Natura Impact Statement

Large-scale Residential Development

Gortnahomna More, Castlemartyr, Co. Cork

Doherty Environmental Consultants Ltd.

November, 2024

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Natura Impact Statement

Document Stage	Document Version	Prepared by
Final	1	Pat Doherty MSc, MCIEEM

This report has been prepared by Doherty Environmental Consultants Ltd. with all reasonable skill, care and diligence. Information report herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is prepared for Marshall Yards Development Company Ltd. and we accept no responsibility to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

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1.0 INTRODUCTION

Doherty Environmental Consultants (DEC) Ltd. have been commissioned by Marshall Yards Development Company Ltd. to prepare Natura Impact Statement for a proposed large-scale housing development at Gortnahomna More, Castlemartyr, Co. Cork (see **Figure 1.1** for the location of project site and **Figure 1.2** for an aerial view of the project site).

In accordance with Article 6(3) of the Habitats Directive, as transposed into Irish law by Regulation 42(1) and Part 5 of the European Communities (Birds and Natural Habitats) Regulations 2011 – 2021 (i.e. the "Habitats Regulations") and Part XAB of the Planning and Development Act, 2000 (as amended) (i.e. the "Planning and Development Act"), a Screening Report for Appropriate Assessment (AA) was prepared to assess whether it could or could not be ruled out, on the basis of objective information, that the project, either individually or in combination with other plans or projects, was likely to have a significant effect on any European Sites. The Screening Report for Appropriate Assessment was prepared by DEC Ltd. on behalf of Marshall Yards Development Company Ltd. and is provided under separate cover with the planning application documentation. The Screening Report for Appropriate Assessment identified a hydrological pathway (see **Figure 1.3**) connecting the project site to the Ballymacoda Bay SAC (Site Code: 000077) and the Ballymacoda Bay SPA (Site Code: 004023) (hereafter jointly referred to as the Ballymacoda Bay European Sites) and found that the hydrological pathway has the potential to function as an impact pathway. The Screening Report for Appropriate Assessment. concluded, in view of best scientific knowledge and the conservation objectives of the European Sites occurring within the zone of influence of the project that, it could not be ruled out at the screening stage that the project would not result in significant adverse effects to two European Sites, namely the Ballymacoda Bay SAC (Site Code: 000077) and the Ballymacoda Bay SPA (Site Code: 004023) (hereafter jointly referred to as the Ballymacoda Bay European Sites). The conclusion of the Screening Report was informed by a highly precautionary approach and adopted a worst-case scenario. Such an approach was adopted to ensure consistency with the extremely low threshold for triggering likely significant effects, as determined in both European and Irish case law and Section 177U of the Planning and Development Act. On the basis of that conclusion, it has been determined that AA is required in order to examine in detail the implications of the project for the above listed European Sites. In accordance with Section 177T of the Planning and Development Act an NIS of the project has been prepared in order to assist the competent authority, in this case

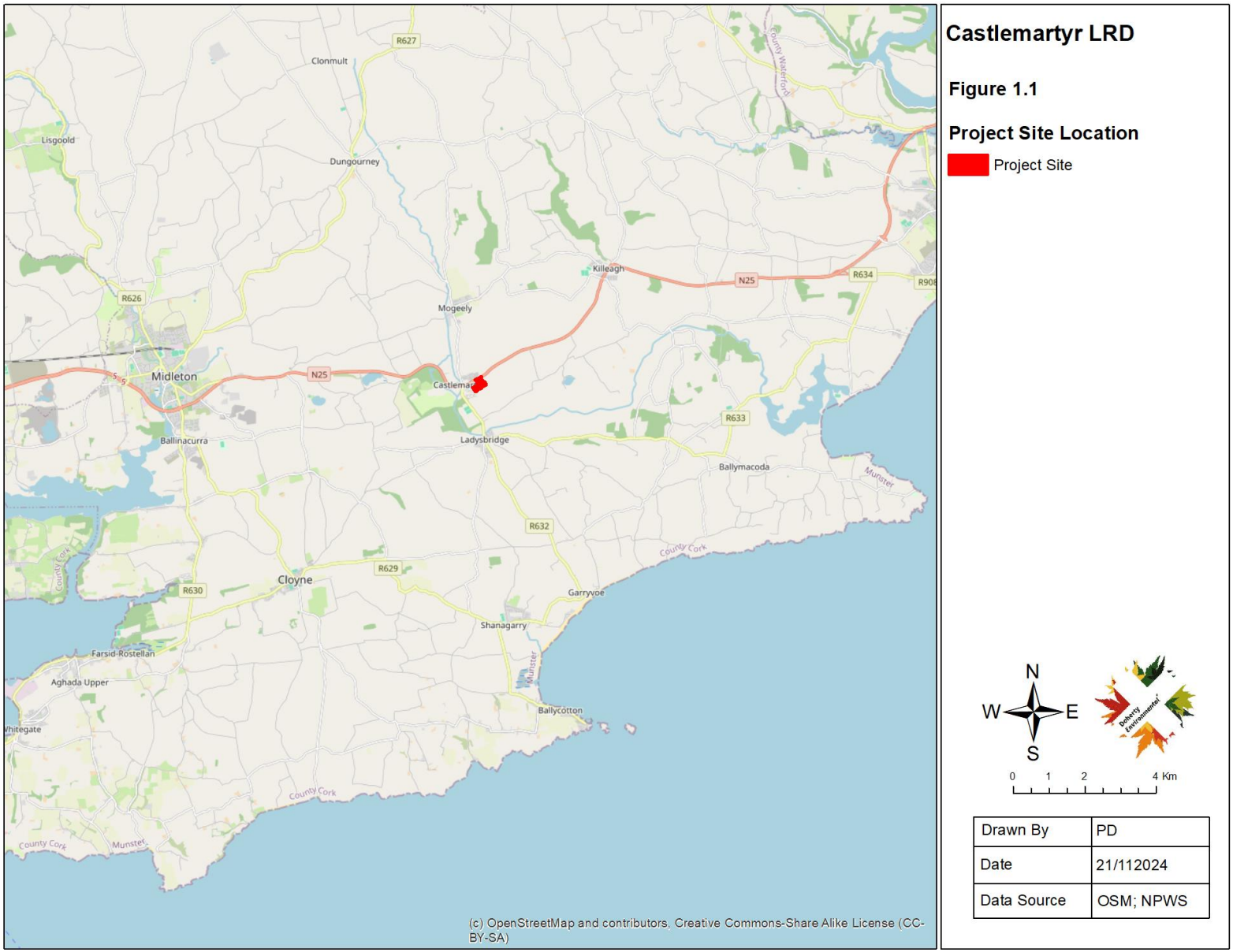
Cork County Council, in carrying out its Appropriate Assessment. This NIS provides an examination, analysis and evaluation of the likely impacts from the Project, both individually and in combination with other plans and projects, in view of best scientific knowledge and the conservation objectives of the above two listed European Sites.

It also provides complete, precise and definitive findings, which are capable of removing all reasonable scientific doubt as to the absence of adverse effects on the integrity of the European sites concerned.

1.1 STATEMENT OF AUTHORITY

This Natura Impact Statement has been prepared by Mr. Pat Doherty BSc., MSc, MCIEEM, of DEC Ltd. Mr. Doherty is a consultant ecologist with over 20 years' experience in completing ecological impact assessments and environmental impact assessments. Pat has been involved in the completion of assessment reports for proposed developments and land use activities under the EIA Directive and Article 6 of the Habitats Directive since 2003 and 2006 respectively. He has extensive experience completing such reporting for projects located in a variety of environments and has a thorough understanding to the biodiversity issues that may arise from proposed land use activities. Pat was responsible for completing one of the first Appropriate Assessment reports for large scale infrastructure developments in Ireland when he prepared the Appropriate Assessment for the N25 New Ross Bypass in 2006/07. Since then Pat has completed multiple examinations of both plans and projects in Ireland. He has completed Natura Impact Statements for national scale plans such as Ireland's CAP Strategic Plan and National Seafood Development Plan and regional and county scale plans including County Development Plans, Local Area Plans, Tourism Strategies and Climate Action Plans. Pat has completed multiple Natura Impact Statements for a range of development types that include large scale infrastructure developments in sectors such as transport and energy as well as industrial, commercial and residential developments.

Pat has completed focused certified professional development training in Appropriate Assessment as well as in a range of ecological survey techniques and assessment processes. Training has been completed for National Vegetation Classification (NVC) and Irish Vegetation Classification (IVC) surveying, bryophyte survey for habitat assessment and identification, professional bat survey and assessment training, mammal surveying and specific training for bird and bat survey techniques. Ongoing training has been completed by approved



