



Energy for
generations

Belmayne 110 kV/38MV Distribution Substation

Biodiversity Enhancement & Management Plan

Electricity Supply Board (ESB)

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ESB Engineering and Major Projects, The Sidings, Grand Canal Quay, Dublin 2, D02 E7K8, Ireland.

Phone +353 (0)1 703 8000

www.esb.ie

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Prepared by:	Shay Gurn	Date: 13/02/2026
Title:	Graduate Ecologist	
Verified by:	David Daly	Date: 20/02/2026
Title:	Senior Ecologist	
Approved by:	Ria Aherne	Date: 02/04/2026
Title:	Senior Ecologist	

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Change History of Report

Date	New Revision	Author	Summary of Change

Contents

1	Introduction	4
1.1	Background	4
1.2	Objectives	4
1.3	Roles & Responsibilities	5
2	Baseline Biodiversity at proposed Belmayne Substation	7
2.1	Methodology	7
2.2	Existing environment within and adjacent to the proposed Belmayne Substation Site	7
3	Biodiversity Enhancement Measures	11
3.1	Reinforcement and enhancement of boundary hedgerows/treelines	12
3.2	Boundary vegetation retention and management	12
3.3	New Hedgerow/Treeline planting	12
3.4	Meadow Management (for pollinators)	13
3.5	Hedgerow/Treeline retention	13
3.6	Pollinator Planting	14
4	Timelines and Monitoring of Biodiversity Actions	14
4.1	Delivery Timeline	14
4.2	Monitoring	14
	Appendix A	16
	Appendix B	18

1 Introduction

1.1 Background

This Biodiversity Enhancement & Management Plan relates to the proposed Belmayne 110kV/38MV Distribution Substation in Belmayne, Co. Dublin (hereafter referred to as the '*proposed development*') (Figure 1), and accompanies a planning application being made by the ESB to An Coimisiún Pleanála (ACP). For the purposes of the planning application ESB is acting in its capacity as licensed operator and asset owner of the distribution system (see further Section 2.1 of the PER).

A pre-planning consultation between ESB and Dublin City Council (DCC) was held on 15th January 2026. During the meeting DCC asked ESB to prepare a Biodiversity Enhancement Plan as part of the planning application. This Biodiversity Enhancement & Management Plan for the Belmayne 110kV/38MV Distribution Substation has been prepared by ESB Engineering and Major Projects (EMP) on behalf of ESB acting through the ESB Networks business unit, to outline actions and management measures which will be implemented during the construction and operational phase of the substation.

1.2 Objectives

The overall objective of this plan is to secure, sustain and enhance the biodiversity value of the proposed Belmayne substation site in the future. This will be delivered by protecting and conserving existing habitats of value, enhancing their condition and improving ecological connectivity within and to/from the overall site. The Biodiversity Enhancement & Management Plan will be updated as required and will remain a 'live' document during the operational lifetime of the substation.

The individual objectives of this Biodiversity Enhancement & Management Plan for the proposed Belmayne substation site are as follows:

- Highlight any known ecological constraints on the proposed Belmayne substation site;
- Outline biodiversity actions which will be implemented during the operational phase of the project to enhance and protect the biodiversity value of the site;
- Set out site monitoring of biodiversity, in order to support future decision-making in management practices for the overall enhancement of biodiversity at the site.

This document has been drafted with reference to the following relevant plans and strategies:

- ESB Group Standard on Biodiversity and Ecosystems 2024;
- All-Ireland Pollinator Plan (AIPP) 2021-2025;
- Dublin City Council Biodiversity Action Plan 2021-2025;
- 4th National Biodiversity Action Plan 2023-2027.

1.3 Roles & Responsibilities

This Biodiversity Enhancement & Management Plan was prepared by ESB EMP Graduate Ecologist Shay Gurn who holds a B.Sc. Hons in Environmental Science with Ecology from Atlantic Technological University Sligo (ATU). His experience primarily includes the preparation of Appropriate Assessment Screening reports for Overhead line (OHL) upgrades, new OHL connections, and new underground cable (UGC) connections.

