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Appropriate Assessment Screening Report

PRESENTED TO

Marshall Yards Development Company Limited
Proposed Large-scale Residential Development (LRD) at Cartron, Oranmore, Co. Galway

May 24

Environmental Consultancy Services

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TABLE OF CONTENTS

LIST OF TABLES **4**

LIST OF FIGURES **4**

1 INTRODUCTION **1**

1.1 Background 1
1.2 Quality Assurance and Competence 1
1.3 Description of Proposed Development 2
1.3.1 Site Location *2*
1.3.2 Proposed Development Description *2*
1.3.3 Drainage and Water Supply *2*

2 LEGISLATIVE AND POLICY CONTEXT **7**

2.1 Legislative Background 7
2.1.1 Legislative Context *7*
2.2 Policy Context 8
2.2.1 Galway County Development Plan 2022-2028 ..... *8*
2.2.2 Galway County Heritage and Biodiversity Plan 2017-2022 ..... *10*
2.3 Stages of Appropriate Assessment 10

3 AA SCREENING METHODOLOGY **12**

3.1 Guidance 12
3.2 Screening Steps 12
3.3 Desk Study 13
3.4 Field surveys 13
3.5 Identification of Relevant European sites 14
3.6 Assessment of Significant Effects 15
3.7 Limitations 15

4 STAGE 1 SCREENING ASSESSMENT **16**

4.1 Existing Environment 16
4.1.1 Desk Study Results *16*
4.1.2 Relevant Field Survey results *17*
4.2 Identification of Relevant European Sites 23
4.2.1 Potential Sources of Effects *23*
4.2.2 Potential Pathways to European Sites *24*
4.2.3 Relevant European sites *26*
4.3 Assessment of Likely Significant Effects 34
4.3.1 Habitat Loss and Alteration *34*
4.3.2 Habitat / Species Fragmentation *35*
4.3.3 Changes in Water Quality and Resource *35*
4.3.4 Disturbance and / or Displacement of Species *37*
4.3.5 Changes in Population Density *39*
4.3.6 Potential for In-combination Effects *40*

5 APPROPRIATE ASSESSMENT SCREENING CONCLUSION **43**

6 REFERENCES **44**

LIST OF TABLES

Table 1. Field surveys undertaken at the Proposed Development Site. 13
Table 2. WFD Risk and Water Body Status 16
Table 3. Birds recorded at the Proposed Development Site during wintering bird surveys. Those species that are also SCI species of Inner Galway bay SPA are highlighted in green. 20
Table 4. European sites considered with the Source-Pathway-Receptor (S-P-R) method to establish notable links between the sources of effects arising from the Proposed Development, and any relevant European sites. Those sites with notable S-P-R links are highlighted in green (if any). Qualifying Interests (QIs) taken from the relevant Conservation Objectives Documents (as referenced) and/or the Standard Data Forms (EEA, 2023). 27
Table 5. Qualifying Interests (QIs) / Special Conservation Interests (SCIs) and their conservation objectives for the relevant European sites. The conservation status of each QI / SCI was sourced from the relevant Standard Data Form(s) (source: EEA (2023)) 31
Table 6. Granted and Pending Development applications within 1km of the Proposed Development or with a connection to Inner Galway bay SPA or Galway Bay Complex SAC. 40
Table 7. Summary of impact assessment on European sites as a result of the Proposed Development. 42

LIST OF FIGURES

Figure 1. Site location. 4
Figure 2. Proposed Site Layout extracted from drawing ref. CAR-ZZ-LZZ-DR-JFA-AR-P1100 (JFA, 2024) 5
Figure 3. Proposed foul and surface water drainage for the Site (AKM, 2024b) 6
Figure 4. Map of habitats and invasive species at the Site of the Proposed Development. ... 19
Figure 5. Location of European sites relative to the Proposed Development. 29

1 INTRODUCTION

1.1 Background

Enviroguide Consulting was commissioned by Marshall Yards Development Company Limited to prepare an Appropriate Assessment Screening Report for a Proposed Large-scale Residential Development, in Cartron, Oranmore, Co. Galway, hereafter referred to as 'Proposed Development' or 'Site', when referring to the application Site area. This report contains information to enable the Competent Authority to undertake Stage 1 Appropriate Assessment (AA) screening in respect of the Proposed Development.

1.2 Quality Assurance and Competence

Enviroguide Consulting is multi-disciplinary consultancy specialising in the areas of the Environment, Waste Management and Planning. All Enviroguide consultants carry scientific or engineering qualifications and have a wealth of experience working within the Environmental Consultancy sectors, having undergone extensive training and continued professional development.

Enviroguide Consulting as a company remains fully briefed in European and Irish environmental policy and legislation. Enviroguide staff members are highly qualified in their field. Professional memberships include the Chartered Institution of Wastes Management (CIWM), the Irish Environmental Law Association and Chartered Institute of Ecology and Environmental Management (CIEEM).

All surveying and reporting have been carried out by qualified and experienced ecologists and environmental consultants. Alice Clarke (AC), Ecologist with Enviroguide authored this report and undertook the desktop research for this Report, AC, Ecologist, undertook the preliminary ecological assessment survey for this Report, and Brian McCloskey (BMcC), Ornithologist, undertook the wintering bird survey for this Report.

AC is an experienced general ecologist; she is an Associate member of CIEEM (ACIEEM) with an MSc in Ecological Management and Conservation Biology from Queen's University, Belfast. AC has a wealth of experience authoring and reviewing Screenings for AA, Natura Impact Statements (NIS), Ecological Impact Assessments (EcIA) and Biodiversity Chapters for Environmental Impact Assessment Reports (EIAR). Subsequently, she is very familiar with the process of ecological assessment and the relevant legislation. She is knowledgeable in a range of survey techniques, including conducting bat, mammal, bird, newt, invasive species and habitat surveys.

BMcC is an Ecologist and experienced Ornithologist with 13 years of bird survey experience. Brian is a longstanding and active member of Bird Watch Ireland and has provided Ornithology survey work for ecological consultancies, e.g., vantage points surveys of gulls, terns, raptors, waders and wildfowl; hinterland surveys of the above as well as riverine species; and breeding waders and country birds. BMcC is highly experienced with all survey methodologies and with surveying all species groups of Irish birds and migrants.

1.3 Description of Proposed Development

1.3.1 Site Location

The Site is approx. 5.5 ha in size and located at lands to the north of Coast Road in Cartron, just west of the village of Oranmore, Co. Galway, and *c.* 2.6km south of Galway Airport. The area currently comprises agricultural fields used for grazing cattle, bordered by stone walls, hedgerow, and treelines. Part of the Site's redline boundary extends from the residential LRD area along the coast road towards Oranmore to the east. A trainline runs parallel to the Site adjacent to the northern boundary. The wider surrounding landscape comprises mostly similar agricultural fields. Galway Bay lies to the south of the Site, separated by <5m at its closest point. The Proposed Development Site location is illustrated below in Figure 1.

1.3.2 Proposed Development Description

The Proposed Development will consist of the construction of a large-scale residential development, comprising the demolition of the existing shed and associated structures on site and the construction of 171 no. residential units, 1 no. creche and all associated development works including the provision of pedestrian/cyclist facilities along the R338 public road connecting to Oranmore rail station, 1 no. ESB substation, 1 no. pumping station, the undergrounding of the existing ESB sites traversing the site, footpaths, lighting, parking, drainage, bicycle and bin stores and landscaping/amenity areas at Cartron (townland), Oranmore, Co. Galway. Access will be via a new entrance on the L-71051 to the east.

1.3.3 Drainage and Water Supply

1.3.3.1 Surface water

It is proposed that all surface water generated at the Site during the Operational Phase will be diverted to infiltrate through the ground. This will be achieved through the use of permeable paving, soakaways, swales, and infiltration trenches, which will run throughout the shared open spaces at the Site. There is no intention to discharge any surface water runoff from the Site into any nearby waterbodies, up to the critical 100 year event with a 30% climate change factor. As per the Cicil Design Report (AKM, 2024a), "*It is proposed that a tiered approach is applied to the management of runoff where initial runoff is intercepted through SuDS components such as soakaways and drainage swales and positive runoff from hardstanding areas in larger storm events is directed to the public network to be stored and infiltrated through a series of infiltration trenches in public open space areas.*

A series of Hydrobrake flow control systems will be utilised within the site to maximise slow the flow of runoff from infiltration areas in order to maximise the use of infiltration and attenuation storage higher in the catchment of the site.

Runoff from roofs will be discharged to soakaways in back gardens with overflows to permeable paving under driveways to infiltrate. Runoff from public roads and footpaths will be dealt with through a combination of SUDS measures including infiltrating swales, and a series of infiltration trenches to be constructed under public open spaces to allow runoff to be stored and to infiltrate to ground".

The proposed Site drainage is outlined in full detail in the accompanying Civil Design Statement (AKM, 2024a) and is illustrated below in Figure 3 extracted from the Drainage Layout drawing (AKM, 2024b).

1.3.3.2 Foul Drainage

In order to facilitate foul water drainage from the Site, it is proposed to build a foul rising main within the Site under the Coast Road to connect to the public network. These works will be undertaken by Uisce Éireann. The area in which the Proposed Development is located is served by the Mutton Island Wastewater Treatment Plant (WwTP), located in Galway Bay, *c.* 7km southwest of the Site. According to the most up to date environmental report produced for this WwTP (Uisce Éireann), this plant is operating under capacity and thus is not at risk of releasing untreated waste into Galway Bay, even with the connection of the Proposed Development.

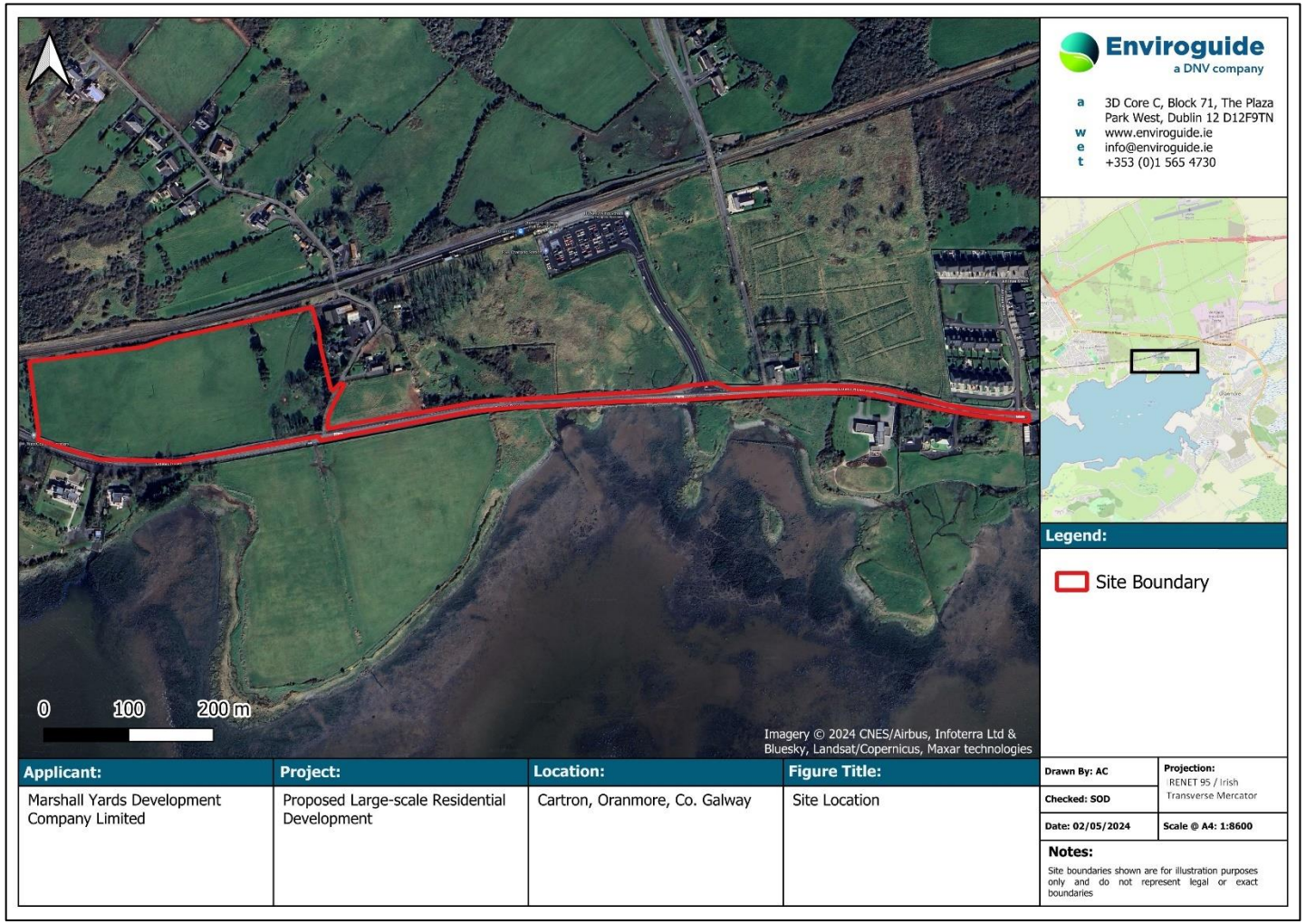

FIGURE 1. SITE LOCATION.