Castlemartyr LRD

Figure 1.1

Project Site Location

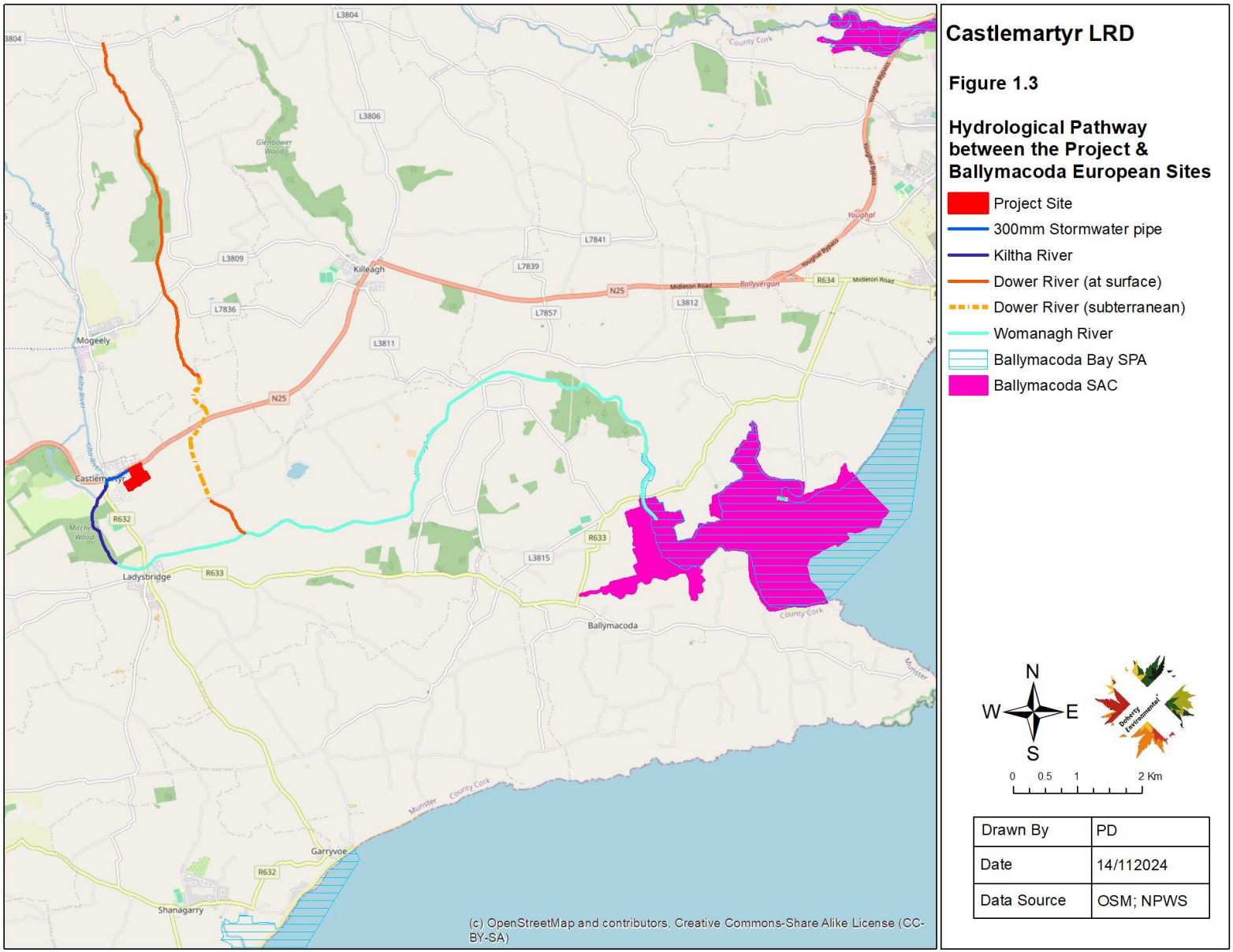
Project Site

N
W E
S

0 1 2 4 Km

Drawn By	PD
Date	21/112024
Data Source	OSM; NPWS


Castlemartyr LRD
Figure 1.2
Aerial View of the Project Site
Project Site
N
W
E
S
0 0.03 0.06 0.12 Km
Drawn By PD
Date 21/11/2024
Data Source Bing


Castlemartyr LRD
Figure 1.3
Hydrological Pathway between the Project & Ballymacoda European Sites
Project Site
300mm Stormwater pipe
Kiltha River
Dower River (at surface)
Dower River (subterranean)
Womanagh River
Ballymacoda Bay SPA
Ballymacoda SAC
N
W
E
S
0 0.5 1 2 Km
Drawn By PD
Date 14/112024
Data Source OSM; NPWS
Killeagh
Mogeely
Castlemartyr
Ladysbridge
Ballymacoda
Garryvoe
Shanagarry
Youghal
Ballyvergan
Midleton Road
L3804
L3806
L3809
L7836
L3811
L7839
L7841
L7857
L3812
L3815
N25
R634
R632
R633
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training providers such as CIEEM, British Trust for Ornithology, the Botanic Gardens and the Field Studies Council

1.2 SUMMARY OF SCREENING REPORT FOR APPROPRIATE ASSESSMENT

The Screening Report identified the European Sites occurring within the zone of influence of the project. This was undertaken by using the SPR model. All potential pathways that could connect the project to European Sites in the wider surrounding area were identified and examined for their potential to function as pathways. The potential pathways examined included hydrological; groundwater; noise and vibration; air; light; visual and mobile species; pathways. Of these pathways, a hydrological pathway, surface water during the operation phase and groundwater pathway during the construction and operation phase were identified as the pathways that could not be ruled out at the screening stage as a potential impact pathway.

The European Sites that are connected to the project via the hydrological pathways are River Ballymacoda Bay European Sites.

The construction phase will require excavations that could result in contact with and exposure of groundwaters. In the event that groundwaters are encountered there will be a risk of pollutions to them from potentially polluting substances stored on site such as hydrocarbons. Groundwater flow paths underlying the site are expected to be to surrounding watercourses, the nearest of which is the Kiltha River to the west, followed by the Dower River to the east. Any discharge of polluted groundwater to these watercourses could in turn be conveyed downstream to the Ballymacoda Bay European Sites, with potential to contribute to any existing water quality pressures at these European Sites.

The Screening Report concluded that the potential for the above pathways to occur and function as an impact pathways requires examination as part of an Natura Impact Statement and if adverse effects are identified then appropriate mitigation measures are set out to ensure such adverse effects are avoided.

1.3 GUIDANCE

This NIS has been undertaken in accordance with National and European guidance documents: Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities

(DEHLG 2010) and *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites – Methodological Guidance of the Provisions of Article 6(3) and (4) of the Habitats directive 92/43/EEC.* The following guidance documents were also of relevance during this the preparation of this NIS:

- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites – Methodological Guidance of the Provisions of Article 6(3) and (4) of the Habitats Directive 92/42/EEC. European Commission (2021).

- Managing Natura 2000 Sites – The provisions of Article 6 of the Habitats directive 92/43/EEC. European commission (2018).

The information provided in this NIS is also guided by European and Irish case law guiding the approach to Stage 2 Appropriate Assessment. In particular it is noted that the consideration of impacts provided in Section 4 this NIS has been undertaken in the absence of any regard to best practice measures and environment safeguards that aim to safeguard the receiving environment and European Sites from potential adverse impacts.

1.3.1 Background to Habitats Directive Article 6 Assessments

The EC (2021) guidelines outline the stages involved in undertaking an assessment of a project under Article 6(3) and 6(4) of the Habitats Directive. The assessment process comprises the four stages outlined below. Stage 1 to 3 form part of the Article 6(3) process, while Stage 4 forms part of the Article 6(4) process. This NIS presents the findings of an examination, analysis and evaluation of the project to inform a Stage 2 Appropriate Assessment of the project.

- Stage 1 – Screening: This stage defines the proposed plan, establishes whether the proposed plan is necessary for the conservation management of the European Site and assesses the likelihood of the plan to have a significant effect, alone or in combination with other plans or projects, upon a European Site.

- Stage 2 – Appropriate Assessment: If a plan or project is likely to have a significant affect an Appropriate Assessment must be undertaken. In this stage the impact of the plan or project to the Conservation Objectives of the European Site is assessed. The

outcome of this assessment will establish whether the plan will have an adverse effect upon the integrity of the European Site.

- Stage 3 – Procedures under Article 6(4): Plans or projects for which the appropriate assessment could not conclude that they will not affect the integrity of the sites concerned may only be approved by the competent authorities if a derogation is sought in accordance with the provisions of Article 6(4). These provisions entail three key requirements that must be met and documented:
    - Alternative have been considered
    - There are imperative reasons of overriding public interest, including those of social or economic nature; and
    - All compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected are taken

1.3.1.1 Stage 2: Appropriate Assessment

The EC Guidance Assessment Criteria for a Stage Two Appropriate Assessment seeks the following information:

1. the collection of information on the project and on the European Sites concerned;
2. An assessment of the implications of the project in view of the site's conservation objectives, individually or in combination with other plans or projects;
3. An evaluation as to whether the project can have adverse effects on the integrity of European Sites;
4. The consideration of mitigation measures (including their monitoring).

This NIS addresses each of these items, through the following sections provided below.

1.4 SCIENTIFIC INVESTIGATIONS

A range of scientific site investigations have been completed for the project and these are relied upon in this Natura Impact Statement. The investigations include ecological field surveys, hydrological field surveys and geotechnical field surveys.

Desk-based investigations were completed to identify pathways connecting the proposed project to European Sites. Datasets used to assist with the desk-based investigations include:

- NPWS European Sites and site-specific conservation objectives datasets;
- EPA Rivers and Lakes dataset;
- EPA surface water catchment and sub-catchment datasets;
- NPWS Article 17 Habitats and Species Reports datasets;
- OSI Geohive and OSI Historic townlands online mapping portal;
- National Biodiversity Data Centre (NBDC) online mapping portal; and
- NPWS Protected Species Dataset for the proposed development site and surrounding area.

The ecological field surveys that have been completed and that have informed this Natura Impact Statement include:

- Habitats and vegetation surveys and mapping as well as the recording of the presence of fauna at the proposed development site completed on a monthly basis between the months of April to November 2024.
- Targeted bat surveys during the 2024 bat activity season.

2.0 PROJECT DESCRIPTION

The project consists of a proposal for a Large-scale Residential Development (LRD) comprising the construction of 150 no. residential units, a creche and all associated development works at Gortnahomna More (townland), Castlemartyr, Co. Cork.

2.1 SURFACE WATER MANAGEMENT

2.1.1 Existing Surface Water Infrastructure

The public surface water network maps do not indicate an existing surface water network along the N25 to the north of the application lands. The applicant commissioned topographical and Gound Penetrating Radar (GPR) surveys to identify the extents of any existing networks along the N25. The surveys confirmed the location and extents of an existing 300mm diameter surface water network along the N25 adjacent to the site and discharging to the Kiltha River to the west of the lands. An existing field boundary drain is apparent along the north west boundary of the northern portion of the site. The existing rainfall runoff from the site appears to discharge directly to ground at source or discharge overland to the field boundary drain prior to discharging to ground.

2.1.2 Proposed Surface Water Infrastructure

The design and management of surface water for the proposed development will comply with the requirements of the Greater Dublin Strategic Drainage Study (GDSDS) and the Cork County Development Plan 2022 – 2028. The design of the surface water network and SuDS measures within the application site shall include a 20% climate change factor in accordance and the Cork Co. Co. Water Services requirements.

2.1.3 Principle Design Considerations

Surface water from the proposed residential development will be managed via a surface water network that includes Sustainable Drainage Systems (SuDS). The surface water will be attenuated and controlled on-site before being discharged at a rate lower than the existing run-off rate. This will be achieved as part of the proposed surface water infrastructure design through the interception and attenuation of existing runoff from the N25. The 300mm diameter public stormwater system along the N25 will serve as the discharge point. Water will be

conveyed along the existing 300mm stormwater system and will discharge to the Kiltha River to the west of the project site (see **Figure 1.3** above).

The development has been split into 6 no. sub-catchment areas for the surface water attenuation design in order to reduce flows within the site. the development surface water catchments are shown on **Figure 2.1** below. The post development overland flow route is illustrated on **Figure 2.2**. The discharge rates will be regulated using vortex flow control devices (Hydrobrakes) and attenuation will be provided using reinforced concrete attenuation tanks (due to the karst risk in the area). The discharge from the site will also pass through a bypass petrol/oil separator, which is sized according to the allowable discharge rate.

