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Natura Impact Statement

PRESENTED TO

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

May 2024

Environmental Consultancy Services

DOCUMENT CONTROL SHEET

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1 INTRODUCTION

1.1 Background

Enviroguide Consulting was commissioned by Marshall Yards Development Company Limited to, to prepare an Appropriate Assessment Screening Report in relation to a Proposed Large-scale Residential Development in Cartron, Oranmore, Co. Galway. The AA Screening Report concluded that a degree of uncertainty exists in whether the Proposed Development could give rise to potentially significant effects on two nearby European sites, namely:

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

Therefore, a Natura Impact Statement (NIS) has been prepared for the Proposed Development. The purpose of this NIS report is to provide information for the relevant competent authority to carry out a Stage 2 Appropriate Assessment in respect of the Proposed Development.

1.2 Quality Assurance and Competence

Enviroguide Consulting is a 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).

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 *c.* 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 Infrastructure Report (AKM, 2024c), "*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 Eireann. 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.

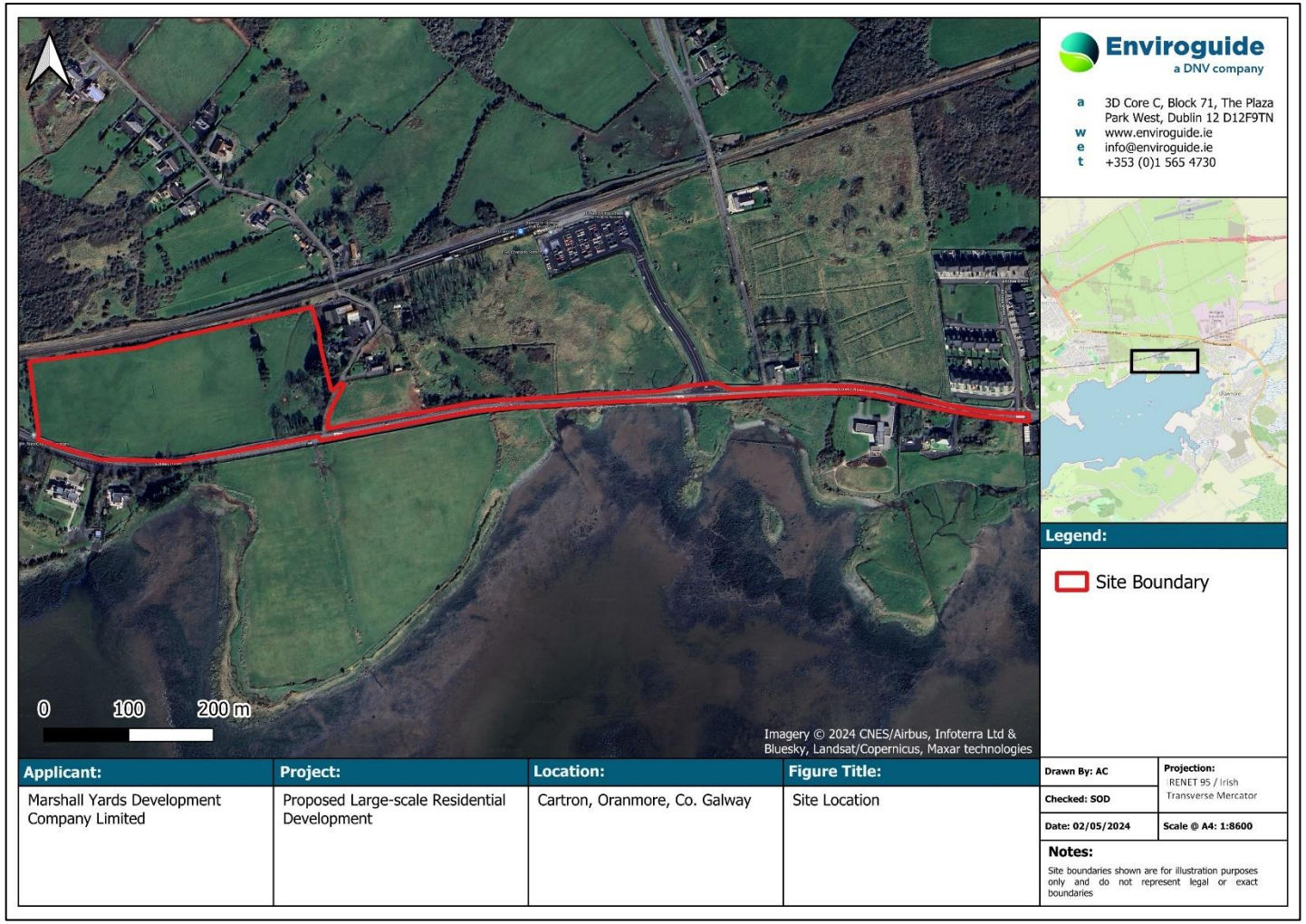

FIGURE 1. SITE LOCATION

FIGURE 2. PROPOSED SITE LAYOUT EXTRACTED FROM FROM JFA (2024) DRAWING NO. CAR-ZZ-LZZ-DR-JFA-AR-P1100 (JFA, 2024)

