

Appropriate Assessment Screening Report and Natura Impact Statement

Kingston Park and Millers
Lane - Public Park and
Urban Realm Project





DOCUMENT DETAILS

Client: **Galway County Council**

Project Title: **Kingston Park and Millers Lane - Public Park and Urban Realm Project**

Project Number: **240298**

Document Title: **Appropriate Assessment Screening Report and Natura Impact Statement**

Document File Name: **NIS F- 2025.11.07- 240298**

Prepared By: **MKO
Tuam Road
Galway
Ireland
H91 VW84**



Rev	Status	Date	Author(s)	Approved By
01	Final	2025.11.07	MK	SF, JH

Table of Contents

1.	INTRODUCTION.....	1
1.1	Background.....	1
1.2	References to Proposed Development.....	1
1.3	Statement of Authority.....	2
1.4	Methodology.....	2
1.4.1	Appropriate Assessment Process.....	2
1.4.2	Ecological Survey Methodologies.....	3
1.4.2.1	Ecological Multidisciplinary Walkover Survey.....	3
1.4.2.2	Wintering bird surveys.....	3
1.4.2.3	Breeding Bird surveys.....	3
1.4.3	Scoping and Consultation.....	6
1.4.4	Desk Study.....	6
2.	DESCRIPTION OF PROPOSED DEVELOPMENT.....	7
2.1	Site Location.....	7
2.2	Characteristics of the Proposed Development.....	9
2.2.1	Development Description.....	9
2.2.2	Construction Details.....	10
2.2.2.1	Site Drainage.....	10
2.2.2.2	Watermains.....	11
2.2.2.3	Landscaping and Amenity Areas.....	12
3.	CHARACTERISTICS OF THE RECEIVING ENVIRONMENT.....	14
3.1	Hydrological Desk Study.....	14
3.2	Results of Baseline Ecological Surveys.....	14
3.2.1	Habitats Present on the Site and Surrounding Area.....	14
3.2.1.1	Kingston Park.....	15
3.2.1.2	Millers Lane.....	20
3.2.2	Wintering Bird Survey Results.....	23
3.2.2.1	Kingston Park.....	23
3.2.2.2	Millers Lane.....	23
3.2.3	Breeding Bird Survey Results.....	24
3.2.3.1	Kingston Park.....	24
3.2.3.2	Millers Lane.....	25
4.	APPROPRIATE ASSESSMENT SCREENING.....	26
4.1	Identification of Relevant European Sites.....	26
4.2	Appropriate Assessment Screening Conclusion.....	34
5.	INFORMATION TO INFORM APPROPRIATE ASSESSMENT.....	35
5.1	Identification of relevant Qualifying Features and Desk Study.....	36
5.1.1	Galway Bay Complex SAC.....	36
5.1.1.1	Identification of Individual Qualifying Features with the Potential to be Affected.....	36
5.1.1.2	Site Specific Pressures and Threats.....	41
5.1.1.3	QI Habitat Specific Information.....	42
5.1.1.4	QI Species Specific Information.....	50
5.1.2	Inner Galway Bay SPA.....	52
5.1.2.1	Identification of Individual Qualifying Features with the Potential to be Affected.....	53
5.1.2.2	Site Specific Pressures and Threats.....	57
5.1.2.3	SCI Habitat Specific Information.....	58
6.	ASSESSMENT OF POTENTIAL EFFECTS & ASSOCIATED MITIGATION.....	59
6.1	Potential for Direct Effects on the European Sites.....	59
6.2	Potential for Indirect Effects on the European Sites.....	59
6.3	Deterioration of Water Quality.....	59
6.3.1	Construction Phase.....	60

6.3.1.1	Surface Water.....	60
6.3.1.2	Refuelling, Fuel and Hazardous Materials Storage.....	61
6.3.1.3	Spill Control Measures.....	61
6.3.1.4	Cement Based Products Control Measures.....	62
6.3.1.5	Dust control.....	62
6.3.1.6	Earthworks.....	62
6.3.1.7	Environmental Monitoring.....	63
6.3.2	Operational Phase.....	63
6.3.2.1	Surface Water.....	63
6.3.2.2	Foul Water.....	63
6.4	Decommissioning Phase.....	63
7.	ASSESSMENT OF RESIDUAL ADVERSE EFFECTS.....	64
8.	ASSESSMENT OF CUMULATIVE EFFECTS.....	65
8.1	Plans.....	65
8.2	Projects.....	66
8.3	Conclusion of Assessment of Cumulative Effects.....	68
9.	CONCLUDING STATEMENT.....	69
	BIBLIOGRAPHY.....	70

TABLE OF FIGURES

<i>Figure 1-1 Bird Survey Vantage Points.....</i>	<i>5</i>
<i>Figure 2-1 Site Location Map.....</i>	<i>8</i>
<i>Figure 4-1 European Designated Sites.....</i>	<i>27</i>

APPENDICES

Appendix 1.....	Site Layout
Appendix 2.....	Engineering Planning Report
Appendix 3.....	Site Drainage Plan
Appendix 4.....	Confirmation of Feasibility Letter
Appendix 5.....	Landscaping Plan
Appendix 6.....	Wintering Bird Survey Results
Appendix 7.....	Breeding Bird Survey Results
Appendix 8.....	Review of Plans and Projects

1. INTRODUCTION

1.1 Background

MKO has been appointed to provide the information necessary to allow the competent authority to conduct an Article 6(3) Appropriate Assessment of the Proposed Development and upgrade of Kingston Park and Millers Lane in Knocknacarra, Galway.

Screening for Appropriate Assessment is required under Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). Where it cannot be excluded that a project or plan, either alone or in combination with other projects or plans, would have a significant effect on a European Site then same shall be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives. The current project is not directly connected with, or necessary for, the management of any European Site. Consequently, the project has been subject to the Appropriate Assessment Screening process.

This Natura Impact Statement (NIS) has been prepared in accordance with:

- European Commission's Assessment of Plans and Projects Significantly affecting Natura 2000 Sites. Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (EC, 2021)
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)
- Department of the Environment's Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DoEHLG, 2010)
- Appropriate Assessment Screening for Development Management. Office of the Planning Regulator, Dublin 7, Ireland OPR (2021).

1.2 References to Proposed Development

The Proposed Development is referenced within this NIS as follows:

- For the purpose of this report, the term 'Site Boundary' or 'site' refers to the red line boundary, comprising the entire area shown in Figure 2-1. This includes the proposed park sites at both Kingston Park and Millers Lane.
- For the purpose of this report, the term 'Likely Zone of Impact' of the proposed development refers to the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This is established on a case-by-case basis using the Source-Pathway-Receptor framework.
- The proposed public park development, including active travel links, car parking, and ancillary works is referred to as 'the proposed development'.

1.3

Statement of Authority

This report has been prepared by Mairead Kavanagh (B.Sc.) and reviewed by Sara Fissolo (B.Sc.) and John Hynes (B.Sc. M.Sc.). Mairead has over two years' professional experience in ecological consultancy. Sara and John have over five and fifteen years' professional experience in ecological consultancy respectively. Baseline ecological surveys were carried out by Mairead Kavanagh of MKO and accompanied by Cormac Roberts. Wintering bird surveys were carried out by MKO ecologists Mairead Kavanagh, Deepali Mooloo (B.Sc., M.Sc.), Fiona Keelin (B.Sc, M.Sc.), Katy Beckett (B.Sc, M.Sc), Ciara Lynn-Sheehan (B.Sc) and Caití Farren (B.Sc). Breeding Bird surveys were carried out by Mairead Kavanagh. and Chandra Walter (B.Sc., M.Sc.) of MKO. All surveyors possess the relevant academic qualifications and are competent in undertaking the ecological surveys in which they were involved.

1.4

Methodology

1.4.1

Appropriate Assessment Process

Screening - The purpose of the screening stage is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, either alone or in combination with other plans or projects, is likely to have significant effects on a European site in view of the site's conservation objectives.

There is no necessity to establish such an effect; it is merely necessary for the Competent Authority to determine that there may be such an effect. The need to apply the precautionary principle in making any key decisions in relation to the tests of Appropriate Assessment has been confirmed by the case law of the Court of Justice of the European Union (CJEU). Plans or projects that have no appreciable effect on a European site may be excluded. The threshold at this first stage is a very low one and operates as a trigger in order to determine whether Appropriate Assessment of a project is required. Therefore, where significant effects are likely, uncertain or unknown at screening stage, an AA of the project will be required.

Appropriate Assessment - This stage of the process is a focused and detailed examination, analysis and evaluation by the Competent Authority of the implications of the plan or project, either alone or in combination with other plans and projects, on the integrity of a European site in view of that site's conservation objectives. Case law has established that such an Appropriate Assessment, to be lawfully conducted must:

- (i) identify, in the light of the best scientific knowledge in the field, all aspects of the proposed project which may, by itself or in-combination with other plans or projects, affect the conservation objectives of the European site;
- (ii) contain complete, precise and definitive findings and conclusions and may not have lacunae or gaps; and
- (iii) may only include a determination that the proposed project will not adversely affect the integrity of any relevant European site where the competent authority decides (on the basis of complete, precise and definitive findings and conclusions) that no reasonable scientific doubt remains as to the absence of potential adverse effects. If adverse impacts can be satisfactorily avoided or successfully mitigated at this stage, so that no reasonable doubt remains as to the absence of the identified potential effects, then the process is complete. If the assessment is

negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to stage three (assessment of alternative) and, if necessary, stage four (IROPI¹).

1.4.2 Ecological Survey Methodologies

1.4.2.1 Ecological Multidisciplinary Walkover Survey

Assessing the impacts of any project and associated activities requires an understanding of the ecological baseline conditions prior to and at the time of the project proceeding. Ecological baseline conditions are those existing in the absence of proposed activities (CIEEM 2018).

A multidisciplinary walkover survey was conducted on the 13th of June 2025 by Mairead Kavanagh of MKO and accompanied by Cormac Roberts in line with NRA (2009) guidelines (*Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*). Habitats were identified in accordance with the Heritage Council's 'Guide to Habitats in Ireland' (Fossitt, 2000). Plant nomenclature for vascular plants follows 'New Flora of the British Isles' (Stace, 2019), while mosses and liverworts nomenclature follows 'Mosses and Liverworts of Britain and Ireland - a field guide' (British Bryological Society, 2010). During the surveys, the site was searched for species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations (S.I. 477 of 2011).

1.4.2.2 Wintering bird surveys

Six dedicated wintering bird surveys were conducted by MKO ecologist Mairead Kavanagh, Deepali Mooloo (B.Sc., M.Sc.), Fiona Keelin (B.Sc, M.Sc.), Katy Beckett (B.Sc, M.Sc), Ciara Lynn-Sheehan (B.Sc) and Caití Farren (B.Sc) at the proposed development site at Millers Lane on the 23rd October, 14th November, 4th December in 2024 and 24th January, 14th February, and 26th March in 2025. Five wintering bird surveys were carried out at the Kingston Park site on the 14th November and 4th December 2024 and 24th January, 14th February and 26th March 2025. The aim of these surveys was to investigate the bird species utilising the habitats within the proposed development site.

Target species for these surveys included birds which are Red Listed or listed under Annex I of the Birds Directive or Special Conservation Interest (SCI) of Inner Galway Bay SPA and Lough Corrib SPA.

Survey methodology followed the Irish Wetland Bird Survey (2021) and Lewis and Tierney (2014). For the purposes of the survey, waterbirds comprised all species of the following taxa: swans, geese, and ducks; cormorant, shag, divers and grebes; auks; seabirds; gulls, terns and skuas; herons, egrets and crane; rails and crakes; waders; and kingfisher. Due to their strong association with aquatic or marine habitats, the species chough, grey wagtail and dipper were also treated as waterbirds for the purposes of these surveys.

All sites were visited during daylight hours, and all waterbirds observed from suitable vantage points/transects were recorded and mapped. The surveyor remained at each vantage point until all visible birds were counted and then moved to the next vantage point. Only birds actively using the site (i.e. for foraging, roosting and maintenance behaviours) were recorded. Birds not actively using the site (i.e. commuters or flyovers) were not included.

1.4.2.3 Breeding Bird surveys

Survey methodology followed NRA (2009) *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*, which recommends a 'scaled-down' survey

¹ IROPI - 'imperative reasons of overriding public interest', the test found in Article 6(4) of the Habitats Directive.

protocol bases upon the specifications of the Common Bird Census (CBC) methodology. Three survey visits were conducted at each site during the breeding season on the 17th of April, 13th of May, and 13th of June 2025 by Mairead Kavanagh (B.Sc.) and Chandra Walter (B.Sc.) of MKO. Each survey started within an hour after sunrise and finished before 12 noon.

Target species also included Special Conservation Interests (SCIs) of Special Protection Areas (SPAs) within the likely zone of influence, as well as those on the Birds of Conservation Concern in Ireland (BoCCI) Red List and Annex I of the EU Birds Directive. All other bird species observed within and adjacent to the study area, including all common and widespread passerines, were recorded as incidentals.

All birds were counted using the ‘look-see’ method, whereby all birds present within a predefined area are counted (Bibby *et al.*, 2000). The surveys were carried out at suitable vantage points, located overlooking sections of the study area. Vantage points were chosen to have as large as possible a view of the study area and potential adjacent daytime feeding habitat in the vicinity of the study area. Vantage points focused on areas which were deemed to be of likely significance to breeding birds of SPAs within the likely zone of influence. Transects through the study area were also used to cover larger areas of ground while recording all birds in sight, with an effort to walk within 50m of all key habitat features, where possible.

For each observation, the date, species, number of birds, activity and any other notes of interest were recorded. Only birds actively using the study area (i.e. for foraging, roosting and maintenance behaviours) were recorded. Birds not actively using the study area (i.e. commuters or flyovers) were noted but not included in the Tables in Section 3 below. Auditory records were also recorded and noted as such.

Vantage points used in the wintering and breeding bird surveys are shown in Figure 1-1 below.



Map Legend

- Redline Boundary
- Bird Survey Vantage Points
- Breeding Bird Transect
- Wintering Bird Transect (November 2024)



Microsoft product screen shots reprinted with permission from Microsoft Corporation
© Ordnance Survey Ireland. All rights reserved. Licence number CYAL50267517

Drawing Title
Bird Survey Vantage Point Locations

Project Title
Kingston Park and Millers Lane - Public Park and Urban Realm Project

Drawn By	Checked By
MK	JH
Project No.	Drawing No.
240298	Figure 1-1
Scale	Date
1:5,000	21.10.2025

MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email: info@mkofireland.ie
Website: ww.mkofireland.ie

1.4.3 Scoping and Consultation

A scoping request was sent to the National Parks and Wildlife Service (NPWS) on the 26th of September 2025 through the Development Applications Unit (DAU) outlining the Proposed Development details and the ecological surveys being undertaken to inform the ecology reports accompanying the planning application. The purpose of the scoping requests was to obtain comments or observations in relation to the development and the ecological surveys undertaken to date. A reply was received on the 29th of September 2025 acknowledging receipt of the consultation. No further response has been received to date.