Figure 2.1: Development Catchments

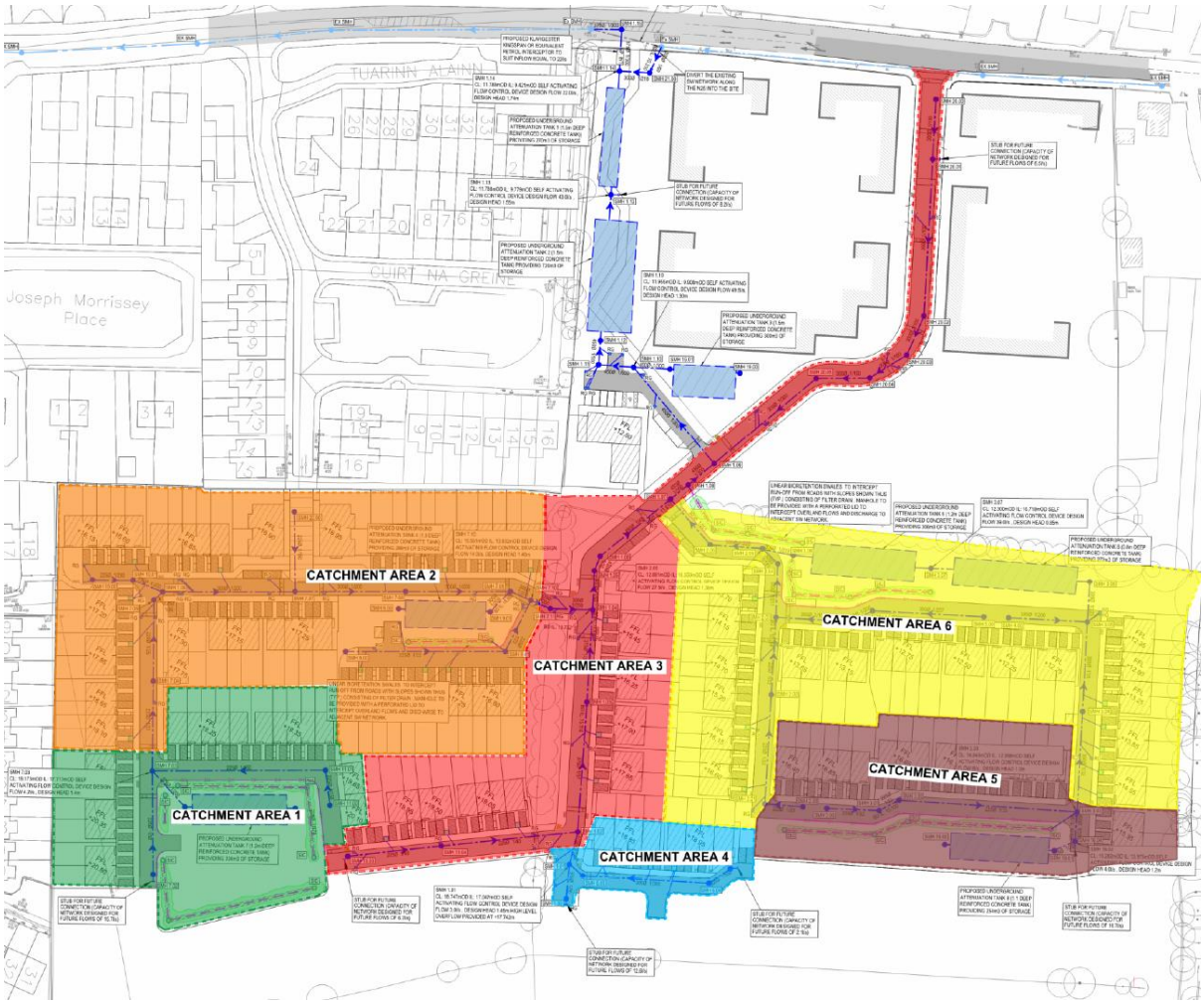


Figure 2.2: Post Development Flow Path

2.2 SUDS

2.2.1 Proposed SuDS Hierarchy

The SuDS hierarchy outlined below has been considered for this site in accordance with the Cork County Council SuDS selection hierarchy for LRD developments. The following SuDS elements form part of the surface water management infrastructure to be provided for the operation phase of the project:

- Source Control

- Swales
- Integrated constructed tree pits
- Downpipe planters
- Rainwater harvesting
- Permeable pavement
- Bio-retention systems/raingardens
- Filter drains

- Site Control
  - Detention basins

- Other
  - Petrol/oil interceptor/grit trap
  - Attenuation tank

All SuDS measures are described in full in the DOBA Infrastructure Design Report, provided under separate cover with the planning application documentation.

2.3 FOUL WATER DRAINAGE

2.3.1 Existing Foulwater Discharge

The Applicant commissioned Metroscan to carry out Topographical and Gound Penetrating Radar (GPR) surveys to confirm the extents and size of the existing wastewater network along the N25 downstream of the proposed connection point. The surveys confirmed 2 No. existing

wastewater networks along the N25 discharging to the west towards the Castlemartyr Bridge WwPS as follows;

A 225mm diameter pipe along the northern side of the N25 which appears to correlate with the existing wastewater network illustrated on the current Uisce Eireann maps. This network appears to serve the existing developments along the N25 according to the GPR survey drawing;

A 300mm diameter pipe along the southern side of the N25 which appears to commence at the site boundary.

The Topographical and GPR survey drawings confirm that both existing wastewater sewers discharge towards the existing Castlemartyr Bridge WwPS. Based on the as-constructed invert levels of the existing networks, the existing 300mm wastewater network is more suitable to serve the proposed application development.

2.3.2 Uisce Éireann Pre-Connection Enquiry & Confirmation of Feasibility (COF)

The Applicant has liaised with Uisce Eireann (UE) in relation to the proposed development and submitted a pre-connection enquiry (PCE) to which UE responded. The Connection & Developer Services (CDS) Response states that a wastewater connection is "feasible subject to upgrades" and "*in order to accommodate the proposed connection at the Development, upgrade works are required to increase the capacity of Castlemartyr WWTP. Uisce Éireann currently has a project underway which will provide the necessary upgrade and capacity. This upgrade project is scheduled to be completed in 2026 (may be subject to change) and the proposed connection could be facilitated as soon as possibly practicable after this date".*

With respect to the examination set out in this report reference is made to a previous planning application for a residential development (in2018) at the project site was refused by An Bord Pleanála (Planning Reference No. 301316-18) on the basis of issues relating to wastewater discharges and potential risks to the Ballymacoda Bay European Sites. It is noted that the previous planning application was completed prior to the receipt of planning approval for the upgrade of the Castlemartyr wastewater treatment plant, which is currently at an advance stage of construction (construction works commenced in September 2023). As such and as per the Uisce Éireann COF, it can now be confirmed that sufficient capacity will be available for the

adequate treatment of all wastewater generated by the proposed development. As such the generation of wastewater by the project and its discharge to the wastewater treatment plant will not pose a risk to the water quality of the receiving Kiltha Riverand will in turn no pose a risk of likely significant effects to the Ballymacoda Bay European Sites downstream.

2.3.3 Proposed Wastewater Drainage

The proposed wastewater drainage will collect effluent from the residential units via a main wastewater drainage network located within the development's access roads and discharge by gravity to the existing wastewater network to the north of the site as illustrated on DOBA Engineering drawing C-0300. The new wastewater sewer network will be designed in accordance with the principles and methods set out in Irish Water's Code of Practice for Wastewater Infrastructure IW-CDS-5030-03, IS EN 752 Drain & Sewer Systems outside Buildings, IS EN 12056 Gravity Drainage Systems inside Buildings and the Building Regulations Technical Guidance Document Part H Drainage & Wastewater. The estimated peak Wastewater loading generated by the proposed development's Dry Weather Flow is estimated at 0.61 l/s while the Design Wastewater Flow of 6DWF is 3.63 l/s.

2.4 WATER SUPPLY

2.4.1 Existing Water Supply

An existing 150mm DI watermain was installed along the N25 adjacent to the application site as part of the N25 pavement strengthening scheme undertaken in 2018. The applicant commissioned Metroscan to carry out topographical and Gound Penetrating Radar (GPR) surveys to locate the existing 150mm watermain along the N25. The GPR identified an existing spur off the new watermain extending to the boundary of the application site.

2.4.2 Uisce Éireann Pre-Connection Enquiry

DOBA have liaised with Irish Water (IW) in relation to the proposed development and submitted a pre-connection enquiry to which IW responded with a Confirmation of Feasibility (CoF). The Connection & Developer Services (CDS) Response noted that a new water connection is "Feasible without infrastructure upgrade by Uisce Éireann".

2.4.3 Proposed Water Supply

The proposed water supply networks within the subject site will include a 150mm dia. watermain with 100mm dia. loops, associated connections, valves, hydrants, meters etc. designed in accordance with Irish Water's Code of Practice for Water Infrastructure IW-CDS-5020-03/ Standard Details and the Department of the Environment's Building Regulations "Technical Guidance Document Part B Fire Safety". The site watermain network will adequately serve the firefighting requirements with Fire Hydrants provided on the loop main in accordance with Part B of the Building Regulations. The proposed watermains are illustrated on the DOBA Engineering C-0400 drawing series. The estimated peak hour water demand generated by the proposed development is 4.69 l/s.

2.5 LANDSCAPING

The Landscape masterplan has been developed with a strong emphasis on the importance of the application site within the Green infrastructure network. The existing hedgerows form a strong component of the overall plan, helping to bed the development in the existing environment. The open space is mainly consolidated to 4 zones to give maximum park frontage for the dwellings. The allocated communal space within that includes informal and formal play provision dotted throughout as well as some flexible spaces for amenity activities like exercise as well as quieter areas with seating. Routes through the open spaces offer pleasant & accessible access throughout the site, creating a variety of experiences throughout, including semi-formal 'manicured' spaces, wilder areas with reduced mowing & pockets of wooded areas. Future pedestrian connections to the existing estates to the North & West form a pedestrian street typology with the opportunity for additional greening and seating. A strong boundary condition is proposed to set the development to create a suitable link to the main road and improve the quality of the road edge. A pedestrian link with a cycleway, planting and play features is proposed to link the development to the main road. The willow area is proposed as an additional amenity & nature space.

Bee orchid (*Ophrys apifera*) has been recorded within the project site. A total of 25 no. flowering spikes were recorded in the area of recolonising bare ground/spoil and bare ground occurring to the north of the project site. As part of the landscape plan it is proposed translocate the existing stand of bee orchid from their current position to an area of landscaped verge to be provided as part of the landscape design. The bee orchid will be positioned on free draining

soils with an unshaded south facing aspect. It will be planted with a mix of other small herb species. The receptor area will be subject to a mowing regime to maximise suitability of the receptor area for bee orchid on an ongoing basis. This will comprise mowing twice yearly, during early spring and autumn. A key element of the mowing regime will be the lifting of all cutting from the receptor area and disposal elsewhere. No cutting will be lift within the receptor area.

2.6 LIGHTING

The Outdoor Lighting Schemehas taken into account best practice, as published by the UKBat Conservation Trust, in respect of a design strategy to minimise the impact of outdoor lighting upon bat populations.

LED type lanterns, of the Warm White type, have been specified, with a Colour Temperature of 3,000K, as is considered least disruptive to the emergence of bats from roosts at dusk, and subsequent movement from habitats to foraging locations. LED lanterns do not emit any ultr aviolet or infra-red radiation, this again being a desirable feature in relation to impact upon bats, in terms of c ausing spatial exclusion from artificially lit areas. Light levels have been kept as low as possi ble by reference to levels specified in BS EN 5489: 2020 for trafficked roads in residential ar eas. Lanterns are of the fully cut off type with no light output above the horizontal plane. In addition to the low illuminance level of the (LED) adjusted P3 Lighting Class selected, dimmi ng of the light levels to Class P4 between 23.00 hrs. and 06.00hrs. has been specified to furth er reduce the environmental impact of the scheme.

