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Appendix 5-7

Biodiversity Enhancement Plan (BEP)

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MWP

Biodiversity Enhancement Plan (BEP)

Proposed Rínn Rua Hotel and Leisure Park, Reenroe, County Kerry.

Rínn Rua Holiday Park LTD.

April 2024

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Contents

Figures

Plates

RECEIVED: 24/05/2024

Appendices

RECEIVED: 24/05/2024

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HEALTH & SAFETY I.S. ISO 45001:2018 NSAI Certified
ENVIRONMENT I.S. EN ISO 14001:2015 NSAI Certified

1. Introduction

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A Planning Application is being lodged to Kerry County Council (KCC) for permission to renovate the existing derelict Reenroe Hotel and develop a holiday park on lands located at Reenroe and Emlaghmore West, near Ballinskelligs, County Kerry.

Malachy Walsh and Partners Engineering and Environmental Consultants (MWP) were engaged by the Applicant (Rínn Rua Holiday Park LTD.) to undertake baseline ecology surveys at the proposed development site to inform the preparation of an Environmental Impact Assessment Report (EIAR) to be submitted to the planning authority. This report comprises a Biodiversity Enhancement Plan (BEP) prepared by MWP ecologists in relation to the proposed development. A Screening for Appropriate Assessment (AA) report has also been prepared. These documents will accompany the planning application.

The BEP has been prepared to identify important habitats and other ecological features within the proposed development site and surrounding area and propose enhancement measures in relation to biodiversity. In addition to the proposed development site, an adjacent area of land, which is under the control and ownership of the Applicant, is proposed as a targeted Biodiversity Enhancement Area (BEA) (see **Figure 1** and **Figure 2** below). The BEA will be set aside specifically for long-term biodiversity enhancement, to be achieved through a range of measures which will focus on enhancing this area specifically for flora and fauna. This document outlines proposals in relation to biodiversity enhancement measures associated with the proposed development. The measures relate to both the proposed development site and the targeted BEA, located outside but adjacent to the site.

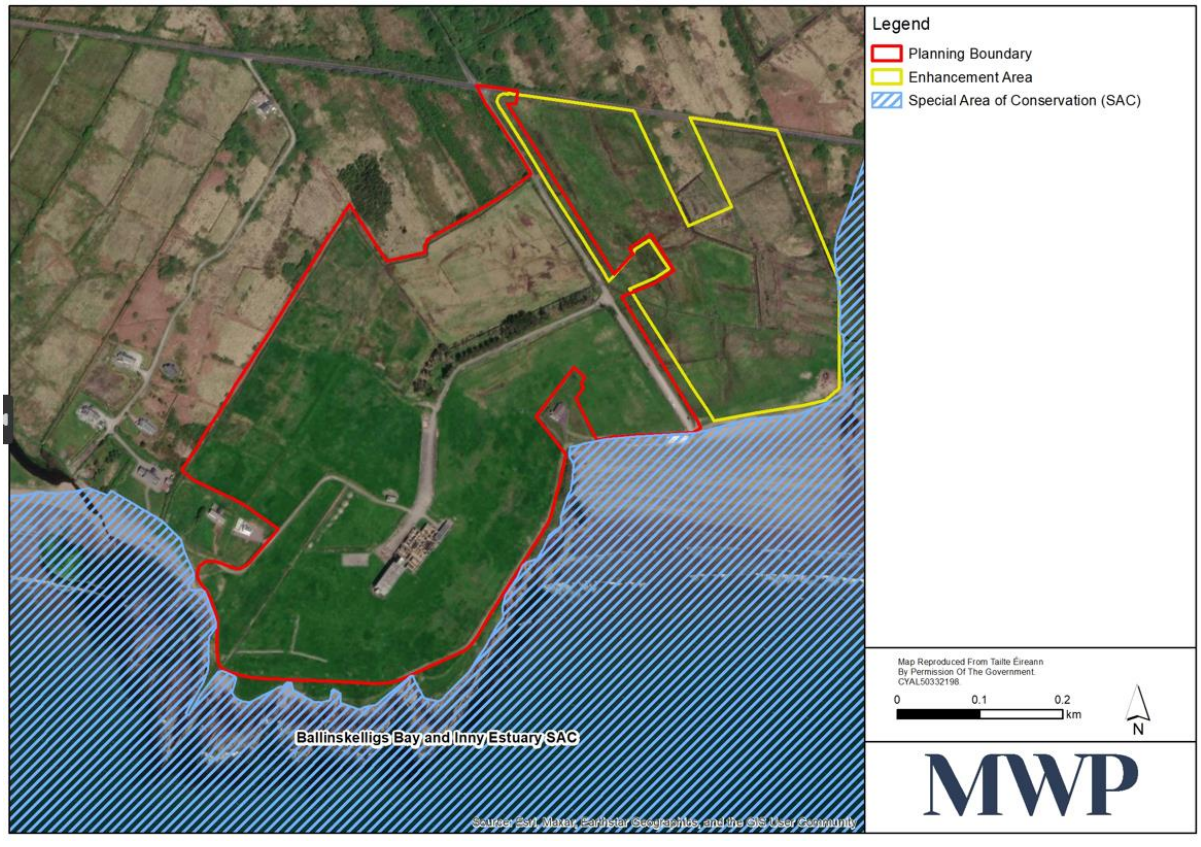

Figure 1: Proposed development site boundary (red) and proposed Biodiversity Enhancement Area (BEA) (yellow) with Ballinskelligs Bay and Inny Estuary SAC indicated.

Figure 2. Drone image looking generally east across the site. The boundary of the proposed development site is indicated by way of dashed red line, and the proposed BEA is indicated by way of dashed yellow line (illustrative purposes).

Ecology surveys which were undertaken at the site, and which have informed the impact assessment and BEP included surveys for:

- Habitats and flora
- Mammals, including bats
- Birds (wintering and breeding)
- Freshwater aquatic ecology, including amphibians
- Invertebrates (terrestrial and aquatic)

All surveys were undertaken by MWP staff ecologists (please refer to Appendix 5-1 of Volume 3 of the EIAR), with the exception of targeted habitat and botanical surveys, undertaken by Delichon Ecology (please refer to Appendix 5-4 of Volume 3 of the EIAR).

A pre-application planning meeting was held between the Applicant, MWP and KCC on the 7th June 2023. During this meeting, a general overview of the approach to ecology fieldwork in relation to the proposed development, including an outline of surveys and findings to date, and outline proposals in relation to biodiversity enhancement was presented to KCC. Consultation was also undertaken with a range of statutory and non-statutory consultees as part of preparation of the EIAR for the proposed development, including the Development Applications Unit (DAU) of the Department of Housing, Local Government and Heritage (DHLGH).

Pre-planning consultation was also undertaken directly with the National Parks and Wildlife Service (NPWS), including a site visit by staff ecologists from MWP and the NPWS local Conservation Ranger for the area undertaken on 11th January 2024 during which the proposed development, ecological survey findings to date and potential proposals with regard to biodiversity enhancement were discussed.

2. Site Location and Description

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The subject area is located on the coast, approximately 2 km north-east of Ballinskelligs and 4.5 km north-west of Waterville in rural south County Kerry. The western part of the study area, taken to be the area west of the existing local road providing public access from the R567 to Inny Strand (the 'local beach access road'), accounts for the vast majority of the 22.6 Ha proposed development site. This area consists mainly of rush/*Molinia*-dominated '**wet grassland (GS4)**'[1] areas occurring on drained and degraded peatland soils in the north, and areas of freer draining semi-improved '**agricultural grassland (GA1)**' in mosaic with wet grassland to the south, all grazed by sheep. Two derelict structures, comprising a large, derelict hotel (see **Plate 1** below), and a derelict stone cottage, also occur.