1.4.4 Desk Study

The desk study undertaken for this assessment included a thorough review of the available ecological data associated with the screened-in European Sites within the Likely Zone of Influence of the Proposed Development. Sources of data included the following:

- Review of NPWS Conservation Objectives supporting documents, site synopsis, standard data forms and supporting documents for European Designated Sites,
- Review of online web-mappers: National Parks and Wildlife Service (NPWS), Environmental Protection Agency (EPA),
- Review of the publicly available National Biodiversity Data Centre (NBDC) web-mapper,
- Review of NPWS Article 17 metadata and GIS database.

2.

DESCRIPTION OF PROPOSED DEVELOPMENT

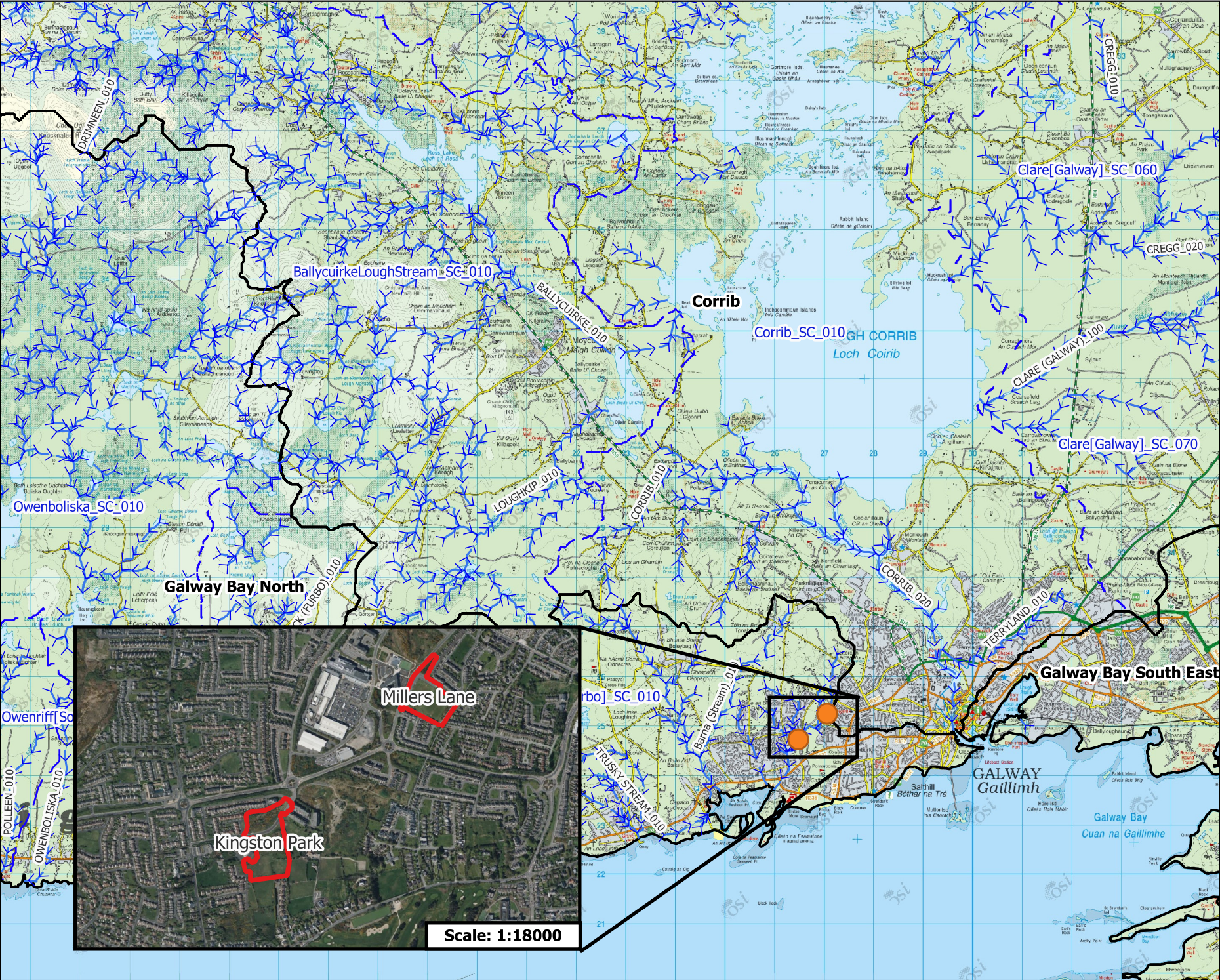
2.1

Site Location

The site of the Proposed Development is located in two areas, Kingston Park (ITM 526448.98513825, 724746.52087687) and Millers lane (ITM 527031.78106342, 725263.57457878). Kingston Park is accessed via a local road referred to as the Altan Road. It is located adjacent to the St. John the Apostle, Knocknacarra National School and existing residential buildings and a proposed large scale residential development.

Millers Lane is accessed via the L-5000 Gort na Bró Road, which runs along the western boundary of the site. It is located adjacent to the Gateway shopping centre and Gaelscoil Mhic Amhlaigh Primary School.

The sites are located in the townlands of Clybaun and Ragoon, Galway City. approximately 2.9km west of the centre of Galway City. The site of Millers land is 2.44 Ha and the Kingston Park is 4.43 Ha.



- Map Legend
- Kingston Park and Millers Lane Red Line Boundary
 - Park Locations
 - WFD Hydrological Catchments
 - WFD Hydrological Subcatchments
 - WFD River Waterbodies

Microsoft product screen shots reprinted with permission from Microsoft Corporation
© Ordnance Survey Ireland. All rights reserved. Licence number CYAL0267517

Site Location	
Project Title	
Kingston Park and Millers Lane - Public Park and Urban Realm Project	
Drawn By	Checked By
MK	JH
Project No.	Drawing No.
240298	Figure 2-1
Scale	Date
1:100,000	21.10.2025

MKO
Planning and Environmental Consultants
Tuan Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email: info@mkofireland.ie
Website: ww.mkofireland.ie

2.2

Characteristics of the Proposed Development

The proposed development consists of the development of a public park at Kingston Park, and the redevelopment of an existing public park at Miller's Lane, located in the Clybaun and Ragoon townlands respectively.

2.2.1

Development Description

The refurbishment and expansion of the existing park (site area 2.44Ha) located on Millers Lane, including:

- I. Relocation and replacement of the 2 no. existing football pitches with: 1 no. new 4G synthetic turf multi-sport pitch (designed to soccer pitch dimensions) with associated fencing and 6 no. floodlights; and 1 no. new 2G sand-filled synthetic multi-sport pitch (designed to hockey pitch dimensions) with associated fencing and 6 no. floodlights.
- II. New two-storey, multi-functional building which includes public and sports team changing rooms, showers and toilets; multi-purpose sports hall; multi-purpose activity rooms; kitchenette; 2 no. viewing terraces; first-aid room; store rooms; plant rooms; reception area; and roof-mounted solar panels.
- III. New public spaces and amenities including fenced children's play areas; internal paths; multi-use games area; climbing wall; calisthenics area; public plaza; pitch spectator areas; equipment storage shed; green space for passive recreation; public lighting; and public seating.
- IV. Extensive landscape planting (including native genus and species) and nature-based drainage measures including pollinator-friendly raingarden/ bioretention areas and reinforced grass paving, as well as planting areas with typologies including native and naturalised wooded areas, avenue tree planting, clipped hedges, short-flowering meadow, and pollinator-friendly perennials.
- V. Relocated vehicular access on the L-5000 Road; 2 no. new active travel accesses from the L-5000 Road; and enhanced pedestrian / cyclist access from Millers Lane.
- VI. 27 no. car parking spaces (2 no. standard EV charging spaces, 1 no. accessible space, 1 no. combined EV and accessible space, 1 no. family space, and 1 no. age-friendly space), 2 no. coach drop-off spaces with automated access control, 3 no. motorcycle spaces, and 64 no. cycle spaces (40 no. standard short-term spaces, 2 no. short term cargo-bike spaces, and a secure bike shed with 20 no. standard and 2 no. cargo-bike spaces).

The development of the northern half of the proposed Kingston Park (site area 3.43Ha), including:

- I. The development of 1 no. 4G synthetic turf multi-sport pitch (designed to rugby pitch dimensions) with associated fencing and 6 no. floodlights.
- II. New two-storey, multi-functional building which includes public and sports team changing rooms, toilets, and showers (standard and accessible); double-height general purpose community hall including retractable bleacher seating; multi-purpose activity rooms (including 3 no. rooms offering direct views onto the playing pitch); commentary booth; café and servery; sensory room; first-aid room; store room; plant room; reception area; and roof-mounted solar panels.
- III. New public spaces and amenities including all-ages play area, outdoor classroom / amphitheatre; internal paths; multi-functional gaming area; informal games lawn; boules pitch; calisthenics area; performance space; pedestrian gateway plaza; parks department staff kiosk; refuse store; sports equipment sheds; public lighting; and public seating.
- IV. Extensive landscape planting (including native genus and species) and nature-based drainage measures including pollinator-friendly raingarden/ bioretention areas; reinforced grass paving; native hedgerows; short- and long-flowering meadows; wildflower gardens; native and naturalised wooded areas and pollinator-friendly perennials and shrubs.

- V. Replacement of the existing vehicular site access / junction on the Altan Road, and modification of the new access road approved under permitted Aquatic Centre Development (Pln. Ref. 24/60370) to account for the layout of this proposed development.
- VI. Improvement of existing active travel entrance from Doire Gheal, improved links to the St. John the Apostle, Knocknacarra National School (via a Safe Routes to School), new active travel accesses from the Altan Road, and provision for 2 no. potential future accesses to lands to the east (northeast of Kingston Gardens).

A site layout is included in Appendix 1 of this report.

2.2.2 Construction Details

The site compound, construction operations, waste management, proposed site drainage, site services, flood risk, and landscape plan are summarised below.

2.2.2.1 Site Drainage

An Engineering Planning Report has been prepared by PUNCH consulting engineers as part of this planning application and is included in Appendix 2. This details the proposed site drainage design including surface water runoff, foul water drainage and watermains supply for the Proposed Development. The site drainage plan is summarised below, and the proposed site drainage drawings are included in Appendix 3 of this report.

2.2.2.1.1 Proposed Surface Water Network

Both sites are serviced by existing surface water drains. This network will be modified during the Proposed Development. Additionally, Sustainable Drainage Systems (SuDS) measures will be implemented within the site with the aim of managing surface water run-off.

Kingston Park

The proposed surface water drainage will consist of a network of filter drains that run underneath the proposed playing pitch, these will connect to a new proposed surface water pipe in the south western corner of the pitch that will connect to the existing surface water sewer that runs close to the western boundary of the site. The filter drains will also drain into a diffuser box located along the northern edge of the playing pitch. This attenuation tank will drain into a proposed surface water drainage network that will connect to the existing combined sewer that runs through the northern portion of the site. Filter drains will also be present in the carparking area of the site, and these will drain into the proposed drainage network and subsequently connects into the existing surface water sewer.

Millers Lane

The proposed surface water drainage will consist of filter drains running underneath the proposed playing pitches and along the edges of the carparking area. These filter drains will drain into a proposed surface drainage network that will connect to the existing surface water sewer that runs close to the western boundary. Two diffuser boxes are proposed, located underneath the western playing pitch.

SuDS Proposals

All SuDS measures are to be implemented with reference to the UK SuDS Manual and Galway City's Council Development Standards.

The SuDS measures aim to reduce the impact of urbanisation by replicating the runoff characteristics of the greenfield site through the introduction of bioretention areas, permeable grass paving and the green roof.

The SuDS design for the Proposed Development will include sections of reinforced grass located in the carparking areas of both Kingston Park and Millers Lane. Bioretention rain garden planting will be implemented in the areas surround car parking, with some tree pit planting included.

Bioretention Areas

The bio-retention areas will incorporate drainage stone/subsoil and will provide a level of additional attenuation within the bioretention areas. Bioretention systems allow the stormwater to filter downwards through a filter medium removing finer contaminants along the way. These will be bordering carparking areas to help mitigate surface water run-off.

Permeable Artificial Pitch and Permeable Grass Paving

A permeable grass paving surface will be used for the car parks across both Kingston Park and Millers Lane. The proposed artificial pitches will be permeable to allow the diffusion of surface water into the soil below. Green Roof and Rainwater Harvesting

A green roof, consisting of a vegetation covered roof will be installed on the proposed buildings within Kingston Park and Millers Lane.

Surface water run-off will be collected from these roofs and will be implemented into a rainwater harvesting system that will be utilised in the buildings. This will help to reduce the level of runoff from the site and help to reduce the area that is needed for attenuation.

2.2.2.1.2 Proposed Foul Water Drainage

The proposed foul water sewer has been modelled using Causeway Flow software in accordance with the “Code of Practice for Wastewater Infrastructure” (particularly clause 3, published by Uisce Éireann). Details of the foul water drainage for the site are included in the Engineering Planning Report that is included in the planning application for this project.

Kingston Park

The Proposed foul water drainage system will be designed to service the proposed two-story building in the centre of the site and will consist of two sewer lines running parallel along both sides of the proposed building. These lines will converge south of the building and will connect to the existing foul sewer network that runs along the western boundary of the Proposed Development.

Millers Lane

The proposed foul water drainage system will serve the proposed two-storey building in the centre of the site. It will consist of two foul sewer lines that will run parallel east and west of the building and will converge and flow south of the building before connecting to the existing foul water sewer network via an existing manhole at the south-west corner of the site.

2.2.2.2 Watermains

Kingston Park

There is an existing watermain that transverses through the site of the Proposed Development and through the footprint of the proposed building. It connects to a 150mm diameter watermain east of the

site. As the watermain is located within the footprint of the proposed building, it must be re-located in line with Uisce Éireann's regulations. The proposed diversion will run along the northern edge of the proposed building, service it via a proposed watermain connection, and then reconnect to the diverted watermain west of the site.

Millers Lane

The proposed watermain network will be designed to service the proposed two-story building. The network will consist of a single watermain connection that will enter the site north of the soccer pitch, will run parallel to the eastern boundary of the soccer pitch, and will connect to the proposed building at its southern side.