3.0 BASELINE DESCRIPTION

3.1 REVIEW OF HISTORICAL MAPS

A review of historical mapping (6-inch colour map 1829 to 1842; 6 inch Cassini, 1830's) and the 25 inch map, 1888 to 1913) for the site indicates that the site was enclosed and subdivided into agricultural fields with hedgerow field boundaries by the early 1800's. At this stage the northern 'field' of the project site was subdivided into two no. fields; the southwest field is depicted on the first 6 inch map as it is today; whilst the southeast field was subdivided into 4 no. smaller fields. The arrangement of the field pattern at the project site changed by the time

of the publication of the 25 inch map in 1899. By this time the northern field was amalgamated into a large field stretching towards the cross roads at Castlemartyr. The 4 no. small fields in the southeast of the project site were amalgamated into the one field, as it is today.

The 1995 satellite imagery for the site shows northern field forming the eastern half of a larger field that stretched west from the project site boundary. The two southern fields within the project site remained unchanged from those depicted on the historical mapping. The 2001 – 2005 imagery shows the commencement of housing development within the western half of the larger field, that spread east into the project site. Residential development continued to be development between 2001 and 2018, establishing the existing footprint of residential land cover to the west and north of the project site. The latest Ordnance Survey Ireland aerial imagery for the site from 2013 – 2018 shows the presence of the existing hedgerow field boundaries, and indicates the presence of arable land in the two southern fields, whilst the northern field appears to comprise a mix of rough grassland and small patches of scrub. This imagery does not indicate the presence of the area of willow scrub that now occupies the southern extent of the northern field, indicating that this scrub habitat has become established in the last 6 to 10 years.

3.2 LAND, SOILS & GEOLOGY OVERVIEW

The bedrock underlying the site changes from north to south, with Massive and crinoidal fine limestone of the Little Island Formation occurring within the project site to the north. A band of Red brecciated calcilutite limestone of the Cork Red marble Formation occupies the southern portion of the project site's northern 'field' that is now largely colonised by willow scrub woodland, as well as the northern portion of the southwestern field and the majority of the southeastern field. To the south of this band the bedrock consists of Massive unbedded lime-mudstone of the Waulsortian limestone.

The subsoils are dominated by till derived from Devonian sandstone, while the soils are dominated by acid brown earth. The Geological Survey of Ireland (GSI) map viewer does not indicate the presence of any wells within the project site.

The project site is located within the Midleton Groundwater body (IE_SW_G_058) which encompasses the limestone valley from Midleton in the west to Youghal in the east. Groundwater vulnerability underlying the subject lands ranges from Medium to High. Two no.

karst features are identified by the GSI to the south of the project site. These are both enclosed depressions (ID no. IE_GSI_Karst_40K_15432 & IE_GSI_Karst_40K_15613). The GIS note in their first draft Midleton GWB Description that the nature of the karstic system occurring at and surrounding the project site leads to rapid interchanges of water between surface and underground. Swallow holes and caves receive surface water, and groundwater is discharged to surface as springs or as baseflow to rivers crossing the groundwater body. As such it is likely that surface waters draining to ground at the project site are likely to discharge to the Kiltha River to the west or the Dower River, which is located at a greater distance (c. 800m) to the east.

3.3 HYDROLOGY

The site is located within Hydrometric Area 19 Lee, Cork Harbour and Youghal Bay. It is located within the Womanagh_SC_010 sub-catchment. There are no watercourses occurring within or bounding the project site. The nearest watercourse to the project site is the Kiltha River, located approximately 315m to the west. No surface drains occur at the project site.

A Site-Specific Flood Risk Assessment (SSFRA) has been prepared by JBA (provided under separate cover with the planning application documentation) and submitted with the Application documentation which summarises that the proposed residential portion of the development is situated within Flood Zone C and is not at risk of flooding arising from Tidal, Fluvial, Pluvial, Groundwater or Human/ Mechanical Error sources.

3.4 DESIGNATED CONSERVATION AREAS

3.4.1 European Sites

No European Sites occur at or in the area (e.g. 5 km radius) surrounding the project site. The European Sites in the wider surrounding area are shown on **Figure 3.1** and **Figure 3.2**. The nearest European Sites to the project site are the Ballycotton Bay SPA (Site Code: 004022), approximately 6.7km (as the crow flies) to the south and the Ballymacoda (Clonpriest and Pillmore) SAC (Site Code: 000077) and SPA (Site Code: 004023) approximately 7km (as the crow flies or c. 11km downstream along Kiltha and Womanagh Rivers) to the east. Of these European Sites, the Ballymacoda Bay European Sites have been identified as occurring within the zone of influence of the project by virtue of hydrological pathways connecting the project

site to these European Sites. There are no pathway connecting the project site to the Ballycotton Bay SPA. The following subsections sets out further details for the Ballymacoda Bay European Sites, whilst Section 3.4.1.3 provides baseline information with respect to the current Water Framework Directive status of the Womanagh Estuary, which will eventually receive all waters draining from the project site.

3.4.1.1 Ballymacoda Bay SAC

This coastal site stretches north-east from Ballymacoda to within about 6 km of Youghal, Co. Cork. Though moderate in size, it has a good diversity of coastal habitats, including several listed on Annex I of the E.U. Habitats Directive.

The site is selected as a SAC for the following qualifying features of interest:

[1130] Estuaries

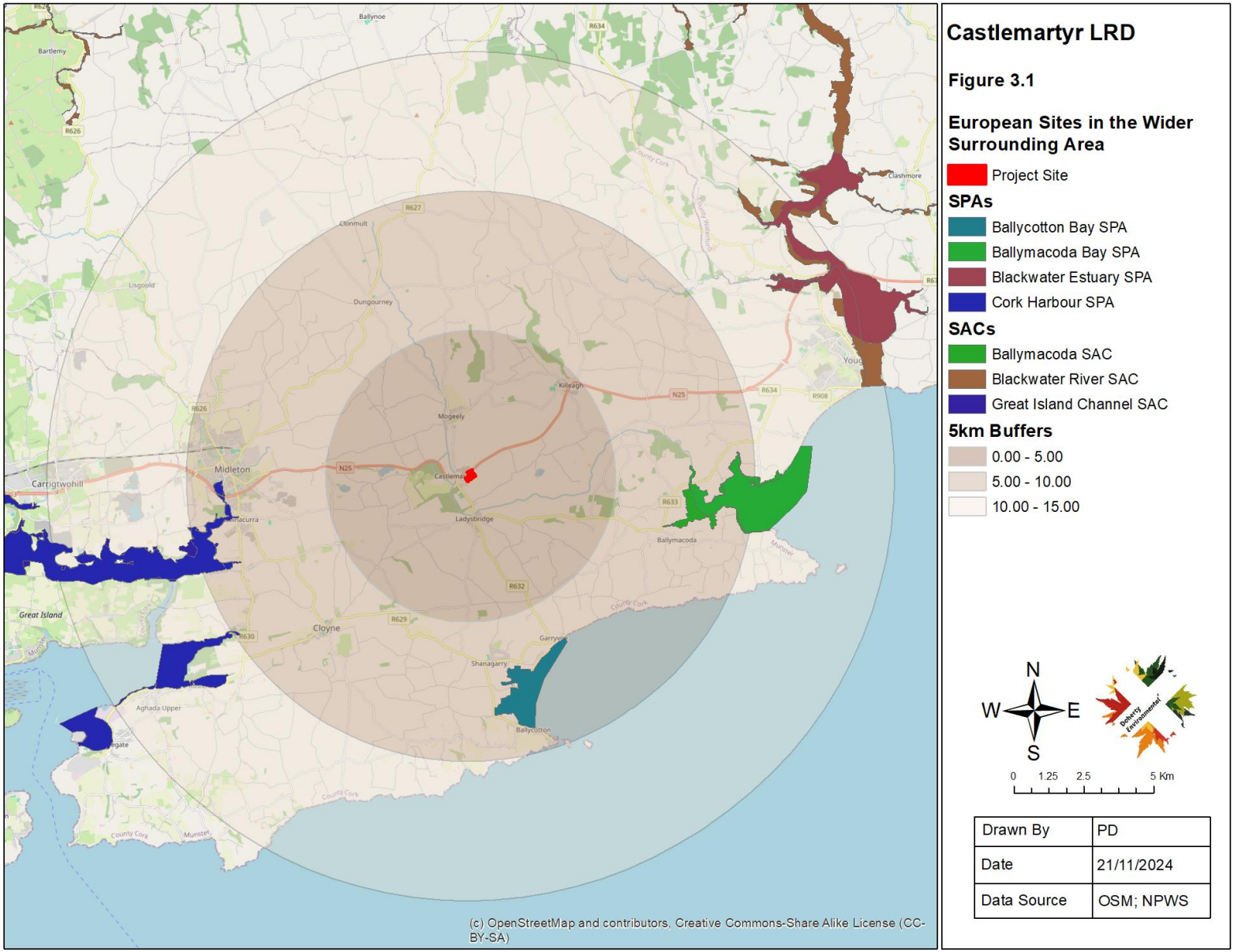
[1140] Tidal Mudflats and Sandflats

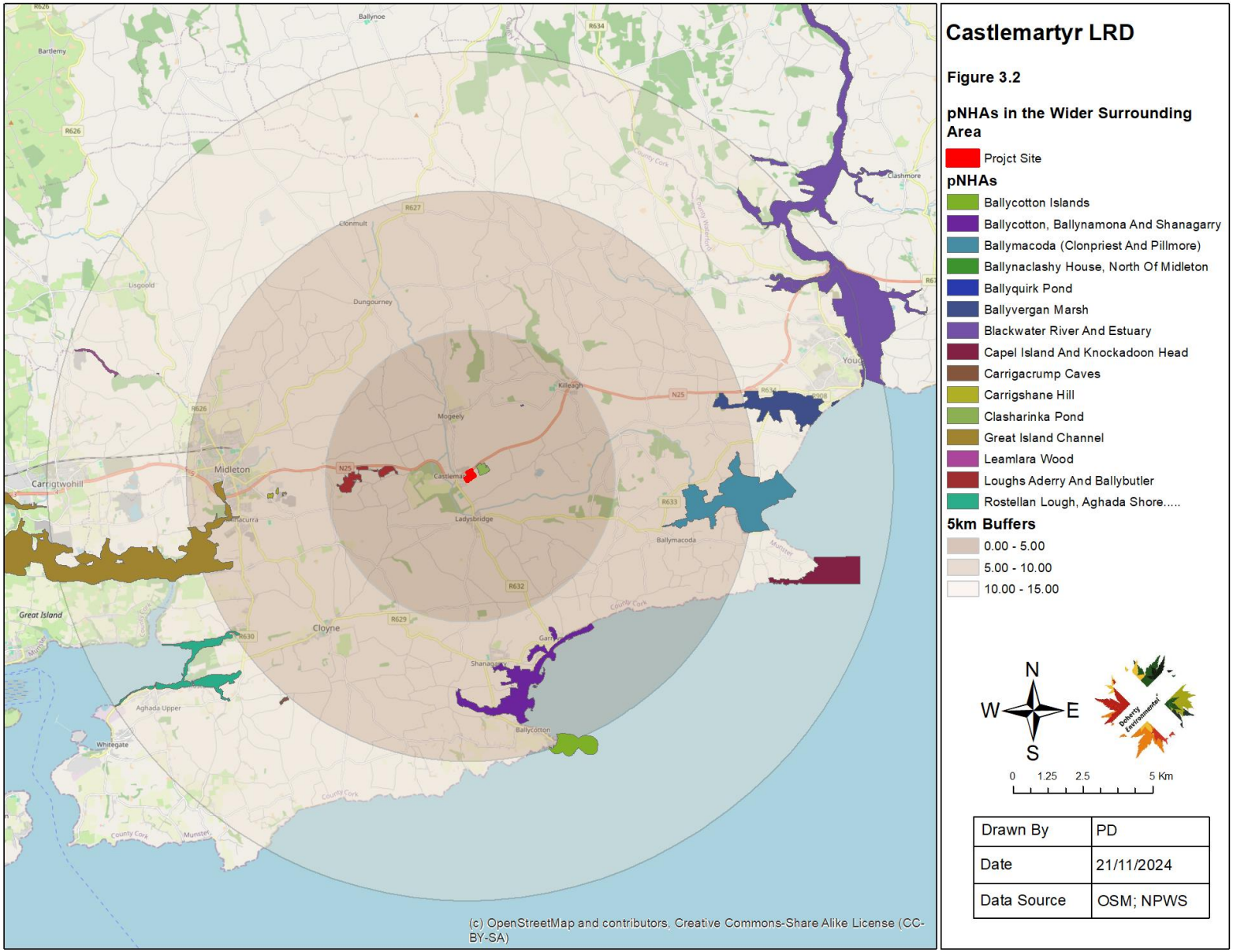
[1310] Salicornia Mud

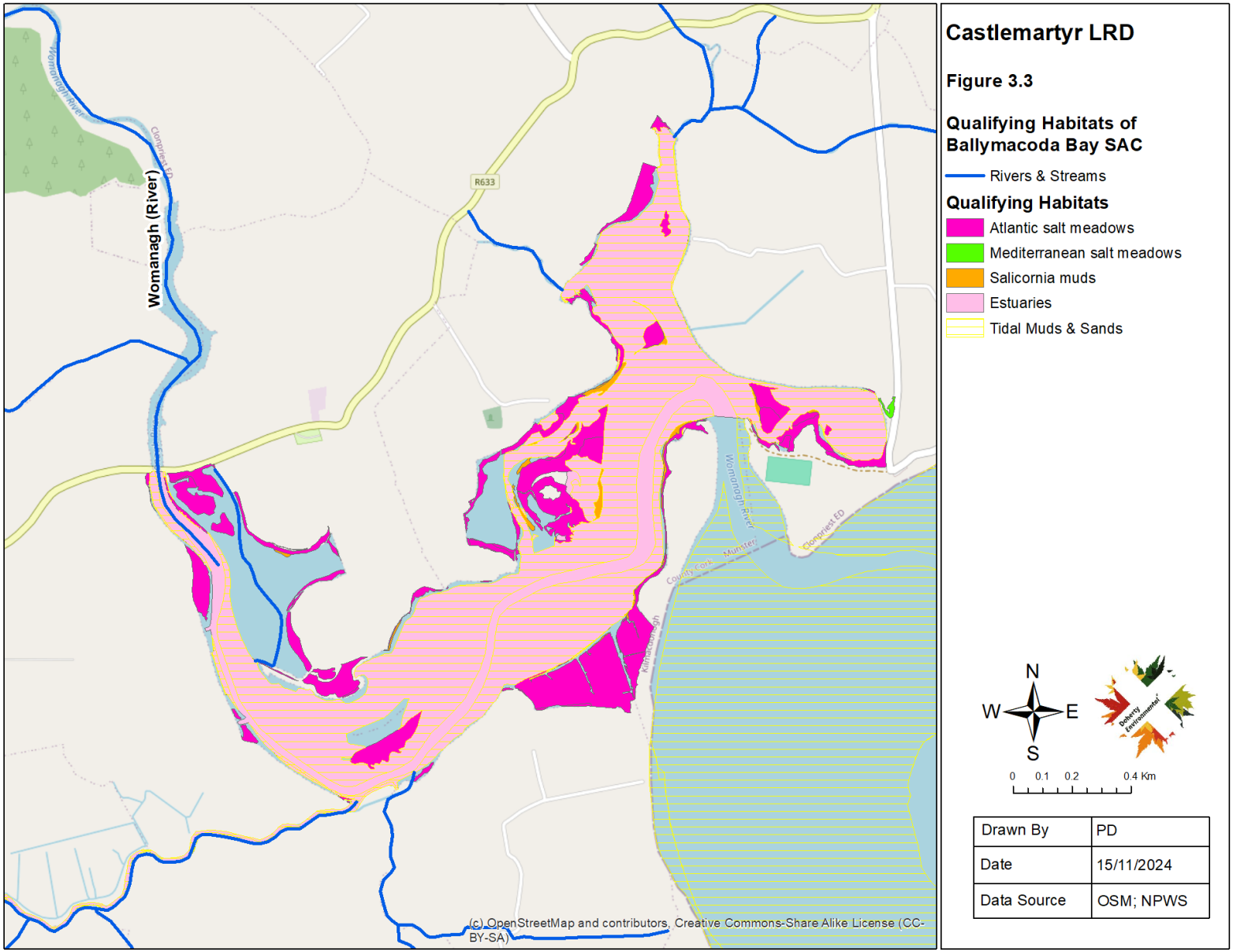
[1330] Atlantic Salt Meadows

[1410] Mediterranean salt meadows (Juncetalia maritimi)

The distribution of the qualifying habitats of this SAC at the Womanagh River estuary, downstream of the project site are shown on **Figure 3.3** below. Aside from Mediterranean salt meadows and Salicornia Mud, the remaining three qualifying habitats of the SAC are located downstream of the project site at the Womanagh River estuary. As such the qualifying habitats of the SAC that are considered to occur within the zone of influence of the project are estuaries, tidal mudflats and sandflats and Atlantic salt meadows.


Castlemartyr LRD
Figure 3.1
European Sites in the Wider Surrounding Area
Project Site
SPAs
Ballycotton Bay SPA
Ballymacoda Bay SPA
Blackwater Estuary SPA
Cork Harbour SPA
SACs
Ballymacoda SAC
Blackwater River SAC
Great Island Channel SAC
5km Buffers
0.00 - 5.00
5.00 - 10.00
10.00 - 15.00
N
W
E
S
0 1.25 2.5 5 Km
Drawn By PD
Date 21/11/2024
Data Source OSM; NPWS
(c) OpenStreetMap and contributors, Creative Commons-Share Alike License (CC-BY-SA)
Midleton
Carrigtwohill
Cloyne
Great Island
Ballymacoda
Ladysbridge
Killeagh
Mogeely
Dungourney
Clonmult
Lisgoold
Bartlemy
Ballynoe
Clashmore
Shanagarry
Ballycotton
Aghada Upper
Garryvoe
County Cork
Munster


Castlemartyr LRD
Figure 3.2
pNHAs in the Wider Surrounding Area
Projct Site
pNHAs
Ballycotton Islands
Ballycotton, Ballynamona And Shanagarry
Ballymacoda (Clonpriest And Pillmore)
Ballynaclashy House, North Of Midleton
Ballyquirk Pond
Ballyvergan Marsh
Blackwater River And Estuary
Capel Island And Knockadoon Head
Carrigacrump Caves
Carrigshane Hill
Clasharinka Pond
Great Island Channel
Leamlara Wood
Loughs Aderry And Ballybutler
Rostellan Lough, Aghada Shore.....
5km Buffers
0.00 - 5.00
5.00 - 10.00
10.00 - 15.00
N
W
E
S
0 1.25 2.5 5 Km
Drawn By PD
Date 21/11/2024
Data Source OSM; NPWS
(c) OpenStreetMap and contributors, Creative Commons-Share Alike License (CC-BY-SA)



Castlemartyr LRD

Figure 3.3

Qualifying Habitats of Ballymacoda Bay SAC

Rivers & Streams

Qualifying Habitats

- Atlantic salt meadows
- Mediterranean salt meadows
- Salicornia muds
- Estuaries
- Tidal Muds & Sands

N
W E
S

0 0.1 0.2 0.4 Km

Drawn By	PD
Date	15/11/2024
Data Source	OSM; NPWS

Conservation objectives have been published for the Ballymacoda Bay SAC (NPWS, 2015a). The conservation objectives attributes and targets pertaining to the qualifying habitats of the SAC occurring within the zone of influence of the project are set out in Section 5 below.

3.4.1.2 Ballymacoda Bay SPA

This coastal site stretches north-east from Ballymacoda to within several kilometres of Youghal, Co. Cork. It comprises the estuary of the Womanagh River, a substantial river which drains a large agricultural catchment. Part of the tidal section of the river is included in the site and on the seaward side the boundary extends to, and includes, Bog Rock, Barrel Rocks and Black Rock. The inner part of the estuary is well sheltered by the Ring peninsula, a stabilised sand spit with sand dunes at its northern end and salt marshes on the landward side. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species:

Wigeon	Grey Plover	Black-tailed Godwit	Turnstone
Teal	Lapwing	Bar-tailed Godwit	Black-headed Gull
Ringed Plover	Sanderling	Curlew	Common Gull
Golden Plover	Dunlin	Redshank	Lesser Black-backed Gull

The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

There is a hydrological pathway between the project site and the wetland habitats of Ballymacoda Bay SPA that support the wetland bird species listed above. As such these wetland bird species and their associated wetland habitats, as well as other waterbirds are considered to lie within the zone of influence of the project.

Conservation objectives have been published for the Ballymacoda Bay SPA (NPWS, 2015b). The conservation objectives attributes and targets pertaining to the special conservation interests of the SPA are set out in Section 5 below.

3.4.1.3 Womanagh Estuary Water Framework Directive Status

The latest Water Framework Directive reporting for the Womanagh Estuary (Cycle 2 report for Sub-catchment Womanagh_SC_010) has placed the estuary Water Framework Directive risk status under review due to the identification of existing anthropogenic pressures. The Womanagh River which drains to the estuary and to which surface waters generated at the project site will eventually drain has been categorised as At Risk owing to the identification of significant pressures the source of which are listed as agricultural, urban waste water and channelisation. It is noted that the current project will not have the potential to contribute to channelisation along the river given that no works are proposed as part of the project to any watercourses. Neither will it have the potential to contribute to urban wastewater inputs given

that there will be no potential for a wastewater impact pathway to connect the project to the Womanagh sub-catchment (see Screening Report for Appropriate Assessment).