Plate 1. View of southeast elevation of existing hotel structure

Some of the field boundaries to the north are associated with '**drainage ditches (FW4)**'. The coastal fringes to the south and southwest support semi-improved and localised areas of more diverse '**dry neutral and calcareous grassland (GS1)**' over rocky sea cliffs/rocky shore along the fringes of Ballinskelligs Bay, which extends southwards. The 'Reenroe Cliff Walk', which starts at Inny Strand, travels along the top of the cliff fronting the proposed development site.

The eastern part of the study area (east of the local beach access road), which predominantly comprises the proposed BEA (approximately 8.3 Ha), is categorised as '**wet grassland (GS4)**' on degraded peatland soils, with localised areas of '**improved agricultural grassland (GA1)**', pockets of '**scrub (W1)**' and '**earth banks (BL2)**' (see **Plate 2,** below). This area is likely to have historically comprised low-lying coastal wetland which has become modified over time. It contains a network of deep, artificial '**drainage channels (FW4)**' which crisscross much of the site and which were previously created with the intention of draining the land for agricultural purposes, as is common in agricultural practice (see **Plate 2** and **Plate 3** below). Existing drains within the BEA comprise both perimeter and internal surface drainage channels which vary in size and depth. Sub-surface drainage channels are

[1] Habitats as categorised by Fossitt (2000), available at A Guide to Habitats in Ireland - Fossitt.pdf (npws.ie)

RECEIVED: 24/05/2024

also present within the site. Almost all drains are recently/regularly maintained, with the majority of in-field drains of bank depth of approximately 2-3 m. Active excavation of drains was noted on-site in December 2022.

Most channels are characterised by steep, bare peat banks which appear recently excavated and which are virtually devoid of any macrophytes, emergent wetland or bankside vegetation. Some channels were found to support native wetland flora such as purple-loosestrife (*Lythrum salicaria*), yellow flag iris (*Iris pseudacorus*), water-pepper (*Persicaria hydropiper*), fool's water-cress (*Helosciadium nodiflorum*) ivy-leaved crowfoot (*Ranunculus hederaceus*) and common duckweed (*Lemna minor*). These relatively diverse artificial channels are likely to support a relatively wider variety of invertebrates and other fauna (see **Plate 2,** below).

Plate 2. Left) View across part of northern section of proposed BEA, looking north-east from the beach access road and right) example of partially vegetated field drain within this area.

Within the BEA, the topography slopes from the R567 regional road in the north to the shoreline area of Inny Strand in the south. The existing drainage network flows in a general south-easterly/southerly direction towards the An Rinn Rua Stream, a 2nd order watercourse which forms a section of the eastern boundary of the BEA (see **Plate 3** below). This watercourse drains to Inny Strand and Ballinskelligs Bay, immediately south-east of the BEA.

Plate 3. Left) View looking east of An Rinn Rua Stream bounding the proposed BEA and right) example of perimeter drain in the BEA adjoining the local road.

Although fencing is in place along the majority of drainage channels, the fencing in many areas is situated along the edge of the top of the channel bank. Although the '**drainage ditches (FW4)'** at the site were generally found to hold little water, during the most recent site visit (October 2023) the internal field drains were found to have

a strong flow following a period of heavy rainfall. Their gradient is such that retention of water would be low (i.e., high gradient) due to the degree of maintenance. The existing drainage network, therefore, likely conveys sediments, nutrients and pollutants into the An Rinn Rua Stream and this part of the bay, as well as impacting on the natural drainage of the grassland/peatland habitats which occur within the area.

RECEIVED: 24/05/2024

The eastern section of the BEA supports a localised area of '**reed and large sedge swamp (FS1)**' influenced by intermittent tidal influxes or the backing up of high tidal water within the An Rinn Rua Stream. Figure 4This stream, which is encompassed within the 'Inny (Kerry)_030' WFD river sub-basin, drains the lands within this area and is fed partially by existing artificial land drains, as well as peatland, farmland and forestry within the wider catchment, before discharging to Ballinskelligs Bay. The River Waterbody WFD status (2016 – 2021) of the 'Inny (Kerry)_030' river sub-basin[2] is 'Moderate'[3]. A habitat map of the overall study area is shown in **Figure 3** below. A habitat map showing the proposed BEA in more detail is shown in **Figure 4** below.

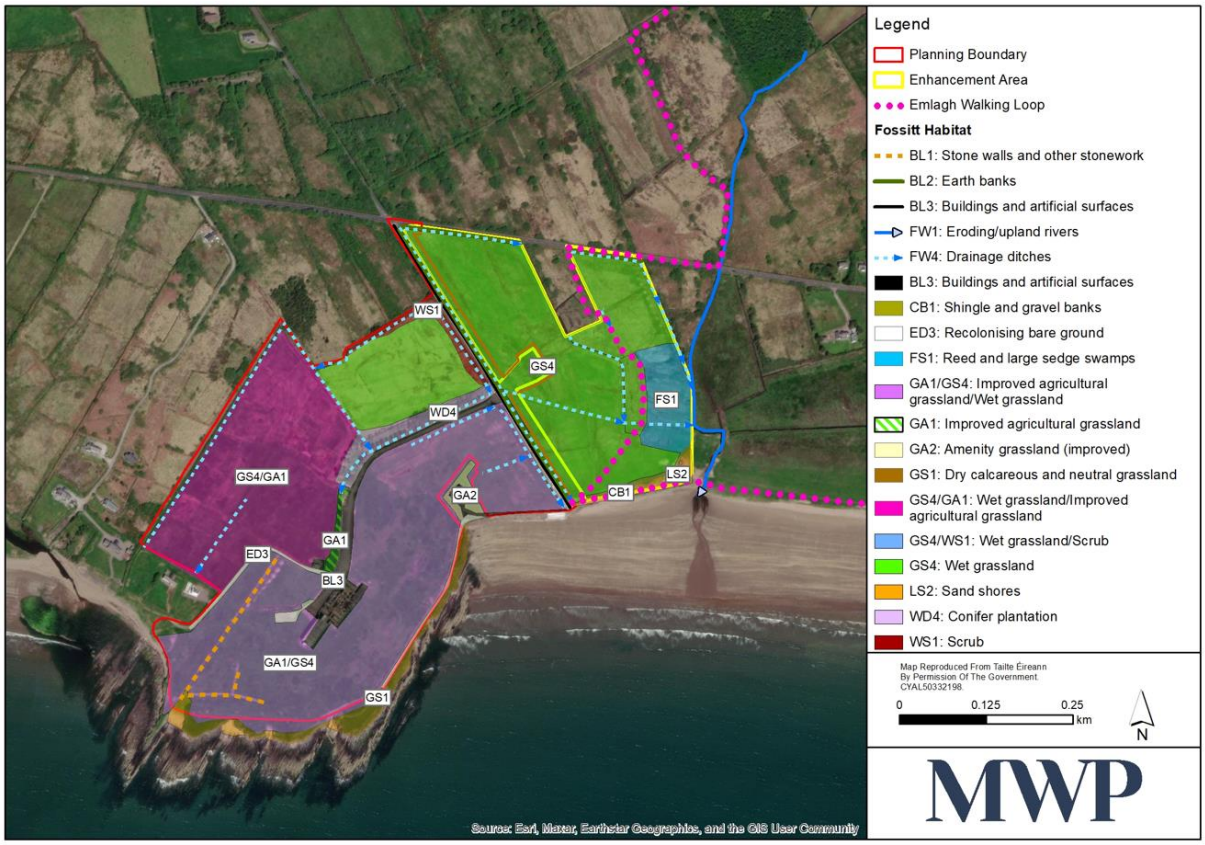
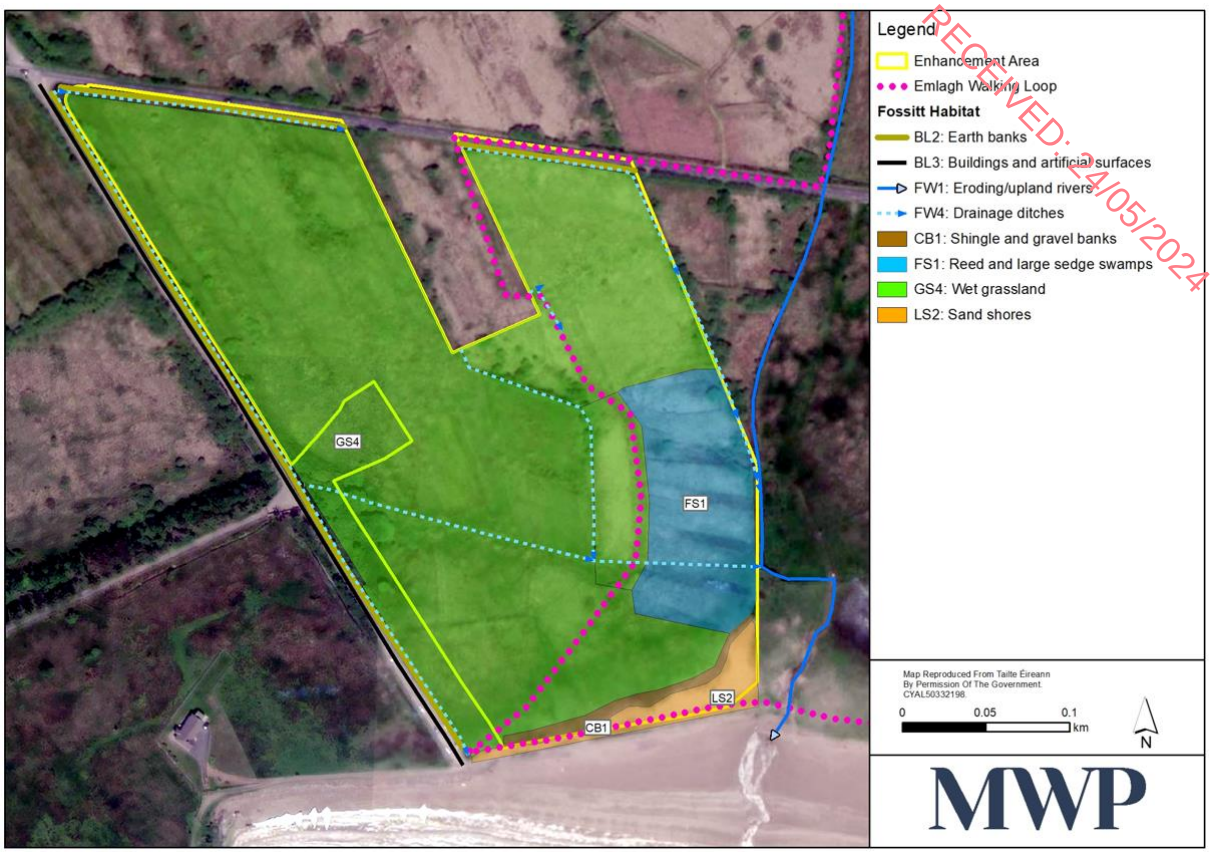