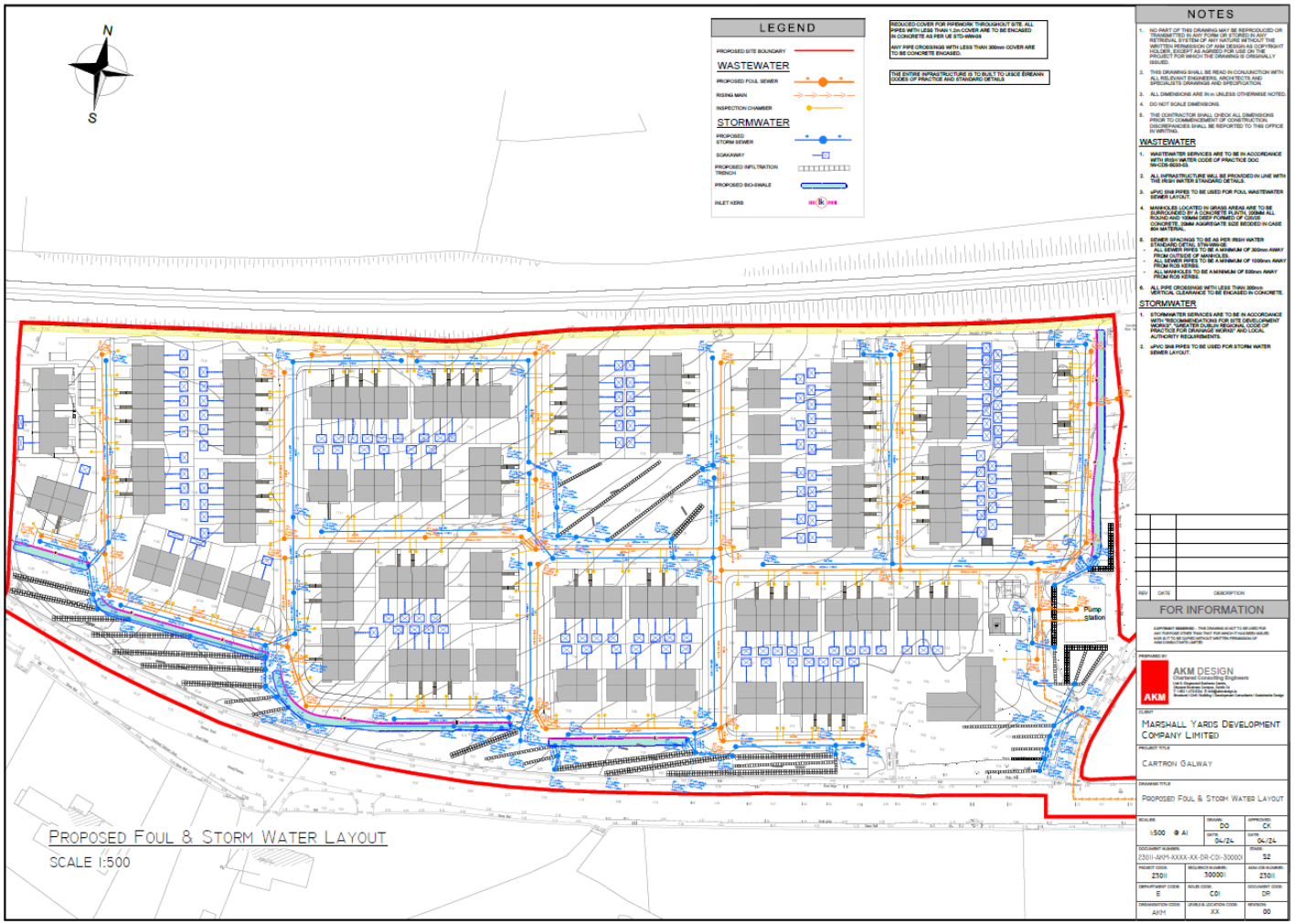

FIGURE 3. PROPOSED FOUL AND SURFACE WATER DRAINAGE FOR THE SITE (AKM, 2024B)

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 Protected 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 Natura 2000, a network of protected sites throughout the European Community.

SACs and SPAs are collectively known as "Natura 2000" 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 'Appropriate Assessment' (AA) is an assessment required prior to the grant of planning permission to determine whether a plan or project, based on best scientific knowledge, will have an adverse effect on the integrity of a European site, either alone or in combination with other plans and projects. It is required for any plan or project not directly connected with or necessary to the management of a site but likely to have a significant effect on it.

An AA is required under Article 6 of the Habitats Directive where a project or plan may give rise to significant effects upon a Natura 2000 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.

2.1.1 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 177T and Section 177V thereof in relation to Natura Impact Statements and Appropriate Assessment. The relevant provisions of Section 177T and 177V are set out below:

"***177T.—*** *(1) In this Part— (a) A Natura impact report means a statement for the purposes of Article 6 of the Habitats Directive, of the implications of a Land use plan, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites.*

(b) A Natura impact statement means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites.

(2) Without prejudice to the generality of subsection (1), a Natura impact report or a Natura impact statement, as the case may be, shall include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one European site in view of the conservation objectives of the site or sites."

(3) …

(4) The applicant for consent for proposed development may, or if directed in accordance with subsection (5) by a competent authority, shall furnish a Natura impact statement to the competent authority in relation to the proposed development.

(5) At any time following an application for consent for proposed development a competent authority may give a notice in writing to the applicant concerned, directing him or her to furnish a Natura impact statement.

(6) ...

(7) (a) Without prejudice to subsection (1) a Natura impact report or a Natura impact statement shall include all information prescribed by regulations under section 177AD .

(b) Where appropriate, a Natura impact report or a Natura impact statement shall include such other information or data as the competent authority considers necessary to enable it to ascertain if the draft Land use plan or proposed development will not affect the integrity of the site."

"177V.— *(1) An appropriate assessment carried out under this Part shall include a determination by the competent authority under Article 6.3 of the Habitats Directive as to whether or not a draft Land use plan or proposed development would adversely affect the integrity of a European site and an appropriate assessment shall be carried out by the competent authority, in each case where it has made a determination under section 177U(4) that an appropriate assessment is required, before—*

(a) the draft Land use plan is made including, where appropriate, before a decision on appeal in relation to a draft strategic development zone is made, or

(b) consent is given for the proposed development.

(2) In carrying out an appropriate assessment under subsection (1) the competent authority shall take into account each of the following matters:

(a) the Natura impact report or Natura impact statement, as appropriate;

(b) any supplemental information furnished in relation to any such report or statement;

(c) if appropriate, any additional information sought by the authority and furnished by the applicant in relation to a Natura impact statement;

(d) any additional information furnished to the competent authority at its request in relation to a Natura impact report;

(e) any information or advice obtained by the competent authority;

(f) if appropriate, any written submissions or observations made to the competent authority in relation to the application for consent for proposed development;

(g) any other relevant information.

(3) Notwithstanding any other provision of this Act, or, as appropriate, the Act of 2001, or the Roads Acts 1993 to 2007 and save as otherwise provided for in sections 177X, 177Y, 177AB and 177AC, a competent authority shall make a Land use plan or give consent for proposed development only after having determined that the Land use plan or proposed development shall not adversely affect the integrity of a European site.

(4) Subject to the other provisions of this Act, consent for proposed development may be given in relation to a proposed development where a competent authority has made modifications or attached conditions to the consent where the authority is satisfied to do so having determined that the proposed development would not adversely affect the integrity of the European site if it is carried out in accordance with the consent and the modifications or conditions attaching thereto."

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

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.

2.4 Stage 1: Appropriate Assessment Screening Conclusion

An AA Screening Report was prepared for the Proposed Development by Enviroguide Consulting in March 2024. The conclusion of the AA Screening Report is as follows:

"*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 any of 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".

As such, this NIS will assess the potential effects of the Proposed Development on

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

These sites are linked to the Proposed Development via hydrological, land, and air pathways.