3.4.2 Natural Heritage Areas

There are no NHAs occurring in the wider area surrounding the project site. The nearest proposed NHA (pNHA) to the project site is the Clasharinka Pond pNHA, located approximately 200m to the east. The next pNHA is the Loughs Aderry and Ballybutler, located approximately 2.5km to the west

3.5 LAND COVER & HABITATS

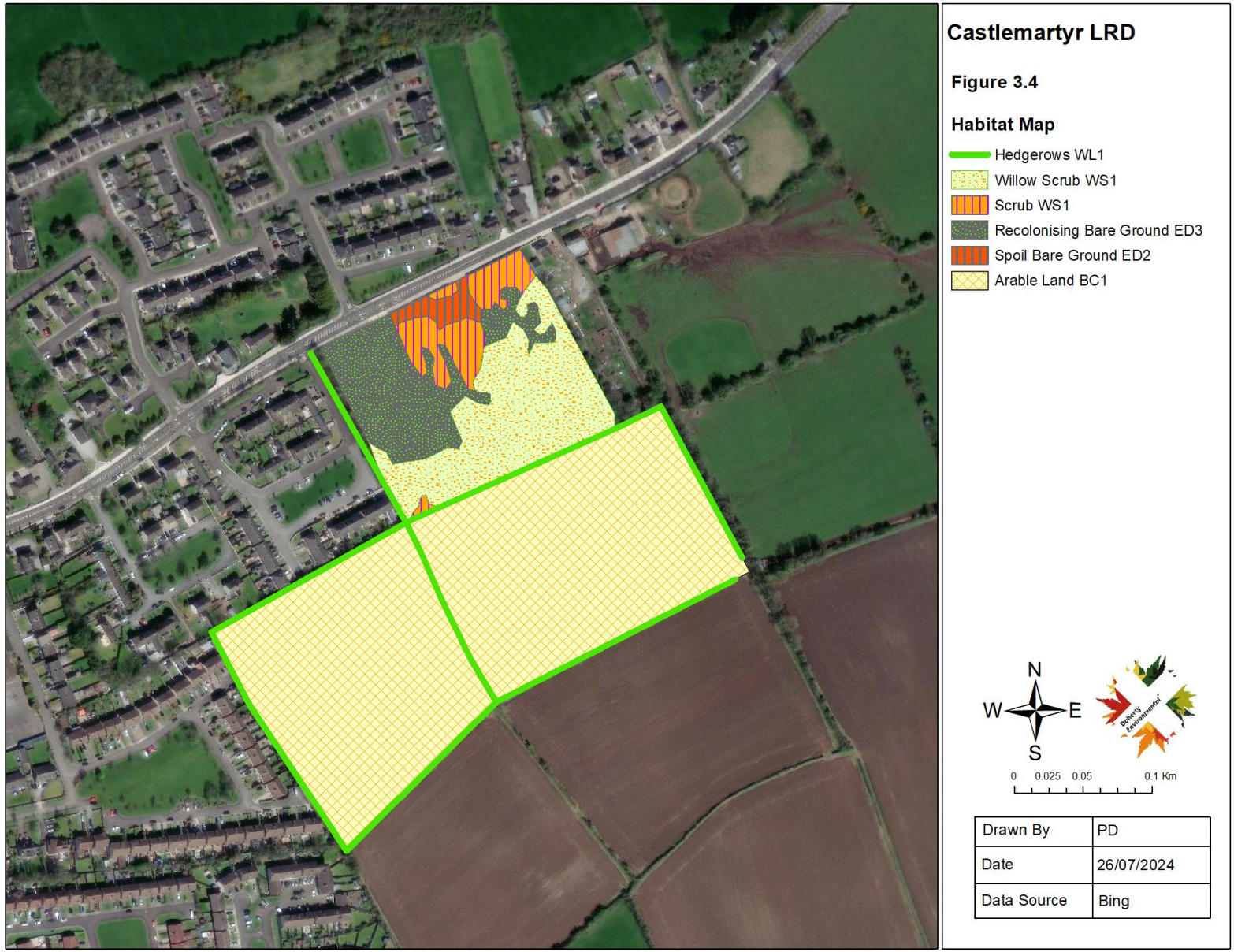
The current land cover within the project site is characterised by arable land bounded by hedgerows in the two southern fields. The northern ‘field’ consists of areas of spoil and bare ground, recolonising bare ground and immature willow scrub. The extent of each habitat occurring within the project site is shown on **Figure 3.4** Habitat Map. Hedgerows bound the site, whilst one number hedgerow, orientated north to south separates the southwestern and southeastern fields of the project site. These hedgerows are shown on historical maps and are of local value from a historical boundary perspective. They are considered to be of local

importance (higher value) (Rating D)[1]. The existing hedgerows on site will be largely retained and as such the potential impact of the proposed development to this habitat will be minor.

An area of species-poor willow (Salix aurita & Salix cinerea) has become established on site in recent years. As noted in Section 3.1 above this scrub habitat is not apparent in the latest OSI aerial imagery and is likely to have become established in the last 6 to 10 years. The scrub habitat is dense with high levels of shading resulting a depauperate and species-poor herb layer. Informal desire line paths are established within the existing willow scrub habitat, indicating its current use as an informal recreational area. The willow scrub habitat is of local importance (higher value) owing to the habitat it provides for fauna species. As part of the landscape plan for the project the woodland habitat will be largely retained within the existing footprint of the willow scrub habitat and will be buffered to the south along the existing hedgerow bounding the south of this area. This buffer has been designated as an ecological corridor (Open Space B) in the landscape plan. Given the approach to the retention of the willow scrub habitat and the provision of an additional and contiguous ecological corridor buffering this area to the south, the potential impact of the proposed development to this habitat will be negligible.

Other habitats occurring within the project site include dense and species-poor bramble and gorse scrub; recolonising bare ground; spoil and bare ground and arable land. These habitats are of Local importance (lower value) (Rating E).

[1] Evaluation is as per the NRA Guidelines for the Assessment of Ecological Impacts of National Road Schemes


Castlemartyr LRD
Figure 3.4
Habitat Map
Hedgerows WL1
Willow Scrub WS1
Scrub WS1
Recolonising Bare Ground ED3
Spoil Bare Ground ED2
Arable Land BC1
N
W
E
S
0 0.025 0.05 0.1 Km
Drawn By PD
Date 26/07/2024
Data Source Bing

3.6 FAUNA

3.6.1 Non-volant mammals

No evidence indicating the presence of protected non-volant mammals, such as badgers, has been recorded within the project site during field surveys completed monthly between April and July 2024. Rabbits are presence within the site, particularly in the northern field. The scrub and hedgerow habitat on site provides suitable habitat for small mammals such as hedgehog, shrew and wood mouse etc. Given the approach to the landscaping plan with the retention of the majority of hedgerow field boundaries as well as the willow scrub and the provision of addition landscape green space such as the ecological buffer, combined with the sensitive approach to the lighting design, the potential impact of the proposed development to non-volant mammals will be low and insignificant.

3.6.2 Bats

There are no structure on site and as such there is no potential for roosting to occur in buildings within the project site. Mature trees occur along the hedgerows within the project site, particularly along the eastern site boundary bounding the arable field. Roost emergence surveys were completed along this hedgerow boundary during bat survey completed in June and July and no bats were recorded emerging from these trees. On the basis of manual bat surveys completed to date the mature trees occurring within the hedgerow field boundaries do not function as bat tree roosts.

Levels of foraging activity by bats recorded during manual foraging activity surveys during May, June and July were found to be low. Species recorded were dominated by Soprano pipistrelle, Common pipistrelle and Leisler's bat with a very low number of calls assigned to Myotis species.

Given the approach to the landscaping plan with the retention of the majority of hedgerow field boundaries as well as the willow scrub and the provision of addition landscape green space such as the ecological buffer, combined with the sensitive approach to the lighting design, the potential impact of the proposed development to bat species will be low and insignificant.

3.6.3 Birds

A range of bird species have been recorded on site during monthly surveys completed between April and July 2024. Species recorded comprise blue tit, bull finch, chaffinch, chiffchaff, coal tit, blackbird, great tit, greenfinch, song thrush, magpie, hooded crow, house sparrow, starling, swallow, yellowhammer, whitethroat, wood pigeon and wren.

All of the above species recorded on site during surveys are green listed and of low conservation concern with the exception of house sparrow, starling and swallow which are amber listed species of medium conservation concern and yellowhammer which is red listed of high conservation concern. It is noted that yellowhammer was heard calling on site during field surveys completed in June 2024. It was not heard calling during other monthly surveys in April, May and July. This result is indicative of possible breeding behaviour at the site. It is noted that the loss of arable land to the footprint of the proposed development will result in a loss of suitable habitat for yellowhammer. However given the small area of arable land to be lost to the proposed development, in the context of the extensive and widespread availability of this habitat in the surrounding area, the impact of this loss for yellowhammer will be insignificant and will not undermine the conservation status of this species at the local scale.

With respect to other bird species occurring at the project site the proposed approach to the landscape masterplan, which will retain the majority of hedgerows and existing willow scrub and provide additional habitat in the form of the ecological buffer, the impact to these species is considered to be low and insignificant.

3.7 FLORA

3.7.1 Rare & Protected Flora

As noted in Section 2 above the relatively rare bee orchid (*Ophrys apifera*) has been recorded on site with a total of 25 no. flowering spikes being observed during surveys in May and June 2024. The landscape masterplan has been prepared to establish suitable conditions for the retention of this species on site. The provision of suitable verge habitat that will be maintained in a condition optimal for sustaining this species on site. The species will be protected during the construction phase as set out in Section 2.7 above and will be translocated to the receptor

area in line with the approach outlined. The implementation of this approach will provide for the protection of this species as part of the proposed development.

3.7.2 Non-native invasive plant species

No high impact non-native invasive plant species have been recorded at the project site during baseline surveys between April and November 2024. One medium impact species, namely Buddleja davidii has been recorded on site. *B. davidii* is native to China and was first recorded in Ireland in the 1950's. It was introduced as a garden ornamental and is widely planted as a landscape garden ornamental throughout Ireland. It establishes readily on naturally or on anthropogenically disturbed sites such as quarries, urban waste grounds, abandoned cultivated areas, clearcut forests, along railway lines etc. (Tallent-Halsell & Watt, 2009).

In the UK and Ireland naturalised *B. davidii* plants retain seeds on the plant throughout winter and then release the seeds in early spring into summer (Tallent-Halsell & Watt, 2009). Large numbers of seeds are produced by each of the flowering spikes on the plant and the lightweight, winged nature of the seeds facilitates dispersal. Seeds can remain viable for three to five years. Plants also readily reproduce asexually from stem and root fragments and can regenerate from buried stems, stumps and roots soon after disruption.

No precise studies have been done on the level of impact of *B. davidii*, likely due to its long history of naturalisation (Talent-Hassell & Watt, 2009), but it is likely to displace native plants where it is present. It has been assessed as having a Medium Risk of impact as an invasive species by the National Biodiversity Centre (Invasiveness Risk Score of 15).

All *B. davidii* plants will be marked out with visible markings prior to the commencement of felling. Strips of hazard tape will be tied to each plant so that they are visible to the site clearance operatives.