FIGURE 2. PROPOSED SITE LAYOUT EXTRACTED FROM DRAWING REF. CAR-ZZ-LZZ-DR-JFA-AR-P1100 (JFA, 2024)

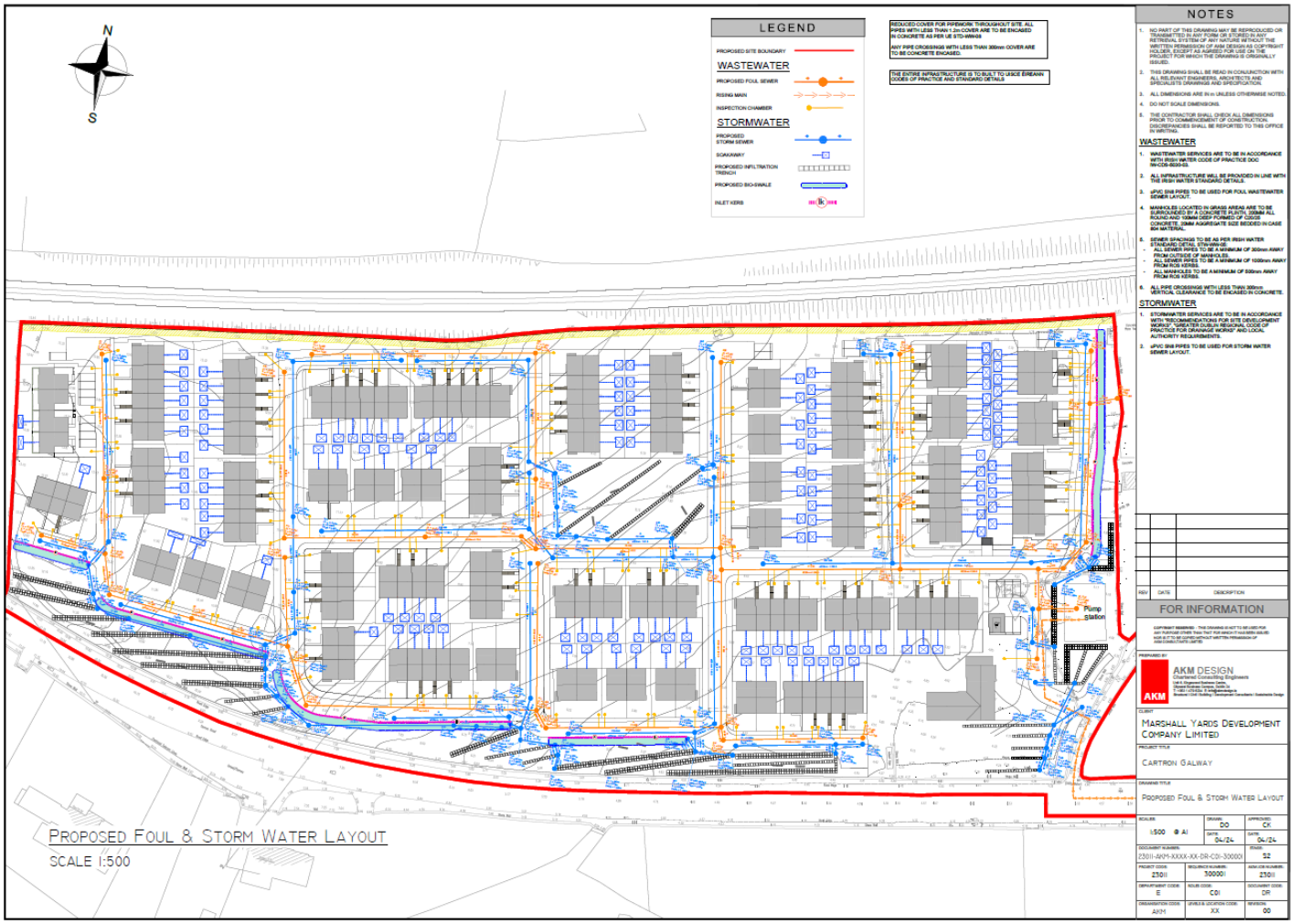

FIGURE 3. PROPOSED FOUL AND SURFACE WATER DRAINAGE FOR THE SITE (AKM, 2024B)

2 LEGISLATIVE AND POLICY CONTEXT

2.1 Legislative Background

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs). The Habitats Directive has been transposed into Irish law through the EC (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011).

It is the responsibility of each Member State to designate SPAs and SACs, both of which will form part of the Natura 2000 Network, a network of protected sites throughout the European Community. These designated sites are referred to as "Natura 2000 sites" or "European sites". SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is selected correspond to the Qualifying Interests (QIs) and Special Conservation Interests (SCIs) of the sites; from these the conservation objectives of the site are derived.

An AA is a required assessment to determine the likelihood of significant effects, based on best scientific knowledge, of any plans or projects on European sites. A screening for AA determines whether a plan or project, either alone or in combination with other plans and projects, is likely to have significant effects on a European site, in view of its conservation objectives.

This AA Screening has been undertaken to determine the potential for significant effects on relevant European sites. The purpose of this assessment is to determine, the appropriateness, or otherwise, of the Proposed Development in the context of the conservation objectives of such sites.

2.1.1 Legislative Context

The obligations in relation to Appropriate Assessment have been implemented in Ireland under Part XAB of the Planning and Development Act 2000, as amended ("the 2000 Act"), and in particular Section 177U and Section 177V thereof. The relevant provisions of Section 177U in relation to AA screening have been set out below:

"***177U.—*** *(1) A screening for appropriate assessment of a draft Land use plan or application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.*

(2)…

(3)…

(4) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a proposed development, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or proposed development,

individually or in combination with other plans or projects, will have a significant effect on a European site.

(5) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a proposed development, as the case may be, is not required if it can be excluded, on the basis of objective information, that the draft Land use plan or proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site."

An Appropriate Assessment is required under Article 6 of the Habitats Directive where a project or plan may give rise to significant effects upon a European site. Paragraph 3 states that:

"*6(3) Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site, in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

According to the ruling delivered in open court in Luxembourg on 15th June 2023 regarding the interpretation of Article 6(3) of Directive 92/43, the Article must be interpreted as meaning that:

"In order to determine whether it is necessary to carry out an appropriate assessment of the implications of a plan or project for a site, account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site".

As such, standardised embedded mitigation (such as the use of Sustainable Drainage Systems (SuDS) in large-scale residential developments), that are incorporated into the design of a proposal or project and which may result in a reduction of effects impacting European sites, but where the primary reason of the embedded mitigation is not to protect a European site, are permitted for consideration during the undertaking of AA.

2.2 Policy Context

2.2.1 Galway County Development Plan 2022-2028

Policies and objectives of the Galway County Development Plan 2022 – 2028 that are of relevance to this Screening Report are outlined below extracted from Chapter 10: Natural Heritage, Biodiversity and Green/Blue Infrastructure:

- **NHB 1: Natural Heritage and Biodiversity of Designated Sites, Habitats and Species**
  Protect and where possible enhance the natural heritage sites designated under EU Legislation and National Legislation (Habitats Directive, Birds Directive, European

Communities (Birds and Natural Habitats) Regulations 2011 and Wildlife Acts) and extend to any additions or alterations to sites that may occur during the lifetime of this plan.

Protect and, where possible, enhance the plant and animal species and their habitats that have been identified under European legislation (Habitats and Birds Directive) and protected under national Legislation (European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011), Wildlife Acts 1976-2010 and the Flora Protection Order (SI 94 of 1999).

Support the protection, conservation and enhancement of natural heritage and biodiversity, including the protection of the integrity of European sites, that form part of the Natura 2000 network, the protection of Natural Heritage Areas, proposed Natural Heritage Areas, Ramsar Sites, Nature Reserves, Wild Fowl Sanctuaries (and other designated sites including any future designations) and the promotion of the development of a green/ ecological network.

- **NHB 2: European Sites and Appropriate Assessment**
  To implement Article 6 of the Habitats Directive and to ensure that Appropriate Assessment is carried out in relation to works, plans and projects likely to impact on European sites (SACs and SPAs), whether directly or indirectly or in combination with any other plan(s) or project(s). All assessments must be in compliance with the European Communities (Birds and Natural Habitats) Regulations 2011. All such projects and plans will also be required to comply with statutory Environmental Impact Assessment requirements where relevant.
- **NHB 3: Protection of European Sites**
  No plans, programmes, or projects etc. giving rise to significant cumulative, direct, indirect or secondary impacts on European sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Plan (either individually or in combination with other plans, programmes, etc. or projects (Except as provided for in Article 6(4) of the Habitats Directive, viz. There must be: (a) no alternative solution available; (b) imperative reasons of overriding public interest for the plan to proceed; and (c) adequate compensatory measures in place).
- **NHB 4: Ecological Appraisal of Biodiversity**
  Ensure, where appropriate, the protection and conservation of areas, sites, species and ecological/networks of biodiversity value outside designated sites. Where appropriate require an ecological appraisal, for development not directly connected with or necessary to the management of European Sites, or a proposed European Site and which are likely to have significant effects on that site either individually or cumulatively.
- **IS 1: Control of Invasive and Alien Invasive Species**
  It is a policy objective of the Planning Authority to support measures for the prevention and eradication of invasive species.
- **IS 2: Invasive Species Management Plan**
  Ensure that proposals for development do not lead to the spread or introduction of invasive species. If developments are proposed on sites where invasive species are currently or were previously present, an invasive species management plan will be

required. A landscaping plan will be required for developments near water bodies and such plans must not include alien invasive species.

2.2.2 Galway County Heritage and Biodiversity Plan 2017-2022

The Galway County Heritage and Biodiversity Plan is set out to protect and improve biodiversity through a list of objectives. These include:

- To increase awareness, appreciation and participation.
- To gather and share knowledge.
- To manage and conserve our heritage, including biodiversity.

2.3 Stages of Appropriate Assessment

This AA Screening Report (the 'Screening Report') has been prepared by Enviroguide Consulting. It considers whether the Proposed Development is likely to have a significant effect on a European site and whether a Stage 2 AA is required.

The AA process is a four-stage process. Each stage requires different considerations, assessments and tests to ultimately arrive at the relevant conclusion for each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

The four stages of an AA, can be summarised as follows:

- **Stage 1: *Screening***. The Screening for AA considers whether a plan or project is directly connected to or necessary for the management of a European site, or whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European site in view of its conservation objectives.
- **Stage 2: *Natura Impact Statement (NIS).*** Where Stage 1 determines that significant effects are likely, uncertain or unknown, the preparation of a NIS is required. The NIS must include a scientific examination of evidence and data to classify potential impacts on any European site(s) in view of their conservation objectives in the absence of mitigation. The NIS will identify appropriate mitigation to remove the potential for likely significant adverse effects on any European site(s). If the competent authority determines that the plan or project would have an adverse effect on the integrity of any European site(s) despite mitigation, it can only grant consent after proceeding through stages 3 and 4.
- **Stage 3: *Assessment of alternative solutions***. If the outcome of Stage 2 is negative i.e., adverse impacts to the sites cannot be scientifically ruled out, despite mitigation, the plan or project should proceed to Stage 3 or be abandoned. This stage examines alternative solutions to the proposal.
- **Stage 4: *Assessment where no alternative solutions exist and where adverse impacts remain***. The final stage is the main derogation process examining whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project to adversely affect a European site, where no less damaging solution exists.

The Habitats Directive promotes a hierarchy of avoidance, mitigation, and compensatory measures. First the project should aim to avoid any negative effects on European sites by identifying possible effects early in the planning stage and designing the project to avoid such effects. Second, mitigation measures should be applied, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If the project is still likely to result in adverse effects, and no further practicable mitigation is possible, a refusal for planning permission may be recommended. In this case, the project will generally only be considered where no alternative solutions are identified and the project is required for IROPI, or, in the case of priority habitats, considerations of health or safety, or beneficial consequences of primary importance for the environment or to other IROPI. Then compensation measures are required for any remaining adverse effects.

3 AA SCREENING METHODOLOGY

3.1 Guidance

This Screening Report has been undertaken in accordance with the following guidance:

- *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities.* (Department of Environment, Heritage and Local Government, 2010 revision);
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.* Circular NPW 1/10 & PSSP 2/10;
- *Communication from the Commission on the precautionary principle* (European Commission, 2000);
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (European Commission, 2019);
- *Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC* Brussels, 28.9.2021 C (European Commission, 2021); and
- *Appropriate Assessment Screening for Development Management, OPR Practice Note PN01, Office of the Planning Regulator March 2021.*

3.2 Screening Steps

Screening for AA involves the following steps:

- Establish whether the plan or project is directly connected with or necessary for the management of a European site;
- Description of the baseline existing environment at the Site of the Proposed Development;
- Identification of relevant European site(s) potentially affected;
- Identification and description of potential effects on the relevant European site(s);
- Assessment of the likely significance of the effects identified on the relevant European site(s);
- Description and characterisation of other projects or plans that in combination with the Proposed Development have the potential for having significant effects on the European site; and
- Exclusion of sites where it can be objectively concluded that there will be no significant effects.