A pre-connection enquiry was undertaken for the development in relation to a Water and Wastewater connection. A confirmation of feasibility letter was received from Uisce Éireann and is available in Appendix 4.

2.2.2.3 Landscaping and Amenity Areas

A landscape plan was prepared by DRLA Landscape Architects for the proposed development. Landscaping plans, including planting lists are included in Appendix 5 of this report.

Kingston Park

In the northern section of the proposed development the northern boundary will be planted with a double row of clipped hedge consisting of the species (*Acer campestre*), (*Carpinus betulus*) and (*Crataegus monogyna*). Adjoining this, in the north eastern and north western corners of the site are pockets of planted multi-stem and semi-mature trees, planted with a proposed woodland edge planting mix including (*Corylus avellana*), (*Ilex aquifolium*), (*Viburnum opulus*) and (*Cornus sanguinea*). Bordering these pockets of woodland is a strip of long flowering meadow, seeded with native sourced Irish wildflower seed, following guidelines set out in the All Ireland Pollinator Plan. Bordering the long flowering meadow strips is a strip of short flowering meadow, also seeded with native wildflower seed. Areas of short flowering meadow are also proposed for the outdoor seating area in the north western corner of the site, and on traffic islands in the car parking area. Proposed rain garden planting is proposed in the car park area, and will include (*Alchemilla mollis*), (*Aster frikartii* 'Mönch'), (*Bergenia cordifolia*), (*Geranium* 'Rozanne'), (*Hemerocallis* 'Burning Daylight'), (*Helenium* 'Moerheim Beauty'), (*Rudbeckia fulgida* 'Yellow Goldstar'), (*Monarda didyma*), (*Stachys byzantina*), (*Iris sibirica*), (*Calamagrostis brachytricha*), (*Carex pendula*), (*Viburnum opulus* 'Nanum'), (*Cornus kousa*). Most of the proposed rain garden areas will include bioretention tree planting with species chosen for their water tolerance, including (*Alnus glutinosa*), (*Betula pubescens*), (*Liquidambar styraciflua* 'Worplesdon') and (*Ulmus* 'Columnella'). Sections of pollinator friendly planting are to be planted along the borders of the proposed community building and will include species that have been selected in line with guidance from the All Ireland Pollinator Plan, including (*Anemone*), (*Berberis darwinii*), (*Echinops*), (*Echinacea purpurea*), (*Euonymus europaeus*), ground cover roses, (*Helenium*), (*Lamium maculatum*), (*Lonicera*), (*Mahonia*), (*Nepeta*), (*Perovskia*), (*Persicaria*), (*Rosmarinus officinalis*), (*Viburnum tinus*), (*Nepeta*), (*Sarcococca hookeriana*), (*Salvia*), (*Sedum*), (*Stachys byzantina*), (*Viburnum opulus* 'Nanum').

South of Altan Road, the clipped hedge boundary will continue to include the entire boundary of the park. Trees will be planted along the eastern boundary, in combination with a woodland edge planting mix, bordered by a short flowering meadow. Trees will also be planted within the south western corner, accompanied by a woodland edge planting mix, and bordered by a strip of long flowering and short flowering meadow. A strip of short flowering meadow will border the active travel path that runs through the western portion of the site; this will be accompanied by pollinator-friendly shrub planting, including: (*Anemone*), (*Berberis darwinii*), (*Echinops*), (*Echinacea purpurea*), (*Euonymus europaeus*),

ground cover roses, (*Helenium*), (*Lamium maculatum*), (*Lonicera*), (*Mahonia*), (*Nepeta*), (*Perovskia*), (*Persicaria*), (*Rosmarinus officinalis*), (*Viburnum tinus*), (*Nepeta*), (*Sarcococca hookeriana*), (*Salvia*), (*Sedum*), (*Stachys byzantina*), (*Viburnum opulus 'Nanum'*).

The children's play area will be bordered by short flowering meadow, and will feature pollinator-friendly planting and tree planting in the centre.

Millers Lane

The north eastern boundary of Millers Lane will be planted with multi-stemmed trees alongside a woodland edge planting mix. Species include (*Amelanchier lamarckii*), (*Betula pendula*), (*Betula jacquemontii*), (*Malus 'Rudolph'*) and (*Sorbus aucuparia*). In the car parking area, semi-mature trees will be planted adjacent to the coach parking; species will include (*Acer campestre 'Elsrijk'*), (*Prunus avium 'Plena'*), (*Quercus robur*), and (*Sorbus aucuparia 'Autumn Spire'*). Extensive rain garden planting will be implemented in the car parking area and will include (*Alchemilla mollis*), (*Aster frikartii 'Mönch'*), (*Bergenia cordifolia*), (*Geranium 'Rozanne'*), (*Hemerocallis 'Burning Daylight'*), (*Helenium 'Moerheim Beauty'*), (*Rudbeckia fulgida 'Yellow Goldstar'*), (*Monarda didyma*), (*Stachys byzantina*), (*Iris sibirica*), (*Calamagrostis brachytricha*), (*Carex pendula*), (*Viburnum opulus 'Nanum'*), and (*Cornus kousa*). Some of these rain gardens will feature bioretention tree planting, including species selected for water tolerance: (*Alnus glutinosa*), (*Betula pubescens*), (*Liquidambar styraciflua 'Worplesdon'*), and (*Ulmus 'Columnella'*). A double clipped hedge, featuring (*Acer campestre*), (*Carpinus betulus*) and (*Crataegus monogyna*), will be planted around the site boundary. Pollinator-friendly planting will be implemented along the borders of the playing pitches and the playground. This will feature species such as (*Anemone*), (*Echinops*), (*Echinacea purpurea*), (*Euonymus europaeus*), ground cover roses, (*Helenium*), (*Lamium maculatum*), (*Lonicera*), (*Mahonia*), (*Nepeta*), (*Perovskia*), (*Persicaria*), (*Rosmarinus officinalis*), (*Viburnum tinus*), (*Nepeta*), (*Sarcococca hookeriana*), (*Salvia*), (*Sedum*), (*Stachys byzantina*), and (*Viburnum opulus 'Nanum'*). A line of semi-mature trees along the pedestrian path located close to the south western boundary will be bordered by a strip of short flowering meadow. Existing trees along the path will be retained. A small section of proposed woodland edge planting will be located adjacent to the most eastern playing pitch and in the south western corner, near the existing pedestrian entrance to the park. An existing strip of wildflower meadow with some existing planted semi-mature trees located along the eastern boundary of the park will be retained.

3. CHARACTERISTICS OF THE RECEIVING ENVIRONMENT

3.1 Hydrological Desk Study

The Knocknacarragh stream (order 1) (IE_WE_31K160960) and the Knocknacarragh stream (order 3) (EPA code IE_WE_31K160960) are entirely culverted underneath the Millers lane and Kingston Park sites in a south westerly direction through a concrete pipe that forms part of the public sewer network. This eventually empties into Rusheen Bay and provides a hydrological connection to the Galway Bay Complex SAC and the Inner Galway Bay SPA approximately 1.1km and 1.2km downstream respectively.

Both sites are located in the Spiddal groundwater body. The Kingston park site is located in an area high and extreme groundwater vulnerability and the Millers Lane site is located in an area of extreme groundwater vulnerability and exposed rock.

3.2 Results of Baseline Ecological Surveys

The results of the Baseline Ecological Surveys are outlined in the sections below.

3.2.1 Habitats Present on the Site and Surrounding Area

The Proposed Development is split between two sites, Kingston Park and Millers Lane. Kingston Park is a greenfield site, and consists of two parcels of undeveloped land. Some of this land is subjected to grazing by horses and the remainder was subjected to recent scrub clearance. The site is bisected by a local access road, known as Altan Road that connects the adjacent school and residential areas to the western distributor road.

Millers' lane consists of two sports pitches that are currently in use as well as an adjacent area of unmanaged scrub located north of the pitches. Landscaping and other infrastructure, including public paths and a planted treeline are also present within the site.

No protected habitats were recorded during walkover surveys.

The culverted Knocknacarragh stream runs underground through both sites.

Further details on the habitat classification in both sites are described below.

3.2.1.1 Kingston Park

Recolonising bare ground (ED3) (Plate 3-1) was the dominant habitat within the Kingston Park site. Created as a result of recent scrub clearance, it consisted of mainly pioneer species including hedge bindweed (*Calystegia sepium*), red shank (*Persicaria maculosa*), bramble (*Rubus fruticosus agg.*), creeping thistle (*Cirsium arvense*), cleavers (*Galium aparine*), purple loosestrife (*Lythrum salicaria*), couch grass (*Elytrigia repens*), spiny sowthistle (*Sonchus asper*), and creeping fumitory (*Fumaria muralis*). Bare unvegetated ground was also common. This habitat was concentrated in the northern portion of the site.

In the centre of the site, the dominant habitat was **Dry-humid acid grassland (GS3) (Plate 3-2)**, spread across three fields. This grassland was in poor condition and showed signs of overgrazing and disturbance by horses on site.

Species in this habitat consisted of red fescue (*Festuca rubra*), sweet vernal grass (*Anthoxanthum odoratum*), common knapweed (*Centaurea nigra*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*) and other less frequent herbaceous species including ribwort plantain (*Plantago lanceolata*), germander speedwell (*Veronica chamaedrys*), common sorrel (*Rumex acetosa*), yarrow (*Achillea millefolium*), creeping buttercup (*Ranunculus repens*), Yorkshire fog (*Holcus lanatus*), common mouse ear (*Cerastium fontanum*) and heath woodrush (*Luzula multiflora ssp Hibernica*).

Small areas of **Scrub (WS1) (Plate 3-3)** were present in the western corner of the grassland and encroaching from the treeline separating the two most northern fields. This scrub was dominated by European gorse (*Ulex europaeus*), with bramble and willow (*Salix sp.*) also present.

A small stand of **Dense bracken (HD1) (Plate 3-4)** was situated in the centre of the site, close to the eastern boundary. This area was dominated by bracken (*Pteridium aquilinum*), with hedge bindweed, bramble and cleavers also present in lesser amounts.

Buildings and artificial surfaces (BL3) (Plate 3-5) were present along the Altan road that runs through the site. This consisted of a tarmacked road surface, with public footpaths on both sides.

A number of **Hedgerows (WL1) (Plate 3-6)** were found within the site, generally associated with old field boundaries. These host various species, including hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*) and eared willow (*Salix aurita*) with understory species including bramble and ivy (*Hedera hibernica*). Hedgerows within the site vary in densities, with some being patchy while others are continuous. The average height of hedgerows within the site is 3m. Hedgerows in the centre of the site are associated with low drystone walls classified as **Stone walls and other stonework (BL1)**.

Two **Treelines (WL2) (Plate 3-7)** were present within the site. The first was located near the centre of the site, along the western boundary. This separated the site from the adjacent school grounds. It was semi-natural and continuous, and approximately 5-8m in height. Species included basket willow (*Salix viminalis*), ash (*Fraxinus excelsior*), alder (*Alnus glutinosa*), copper beech (*Fagus sylvatica f. purpurea*) and birch (*Betula sp.*). The first schedule invasive species sea buckthorn (*Hippophae rhamnoides*) was also present in this treeline. The second treeline was located along the northwestern boundary of the site, separating the site from the adjacent estate. This treeline consisted of planted birch trees that were widely spaced, creating a low value treeline.

Scattered trees were present throughout the area of recolonised ground, particularly in the northern portion of the site. These trees were semi-mature and a mixture of naturally occurring and planted. Species included Italian alder (*Alnus cordata*), sycamore (*Acer pseudoplatanus*), silver birch (*Betula pendula*) and willow species including grey willow (*Salix cinerea*), white willow (*Salix alba*), crack willow (*Salix fragilis*), and goat willow (*Salix caprea*). This corresponded to the habitat type **Immature woodland (WS2) (Plate 3-8)**.



Plate 3-1 Recolonising Bare ground as the result of recent scrub clearance



Plate 3-2 Heavily grazed Dry-humid acid grassland (GS3)



Plate 3-3 Scrub (WS1) located in the centre of the site



Plate 3-4 Dense Bracken (HD1) located along the eastern boundary of the site



Plate 3-5 Tarmacked road (BL3) running through the site



Plate 3-6 Hedgerow (WL1) running along the existing field boundary



Plate 3-7 Treeline (WL2) along the western boundary of the site



Plate 3-8 Area of Immature woodland (WS2) in the northern portion of the site

3.2.1.2 Millers Lane

Millers lane is dominated by two existing football pitches, classified as **Amenity grassland (GA2) (Plate 3-9)**. This grassland is highly managed and regularly mown and consists of typical grassland species including Yorkshire fog, greater plantain (*Plantago major*), perennial rye grass (*Lolium perenne*) ragwort (*Jacobaea vulgaris*), red clover, common daisy (*Bellis perennis*) and white clover.

A sloped bank on the north eastern boundary of the site was dominated by **Scrub (WS1) (Plate 3-10)** and included European gorse, sweet vernal grass, smooth meadow grass (*Poa pratensis*), Yorkshire fog, bramble, ribwort plantain, common dandelion (*Taraxacum officinale agg.*), common hogweed (*Heracleum sphondylium*), common knapweed, field horsetail (*Equisetum arvense*), white clover, red clover, yarrow, creeping thistle, and meadow buttercup (*Ranunculus acris*).

A second area of scrub formed a mosaic habitat with areas of **Dry meadows and grassy verges (GS2) (Plate 3-11)**, located north of the football pitches. This area consisted of species typical of grassy verges, including rosebay willow herb (*Chamerion angustifolium*), sweet vernal grass, false oat grass (*Arrhenatherum elatius*), smooth meadow grass, perennial rye grass, ribwort plantain, common hogweed, knapweed, broad-leaved dock (*Rumex obtusifolius*), hedge bindweed, tormentil (*Potentilla erecta*), common dandelion, and red fescue. This graded into scrub dominated by European gorse, hedge bindweed and bramble.

A well spaced, planted **Treeline (WL1)** was present along the southern boundary of the site. This consisted of silver birch, goat willow and eared willow. A poorly maintained strip of **Flower beds and borders (BC4) (Plate 3-12)** was associated with this treeline, and consisted of planted non-native species alongside native species including great willowherb (*Epilobium hirsutum*), small hoary willowherb (*Epilobium parviflorum*), common dandelion, creeping buttercup (*Ranunculus repens*), Yorkshire fog, perennial rye grass, common daisy, common ragwort, meadow buttercup, white clover, short fruited willowherb (*Epilobium obscurum*) and coralberry (*Symphoricarpos × chenaultii*).