In order to minimise the dispersal of seed it is recommended that *B. davidii* is felled on site and stockpiled locally to the area it which it is felled. Freshly cut plant material will not be transported large distances across the site to minimise the spread of seed. Other plant material can be deposited on top of the *B. davidii* so that the cut plant material buried beneath this material. The stockpiles containing *B. davidii* at the base should be left undisturbed on the

ground for a period of one week to whither. Once whithered the stockpiles containing felled *B. davidii* material can be removed for disposal.

To minimise the dispersal of seed, the felling of *B. davidii* be undertaken during period of prevailing calm conditions.

The implementation of these measures will ensure that the proposed development will not result in the risk of spread of this species.

4.0 EXAMINATION OF IMPACTS

The potential impacts that could arise as a result of the project relate to the generation and emission of contaminated waters from the project site and downstream to the Ballymacoda Bay European Sites via the Kiltha River and the Womanagh River. The pathways for such emissions relate to groundwater and surface water pathways. An examination of the project's potential to result in adverse effects to the Ballymacoda Bay European Sites by way of these impact pathways is provided below.

4.1 HYDROLOGICAL EMISSIONS

The potential impacts that may arise as a result of the project relate to the discharge of contaminated surface water from the project site during the construction phase (in the event of contamination of groundwaters) and the operation phase (in the event that polluted surface water runoff is generated). Under such scenarios polluted groundwater and/or surface water will drain from the project site to the Kiltha River via natural flow pathways for groundwater or for surface water via the proposed surface water drainage infrastructure to be installed for the development. The discharge of any contaminated waters from the project site to the Kiltha River will in turn be conveyed downstream to the Womanagh River and the Womanagh River Estuary with potential to contribute to existing pressures to the water quality at the Ballymacoda Bay European Sites.

While it is noted that the uncontrolled release of contaminated surface drainage waters to the Kiltha River and downstream to the Ballymacoda Bay European Sites is likely to be rapidly diluted and distributed within this mature and depositing watercourse and by tidal transitional waters, the contribution of contaminants such as hydrocarbons to transitional habitats

downstream at the estuary could in turn contribute to the contamination of benthic fauna and epifauna of the Ballymacoda Bay European Sites. The toxic effect of such contaminants, particularly hydrocarbons, on feeding, growth, development and reproduction are known to cascade and bioaccumulate throughout the food chain affecting benthic fauna, fish, birds (such as the special conservation interest bird species of the SPA) and mammals (Ferrando, 2015).

The significance of the impact of the uncontrolled release of contaminants from the project site to the Womanagh River Estuary and its transitional habitats and associated fauna will depend upon the frequency of the release and the concentration of contaminating materials in surface water discharging from the site. In a worst-case scenario the ongoing discharge of waters with high concentrations of contaminating substances could over time lead to the deposition of such contaminants in wetland intertidal habitats. Revitt et al. (2014) demonstrated the potential of car parking areas to result in a build-up of diffuse pollution loads on their surfaces with subsequent mobilization and direct discharge to receiving waters. In the absence of appropriate design safeguards (such as the inclusion of hydrocarbon interceptors) the discharge of such contaminated surface water from car parking area during the operation phase could represent a source of ongoing contamination to surface drainage waters being discharged to the Kiltha River and on downstream to the Womanagh River Estuary. Accidental spillages of contaminating materials during the construction phase and/or operation phase could also represent sources of acute pollution to the Kiltha River and its conveyance downstream to the estuary.

The exposure of fauna, including birds, to such contaminants can result in disturbance and stress effects. Upon detection of such contaminants mobile species such as birds and mammals may simply move away from the affected area, with the potential to result in a decline in the distribution of these species within the European Site. For sessile benthic fauna, upon which special conservation interest bird species of the SPA rely, there will be limited potential for escape and their exposure to contaminants may result in biological changes designed to aid survival. In some cases these benthic species may acclimatise to contaminated conditions, while in others the contaminants may lead to mortality and changes in the population and community structure of the rivers invertebrate population. Such an effect would have the potential to undermine the conservation status of the sections of the Ballymacoda Bay European Sites downstream of the project site.

4.2 IN-COMBINATION EFFECTS

4.2.1 Plans

The Cork County Development Plan 2022 to 2028 represents the key plan for the management and development of lands within County Cork. As part of the County Development Plan the project site forms part of the lands included within the land use zonings "Existing Residential/Mixed Residential and Other Uses" and "Residential". The County Development Plan and associated zoning were subject to Appropriate Assessment and it was determined that the implementation of the Plan, alone or in-combination with other plans or projects, will not have the potential to result in adverse effects to European Sites.

4.2.2 Recently Approved/Live Planning Applications

A review of Cork County Council's and An Bord Pleanála's online planning portals was completed in November 2024 to identify other granted or recently approved (i.e. within five years) planning applications within the vicinity of the project site. The following planning applications have been identified and an examination of the potential for this project to combine with these other projects is set out for each below. :

Planning Application Register Ref: 23/6054 this planning application comprises the construction of a single storey detached recreation room (rumpus room) and terraced areas to the side of existing dwelling, a new screen wall and pump house, along with a detached domestic garage/store incorporating a home office, to include all associated site works. This is a small scale project comprising an extension to an existing dwelling. It was not considered to present a risk of likely significant effects to European Sites and there is no potential for the current project to combine with this project to result in likely cumulative significant effects to European Sites.

Planning Application Register Ref: 22/5738 this planning application comprises the demolition of existing shed and the construction of 2 no. dwelling houses, site entrances and all associated works This is a small scale project comprising an extension to an existing dwelling. It was not considered to present a risk of likely significant effects to European Sites and there is no potential for the current project to combine with this project to result in likely cumulative significant effects to European Sites.

Planning Application Register Ref: 22/6416 this planning application comprises the upgrade the existing Castlemartyr Wastewater Treatment Plant at lands at Ladysbridge Road (R632), Castlemartyr, Co. Cork. The upgrade was subject to Natura Impact Statement which concluded that, provided all mitigation measures are implemented the upgrade will not result in adverse effects to European Sites downstream, namely the Ballymacoda Bay European Sites. The Planning Authority completed an Appropriate Assessment for this project and determined that this project will not have the potential, alone or in-combination with other plans or projects, to result in adverse effects to European Sites. On the basis of this determination, it can be concluded that the current project will not have the potential to combine with this other project to result in cumulative adverse effects to the Ballymacoda Bay European Sites.

Planning Application Register Ref: 22/6414 this planning application comprises the alternation of elevations for an existing detached bungaloe at Gortnahomna, Killeagh Road. This is a small scale project comprising an extension to an existing dwelling. It was not considered to present a risk of likely significant effects to European Sites and there is no potential for the current project to combine with this project to result in likely cumulative significant effects to European Sites.

Planning Application Register Ref: 22/4084 this planning application comprises an extension to an existing dwelling at 2 Hayman's Hill. This is a small scale project comprising an extension to an existing dwelling. It was not considered to present a risk of likely significant effects to European Sites and there is no potential for the current project to combine with this project to result in likely cumulative significant effects to European Sites.

Planning Application Register Ref: 20/4771 this planning application comprises the replacement of the existing east boundary fence and vehicular access gate with a steel mesh fencing at Scoil Iosaf National School Castlemartyr, Gortnahomna More. This is a small-scale project comprising an extension to an existing dwelling. It was not considered to present a risk of likely significant effects to European Sites and there is no potential for the current project to combine with this project to result in likely cumulative significant effects to European Sites.

Planning Application Register Ref: 194734 this planning application comprises the retention of an existing 24m high telecommunications antennae support structure on a concrete base at Ightermurragh, Ladysbridge. This is a small scale project comprising an extension to an existing dwelling. It was not considered to present a risk of likely significant effects to European Sites and there is no potential for the current project to combine with this project to result in likely cumulative significant effects to European Sites

An Bord Pleanála Ref 310585-21 this planning application comprises the construction of 32 no. dwellings arranged around a central area of open space. The planning application was subject to Screening for Appropriate Assessment and a Screening Report for Appropriate Assessment accompanied the planning application. An Bord Pleanála completed a screening for Appropriate Assessment and concluded that no pathways connect this project to any European Sites. As such this project, will not, alone or in-combination with other plans or projects, have the potential to result in likely significant effects to European Sites. On the basis of this determination, it can be concluded that the current project will not have the potential to combine with this other project to result in cumulative adverse effects to the Ballymacoda Bay European Sites.

5.0 THE IMPLICATION OF POTENTIAL IMPACTS FOR CONSERVATION OBJECTIVES

An NIS is required to assess the potential for impacts to the integrity of a European Site, with respect to the site's structure and function and its Conservation Objectives. The structural and functional elements of a European Site to maintain the favourable conservation status of qualifying features of interest are embedded into the list of detailed SSCOs for each of the site's interest features. As such a European Sites' SSCOs represent the parameters against which a project's potential to adversely affect the integrity of a European Sites should be considered.

Table 5.1 lists the Conservation Objectives attributes and targets for each of special conservation interests of the Ballymacoda Bay SPA and the qualifying features of interest of the Ballymacoda Bay SAC and assesses the potential for the project to result in adverse effects to these attributes and targets.

It is noted that the appraisal outlined in Table 5.1 has been completed without any regard to the mitigation measures that will be implemented as part of the project. These mitigation measures are considered later in Section 6 below.

Table 5.1: Consideration of Potential Impact to the Site-Specific Conservation Objectives for Features of Interest occurring within the Zone of Influence of the Project

Attribute No.	Attribute	Target	Consideration of likely significant effects
Cork Harbour SPA			
Special conservation interest bird species			
1	Population trend	Long term population trend stable or increasing	The discharge of inadequately treated storm water to the Kiltha River, Womanagh River and the Womanagh River Estuary downstream will have the potential to contribute to existing pressures to water quality at the estuary and within the SAC. Any contribution to perturbed water quality at the estuary will in turn have the potential to undermine the habitats and the associated prey resource upon which the wetland bird species of the SPA rely. Such adverse effects could, over time, result in a decline in the long-term population trend supported by the sections of the SPA surrounding the project site and discharge locations.
2	Distribution	No significant decrease in the range, timing and intensity of use of areas by light-bellied brent geese, Oystercatcher, Black-tailed Godwit, Dunlin and Redshank other than that	For reasons outlined for Attribute No. 1 and in Section 4.1 above the discharge of inadequately treated and contaminated storm water will have the potential to undermine the targets for this attribute.

		occurring from natural patterns of variation	
Ballymacoda Bay SAC			
Mudflats			
3	Habitat area	The permanent habitat area is stable or increasing, subject to natural processes.	The discharge of inadequately treated and contaminated storm water to this habitat will not have the potential to undermine its extent within the SAC.
4	Community distribution	Conserve the following community type in a natural condition: Mixed sediment to sandy mud with polychaetes and oligochaetes community complex.	The discharge of inadequately treated and contaminated storm water to this habitat could contribute to water quality pressures within the Womanagh River Estuary and Ballymacoda Bay SAC and result in changes to the community of infauna supported by this habitat.
Saltmarsh			
5	Habitat area	Area stable or increasing, subject to natural processes, including erosion and succession.	The discharge of inadequately treated and contaminated storm water to this habitat could result in changes to the vegetation community of this habitat, resulting over time in a decrease in the extent of this habitat.
6	Habitat distribution	No decline or change in habitat distribution, subject to natural processes.	For reasons outlined for Attribute No. 5 above the discharge of inadequately treated and contaminated storm water to this habitat could result in a decrease in the distribution of this habitat.