It should be noted that any targeted ecological mitigation measures and/or measures intended or included for the purposes of avoiding adverse effects arising as a result of the Proposed Development on any European site **have not been considered** as part of this Screening Report.

3.3 Desk Study

A desktop study was carried out in March 2024 to collate and review available information, datasets and documentation sources relevant for the completion of this Screening Report. The desktop study relied on the following sources:

- Information on the network of European Sites, boundaries, QIs and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at *www.npws.ie*;
- Text summaries of the relevant European sites taken from the respective Standard Data Forms (available at *https://natura2000.eea.europa.eu/*) and Site Synopses (available at *www.npws.ie*);
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA) at *www.gis.epa.ie*;
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at *www.gsi.ie*;
- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing and Ordnance Survey Ireland; and
- Information on the existence of permitted developments, or developments awaiting decision, in the vicinity of the Proposed Development from the Galway County Council online planning database (*galwaycoco.maps.arcgis.com*) and the National Planning Database (DHLGH, 2023).

For a complete list of the documents consulted as part of this assessment, see *Section 6 References*.

3.4 Field surveys

A range of field surveys have been carried out at the Site to date. These are summarised in Table 1. For full details on the methods and results of the fields surveys listed, please refer to the EcIA report (Enviroguide, 2024a) accompanying this application under separate cover. Results relevant to this Screening Report have been summarised in section 4.1.2.

TABLE 1. FIELD SURVEYS UNDERTAKEN AT THE PROPOSED DEVELOPMENT SITE.

Survey	Surveyor	Dates
Walkover survey • Habitats and Flora (incl. invasive species) • Search for signs of protected species (e.g., non-volant mammals, amphibians, reptiles) • Assessment of habitat suitability for protected species • Preliminary Bat Roost and Habitat Suitability Assessment	Enviroguide Consulting (AC)	26th October 2023
Wintering Bird Surveys	Enviroguide Consulting (BMcC)	20th November 2023 5th January 2024 26th January 2024 20th February 2024 27th March 2024

3.5 Identification of Relevant European sites

The Zone of Influence (ZOI) for a project is the area over which ecological features may be affected by changes as a result of a development and associated activities. This is likely to extend beyond the development site, for example where there are ecological or hydrological links beyond the site boundaries (CIEEM, 2018). Furthermore, ZOI in relation to European sites is described as follows in the 'OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management' (OPR, 2021):

> "*The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source-Pathway-Receptor framework and not by arbitrary distances (such as 15 km).*"

Thus, to identify the European sites that potentially lie within the ZOI of the Proposed Development, a Source-Path-Receptor (S-P-R) method was adopted, as described in OPR PN01 (OPR 2021). This note was published to provide guidance on screening for AA during the planning process, and although it focuses on the approach a planning authority should take in screening for AA, the methodology is also readily applied in the preparation of Screening Reports such as this.

The relevant European sites were identified based on the following:

- Identification of potential sources of effects based on the Proposed Development description and details, including changes to potentially suitable ex-situ habitats at the Site (i.e., habitats utilised by SCI bird species outside of their designated SPAs);
- Use of up-to-date GIS spatial datasets for European designated sites and water catchments – downloaded from the NPWS website (*www.npws.ie*) and the EPA website (*www.epa.ie*) to identify European sites which could potentially be affected by the Proposed Development; and
- Identification of potential pathways between the Site of the Proposed Development and any European sites within the ZOI of any of the identified sources of effects.
    - The catchment data were used to establish or discount potential hydrological connectivity between the Proposed Development and any European sites.
    - Groundwater and bedrock information used to establish or discount potential hydrogeological connectivity between the Proposed Development and any European sites.
    - Air and land connectivity assessed based on Proposed Development details and proximity to European sites.
    - Consideration of potential indirect pathways, e.g., impacts to flight paths, *ex-situ* habitats, etc.
- Defining the likely ZOI based on the identified sources of effects and potential pathways between the Proposed Development and any European sites.

3.6 Assessment of Significant Effects

The conservation objectives of the European sites identified to lie within the ZOI were reviewed and assessed in order to establish whether the construction and operation of the Proposed Development has the potential to have a negative impact on any of the QIs and/or conservation objectives listed for the site.

The assessment framework is taken from the best practice guidelines issued by the European Commission, i.e., "*Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*".

The potential for significant effects that may arise from the Proposed Development was considered through the use of key indicators:

- Habitat loss or alteration.
- Habitat/species fragmentation.
- Disturbance and/or displacement of species.
- Changes in population density.
- Changes in water quality and resource.

In addition, information pertaining to the conservation objectives of the European sites, the ecology of the designated habitats and species and known or perceived sensitivities of the habitats and species were considered.

3.7 Limitations

With the exception of the preliminary habitat and invasive flora surveys undertaken in October 2023, which are to be updated in the appropriate season, all surveys were carried out at the appropriate time of year by suitably qualified ecologists. No limitations to field surveys were encountered which would prevent robust conclusions being drawn as to the potential effects of the Proposed Development on European sites.

Proposed works in relation to pedestrian/cycleway within the redline boundary to the east of the main residential LRD area along the coast road were not assessed during the field surveys due to the later addition of the area. Due to the minor nature of the works and the already hardstanding condition which will be devoid of vegetation as a busy carriageway, the works within this area are not considered to cause any significant adverse effects on the nearby flora and/or fauna.

4 STAGE 1 SCREENING ASSESSMENT

4.1 Existing Environment

4.1.1 Desk Study Results

4.1.1.1 Hydrology, Geology and Hydrogeology

The Site of the Proposed Development is located within the Galway Bay South East catchment (catchment ID: 29) and the Carrowmoneash [Oranmore]_SC_010 subcatchment (subcatchment ID: 29_6). There are no on-Site or nearby watercourses, with the nearest river being the Carrowmoneash river (IE_WE_29C050400), located *c.* 0.48km southeast of the Site. The Site is located <5m north of Oranmore Bay (IE_WE_170_0500), encompassed within which are the European sites Inner Galway Bay SPA and Galway Bay Complex SAC. Oranmore Bay is a transitional waterbody, with an Unassigned status for the survey period 2016-2021, while a few kilometres downstream lies Inner Galway Bay North coastal waterbody (IE_WE_170_0000), which is classed as being of 'Good' quality for the survey period 2016-2021, which it has retained since 2010-2012.

The Site is situated on the Clarinbridge groundwater body (IE_WE_G_0008), assessed as being of 'Good' quality for the survey period 2016-2021, a status which has been maintained since the 2007-2012 survey period. This groundwater body is Not at Risk according to the WFD assessment. The groundwater vulnerability at the Site is *High* in the southern half and *Extreme* in the northern section. The underlying bedrock aquifer is a 'Regionally Important Aquifer – Karstified (conduit)'.

The soils beneath the Site are a well-drained, fine loamy substrate over limestone bedrock, while the subsoils comprise Limestone Till (carboniferous) (TLs). Quaternary sediments also comprise Till derived form Limestones.

The Waterbody Status for water bodies relevant to the Site as recorded by the EPA (2023) in accordance with European Communities (Water Policy) Regulations 2003 (SI no. 722/2003) are provided in Table 2.

TABLE 2. WFD RISK AND WATER BODY STATUS

Waterbody Name	Waterbody; EU code	Location from Site	Distance from Site (km)	WFD water body status (2016-2021)	WFD 3rd cycle Risk Status	Hydraulic Connection to the Site
Surface Waterbodies						
Carrowmoneagh (Oranmore)_010	IE_WE_29C050400	SE	0.48km	Poor	Review	No downstream connection
Transitional Waterbodies						
Oranmore Bay	IE_WE_170_0500	S	<5m	Unassigned	Not At Risk	Potential connection via surface water runoff
Coastal Waterbodies						
Inner Galway Bay North	IE_WE_170_0000	SW	1.7km	Good	Not At Risk	Potential connection via surface water runoff

Waterbody Name	Waterbody; EU code	Location from Site	Distance from Site (km)	WFD water body status (2016-2021)	WFD 3rd cycle Risk Status	Hydraulic Connection to the Site
Groundwater Bodies						
Clarinbridge	IE_WE_G_0008	N/A	N/A	Good	Not at risk	Underlying groundwater-body

4.1.2 Relevant Field Survey results

4.1.2.1 Habitats and Invasive Flora

The majority of the Site consists of improved agricultural grassland (GA1) habitat. In total, two areas of distinct habitat types and two distinct types of linear habitat were recorded at the Site, as illustrated in the below Figure 4. These are listed below and described in further detail in the subsequent paragraphs.

- Improved agricultural grassland (GA1);
- Scrub (WS1);
- Treeline (WL2);
- Stone Wall (BL1).
- Buildings and Artificial Surfaces (BL3).

Improved Agricultural Grassland (GA1)

The vast majority of the Site consists of 'Improved agricultural grassland (GA1)' habitat comprising a number of species including dandelion (*Taraxacum vulgaris*), thistle (*Cirsium* sp.) creeping buttercup (*Ranunculus repens*), dock (*Rumex* sp.), ribwort plantain (*Plantago lanceolata*), Yorkshire fog (*Holcus lanatus*), daisy (*Bellis perennis*), creeping cinquefoil (*Potentilla reptans*), and common nettle (*Urtica dioica*). Along the boundaries of the grassland habitat, along the base of the stone walls, additional species are noted including geranium (*Pelargonium* sp.), herb Robert (*Geranium robertanium*), ragwort (*Jacobea vulgaris*) and groundsel (*Senecio vulgaris*).

Scrub (WS1)

Small patches of bramble (*Rubus fruticosus*) and common nettle dominated 'Scrub (WS1)' are located in a few different areas to the east of the Site, along the northeastern and eastern boundaries. The patch of scrub in the small treelined area to the southeast corner of the Site is dominated by ivy (*Hedera helix*), among other less frequently occurring species including cow parsley (*Anthriscus sylvestris*) and common nettle. Ground flora in this area comprises pignut (*Conopodium majus*), elder (*Aegopodium podagraria*), dock sp., creeping buttercup, elder (*Sambucus* nigra) and dandelion. A small patch of scrub is located along the southern boundary, comprising a mix of bramble and cotoneaster (*Cotoneaster* sp.), noted has having recently been cut.

Treelines (WL2)

A number of linear habitats comprising 'Treelines (WL2)' are situated in the eastern parcel of the Site, composed of species including cypress (*Cupressuis* sp.), sycamore (*Acer pseudoplatanus*), hawthorn (*Crataegus monogyna*) and one mature horse chestnut tree (*Aesculus hippocastanum*). Hawthorn was noted as being the dominant tree species present at the Site. It should be noted that while technically outside the Site boundary, on the opposite

side of the western and northern stone wall bounds are a number of tall overhanging hawthorn trees that potentially support suitable nesting habitat for birds and thus are considered within this report.

Stone Wall (BL1)

Stone walls bound the Site on all sides, with some areas clear of vegetation, and others overgrown with ivy. A mix of bracken and ivy covers some of the walls along the northern boundary. Species growing within the stone walls include thistle, geranium, herb Robert, Maidenhair spleenwort (*Aspelenium trichomanes*) and field horsetail (*Equisetum arvense*). *Sphagnum* moss growth was also noted on some of the rocks within the stone walls.

Buildings and Artificial Surfaces (BL3)

There is a small derelict shed located next to the eastern boundary of the Site and R338 road from the east of the site formed by tarmac. This habitat type is of negligible ecological value. The coast road which is included within the redline boundary to the east of the main residential area has not been taken into account within this report though is of negligible ecological value.

Invasive species

Four butterfly bush (*Buddleja davidii*) stands of approx. 1 – 1.5m in height are present along the southern boundary wall on the Coast Road side. Butterfly bush is a medium impact invasive species (Kelly et al., 2013) and an ornamental garden escape. Its roots grow rapidly and allow it to grow into dense thickets, out-competing and shading native plant species (NBDC). Given the <5m proximity to two European sites, namely, Galway Bay Complex (000268) and Inner Galway Bay SAC (004031), butterfly bush should be appropriately treated prior to the commencement of any works at the Site to prevent its spread and the degradation of QI / SCI habitats.