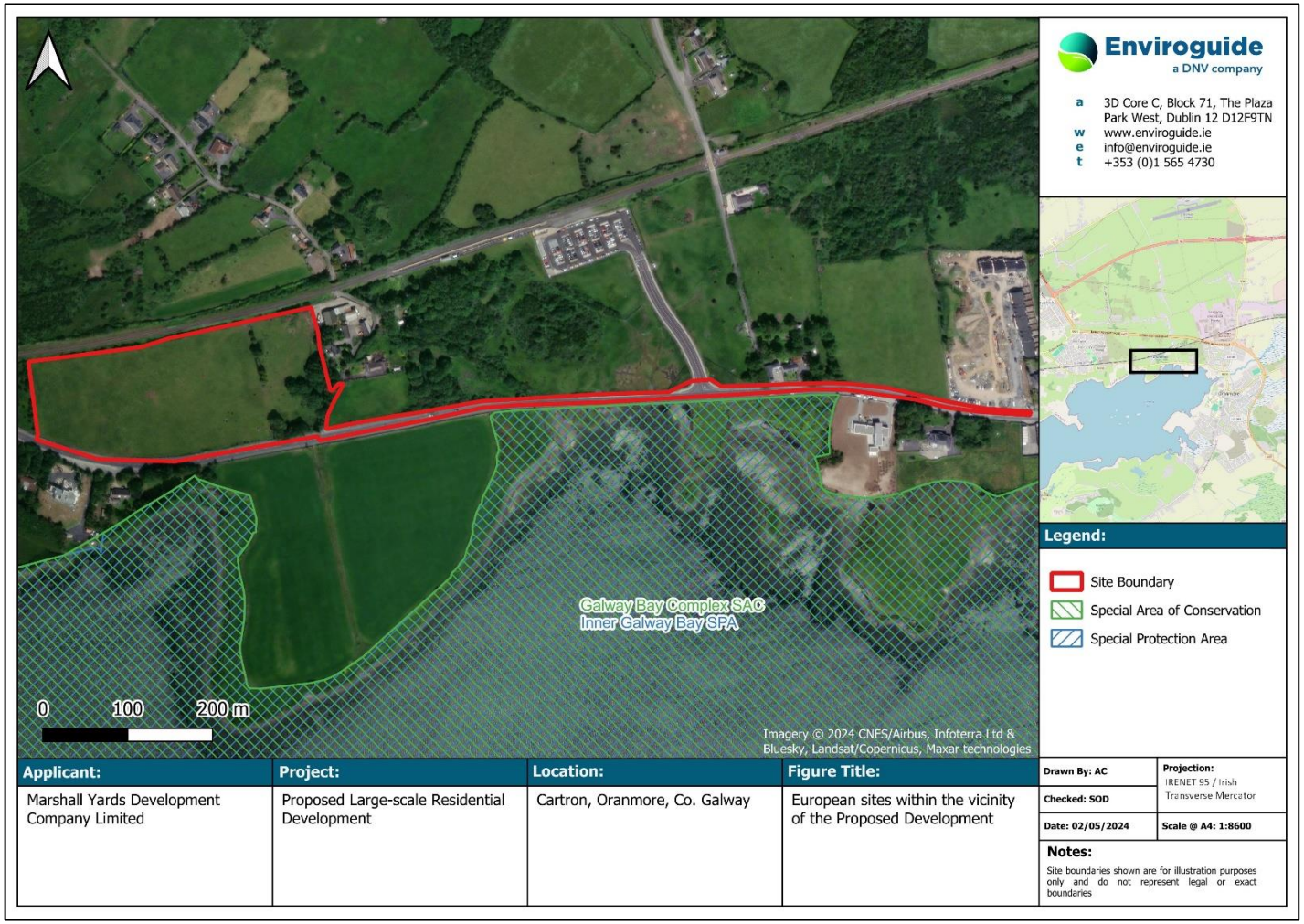

FIGURE 4. RELEVANT EUROPEAN SITES AS IDENTIFIED IN AA SCREENING (ENVIROGUIDE, 2024)

3 NIS METHODOLOGY

3.1 Guidance

This NIS 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 (European Commission, 2021)*;
- *Appropriate Assessment Screening for Development Management, OPR Practice Note PN01, Office of the Planning Regulator March 2021;* and
- *Amendments to section 42 of the Planning and Development Act 2000, as amended and associated Planning and Development Regulations 2001. Department of the Environment, Heritage and Local Government. (2021). Circular Letter: EUIPR 01/2021.*

3.2 NIS Steps

This NIS has been prepared following the steps described below:

- Description of the baseline existing environment at the Site of the Proposed Development;
- Review and description of available data for the relevant European site(s) potentially affected as identified in the Screening Report (Enviroguide, 2024);
- Identification and description of potential effects on the relevant European site(s) and their designated QIs/SCIs;
- Assessment of the likely significance of the effects and/or impacts identified on the relevant QIs/SCIs in view of their Site Specific Conservation Objectives (SSCOs) where available;
- Description and characterisation of other projects or plans that in combination with the Proposed Development have the potential for having significant effects on the relevant QIs/SCIS;

- Identification of appropriate mitigation measures to remove the likelihood of significant effects on any European site(s) and their QIs/SCI; and
- Exclusion of sites where it can be objectively concluded that there will be no significant effects once mitigation measures are adhered to.

3.3 Desk Study

A desktop study was carried out to collate and review available information, datasets and documentation sources relevant for the completion of the NIS. The desk- top study, completed in March 2024, relied on the following sources:

- Information on the network of European sites, relevant boundaries, QIs and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at *www.npws.ie* and the European Environment Agency (EEA) at *https://natura2000.eea.europa.eu/;*
- Information on the status of EU protected habitats and species in Ireland, obtained from the NPWS Article 17 reports;
- Text summaries of the relevant European sites taken from the respective Site Synopses for each site, 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 extent, nature and location of the Proposed Development, provided by the applicant and their design team.

A comprehensive list of all the specific documents and information sources consulted in the completion of this report is provided in 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, 2024c) accompanying this application under separate cover. Results relevant to this Screening Report have been summarised in section 4.2.

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	Enviroguide Consulting (AC)	26th October 2023

Survey	Surveyor	Dates
• Preliminary Bat Roost and Habitat Suitability Assessment		
Wintering Bird Surveys	Enviroguide Consulting (BMcC)	20th November 2023 5th January 2024 26th January 2024 20th February 2024 27th March 2024
Otter Survey	Enviroguide Consulting (AC)	9th April 2024

3.5 Impact Prediction

Potential impacts on the relevant European site(s) identified during the AA Screening are based on information regarding their QIs and/or SCI species, and the attributes and targets relating to their SSCOs where available. These have been informed by the desk study and any field surveys carried out prior to the preparation of this report.

Impact prediction is based on the Source-Pathway-Receptor (S-P-R) model. The following describes the steps of the S-P-R approach taken in this NIS:

- Potential sources of effects were identified based on the Proposed Development description and details, including changes to potentially suitable ex-situ habitats at the Site (i.e., habitats utilised by Species of Conservational Importance (SCI) bird species outside of their designated SPAs).
- Up-to-date GIS spatial datasets for water catchments as well as any information from relevant site investigations and/or field surveys were used to identify the QIs/ SCIs within the relevant European site(s) that have a notable S-P-R connection to the Proposed Development:
    - The catchment data were used to establish or discount potential hydrological connectivity between the Proposed Development and any QIs/SCIs.
    - Groundwater and bedrock information used to establish or discount potential hydrogeological connectivity between the Proposed Development and any QIs/SCIs.
    - Air and land connectivity assessed based on Proposed Development details and proximity to QIs/SCIs.
    - Consideration of potential indirect pathways, e.g., impacts to flight paths, *ex-situ* habitats, etc.
- Identification of potential impacts for those QIs/SCIs linked to the Proposed Development via notable S-P-R connections.

Where the preceding steps identified any potential for adverse impacts on any QIs/SCIs for the relevant European site(s), appropriate mitigation measures to eliminate the potential for significant adverse effects are identified in this report.