Figure 3. Habitat map

[2] European Code IE_SW_21I010900
[3] https://gis.epa.ie/EPAMaps/



RECEIVED: 24/05/2024

Figure 4: Habitat map of proposed BEA (adapted from Delichon Ecology, 2023).

Lands throughout the proposed development site and proposed BEA are managed for agriculture, comprising mainly sheep grazing. Field boundaries across the site support overgrown and unmanaged earth banks, most of which are adjoined by drainage channels. Grazing intensity varies across the proposed BEA. Some areas show signs of over-grazing, with heavy poaching and exposed peat/soil, while other areas, such as the northern section, are not as intensively grazed (see **Plate 4** below).

Plate 4. View of parts of northern section of the proposed BEA in summer (left) and winter (right).

The southern section of the BEA, fronting Inny Strand, is heavily grazed by sheep and is almost devoid of any tall vegetation, comprising exclusively of short-cropped coastal grassland (see **Plate 5,** left below). Supplementary cattle feeders are present in this area; however, cattle have not been recorded in the area during any of the field

surveys. There is evidence of nutrient enrichment of pockets of grassland habitat, assumed to be associated with past supplementary feeding of livestock in these areas.

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Plate 5. View across the An Rinn Rua Stream to the southern section of the proposed BEA (left) and view of same area from the local beach access road which joins with the R567 (right).

Low-lying areas of the BEA, particularly in the southern section, are prone to flooding/temporary standing water. Livestock can access as far as the tops of some drainage channel banks (no fenced setbacks) with heavy poaching right up to the edge of ditches evident in some locations. There is also evidence of past burning of vegetation. Domestic litter (originating from the the sea/shoreline) and farm debris (old wooden pallets, sections of concrete pipe, farm waste plastic/metal etc.) are scattered throughout the proposed BEA. A sheep carcass was also noted on one occasion in the east of the area. Piles of spoil (presumably from digging drainage ditches) were also noted (see Plate 6 below). It is thought that there has potentially been some excavation/stockpiling of sand and stone along the banks of the mouth of the An Rinn Rua Stream, with a heavy vehicle crossing point also noted just upstream of the shoreline. A National Looped Walking trail, the 'Emlagh Loop', traverses the proposed BEA (see Figure 3 and Figure 4 above). This amenity is to be retained as part of the proposal.

The Ballinskelligs Bay and Inny Estuary SAC (000335) and the Ballinskelligs Bay and Inny Estuary pNHA (000335) with which it overlaps comprise the marine waters of Ballinskelligs Bay, some adjoining terrestrial areas and the River Inny Estuary. The south-eastern and southern boundaries of the proposed BEA adjoin the boundaries of the SAC and pNHA. The Ballinskelligs Bay and Inny Estuary SAC is designated for two types of saltmarsh habitat and the liverwort species petalwort (*Petalophyllum ralfsii*), none of which occur within the subject area, based on the results of the habitat and botanical surveys undertaken in July 2023 by Delichon Ecology. Within the wider landscape, the Iveragh Peninsula SPA (004154) is located approximately 3.6 km to the south-west. This site is designated for the protection of the following bird species: fulmar (*Fulmarus glacialis*), peregrine (*Falco peregrinus*), kittiwake (*Rissa tridactyla*), guillemot (*Uria aalge*) and chough (*Pyrrhocorax pyrrhocorax*).

Plate 6 View looking east from temporary farm crossing point on a drain within the proposed BEA towards Ballinskelligs Bay and Inny Estuary SAC and pNHA (left). This drain adjoins the area of reed and large sedge swamp before entering An Rinn Rua Stream. View of spoil deposition area within proposed BEA (right).

3. Proposed Enhancement Measures for the Proposed Development Site

This section outlines the proposed biodiversity enhancement measures in relation to the proposed development site.

3.1 Bird Box Scheme

The current cover of trees, hedgerows and tall vegetation is generally very limited within the proposed development site. This reduces nesting opportunities for birds. The hedgerows, linear woodland planting and individual specimen trees which will be planted within the proposed development site as part of the landscaping proposal will enhance the value of the site for both nesting and foraging birds (please refer to the Landscape Design Rationale and Overall Landscape Master Plan for this planning application for more information). To further enhance the proposed development site for birds, a bird box scheme comprising artificial nest boxes will be installed to provide additional nesting habitat for a variety of species.

