected by construction.

Function: Meadow seeding creates a low maintenance buffer zone between the rough grazing pasture and haul track and increases species biodiversity.

Table 7, below, provides a seeding schedule with details of the species included in the meadow seeding mix.

Table 7 MG5 Meadow Seeding Schedule

Scientific Name	Common Name	Planting Method	Sowing Rate	Mix
WILDFLOWERS (20% of mix)				
Achillea millefolium	Yarrow	Manual broadcast, seed drill or hydro-seed.	3g/m2	1%
Agrimonia eupatoria	Agrimony			1%
Alchemilla glabra	Smooth Lady's Mantle			0.1%
Centaurea nigra	Common Knapweed			2%
Cerastium fontanum	Common Mousear			1%
Galium verum	Lady's Bedstraw			1%
Lathyrus pratensis	Meadow Vetchling			1%
Leucanthemum vulgare	Ox-eye Daisy			2%
Plantago lanceolata	Ribwort Plantain			2%
Primula veris	Cowslip			0.5%
Prunella vulgaris	Selfheal			1%
Ranunculus acris	Meadow Buttercup			1.5%
Rhinanthus minor	Yellow Rattle			2%
Rumex acetosa	Common Sorrel			1%
Scorzoneroides autumnalis	Autumn Hawkbit			1.3%
Succisa pratensis	Devils-bit Scabious			1%
Trifolium pratense	Red Clover			0.5%
Veronica chamaedrys	Germander Speedwell			0.1%
GRASSES (80% of mix)				
Agrostis capillaris	Common Bent (c)	Manual broadcast, seed drill or hydro-seed.	3g/m2	10%
Alopecurus pratensis	Meadow Foxtail (c)			5%
Anthoxanthum odoratum	Sweet Vernal Grass			5%
Briza media	Quaking Grass			2%
Cynosurus cristatus	Crested Dog's Tail			10%
Festuca ovina	Sheep's Fescue			15%
Festuca rubra	Red Fescue			33%

Agricultural Grass Mix

An agricultural grass seed mix is proposed for sections areas alongside the haul track and areas temporarily occupied by construction that would be returned to agricultural use such as the temporary compounds and bridge fabrication areas. The agricultural grass mix includes a range of grass species (80%) and wildflowers (20%) tailed for agricultural use, including grazing. Additional seeding will be undertaken to reinstate others areas affected by construction and to be returned to agricultural use.

Function: Agricultural seeding to facilitate return of areas occupied during construction to agricultural use, while also increasing species diversity.

Table 8, below, provides a seeding schedule with details of the species included in the agricultural seeding mix. Species mix is indicative, subject to agreement with landowners.

Table 8 Agricultural Seeding Schedule

Scientific Name	Common Name	Planting Method	Sowing Rate	Mix
Lolium spp	Perennial Ryegrass	Manual broadcast, seed drill or hydro-seed.	3.7g/m2	87%
Phleum bertolonii	Timothy (Small eared)			6.5%
Trifolium repens	White Clover			6.5%

5. MAINTENANCE AND MANAGEMENT

5.1 Introduction

This section describes the key roles and responsibilities and sets out the soft landscape monitoring and management objectives.

5.2 Overview of Roles and Key Environmental Responsibilities

The appointed contractor will be responsible for implementing the landscape and ecology measures during construction. They will also be responsible for the establishment of maintenance and monitoring based on more detailed landscape specification for a five-year period unless otherwise agreed with SSEN Transmission.

The BNG Report is contained within **Appendix D Biodiversity Net Gain Report** of the accompanying EA Report and details the monitoring and maintenance requirements including roles and responsibilities in the first five years following construction, and a period of up to 30 years for the purpose of complying with the relevant SSEN Transmission Biodiversity project Toolkit and technical guidance, with cognisance of the targeted condition (predicted condition values are determined as part of the BNG assessment, and are based on set condition assessment criteria). These monitoring and maintenance requirements are summarised below for each general habitat type to be created.

During the construction phase, it will be ensured that all relevant policies, procedures, and their requirements are made known to site personnel. This will be undertaken through several methods including site inductions, Work Package Plans (otherwise known as method statements), Task Briefing Sheets (task specific method statement and risk assessments), risk assessment briefings, and toolbox talks.

Staff, operatives, and subcontractors have the authority and responsibility to protect the environment at all times during execution of the works; the responsibilities outlined in this section will be highlighted during the site briefing. All personnel will be trained in the necessary skills to fulfil their role.

Key personnel for specific job roles are set out in **Table 9.** The roles outlined may be substituted as required providing that the key environmental responsibilities are clearly and appropriately allocated.