3.6 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 NATURA IMPACT STATEMENT

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 from 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 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						
Carrowmoneash (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
Groundwater Bodies						
Clarinbridge	IE_WE_G_0008	N/A	N/A	Good	Not at risk	Underlying groundwater-body

4.2 Relevant Field Survey results

4.2.1 Habitats & 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); and
- 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 sp. (*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 as 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 sp., 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. 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.

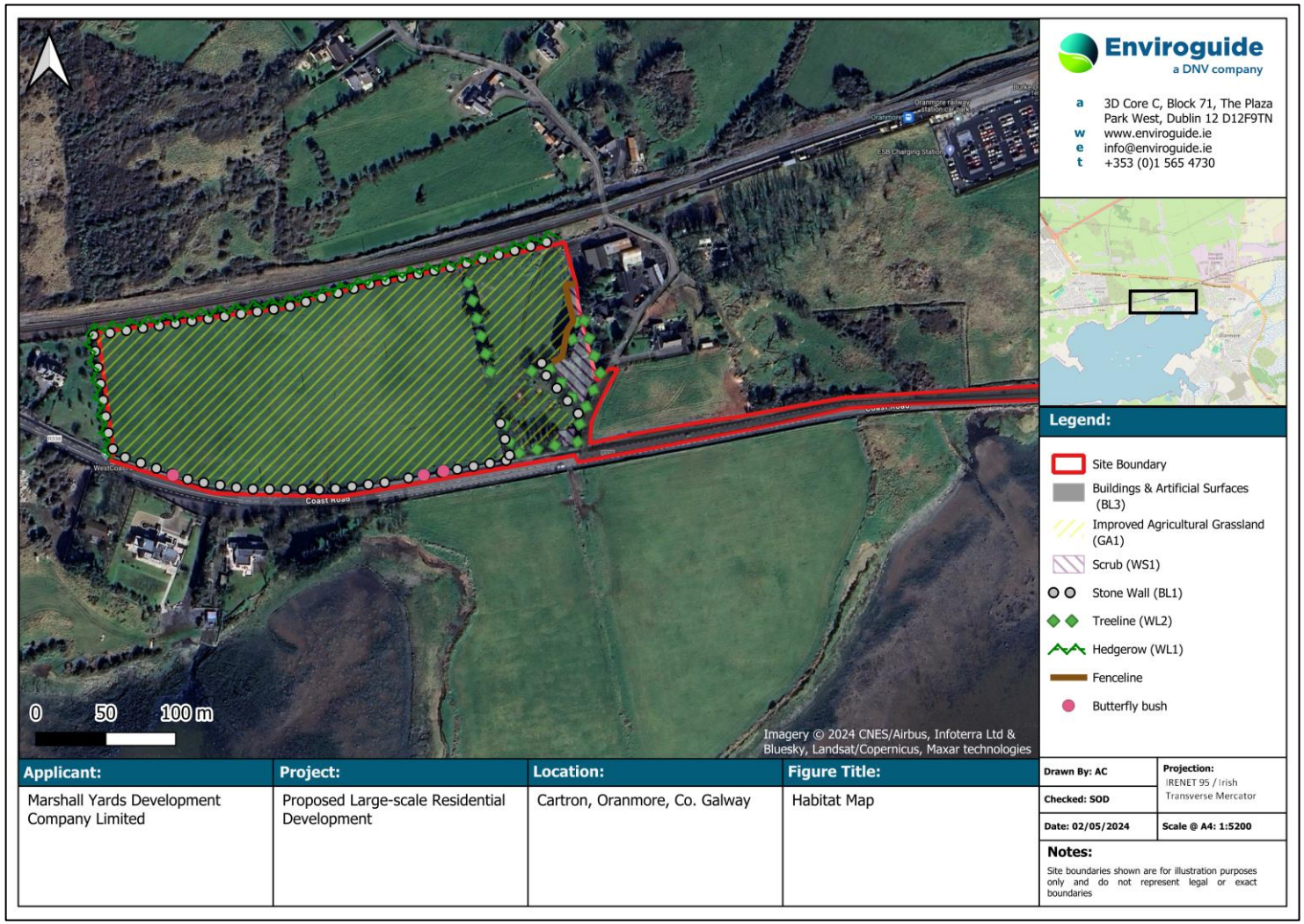

FIGURE 4. MAP OF HABITATS AND INVASIVE SPECIES AT THE SITE OF THE PROPOSED DEVELOPMENT.

4.2.2 Fauna

4.2.2.1 Wintering Bird 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	Small flocks moving through the Site on several dates.

			20th February 2024	
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	*Saxicola rubicola*	**Green**	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 within 300m of the Site 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.

4.2.2.2 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 activity recorded, such as prints, spraints, lay-ups or slides.

The results of this survey are used in this Report to inform the assessment of potential adverse effects on otter as a result of disturbance during the Construction of the Proposed Development.

4.3 Summary Of Relevant European Sites

The following descriptions of the relevant habitats and species occurring within the European site(s) considered in this NIS have been extracted from the Standard Data Forms (EEA 2023), Site Synopses (NPWS 2019a) and any supporting documents available for the relevant site(s).

4.3.1 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 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".

4.3.2 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".

4.3.3 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 4 below.

TABLE 4. 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)) AND THE LATEST NATIONAL STATUS IS TAKEN FROM THE LATEST ARTICLE 17 REPORT (NPWS, 2019A & 2019B).

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	
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	
Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]	Excellent	
Wigeon (*Anas penelope*) [A050]	Good	
Teal (*Anas crecca*) [A052]	Good	
Shoveler		
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.

4.4 Impact Prediction

This section follows the S-P-R method as outlined in section 3 to identify if and how any of the QIs/SCIs of the relevant European sites are linked to the Proposed Development. Once the connections have been identified the potential impacts of the Proposed Development on the Galway Bay Complex SAC or Inner Galway Bay SPA in light of their QIs/SCIs are assessed.

4.4.1 Potential impacts of the Proposed Development on key Species and Habitats

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 dust, sediments and/or other pollutants to air due to earthworks;
- 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)*

- 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.

The QIs/SCIs for the relevant European sites are shown described in Table 5 below. Descriptions are sourced from the relevant Conservation Objectives and supporting documents (NPWS 2017b, NPWS 2019a), Standard Data Forms (EEA, 2024) as well as the surveys carried out at the Site.

Table 5 outlines the identified pathways between the Proposed Development and the relevant QIs/SCIs and assesses the potential for significant effects of the Proposed Development on these.

TABLE 5. ASSESSMENT OF THE POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT ON THE QIS AND SCIS OF THE RELEVANT EUROPEAN SITES. THOSE QIS/SCIS FOR WHICH NOTABLE IMPACT PATHWAYS WERE IDENTIFIED HAVE BEEN HIGHLIGHTED IN GREEN.