7	Physical structure: sediment supply	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	The storm water effluent from the project site will not have the potential to result in changes to this attribute. Any sediment discharged with inadequately treated storm water will settle along the hydrological pathway or within estuary habitat prior to be conveyed to areas supporting this habitat.
8	Physical structure: creeks and pans	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	The discharges associated with the project will not have the potential to result in changes to the physical structure of this habitat. These discharges will be mixed within the harbour and will not have the potential to change the hydrological regimes, such as flows etc, that underpin the physical structure of this habitat.
9	Physical structure: flooding regime	Maintain natural tidal regime	The discharges associated with the project will not have the potential to alter the natural tidal regime of the Womanagh River Estuary.
10	Vegetation structure: zonation	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	For reasons outlined for Attribute No. 5 above the discharge of inadequately treated and contaminated storm water to this habitat could result in a change in the vegetation zonation.
11	Vegetation structure: vegetation height	Maintain structural variation within sward	For reasons outlined for Attribute No. 5 above the discharge of inadequately treated and contaminated storm water to this habitat could result in a change in the vegetation community of this habitat, which in turn could result in changes in vegetation height.
12	Vegetation structure: vegetation cover	Maintain more than 90% area outside creeks vegetated	For reasons outlined for Attribute No. 5 above the discharge of inadequately treated and contaminated storm water to this habitat could result in a change in the nature of the vegetation cover of this habitat.

13	Vegetation composition: typical species and sub-communities	Maintain range of sub-communities with typical species listed in SMP	For reasons outlined for Attribute No. 5 above the discharge of inadequately treated and contaminated storm water to this habitat could result in a decrease in the abundant of typical vegetation of this habitat.
14	Vegetation structure: negative indicator species - Spartina anglica	No significant expansion of common cordgrass (Spartina anglica), with an annual spread of less than 1% where it is known to occur	Given the remote distance of the project from the SAC it will not have the potential to result in the spread of Spartina angelica within the SAC.

6.0 A DESCRIPTION AND EVALUATION OF MITIGATION MEASURES

Targeted mitigation measures are provided to safeguard against the potential effects of the project to the water quality of the Kiltha River, Dower River, the Womanagh River to which the two former rivers drain and the Womanagh River Estuary downstream during the construction phase and operation phase of the project. The measures to be implemented to protect the water quality downstream at the Womanagh River Estuary are outlined in the following sub-sections.

All operation phase mitigation measures shall be required to be implemented by site management during the operation phase of the proposed development.

6.1 MEASURES TO CONTROL POLLUTION & PROTECT SURFACE WATER QUALITY

6.1.1 Site Operations

The construction phase of the project will adhere to best practice guidance, particularly the CIRIA guidance document C532 Control of water pollution from construction sites.

During site operations key requirements for control of pollution risk will include measures that will be put in place for the safe storage of potentially polluting materials and the collection, filtration and treatment of surface water runoff prior to discharge from the site. These measures will include features outlined in the following bullet points:

- Storage - All potentially contaminating construction phase substances such as hydrocarbons and other chemicals will be stored in secured and bunded containers within the temporary construction compound.

- Storage – potentially polluting construction materials, such as fuels, oils, cementitous materials and chemicals will be stored on impervious bases and within a secured bund of 110% of the storage capacity, within a designated lay down in this area of the site compound. The storage of such materials on an impervious base will eliminate the potential for their discharge to ground and groundwaters during the construction phase.

- Storage - The integrity and water tightness of all the bunding structures and their resistance to penetration by water or other materials stored therein shall also be tested and demonstrated.

- Temporary construction compound – The storage of potentially polluting materials and their use at the temporary construction compound represents the risk to groundwater and establishing a groundwater pathway between the project site, the Kiltha naad Dower Rivers and the Ballymacoda Bay European Sites downstream. The temporary construction phase site compound will be installed over an impermeable barrier. This will ensure that surface water draining from the site compound is prevented from draining to ground. Surface water arising from the site compound will be directed to temporary construction phase perimeter drains which will bound the compound. The perimeter drains will be formed over existing soil and subsoil overburden and will be fitted with regularly spaced check dams in the form of straw bales and/or stone filter dams. The perimeter drain will convey surface water runoff to a buffered outfall that will discharge waters over ground. The treatment provided along the drains will in turn provide for effective treatment of the surface water runoff prior to draining to ground.

- Cement & Concrete - Cement and cement-based products will also be stored in a securely bunded area at the temporary construction compound.

- Cement & Concrete - Any in-situ concrete works will be lined and areas where such work is undertaken will be bunded to stop accidental spillage and release to ground or over ground.

- Fuelling - Refuelling of vehicles and machinery will be carried out on an impermeable surface in designated areas, well away from any surface drain at the southern end of the site compound as detailed under the first bullet point above.

- Fuelling - All fuel oil fill areas will have an appropriate spill apron and spill kits will be provided on site.

- Fuelling - Vehicles and refuelling – standing machinery will have drip trays placed underneath to prevent oil and fuel leaks causing pollution.

- Spoil – any spoil or waste material generated from the construction process will be temporarily storage at an approved location on site before being removed to a licenced waste disposal facility. Spoil and waste material will be stored on ground consisting of existing soil and subsoil overburden. No spoil or waste material will be stored in areas of exposed bedrock on site.

6.1.1.1 Measures to Avoid/Minimise Accidental Spills

In order to avoid/minimise the potential for accidental spills during the construction phase the following measures will be implemented:

Potentially contaminating aqueous materials will be stored in designated bunded and impervious areas within the site compound, as set out in Section 6.1.1 above.

Spill kits and oil absorbent material will be provided on site and personnel trained in their use. Booms will be provided on site and will be installed when undertaking works near surface water drains.

In the event of a spillage the following procedures will be followed:

1. Assess the situation.

2. Check for ignition sources.

3. Use a spill kit to contain the spill

4. Once the spill is contained remove all contaminated material to an impermeable plastic membrane liner.

5. Cover the contaminated material with the plastic membrane liner.

6. Store in a designated contaminated waste material area until the material can be disposed of off-site by an appropriately licenced waste contractor.

6.1.1.2 Emergency Response Planning

In the event of an environmental emergency, a procedure for Environmental Emergency Preparedness and Response will be developed prior to commencement of construction. The procedures will be implemented by the Contractor in order to minimise the potential for environmental emergency incident to occur. An environmental emergency at the site may include;

- Discovery of a fire within the site boundary
- Uncontained spillage / leakage / loss of containment action
- Discharge concentration of potential pollutants in excess of environmental trigger levels

The general required emergency response actions will be posted at strategic locations, such as the site office.

As an example of emergency response actions required, in the event of a spillage, the following procedure shall be followed:

1. **IF SAFE (USE PPE),** stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers.
2. **IF SAFE (USE PPE),** contain the spill using the absorbent spills material provided. Do not spread or flush away the spill.
3. Cover or bund off any vulnerable areas where appropriate.
4. If possible, clean up as much as possible using the absorbent spills materials.
5. Do not hose the spillage down or use any detergents.
6. Contain any used absorbent material so that further contamination is limited.

7. Notify the Site Manager so that used absorbent material can be disposed of using a licensed waste contractor.

An accident investigation will be performed in accordance with procedures and an incident report will be logged.

6.2 OPERATION PHASE

6.2.1.1 Surface Water Management System

A description of the proposed surface water management system to be provided for the operation phase of the project has been provided at Section 2.1 above. The implementation of the surface water management system will ensure that all surface water generated at the site throughout the operation phase will be adequately managed and treated and will ensure no pollution threat to the Kiltha or Dower River, the Womanagh River downstream and the Ballymacoda Bay European Sites at the Womanagh River outfall.

6.3 EVALUATION OF MITIGATION MEASURES

The mitigation measures and environmental safeguards outlined above for the construction phase of the project are taken from established best practice guidelines that have been successfully implemented for a wide range of sites that have operated as permitted waste facilities. These measures have undergone extensive and rigorous monitoring for their effectiveness at development sites where they have previously been applied to ensure adverse environmental impacts are avoided.

The best practice guidance that have informed the mitigation measures and environmental safeguards proposed in this NIS and that will be adhered to throughout the construction and operation of the proposed development include:

- The Good Practice Guidance notes proposed by EA/SEPA/EHS:
- PPG 1: Understanding your environmental responsibilities - good environmental practices
- GPP 2: Above ground oil storage tanks
- PPG 3: Use and design of oil separators in surface water drainage systems

- GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer
- GPP 5: Works and maintenance in or near water
- PPG 6: Working at construction and demolition sites
- PPG 7: Safe storage - The safe operation of refuelling facilities
- GPP 8: Safe storage and disposal of used oils
- GPP 8: Safe storage and disposal of used oils
- GPP 8: Safe storage and disposal of used oils
- GPP 19: Vehicles: Service and Repair
- GPP 21: Pollution incident response planning
- GPP 22: Dealing with spills
- GPP 26 Safe storage - drums and intermediate bulk containers
- PPG 27: Installation, decommissioning and removal of underground storage tanks
- CIRIA Environmental Good Practice on Site.
- CIRIA Control of Water Pollution from Construction Sites. Technical Guidance C648.
- CIRIA SuDS Manual Technical Guidance C697.
- Development on Unstable Land. Department of Environment (DOE), UK.

7.0 CONCLUSION

This NIS presents an analysis of the potential for the project to result in adverse impacts to the Ballymacoda Bay European Sites. An evaluation of the potential impact during the construction phase and operation phase has been completed.

During the evaluation of potential impacts associated with the discharge of surface drainage waters it was found that, in the absence of mitigation measures, the potential will exist for contaminants to be released from the project site to the Kiltha River, Dower River and on downstream to the Womanagh River Estuary with the potential for such emissions to contribute to existing water quality pressures to the estuary and the transitional habitats occurring at the estuary. A range of mitigation measures have been prescribed in this NIS that aim to avoid the discharge of contaminated surface and ground drainage waters from the project site during the construction phase and operation phase. These mitigation measures have been evaluated and reference has been made to their successful implementation for other similar development projects. It has been concluded that, provide all mitigation measures that aim to avoid the

discharge of contaminated surface and ground drainage waters are implemented, the potential for this impact to occur will be eliminated and associated adverse impacts to the Ballymacoda Bay European Sites will not arise.

Based upon the information provided in this NIS, it is the considered view of the authors of this NIS that it can be concluded by the Planning Authority that the project will not, alone or in-combination with other plans or projects, result in significant adverse effects to the integrity and conservation status of European Sites in view of their Conservation Objectives and on the basis of best scientific evidence and there is no reasonable scientific doubt as to that conclusion.

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