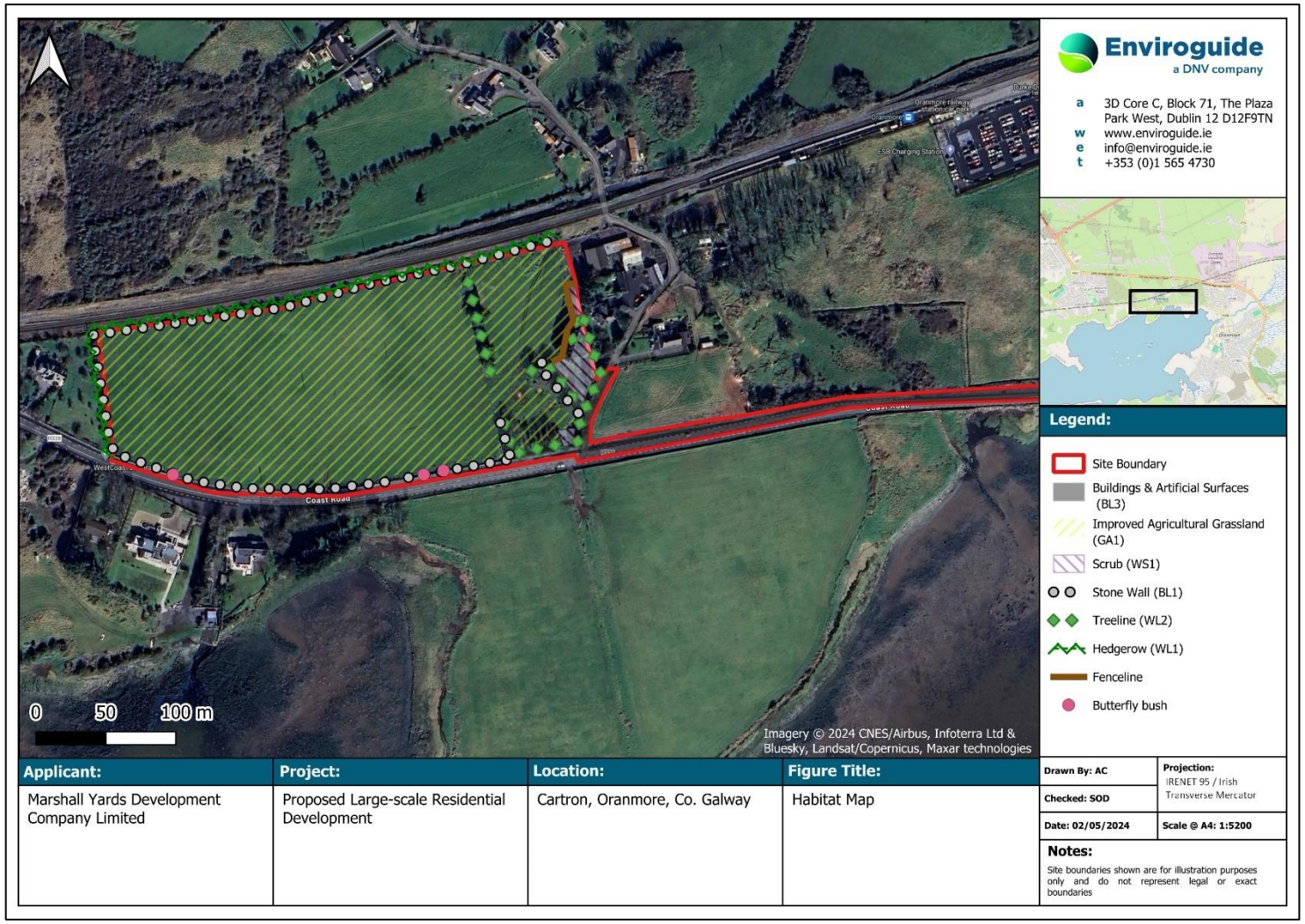

FIGURE 4. MAP OF HABITATS AND INVASIVE SPECIES AT THE SITE OF THE PROPOSED DEVELOPMENT.

4.1.2.2 Fauna

4.1.2.2.1 Wintering Waterbird Surveys

Five wintering bird surveys have been undertaken at the Site between November 2023 and March 2024, as outlined in Table 1 in section 3.4.

In total, **29** species were recorded either on or flying over the Site. **19** species were recorded inside the red-line boundary on the 20th of November 2023, **17** were recorded on the 5th of January, **20** were recorded on the 26th of January, **20** were recorded on the 20th of February and **21** on the 28th of March 2024. All species recorded at the Site are listed in Table 3 below and those that overlap with SCI species of Inner Galway Bay SPA (004031) are highlighted in green. Three SCI species of Inner Galway Bay SPA were recorded on the Site across the survey period, namely, curlew (*Numenius Arquata*), black-headed gull (*Larus ridibundus*) and common gull (*Larus canus*). It is worth noting that while a group of curlew were recorded foraging at the Site during the November 2023 survey, they have not been observed using the Site since this initial survey.

TABLE 3. BIRDS RECORDED AT THE PROPOSED DEVELOPMENT SITE DURING WINTERING BIRD SURVEYS. THOSE SPECIES THAT ARE ALSO SCI SPECIES OF INNER GALWAY BAY SPA ARE HIGHLIGHTED IN GREEN.

Species	Scientific name	BoCCI Status	Dates recorded	Activity
Blackbird	*Turdus merula*	Green	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common.
Black-headed Gull	*Larus ridibundus*	Amber	20th November 2023 5th January 2024 26th January 2024 20th February 2024	One, adult, flew north over the Site on 20th Nov. Two adults flew over on the 5th Jan.
Blue Tit	*Cyanistes caeruleus*	Green	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common.
Chaffinch	*Fringilla coelebs*	Green	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common but mainly flyovers.
Chiffchaff	*Phylloscopus collybita*	Green	28th March 2024	One in song.

Common Gull	*Larus canus*	Amber	20th November 2023 20th February 2024	Eight (six adults, one first-winter and one 2nd winter) flew west over the Site.
Curlew	*Numenius arquata*	Red	20th November 2023	Twelve foraging on the field, before flying to the field immediately to the south, before returning to the field inside the RLB.
Dunnock	*Prunella modularis*	Green	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common on Site.
Goldcrest	*Regulus regulus*	Amber	28th March 2024	One in song
Goldfinch	*Carduelis carduelis*	Green	28th March 2024	One, flew over, landed briefly in a tree and then continued on.
Great Black-backed Gull	*Larus marinus*	Green	26th January 2024	One flew west over the Site.
Great Tit	*Parus major*	Green	26th January 2024 20th February 2024 28th March 2024	Common on the Site.
Hooded Crow	*Corvus cornix*	Green	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common.
Jackdaw	*Corvus monedula*	Green	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common.
Kestrel	Falco tinnunculus	Red	26th January 2024 20th February 2024	One Female, presumed to be the same individual seen on the Site on two dates.
Linnet	*Linaria cannabina*	Amber	20th November 2023 5th January 2024 26th January 2024 28th March 2024	Common, but mainly recorded as flyovers.

Long-tailed Tit	*Aegithalos caudatus*	**Green**	20th November 2023 5th January 2024 26th January 2024 20th February 2024	Small flocks moving through the Site on several dates.
Magpie	*Pica pica*	**Green**	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common.
Meadow Pipit	*Anthus pratensis*	**Red**	28th March 2024	One, flyover
Mistle Thrush	*Turdus viscivorus*	**Green**	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common, mainly flyovers.
Redwing	*Turdus iliacus*	**Red**	20th November 2023 26th January 2024	One flyover, calling, heading south on two dates.
Robin	*Erithacus rubecula*	**Green**	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common.
Rook	*Corvus frugilegus*	**Green**	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common.
Skylark	Alauda arvensis	**Amber**	20th February 2024 28th March 2024	Singing over the site and occasionally the field on the opposite side of the road on two dates.
Starling	*Sturnus vulgaris*	**Amber**	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Mainly flyovers.
Stonechat			28th March 2024	Male landed in briefly.
Siskin	*Spinus spinus*	**Green**	5th January 2024 20th February 2024	One flew over the Site on two dates.

Woodpigeon	*Columba palumbus*	**Green**	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common over the Site.
Wren	*Troglodytes troglodytes*	**Green**	20th November 2023 5th January 2024 26th January 2024 20th February 2024 28th March 2024	Common.

In order to determine the importance of the bay itself for certain species and given the <5m separation distance from the Site, a species list was also taken of birds present in the bay during the Site surveys. These are tabulated in full in Appendix II and show that a number of groups of SCI birds for which Inner Galway Bay SPA (004031) is designated roost within Oranmore Bay and within proximity of the Site of the Proposed Development. These results are used to provide consideration to the potential for both *ex-situ* habitat loss for SCI birds and noise / visual disturbance which could potentially lead to displacement of SCI birds from their usual roosting sites in Oranmore Bay.

4.1.2.2.2 Otter Survey

A survey of the shoreline located south of the Site and within Galway Bay Complex SAC (000268) was undertaken on the 9th of April 2024 in order to identify potential holts located within a precautionary 150m disturbance distance (NRA, 2008) of the Site.

No holts were identified as being present within 150m of the Site, nor were any signs of otter recorded, such as prints, spraints, lay-ups or slides.

4.2 Identification of Relevant European Sites

4.2.1 Potential Sources of Effects

The Proposed Development is not directly connected with or necessary to the management of European sites. However, the following elements of the Proposed Development were identified and assessed for their potential to cause likely significant effects on European sites.

Construction Phase (*Estimated duration:* ***27 months***)

- Uncontrolled releases of silt, sediments and/or other pollutants to air due to earthworks;
- Surface water run-off containing silt, sediments and/or other pollutants into nearby waterbodies or surface water network;

- Surface water run-off containing silt, sediments and/or other pollutants into the local groundwater;
- Waste generation during the Construction Phase comprising soils and construction wastes;
- Increased noise, dust and/or vibrations as a result of construction activity;
- Increased dust and air emissions from construction traffic;
- Increased lighting in the vicinity as a result of construction activity; and
- Increased human presence and activity as a result of construction activity.

Operational Phase *(Estimated duration: Indefinite)*

- Surface water drainage from the Site of the Proposed Development;
- Foul water from the Proposed Development;
- Increased lighting at the Site and in the vicinity emitted from the Proposed Development; and
- Increased human presence and activity at the Site and in the vicinity as a result of the Proposed Development.

4.2.2 Potential Pathways to European Sites

For the above listed potential sources of effects to have the potential to cause likely significant effects on any European site, a pathway between the source of potential effects (i.e., the Site of the Proposed Development) and the receptor is required. Potential impact pathways are discussed in the following sections in the context of the identified impact sources as identified in section 4.2.1.

4.2.2.1 Direct Pathways

4.2.2.1.1 Hydrological pathways

The Site is located along a coastal road, <5m north of two designated sites, namely, **Inner Galway Bay SPA (004031)** and **Galway Bay Complex SAC (000268)**. Given this close proximity, there is the potential for surface water generated during Construction to runoff and introduce pollutants such as sediment, chemicals, or hydrocarbons into these designated sites. As such, a direct hydrological pathway exists from surface water runoff from the Site during the Construction Phase and this pathway is brought forward for further assessment in section 4.3.3.

As a component of the design of the Proposed Development and as described in full in the Civil Design Report (AKM, 2024a), SuDS measures are incorporated into the proposal with the aim of preventing any surface water runoff from exiting the Site. Excess water at the Site (e.g. during heavy rainfall) will be discharged into the ground via swales, permeable paving, attenuation tanks and infiltration systems, which are calculated to withstand the critical 100 year event with a 30% climate change factor. Thus, no surface water will exit the Site and enter the local surface water drainage network or nearby waterbodies. As a result of these embedded design measures (see section 2.1.1), there is no hydrological pathway present which could lead to the propagation of significant effects from the Site of the Proposed Development to any European site, during Operation.

4.2.2.1.2 Hydrogeological pathways

During groundworks and other construction activities, the ground will be exposed and any potential accidental discharges to ground could potentially migrate vertically downward to the underlying bedrock aquifer and laterally within the aquifer to the nearby **Inner Galway Bay SPA (004031)** and **Galway Bay Complex SAC (000268)**. As such, there is a potential hydrogeological pathway between the Site of the Proposed Development during Construction, and this pathway is brought forward for further assessment in section 4.3.3.

During Operation, excess water at the Site will be discharged into the ground via swales, permeable paving, attenuation tanks and infiltration systems, with the aim of preventing uncontrolled surface water runoff. As such, in the event that collected water penetrates the underlying bedrock aquifer, pollutants could enter the groundwater body and migrate laterally in the direction of **Inner Galway Bay SPA (004031)** and **Galway Bay Complex SAC (000268)**. This constitutes a possible hydrogeological pathway between the Proposed Development and these two designated sites during Operation, and this pathway is brought forward for further assessment in section 4.3.3.

4.2.2.1.3 Air and land pathways

The Construction Phase of the Proposed Development could introduce dust and noise impacts transferable via air and land pathways, as well as increased lighting and human activity at the Site and in the vicinity of the Site during the Construction and Operational Phases.

<u>Noise and Visual Disturbance</u>
Construction-related disturbance and displacement of fauna species could potentially occur within the vicinity of the Proposed Development. For mammal species such as otter, disturbance effects would not be expected to extend beyond 150m[1], extracted from the minimum distance from a breeding otter holt within which works can occur. For birds, disturbance effects would not be expected to extend beyond a distance of c.300m (Cutts, et al., 2009), as noise levels associated with general construction activities would attenuate to close to background levels at that distance. As such, there is the potential for disturbance during Construction and Operation affecting **Inner Galway Bay SPA (004031)** and **Galway Bay Complex SAC (000268)**, given the <5m separation distance between these two European sites and the Proposed Development.