Description	Pathway(s)	Assessment of likely significant effects	Suggested Mitigation
Galway Bay Complex SAC (000268)			
1140 Mudflats and sandflats not covered by seawater at low tide *Conservation objective:* To maintain the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
Tidal mudflats and sandflats habitat is comprised of the intertidal section of the coastline where sands and muds dominate. They are dynamic ecosystems, dependent on the balance of natural accretion and erosion.	None	Located <5m from the Proposed Development. As discussed in section 4.5.2.1 and 1.3.3.1, no surface water will leave the Site during Construction or Operation, thus there is no pathway for the propagation of water quality effects from the Proposed Development to this QI habitat.	**Construction Phase:** Standard international best practice measures for construction sites as per CEMP (Enviroguide, 2024b). **Operational Phase:** Embedded SuDS measures as per Civil Design Statement (AKM, 2024a).
1150 Coastal lagoons *Conservation Objective:* To restore the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
Lagoons are expanses of coastal salt water, of varying salinity, which are wholly or partially separated from the sea by sand banks or shingle, or less frequently by rocks.	None	Located *c.* 2.5km from the Proposed Development. As discussed in section 4.5.2.1 and 1.3.3.1, no surface water will leave the Site during Construction or Operation, thus there is no pathway for the propagation of water quality effects from the Proposed Development to this QI habitat.	**Construction Phase:** Standard international best practice measures for construction sites as per CEMP (Enviroguide, 2024b). **Operational Phase:** Embedded SuDS measures as per Civil Design Statement (AKM, 2024a).
1160 Large shallow inlets and bays *Conservation objective:* To maintain the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
Large shallow inlets and bays are indentations of the coast with limited freshwater influence. They vary widely in habitat and species diversity depending on their location, exposure, geology and sediment composition, which determine their constituent habitat communities. The three most prevalent sediment communities are the Fine sand to sand community, Mud to fine sand	None	Located *c.*1.6km from the Proposed Development. As discussed in section 4.5.2.1 and 1.3.3.1, no surface water will leave the Site during Construction or Operation, thus there is no pathway for the propagation of water quality effects from the Proposed Development to this QI habitat.	**Construction Phase:** Standard international best practice measures for construction sites as per CEMP (Enviroguide, 2024b). **Operational Phase:** Embedded SuDS measures as per Civil Design Statement (AKM, 2024a).

Description	Pathway(s)	Assessment of likely significant effects	Suggested Mitigation
community and Muddy sands/sandy muds community.			
1170 Reefs *Conservation objective:* To maintain the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
Reefs are marine features with hard substrate available for colonisation by plants and animals. The main pressures on reefs come from fishing methods that damage the seafloor.	None	Located *c.*100m from the Proposed Development. As discussed in section 4.5.2.1 and 1.3.3.1, no surface water will leave the Site during Construction or Operation, thus there is no pathway for the propagation of water quality effects from the Proposed Development to this QI habitat.	**Construction Phase:** Standard international best practice measures for construction sites as per CEMP (Enviroguide, 2024b). **Operational Phase:** Embedded SuDS measures as per Civil Design Statement (AKM, 2024a).
1220 Perennial vegetation of stony banks *Conservation objective:* To maintain the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
Vegetated shingle occurs along the coast where shingle (cobbles, pebbles, and gravel ≥2mm wide) has accumulated to form elevated ridges or banks above the high tide mark.	None	Located *c.* 6km from the Proposed Development. There is no potential for significant effects on this QI habitat.	None
1310 Salicornia and other annuals colonising mud and sand *Conservation objective:* To maintain the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
Salicornia and other annuals colonising mud and sand is a pioneer saltmarsh community that may occur on muddy sediment seaward of established saltmarsh, or form patches within other saltmarsh communities where the elevation is suitable and there is regular tidal inundation.	None	Located *c. 2.66*km from the Proposed Development. There is no potential for significant effects on this QI habitat.	None
1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) *Conservation objective:* To restore the favourable conservation condition of this habitat in Galway Bay Complex SAC.			

Description	Pathway(s)	Assessment of likely significant effects	Suggested Mitigation
Atlantic salt meadows generally occupy the widest part of the saltmarsh gradient. They also contain a distinctive topography with an intricate network of creeks and salt pans occurring on medium and large-sized saltmarshes. Atlantic salt meadows contain several distinctive zones that are related to elevation and submergence frequency.	None	Located <5m from the Proposed Development. As discussed in section 4.5.2.1 and 1.3.3.1, no surface water will leave the Site during Construction or Operation, thus there is no pathway for the propagation of water quality effects from the Proposed Development to this QI habitat.	**Construction Phase:** Standard international best practice measures for construction sites as per CEMP (Enviroguide, 2024b). **Operational Phase:** Embedded SuDS measures as per Civil Design Statement (AKM, 2024a).
1410 Mediterranean salt meadows (*Juncetalia maritimi*) *Conservation objective:* To restore the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
Mediterranean salt meadows occupy the upper zone of saltmarshes and usually occur adjacent to the boundary with terrestrial habitats. They are widespread on the Irish coastline; however, they are not as extensive as Atlantic salt meadows.	None	Located *c.* 1.4km from the Proposed Development. There is no potential for significant effects on this QI habitat.	None
3180 Turloughs *Conservation objective:* To maintain the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
A turlough is a depression in limestone areas that is temporarily flooded by groundwater in most years. Turloughs are usually flooded in winter and dry during summer, though this varies greatly with rainfall and groundwater dynamics. Turloughs are entirely restricted to well-bedded, relatively pure, karstified Carboniferous limestone. Areas with turloughs seldom have rivers; instead water flows below the ground, and turloughs can be described as the floodplains of underground rivers. Turloughs typically contain wetland vegetation communities in their lower zones, and communities more characteristic of drier limestone soils in their upper zones.	None	Located *c.* 5.6km from the Proposed Development. There is no potential for significant effects on this QI habitat.	None

Description	Pathway(s)	Assessment of likely significant effects	Suggested Mitigation
5130 Juniperus communis formations on heaths or calcareous grasslands *Conservation objective:* To restore the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
Juniper formations are mostly associated with lowland dry calcareous and neutral grassland, exposed calcareous and siliceous rock, and dry siliceous and calcareous heath; however, formations can also occur on coastal dunes and at higher altitudes	None	Located *c.* 1.88km from the Proposed Development and upstream. There is no potential for significant effects on this QI habitat.	None
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*)(*important orchid sites) *Conservation objective:* To maintain the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
This calcareous grassland habitat comprises species-rich plant communities on shallow, well-drained calcareous substrates. It is considered a priority habitat if it is an important orchid site. This habitat includes a mixture of grasses and herbs, with calcicole species typically frequent. It usually occurs on obvious geological features such as eskers, outcropping limestone rock and in association with limestone pavement.	None	Located *c.* 950m west of the Proposed Development as per the Irish semi-natural grasslands survey (2013) and terrestrial in nature. There is no potential for significant effects on this QI habitat.	None
7210 Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* *Conservation objective:* To maintain the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
Cladium fens refers to Cladium mariscus beds which are in contact with species-rich vegetation of small-sedge fens (i.e. Cladium mariscus and species of the Caricion davallianae). They occur where there are species-rich open swards of Cladium mariscus with elements of small-sedge fen, fen meadow and tall-herb fen. These may be naturally species-rich or managed to prevent dominance of Cladium mariscus. However, this habitat can also occur where species-poor or mono-dominant stands of Cladium mariscus	None	The full distribution of this habitat within the SAC is unknown, although some locations are known including east of Oranmore and in Ballindereen Lough (NPWS, 2013). This habitat is not present within the Proposed Development Site.	None