This Biodiversity Enhancement & Management Plan has been technically reviewed by ESB EMP Senior Ecologist David Daly. David has over six years' professional experience in ecological consultancy. He holds a B.Sc. in Ecology from University College Cork and obtained a distinction in M.Sc. in Species Identification and Survey Skills from the University of Reading. His experience primarily includes the preparation of Ecological Impact Assessments, Biodiversity Chapters of Environmental impact Assessment (EIA) reports, Appropriate Assessment (AA) Screening reports and Natura Impact Statements (NIS) for a range of public and private projects across Ireland, largely renewable energy projects. David is a terrestrial ecologist with experience in habitat, botanical, ornithological, bat and mammal surveys and assessments in both Ireland and the UK.

Implementation of this Biodiversity Management Plan will be the responsibility of ESB Networks (ESBN). Specialist support will be provided by the Ecology Team based in ESB EMP.

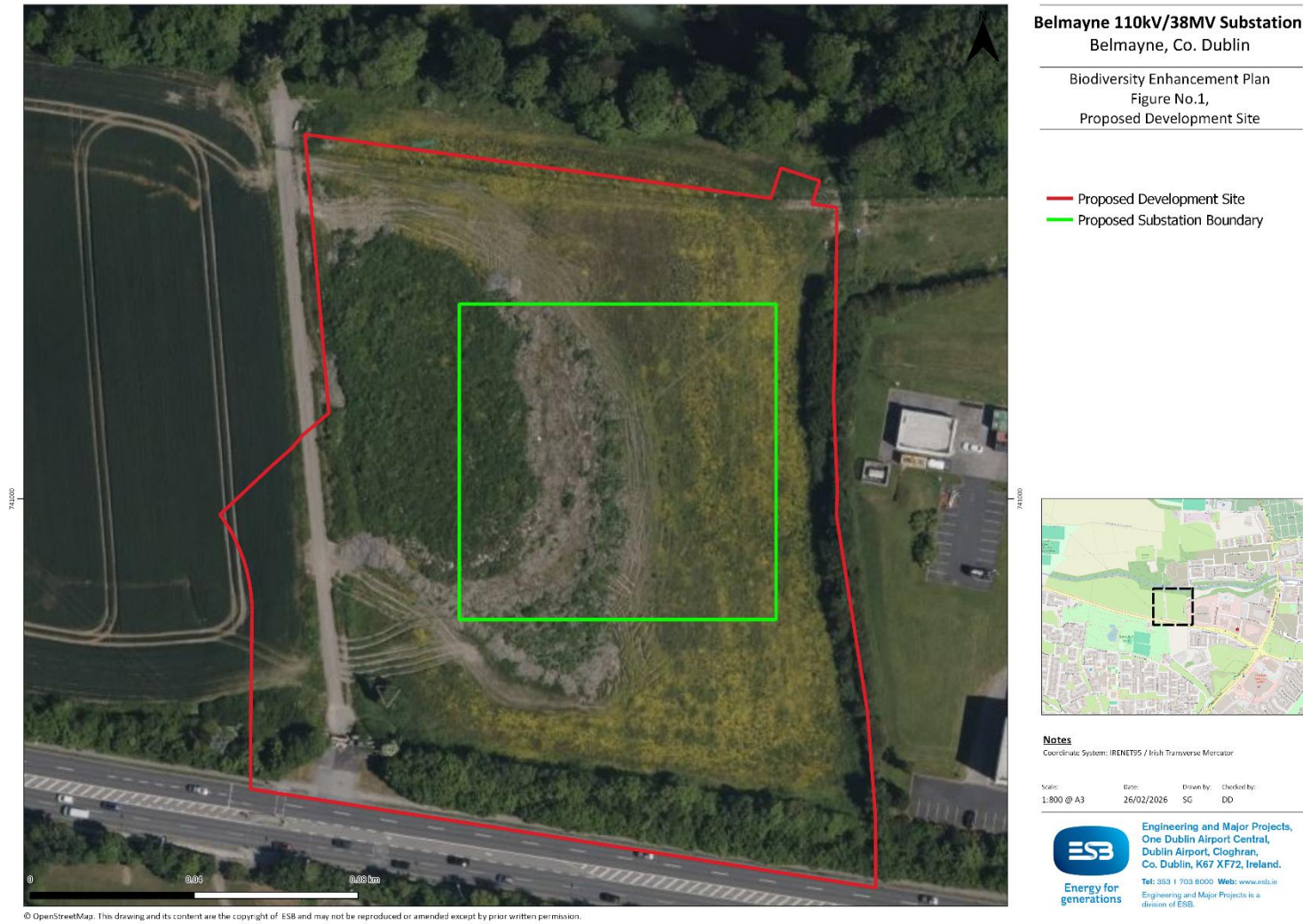


Figure 1 Proposed Development Site.