It is proposed that a minimum of 10 No. bird boxes are installed within the proposed development site. For example, the maintenance building in the north-east corner of the site has been identified as a suitable location and could accommodate boxes for swift (*Apus apus*), house martin (*Delichon urbica*) and house sparrow (*Passer domesticus*). In addition, a variety of boxes designed to accommodate different passerine species, such as blue tit (*Cyanistes caeruleus*), great tit (*Parus major*), robin (*Erithacus rubecula*), pied wagtail (*Motacilla alba yarrellii*) and wren (*Troglodytes troglodytes*), can be installed in other suitable locations, such as on walls and on suitable mature trees within the proposed development site, either retained or newly planted.

Any concrete block walls to be erected at the site could incorporate nesting blocks/bricks into their structures to provide increased nesting opportunities to local passerine populations. The nesting blocks should be located within/near vegetated areas and be selected for species that usually nest at lower levels in recesses or cavities such as robins and wagtails. The nesting blocks/bricks have a lightweight design and are specially designed with a narrow entrance to prevent magpies (*Pica pica*), jays (*Garrulus glandarius*), pine martens (*Martes martes*) and domestic cats from gaining access. There are several designs available including species-specific models and the bricks can also be mounted externally onto the wall's surface with a bracket if necessary. Figure 5 below, shows the Brick Box 1HE design from the German company Schwegler.

RECEIVED: 24/05/2024

BirdWatch Ireland (BWI)[4], the British Trust for Ornithology (BTO)[5] and the Royal Society for the Protection of Birds (RSPB)[6] have all produced various guidelines with regard to the construction/purchase, installation and maintenance of nest boxes for various common species. These guidelines outline the various factors which should be considered with regard to installation of nest boxes depending on the target species, such as nest box characteristics/dimensions, appropriate height above ground for installation, aspect and degree of vegetation cover required.

Installation of the nest box scheme, including the final number and location of boxes to be installed, is to be undertaken under the direction of the appointed ecologist.

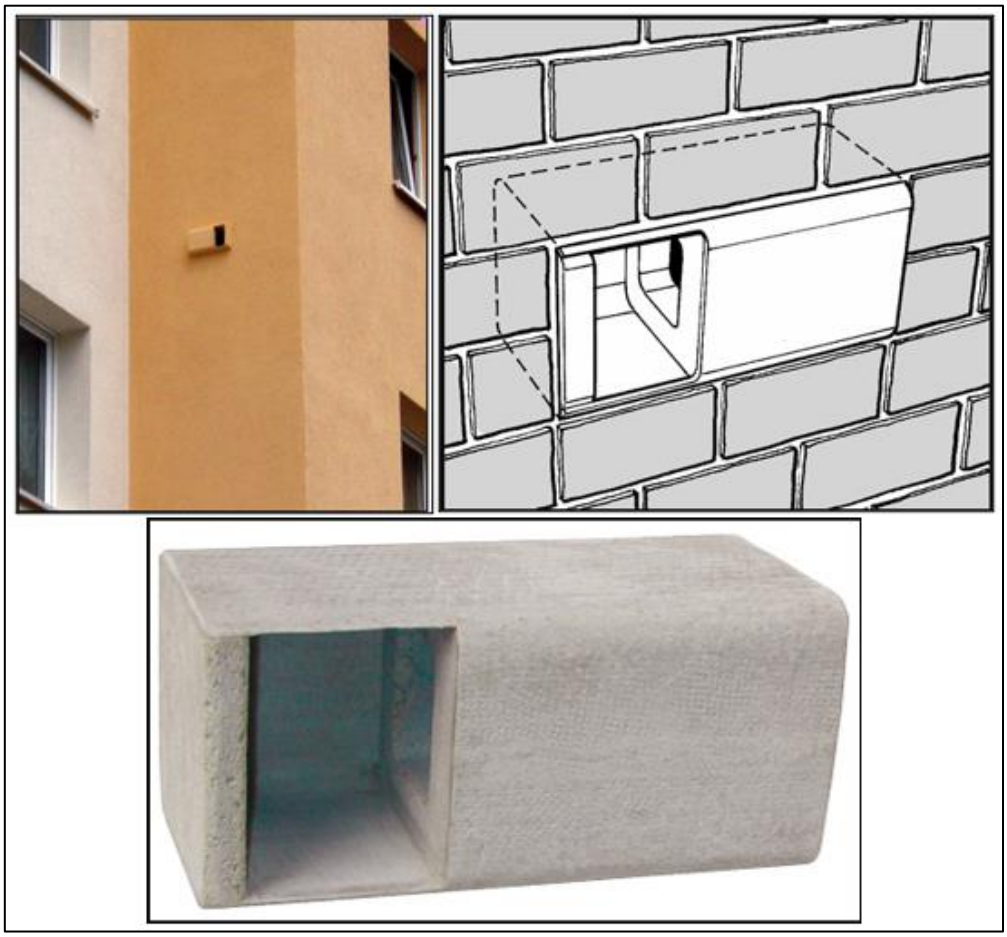

Figure 5. The 1HE Brick Box from Schwegler (bottom), illustration of the Brick Box integrated into brickwork (top right), and, picture of the Brick Box installed on an outer wall (top left), [adapted from Brick Box 1HE » Schwegler Natur (schwegler-natur.de)].

3.2 Bat Box Scheme

To enhance the proposed development site for bats, bat boxes will be erected on suitable trees within the site. The scheme will comprise a mix of bat-box designs to attract a variety of bat species. Schwegler Woodcrete bat boxes are suitable for species such as common pipistrelle, soprano pipistrelle, Leisler's bats and brown long-eared bats, all of which were recorded within the site during baseline surveys, and are self-cleaning. A minimum of 20 no. bat boxes are to be installed on mature trees within the site. The final number, type and location of bat boxes

[4] Build a Nest Box for Birds and Biodiversity in Your Garden This Spring - BirdWatch Ireland Accessed: 28th February 2024
[5] bto-nest-boxes-essential-guide.pdf Accessed: 28th February 2024
[6] Attracting House Martins to Nest | Birds & Wildlife - The RSPB Accessed: 28th February 2024

will be determined by the appointed ecologist. Bat boxes should be located as high as possible (at least 4 m off the ground) in sunny but sheltered positions. Mature trees, free from ivy and with no branches located within a 1 m radius around the box location, should be selected. Boxes can be positioned at different broadly-south-facing aspects to provide a range of temperature conditions, as discussed above. Design and installation of the bat box scheme will be overseen by the appointed ecologist and will follow BCIreland guidance[7].

RECEIVED: 24/05/2024

3.3 General Landscaping Opportunities to Enhance the Site for Biodiversity

Extensive soft landscaping is proposed as part of the proposed development. Planting of mature and semi-mature trees, hedgerow, meadow and amenity and ornamental planting will enhance the site for biodiversity by providing valuable habitat (foraging, breeding and commuting/shelter) for a wide variety of fauna, within an area generally low in cover of tall vegetation.

The Landscaping proposal for the proposed development site has incorporated 'bat-friendly' and 'pollinator-friendly' planting schemes throughout, with a strong focus on native species which, in general, support a greater amount of insect life leading to increased foraging opportunities for bats and other fauna.

The Landscape Plan proposal has had regard to the All-Ireland Pollinator Plan[8], Bat Conservation Ireland/Bat Conservation Trust guidance[9] for preferred plant species to be used. Consideration has also been given to the use of species which are already established on-site to ensure that proposed planting is suitable for exposed, coastal locations.

The Landscape Plan has aimed to:

- provide a pollinator-friendly environment.
- maximise the use of native species and enhance any already-established species.
- use diverse combinations of flowering plants species.
- ensure flowering throughout the seasons to extend the length of time the supply of nectar and pollen is available, and
- provide information on the importance of pollinators and raise awareness of their role within ecosystems.