Description	Pathway(s)	Assessment of likely significant effects	Suggested Mitigation
transition to species-rich alkaline fen vegetation types at their margins or occur in a mosaic of species-poor and species-rich vegetation.			
7230 Alkaline fens *Conservation objective:* To maintain the favourable conservation condition of this habitat in Galway Bay Complex SAC.			
Alkaline fens are groundwater-fed, generally peat-forming systems with extensive areas of species-rich small sedge and brown moss communities. They occur in areas where there is a high water table and a base-rich, often calcareous water supply. The main pressures facing the habitat in Ireland are land abandonment (and associated succession), overgrazing, drainage and pollution.	None	The full distribution of this habitat within the SAC are unknown, although some locations are known including east of Oranmore and in Ballindereen Lough (NPWS, 2013). This habitat is not present within the Proposed Development Site.	None
1355 Otter *Lutra lutra* *Conservation objective:* To maintain the favourable conservation condition of this species in Galway Bay Complex SAC.			
Ireland is a stronghold for otter, with the most recent distribution data showing that the otter continues to be widespread throughout Ireland in a wide variety of habitat types. Otters have two basic requirements: aquatic prey and safe refuges where they can rest. In Ireland, otter populations are found along rivers, lakes and coasts, where fish and other prey are abundant, and where the bank-side habitat offers plenty of cover. The otter is an opportunistic predator with a broad and varied diet. In coastal areas fish, crabs and molluscs are known to be eaten. The main threats to the otter include pollution, particularly organic pollution resulting in fish kills; and accidental deaths. the otter population (estimated at between 7,000 and 10,000 breeding females) is considered to be increasing and none of the threats or	Air/Land	The Proposed Development is located 28m from this SAC at its closest point, and as such there is the potential for disturbance to otter should breeding otter occupy a holt near the Site prior to the commencement of works. As per the TII (formerly NRA) guidance (2008), no works can occur within 150m of breeding holts (natal dens), and 20m of non-breeding holts, without appropriate mitigation such as screening and consultation with NPWS. Furthermore, should inappropriate lighting be utilized at the Site, including directing lights towards Oranmore Bay, this could lead to disruptions to normal otter foraging behaviour.	**Construction Phase:** A pre-construction otter survey. Suitable lighting to allow for uninterrupted foraging. **Operational Phase:** Suitable lighting to allow for uninterrupted foraging.

Description	Pathway(s)	Assessment of likely significant effects	Suggested Mitigation
pressures identified is considered likely to impact significantly on the species.			
1365 Harbour seal *Phoca vitulina* *Conservation objective:* To maintain the favourable conservation condition of this species in Galway Bay Complex SAC.			
Harbour seal is the smaller of two seal species that commonly breed around the coast of Ireland and inhabit its inshore and offshore waters. The breeding season takes place mainly between May and July each year when pups are born and nursed for a period of about three weeks.	None	Nearest breeding / moulting / haul-out site is located *c.* 900m S of the Proposed Development Site at its closest point and will not be affected by its Construction or Operation as there is no pathway for the propagation of effects between the Site and these important seal sites.	None
Inner Galway Bay SPA (004031)			
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], 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] and Common Tern (*Sterna hirundo*) [A193]. *Conservation objective:* To maintain the favourable conservation condition of these species in Inner Galway Bay SPA.			
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	Air/Land	Disturbance to or displacement of SCI birds within Oranmore Bay as a result of noise and visual stimuli generated during Construction and Operation and Lighting during Operation. Potential for *ex-situ* habitat loss screened out in the accompanying AA Screening (Enviroguide, 2024).	**Construction Phase:** Screening to remove visual stimuli from view of birds within the bay and reduce noise levels reaching the bay. Suitable Lighting that will not disturb birds. High disturbance works should be undertaken between April and September to avoid most sensitive time for wintering birds.

Description	Pathway(s)	Assessment of likely significant effects	Suggested Mitigation
Convention site and part of the Inner Galway Bay SPA is a Wildfowl Sanctuary.			**Operational Phase:** Screening in the form of a vegetated buffer zone planted with trees and shrubs along the southern boundary of the Site as per Landscape Plan (JFA, 2024).
Wetland and waterbirds [A999] *Conservation objective:* To maintain the favourable conservation condition of this habitat in Inner Galway Bay SPA.			
The long shoreline of Inner Galway Bay SPA is noted for its diversity, and comprises complex mixtures of bedrock shore, shingle beach, sandy beach and fringing salt marshes. Intertidal sand and mud flats occur around much of the shoreline, with the largest areas being found on the sheltered eastern coast between Oranmore Bay and Kinvarra Bay. A number of small islands and rocky islets in the Bay are included within the site.	None	As discussed in sections 4.5.2.1 and 1.3.3.1, no surface water will leave the Site during Construction or Operation, thus there is no pathway for the transfer of pollutants from the Site to this habitat leading to subsequent deterioration of water quality affecting wetland and waterbirds.	**Construction Phase:** Standard international best practice measures for construction sites as per CEMP (Enviroguide, 2024b). **Operational Phase:** Embedded SuDS measures as per Civil Design Statement (AKM, 2024a).

4.4.2 Potential for In-combination Effects

4.4.2.1 Existing Planning Permissions

A search of planning applications located within a 2km radius of the Site of the Proposed Development was conducted using online planning resources such as the National Planning Application Database (NPAD) (MyPlan.ie), the Galway City Council Planning Application map viewer (*galwaycityco.maps.arcgis.com*) and Galway County Council Planning Application map viewer (*galwaycoco.maps.arcgis.com*). 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 given in Table 6 below.

TABLE 6. GRANTED AND PENDING DEVELOPMENT APPLICATIONS WITHIN 2KM OF THE PROPOSED DEVELOPMENT OR WITH A CONNECTION TO INNER GALWAY BAY SPA OR GALWAY BAY COMPLEX SAC.

Planning Ref.	Planning Authority	Status	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.		

4.4.2.2 Relevant Policies and Plans

The local policies and plans were reviewed and considered for possible in-combination effects with the Proposed Development. The Galway County Development Plan has

directly addressed the protection of European sites through specific policy objectives which ensure that no new development will give rise to significant effects on any European sites, either individually or in-combination with other plans or projects (except in the rare cases where imperative reasons of overriding public interest exist).

Additionally, the Galway Biodiversity Action Plan is set out to protect and improve biodiversity and thus will not result in negative in-combination effects with the Proposed Development. Therefore, no in-combination effects are expected with the relevant policies and plans.

4.5 Avoidance and Mitigation Measures

The following sections outline the avoidance and mitigation measures identified to eliminate the potential for significant adverse impacts on the relevant European sites. Once the recommended measures outlined in the following sections are implemented in full, no adverse impacts on the relevant European sites or their QIs/SCIs are anticipated as a result of the Proposed Development. These mitigation measures will be included in the accompanying Construction and Environmental Management Plan (CEMP) (Enviroguide, 2024b).