<u>Dust Deposition</u>
Due to the nature and localised scale of the works, emissions to air during Construction will be limited to brief to temporary dust generation within 25m of the construction site (based on TII assessment criteria for moderate sized construction sites), and emissions from construction machinery and vehicles (NRA, 2011). Given the size of the Proposed Development site, dust generation and deposition during construction has the potential to degrade habitats within 25m of the proposed development site (NRA, 2011). Thus, there is no potential for dust related impacts in relation to designated sites. There is also no potential for release of contaminated material to air during Operation, furthermore, no other designated

[1] This is consistent with Transport Infrastructure Ireland (TII) guidance (*Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes* and *Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes*) documents. This is a precautionary distance, and likely to be moderated by the screening effect provided by surrounding vegetation and buildings, with the actual ZoI of construction related disturbance likely to be much less in reality.

sites are linked to the Site via air and land pathways due to the distance between the Site and the next nearest designated site (**Creganna Marsh SPA (004142)**; *c.* 2.05 km southeast).

Lighting

During Construction and Operation of the Site of the Proposed Development will require lighting which has the potential to cause disruption to species of the nearby **Inner Galway Bay SPA (004031)** and **Galway Bay Complex SAC (000268)**. Should lights be directed towards Oranmore Bay to the south, there is the potential for light related disturbance impacts that may interrupt normal foraging behaviours, particularly QI species otter which are a nocturnal species. Birds can become distracted by lights when in flight and become lured away from their normal migration routes (Van Doreen et al., 2017). Furthermore, increased lighting can lead to increased predation of birds due to the illumination of previously dark foraging / commuting / nesting areas, particularly if lights are focused on features such as treelines or scrub. As such, an air/land pathway exists during the Construction and Operational Phases as a result of light-related disturbance, affecting **Inner Galway Bay SPA (004031)** and **Galway Bay Complex SAC (000268)**.

Spread of butterfly bush

When non-native species become established and invasive, they can alter ecosystems and become a threat to native species. Introduced species are recognised as one of the main causes of biodiversity loss worldwide (Stokes et al., 2004). Should butterfly bush be allowed to spread southwards into **Inner Galway Bay SPA (004031)** and **Galway Bay Complex SAC (000268)**, and butterfly bush be allowed to establish, the native vegetation that comprises the QI habitats / SCI wetland habitat could be compromised, contravening the conservation objectives for these two European sites. As such, an air/land pathway exists for the propagation of effects between the Site and these two European sites during Construction, in the absence of biosecurity protocols and an invasive species management plan.

4.2.2.2 Indirect Pathways

Given the proximity of the Site of the Proposed Development to the **Inner Galway Bay SPA (004031)** and considering that the first wintering bird surveys between November and March have identified three SCI species as foraging on-Site, there is an indirect pathway between the Site and this SPA as a result of potential loss of *ex-situ* habitat during Construction.

The potential for collisions in relation to SCI species of **Inner Galway Bay SPA (004031)** was also assessed in terms of the new structures during the Operational Phase given that waterbirds are in the vicinity and have been observed using and flying over the Site, however, it was determined that given the two and three-storey height of buildings and taller trees present along the bounds of the Site and in the wider area, that birds will be acclimatised to navigating these obstacles.

4.2.3 Relevant European sites

A European site will only be at risk from likely significant effects where a S-P- R link exists between the Proposed Development Site and the European site. All of the European sites considered under the S-P-R method are listed in Table 4, however only two European sites were identified to have a S-P-R link of note to the Proposed Development Site, namely:

- Galway Bay Complex SAC (000268); and
- Inner Galway Bay SPA (004031).

These two sites are highlighted in green in the below and illustrated in Figure 5.

TABLE 4. EUROPEAN SITES CONSIDERED WITH THE SOURCE-PATHWAY-RECEPTOR (S-P-R) METHOD TO ESTABLISH NOTABLE LINKS BETWEEN THE SOURCES OF EFFECTS ARISING FROM THE PROPOSED DEVELOPMENT, AND ANY RELEVANT EUROPEAN SITES. THOSE SITES WITH NOTABLE S-P-R LINKS ARE HIGHLIGHTED IN GREEN (IF ANY). QUALIFYING INTERESTS (QIS) TAKEN FROM THE RELEVANT CONSERVATION OBJECTIVES DOCUMENTS (AS REFERENCED) AND/OR THE STANDARD DATA FORMS (EEA, 2023)[2].

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Potential Pathways
Special Areas of Conservation (SAC)		
Galway Bay Complex SAC (000268) Linear Distance to Proposed Development: <5m	• Mudflats and sandflats not covered by seawater at low tide [1140] • Coastal lagoons [1150] • Large shallow inlets and bays [1160] • Reefs [1170] • Perennial vegetation of stony banks [1220] • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] • Mediterranean salt meadows (*Juncetalia maritimi*) [1410] • Turloughs [3180] • *Juniperus communis* formations on heaths or calcareous grasslands [5130] • Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210] • Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210] • Alkaline fens [7230] • Limestone pavements [8240] • *Lutra lutra* (Otter) [1355] • *Phoca vitulina* (Harbour Seal) [1365]	Direct hydrological, hydrogeological, and air / land pathways.
Special Protection Areas (SPAs)		
Inner Galway Bay SPA (004031) Linear Distance to Proposed Development: <5m	• Black-throated Diver (*Gavia arctica*) [A002] • Great Northern Diver (*Gavia immer*) [A003] • Cormorant (*Phalacrocorax carbo*) [A017] • Grey Heron (*Ardea cinerea*) [A028] • Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] • Wigeon (*Anas penelope*) [A050] • Teal (*Anas crecca*) [A052]	Direct hydrological, hydrogeological, and air / land pathways and indirect pathway via potential *ex-situ* habitat removal.

[2] Where applicable, the full species list included in this table is as per the latest updated information as indicated, so either the Conservation Objectives (CO) document for the site, or the latest Standard Data Form (SDF) (EEA, 2023). For SDF updates, CO are not yet available for the newly added species but are assumed, for the purposes of assessment, to follow the same format as for other feature species.

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Potential Pathways
	• Red-breasted Merganser (*Mergus serrator*) [A069] • Ringed Plover (*Charadrius hiaticula*) [A137] • Golden Plover (*Pluvialis apricaria*) [A140] • Lapwing (*Vanellus vanellus*) [A142] • Dunlin (*Calidris alpina*) [A149] • Bar-tailed Godwit (*Limosa lapponica*) [A157] • Curlew (*Numenius arquata*) [A160] • Redshank (*Tringa totanus*) [A162] • Turnstone (*Arenaria interpres*) [A169] • Black-headed Gull (*Chroicocephalus ridibundus*) [A179] • Common Gull (*Larus canus*) [A182] • Sandwich Tern (*Sterna sandvicensis*) [A191] • Common Tern (*Sterna hirundo*) [A193] • Wetland and Waterbirds [A999]	
Creganna Marsh SPA (004142) Linear Distance to Proposed Development: 2.05km	• Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]	Hydrological, hydrogeological, and air / land pathways ruled out due to distance and lack of hydrological / hydrogeological connectivity.

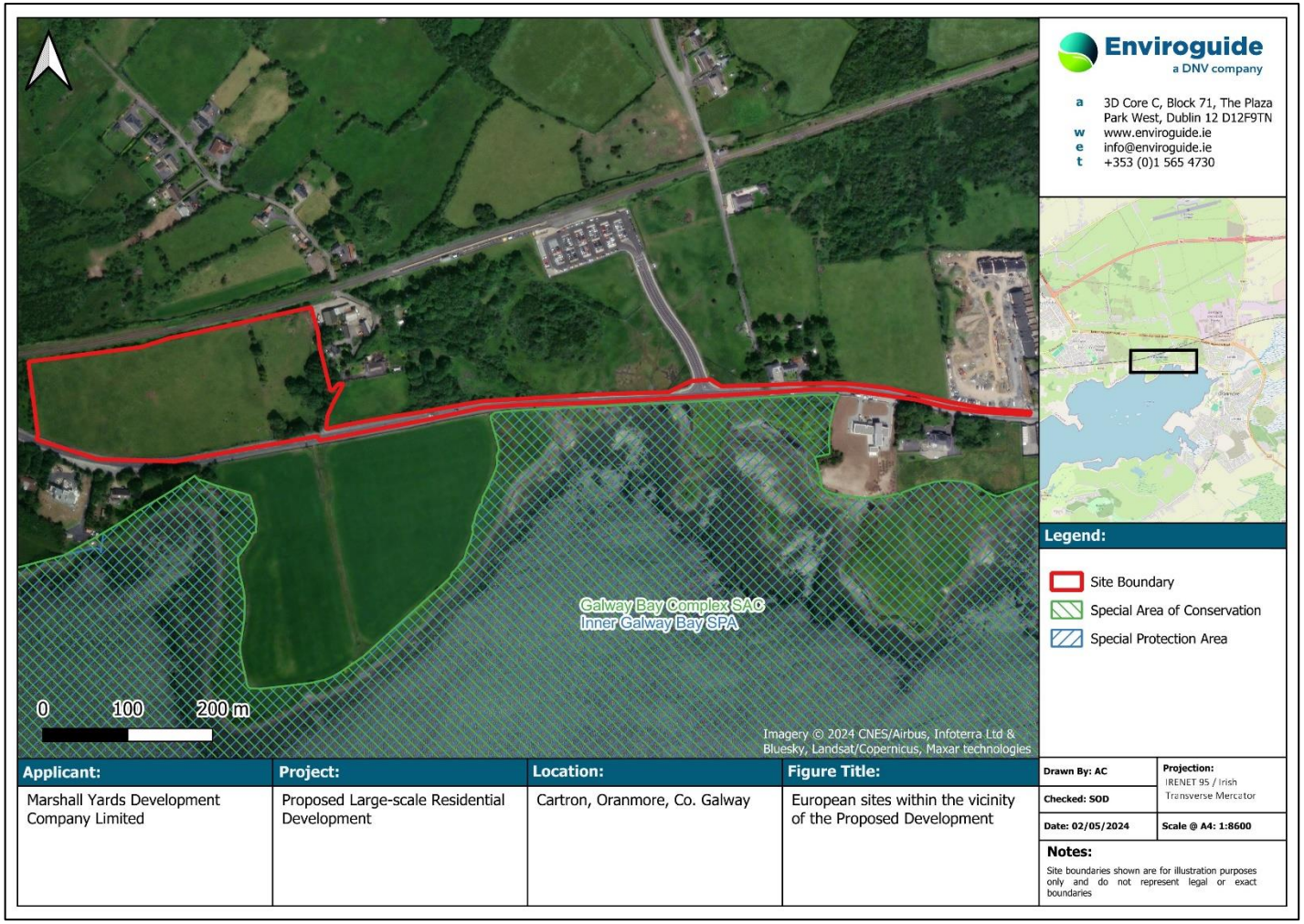

FIGURE 5. LOCATION OF EUROPEAN SITES RELATIVE TO THE PROPOSED DEVELOPMENT.

4.2.3.1 Galway Bay Complex SAC (000268)

The following description of the Galway Bay Complex SAC is extracted from the Site Synopsis (NPWS, 2015) for the site:

"*Situated on the west coast of Ireland, this site comprises the inner, shallow part of a large bay which is partially sheltered by the Aran Islands. A diverse range of marine, coastal and terrestrial habitats, including several listed on Annex I of the E.U. Habitats Directive, occur within the site, making the area of high scientific importance. Galway Bay South holds a very high number of littoral communities (12). They range from rocky terraces, to sandy beaches with rock or sand dunes behind. The intertidal sediments of Galway Bay support good examples of communities that are moderately exposed to wave action. This community has very high species richness (85 species), as do the sublittoral fringe communities on the Finavarra reef (88 species).*

Saltmarshes are frequent within this extensive coastal site, with both E.U. Habitats Directive types, 'Atlantic Salt Meadow' and 'Mediterranean Salt Meadow' well represented. Most of the saltmarshes are classified as the bay type, with the substrate being mud or mud/sand. There is one lagoon type and one estuary type.

Shingle and stony beaches can be found throughout the site, with the best examples along the more exposed shores to the south and west of Galway city and to the north and east of Finavarra, Co. Clare. In general, these shingle shorelines are sparsely vegetated and frequently occur interspersed with areas of sandy beach and/or Version date: 10.12.2015 3 of 5 000268_Rev15.Docx bedrock shore. The associated flora is dominated by plant species of frequently disturbed maritime habitats.

Soft coastal cliffs reaching heights in excess of 10m occur at Rusheen. These support coastal grassland with very sparse vegetation cover. An excellent range of lagoons of different types, sizes and salinities occurs within the site. This habitat is given priority status on Annex I of the E.U. Habitats Directive. One unusual type of lagoon, karstic rock lagoon, is particularly well represented.

Other terrestrial habitats within this site which are of conservation importance include Great Fen-sedge (Cladium mariscus)-dominated fen and Black Bog-rush (Schoenus nigricans)-dominated alkaline fen at Oranmore, a turlough of moderate size at Ballinacourty, limestone pavement at Ballyconry, Gleninagh North and Newquay, dry calcareous grassland with orchids (best examples occurring west of Salthill), Juniper (Juniperus communis) scrub formations at Oranmore, wet grassland and an area of deciduous woodland at Barna.