The Landscape Plan proposes the following planting within the proposed development site:

- Individual trees (total 85 no.) to include native species such as holly (*Ilex aquifolium*), hawthorn (*Crataegus monogyna*), rowan (*Sorbus aucuparia*), Scot's pine (*Pinus sylvestris*) and whitebeam (*Sorbus aria*).
- Native screen planting and pollinator-friendly ornamental hedging (total length 6.85 km) to include species such as holly, broom (*Cytisus scoparius*), blackthorn (*Prunus spinosa*) and willow (*Salix cinerea*).
- Pollinator-friendly shrubs, perennials and groundcover to include species such as sea holly (*Eryngium* spp.), hemp agrimony (*Eupatorium cannabinum*), heather (*Calluna vulgaris*), hebe (*Hebe* spp.), lavender (*Lavendula angustifolia*) and purple top (*Verbena bonariensis*).
- An area of meadow grassland (to be maintained with differential mowing regime) (approximately 1.42 hectares in area).

[7] https://www.batconservationireland.org/wp-content/uploads/2013/09/Leaflet_3_batboxes.pdf; https://www.batconservationireland.org/wp-content/uploads/2015/05/BCIrelandGuidelines_BatBoxes.pdf
[8] https://pollinators.ie/resources/
[9] https://www.batconservationireland.org/wp-content/uploads/2022/07/Gardening-For-Bats.pdf; https://cdn.bats.org.uk/uploads/pdf/Resources/Encouraging-Bats.pdf; https://cdn.bats.org.uk/uploads/pdf/Resources/Stars_of_the_Night

- Supplementary planting of the vegetated earth bank bounding the local beach access road in the north-east corner of the site - proposed planting of native hedgerow (of approx. 130 m length) adjacent to the existing roadside vegetation.

RECEIVED: 24/05/2024

Please refer to the **Landscape Design Rationale** and **Overall Landscape Master Plan** for this planning application for more information.

It is recommended that native tree, shrub and plant species are utilised as much as possible as part of site landscaping, although any proposed non-native plant species will still contribute to the overall biodiversity value, benefiting pollinators and other fauna. Where possible, planting should be locally provenanced and grown. Landscaping should provide for the reuse of soils and native seed bank available in the site. It is recommended that the use of vermicides (chemicals which kill worms) on areas of amenity grassland is avoided as part of general site maintenance once the development is operational. This will ensure that these areas are maintained/enhanced for wildlife.

3.4 Pollinator-friendly Management of the Site

It is recommended that pollinator-friendly management of green spaces and other managed areas is implemented at the site during the operational phase of the proposed development. This should have regard to 'All-Ireland Pollinator Plan' guidance[10]. Measures could include:

- using "cut and lift" methodology as per NBDC guidance[11]
- promotion of "No Mow May"[12]
- chemical free management of the site

3.5 Biodiversity Signage

Informative biodiversity signage will be erected in suitable locations throughout the site for easy access by the public, such as within amenity/landscaped areas or at various points along the Reenroe Cliff Walk.

These should provide information to readers about the wildlife-friendly habitat management practices and biodiversity enhancement measures which are being implemented on the site such as the bird box scheme, use of pollinator-friendly planting, etc. The NBDC has various signage available e.g., 'Managed for Wildlife', 'Pollinator-friendly Zone' etc[13], which can be installed at appropriate locations.

Signage should also be installed describing the biodiversity of the site and surrounding area, including Ballinskelligs Bay, with illustrations and background information on key species, floral or faunal groups. Signage should include information on, for example, the bird and marine life of the bay or the flora of some of the coastal grassland habitats occurring, highlighting any species of interest in the locality, to promote knowledge-sharing and appreciation of biodiversity and the local environment amongst visitors to the area.

[10] AIPP-Business-Guide-2023-WEB-1.pdf (pollinators.ie)
[11] https://biodiversityireland.ie/practical-advice-on-managing-wildflower-meadows/
[12] https://pollinators.ie/no-mow-may/
[13] https://pollinators.ie/resources/signs/

4. Proposed Enhancement Measures for the Targeted Biodiversity Enhancement Area (BEA)

RECEIVED: 24/05/2024

This section outlines the range of biodiversity enhancement measures which are proposed in relation to the targeted BEA.

4.1 Management of Existing Artificial Drainage Network

The proposed BEA has been impacted by an artificial drainage network which has likely affected the extent and condition of wetland habitats in this area. The ecological value of this area will be enhanced by precluding any future on-going maintenance of existing drainage channels and the creation of any new drainage channels in this area.

Many of the existing channels within the proposed BEA were found to be virtually devoid of any macrophytes, emergent wetland or bankside vegetation (see **Plate 7** below). In contrast, the relatively diverse artificial channels containing an assemblage of native wetland flora are likely to support a relatively wider variety of invertebrates and other fauna (see **Plate 8** below).

Ceasing maintenance of existing artificial drainage channels and precluding the creation of any new drainage channels within the proposed BEA may:

- contribute to the improvement of natural water flows and natural drainage within the BEA
- decrease infiltration depths and thereby increase water levels helping to restore a more natural saturation/flood regime
- improve soil carbon storage
- improve water quality and the overall habitat quality of the An Rinn Rua Stream draining the site
- improve the quality of the wetland and lowland wet grassland habitats in this area, and
- increase floral and faunal species diversity.

Plate 7. Examples of part of the existing surface drainage network within the proposed BEA.

Plate 8. Left) Large drainage ditch located within the proposed BEA, pictured on the 21/06/22 and right) same ditch pictured on 22/02/23 showing difference in degree of vegetation growth.

The cessation of maintenance of existing channels will support natural colonisation and revegetation with native emergent and submergent wetland plant species allowing for the development of a more diverse floral and faunal community within the proposed BEA while promoting natural variation in vegetation structure and diversity of micro-habitats (see Plate 8 above).

More low-lying areas of the proposed BEA are prone to some surface flooding during the winter months. Enhancement of the existing wetland and wet grassland habitats within the BEA will increase the value of these habitats for wintering, and potentially breeding, waders and other waterbirds. Lowland wet grassland can support breeding and wintering waders and wildfowl such as redshank (*Tringa totanus*), curlew (*Numenius arquata*), snipe (*Gallinago gallinago*), wigeon (*Anas penelope*), teal (*Anas crecca*) and shoveler (*Anas clypeata)* [14]. Baseline bird surveys undertaken have determined that grey heron (*Ardea cinerea*), curlew, whimbrel (*Numenius phaeopus*), snipe and teal already utilise the area of land encompassed within the proposed BEA. Improvement of these habitats will also enhance this area for a variety of other bird species, such as reed bunting *(Emberiza schoeniclus*), stonechat (*Saxicola rubicola*), skylark (*Alauda arvensis*) and meadow pipit (*Anthus pratensis*), all of which were recorded on-site.

Therefore, there is potential to enhance this area further for birds and a wide range of other fauna, including invertebrates, amphibians, reptiles, small mammals and bats, which in turn will support other fauna, with the aim of increasing overall species diversity and abundance within the BEA (see Plate 9 below).

[14] Manage lowland wet grassland for birds - Farming (blog.gov.uk) Accessed 26/02/24

Plate 9. Common frog (*Rana temporaria*), a widespread species generally, and the ground-beetle species '*Carabus clatratus*' which is found in peaty marsh, wet meadow and boggy lakeshore, both recorded in the proposed BEA during baseline surveys.

4.2 Habitat Enhancement for Chough

Habitat can be managed effectively for chough through sensitive farming and grazing practices which support the optimal grassland habitat characteristics that are required by foraging chough. Choughs require a suitability-short grassland sward in order to forage. They prefer short-grazed, free-draining grassland measuring between 1 and 10 cm in height, but preferably less than 5 cm in height, as this allows them access to ground surface and soil insects and other invertebrates on which they feed. Livestock (preferably sheep, or cattle) help to maintain optimal chough foraging habitat conditions through their grazing behaviour and the dung they produce. Year-round grazing keeps the sward at optimal height and prevents excessive build-up of dead and decaying vegetation at the surface, allowing chough continuous access to the soil. It also provides a continuous supply of dung to support foraging chough.