Table 9 Schedule of Mitigation

Role	Responsibility
Environment and Sustainability Manager	• Maintaining and revising any environmental procedures that are required; • All measures in the LHMP are implemented on site. This includes ensuring that adequate resources are allocated to environmental management on site; • Ensuring all measures to protect retained vegetation are implemented on site; • Reviews and approves risk assessments and Work Package Plans (RAMS) for environmental content; • Appointing Environmental Specialists where required; • Ensuring environmental issues in risk assessments are communicated effectively on site and that appropriate training is delivered;

Role	Responsibility
	• Ensuring that any mitigation measures identified in this LHMP but not covered by a Protected Species Licence will be implemented on site; and • Ensuring environmental instructions (including any Key Performance Indicators) from the client are carried out.
Environmental Clerk of Works (ECoW)	• The scope of the ECoW would be advised by the ecologist and landscape architect based on relevant environmental commitments, the findings of the pre-commencement walkovers, protected species licensing requirements, presence of INNS and with reference to the relevant project programmes. • Relevant site staff would receive toolbox talks as necessary from the ECoW on the relevant ecological risks present, legal requirements, and the working requirements necessary to comply with legislation, and the final approved landscaping and biodiversity management and enhancement measures. Toolbox talks would be repeated as necessary over the duration of the works.
Project Ecologist	• A Project Ecologist will be employed for the duration of construction, including implementation of the LHMP. This role may be combined with that of the Ecological / Environmental Clerk of Works (ECoW). • Appointed by the Principal Contractor (unless combined with the role of ECoW); • The Project Ecologist will advise on and monitor implementation of mitigation measures and compliance with legislation concerning ecological features, including those relevant to the LHMP; • These measures may include carrying out pre-works surveys for relevant protected species in suitable habitat, including otter, water vole, badger, red squirrel. and pine marten. In line with NatureScot guidance, the pre-construction surveys will take place no more than three months before commencing works (including facilitating works such as vegetation clearance); The Project Ecologist will be responsible for overseeing habitat mitigation works to ensure these align with this LHMP and the overarching BNG assessment; • The contractor team will be responsible for implementing the landscape and ecology measures during construction. They will also be responsible for establishing, managing, and monitoring the implementation and establishment of the landscape and ecological measures outlined within this document within the five-year monitoring and maintenance period for establishment.
Landscape Architect	• Monitoring and assessing the landscape related elements of the detailed LHMP for their effectiveness on an annual basis for the first five years following the completion of the Proposed Development; • The LHMP and specification, shall be developed accordingly to suit any changing landscape conditions and ultimately inform the maintenance operations associated with the

Role	Responsibility
	Proposed Development throughout the operational life of the Proposed Development; • Ensuring that any reviews associated with landscape related elements of the LHMP clearly identifies any changes to site conditions and circumstances, whether the aims and objectives of the approved LHMP are being met, and where identified changes are needed to existing management practices and timeframes.

5.3 Soft landscape monitoring and management

General management and monitoring objectives

Management of proposed planting and seeding will be achieved through implementing general objectives to maximise the biodiversity value on-site, specifically including:

- Applying good horticultural and ecological practice to all operations. Horticultural practice will include the use of peat-free composts, biodegradable mulches, and soil conditioners, if required. The use of pesticides (insecticides, fungicides, and slug pellets), appropriate herbicides (non-residual (glyphosate-free)) and chemical fertilisers will be discouraged, and any weed removal will be undertaken by hand where practicable;
- Promoting healthy growth and establishment of all planting and seeding;
- Ensuring development of optimal plant form, shape, and planting density;
- Ensuring consistent control of invasive weeds;
- Providing protection against pests and diseases;
- Promoting wildlife value and species diversity where appropriate;
- Ensuring planting and seeding is managed to maintain its function to provide landscape integration, nature and biodiversity value, connectivity for the benefit of wildlife and visual amenity;
- Ensuring the new landscape reflects the local landscape character and is in keeping with the surrounding area;
- Ensuring long term commitment to replacement of defective planting and seeding;
- Reviewing opportunities for introduction of new species or replacement of exhausted species where appropriate, in line with original design intentions;
- Managing planting and grass seeding to ensure clear forward visibility is maintained along transport and pedestrian access routes;
- Ensuring that all areas of hard surfacing are left in a clean condition, free from any soil, mud, leaves, cuttings, and plant arisings; and
- Ensuring that the works themselves do not cause inconvenience or danger to users.