An area of grassy verge was located along the eastern boundary of the site. This area was bisected by a path with public seating. Species in this area included Ribwort plantain, cocks foot grass, meadow foxtail, creeping buttercup, common dandelion, red clover, greater plantain, broad leaved dock, yarrow, wild carrot, oxeye daisy. Immature trees were planted sporadically throughout, including hawthorn, rowan, and silver birch.

The remaining area of the site consisted of tarmacked hard surfaces that provided public walkways and storage areas and a stone and block boundary wall along the southern boundary. These habitats were classified as **Buildings and artificial surfaces (BL3)**.



Plate 3-9 Existing football pitches, classified as Amenity grassland (GA2)



Plate 3-10 Scrub (WS1) on a slope above football pitch



Plate 3-11 Area of Grassy verge (GS2) to the north of the football pitches



Plate 3-12 Flower beds and borders (BC4) with associated treeline

3.2.2 Wintering Bird Survey Results

The results of the six wintering bird surveys undertaken during the 24/25 season are summarised in Table 3-1 below. Full results of all birds, including non-target species and flyovers are available in Appendix 6.

3.2.2.1 Kingston Park

No Target species were recorded using the site at Kingston Park during the wintering bird surveys.

3.2.2.2 Millers Lane

Table 3-1 Wintering Bird Survey Records for Millers Lane

Common Name and Conservation Status	Date	Behaviour
Common gull (<i>Larus canus</i>) Amber listed (breeding and wintering). Listed SCI species of Lough Corrib SPA and Inner Galway Bay SPA	23/10	10-15 individuals feeding on football pitches.
	14/11	5 individuals feeding on pitches
	4/12	8 individuals feeding on pitches
	24/01	13 individuals feeding on pitches
	14/02	No birds recorded
	26/03	No birds recorded
Black-headed gull (<i>Larus ridibundus</i>) Amber listed (breeding and wintering). Listed SCI species of Lough Corrib SPA and Inner Galway Bay SPA	23/10	50-60 individuals feeding on football pitches

	14/11	20 individuals feeding on football pitches
	4/12	14 individuals feeding on football pitches
	22/1	6 individuals feeding on football pitches
	14/02	No birds recorded
	26/03	No birds recorded

3.2.3 Breeding Bird Survey Results

The results of the three breeding bird surveys undertaken in Spring/ Summer 2025 are summarised in Table 3-2 and Table 3-3 below. Full results of all birds, including non-target species and flyovers are available in Appendix 7.

3.2.3.1 Kingston Park

Table 3-2 Summary of Breeding Bird Results for Kingston Park

Common Name and Conservation Status	Date	Behaviour
Starling (<i>Sturnus vulgaris</i>) Amber listed (breeding)	13/06	Heard not seen
	13/05	3 Foraging in Grass

Greenfinch (<i>Chloris chloris</i>) Amber listed (breeding)	13/06	Pair displaying courtship behaviour
Willow Warbler (<i>Phylloscopus trochilus</i>) Amber listed (breeding)	13/05	On telegraph line within site
Linnet (<i>Linaria cannabina</i>) Amber listed (breeding)	13/05	In hedgerow

3.2.3.2 Millers Lane

Table 3-3 Summary of Breeding Bird Results for Millers Lane

Common Name and Conservation Status	Date	Behaviour
Starling (<i>Sturnus vulgaris</i>) Amber listed (breeding)	17/04	4 Foraging in Grass
	17/04	1 in tree

4.

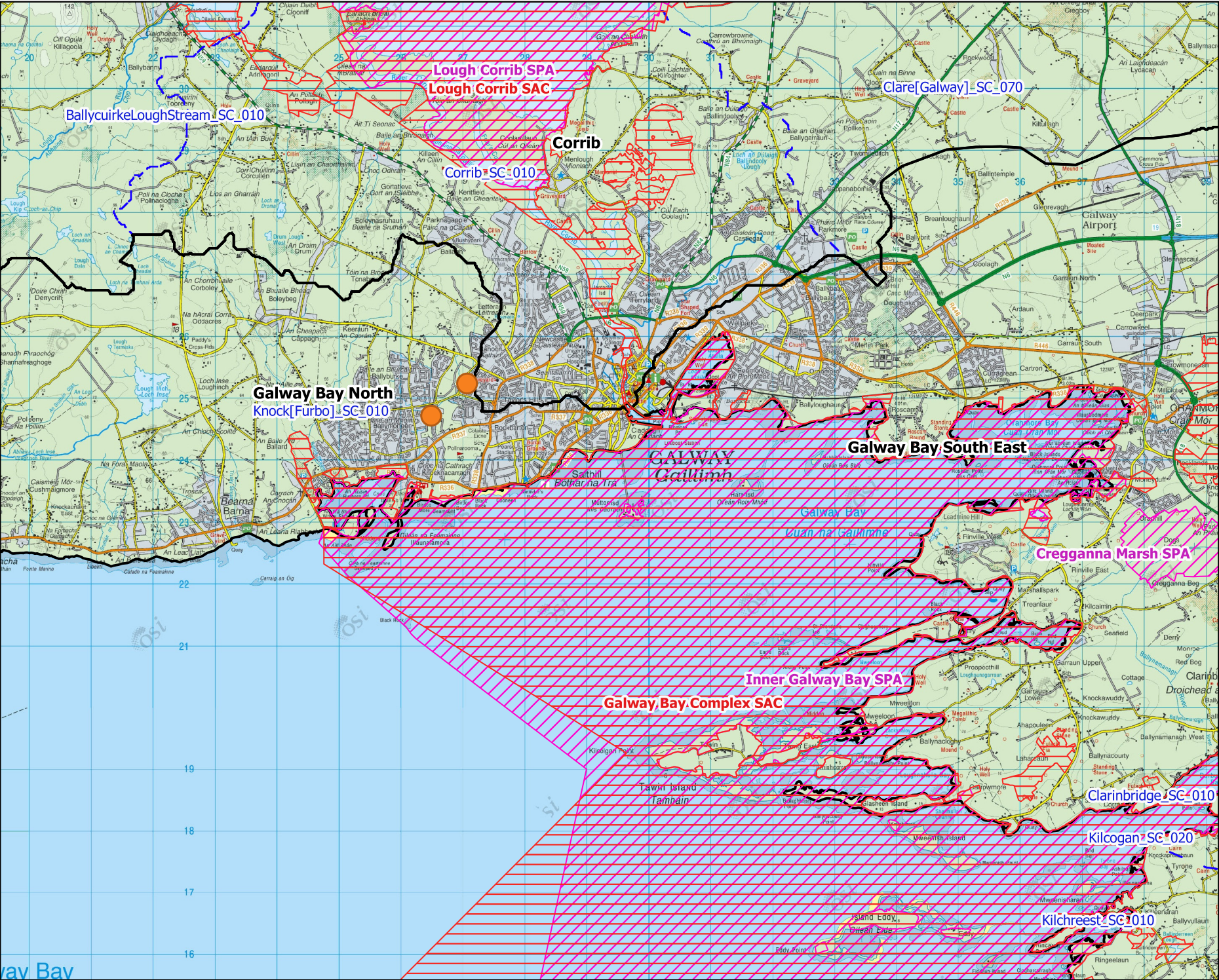
APPROPRIATE ASSESSMENT SCREENING

4.1

Identification of Relevant European Sites

The following methodology was used to establish any European Sites upon which there is a potential for a likely significant effect to occur either individually or in combination with other plans and projects as a result of the proposed development:

- Initially the most up to date GIS spatial datasets for European designated sites and water catchments were downloaded from the NPWS website (www.npws.ie) and the EPA website (www.epa.ie).
- All European Sites that could potentially be affected were identified using a source-pathway - receptor model. To provide context for the assessment, European Sites surrounding the Proposed Development are shown on Figure 4-1. Information on these sites according to the site-specific conservation objectives is provided in Table 4-1. Sites that were further away from the proposed development were also considered and no complete source-pathway-receptor chain for significant effect was identified for any other European Site.
- The catchment mapping was used to establish or discount potential hydrological connectivity between the site of the proposed development and any European Sites. The hydrological catchments are also shown in Figure 4-1.
- In relation to Special Protection Areas, in the absence of any specific European or Irish guidance in relation to such sites, the Scottish Natural Heritage (SNH) Guidance, '*Assessing Connectivity with Special Protection Areas (SPA)*' (2016) was consulted. This document provides guidance in relation to the identification of connectivity between proposed development and Special Protection Areas. The guidance takes into consideration the distances species may travel beyond the boundary of their SPAs and provides information on dispersal and foraging ranges of bird species which are frequently encountered when considering plans and projects.
- Table 4-1, provides details of all relevant European Sites as identified in the preceding steps and assesses the potential for likely significant effects on each.
- The assessment considers any likely direct or indirect impacts of the Proposed Development, both alone and in combination with other plans and projects, on European Sites by virtue of criteria including the following: size and scale, land-take, distance from the European Site or key features of the site, resource requirements, emissions, excavation requirements, transportation requirements and duration of construction, operation and decommissioning were considered in this assessment.
- The site synopses and conservation objectives of these sites, as per the NPWS website (www.npws.ie), were consulted and reviewed at the time of preparing this report.
- Where potential pathways for Likely Significant Effect are identified, the site is included within the Likely Zone of Influence and further assessment is required within the NIS.
- The potential for the Proposed Development to result in cumulative impacts on any European Sites in combination with other plans and projects was considered in the assessment that is presented in Table 4-1. Plans and projects considered include those that are listed in Appendix 8.



- Map Legend
- Park Locations
 - Special Area of Conservation (SAC)
 - Special Protection Area (SPA)
 - WFD Hydrological Catchments
 - WFD Hydrological Subcatchments

Microsoft product screen shots reprinted with permission from Microsoft Corporation
© Ordnance Survey Ireland. All rights reserved. Licence number CYAL50267517

Drawing Title	
European Designated Sites within the Likely Zone of Influence	
Project Title	
Kingston Park and Millers Lane - Public Park and Urban Realm Project	
Drawn By	Checked By
MK	JH
Project No.	Drawing No.
240298	Figure 4-1
Scale	Date
1:80,000	21.10.2025

MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email: info@mkoreland.ie
Website: ww.mkoreland.ie

Table 4-1 Identification of European Sites within the Likely Zone of Influence

European Sites and distance from Proposed Development	Qualifying Interests/Special Conservation Interests for which the European site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie ²)	Conservation Objectives	Identification of Source-Pathway-Receptor chain	Potential for Likely Significant Effects (LSEs)
Special Areas of Conservation (SAC)				
Galway Bay Complex SAC [000268] Distance: approx. 0.7km Downstream Hydrological Distance: approx. 1.1km	➤ [1140] Mudflats and sandflats not covered by seawater at low tide ➤ [1150] Coastal lagoons* ➤ [1160] Large shallow inlets and bays ➤ [1170] Reefs ➤ [1220] Perennial vegetation of stony banks ➤ [1310] <i>Salicornia</i> and other annuals colonising mud and sand ➤ [1330] Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) ➤ [1355] Otter (<i>Lutra lutra</i>) ➤ [1365] Harbour seal (<i>Phoca vitulina</i>) ➤ [1410] Mediterranean	Detailed conservation objectives for this site (Version 1, April 2013) were reviewed as part of the assessment and are available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000268.pdf	There will be no direct effects as the project footprint is located entirely outside the designated site. The Knocknacarragh stream flows underneath the site of the Proposed Development. It provides a hydrological connection to the Galway Bay Complex SAC approximately 1.1km downstream. As the above mentioned watercourse is culverted and flows beneath the site of the Proposed Development, there is no suitable habitat for the QI species otter within the site of the Proposed Development. As a result, there is no potential for influence on this species due to disturbance or habitat loss during the construction of operational phase of the Proposed Development. No QI habitat designated for this SAC was recorded within the site of the Proposed Development. Therefore, there is no potential for ex-situ effects on QI habitats designated for this SAC. A potential pathway for significant effect on the SAC was identified in the form of deterioration of water quality during	Yes

² Accessed at <<https://www.npws.ie/protected-sites/conservation-management-planning/conservation-objectives>>

European Sites and distance from Proposed Development	Qualifying Interests/Special Conservation Interests for which the European site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie)	Conservation Objectives	Identification of Source-Pathway-Receptor chain	Potential for Likely Significant Effects (LSEs)
	- salt meadows (<i>Juncetalia maritimi</i>) ➤ [3180] Turloughs* ➤ [5130] <i>Juniperus communis</i> formations on heaths or calcareous grasslands ➤ [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>) (*important orchid sites) ➤ [7210] Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>* ➤ [7230] Alkaline fens		construction and operation of the proposed development. A complete source-pathway-receptor chain was identified and in the absence of mitigation, there is potential for the Proposed Development to result in likely significant effects on this European Site. The European Site is considered to be within the Likely Zone of Influence of the Proposed Development and further assessment is required.	
Lough Corrib SAC [000297] Distance: approx. 2.5km	➤ [1029] Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) ➤ [1092] White-clawed Crayfish (<i>Austropotamobius pallipes</i>) ➤ [1095] Sea Lamprey (<i>Petromyzon marinus</i>) ➤ [1096] Brook Lamprey (<i>Lampetra planeri</i>) ➤ [1106] Salmon (<i>Salmo salar</i>) ➤ [1303] Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>) ➤ [1355] Otter (<i>Lutra lutra</i>)	Detailed conservation objectives for this site (Version 1, April 2017) were reviewed as part of the assessment and are available at https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000297.pdf	The proposed development is located outside of this SAC, therefore there is no potential for direct effects. There is no hydrological connection between the site of the Proposed Development and this SAC. Additionally, the site of the Proposed Development is underlain by a separate groundwater body to the SAC. According to Map 11 of the site-specific conservation objectives, the Lesser Horseshoe Bat roost for which this site is designated is located to the north of Lough Corrib	No

European Sites and distance from Proposed Development	Qualifying Interests/Special Conservation Interests for which the European site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie ²)	Conservation Objectives	Identification of Source-Pathway-Receptor chain	Potential for Likely Significant Effects (LSEs)
	➤ [1393] Slender Green Feather-moss (<i>Drepanocladus vernicosus</i>) ➤ [1833] Slender Naiad (<i>Najas flexilis</i>) ➤ [3110] Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) ➤ [3130] Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or <i>Isoeto-Nanojuncetea</i> ➤ [3140] Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara spp.</i> ➤ [3260] Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation ➤ [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (*important orchid sites) ➤ [6410] Molinia meadows on calcareous, peaty or clayey-		approx. 33.7km northwest of the Proposed Development site (NPWS, 2018). Therefore, the development site is located outside of the bat roost's 2.5km foraging range, and there is no potential for impact on this QI. No pathway for likely significant effect on this European Site was identified, when considered in the absence of any mitigation, individually or cumulatively with other plans or projects. This site is not within the Likely Zone of Influence of the Proposed Development. Therefore, it is not considered further in this assessment.	