2 Baseline Biodiversity at proposed Belmayne Substation

2.1 Methodology

2.1.1 Desktop study

A desktop study was undertaken to inform this assessment. The following sources of information were referred to as part of this desktop study:

- Information on records of protected and invasive species relevant to this assessment, held by the National Biodiversity Data Centre (NBDC), viewed on the 13th February 2026 at <https://maps/biodiversity.ie/Map>;
- Information on records of plant species relevant to this assessment, held by the National Parks and Wildlife Service (NPWS) Flora (Protection) Order 2022 map viewer, viewed on the 13th February 2026 at <https://heritagedata.maps.arcgis.com/apps/webappviewer/index.html?id=a41ef4e10227499d8de17a8abe42bd1e>;
- Aerial photography of the proposed development site and the surrounding area as relevant to this assessment, held by Ordnance Survey Ireland, viewed on 13th February 2026 at <https://geohive.ie>

2.1.2 Field study

The development site was visited by ESB ecologists on 29th April 2025. The purpose of this survey was to establish the baseline ecological conditions and to identify potential enhancement opportunities.

The approach to the field survey is based on accepted standard practice and methods. Habitats within the study area were classified after 'A Guide to Habitats in Ireland' (Fossitt, 2000). Plant species within each habitat type were noted, as well as the locations of any evidence of rare/ protected species or invasive species.

2.2 Existing environment within and adjacent to the proposed Belmayne Substation Site

2.2.1 Habitats

According to NPWS Flora (Protection) Order 2022 map viewers opposite-leaved pondweed (*Groenlandia densa*) was recorded in hectad O24 in 2017. There are no recent records (i.e. last 25 years) of protected and/ or rare plant species within the proposed development site according to NBDC map viewer 2km grid square O24A. No protected and/ or rare plant species were recorded during the field survey. The site is surrounded by roads, commercial buildings, residential houses, and improved agricultural grassland. As noted above, a site visit was completed on 29th April 2025 by ESB ecologists. A subsequent site visit was completed on 18th December 2025 and it was evident that an area of scrub that was previously recorded during April 29th visit had been removed .

The site comprises the following habitat types (see Appendix A for photos of each habitat):

- Recolonising bare ground (ED3) - A low diversity of herbaceous species i.e. dock (*Rumex obtusifolius*), broadleaf plantain (*Plantago major*), common nettle (*Urtica dioica*), scentless mayweed (*Tripleurospermum inodorum*), and dandelion (*Taraxacum sp*).
- Buildings and artificial surfaces (BL3) - hardstanding area on entrance road on western side of the site.
- Treelines (WL2) – willow (*Salix spp*), blackthorn (*Prunus spinosa*), and ash (*Fraxinus excelsior*) immature treeline with english ivy (*Hedera helix*); and pockets of the invasive butterfly bush (*Buddleja davidii*).
- Tilled Land (BC3) – This habitat was located on the western side of the access track, it appeared to be dominated by one species however it was recently cut therefore crop identification was not possible.