General management actions

The following management and maintenance actions will be required to ensure successful establishment of proposed planting and seeding:

- All grassed and planted areas shall be kept in a neat and tidy condition and free of litter. Adjacent hard standing areas, drains and gullies shall also be kept clear of litter, and un-wanted vegetation and debris.
- All planting shall be kept free from weeds, pest, and diseases. Planting is to be inspected regularly throughout the growing season (at least every two months between April and September in the first 3 - 5 years) and any required remedial action taken immediately. Application of chemicals must be restricted to affected areas through spot treatment with selective herbicide. Chemical treatments are to be applied in accordance with manufacturer's instructions and relevant safety regulations.
- All planting should be monitored during warm and dry periods, particularly in the first 5 years after planting. Trees and hedgerow plants showing signs of distress are to be watered as required to ensure successful establishment and healthy growth. Standard trees are likely to require approx. 50 litres of water per week (from rainfall and supplementary watering) during summer months and dry spells. Watering should reflect this volume requirement, at a practicable frequency, ideally using tree water bags for slow water release to the base of standard trees.

All trees and hedge plants that have failed or are failing to make satisfactory extension growth are to be replaced with species matching the original planting proposals. Replacement stock size should reflect the size and form of adjacent planting of the same species.

Habitat Specific Management

To meet the objectives of certain habitat types set out in the BNG assessment, specific management measures are necessary in addition to those general measures outlined above. Specific measures related to each of the four habitat types (standard tree planting, hedgerow planting, woodland planting, and meadow grassland planting) are set out below.

Standard Tree Planting and Hedgerow Tree Planting

The planting of specimen trees is proposed to infill gaps between the existing tree line alongside the B8033 and within proposed new hedgerow planting. The trees are intended to help reinforce the existing landscape pattern, increase habitat connectivity, and provide an element of localised screening of the Proposed Development.

The species selected is reflective of existing nearby roadside trees and are targeted to achieve 'Moderate' condition in 27 years. The management phase must satisfy the following condition criteria to achieve the target biodiversity net gain:

- Trees must be protected from significant browsing damage.
- Management to ensure no invasive species are present.
- Tree health must be maintained to ensure mortality is less than 10% with no disease, pests or crown die back.

Prior to, during and after work the Contractor should avoid damage to neighbouring trees, plants, and property.

The following maintenance measures should also be undertaken as necessary to ensure successful establishment:

- Regular inspection of all tree stakes and ties (once every two months and/or after periods of high winds) to ensure trees remain upright and are securely supported. Ties should be adjusted or replaced as required to allow for growth and to prevent chaffing.

- Trees shall be re-firmed after strong winds, frost heave and other disturbances by treading around the base of trees until firmly bedded. Any collars in the soil at the base of tree stems, created by tree movement should be broken up by fork, avoiding damage to roots. The voids should be backfilled with topsoil and re-firmed.
- Any loose or defective tree guards should be adjusted, re-fixed or replaced as necessary to ensure protection from pests.
- Formative pruning and/ or cleaning out of deadwood may be required to ensure successful establishment. All tree works shall be undertaken in accordance with good horticultural practice, with extensive pruning and/ or works to larger trees carried out by an approved member of the Arboricultural Association.

Hedgerow Planting

The proposed hedge planting is required to achieve 'Poor' condition within 1 year. Management and maintenance will aim to achieve the following:

- Hedgerow with an average height of greater than 2 m and average width of greater than 1.5 m, maintained in a neat profile consistent with nearby hedgerows and avoiding obstructing or overhang footpaths, roads, and tracks; and
- The gap between the ground and base of the hedge canopy will be less than 0.5 m and gaps along the hedgerow comprise less than 10% of the total hedge length with no individual gap being larger than 5 m.

The following actions should be undertaken as necessary to ensure successful establishment:

- Hedges to be pruned every two years once established to maintain a consistent profile and promote dense growth;
- No cutting or pruning should be undertaken between March and July (inclusive) to minimise potential disturbance to nesting birds and wildlife; and
- all herbaceous species (except invasive weed species) at the base of hedgerows are to be retained to increase biodiversity.

Native Woodland Planting

The planting of native woodland is targeted to achieve 'Poor' condition in 5 years, the management phase must satisfy the following condition criteria to achieve the target biodiversity net gain:

- Trees must be protected from significant browsing damage.
- Management to ensure no invasive species are present.
- Tree health must be maintained to ensure mortality is less than 10% with no disease, pests or crown die back.
- Timber from existing trees to be removed in this area should be retained to provide deadwood habitat to enhance ecological value of woodland.