The area of coastal grassland encompassed within the Applicant's land holding and comprising the southern section of the proposed BEA will be maintained and managed for chough on a permanent basis as a 'chough habitat management area'. This area was found to be used by small groups of foraging chough on occasion during the baseline bird surveys undertaken for the proposed development between May 2022 and June 2023. It is considered that this area can be enhanced to provide optimal chough foraging habitat conditions throughout the year via specific measures which can be implemented on a long-term basis.

It is proposed to implement the following measures within the 'chough habitat management area':

- Livestock grazing by sheep is to be maintained on a year-round basis to optimise grassland sward conditions for chough.
- It is important that Avermectin-based drugs are not used on livestock in the 'chough habitat management area', particularly at chough breeding and chick-rearing times, as these drugs reduce the

number of insects found within dung upon which chough heavily rely[15]. Use of these drugs on livestock in the 'chough habitat management area' is to be avoided and will be prohibited during sensitive periods for chough (April to July, inclusive, each year).

Please refer to **Figure 7** below which shows the proposed 'chough habitat management area'.

RECEIVED: 24/05/2024

4.3 Habitat Enhancement for Marsh Fritillary Butterfly

Marsh fritillary (*Euphydryas aurinia)* generally exists in extremely localised colonies in areas of low intensity land use, typically where grazing by cattle at low stock density occurs. All suitable and potentially suitable habitat in landscapes where the butterfly occurs can be targeted for management. Sites within 2 km of occupied sites should be a priority, with up to 5 km being important. Not all sites are occupied in all years but are still valuable as part of a network of sites that can become colonised between years[16]. The desktop study undertaken in relation to the proposed development identified a recent NBDC record (2018) for marsh fritillary from Portmagee Bog (V437737), located approximately 5.4 km north-west of the study area.

Marsh fritillary surveys were undertaken as part of baseline surveys and although this species was not recorded, two field areas within the proposed BEA were found to comprise potentially suitable habitat, although 'under-grazed', following targeted Habitat Condition Assessments for this species. Therefore, it is considered that these areas could be enhanced for this species. Please refer to the separate '*Terrestrial and Aquatic Invertebrate Survey Report*' that has been prepared in relation to the proposed development which can be found in **Appendix 5-5** of **Volume 3** of the **EIAR**.

The species requires a low (ideally 25 cm or less), open sward with at least a 25% density of devil's-bit scabious (*Succisa pratensis*), the species larval food-plant (Harding, 2009) (see **Plate 10** below). Females will not lay eggs on isolated plants, as these will not be adequate to continue to support the growing larvae. There must be adjoining plants to which the feeding larvae can move quickly and easily. Vegetation structure within the sward is important in creating and maintaining the optimal microclimatic conditions for larvae, with a patchwork of open areas within the sward required where larvae can receive sufficient sunlight close to ground level. Slope aspect is therefore another important factor, with a preference for south, southwest or southeast facing slopes that are sheltered, but not overshadowed or obstructed.

[15] https://www.ruralpayments.org/topics/all-schemes/agri-environment-climate-scheme/management-options-and-capital-items/chough-mown-grassland/guidance-for-chough-mown-grassland/
[16] Marsh Fritillary - Managing grassland_0.pdf (butterfly-conservation.org)

Plate 10. Example of area of devils-bit scabious (*Succisa pratensis*) growing in open, short sward within the northern section of the proposed BEA.

Marsh fritillary populations occupy the landscape in a meta-population structure, *i.e.,* a central population with outlying colonies occupying habitat patches (individual sites) which are thought to exist as part of a network of neighbouring sites, which become occupied in a cyclical manner via migration as and when conditions at individual sites become suitable[17]. The extent and magnitude of these populations is dependent on the suitability of habitat patches and the topography of the landscape. Negative impacts to suitable habitat patches may result in meta-populations becoming more fragmented and isolated, reducing meta-population function. Therefore, if suitable habitat or potentially suitable habitat is present, but the species is not recorded during surveys, it is recommended that such habitat is conserved/improved as there is potential for this habitat to be occupied/re-occupied in future (Phelan *et al*., 2021).

Appropriate grazing management could enhance and improve habitat suitability for this species in these areas of the BEA. Extensive grazing with cattle or horses is recommended. Sheep are generally unsuitable, as they eat the scabious plants and produce too 'tight' a sward. The goal is a structured sward height between 12-25cm. Some poaching, especially of tussocky patches, creates pockets of bare ground for plants to germinate. Grazing should be limited to spring and summer due to the wet nature of this part of the site (Phelan, *et al*., 2021). It may be necessary to move the stock off early in a dry year, or to stock later in a wet year to achieve suitable habitat conditions. The stocking level and grazing period should be adjusted, as required, to maximise availability of favourable habitat conditions[18]. Longer periods of light grazing are preferable to shorter periods of heavier grazing (Phelan, *et al*., 2021). Where scrub control is necessary, this should be undertaken over the autumn and winter

[17] Marsh Fritillary Euphydryas aurinia | National Parks & Wildlife Service (npws.ie) Accessed 28/02/24
[18] Marsh Fritillary - Managing grassland_0.pdf (butterfly-conservation.org)

months. All cuttings should be removed from site to reduce nutrient inputs and keep soil fertility low (Phelan, *et al.*, 2021).

Please refer to **Figure 7** below which shows the proposed habitat enhancement area for marsh fritillary.

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4.4 Habitat Enhancement for Wall Butterfly and Other Insects

During baseline invertebrate surveys within the proposed BEA, a single wall butterfly (*Lasiommata megera*) was recorded on 14th August 2023. This species, once distributed across Ireland, is now in severe decline, and is classified as 'Endangered' in Ireland. Less than 35 annual records were submitted to Butterfly Conservation Ireland in both 2023 and 2022 as part of their annual National Butterfly Monitoring Scheme, undertaken in conjunction with the NBDC[19]. The reasons for decline are not well understood, but loss of unimproved grassland may be one of the factors[20]. The wall butterfly is found in relatively small colonies that are self-contained although some individuals will wander, allowing the species to quickly colonise suitable nearby sites[21].

This species favours short, open grassland, where turf is broken or stony, and can also be found on dunes and other coastal habitats, as well as disused quarries, derelict land, farm tracks, railway embankments and cuttings, gardens and field edges[22]. It tends to bask on bare ground, walls, rocks and other stony areas where it can benefit from the warmth of the sun. Adults fly from late April to mid-June and again from July to September.

Suitable habitat conditions include the presence of larval food plants, which include a variety of short grasses, along with sources of nectar for adults. The most common foodplants on which caterpillars feed include false brome (*Brachypodium sylvaticum*), cock's-foot (*Dactylis glomerata*), bents (*Agrostis* spp.), wavy hair-grass (*Deschampsia flexuosa*), Yorkshire-fog (*Holcus lanatus*), sheep's fescue (*Festua ovina*) and purple moor-grass (*Molinia caerulea*). Females lay their eggs on bare ground near the base of the foodplant[23]. Species such as thistles (*Cirsium* spp. and *Carduus* spp.), bramble (*Rubus fructicosus*), dandelions (*Taraxacum officinale* agg.), hawkweeds (Hieracium/Hypochoeris), daisy (*Bellis perennis*), fleabane (*Pulicaria dysenterica*), knapweed (*Centaurea nigra*), ragged robin (*Silene flos-cuculi*), water mint (*Mentha aquatica*) and yarrow (*Achillea millefolium*) provide nectar for adults[24].