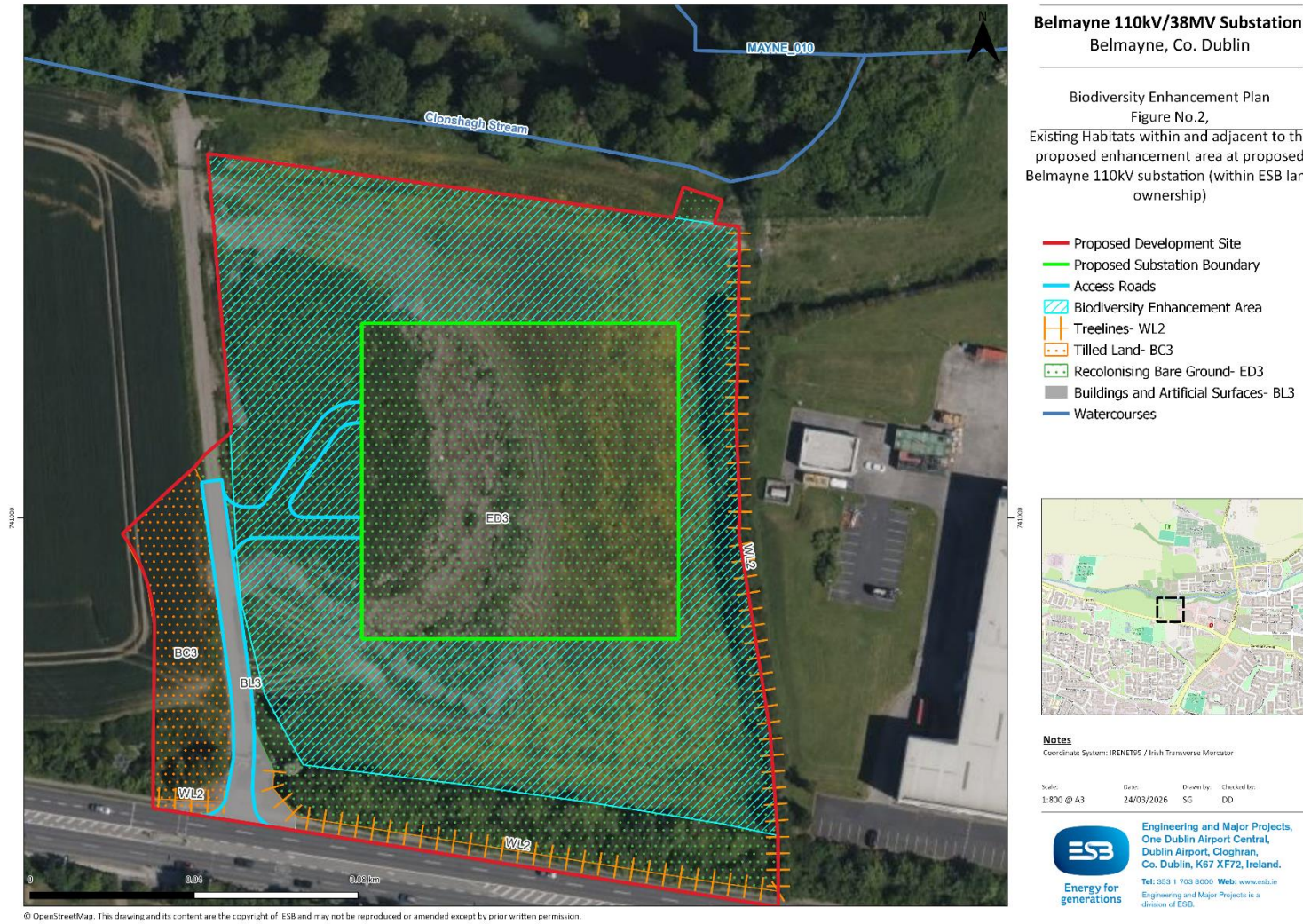


Figure 2 Existing habitats within and adjacent to the proposed enhancement area at proposed Belmayne 110 kV substation (within ESB land ownership)

2.2.2 Species

According to NBDC map viewer (2km grid square O24A), the following protected fauna species were recorded within approximately 2 km of the proposed development site:

- Twenty five Red-listed bird species¹:– bar-tailed godwit (*Limosa lapponica*), black-tailed godwit (*Limosa limosa*), common scoter (*Melanitta nigra*), curlew (*Numenius arquata*), dunlin (*Calidris alpina*), golden plover (*Pluvialis apricaria*), goldeneye (*Bucephala clangula*), grey plover (*Pluvialis squatarola*), grey wagtail (*Motacilla cinerea*), kestrel (*Falco tinnunculus*), kittiwake (*Rissa tridactyla*), knot (*Calidris canutus*), lapwing (*Vanellus vanellus*), meadow pipit (*Anthus pratensis*), oystercatcher (*Haematopus ostralegus*), pochard (*Aythya ferina*), purple sandpiper (*Calidris maritima*), razorbill (*Alca torda*), redshank (*Tringa totanus*), redwing (*Turdus iliacus*), shoveler (*Spatula clypeata*), snipe (*Gallinago gallinago*), stock dove (*Columba oenas*), swift (*Apus apus*), yellowhammer (*Emberiza citrinella*).
- Forty two Amber-listed bird species:- arctic tern (*Sterna paradisaea*), black guillemot (*Cepphus grylle*), black-headed gull (*Chroicocephalus ridibundus*), common guillemot (*Uria aalge*), common gull (*Larus canus*), coot (*Fulica atra*), cormorant (*Phalacrocorax carbo*), fulmar (*Fulmarus glacialis*), goldcrest (*Regulus regulus*), great crested grebe (*Podiceps cristatus*), great northern diver (*Gavia immer*), greenfinch (*Chloris chloris*), herring gull (*Larus argentatus*), house martin (*Delichon urbicum*), house sparrow (*Passer domesticus*), lesser black-backed gull (*Larus fuscus*), light-bellied brent goose (*Branta bernicla hrota*), linnet (*Linaria cannabina*), mallard (*Anas platyrhynchos*), mediterranean gull (*Ichthyaetus melanocephalus*), merlin (*Falco columbarius*), mute swan (*Cygnus olor*), pintail (*Anas acuta*), red-breasted merganser (*Mergus serrator*), red-throated diver (*Gavia stellata*), ringed plover (*Charadrius hiaticula*), sand martin (*Riparia riparia*), shag (*Gulosus aristotelis*), shelduck (*Tadorna tadorna*), skylark (*Alauda arvensis*), spotted flycatcher (*Muscicapa striata*), starling (*Sturnus vulgaris*), swallow (*Hirundo rustica*), teal (*Anas crecca*), tufted duck (*Aythya fuligula*), turnstone (*Arenaria interpres*), whooper swan (*Cygnus cygnus*), wigeon (*Mareca penelope*), willow warbler (*Phylloscopus trochilus*)
- One bat species – soprano pipistrelle (*Pipistrellus pygmaeus*)
- One terrestrial mammal –hedgehog (*Erinaceus europaeus*)
- Five invasive species- giant hogweed (*Heracleum mantegazzianum*), butterfly bush (*Buddleja davidii*), harlequin ladybird (*Harmonia axyridis*), ring-necked parakeet (*Psittacula krameria*), rabbit (*Oryctolagus cuniculus*).

Birds

The proposed enhancement area is dominated by recolonising bare ground which offers limited foraging habitat for birds.

¹ As per Birds of Conservation Concern in Ireland 4: 2020-2026, Gilbert et al. 2020

The treelines and hedgerows provide suitable nesting habitat for a variety of common passerine species during the breeding season (March to August inclusive). A buzzard (*Buteo buteo*) was recorded flying over the proposed development site during the site survey.

Mammals

The proposed development site is in an area of moderate habitat suitability for bats (Lunday *et al.* 2011). Given the ivy-cladding on the immature willow, ash, and blackthorn treeline it is considered to have low potential for roosting bats². The treelines onsite could provide commuting/ foraging habitat for bats in the surrounding area.

A small mammal burrow was recorded along the south-western corner of the site. The recolonising bare ground, buildings and artificial surfaces, and treelines, onsite likely provide suitable foraging habitat for badger and hedgehog.

3 Biodiversity Enhancement Measures

This section describes several site management measures which will be implemented by ESNB to enhance biodiversity at the proposed Belmayne 110 kV substation site during the construction and operation phases of the substation.

The landscape plan in Appendix B below shows the 'Target Areas' for respective biodiversity enhancement measures. These measures comprise a series of actions broadly spread over six discrete categories based on existing habitats and/or species present.

The hardstanding components of the live substation (and construction compound area) have been excluded from the Biodiversity Target Actions, given the limited capacity for practical enhancements in these areas.

² Bat Surveys for Professional Ecologists – Good Practice Guidelines, Collins 2023.