4.5.1 Summary of Potential Effects

Potential significant effects arising from the **Construction Phase** include:

- Disturbance to / displacement of SCI bird species of Inner Galway Bay SPA (004031).
- Disturbance to / displacement of otter, a QI species of Galway Bay Complex SAC (000268).
- Habitat alteration in the event of spread of butterfly bush from the Proposed Development Site to Galway Bay Complex SAC (000268) or Inner Galway Bay SPA (004031).

Potential significant effects arising from the **Operational Phase** include:

- Disturbance to / displacement of otter, a QI species of Galway Bay Complex SAC (000268).
- Disturbance to / displacement of SCI bird species of Inner Galway Bay SPA (004031).

The following mitigation and enhancement measures will ensure no significant effects arise on designated sites as a result of the Proposed Development, either alone or in-combination with other projects.

4.5.2 Embedded Measures

Embedded measures incorporated as a component of the design of the Proposed Development which will have a secondary effect of preventing significant effects on European sites are described below (see section 2.1 for additional information on the legislative context). These include the application of standardised international best practice measures as outlined in the accompanying Construction Environment Management Plan (CEMP), and the Sustainable Drainage Systems (SuDS) which are to be included as part of the overall design of the Operational Phase of the proposal.

4.5.2.1 CEMP

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 extracted from the CEMP (Enviroguide, 2024b) are outlined below:

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.

4.5.2.2 SuDS

It is proposed that all surface water generated at the Site during the Operational Phase will be diverted to infiltrate through the ground, as outlined in section 1.3.3.1 and in full in the accompanying Infrastructure Report (AKM, 2024c). 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 such, during Operation, no surface water carrying pollutants will exit the Site of the Proposed Development and thus the potential for effects propagated via a hydrological pathway is removed.

4.5.3 Construction Phase

4.5.3.1 Mitigation 1: Disturbance to SCI waterbirds

Waterbirds are particularly susceptible when roosting on mudflats such as those present in Oranmore Bay <5m from the Proposed Development Site and during Construction, there is a combined risk of noise and visual disturbance which can result in an additive disturbance effect and even displacement of birds, wasting energy that would otherwise be used for foraging (Cutts et al., 2013). Mitigation to reduce the effects of noise and visual stimuli posed by the Construction works (including human presence, plant, machinery and vehicles) is required at the Site to avoid significant adverse effects on the SCI waterbirds of Inner Galway Bay SPA, as described in Appendix II.

- High disturbance works should be undertaken between April and September to avoid most sensitive time for wintering birds.
- Minimise working time outside of the designated area within the Proposed Development Site.
- Acoustic barriers should be installed along the entire length of the southern boundary of the Site.
- Acoustic barriers should be opaque so as to additionally reduce visual disturbance.

Acoustic barriers are readily available online and have the benefit of reducing noise levels by up to 43dB (*https://www.safesitefacilities.co.uk/products/construction-site-security/acoustic-barriers-noise-barriers*).

Noise levels at the Site in conjunction with SCI birds present in Oranmore Bay will be monitored regularly by a suitably qualified ornithologist to ensure the effectiveness of the acoustic barriers. Monitoring is discussed in more detail in section 4.6.1.

Where works are occurring outside of the wintering bird sensitive season (April to September), monitoring is not required. Acoustic barriers should remain in place.

4.5.3.2 Mitigation 2: Disturbance to Otter

In order to reduce noise and visual disturbance affecting QI species otter, the following mitigation measures are proposed in relation to lighting and avoidance of breeding holts (natal dens):

- Minimise working time outside of the designated area within the Proposed Development Site.
- A pre-construction otter survey covering areas of Oranmore Bay within 150m of the Proposed Development will be conducted 3-4 months prior to the commencement of works to ensure that there are no active breeding holts

present within this distance of the Site and allow time for derogation licence application if required.

- Should an active breeding holt be identified, works are not to commence until a derogation license has been obtained from NPWS and suitable mitigation for the protection of otters is in place.
- Acoustic barriers as described in the above section 4.5.3.1 will also be suitable to reduce noise disturbance to any otter that may be using the area.
- Otters are a nocturnal species that forage at night and are likely to investigate a construction site (CIEEM, 2019). As such, there will be no lighting of the Proposed Development during Construction and works are to be caried out during daylight hours only. If lighting is considered essential to works, the ecologist will be consulted, and directional lighting will be used, in agreement with NPWS.
- A toolbox talk will be delivered to anyone working on-Site prior to the commencement of any works.

4.5.3.3 Mitigation 3: Biosecurity

The following best practice site hygiene and biosecurity measures will be in place to avoid the potential introduction of invasive floral species at the Site and offsite via movement of materials/staff:

- All soils/materials being introduced to the Site will be sourced from a certified invasive flora-free source site, to ensure no introduction of invasive plant materials to the Site occurs.
- Personnel working on or between sites will ensure their clothing and footwear are cleaned, ensuring they are visually free from soil and organic debris, in order to prevent inadvertent spread of invasive plant material.
- All vehicles entering or leaving the Site will have been suitably checked and pressure-washed to ensure no introduction of invasive flora to and from the Site. Measures such as a drive through hygiene bath or footbaths will be considered where appropriate.
- Material/water left after vehicles have been pressure-washed must be contained, collected and disposed of appropriately (these waters must not under any circumstances be discharged to drains or nearby ditches).

4.5.3.4 Mitigation 4: Butterfly bush removal

The following measures are extracted from TII (2020) for the chemical and physical control of butterfly bush:

Chemical control
"Foliar application of herbicide is capable of providing control with young plants and small infestations but should be followed up at six-monthly intervals as regrowth is common".

Physical control

Removal of the flower heads before seed set (June or even July) is an important control method as it reduces the volume of seeds that are available to spread. Hand-picking of young plants will provide control, but it is very tedious and should be undertaken with care to avoid soil disturbance, which can give rise to a flush of new seedling growth. Digging out plants is only practical with relatively minor infestations, at the initial stage of invasion, or where a site is to be excavated for development or road construction purposes. Mowing of young plants does not provide effective control as they re-sprout with vigour. The physical removal of mature stands is not recommended for the same reason. After uprooting, it is essential to plant the ground in order to prevent a flush of new seedling growth. When Buddleia plants are cut, regrowth from the stump can be very vigorous".

Combined chemical and physical control
"Effective control can be achieved by cutting Buddleia plants to a basal stump during active growth (late spring to early summer) and immediately treating the total cut surface with herbicide concentrate. Monitoring will be required and retreatment, as necessary. Do not leave cut stems and branches on the ground as they will re-root and produce new plants."

Recommended Management: Physical removal and off-site disposal of butterfly bush is recommended where it occurs along the southern boundary wall, due to its limited presence on Site (Four plants, between 1-1.5m in height).

4.5.4 Operational Phase

4.5.4.1 Mitigation 5: Invasive Species Management

Certain plant species and their hybrids are listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations* 2011 (SI 477 of 2011, as amended). In addition, soils and other material containing such invasive plant material, are classified in Part 3 of the Third Schedule as vector materials and are subject to the same strict legal controls.