Inner Galway Bay provides extensive good quality habitat for Common Seal (maximum count of 317 in the all-Ireland survey of 2003). This species is listed on Annex II of the E.U. Habitats Directive. The seals use a range of haul-out sites distributed through the bay - these include inner Oranmore Bay, Rabbit Island, St. Brendan's Island, Tawin Island, Kinvarra Bay, Aughinish Bay and Ballyvaughan. The site provides optimum habitat for Otter, also an Annex II-listed species.

Fishing and aquaculture are the main commercial activities within the site. A concern is that sewage effluent and detritus of the aquaculture industry could be deleterious to benthic communities. Reef and sediment communities are vulnerable to disturbance or compaction from tractors accessing oyster trestles. The Paracentrotus lividus

populations have been shown to be vulnerable to over-fishing. Extraction of maerl in Galway Bay is a threat. Owing to the proximity of Galway city, shoreline and terrestrial habitats are under pressure from urban expansion and recreational activities. Eutrophication is probably affecting some of the lagoons and is a continued threat. Drainage is a general threat to the turlough and fen habitats".

4.2.3.2 Inner Galway Bay SPA (004031)

The following description of Inner Galway Bay SPA is extracted from the Site Synopsis (NPWS, 2019b) for the site:

"*Inner Galway Bay SPA is a very large, marine-dominated site situated on the west coast of Ireland. A number of small islands and rocky islets in the Bay are included within the site. Inner Galway Bay supports an excellent diversity of wintering wetland birds, with divers, grebes, cormorants, dabbling duck, sea duck and waders all well represented. The site provides both feeding and roost sites for most of the species.*

Inner Galway Bay SPA is of high ornithological importance with two wintering species having populations of international importance and a further sixteen wintering species having populations of national importance. The breeding colonies of Sandwich Tern, Common Tern and Cormorant are also of national importance. Also of note is that six of the regularly occurring species are listed on Annex I of the E.U. Birds Directive, i.e. Black-throated Diver, Great Northern Diver, Golden Plover, Bartailed Godwit, Sandwich Tern and Common Tern. Inner Galway Bay is a Ramsar Convention site and part of the Inner Galway Bay SPA is a Wildfowl Sanctuary".

4.2.3.3 Qualifying Interests and Conservation Objectives

The QIs/SCIs and their respective conservation objectives for each of the relevant European site(s) are detailed in Table 5 below.

TABLE 5. QUALIFYING INTERESTS (QIS) / SPECIAL CONSERVATION INTERESTS (SCIS) AND THEIR CONSERVATION OBJECTIVES FOR THE RELEVANT EUROPEAN SITES. THE CONSERVATION STATUS OF EACH QI / SCI WAS SOURCED FROM THE RELEVANT STANDARD DATA FORM(S) (SOURCE: EEA (2023))

QI / SCI (* = priority habitat)	Conservation Status	Conservation Objective
Galway Bay Complex SAC (000268)		
Mudflats and sandflats not covered by seawater at low tide [1140]	Good	To maintain the favourable conservation condition of these habitats in Galway Bay Complex SAC.
Coastal lagoons [1150]	Good	To restore the favourable conservation condition of these habitats in Galway Bay Complex SAC.
Large shallow inlets and bays [1160]	Excellent	To maintain the favourable conservation condition of these habitats in Galway Bay Complex SAC.
Reefs [1170]	Good	
Perennial vegetation of stony banks [1220]	Good	

Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	Good	
Salicornia and other annuals colonising mud and sand [1310]	Good	
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	Good	To restore the favourable conservation condition of these habitats in Galway Bay Complex SAC.
Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	Good	
Turloughs [3180]	Good	To maintain the favourable conservation condition of these habitats in Galway Bay Complex SAC.
Juniperus communis formations on heaths or calcareous grasslands [5130]	Average or reduced	To restore the favourable conservation condition of these habitats in Galway Bay Complex SAC.
Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210]	Good	To maintain the favourable conservation condition of these habitats in Galway Bay Complex SAC.
Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210]	Average or reduced	
Alkaline fens [7230]	Average or reduced	
Limestone pavements [8240]	Good	
Lutra lutra (Otter) [1355]	Excellent	To restore the favourable conservation condition of this species in Galway Bay Complex SAC.
Phoca vitulina (Harbour Seal) [1365]	Excellent	To maintain the favourable conservation condition of this species in Galway Bay Complex SAC.
Inner Galway Bay SPA (004031)		
Black-throated Diver (*Gavia arctica*) [A002]	Excellent	To maintain the favourable conservation condition of this species in Inner Galway Bay SPA.
Great Northern Diver (*Gavia immer*) [A003]	Excellent	
Cormorant (*Phalacrocorax carbo*) [A017]	Excellent	
Grey Heron (*Ardea cinerea*) [A028]	N/A	
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	Excellent	

Wigeon (*Anas penelope*) [A050]	Good	
Teal (*Anas crecca*) [A052]	Good	
Red-breasted Merganser (*Mergus serrator*) [A069]	Excellent	
Ringed Plover (*Charadrius hiaticula*) [A137]	Excellent	
Golden Plover (*Pluvialis apricaria*) [A140]	Good	
Lapwing (*Vanellus vanellus*) [A142]	Excellent	
Dunlin (*Calidris alpina*) [A149]	Excellent	
Bar-tailed Godwit (*Limosa lapponica*) [A157]	Excellent	
Curlew (*Numenius arquata*) [A160]	Excellent	
Redshank (*Tringa totanus*) [A162]	Excellent	
Turnstone (*Arenaria interpres*) [A169]	Excellent	
Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	Excellent	
Common Gull (*Larus canus*) [A182]	Excellent	
Sandwich Tern (*Sterna sandvicensis*) [A191]	Excellent	
Common Tern (*Sterna hirundo*) [A193]	Good	
Wetland and Waterbirds [A999]	N/A	To maintain the favourable conservation condition of this habitat in Inner Galway Bay SPA.

4.3 Assessment of Likely Significant Effects

The following sections discuss the potential for likely significant effects on the relevant European sites, taking into consideration the QIs, SCIs and SSCOs (where available), and assesses whether the Proposed Development has the capacity to adversely affect the integrity of this European site. Furthermore, due consideration shall be given to species not formally identified but which may be present within **Inner Galway Bay SPA (004031)** and **Galway Bay Complex SAC (000268)** and adversely affected by the Proposed Development, provided that those potential impacts are likely to affect the conservation objectives of the designated site. The potential for significant effects that may arise from the Proposed Development was considered through the use of key indicators as detailed in section 3.6.

4.3.1 Habitat Loss and Alteration

Galway Bay Complex SAC (000268)

There is no potential for direct habitat loss or alteration as a result of the Proposed Development as works will not be taking place within a European site. Additionally, there is no QI habitat from the nearby **Galway Bay Complex SAC (000268)** present within the Site of the Proposed Development (see section 4.1.2.1) and thus no potential for indirect habitat loss affecting this SAC as a result of *ex-situ* habitat removal. Furthermore, no suitable habitat for otter (*Lutra lutra*) exists on Site (e.g. watercourses), thus there will be no loss of habitat suitable to support this QI species. However, there are four stands of medium impact invasive species butterfly bush present along the southern boundary wall on the Coast Road side. Without proper biosecurity controls, this invasive species could spread into **Galway Bay Complex SAC (000268)** during Construction as a result of the movement of vehicles, people and machinery on and off the Site, impacting on the integrity and quality of its QI habitats. As such, the risk of significant effects as a result of the spread of invasive species leading to QI habitat alteration cannot be ruled out. Habitat loss or alteration can also occur as a result of water quality deterioration; this is discussed below in section 4.3.3.

Inner Galway Bay SPA (004031)

Wintering bird surveys have been undertaken at this Site focused on the SCI species of **Inner Galway Bay SPA (004031)**. Five surveys have been conducted and have revealed 12 no. curlew (*Numenius arquata*) foraging on the Site on just one occasion on 20th November 2023; curlew is a red-listed SCI species of this SPA. This species was not recorded using the Site during any of the remaining four wintering bird surveys. Furthermore, as per the Site Synopsis for **Inner Galway Bay SPA (004031)**, the site supports 697 curlew, of which 12 is not significant, while additionally, there are similar habitats to the Proposed Development in abundance in the wider area, including improved agricultural grassland fields located closer to the SPA than the Proposed Development Site. Two additional SCI species, namely, black-headed gull (*Larus ridibundus*) and common gull (*Larus canus*) were also observed flying overhead but did not utilise the Site. As such, it is not expected that the loss of potential *ex-situ* habitat for curlew will be of significance in relation to the wider area.

As discussed in the above section, four stands of medium impact invasive species butterfly bush are present along the southern boundary wall. Without proper biosecurity controls, this invasive species could spread into **Inner Galway Bay SPA (004031)** during Construction as a result of the movement of vehicles, people and machinery on and off the Site, impacting on the integrity and quality of the wetland habitats on which wintering birds rely. As such, the risk of significant effects as a result of the spread of invasive species leading to SCI bird foraging / roosting habitat loss or alteration cannot be ruled out.

4.3.2 Habitat / Species Fragmentation

Habitat fragmentation can be defined as the 'reduction and isolation of patches of natural environment' (Hall et al., 1997 cited in Franklin et al., 2002) usually due to an external disturbance such that an alteration of the spatial composition of a habitat occurs that alters the habitat and 'create[s] isolated or tenuously connected patches of the original habitat' (Wiens, 1989 cited in Franklin et al., 2002). This results in spatial separation of habitat units which had previously been in a state of greater continuity.

The potential for habitat loss is discussed above in section 4.3.1, potentially affecting SCI species of **Inner Galway Bay SPA (004031)** that use the Site. Given that birds are less reliant on continuous stretches of habitat as they can fly from one section of suitable habitat to the next, the loss of habitat within the Proposed Development Site is not considered to be of significance in relation to fragmentation of SCI bird populations or their habitat.

4.3.3 Changes in Water Quality and Resource

During Construction, should a pollution event or spill occur, or, if surface water runoff is unmanaged during heavy rainfall, there is the potential that runoff carrying sediments or hydrocarbons could enter Oranmore Bay and lead to water quality deterioration in **Galway Bay Complex SAC (000268)** and **Inner Galway Bay SPA (004031)**, impacting QI habitats or leading to a decrease in prey availability for QI species such as otter (*Lutra lutra*) and harbour seal (*Phoca vitulina*) and foraging SCI bird species. Furthermore, should the ground be exposed, pollutants could be discharged to the soil and enter the groundwater body below, potentially migrating laterally into nearby **Galway Bay Complex SAC (000268)** and **Inner Galway Bay SPA (004031)**. As per the accompanying CEMP for the Site (Enviroguide, 2024b), standardised best practice measures will be applied to the Site during Construction, to prevent any water generated at the Site, containing silt, sediment or hydrocarbons from exiting the Site, whether that is via surface water runoff or through discharge to tbe ground. Best practice guidance includes but is not limited to:

- CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors;
- Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (C650), 2005;
- BPGCS005, Oil Storage Guidelines;
- CIRIA 697, The SUDS Manual, 2007;
- UK Pollution Prevention Guidelines (PPG) UK Environment Agency, 2004;
- Construction Industry Research and Information Association CIRIA C648:

Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006);
- CIRIA C648: Control of water pollution from linear construction projects: Site guide (Murnane et al. 2006); and
- Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.

Specific measures to be applied at the Site as part of the standard best practice measures applied at Construction sites (Enviroguide, 2024b):

Concrete and cement

Concrete and cement are highly toxic to fauna, particularly fish and other aquatic / marine species. On-site pouring and/or mixing of concrete or cement will be required during construction works, so the following measures will be implemented in order to retain all cement-based materials within the boundaries of the site:

- Concrete pouring / mixing will only take place in dry weather conditions. It will be suspended if high-intensity local rainfall events are forecast (e.g. >10 mm/hr, >25 mm in a 24 hour period or high winds);
- If any on-site mixing of concrete is required, it will be carried out at least 20m from the drainage ditch in the west of the site. If any cement-based products will be stored on-site, they will be kept in a sheltered area at least 20m from the drainage ditch in the west of the site, and will be covered (e.g. with a secured plastic membrane) to prevent spread by wind; and
- Any on-site cleaning of tools or concrete-batching plant will take place at least 20m from the drainage ditch in the west of the site. Wash waters will be discharged to a soakaway.

Suspended sediments

The term ‘suspended sediments’ refers to any silt, mud or other fine sediment that becomes dissolved in water. Water can be contaminated by suspended sediments (SS) from open earthworks and excavations (either from rainfall or groundwater seepage), from rainfall on soil/sediment stockpiles, or from the tyres / tracks of construction vehicles. In order to retain all contaminated waters within the boundary of the site, the following measures will be implemented:

- Excavation works will be suspended if high intensity local rainfall events are forecast (e.g. >10 mm/hr, >25 mm in a 24 hour period, or high winds);
- If any excavations need to be dewatered, the SS-contaminated water will be retained and treated within the boundary of the site. It will be collected and pumped into a settlement tank / pond (or similar feature), left undisturbed until sediments have settled, and then discharged via a buffered outflow to a soakaway that is at least 20m from the drainage ditch in the west of the site;
- Stockpiles of mud, sand or other fine sediments will be stored at least 20m from the drainage ditch in the west of the site. Stockpiles will be levelled and compacted, and will be covered with secured plastic membranes in order to limit wind/rainwater erosion; and
- Dust suppression and road cleaning measures will be implemented, as outlined in Section 8 of the Inland Fisheries Ireland guidelines (Guidelines on protection

of fisheries during construction works in and adjacent to waters (Inland Fisheries Ireland, 2016)).