European Sites and distance from Proposed Development	Qualifying Interests/Special Conservation Interests for which the European site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie)	Conservation Objectives	Identification of Source-Pathway-Receptor chain	Potential for Likely Significant Effects (LSEs)
	silt-laden soils (<i>Molinion caeruleae</i>)			
Special Protection Area (SPA)				
Inner Galway Bay SPA [004031] Distance: approx. 0.9km Downstream Hydrological Distance: approx. 1.2km	➤ [A003] Great Northern Diver (<i>Gavia immer</i>) ➤ [A017] Cormorant (<i>Phalacrocorax carbo</i>) ➤ [A028] Grey Heron (<i>Ardea cinerea</i>) ➤ [A046] Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) ➤ [A050] Wigeon (<i>Anas Penelope</i>) ➤ [A052] Teal (<i>Anas crecca</i>) ➤ [A056] Shoveler (<i>Anas clypeata</i>) ➤ [A069] Red-breasted Merganser (<i>Mergus serrator</i>) ➤ [A137] Ringed Plover (<i>Charadrius hiaticula</i>) ➤ [A140] Golden Plover (<i>Pluvialis apricaria</i>) ➤ [A142] Lapwing (<i>Vanellus vanellus</i>) ➤ [A149] Dunlin (<i>Calidris alpina alpina</i>) ➤ [A157] Bar-tailed Godwit (<i>Limosa lapponica</i>) ➤ [A160] Curlew (<i>Numenius arquata</i>) ➤ [A162] Redshank (<i>Tringa tetanus</i>) ➤ [A169] Turnstone (<i>Arenaria interpres</i>)	Detailed conservation objectives for this site (Version 1, May 2013) were reviewed as part of the assessment and are available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004031.pdf	The proposed development is located outside of this SPA, therefore there is no potential for direct effects. The Knocknacarragh stream flows underneath the site of the Proposed Development. It provides a hydrological connection to the Inner Galway Bay SPA approximately 1.2km downstream. A potential for significant effect on the SPA was identified via deterioration in water quality during construction and operation of the proposed development. Black-headed Gull (<i>Chroicocephalus ridibundus</i>) and Common Gull (<i>Sterna Hirundo</i>) for which this SPA is designated, were recorded using the amenity grassland within the Millers Lane site during the wintering bird surveys undertaken in the 24/25 season. It is highly likely that the gull species recorded on site were using the site periodically and are therefore not dependent on the habitats within the Proposed Development site. Additionally, birds utilizing the site are already habituated to a level of human disturbance that will not increase significantly as a result of the Proposed Development. Therefore, it can be concluded that the Proposed Development site does not provide significant suitable supporting habitat for bird species	Yes

European Sites and distance from Proposed Development	Qualifying Interests/Special Conservation Interests for which the European site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie ²)	Conservation Objectives	Identification of Source-Pathway-Receptor chain	Potential for Likely Significant Effects (LSEs)
	➤ [A179] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) ➤ [A182] Common Gull (<i>Larus canus</i>) ➤ [A191] Sandwich Tern (<i>Sterna sandvicensis</i>) ➤ [A193] Common Tern (<i>Sterna hirundo</i>) ➤ [A999] Wetlands		associated with this SPA and significant effects as a result of ex-situ habitat loss and/or disturbance/ displacement can be excluded. A complete source-pathway-receptor chain was identified and in the absence of mitigation, there is potential for the Proposed Development to result in likely significant effects on this European Site. The European Site is considered to be within the Likely Zone of Influence of the Proposed Development and further assessment is required.	
Lough Corrib SPA [004042] Distance: approx. 3.1km	➤ [A051] Gadwall (<i>Anas strepera</i>) ➤ [A056] Shoveler (<i>Anas chrypeata</i>) ➤ [A059] Pochard (<i>Aythya farina</i>) ➤ [A061] Tufted Duck (<i>Aythya fuligula</i>) ➤ [A065] Common Scoter (<i>Melanitta nigra</i>) ➤ [A082] Hen Harrier (<i>Circus cyaneus</i>) ➤ [A125] Coot (<i>Fulica atra</i>) ➤ [A140] Golden Plover (<i>Pluvialis apricaria</i>) ➤ [A179] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) ➤ [A182] Common Gull (<i>Larus canus</i>) ➤ [A193] Common Tern (<i>Sterna hirundo</i>) ➤ [A194] Arctic Tern (<i>Sterna paradisaea</i>)	Detailed conservation objectives for this site (Version 1, January 2023) were reviewed as part of the assessment and are available at: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004042.pdf	The proposed development is located outside of this SPA, therefore there is no potential for direct effects.. The potential for indirect effects was considered. The site of the Proposed Development is located in a different sub-catchment to the SAC. Additionally, the site of the Proposed Development is underlain by a separate groundwater body to the SAC. As result, there is no hydrological connection, and there will be no influence on this SAC via water quality degradation as a result of the Proposed Development. Black-headed Gull (<i>Chroicocephalus ridibundus</i>) and Common Gull (<i>Sterna Hirundo</i>) for which this SPA is designated, were recorded using the amenity grassland within the Millers Lane site during the wintering bird surveys undertaken in the 24/25 season. It is highly likely that the gull species recorded on site were using the site periodically and are therefore not dependent on the habitats within the Proposed Development site. Additionally, birds	No

European Sites and distance from Proposed Development	Qualifying Interests/Special Conservation Interests for which the European site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie ²)	Conservation Objectives	Identification of Source-Pathway-Receptor chain	Potential for Likely Significant Effects (LSEs)
	➤ [A395] Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) ➤ [A999] Wetlands and waterbirds		utilizing the site are already habituated to a level of human disturbance that will not increase significantly as a result of the Proposed Development. Therefore, it can be concluded that the Proposed Development site does not provide significant suitable supporting habitat for bird species associated with this SPA and significant effects as a result of ex-situ habitat loss and/or disturbance/ displacement can be excluded. No pathway for likely significant effect on this European Site was identified, when considered in the absence of any mitigation, individually or cumulatively with other plans or projects. This site is not within the Likely Zone of Influence of the Proposed Development. Therefore, it is not considered further in this assessment.	

4.2

Appropriate Assessment Screening Conclusion

It cannot be excluded beyond reasonable scientific doubt, in view of best scientific knowledge, on the basis of objective information and in light of the conservation objectives of the relevant European sites, that the Proposed Development, individually or in combination with other plans and projects, would be likely to have a significant effect on the Inner Galway Bay SPA [004031], and Galway Bay Complex SAC [000268].

As a result, an Appropriate Assessment (AA) of the Proposed Development is required. Information to enable the Competent Authority to carry out an AA of the Proposed Development is presented in Sections 5 – 9 of this report.

5.

INFORMATION TO INFORM APPROPRIATE ASSESSMENT

The potential for likely significant effects on the following European Sites in the absence of any mitigation, individually or cumulatively with other plans or projects, was identified in the preceding section:

- > Galway Bay Complex SAC [000268]
- > Inner Galway Bay SPA [004031]

The following sections consider each European Site individually to:

1. Determine which individual qualifying features have the potential to be adversely affected by the Proposed Development.
2. Provide information with regard to the Conservation Objectives and site-specific pressures and threats for those qualifying features that have the potential to be adversely affected.
3. Provide the results of any additional survey work that was necessary to inform an impact assessment.

5.1 Identification of relevant Qualifying Features and Desk Study

5.1.1 Galway Bay Complex SAC

The potential for impacts on this SAC was identified in Section 4.1 above. The identified pathways for effect is downstream surface water connectivity via the Knocknacarragh which runs underneath the site of the Proposed Development.

Table 5-1 below lists the qualifying features of this European Site and determines, in the light of their Conservation Objectives, whether there is any complete source-pathway-receptor chain, by which adverse effects may occur.

5.1.1.1 Identification of Individual Qualifying Features with the Potential to be Affected

Table 5-1 Assessment of Qualifying features potentially affected

Qualifying feature	Conservation Objective (NPWS, Version 1, April 2013 ³),	Rationale	Potential for Adverse Effects Y/N
[1140] Mudflats and sandflats not covered by seawater at low tide	To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Galway Bay Complex SAC.	The culverted Knocknacarragh stream runs directly underneath the site of the proposed development. This river provides direct connectivity to Galway Bay Complex SAC, which is located downstream at a hydrological surface water distance of approx. 1.1km. This habitat is mapped throughout much of the coastal areas of the SAC downstream of the Proposed Development site, as shown in Map 3 of the Site-Specific Conservation Objectives. Taking a precautionary approach, a complete source-pathway-receptor chain for adverse effects on this intertidal habitat was identified due to potential deterioration in water quality resulting from construction and operational activities. This potential pathway is assessed further in this NIS.	Y

³ NPWS (2013) Conservation Objectives: Galway Bay Complex SAC 000268. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht

[1150] Coastal lagoons	To restore the favourable conservation condition of Coastal lagoons in Galway Bay Complex SAC.	The culverted Knocknacarragh stream runs directly underneath the site of the proposed development. This river provides direct connectivity to Galway Bay Complex SAC, which is located downstream at a hydrological surface water distance of approx. 1.1km. This habitat is mapped throughout much of the coastal areas of the SAC downstream of the Proposed Development site, as shown in Map 4 of the Site-Specific Conservation Objectives. Taking a precautionary approach, a complete source-pathway-receptor chain for adverse effects on this intertidal habitat was identified due to potential deterioration in water quality resulting from construction and operational activities. This potential pathway is assessed further in this NIS.	Y
[1160] Large shallow inlets and bays	To maintain the favourable conservation condition of Large shallow inlets and bays in Galway Bay Complex SAC.	The culverted Knocknacarragh stream runs directly underneath the site of the proposed development. This river provides direct connectivity to Galway Bay Complex SAC, which is located downstream at a hydrological surface water distance of approx. 1.1km. This habitat is mapped throughout much of the coastal areas of the SAC downstream of the Proposed Development site, as shown in Map 5 of the Site-Specific Conservation Objectives. Taking a precautionary approach, a complete source-pathway-receptor chain for adverse effects on this intertidal habitat was identified due to potential deterioration in water quality resulting from construction and operational activities. This potential pathway is assessed further in this NIS.	Y
[1170] Reefs	To maintain the favourable conservation condition of Reefs in Galway Bay Complex SAC.	The culverted Knocknacarragh stream runs directly underneath the site of the proposed development. This river provides direct connectivity to Galway Bay Complex SAC, which is located downstream at a hydrological surface water distance of approx. 1.1km. This habitat is mapped throughout much of the coastal areas of the SAC downstream of the Proposed Development site, as shown in Map 6 of the Site-Specific Conservation Objectives. Taking a precautionary approach, a complete source-pathway-receptor chain for adverse	Y

		effects on this intertidal habitat was identified due to potential deterioration in water quality resulting from construction and operational activities. This potential pathway is assessed further in this NIS.	
[1220] Perennial vegetation of stony banks	To maintain the favourable conservation condition of Perennial vegetation of stony banks in Galway Bay Complex SAC.	These QI habitats are terrestrial in nature and were not recorded within or adjacent to the site during the surveys undertaken. Therefore, no source-pathway-receptor chain for adverse effects on these QIs was identified as a result of the Proposed Development. No further assessment is required.	N
[1230] Vegetated Sea cliffs of the Atlantic and Baltic coasts	This site is not listed in the Conservation Objective document for Galway Bay Complex SAC however it has been listed in the Site Synopsis document therefore is included on a precautionary basis.		N
[1310] <i>Salicornia</i> and other annuals colonising mud and sand	To maintain the favourable conservation condition of <i>Salicornia</i> and other annuals colonizing mud and sand in Galway Bay Complex SAC.	The culverted Knocknacarragh stream runs directly underneath the site of the proposed development. This river provides direct connectivity to Galway Bay Complex SAC, which is located downstream at a hydrological surface water distance of approx. 1.1km. These habitats are mapped throughout much of the coastal areas of the SAC downstream of the Proposed Development site, as shown in Map 9 of the Site-Specific Conservation Objectives. Taking a precautionary approach, a complete source-pathway-receptor chain for adverse effects on this intertidal habitat was identified due to potential deterioration in water quality resulting from construction and operational activities.	Y
[1330] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)	To restore the favourable conservation condition of Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) in Galway Bay Complex SAC.		Y
[1410] Mediterranean salt meadows (<i>Juncetalia maritima</i>)	To restore the favourable conservation condition of Mediterranean salt meadows (<i>Juncetalia maritima</i>) in Galway Bay Complex SAC.		Y

[3180] Turloughs	To maintain the favourable conservation condition of Turloughs in Galway Bay Complex SAC.	The Knocknacarragh stream travels through an urban landscape before discharging to marine waters. Therefore, there is no potential for adverse effects on this groundwater dependent QI. Therefore, no source-pathway-receptor chain for adverse effects on this QI was identified as a result of the Proposed Development. No further assessment is required.	N
[5130] <i>Juniperus communis</i> formations on heaths or calcareous grasslands	To restore the favourable conservation condition of <i>Juniperus communis</i> formations on heaths or calcareous grasslands in Galway Bay Complex SAC.	These QI habitats are terrestrial in nature and were not recorded within or adjacent to the site during the surveys undertaken. Therefore, no source-pathway-receptor chain for adverse effects on these QIs was identified as a result of the Proposed Development. No further assessment is required.	N
[6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>) (*important orchid sites)	To maintain the favourable conservation condition of Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>) in Galway Bay Complex SAC.		N
[7210] Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>	To maintain the favourable conservation condition of Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> in Galway Bay Complex SAC.	According to the Site-Specific Conservation Objectives, these habitats have not been mapped in detail for Galway Bay Complex SAC and thus the total area of the qualifying habitats in the SAC is unknown. However, the Knocknacarragh stream travels through an urban landscape before discharging to marine waters. Therefore, there is no potential for indirect effects on these groundwater dependent QIs. Therefore, no source-pathway-receptor chain for adverse on these QIs was identified as a result of the Proposed Development. No further assessment is required.	N
[7230] Alkaline fens	To maintain the favourable conservation condition of Alkaline fens in Galway Bay Complex SAC.		N
[1355] Otter (<i>Lutra lutra</i>)	To restore the favourable conservation condition of Otter in Galway Bay Complex SAC.	As the Knocknacarragh stream is entirely culverted as it passes through the site of the Proposed Development, there is no suitable habitat for otter within the site. As result, disturbance effects on otter could be ruled out for both the construction and operational phases of the Proposed Development.	Y

		However, a potential pathway for adverse effects on this species was identified due to potential deterioration of water quality during construction and operation of the Proposed Development. This has potential to result in reduced prey (fish) resources for otter. These potential pathways are assessed further in this NIS.	
[1365] Harbour seal (<i>Phoca vitulina</i>)	To maintain the favourable conservation condition of Harbour Seal in Galway Bay Complex SAC.	The culverted Knocknacarragh stream runs directly underneath the site of the proposed development. This river provides direct connectivity to Galway Bay Complex SAC, which is located downstream at a hydrological surface water distance of approx. 1.1km. On a precautionary basis, a complete source-pathway-receptor chain for adverse effects on this species was identified due to the potential deterioration in water quality resulting from construction and operational activities adversely impacting the species' habitat, which comprises much of the designated area of the SAC in Galway Bay, prey (fish) resources, as well as important breeding, moulting and resting sites (see Map 12 of Site-Specific Conservation Objectives). This potential pathway is assessed further in this NIS.	Y

5.1.1.2 Site Specific Pressures and Threats

As per the Natura 2000 Data Form, the site-specific threats, pressures and activities with potential to impact on the European Site were reviewed and considered in relation to the Proposed Development. These are provided in Table 5-2.