As such, it is recommended that any newly landscaped areas, particularly where infill materials and soils have been imported for soft landscaping, are assessed during the Operational Phase within the next botanical season for the presence of any inadvertently introduced invasive species, with particular focus on those listed on Schedule III of SI 477 of 2011. If invasive species are detected, an Invasive Species Management Plan will be prepared, agreed with the Local Authority and implemented at the earliest possibility to limit the potential for further spread during the Operational lifetime of the Site.

4.5.4.2 Mitigation 6: Artificial Lighting

As the use of lighting cannot be avoided during Operation, the below features for artificial lighting are required at the Site to avoid disturbance to foraging otter using Oranmore Bay.

- Lighting should be directed away from the shoreline.
- Light spill outside of the Site's boundaries should be minimised.

The screening buffer created by the vegetated strip as outlined in the below section 4.5.4.3 will also help in preventing light spill outside of the Site.

4.5.4.3 Enhancement 1: Buffer Strip

A 15-30m wide vegetated buffer is proposed along the entire southern boundary of the Site, stretching northwards, and providing separation between the residential dwellings and Galway Bay Complex SAC (000268) and Inner Galway Bay SPA (004031). This area will be planted with a mixture of wildflower meadow, shrubs and trees as per the accompanying Landscape Plan (SRLA, 2024). The planting schedule is attached in Appendix X, and can be found in full in the Landscape Report, along with specifications for plant material, the requirements of the Landscape Contractor and proposals for monitoring establishment of green spaces. The landscaping will offset habitat loss at the Site to an extent.

4.6 Monitoring

4.6.1 Construction Phase

During the Construction Phase, the following monitoring will be carried out by the Construction contractor to ensure the implemented mitigation measures are maintained effectively:

- Checks of sound levels emitted from the Site during any loud works after installation of acoustic barriers.
- Monitoring for regrowth of invasive species (butterfly bush) after removal.
- Ensuring time spent outside of the Site's bounds by workers is kept to a minimum.
- Should otter be observed within the Site, works should cease immediately and the ecologist notified.

4.6.2 Operational Phase

During the Operational Phase, the following monitoring is recommended to ensure the implemented mitigation measures have been effective:

- Annual Invasive Species Surveys during the optimal botanical survey season for two consecutive years after completion of construction (i.e., if Proposed Development is completed in 2025, annual surveys will take place in 2026 and 2027). These surveys will be undertaken by a suitably qualified ecologist and will allow for early detection of any spread of invasive species that may have occurred as a result of the Proposed Development. If invasive species are detected during these surveys, an invasive species management plan will be prepared and adhered to.
- Management of landscaped areas will be the responsibility of the Landscape Contractor and the Management Company, and monitoring is outlined in full in the accompanying Landscape Report (SRLA, 2024).

5 CONCLUSION

This Natura Impact Statement details the findings of the Stage 2 Appropriate Assessment conducted to further examine the potential direct and indirect adverse effects of the Proposed Development planning application at Oranmore, Co. Galway, on the following European Sites:

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

The above sites were identified by a screening exercise that assessed likely significant effects of a range of impacts that have the potential to arise from the Proposed Development. The Appropriate Assessment investigated the potential direct and indirect effects of the proposed works, both during construction/infill and operation, on the integrity and qualifying interests of the above European Site, alone and in combination with other plans and projects, taking into account the site's structure, function and conservation objectives.

Where potentially significant effects were identified, a range of mitigation and avoidance measures have been suggested to avoid them. This NIS has concluded that, once the avoidance and mitigation measures are implemented as proposed, the Proposed Development will not have an adverse effect on the integrity of the above European site(s), individually or in combination with other plans and projects. Where applicable, a suite of monitoring surveys have been proposed to confirm the efficacy of said measures in relation to ensuring no adverse impacts on the habitats of the relevant European sites have occurred.

As a result of the complete, precise and definitive findings in of this NIS, it has been concluded, beyond reasonable scientific doubt, that the Proposed Development will have no significant adverse effects on the QIs, SCIs and on the integrity and extent of Galway Bay Complex SAC or Inner Galway Bay SPA. Accordingly, the Proposed Development will not adversely affect the integrity of any relevant European site.

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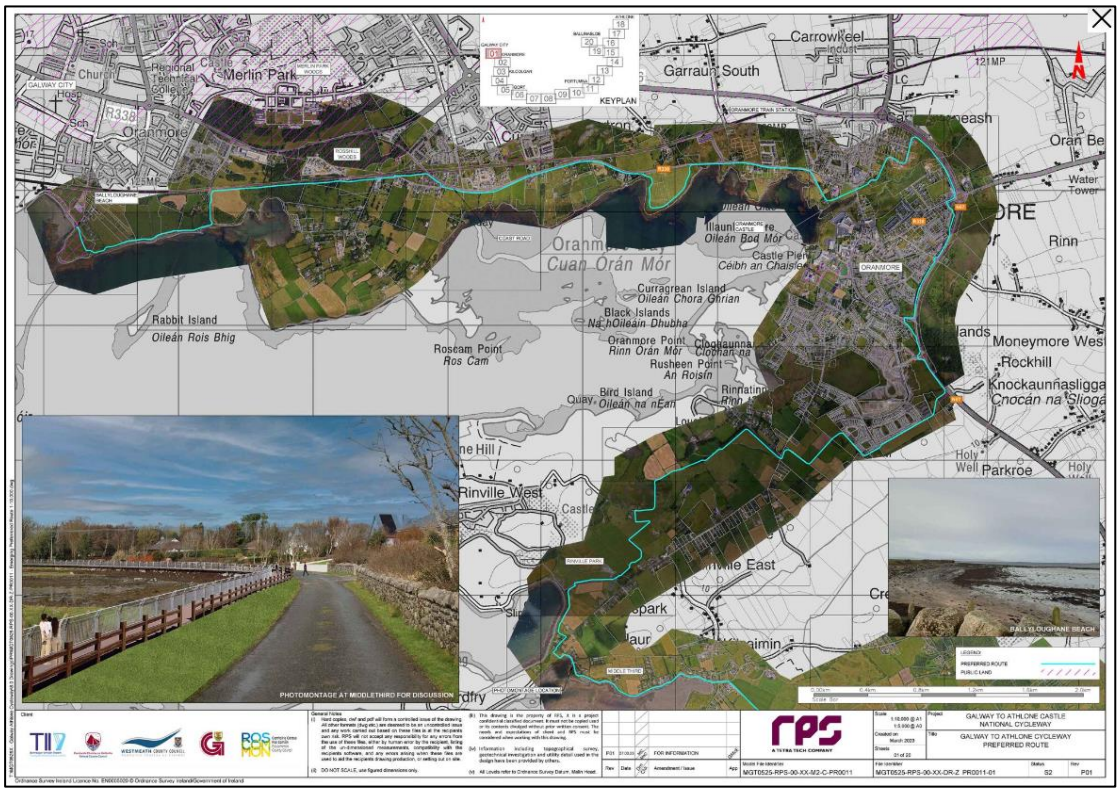
Appendix I – Proposed Cycleway



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-tailed 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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