Hydrocarbons and chemicals

Hydrocarbons (oil, petrol, diesel, etc) and solvents are toxic to fauna. These chemicals can enter surface water or groundwater if they are accidentally spilled (e.g. during re-fuelling of machinery), or from leaking containers. In order to retain such materials within the boundaries of the site, the following measures will be applied throughout the construction works:

- Any fuel, oil or chemical containers will be kept at least 20m from the drainage ditch in the west of the site. These pollutants are hazardous and must be stored in a designated bunded area that has sufficient capacity to retain any spills;
- All machinery will be protected from vandalism and unauthorised interference, and will be turned off and securely locked overnight;
- Any on-site re-fuelling will take place at least 20m from the drainage ditch in the west of the site. Immobile plant will be refuelled over drip-trays;
- While in operation, diesel pumps, generators or other similar equipment will be placed on drip trays to catch any leaks; and
- A spill kit will be kept on-site. If any spills occur, appropriate measures will be taken to intercept hydrocarbons or chemicals before they can leave the site.

As discussed in section 1.3.3.1, it is proposed during the Operational Phase of the Site, that surface water is managed within the Site and discharged to the ground, thus ensuring zero surface water runoff off-Site and avoiding any potential for deterioration of water quality at **Inner Galway Bay SPA (004031)** and **Galway Bay Complex SAC (000268)**. Additionally, SuDS measures will include the use of attenuation tanks and oil/petrol interceptors which will ensure that prior to its discharge to the ground, pollutants such as sediments or hydrocarbons are removed from collected water. SuDS measures can be considered when undertaking AA Screenings, when the primary purpose of such measures is not to provide protection to European sites as outlined in section 2.1.1, although they may secondarily result in preventing effects on European sites. As a result of the embedded SuDS measures as outlined in full in the accompanying Civil Design Statement (AKM, 2024a), surface water carrying pollutants will not leave the Site during the Operational Phase, as such, there is no potential for significant effects on any European sites as a result of water quality deterioration via a hydrological or hydrogeological pathway.

4.3.4 Disturbance and / or Displacement of Species

'Disturbance' in an ecosystem is defined as any event "*that disrupts the structure of an ecosystem, community, or population, and changes resource availability or the physical environment*" (White and Pickett, 1985). The works area of the Site is located <5m from **Inner Galway Bay SPA (004031)** and **Galway Bay Complex SAC (000268)**, with the majority of works undertaken being separated by a busy main road (Coast Road).

Inner Galway Bay SPA (004031)

While baseline disturbance in this area may be relatively high already due to the main road to the south and train track to the north, construction noise is generally at 80-90

decibels (dB) according to the HSE (*https://www.hse.gov.uk/construction*) and will be additive to the existing noise in the area. Furthermore, the <5m separation distance between the SPA and the Proposed Development Site is within disturbance distances for waterbirds outlined in Cutts *et al.* (2013). As per the waterbird disturbance guidance, "*Generic guidelines at present are precautionary for consenting requirements and employ an approach distance to 300m".* The guidance continues, "*A 70dB noise threshold has however been developed over a period of years, based on published data as well as findings from primary observations (e.g. Cutts & Allen, 1999; Cutts , Phelps & Burdon, 2008 and Cutts & Hemingway 2010)*".

Visual disturbance should also be considered, given the <5m separation distance and sensitivity of some species to human presence near potential roosting sites. Curlew is mentioned specifically in the waterbird disturbance guidance as being particularly sensitive to visual disturbance from humans and machinery, becoming alert to their presence from *c.* 275m away and wastefully expending energy that would be otherwise used to roost, forage or commute. Other SCI species present in the bay during the November 2023 and January 2024 surveys included bar-tailed godwit (*Limosa lapponica*), black-headed gull, common gull, cormorant (*Phalacrocorax carbo*), dunlin (*Calidris alpina*), golden plover (*Pluvialis apricaria*), lapwing (*Vanellus vanellus*), redshank (*Tringa tetanus*), turnstone (*Arenaria interpres*) and wigeon (*Mareca penelope*). Birds were either foraging or roosting in large groups.

Assessing noise disturbance alone as being 90dB at the source, in conjunction with the 28m separation distance, noise when it reaches the bay would be around 72dB, producing a generally Moderate noise level effect as per Cutts *et al* (2013), meaning that it is likely to cause a response in birds, but is likely to be masked by the already present disturbance in the area including the busy Coast Road. However, noise stimuli in combination with visual stimuli, i.e. plant, machinery and workers being visible to any birds present in the bay, disturbance levels would be increased to a High noise level effect due to the "*Close proximity of activities to birds e.g. works or works access undertaken less than 100m from bird activity*" (Cutts *et al,* 2013).

As a result of the above, in the absence of mitigation, visual / noise disturbance affecting SCI species of **Inner Galway Bay SPA (004031)** or displacement of SCI species as a result of disturbance cannot be ruled out during Construction.

During Operation, the Site will comprise inhabited residential dwellings and a creche, linked to the wider area by cycle and pedestrian paths. This increase in human presence could lead to the disturbance of roosting SCI birds in Oranmore Bay and possibly their displacement to less disturbed locations. As shown in the wintering bird survey results in section 4.1.2.2 and Appendix II, there are a range of SCI birds that roost within proximity to the Site. This supports results presented in the Conservation Objectives supporting document for this SPA, which indicated 'Very High' and 'High' numbers of some SCI birds present within the Oranmore Bay subsite during Low tide, which was surveyed as part of the 2009/2010 waterbird survey programme (NPWS, 2013c).

The baseline disturbance in this location is relatively high owing to the busy Coast road that runs parallel to Oranmore Bay, while the proposed landscaping for the Site along the southern boundary which will provide a 15-30m screening buffer between

residences and the southern bounds of the Site (see Figure 2). Furthermore, considering that noise levels in a quiet urban area averages 55dB at the source (EPA, 2018), the *c.* 28m separation distance not including the 15m-30m buffer, and given that noise levels <55dB at the bird are described as being "*unlikely to cause a response in birds using a fronting intertidal area*" (Cutts et al, 2013), it is expected that there will be no significant effects related to disturbance or displacement of SCI waterbirds of **Inner Galway SPA (004031)**, and that birds will habituate to the constant low noise levels.

Galway Bay Complex SAC (000268)
This SAC is designated for two QI species in total, namely, otter and harbour seal. The conservation objectives document for this site outlines the extant haul out and moulting locations of harbour seal within the SAC, with the nearest being *c.* 855m south of the Proposed Development. Furthermore, harbour seal is a marine mammal with a wide range of marine habitat available throughout the SAC. As such, in the absence of mitigation, it is not anticipated that any significant effects will arise in relation to harbour seal as a result of noise or visual disturbance from the Proposed Development.

Otter within coastal locations have a smaller ranging territory than those in upland riverine locations, some as small as *c.* 2km from the den. Observations of coastal otters from Murnell *et al.* (2011) suggest that adult females occupy home ranges of *c.* 2.6km. As such, coastal otter are more likely to be affected by disturbances within their home range than upland otters whose home ranges are significantly larger and thus have more suitable alternative habitat available to them. Disturbance-related effects would not be expected to extend beyond 150m, adapted from the distance from which any works should be from breeding holts (NRA, 2008). Although a thorough search of the shoreline opposite the Site was undertaken and no otter holts or signs of otter were identified, should breeding otter begin to occupy a holt near the Site prior to the commencement of works, there is the potential for disturbance to this species; as such, a precautionary approach is taken in relation to otter, and disturbance during Construction cannot be ruled out.

During Construction and Operation, should lighting at the Site be inappropriate or directed towards Oranmore Bay, there is the potential for interruptions to foraging otters when hunting at night.

During Operation, the Site will comprise inhabited residential dwellings and a creche, linked to the wider area by cycle and pedestrian paths. This increase in human presence could lead to the disturbance of otter if their resting sites (e.g. holts) are located within proximity of the Site in Oranmore Bay. The baseline disturbance in this location is relatively high owing to the busy Coast road that runs parallel to Oranmore Bay, while the proposed landscaping for the Site along the southern boundary which will provide a 15-30m screening buffer between residences and the southern bounds of the Site (see Figure 2). As a result of the above, significant effects on otter as a result of disturbance during Operation are not anticipated.

4.3.5 Changes in Population Density

Changes to population density may come about as a result of long-term disturbance, habitat removal or alteration, changes to water quality or direct mortality of species

during works. There is no potential for direct changes to population density as a result of the Proposed Development, however, changes to population density could occur as a result of disturbance / displacement of species, which is addressed in section 4.3.4 above.

4.3.6 Potential for In-combination Effects

4.3.6.1 Existing Planning Permissions

A search of planning applications located within a 1km radius of the Site of the Proposed Development or with a connection to Inner Galway Bay SPA or Galway Bay Complex SAC was conducted using online planning resources such as the National Planning Application Database (NPAD) (MyPlan.ie) and Galway County Council Planning Applications online map. Any planning applications listed as granted or decision pending from within the last five years were assessed for their potential to act in-combination with the Proposed Development and cause likely significant effects on the relevant European sites. Long-term developments granted outside of this time period were also considered where applicable.

It is noted that the majority of the few developments within the vicinity of the Site of the Proposed Development are applications for retentions, small scale developments, refusals and applications from before 2017. The one larger granted development in the vicinity of the Proposed Development and the aforementioned European sites is outlined in Table 6.

TABLE 6. GRANTED AND PENDING DEVELOPMENT APPLICATIONS WITHIN 1KM OF THE PROPOSED DEVELOPMENT OR WITH A CONNECTION TO INNER GALWAY BAY SPA OR GALWAY BAY COMPLEX SAC.

Planning Reference	Planning Authority	Status (Grant Date)	Location
171268	**Galway County Council**	**Conditional (07/06/2019)**	***c.* 0.97km SE**
Development Description Permission for development on site which extends to 4.48ha, on the northern side of the old Dublin Road (R338). The proposed development will consist of the following: (1) construction of 76 no. residential units comprising: 9 no. blocks of House Type A (18 no. houses), 3 no. blocks of House Type B (6 no. houses), 5 no. blocks of House Type C (10 no. houses), 2 no. blocks of House Type D (4 no. houses), 5 no. blocks of House Type E(20 no. houses), 2 no. block of House Type G (8 no. houses), 1 no. block of House Type 6 (1 no. houses), 1 no. block of House Type 07 (1 no. houses), 1 no. block of House Type H (8 no. apartments); (2) provision of shared communal and private open space and site landscaping; (3) onsite and visitor carparking; (4) vehicular and pedestrian access from R338; and (5) all associated site development works (gross floor space 9,079.3sqm). **Potential for In-combination effects** This development is accompanied by an AA Screening which states there is no potential for significant effects "*either alone or in-combination with other projects*"; furthermore, an air/land pathway propagating disturbance-related effects between this project and any SAC/SPA was not present during construction or operation. The report also identified that there was no potential for deterioration of water quality as a result of this project. As such, and given the 1.6km separation distance, it is not expected that there will be any in-combination effects as a result of this project being undertaken simultaneously with the Proposed Development.			

4.3.6.2 Relevant Policies and Plans

The local policies and plans detailed in section 2.2 above were reviewed and considered for possible in-combination effects with the Proposed Development. Each of these plans has undergone AA, and where potential for likely significant effects has been identified (e.g., in the case of the Galway County Development Plan), an NIS has been prepared which identifies appropriate mitigation. As such, it is considered that the plans and policies listed will not result in in-combination effects with the Proposed Development. The Galway County Development Plan 2022-2028 has directly addressed the protection of European sites and biodiversity through specific objectives. The above listed plans are not being relied upon to rule out potential significant effects on European sites.

TABLE 7. SUMMARY OF IMPACT ASSESSMENT ON EUROPEAN SITES AS A RESULT OF THE PROPOSED DEVELOPMENT.

Site	Habitat Loss / Alteration	Habitat or Species Fragmentation	Disturbance and/or Displacement of Species	Changes in Population Density	Changes in Water Quality and/or Resource	In-combination effects	Stage 2 AA Required
SAC							
Galway Bay Complex SAC (000268)	Yes	No	Yes	None	None	None	**YES**
SPA							
Inner Galway Bay SPA (004031)	Yes	No	Yes	None	None	None	**YES**
Creganna Marsh SPA (004142)	No	No	No	None	None	None	**NO**

5 APPROPRIATE ASSESSMENT SCREENING CONCLUSION

The Proposed Development at Cartron, Oranmore, Co. Galway, has been assessed taking into account:

- The nature, size and location of the proposed works and possible impacts arising from the construction works.
- The QIs and conservation objectives of the European sites.
- The potential for in-combination effects arising from other plans and projects.