Table 5-2 Site-specific threats, pressures and activities

Negative Impacts			
Rank	Threats and Pressures		Inside/Outside
High	D03	Shipping lanes, ports, marine constructions	Inside
High	D03.01.04	Industrial ports	Inside
High	H01.05	Diffuse pollution to surface waters due to agricultural and forestry activities	Both
High	H01.08	Diffuse pollution to surface waters due to household sewage and waste waters	Both
High	J02.12.01	Sea defense or coast protection works, tidal barrages	Inside
Low	D01.01	Paths, tracks, cycling tracks	Inside
Low	D03.01.01	Slipways	Inside
Low	D03.01.01	Slipways	Inside
Low	E03.03	Disposal of inert materials	Inside
Low	F02.03.01	Bait digging / collection	Inside
Low	G01.01.02	Non-motorized nautical sports	Inside
Low	G02.01	Golf course	Inside
Low	J02.02.02	Estuarine and coastal dredging	Inside
Low	J02.05.01	Modification of water flow (tidal & marine currents)	Both
Medium	A02.01	Agricultural intensification	Inside
Medium	A04.02.01	Non intensive cattle grazing	Inside
Medium	A04.02.02	Non intensive sheep grazing	Inside
Medium	C01.01	Sand and gravel extraction	Inside
Medium	C01.01.02	Removal of beach materials	Inside
Medium	D02.02	Pipe lines	Inside
Medium	F01	Marine and Freshwater Aquaculture	Both
Medium	F06	Hunting, fishing or collecting activities not referred to above	Inside

Negative Impacts			
Rank	Threats and Pressures		Inside/Outside
Medium	I01	Invasive non-native species	Both
Medium	J02.01.02	Reclamation of land from sea, estuary or marsh	Inside
Medium	J02.01.02	Reclamation of land from sea, estuary or marsh	Inside

Potential pathways for effect with regard to site-specific threats, pressures and activities have been identified in relation to potential for 'Diffuse pollution to surface waters due to household sewage and waste waters and Paths, tracks, cycling tracks'.

5.1.1.3 QI Habitat Specific Information

5.1.1.3.1 *Mudflats and sandflats not covered by seawater at low tide [1140]*

The conservation objective for this QI is:

'To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Galway Bay Complex SAC'

The attributes and targets for this habitat are provided in Table 5-3 below:

Targets and Attributes

Table 5-3 Targets and Attributes associated with nominated site-specific conservation objectives for Mudflats and sandflats not covered by seawater at low tide in Galway Bay Complex SAC

Attribute	Target	Potential for Proposed Development to Undermine Conservation Objective Target in the Absence of Mitigation
Habitat area	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	No – The Proposed Development will not result in reduction of the area of this habitat.
Community distribution	Conserve the following community types in a natural condition: Intertidal sandy mud community complex; and Intertidal sand community complex. See map 7	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could alter community distribution and undermine this target

5.1.1.3.2 Coastal lagoons [1150]

The conservation objective for this QI is:

‘To restore the favourable conservation condition of Coastal lagoons in Galway Bay Complex SAC’

The attributes and targets for this habitat are provided in Table 5-4 below:

Targets and Attributes

Table 5-4 Targets and attributes associated with nominated site-specific conservation objectives for Coastal lagoons in Galway Bay Complex SAC

Attribute	Target	Potential for Proposed Development to Undermine Conservation Objective Target in the Absence of Mitigation
Habitat area	Area stable, subject to slight natural variation. Favourable reference area 76.7ha. See map 4	No –The Proposed Development will not result in reduction of the area of this habitat.
Habitat distribution	No decline, subject to natural processes. See map 4 for mapped lagoons	No – The Proposed Development will not result in any change of distribution of this habitat.
Salinity regime	Median annual salinity and temporal variation within natural ranges	No – The Proposed Development will not result in any change of salinity levels.
Hydrological regime	Annual water level fluctuations and minima within natural ranges	No – The Proposed Development will not result in any change to the hydrological regime.
Barrier: connectivity between lagoon and sea	Appropriate hydrological connections between lagoons and sea, including where necessary, appropriate management	No – The Proposed Development will not result in any barriers to connectivity.
Water quality: Chlorophyll <i>a</i>	Annual median chlorophyll <i>a</i> within natural ranges and less than g/L	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Water quality: Molybdate Reactive Phosphorus (MRP)	Annual median MRP within natural ranges 0.1mg/L	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Water quality: Dissolved Inorganic Nitrogen (DIN)	Annual median DIN within natural ranges and less than 0.15mg/L	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Depth of macrophyte colonisation	Macrophyte colonisation to at least 2m depth	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Typical plant species	Maintain number and extent of listed lagoonal specialists, subject to natural variation	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation

		as a result of silt-laden run-off and other pollutants could undermine this target
Typical animal species	Maintain listed lagoon specialists, subject to natural variation	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Negative indicator species	Negative indicator species absent or under control	No – The Proposed Development will not result in the introduction/spread of negative indicator species.

5.1.1.3.3 Large shallow inlets and bays [1160]

The conservation objective for this QI is:

‘To maintain the favourable conservation condition of Large shallow inlets and bays in Galway Bay Complex SAC’

The attributes and targets for this habitat are provided in Table 5-5 below:

Targets and Attributes

Table 5-5 Targets and attributes associated with nominated site-specific conservation objectives for Large shallow inlets and bays in Galway Bay Complex SAC

Attribute	Target	Potential for Proposed Development to Undermine Conservation Objective Target in the Absence of Mitigation
Habitat area	The permanent habitat area is stable or increasing, subject to natural processes. See map 5	No –The Proposed Development will not result in reduction of the area of this habitat.
Community extent	Maintain the extent of the <i>Zostera</i> -dominated community complex and the maërl-dominated community, subject to natural processes. See map 7	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Community structure: <i>Zostera</i> density	Conserve the high quality of <i>Zostera</i> -dominated communities, subject to natural processes	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Community structure	Conserve the high quality of the maërl-dominated community, subject to natural processes	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Community distribution	Conserve the following community types in a natural condition: Intertidal sandy mud community complex; Intertidal sand community complex; Fine to medium sand with bivalves community complex; Sandy mud to mixed sediment community complex; Mixed sediment dominated by <i>Mytilidae</i> community complex; Shingle; Furoid-dominated community complex; <i>Laminaria</i> -	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target

	dominated community complex; and Shallow sponge-dominated community complex. See map 7	
--	--	--

5.1.1.3.4 Reefs [1170]

The conservation objective for this QI is:

‘To maintain the favourable conservation condition of Reefs in Galway Bay Complex SAC’

The attributes and targets for this habitat are provided in Table 5-6 below:

Targets and Attributes

Table 5-6 Targets and attributes associated with nominated site-specific conservation objectives for Reefs in Galway Bay Complex SAC

Attribute	Target	Potential for Proposed Development to Undermine Conservation Objective Target in the Absence of Mitigation
Distribution	The distribution of reefs is stable or increasing, subject to natural processes. See map 6 for mapped distribution	No –The Proposed Development will not result in a changed distribution of this habitat.
Habitat area	The permanent habitat area is stable, subject to natural processes. See map 6	No –The Proposed Development will not result in reduction of the area of this habitat.
Community extent	Maintain the extent of the <i>Mytilus</i> -dominated reef community, subject to natural processes. See map 7	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Community structure: <i>Mytilus</i> density	Conserve the high quality of the <i>Mytilus</i> -dominated reef community, subject to natural processes	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Community structure	Conserve the following community types in a natural condition: Furoid-dominated community complex; <i>Laminaria</i> -dominated community complex; and Shallow sponge-dominated community complex See map 7	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target

5.1.1.3.5 *Salicornia and other annuals colonising mud and sand [1310]*

The conservation objective for this QI is:

‘To maintain the favourable conservation condition of *Salicornia* and other annuals colonising mud and sand in Galway Bay Complex SAC’

The attributes and targets for this habitat are provided in Table 5-7 below:

Targets and Attributes

Table 5-7 Targets and attributes associated with nominated site-specific conservation objectives for *Salicornia* and other annuals colonising mud and sand in Galway Bay Complex SAC

Attribute	Target	Potential for Proposed Development to Undermine Conservation Objective Target in the Absence of Mitigation
Habitat area	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Barna House - 0.067ha, Seaweed Point - 0.003ha, Roscam West and South - 0.023ha, Kilcaimin - 0.015, Kileenaran - 0.007ha, Kinvara West - 0.017ha, Scanlan's Island - 0.117ha, Tawin Island - 1.098ha. See map 9	No –The Proposed Development will not result in reduction of the area of this habitat.
Habitat distribution	No decline, or change in habitat distribution, subject to natural processes. See map 9 for known distribution	No –The Proposed Development will not result in a changed distribution of this habitat
Physical structure: sediment supply	Maintain/restore, natural circulation of sediments and organic matter, without any physical obstructions	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Physical structure: creeks and pans	Maintain, or where necessary restore creek and pan structure, subject to natural processes, including erosion and succession	No –The Proposed Development will not result in a changed structure of creeks and pans.
Physical structure: flooding regime	Maintain natural tidal regime	No –The Proposed Development will not result in a changed of flooding regime.
Vegetation structure: zonation	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession.	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Vegetation structure: vegetation height	Maintain structural variation within sward	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target

Vegetation structure: vegetation cover	Maintain more than 90% of area outside creeks vegetated	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Vegetation composition: typical species and subcommunities	Maintain the range of species-poor communities with typical species listed in SMP (McCorry and Ryle, 2009)	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Vegetation structure: negative indicator species – <i>Spartina anglica</i>	There is currently no common cordgrass (<i>Spartina anglica</i>) in this SAC. Prevent establishment of cordgrass	No –The Proposed Development will not result in the introduction of common cordgrass to this SAC.

5.1.1.3.6 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]

The conservation objective for this QI is:

‘To restore the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in Galway Bay Complex SAC’

The attributes and targets for this habitat are provided in Table 5-8 below:

Targets and Attributes

Table 5-8 Targets and attributes associated with nominated site-specific conservation objectives for Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in Galway Bay Complex SAC

Attribute	Target	Potential for Proposed Development to Undermine Conservation Objective Target in the Absence of Mitigation
Habitat area	Area increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Barna House - 2.33ha, Seaweed Point - 1.41ha, Roscam West and South - 3.30ha, Oranmore North - 4.24ha, Kilcaimin - 6.82ha, Tawin Island - 53.85ha, Tyrone House- Dunbulcaun Bay - 9.83ha, Kileenaran - 15.37ha, Kinvara West - 13.33ha, Scanlan's Island - 4.13ha. See map 9	No –The Proposed Development will not result in a change to the area of this habitat.
Habitat distribution	No decline or change in habitat distribution, subject to natural processes. See map 9 for known distribution	No –The Proposed Development will not result in a changed distribution of this habitat
Physical structure: sediment supply	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Physical structure: creeks and pans	Maintain creek and pan structure, subject to natural processes, including erosion and succession	No –The Proposed Development will not result in a changed structure of creeks and pans.

Physical structure: flooding regime	Maintain natural tidal regime	No –The Proposed Development will not result in a changed of flooding regime.
Vegetation structure: zonation	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Vegetation structure: vegetation height	Maintain structural variation within sward	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Vegetation structure: vegetation cover	Maintain more than 90% area outside creeks vegetated	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Vegetation composition: typical species and sub-communities	Maintain range of subcommunities with typical species listed in SMP (McCorry and Ryle, 2009)	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Vegetation structure: negative indicator species – <i>Spartina anglica</i>	There is currently no common cordgrass (<i>Spartina anglica</i>) in this SAC. Prevent establishment of cordgrass	No –The Proposed Development will not result in the introduction of common cordgrass to this SAC.

5.1.1.3.7 Mediterranean salt meadows (*Juncetalia maritimi*) [1410]

The conservation objective for this QI is:

‘To restore the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in Galway Bay Complex SAC’

The attributes and targets for this habitat are provided in Table 5-9 below:

Targets and Attributes

Table 5-9 Targets and attributes associated with nominated site-specific conservation objectives for Mediterranean salt meadows (*Juncetalia maritimi*) in Galway Bay Complex SAC

Attribute	Target	Potential for Proposed Development to Undermine Conservation Objective Target in the Absence of Mitigation
Habitat area	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Barna House - 0.282ha, Seaweed Point - 0.931ha, Kilcaimin - 0.005ha, Tawin Island - 1.799ha. Tyrone House- Dunbulcan Bay - 8.184ha, Kileenaran - 0.271ha. See map 9	No –The Proposed Development will not result in a change to the area of this habitat.
Habitat distribution	No decline, subject to natural processes. See map 9 for known distribution	No –The Proposed Development will not result in a changed distribution of this habitat

Physical structure: sediment supply	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Physical structure: creeks and pans	Maintain creek and pan structure, subject to natural processes, including erosion and succession	No –The Proposed Development will not result in a changed structure of creeks and pans.
Physical structure: flooding regime	Maintain natural tidal regime	No –The Proposed Development will not result in a changed of flooding regime.
Vegetation structure: zonation	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target.
Vegetation structure: vegetation height	Maintain structural variation in the sward	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Vegetation structure: vegetation cover	Maintain more than 90% of area outside creeks vegetated	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Vegetation composition: typical species and sub- communities	Maintain range of subcommunities with typical species listed in SMP (McCorry and Ryle, 2009)	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target
Vegetation structure: negative indicator species – <i>Spartina anglica</i>	There is currently no common cordgrass (<i>Spartina anglica</i>) in this SAC. Prevent establishment of cordgrass	No –The Proposed Development will not result in the introduction of common cordgrass to this SAC.