3.1 Reinforcement and enhancement of boundary hedgerows/treelines

Supplementary planting of gaps in the hedgerows around the east of the proposed development site (approx. 150 m total length) will be undertaken to enhance the integrity and connectivity of this boundary vegetation, as follows:

- Planting undertaken by hand with native hedgerow whips of local provenance, such as hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), pedunculate oak (*Quercus robur*), grey willow (*Salix cinerea*), guelder rose (*Viburnum opulus*), dog-rose (*Rosa canina*), and honeysuckle (*Lonicera periclymenum*)
- Aim to achieve a species-rich condition (5 woody native species per 30 m);
- Staggered planting of feathered whips (of various sizes) and advanced nursery stock (where necessary) in staggered rows at a spacing of 600 mm
- Cutting of the enhanced hedge will occur on 3-5 year cycles, this is to allow for the production of flowers and fruit.

All existing boundary vegetation will be retained, with minor cutting back only when necessary during the appropriate seasons (no vegetation clearance within the breeding bird season i.e. March to August inclusive), retaining height and structure as much as possible, and subject to evaluation by an ecologist.

3.2 Boundary vegetation retention and management

The existing treeline to the south of the proposed development site (approx. 125 m length) will be subject to sensitive management for the operational lifetime of the substation.

All existing boundary vegetation will be retained, with minor cutting back only when necessary during the appropriate seasons (no vegetation clearance within the breeding bird season i.e. March to August inclusive), retaining height and structure as much as possible, and subject to evaluation by an ecologist.

The road side of the treeline, as it runs along the R139, may be subject to trimming along its vertical face, similar to existing trimming required under Road Safety Authority and Dublin City Council guidance.

3.3 New Hedgerow/Treeline planting

The northern, western, and southern boundary of the proposed development site will be planted with native tree whips (no. 55) (approx. 360 m length), and the northern and western boundary will be planted with fastigiata oak (*Quercus robur*) trees (no. 26) (approx. 250 m length). Native hedgerow species (approx. 124 m length) will also be planted on the northern boundary to enhance the integrity and connectivity of woody areas onsite.

Planting is to be undertaken by hand with native tree whips of local provenance, such as blackthorn (*Prunus spinosa*), alder (*Alnus glutinosa*), downy birch (*Betula pubescens*), wild cherry (*Prunus avium*), hawthorn (*Crataegus monogyna*), silver birch (*Betula pendula*), rowan (*Sorbus aucuparia*), and holly (*Ilex aquifolium*).

Planting undertaken by hand with native hedgerow whips of local provenance, such as hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), pedunculate oak (*Quercus robur*), grey willow (*Salix cinerea*), guelder rose (*Viburnum opulus*), dog rose (*Rosa canina*), and honeysuckle (*Lonicera periclymenum*).

Trees will be allowed to reach maximum height and structure, leading to the establishment of mature trees onsite.

Hedgerows will be maintained at 3-4 m height.

3.4 Meadow Management (for pollinators)

The existing area of recolonising bare ground and buildings and artificial surfaces around the proposed substation (approx. 8,500 m²) will be enhanced for pollinators utilising meadow management regimes in accordance with AIPP guidance.

Where there are significant areas of bare soil, areas will initially be seeded with a light mix of grass seed, sourced from a registered Irish supplier and comprising of native species of a local provenance, in line with the recommendations of the All-Ireland Pollinator Plan 2021 – 2025. Grass species will include those typical of dry meadows in the area, such as smooth meadow-grass (*Poa pratensis*) and false oat-grass (*Arrhenatherum elatius*). Once initially seeded the meadow area will be allowed to naturally revegetate and will be managed as a meadow to promote biodiversity. This will create a dry grassy meadow habitat once established after ca. 3 years.

This target area for pollinator action will be managed in line with a 'long-flowering meadow' regime, as follows:

- Annual cut of long-established grassy areas in early September, then let the grass grow until the following September;
- If grass growth is very strong and the vegetation is falling over under its own weight, for the first 3-5 years cut sooner (e.g. July) and again in September;
- Remove the cuttings from the grassland to reduce soil fertility over time.

If required for ESN operational/ monitoring reasons, small scale sections of the target area (e.g. to allow for access paths through the meadows) will be managed in accordance with a 'short-flowering meadow' regime, as follows:

- Do the first cut on or around the 15th of April (or after first bloom of dandelions, but before the setting of seed);
- Cut areas on a 6 no. week rotation, removing all cuttings; and
- Eliminate herbicide usage in such areas.