The following maintenance operations should also be undertaken as necessary to ensure successful establishment:

- Maintain a 600 mm diameter circle around base of tree free of weeds to minimise competition.
- Regular check for pest and disease attack throughout the growing season, with suitable treatment applied, as necessary.
- Keep trees upright and check for root firmness in spring and autumn.

- Check stakes and ties for firmness and adjust as necessary in spring and autumn and after periods of strong winds.
- Prune trees to remove any dead, damaged or diseased shoots in spring and autumn.
- Regular monitoring of trees for signs of drought distress throughout the growing season, and particularly during periods of warm weather and low rainfall. Watering to be undertaken as necessary to ensure successful establishment.
- Remove stakes and ties once trees are established.
- Following an establishment period of 10 years, thinning may be required to reduce the crown density and encourage continual growth of the woodland structure. Thinning will take place between the months of January and March.
- Do not allow mowing machinery closer than 100 mm to any tree stem. Avoid damage to tree stems by nylon filament rotary cutters or other mechanical tools.

Proposed Grass seeding (MG5 Meadow Mix and Agricultural Seed Mix)

The MG5 Meadow Mix and Agricultural Seed Mix is targeted to achieve 'Poor' condition in 1 year. The management phase must satisfy the following condition criteria to achieve the target biodiversity net gain:

- Ensure the cover of bracken is less than 5% of total area.
- Ensure invasive non-native and undesirable species make up less than 5% of the total area.

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

Sowing on ground prone to winter flooding is safest either in the early autumn or in spring once the land has drained. Most plants need time to grow mature enough to withstand flooding.

The following maintenance operations should also be undertaken as necessary to ensure successful establishment:

- Within the first year after seeding resist cutting of initial flush of annual weeds arising from the soil seed bank as these can offer shelter to sown seedlings and offer biodiversity benefits. Cut late in season to reveal the young meadow, which can then be kept short by grazing or mowing through to the end of March of the following year.
- In the second and subsequent years MG5 sowings can be managed in several ways which, in association with soil fertility, will determine the character of the grassland. The best results are usually obtained by traditional meadow management based around a main summer hay cut in combination with autumn and possibly spring mowing or grazing.
- Meadow grassland is not cut or grazed from spring through to July/August to give the sown species an opportunity to flower. After flowering in July or August take a 'hay cut': cut back with a scythe, strimmer, or tractor mower to c 50 mm. Leave the 'hay' to dry and shed seed for 1-days then remove from site. Mow or graze the re-growth through to late autumn/winter to c50 mm and again, in spring if needed.
- Recommended ongoing management of MG5 Meadow Mix includes a once-a-year hay cut, with the removal of arisings (e.g. off-site to be composted locally).

5.4 Monitoring of Habitat Creation

All habitat creation measures will be initiated during construction of the Proposed Development, and then managed for a minimum of five years after completion and until establishment is ensured as set out above in order to meet the proposed target conditions (as set out in the BNG assessment).

Monitoring of habitat creation will be undertaken in years 1, 2, 3, 5, 10, 15 and 20 to check on progress towards achieving the targeted conditions. The monitoring should follow the habitat condition assessment methodology to check progress. Where progress towards the target condition is not on track, remedial measures will be recommended.

APPENDIX A – BIODIVERSITY ACTION PLAN

The details provided in this LHMP set out much of the information relating to how the habitats to be created have been designed and details the management and monitoring arrangements. This appendix draws together a summary of where the key information within this document relating to biodiversity can be located.

Biodiversity Objectives

Table 2 sets out the objective with respect to biodiversity, that being to achieve a 10% net gain in biodiversity value, through the creation and enhancement of habitats appropriate to the local area.

Biodiversity Actions

As detailed in Section 4.2 above the following habitats will be created as part of the Proposed Development. Table B.1 sets out the quantities of the habitats that are to be created. The locations of the habitats are shown on **Figure 4-5 in Appendix A, Figures**. These biodiversity actions, achieve the objective, as are predicted to deliver a net gain greater than 10%.

Table B. 1 Quantities of habitats to be created

Proposed Element	Number	Area (m²)	Length (lin m)
Proposed Standard Tree Planting	**7**		
Proposed Hedgerow Planting with Trees	5		265
Proposed Native Woodland Planting		520	
Other neutral grassland		21,200	
Modified grassland		6,200	

Habitat Management Techniques

Section 5.3 above sets out the approaches for habitat to management to ensure that the proposed habitats establish. This section also sets out the targeted conditions for each habitat to be created and the timescales associated with these.

Monitoring

Section 5.4 sets out details on the monitoring timescales.