5.1.1.4 QI Species Specific Information

5.1.1.4.1 Otter *Lutra lutra* [1355]

The conservation objective for this QI is:

‘To restore the favourable conservation condition of Otter in Galway Bay Complex SAC’

The attributes and targets for this species are provided in Table 5-10 below:

Targets and Attributes

Table 5-10 Targets and attributes associated with nominated site-specific conservation objectives for Otter in Galway Bay Complex SAC

Attribute	Target	Potential for Proposed Development to Undermine Conservation Objective Target in the Absence of Mitigation
Distribution	No significant decline	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target.
Extent of terrestrial habitat	No significant decline. Area mapped and calculated as 262ha above high water mark (HWM); 14ha along river banks/around ponds	No – The Proposed Development will not result in any reduction to terrestrial otter habitat.
Extent of marine habitat	No significant decline. Area mapped and calculated as 2040ha	No – The Proposed Development will not result in any reduction to marine otter habitat.
Extent of freshwater (river) habitat	No significant decline. Length mapped and calculated as 4km	No – The Proposed Development will not result in any reduction to freshwater (river) otter habitat.
Extent of freshwater (lake/lagoon) habitat	No significant decline. Area mapped and calculated as 21ha	No – The Proposed Development will not result in any reduction to freshwater (lake/lagoon) otter habitat.
Couching sites and holts	No significant decline	No – The Proposed Development will not result in the loss of couching sites or holts.
Fish biomass available	No significant decline	Yes – On a precautionary basis, deterioration in water quality and associated habitat degradation as a result of silt-laden run-off and other pollutants could undermine this target.
Barriers to connectivity	No significant increase. For guidance, see map 11	No – The Proposed Development will not result in any barriers to movement.

5.1.1.4.2 Harbour seal *Phoca vitulina* [1365]

The conservation objective for this QI is:

‘To maintain the favourable conservation condition of Harbour seal in Galway Bay Complex SAC’

The attributes and targets for this species are provided in Table 5-11 below:

Targets and Attributes

Table 5-11 Targets and attributes associated with nominated site-specific conservation objectives for Harbour seal in Galway Bay Complex SAC

Attribute	Target	Potential for Proposed Development to Undermine Conservation Objective Target in the Absence of Mitigation
Access to suitable habitat	Species range within the site should not be restricted by artificial barriers to site use. See map 12	No – The Proposed Development will not result in any barriers to movement or loss of suitable habitat for this species.
Breeding behaviour	Conserve breeding sites in a natural condition. See map 12	No – The Proposed Development will not result in any loss/alteration of breeding sites.
Moulting behaviour	Conserve moult haul-out sites in a natural condition. See map 12	No – The Proposed Development will not result in any loss/alteration of haul-out sites.
Resting behaviour	Conserve resting haul-out sites in a natural condition. See map 12	No – The Proposed Development will not result in any loss/alteration of haul-out sites.
Disturbance	Human activities should occur at levels that do not adversely affect the harbour seal population at the site	No – The Proposed Development will not result in any disturbance to harbour seals.

On a precautionary basis, a complete source-pathway-receptor chain for adverse effects on this species was identified due to the potential deterioration in water quality resulting from construction and operational activities adversely impacting the species’ habitat, which comprises much of the designated area of the SAC in Galway Bay, prey (fish) resources, as well as important breeding, moulting and resting sites.

5.1.2 Inner Galway Bay SPA

The potential for impacts on this SPA were identified in Section 4.1 above. The identified pathways for effect is downstream surface water connectivity via the Knocknacarragh stream which runs underneath the site of the Proposed Development.

Table 5-12 below lists the qualifying features of this European Site and determines, in the light of their Conservation Objectives, whether there is any complete source-pathway-receptor chain, by which adverse effects may occur.

5.1.2.1 Identification of Individual Qualifying Features with the Potential to be Affected

Table 5-12 Assessment of Qualifying features potentially affected

Qualifying feature	Conservation Objective (NPWS, Version 1, May 2013 ⁴),	Rationale	Potential for Adverse Effects Y/N
[A003] Great Northern Diver (<i>Gavia immer</i>)	To maintain the favourable conservation condition of Great Northern Diver in Inner Galway Bay SPA.	The Kingston Park site does not provide significant suitable habitat for any SCIs of Inner Galway Bay SPA. Two SCI species, black headed gull, and common gull were recorded flying over the site during bird surveys in Kingston Park; however they were not recorded using the site.	N
[A017] Cormorant (<i>Phalacrocorax carbo</i>)	To maintain the favourable conservation condition of Cormorant in Inner Galway Bay SPA.	The potential for <i>ex-situ</i> habitat loss effects on SCI bird species has been excluded at the Appropriate Assessment Screening Stage (refer to Section 4.1).	N
[A028] Grey Heron (<i>Ardea cinerea</i>)	To maintain the favourable conservation condition of Grey Heron in Inner Galway Bay SPA.	A potential pathway for indirect effects on these species via deterioration of water quality resulting in potential degradation of supporting wetland habitat for these species was identified. This is assessed under the SCI 'Wetland' below.	N
[A046] Brent Goose (<i>Branta bernicla hrota</i>)	To maintain the favourable conservation condition of Light-bellied Brent Goose in Inner Galway Bay SPA.	No further assessment is required in relation to disturbance or displacement of these species.	N
[A050] Wigeon (<i>Anas Penelope</i>)	To maintain the favourable conservation condition of Wigeon in Inner Galway Bay SPA.		N
[A052] Teal (<i>Anas crecca</i>)	To maintain the favourable conservation condition of Teal in Inner Galway Bay SPA.		N

⁴NPWS (2013) Conservation Objectives: Inner Galway Bay SPA 004031. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Qualifying feature	Conservation Objective (NPWS, Version 1, May 2013 ⁴),	Rationale	Potential for Adverse Effects Y/N
[A056] Shoveler (<i>Anas clypeata</i>)	To maintain the favourable conservation condition of Shoveler in Inner Galway Bay SPA.		N
[A069] Red-breasted Merganser (<i>Mergus serrator</i>)	To maintain the favourable conservation condition of Red-breasted Merganser in Inner Galway Bay SPA.		N
[A137] Ringed Plover (<i>Charadrius hiaticula</i>)	To maintain the favourable conservation condition of Ringed Plover in Inner Galway Bay SPA.		N
[A140] Golden Plover (<i>Pluvialis apricaria</i>)	To maintain the favourable conservation condition of Golden Plover in Inner Galway Bay SPA.		N
[A142] Lapwing (<i>Vanellus vanellus</i>)	To maintain the favourable conservation condition of Lapwing in Inner Galway Bay SPA.		N
[A149] Dunlin (<i>Calidris alpina alpina</i>)	To maintain the favourable conservation condition of Dunlin in Inner Galway Bay SPA.		N
[A157] Bar-tailed Godwit (<i>Limosa lapponica</i>)	To maintain the favourable conservation condition of Bar-tailed Godwit in Inner Galway Bay SPA.		N
[A160] Curlew (<i>Numenius arquata</i>)	To maintain the favourable conservation condition of Curlew in Inner Galway Bay SPA.		N

Qualifying feature	Conservation Objective (NPWS, Version 1, May 2013 ⁴),	Rationale	Potential for Adverse Effects Y/N
[A162] Redshank (<i>Tringa totanus</i>)	To maintain the favourable conservation condition of Redshank in Inner Galway Bay SPA.		N
[A169] Turnstone (<i>Arenaria interpres</i>)	To maintain the favourable conservation condition of Turnstone in Inner Galway Bay SPA.		N
[A179] Black-headed Gull (<i>Chroicocephalus ridibundus</i>)	To maintain the favourable conservation condition of Black-headed Gull in Inner Galway Bay SPA.		N
[A182] Common Gull (<i>Larus canus</i>)	To maintain the favourable conservation condition of Common Gull in Inner Galway Bay SPA.		N
[A191] Sandwich Tern (<i>Sterna sandvicensis</i>)	To maintain the favourable conservation condition of Sandwich Tern in Inner Galway Bay SPA.		N
[A193] Common Tern (<i>Sterna Hirundo</i>)	To maintain the favourable conservation condition of Common Tern in Inner Galway Bay SPA		N
[A999] Wetlands	To maintain the favourable conservation condition of wetland habitat in Inner Galway Bay SPA as a resource for the regularly occurring migratory waterbirds that utilise it.	There is direct hydrological connectivity between the Proposed Development site and Inner Galway Bay SPA, which is located downstream at a hydrological surface water distance of approx. 1.2 km via the Knocknacarragh stream. Therefore, a complete source-pathway-receptor chain for adverse effects on wetland habitat was identified due to deterioration in water quality resulting from construction and operation of the Proposed Development.	Y

Qualifying feature	Conservation Objective (NPWS, Version 1, May 2013 ⁴),	Rationale	Potential for Adverse Effects Y/N
		This potential pathway is assessed further in this NIS.	

5.1.2.2 Site Specific Pressures and Threats

As per the Natura 2000 Data Form, the site-specific threats, pressures and activities with potential to impact on the European Site were reviewed and considered in relation to the Proposed Development. These are provided in Table 5-13.

Table 5-13 Site-specific threats, pressures and activities

Negative Impacts			
Rank	Threats and Pressures		Inside/Outside
Medium	G01.02	walking, horseriding and non-motorised vehicles	inside
Medium	J02.12	Dykes, embankments, artificial beaches, general	inside
Medium	E02	Industrial or commercial areas	inside
Low	F03.01	Hunting	inside
Medium	F01	Marine and Freshwater Aquaculture	inside
High	J02.01.02	reclamation of land from sea, estuary or marsh	inside
Medium	G01.01	nautical sports	inside
Low	A04	grazing	inside
High	E01	Urbanised areas, human habitation	outside
High	E03	Discharges	inside
Medium	F02.03	Leisure fishing	inside
Medium	D01.02	roads, motorways	outside
Medium	A08	Fertilisation	outside

Potential pathways for effect with regard to site-specific threats, pressures and activities have been identified in relation to 'Urbanised areas, human habitation' and 'Discharges'.

5.1.2.3 SCI Habitat Specific Information

5.1.2.3.1 Wetlands [A999]

The conservation objective for this QI is:

‘To maintain the favourable conservation condition of wetland habitat in Inner Galway Bay SPA as a resource for the regularly occurring migratory waterbirds that utilise it.’

The attributes and targets for this habitat are provided in Table 5-14 below.

Table 5-14 Targets and attributes associated with site-specific conservation objectives for Wetlands in Inner Galway Bay SPA

Attribute	Target	Potential for Proposed Development to Undermine Conservation Objective Target in the Absence of Mitigation
Habitat area	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 13,267ha, other than that occurring from natural patterns of variation	No –The Proposed Development will not result in a reduction to the area of this habitat.

6.

ASSESSMENT OF POTENTIAL EFFECTS & ASSOCIATED MITIGATION

This section of the NIS assesses the potential effects of the Proposed Development on the identified relevant Qualifying Interests/Special Conservation Interests. The initial assessment is undertaken in the absence of any mitigation and in respect of the conservation objectives of the European Sites. The Conservation Objectives each of the European Sites assessed were reviewed on the 17th September 2025. The Conservation Objectives for these sites are available at the following locations:

- Galway Bay Complex SAC [000268]: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000268.pdf
- Inner Galway Bay SPA [004031]: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004031.pdf

Following the initial impact assessment, mitigation is prescribed where necessary to avoid adverse effects on the Conservation Objectives of the relevant QIs/SCIs.

6.1

Potential for Direct Effects on the European Sites

As outlined in Table 4-1 above, no QI habitats associated with the Galway Bay Complex SAC were recorded within the footprint or in close proximity to the Proposed Development. Therefore, potential for direct adverse effects on this SAC due to loss of QI habitat can be ruled out.

6.2

Potential for Indirect Effects on the European Sites

6.3

Deterioration of Water Quality

A pathway for effect was identified via the Knocknacarragh stream. Therefore, taking a precautionary approach, in the absence of mitigation there is potential for pollution of surface waters in Galway Bay as a result of pollution arising from construction and operational activities.

The QIs of the relevant European Sites, on which a potential pathway for adverse effects to occur due to deterioration of water quality has been identified, are listed below:

Galway Bay Complex SAC [000268]

- [1140] Mudflats and sandflats not covered by seawater at low tide
- [1150] Coastal lagoons
- [1160] Large shallow inlets and bays
- [1170] Reefs
- [1310] *Salicornia* and other annuals colonising mud and sand
- [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)
- [1355] Otter (*Lutra lutra*)
- [1365] Harbour seal (*Phoca vitulina*)
- [1410] Mediterranean salt meadows (*Juncetalia maritimi*)

Inner Galway Bay SPA [004031]

➤ [A999] Wetlands

6.3.1 Construction Phase

The pathway that would allow potentially adverse impacts to occur via deterioration in water quality was considered in the design of the Proposed Development. A Construction and Environmental Management Plan (CEMP) has been prepared for the Proposed Development and is included with the planning application documents and can be found in Appendix 9 of this NIS. The following best practice mitigation and environmental control measures as outlined in the CEMP have been incorporated into the proposed development.

6.3.1.1 Surface Water

- The site compounds will be established within the site boundary. The exact location of the site compounds will be established by the contractor. All construction materials and substances inclusive of the site compounds and will be located a minimum of 30 m from any drains. The compounds will be used for storage of material, machinery, fuel, and workers facilities.
- The works will be managed to ensure there will be no silt-laden run-off beyond the site boundary or into any nearby drains. This will be achieved through the use of appropriate excavation techniques during the initial construction works. Where necessary, silt fencing will be installed downslope of the construction areas, particularly where drains or drainage pathways are present. These measures will serve as a protective measure to contain silt material within the site.
- Any requirement for temporary fills or stockpiles will be damped down or covered with polyethylene sheeting as required to avoid sediment release associated with heavy rainfall.
- Excavated spoil will be stockpiled and contained entirely within the confines of the site boundaries.
- If groundwater is encountered during excavations, waters will be pumped from excavation and discharged through a pipe with a silt bag attached on to an area of overland vegetation within the site boundary. It should be noted that due to the extent of the excavations proposed, that the likelihood of encountering groundwater ingress is anticipated to be low.
- All diesel or petrol pumps required onsite will be operated within bunded units, these units will not be located within 30 m of any drains.
- Exposed surfaces will be re-vegetated as soon as possible following construction.
- Where possible, earthworks will not be carried out during periods of heavy rainfall.
- Daily monitoring and inspections of site drainage and silt fencing during construction will be completed by the appointed environmental officer;
- Good construction practices will be implemented at the site. This will ensure minimal risk. The Construction Industry Research and Information Association (CIRIA) provide guidance on the control and management of water pollution from construction sites ('Control of Water Pollution from Construction Sites, guidance for consultants and contractors', CIRIA, 2001)⁵, which provides information on these issues. This will ensure that surface water arising during the course of construction activities will contain minimum sediment.