3.5 Hedgerow/Treeline retention

The existing area of hedgerow/treeline (approx. 151 linear metres) will be subject to sensitive management for the operational lifetime of the substation.

All of the hedgerow/treeline vegetation will be retained, with minor cutting back only when necessary, e.g. if the planted hedgerow/treeline is impinging on immature whips planted during

the appropriate seasons (no vegetation clearance within the breeding bird season i.e. March to August inclusive).

3.6 Pollinator Planting (Native)

An existing area of recolonising bare ground on the west of the proposed development site (approx. 130 linear metres) where it is proposed to plant fastigiata oak trees will also be planted with native pollinator friendly perennials, which serves as a functional aesthetic piece for the site while also enhancing this location for local pollinators.

This target area will be managed in line with the AIPP guidance on as follows:

- Lightly cultivate soil to allow for planting or natural regeneration.
- Utilise a mix of locally sourced, low perennials and shrubs that flower at different times of the year to provide year-round support for pollinators.
- In creation of pollinator friendly planting mix close to proposed fastigiata oak trees, utilising a mix of pollinator friendly plants such as bird's-foot trefoil (*Lotus corniculatus*), red clover (*Trifolium pratense*), devil's-bit scabious (*Succisa pratensis*), field scabious (*Knautia arvensis*), lady's bedstraw (*Galium verum*), knapweed (*Centaurea nigra*), oxeye daisy (*Leucanthemum vulgare*), and blue flax (*Linum perenne*)

4 Timelines and Monitoring of Biodiversity Actions

4.1 Delivery Timeline

Biodiversity actions will be implemented as appropriate during the construction phase of the proposed development and subsequently through the continued operational phase of the proposed Belmayne substation. The grassland/meadow management area may require 3-5 years of management before an increase in botanical diversity is noted. The planting of whips in the hedgerows and treelines, could take five years to establish. Monitoring timelines will reflect these habitat establishment timeframes.

4.2 Monitoring

- ESNB proposes to undertake monitoring (such as fixed relevé surveys and hedgerow assessments) of the respective actions, issuing internal recommendations for modifications to management regimes as necessary i.e. if enhancement measures appear to be failing. After the initial implementation of these measures, monitoring will be completed on Years 1, 3, 5, and then on *ad-hoc* basis.
- Monitoring will be undertaken by competent persons (e.g. ESB staff ecologists), with the results captured in a monitoring report (or other record).
- A photographic record of the respective measures will be established to document and record successful establishment as appropriate.

References

ESB (2024) Group Standard on Biodiversity and Ecosystems.

National Biodiversity Data Centre & All-Ireland Pollinator Plan Steering Group (2021) *All-Ireland Pollinator Plan 2021–2025*

Dublin City Council (2022) *Dublin City Biodiversity Action Plan 2021–2025*

National Parks and Wildlife Service (2023) *4th National Biodiversity Action Plan 2023–2030*

Fossitt (2000) *A Guide to Habitats in Ireland*. The Heritage Council.

National Biodiversity Data Centre (NBDC) *Map Viewer*

National Parks and Wildlife Service (NPWS) *Flora (Protection) Order 2022 map viewer*

Ordnance Survey Ireland (OSI) *Geohive Maps*

BirdWatch Ireland & RSPB Northern Ireland (2021) *Birds of Conservation Concern in Ireland 4 (BoCCI4): 2020–2026*. *Irish Birds*, 43, 1–22.

Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N., (2011) *Landscape conservation for Irish bats & species specific roosting characteristics*. Bat Conservation Ireland

Bat Conservation Trust (2022) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edition).

Appendix A

Site Photographs



Plate 1. Buildings and artificial surfaces (BL3). Access for proposed development. Photograph taken facing a southerly direction on 29/04/25.



Plate 2. Recolonising bare ground (ED3). proposed location for new substation. Photograph taken facing a westerly direction on 29/04/2025



Plate 3. Treelines (WL2) along north-easterly boundary of the proposed development site. The treeline is to be retained and bolstered. Photograph taken facing a southerly direction on 29/04/2025

Appendix B

Landscape Plan