The area within the proposed BEA will be enhanced for wall butterfly by maintaining/promoting unimproved grassland without fertiliser enrichment, and conserving suitable larval and adult foodplants within the area. The majority of species required for this butterfly's life cycle can usually be found within a meadow site managed for pollinators. Bare ground is important for butterflies, moths and other species as it provides localised areas of warmth in which they can bask, as well as providing suitable areas of habitat in which plants can germinate at reduced risk of being outcompeted by more vigorous species. Patches of bare and stony ground can be maintained/created to provide suitable basking areas for butterflies and moths. These features, known as butterfly banks and scrapes, can be created within the proposed BEA. These will benefit wall butterfly and a wide variety of other butterflies and moths, as well as other insects, such as beetles, bees and wasps. Guidance is available on how best to create these features, including information on size, shape, positioning, and maintenance[25].

[19] Butterfly Conservation Ireland Annual Report 2023 – Butterfly Conservation Ireland Accessed 28/02/24
[20] Lasiommata megera Wall Brown :: Northern Ireland's Priority Species :: (habitas.org.uk)
[21] UK Butterflies - Wall - Lasiommata megera
[22] Wall | Butterfly Conservation (butterfly-conservation.org)
[23] Wall - Butterflies and Moths of Northern Ireland (habitas.org.uk)
[24] Wall | Barnsley Biodiversity Plan
[25] Butterfly Scrape Factsheet_NEW.pdf (butterfly-conservation.org); BareGroundLeafletA4_ENG_V2[1].pdf (butterfly-conservation.org)

4.5 Biodiversity-friendly Livestock Measures

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Livestock grazing plays a key role in maintaining many species-rich habitats by controlling more competitive species and preventing scrub encroachment and successional development. An appropriate grazing regime is crucial to maintaining diversity in plant and invertebrate communities, which in turn supports other fauna.

Extensive grazing can be used to develop and maintain habitat mosaics. Some animals will select particular plant species, and in doing so will determine the structure and floristic composition of the vegetation. Furthermore, animal dung and areas of bare ground produced by movement of livestock support specialist invertebrates, such as dung beetles, other insects such as ants, nesting solitary bees and wasps, and a variety of birds. Disturbance of the soil also supports the germination of wildflower seeds. Grazing can also be used to remove nutrients from areas of land which may have been subjected to nutrient inputs as part of historic or current land management practices.

To ensure that wildlife habitats are managed for the greatest environmental benefit it is important that the type, number and timing of livestock grazing is tailored to the needs of an individual site. The advice of a qualified farm advisor will be sought in advance of the implementation of the BEP with regard to the appropriate stock type, levels and seasonal grazing patterns for the BEA, with respect to an extensive grazing regime. The level should be set below the level which causes eutrophication, overgrazing, or erosion, but still high enough to control the encroachment of coarse vegetation and scrub. Generally, light grazing is considered most suitable for marshy grassland (SEPA, 2009).

With regard to use of supplementary cattle feeders, currently located in the south-eastern section of the BEA, 'feeding points', if required, will be relocated every three weeks to reduce the likelihood of heavy grazing, trampling, poaching and erosion problems. It is recommended that the feeders are sited in this area of short-grazed coastal grassland only, and that their use is restricted within the wetter areas of peat soils which comprise the central and northern sections of the BEA. A livestock drinking source is to be provided.

Use of either organic or non-organic fertilisers and insecticides will be prohibited. Use of herbicides will generally be prohibited, except in the case of occurrence of noxious weeds (e.g., ragwort (*Jacobaea vulgaris*), dock (*Rumex obtusifolius*) and/or invasive plants, in the event that they are encountered. In this case, means of physical control are to be prioritised, as appropriate, and should chemical herbicides be required, they will be applied as a spot treatment only to reduce potential impacts on surrounding vegetation. Spraying or broadcast application of herbicides will not be permitted. Use of herbicides in the vicinity of any watercourse or drainage features are to comprise aquatic-approved products only.

Use of persistent animal treatments on stock will be avoided within the BEA as these leave residues in animal dung for extended periods which adversely impact on soil invertebrates, which are an important prey resource for a variety of fauna. Burning vegetation will be prohibited within the BEA. Where any vegetation is required to be removed, cut or otherwise disturbed, this will be undertaken strictly outside the bird nesting season (1st March to 31st August, inclusive).

Appropriate fencing of the 'An Rinn Rua' watercourse, which forms the boundary between the proposed BEA and the Ballinskelligs Bay and Inny Estuary SAC (000335) and draining to the bay at the south-east corner of the proposed BEA, is to be installed. The purpose of this is to prevent livestock damage of channel margins, reduce erosion and protect/support riparian vegetation which will help to stabilise the riverbank and support the formation of a vegetated riparian zone. Preventing livestock access to the riparian zone will avoid direct inputs of animal waste, while vegetated buffers will filter any overland flow of nutrients to the watercourse. The watercourse should be fenced off a minimum of 10 m from the top of the bank of the channel with stockproof fencing (permanent stake and wire). Line wire fencing installed parallel to the channel is recommended to reduce the potential for inadvertent trapping of debris in the event of a flood event (SEPA, 2009).

Fencing of retained drainage ditches throughout the proposed BEA (to minimum 1.5m from top of bank of channel) will be undertaken. This will prevent livestock poaching around drainage features (in field drains) and reduce run-off of manure and other nutrients into channels. Fencing of existing reedbed wetland habitat will prevent livestock damage to habitat margins and vegetation and reduce poaching and nutrient inputs.

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4.6 Bird Box Scheme

The hedgerows to be planted along the western boundary of the proposed BEA as part of the landscaping proposal will enhance the value of this area for nesting birds. To further enhance this area for birds, a bird box scheme comprising artificial nest boxes (minimum 5 No.) will be installed at appropriate locations to provide additional nesting habitat for a variety of species.

Installation of the nest-box scheme will follow BWI, BTO and/or RSPB guidance, as discussed in **Section 3.1** above, with regard to appropriate nest box size, height above ground, aspect and degree of vegetation cover required. Installation of the nest box scheme, including the final number and location of boxes to be installed, is to be undertaken under the direction of the appointed ecologist.

Please see **Figure 7** below for indicative locations of bird boxes within the proposed BEA.

4.7 Bat Box Scheme

A bat box scheme will be implemented within the proposed BEA to enhance the value of this area for bats by providing additional roost-sites. Bat-boxes (minimum 5 No.) will be erected in suitable habitat within the proposed BEA. The design, siting and installation of the bat-box scheme will be undertaken under the direction of the appointed ecologist and will follow NRA guidance (NRA, undated) and Bat Conservation Ireland (BCIreland) guidance[26]. It is recommended that self-cleaning bat boxes are used. The bat box scheme is to be registered with BCIreland.

Please see **Figure 7** below for indicative locations of bat boxes within the proposed BEA.

4.8 Log/Wood Piles

Creation of log/wood piles (minimum 3 no.) at appropriate locations within the proposed BEA will provide additional habitat and shelter for a variety of species, including insects, frogs, birds and small mammals, including hibernating hedgehogs (*Erinaceus europaeus*). These should incorporate locally sourced natural and native materials comprising different sized logs/branches with bark intact. The log/wood piles should be constructed so as to provide a diversity of conditions and micro-habitats which will attract an array of different species. Logs at the base of the pile should be partially buried in the ground, which will help to retain some degree of moisture, and should comprise logs positioned both horizontally and vertically (see **Figure 6** below for examples of log/wood piles for biodiversity). Larger logs should be used towards the centre of the pile, with smaller logs towards the edges[27]. Holes can be drilled into some logs to provide habitat for solitary bees and other invertebrates. The log/wood piles should be positioned in a sunny location or in light shade e.g., sunny, south-facing positions within the site or damper, cooler, shaded locations, such as along the stream. The final number and location of log/wood piles will be confirmed by the appointed ecologist.

Please see **Figure 7** below for indicative locations of log/wood piles within the proposed BEA.