In conclusion, upon the examination, analysis and evaluation of the relevant information and applying the precautionary principle, it is concluded by the authors of this report that the possibility **cannot be excluded** that the Proposed Development will have a significant effect on the European sites listed below:

- Inner Galway Bay SPA (004031).
- Galway Bay Complex SAC (000268).

On the basis of the screening exercise carried out above, it can be concluded, on the basis of the best scientific knowledge available and objective information, that the possibility of any significant effects on the above listed European sites, whether arising from the project itself or in combination with other plans and projects, cannot be excluded in light of the above listed European sites' conservation objectives. Thus, there is a requirement to proceed to Stage 2 of the Appropriate Assessment process; and a NIS has been prepared and accompanies this submission under separate cover.

6 REFERENCES

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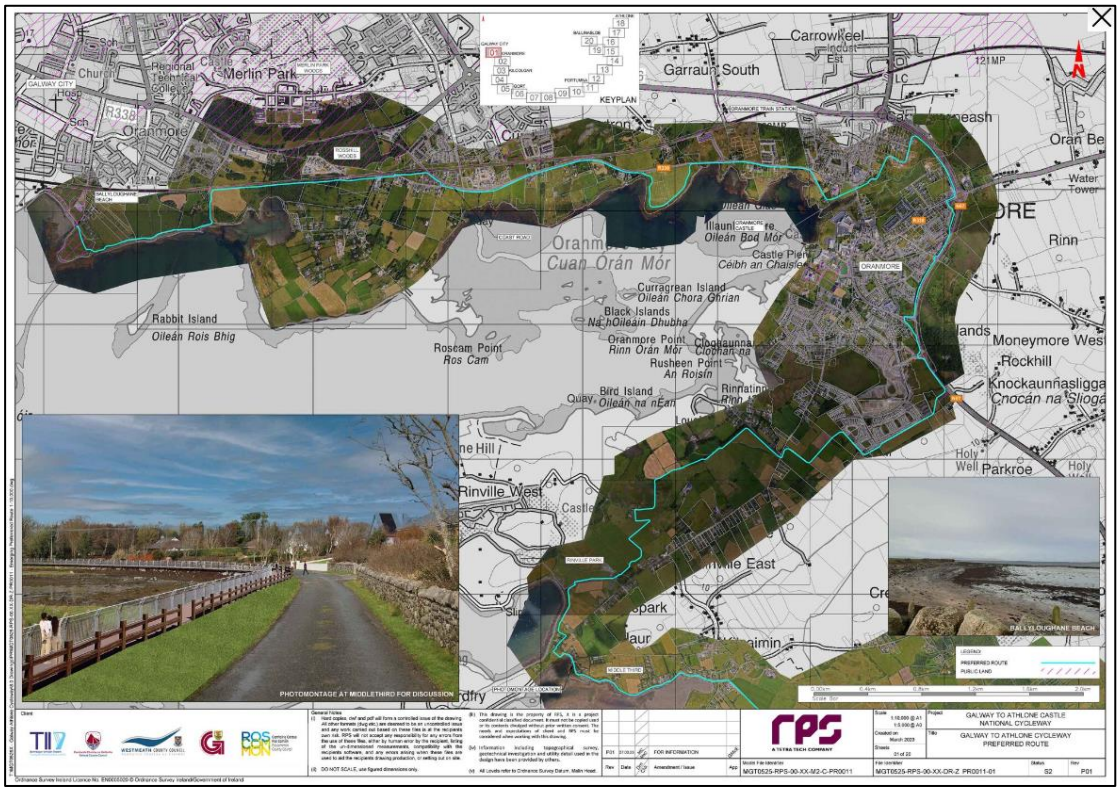
Appendix I – Proposed Cycleway



Galway to Athlone Cycleway Map Viewer. Available at: https://rps-ireland.maps.arcgis.com/apps/View/index.html?appid=eca7f3b96b1640b2b606585269170f9b

Appendix II - Birds recorded in Oranmore Bay during WBS

Survey 1: 20th November 2023

Species	Scientific name	BoCCI Status	Activity
Black-headed Gull	*Larus ridibundus*	Amber	55 in Gull roost.
Black-tailed Godwit	*Limosa limosa*	Red	70 distantly on shore.
Common Gull	*Larus canus*	Amber	5 in Gull roost
Common Scoter	*Melanitta nigra*	Red	Female, in bay.
Cormorant	*Phalacrocorax carbo*	Amber	Two fishing close to shore
Curlew	*Numenius arquata*	Red	21
Dunlin	*Calidris alpina*	Red	30 in a single flock
Great Black-backed Gull	*Larus marinus*	Amber	One distantly on rocks. Adult.
Great Northern Diver	*Gavia immer*	Amber	Two (one first-winter/juvenile) in the Bay
Golden Plover	*Pluvialis apricaria*	Red	110
Herring Gull	*Larus argentatus*	Amber	22 in Gull roost
Lapwing	*Vanellus vanellus*	Red	50 in a flock.
Little Egret	*Egretta garzetta*	Green	One roosting.
Mallard	*Anas platyrhynchos*	Amber	Two roosting on rocks.
Oystercatcher	*Haematopus ostralegus*	Red	One on rocks.
Redshank	*Tringa totanus*	Red	Five seen briefly in flight before dropping behind rocks, presumably to roost.
Red-throated Diver	*Gavia stellata*	Amber	Distant juvenile in the bay
Shag	*Gulosus aristotelis*	Amber	One hunting close to shore.
Turnstone	*Arenaria interpres*	Amber	15, roosting.
Wigeon	*Mareca Penelope*	Amber	115 along shore.

Survey 2: 5th January 2024

Species	Scientific name	BoCCI Status	Activity
Black-headed Gull	*Larus ridibundus*	Amber	110 counted in the bay, mainly on the rocks roosting.
Bar-tailed Godwit	*Limosa lapponica*	Red	Two roosting on the rocks with the Black-taileds was an unexpected find at this location.
Black-tailed Godwit	*Limosa limosa*	Red	20 on the rocks. Distant.

Common Gull	*Larus canus*	Amber	8 with the Black-headed Gulls.
Cormorant	*Phalacrocorax carbo*	Amber	Five feeding in the bay.
Curlew	*Numenius arquata*	Red	21 in the field across the road from the Site. Presumably the same birds from November.
Dunlin	*Calidris alpina*	Red	4 seen briefly in flight before landing out of sight.
Great Black-backed Gull	*Larus marinus*	Amber	Two adults present.
Great Crested Grebe	*Podiceps cristatus*	Amber	Six feeding in the bay.
Great Northern Diver	*Gavia immer*	Amber	Four including at least two first-winter birds.
Guillemot	*Uria aalge*	Amber	Four with the distant Mergansers
Herring Gull	*Larus argentatus*	Amber	A minimum of 40 recorded.
Lapwing	*Vanellus vanellus*	Red	One large flock of 180 birds were seen in flight for several minutes before flying inland.
Little Egret	*Egretta garzetta*	Green	One.
Mallard	*Anas platyrhynchos*	Amber	Four swimming close inshore.
Oystercatcher	*Haematopus ostralegus*	Red	Seven roosting on the rocks.
Razorbill	*Alca torda*	Red	One with the Guillemots.
Redshank	*Tringa totanus*	Red	Three roosting with the Godwits.
Red-breasted Merganser	*Mergus serrator*	Amber	At least eight well offshore.
Red-throated Diver	*Gavia stellata*	Amber	Two juveniles close into shore.
Shag	*Gulosus aristotelis*	Amber	One with the distant Mergansers.
Turnstone	*Arenaria interpres*	Amber	20 roosting on the rocks.
Wigeon	*Mareca Penelope*	Amber	55 counted.

Survey 3: 26th of January 2024

Species	Scientific name	BoCCI Status	Activity
Black-headed Gull	*Larus ridibundus*	Amber	84 counted loafing in the bay.
Bar-tailed Godwit	*Limosa lapponica*	Red	A flock of 21 flew around the bay before roosting distantly on the rocks. Surprisingly, no Black-tailed Godwits were recorded.
Common Gull	*Larus canus*	Amber	12 in the gull flocks.
Cormorant	*Phalacrocorax carbo*	Amber	9 roosting.

Curlew	*Numenius arquata*	Red	24 in the field just south of the Site.
Dunlin	*Calidris alpina*	Red	4 distantly on the rocks.
Great Black-backed Gull	*Larus marinus*	Amber	2 roosting on the rocks.
Great Crested Grebe	*Podiceps cristatus*	Amber	2 in largely winter plumage in the bay.
Great Northern Diver	*Gavia immer*	Amber	2 (second-calendar year birds) in the bay.
Greenshank	Tringa nebularia	Green	1 in flight.
Grey Heron	Ardea cinerea	Green	1 roosting on rocks.
Herring Gull	*Larus argentatus*	Amber	Very common.
Lapwing	*Vanellus vanellus*	Red	110 in a flock.
Little Egret	*Egretta garzetta*	Green	3 feeding around the bay.
Mallard	*Anas platyrhynchos*	Amber	11
Oystercatcher	*Haematopus ostralegus*	Red	18 roosting on rocks.
Redshank	*Tringa totanus*	Red	6 flew east and landed on rocks.
Red-breasted Merganser	*Mergus serrator*	Amber	A pair distantly in the bay.
Red-throated Diver	*Gavia stellata*	Amber	2. One adult and one juvenile.
Teal	*Anas crecca*	Amber	Eight. Four males and four females.
Turnstone	*Arenaria interpres*	Amber	2 briefly in flight on the rocks.
Wigeon	*Mareca Penelope*	Amber	64 feeding along the rocks on the eastern side of the bay.

Survey 4: 20th February 2024

Species	Scientific name	BoCCI Status	Activity
Black-headed Gull	*Larus ridibundus*	Amber	Very common in the bay.
Bar-tailed Godwit	*Limosa lapponica*	Red	24 in a flock roosting on the rocks.
Black-tailed Godwit	*Limosa limosa*	Red	18 in a flock.
Common Gull	*Larus canus*	Amber	Small numbers with the gull flocks.
Cormorant	*Phalacrocorax carbo*	Amber	One fishing offshore.
Curlew	*Numenius arquata*	Red	25. Many landed in the field to the south of the Site to feed.
Dunlin	*Calidris alpina*	Red	

Golden Plover	*Pluvialis apricaria*	Red	A flock of ten landed on the rocks and roosted for a short time.
Great Black-backed Gull	*Larus marinus*	Amber	
Great Crested Grebe	*Podiceps cristatus*	Amber	Two. Almost in full summer plumage.
Great Northern Diver	*Gavia immer*	Amber	3 feeding in the bay.
Herring Gull	*Larus argentatus*	Amber	Common in the bay.
Mallard	*Anas platyrhynchos*	Amber	7 close to shore. Associating with Wigeon.
Oystercatcher	*Haematopus ostralegus*	Red	6 roosting.
Peregrine	*Falco peregrinus*	Green	Presumed female based on size, flew north across the bay and inland but not over the Site.
Redshank	*Tringa totanus*	Red	One seen briefly in flight.
Red-breasted Merganser	*Mergus serrator*	Amber	A close flock of nine feeding in the bay.
Red-throated Diver	*Gavia stellata*	Amber	2 feeding in the bay.
Teal	*Anas crecca*	Amber	4 seen well at close range.
Turnstone	*Arenaria interpres*	Amber	One seen in flight before landing on rocks.
Wigeon	*Mareca Penelope*	Amber	8 swimming close to shore.

Survey 5: 28th March 2024

Species	Scientific name	BoCCI Status	Activity
Black-headed Gull	*Larus ridibundus*	Amber	Common in the bay.
Black-tailed Godwit	*Limosa limosa*	Red	2 distantly on rocks.
Common Gull	*Larus canus*	Amber	Small numbers with the gull flocks.
Cormorant	*Phalacrocorax carbo*	Amber	Two offshore.
Curlew	*Numenius arquata*	Red	4 distantly on the rocks together.
Dunlin	*Calidris alpina*	Red	Two roosting on the rocks.
Great Black-backed Gull	*Larus marinus*	Amber	2 with a flock of gulls.
Great Crested Grebe	*Podiceps cristatus*	Amber	Two. Full summer plumage.
Great Northern Diver	*Gavia immer*	Amber	2, still in winter plumage.
Grey Heron	Ardea cinerea	Green	One in flight.
Herring Gull	*Larus argentatus*	Amber	Common in the bay.
Little Egret	*Egretta garzetta*	Green	2 distantly in flight.
Mallard	*Anas platyrhynchos*	Amber	4 close into shore.

Oystercatcher	*Haematopus ostralegus*	Red	8 on the rocks with the Curlew.
Redshank	*Tringa totanus*	Red	Four flew past together
Red-throated Diver	*Gavia stellata*	Amber	1 feeding in the bay. Second-calendar year bird.
Teal	*Anas crecca*	Amber	2 roosting on the rocks.
Wigeon	*Mareca Penelope*	Amber	19 just offshore before roosting on the rocks.

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