[26] https://www.batconservationireland.org/wp-content/uploads/2013/09/Leaflet_3_batboxes.pdf; https://www.batconservationireland.org/wp-content/uploads/2015/05/BCIrelandGuidelines_BatBoxes.pdf

[27] Log Piles – Creating a Flourishing Wildlife Community | Creative STAR Learning | I'm a teacher, get me OUTSIDE here! Accessed 24/02/24


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Figure 6. Examples of different types of log piles (Source: https://creativestarlearning.co.uk/).

4.9 General Tidy Up

Any areas of domestic, industrial or farm litter, wastes or refuse, rubble, rock, spoil or similar materials, and sheep carcasses/remains, which disturb the natural environment, will be removed from the proposed BEA to further enhance the biodiversity value of the area.

4.10 Biodiversity Signage

Appropriate informative/educational signage will be erected in suitable locations where the public can easily access them, such as the existing Inny Strand car park, along the southern edge of the proposed BEA adjoining the shoreline or along the Emlagh Loop walking trail which traverses the proposed BEA. These should provide an overview of the biodiversity enhancement measures being employed within the BEA using illustrations and background information on key floral or faunal species. Signage could include information on, for example, pollinators, birds, wet grassland flora and specific wildlife-friendly habitat management practices which are being implemented to enhance the biodiversity value of the area, and promote knowledge-sharing and appreciation of biodiversity and the local environment amongst visitors to the area. Information could also be included on risk of potential disturbance of birds and other fauna within the BEA by dogs and a request to members of the public accessing the area to keep dogs on leads/under control at all times and adhere to 'Leave No Trace'/ 'Ná Fág Lorg' principles[28].

Please see **Figure 7** below for indicative locations of biodiversity signage within and around the proposed BEA.

[28] Home - Leave No Trace Ireland

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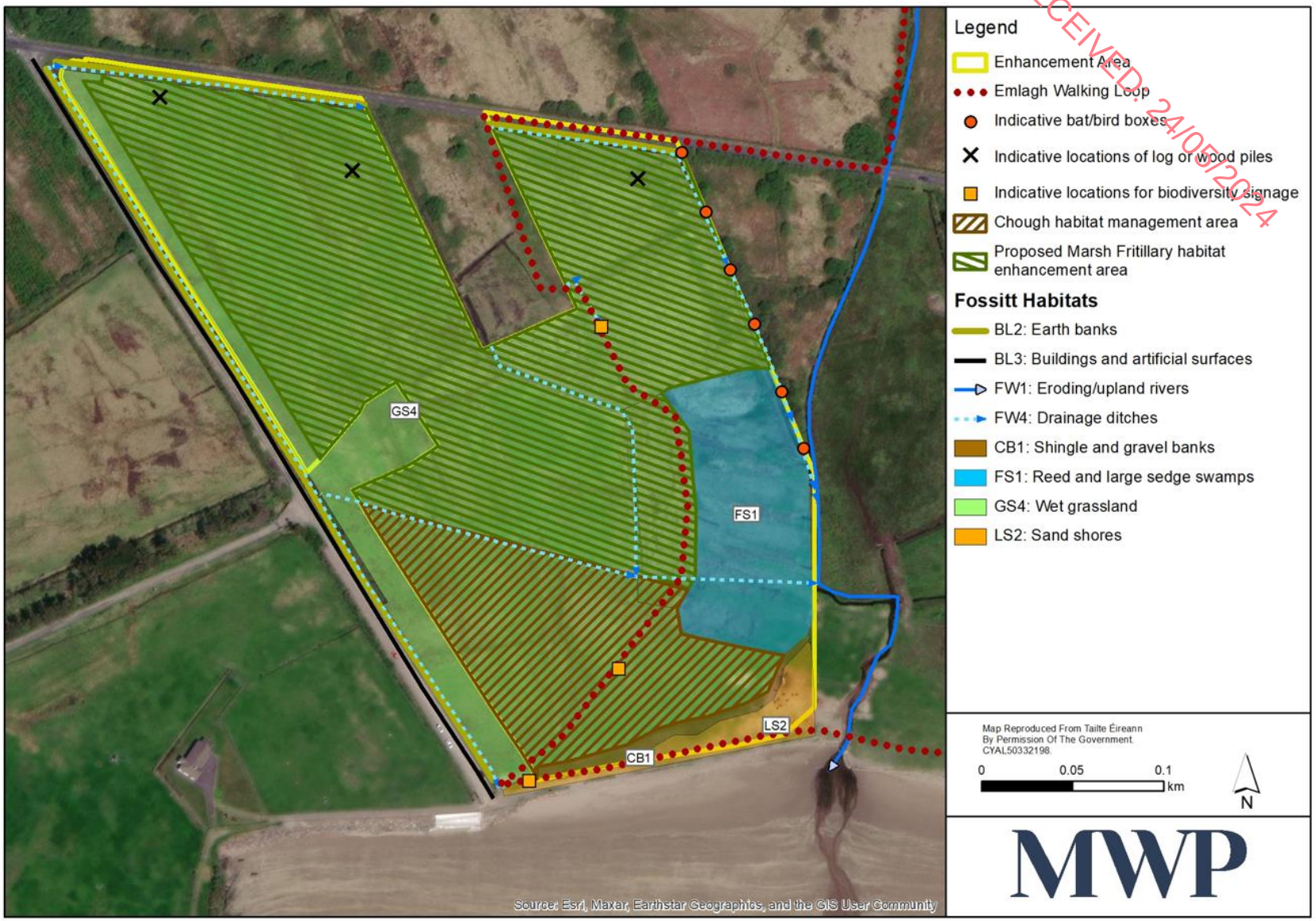

Figure 7. Overview of proposed targeted biodiversity enhancement measures within the BEA

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5. Monitoring of BEA

The monitoring measures outlined below are recommended in relation to the implementation of targeted enhancement measures within the BEA as discussed in **Section 4** above. Monitoring is recommended to be undertaken annually for the first two years following implementation of enhancement measures. Results of monitoring activities should be submitted to KCC. Species records should be uploaded, where appropriate, to the NBDC database by the surveyor(s).

- Bird surveys (one breeding and one winter season walkover survey)
- Bat surveys (one round of static detectors and one nighttime walkover survey – summer (June/July/August)
- Butterfly and Bumblebee survey – twice between April and September
- Marsh Fritillary Habitat Condition Assessment (HCA) survey, as per NBDC methodology[29] – late summer/autumn

[29] https://biodiversityireland.ie/surveys/marsh-fritillary-monitoring-scheme/

6. References

RECEIVED: 24/05/2024

All-Ireland Pollinator Plan (AIPP) 2021-2025. *National Biodiversity Data Centre Series No. 25*. National Biodiversity Data Centre, Waterford Institute of Technology Campus, Carriganore, County Waterford.

Delichon Ecology, 2023. An Rinn Rua Hotel & Leisure Park Habitat and Botanical Survey Report. Prepared by Delichon Ecology for Malachy Walsh and Partners.

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

Harding, J. (2009). Discovering Irish butterflies and their habitats. Privately published.

National Roads Authority (NRA) (undated). Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes. National Roads Authority, Parkgate Business Centre, Parkgate Street, Dublin 8. [Available at: untitled (tii.ie)].

Phelan, N., Nelson, B., Harding, J. & Lysaght, L. (2021). Ireland's Butterflies Series No. 1: Habitat Management for the Marsh Fritillary. National Biodiversity Data Centre, Waterford.

Scottish Environment Protection Agency (SEPA) (2009). Engineering in the Water Environment Good Practice Guide: Riparian Vegetation Management. Second edition, June 2009. Document reference: WAT-SG-44. Scottish Environment Protection Agency, Stirling, Scotland. Available at: WAT-SG-44 (sepa.org.uk) [Accessed: 28th February 2024].

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Appendix 1

Examples of NBDC Signage

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