⁵ Construction Industry Research and Information Association (CIRIA) (2001); 'Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors'. CIRIA UK. Available at: <https://www.ciria.org/>

6.3.1.2 Refuelling, Fuel and Hazardous Materials Storage

- Storage/refuelling shall occur in a designated area of the construction sites, located a suitable distance from excavation works. This area should be underlain by impermeable hard standing, and tanks should be inspected for leaks regularly. Spill kits should be supplied at these stations and staff should be trained in their use and in spill control. Drainage from these areas shall be diverted for collection and not discharged into municipal drains without treatment and other best management practices.
- On site refuelling will be directly done from delivery trucks or stored fuel within bunded fuel tanks. Mobile measures such as drip trays and fuel absorbent mats will be used during all refuelling operations.
- Vehicles will never be left unattended during refuelling; only dedicated trained and competent personnel will perform refuelling operations; plant refuelling procedures shall be detailed in the contractor's method statements.
- Fuels, lubricants and hydraulic fluids for equipment used on the site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment.
- Storage of the small volume of fuels, lubricants and hydraulic fluids on-site will be placed secured in appropriately bunded storage areas within the boundaries of the Proposed Development site.
- Storage bunds/trays, if required will be constructed of an impermeable membrane (High density polyethylene (HDPE) Plastic) and will have the adequate capacity to contain the volume of the liquids contained therein, if a leak/spillage does occur from one of the storage vessels.
- All sites plant will be inspected at the beginning of each day prior to use. Defective plant shall not be used until the defect is satisfactorily fixed. All major repair and maintenance operations will take place off-site.

6.3.1.3 Spill Control Measures

In the event of minor spills and leaks from road vehicles and the onsite excavator, the following steps provide the procedure to be followed in the event of any significant spill or leak.

- Stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers.
- If applicable, eliminate any sources of ignition in the immediate vicinity of the incident.
- Contain the spill using the spill control materials, track mats or other material as required. Do not spread or flush away the spill.
- If possible, cover or bund off any vulnerable areas where appropriate such as drains or watercourses.
- Clean up as much as possible using the spill control materials.
- Contain any used spill control material and dispose of used materials appropriately using a fully licensed waste contractor with the appropriate permits so that further contamination is limited.
- Notify the Environmental Manager immediately giving information on the location, type and extent of the spill so that they can take appropriate action and further investigate the incident to ensure it has been contained adequately.
- External consultants will inspect the site and ensure the necessary measures are in place to contain and clean up the spill and prevent further spillage from occurring.
- The Environmental Manager will notify the appropriate regulatory body such as Galway City Council, if deemed necessary.

6.3.1.4 Cement Based Products Control Measures

The following mitigation measures are proposed to avoid release of cement leachate from the site:

- No batching of wet-cement products will occur on the sites.
- Ready-mixed supply of wet concrete products and where possible, emplacement of pre-cast elements, will take place.
- No washing out of any plant used in concrete transport or concreting operations will be allowed on-sites.
- Where concrete is delivered on the sites, only chute cleaning will be permitted, using the smallest volume of water possible.
- No discharge of cement contaminated waters to the construction phase drainage system or directly to any stormwater drain will be allowed.
- Use weather forecasting to plan dry days for pouring concrete.
- Ensure pour site is free of standing water and plastic covers will be ready in case of sudden rainfall event.

6.3.1.5 Dust control

Construction dust can be generated from many on-site activities such as excavation and backfilling. The extent of dust generation will depend on the type of activity undertaken, the location, the nature of the dust, i.e., soil, sand, etc and the weather. In addition, dust dispersion is influenced by external factors such as wind speed and direction and/or, periods of dry weather. Construction traffic movements also have the potential to generate dust as they travel along the haul route. The measures below will also prevent construction debris arising on the public road network.

- The designated public roads outside the site and along the main transport routes to the site will be regularly inspected by Site Management for cleanliness and cleaned as necessary.
- Material handling systems and material storage areas, if required will be designed and laid out to minimise exposure to wind.
- Water misting will be utilised on-site as required to mitigate dust in dry weather conditions, if required.
- A road sweeper will be employed, if necessary, to clean the public roads of any residual debris that may be deposited on the public roads leading away from the construction works.
- On site wheel washing will be undertaken as required for construction vehicles to remove any debris prior to leaving the site,
- The transport of soils, aggregates or other material, which has the potential to generate dust, will be undertaken in tarpaulin-covered vehicles where necessary.
- Daily inspection of construction sites to examine dust measures and their effectiveness.
- All construction related traffic will have speed restrictions on un-surfaced areas within the site to 15 kph.
- Daily inspection of construction sites to examine dust measures and their effectiveness.

6.3.1.6 Earthworks

- Material that is not re-used will be transported off site to a designated waste facility.
- Suitable stone material will be imported to the site to be used as backfill.
- Excavation depths will be kept to a minimum.

6.3.1.7 Environmental Monitoring

The contractor will assign a member of the site staff as the environmental officer with the responsibility for ensuring the environmental measures prescribed in this document are adhered to. Any environmental incidents or non-compliance issues will immediately be reported to the project team.

6.3.2 Operational Phase

The operational phase of the Proposed Development will result in the production of foul and surface-water runoff which, if not adequately treated, has the potential to result in indirect effects on water quality and, therefore, potential adverse effects on aquatic QIs associated with downstream European Sites. The following design measures will be implemented to prevent impacts on European Sites during the operational phase of the Proposed Development:

6.3.2.1 Surface Water

The surface water drainage plans have been prepared by PUNCH and are included in the Engineering Planning Report available in Appendix 2.

The proposed surface water drainage network will connect into the existing public drainage network. SuDS measures, including permeable grass paving, bioretention areas, rain gardens and a permeable synthetic grass pitch will help limit the flow of water entering the surface water network system.

6.3.2.2 Foul Water

A new foul water sewer system is proposed to connect the buildings within the Proposed Development to the existing combined public sewer system. This will account for foul water generated during the use of the buildings and divert it into the existing public system. Details of the proposed foul water network are outlined in the Engineering Planning Report available in Appendix 2.

6.4 Decommissioning Phase

It is not intended that the Proposed Development will be removed, as permanent planning permission is being sought for this development. The Proposed Development will form an integral part of the Knocknacarra area and will provide an essential amenity space. Therefore, it is intended that the Proposed Development will be retained as permanent and will not be decommissioned.

7.

ASSESSMENT OF RESIDUAL ADVERSE EFFECTS

The potential for residual adverse effects on each of the individual relevant Qualifying Features of the Screened In European Sites following the implementation of mitigation, is assessed in this section of the report.

Based on the above, in view of best scientific knowledge, on the basis of objective information, there is no potential for adverse effect on the identified QIs/SCIs and their associated targets and attributes, or on any European Site Potential pathways for effect have been robustly blocked through measures to avoid impacts and the incorporation of best practice/mitigation measures into the project design.

Taking cognisance of measures to avoid impacts and best practice/mitigation measures incorporated into the project design which are considered in the preceding section, the Proposed Development will not have an adverse effect on the integrity of any European Site.

The Proposed Development will not prevent the QIs/SCIs of European Sites from achieving/maintaining favourable conservation status in the future as defined in Article 1 of the EU Habitats Directive. A definition of Favourable Conservation Status is provided below:

‘conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2; The conservation status will be taken as ‘favourable’ when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.’

Based on the above, it can be concluded in view of best scientific knowledge, on the basis of objective information that the Proposed Development will not adversely affect the Qualifying Interests/Special Conservation Interests associated with any European Site.

8.

ASSESSMENT OF CUMULATIVE EFFECTS

A search and review in relation to plans and projects that may have the potential to result in cumulative and/or in-combination impacts on European Sites was conducted. This assessment focuses on the potential for cumulative in-combination effects on the European Sites where potential for adverse effects was identified in Section 4 of this report. This included a review of online Planning Registers, Development Plans and other available information and served to identify past and future plans and projects, their activities and their predicted environmental effects. A list of the plans and projects considered is provided in Appendix 9.

8.1

Plans

The following Development Plans have been reviewed and taken into consideration as part of this assessment:

- Galway County Development Plan 2022 – 2028
- Galway City Council Development Plan 2023-2029
- Ireland's 4th National Biodiversity Action Plan 2023-2030
- Northern and Western Regional Assembly Regional Spatial and Economic Strategy 2020-2032

A review of the objectives of the Plans relating to European Designated Sites has been carried out and is provided in the Appendix. No potential for cumulative effects when considered in-combination with the Proposed Development has been identified, and the Proposed Development is in compliance with the relevant objectives of the Plan.

In addition, the Appropriate Assessment carried out for these Plans have been reviewed. The relevant Natura Impact Report (NIR) is found on the Galway County Council website at the following link:

< <https://www.galway.ie/en/media/7.%20Natura%20Impact%20Report%20title.pdf> >.

The Appropriate Assessment carried out for the Development Plan has concluded that there is no potential for Residual Adverse Effect as a result of implementation of the Plan. Therefore, there is no potential for cumulative effect as a result of the Proposed Development in-combination with the Plan.

8.2

Projects

Assessment material for this in-combination impact assessment was compiled on the relevant developments within the vicinity of the Proposed Development. The material was gathered through a search of relevant online Planning Registers, reviews of relevant documents, planning application details and planning drawings, and served to identify past and future projects, their activities and their environmental impacts. All relevant projects were considered in relation to the potential for in-combination effects. All relevant data was reviewed (e.g. individual EISs/EIARs, NISs, layouts, drawings etc.) for all relevant projects where available.

The dominant land uses in the area were also considered in the assessment, these included residential and commercial uses.

The relevant developments that are within the Proposed Development are as follows:

- **Planning Ref. 9926:** Permission to erect a club house/dressing rooms
- **Planning Ref. 96238:** Permission to erect a Club House/Dressing Rooms
- **Planning Ref. 93112:** Permission for revised location of car parking at proposed football pitches

The following developments are proposed adjacent to the Kingston Park site:

- **Planning Ref. 2560320:** Provision of 362 no. residential units in 4 no. development areas with a mix of apartment and house types on a site area of 5.37 ha. The buildings range between 2 no. and 6 no. storeys in height. The development will comprise the following:

4 no. 2-bed townhouses;
40 no. 3-bed townhouses;
21 no. 4-bed townhouses;
15 no. 1-bedroom duplex apartments;
46 no. 2-bedroom duplex apartments;
15 no. 2-bedroom duplex houses;
46 no. 3-bedroom duplex houses;
114 no. 1-bedroom apartments;
56 no. 2-bedroom apartments;
5 no. 3-bedroom apartments.
Demolition of existing structures (333.8 m²);
Vehicular access to the proposed development from a permitted road (Planning Reference 24/60370 refers);

The provision of new active travel cycle and pedestrian access from Millers Lane;
Upgrades to the existing access at Kingston Road
The provision of a childcare facility (440 m²);
The provision of public open space;
The provision of 665 no. bicycle parking spaces;
The provision of 313 no. car parking spaces;
Public lighting, bin stores, signage, services, ESB substation, site landscaping and all ancillary site development and enabling works.

- **Planning Ref. 24/50370:** Forbairt Snámh Thiar Cuideachta Faoi Theorainn Ráthaíochta, intend to apply to Permission for development which consists of; Galway City Council for permission for the development of a swimming pool and sports facility at a 0.87ha site accessed from Altán Road and Millers Lane, in the townlands of Ragoon, Knocknacarra, Galway. The

proposed development will consist of the construction of a prefabricated aluminium frame and fabric tensile envelope with independently constructed facilities building within the envelope and will include the following: 1. Provision of a 35 x 25m competition standard swimming pool with adjustable floor (max depth 2m); 2. Ground floor changing rooms ‘wet village’ including steam room, sauna and first aid (425 sq.m.), pool deck and spectator area (476 sq.m), reception and staff offices (57 sq.m.), gymnasium (576 sq.m), storage areas and plant spaces (52 sq.m.); 3. Provision of ancillary spaces on the mezzanine floor including multifunctional sports court (760sq. m), gymnasium (92 sq.m), staff offices (54 sq.m.); bathroom facilities and plant spaces (389 sq.m.); 4. Provision of plant area at basement level (495 sq.m.); 5. Provision of a coffee dock at ground floor level (85 sq. m.); 6. The provision of new vehicular and pedestrian access from Altán Road along with the provision of upgraded cycle and pedestrian infrastructure along Altán Road; 7. The provision of new active travel cycle and pedestrian access from Millers Lane; 8. Provision of site landscaping, wall mounted signage, public lighting, bike parking (89 no. Spaces), car parking (75 no. Spaces), bus parking (2 no. Spaces), 1 no. ESB Substation, 1 no. LV Switch room, ground mounted solar PV (250 sq. m) and all associated site development and site enabling works.

8.3

Conclusion of Assessment of Cumulative Effects

Following the detailed assessment provided in the preceding sections, it is concluded that, the Proposed Development will not result in any residual adverse effects on any of the European Sites, their integrity or their conservation objectives when considered on its own. There is therefore no potential for the proposed development to contribute to any cumulative adverse effects on any European Site when considered in-combination with other plans and projects.

In the review of the projects that was undertaken, no connection, that could potentially result in additional or cumulative impacts was identified. Neither was any potential for different (new) impacts resulting from the combination of the various projects and plans in association with the proposed development.

Taking into consideration the reported residual impacts from other plans and projects in the area and the predicted impacts with the current proposal, no residual cumulative impacts have been identified with regard to any European Site.

9.

CONCLUDING STATEMENT

This NIS has provided an assessment of all potential direct or indirect adverse effects on European Sites. It has also assessed the potential for in-combination effects on European site with other plans and projects.

Where the potential for any adverse effect on any European Site has been identified, the pathway by which any such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and its appendices. The measures ensure that the construction and operation of the Proposed Development does not adversely affect the integrity of European sites.

Therefore, it can be objectively concluded that the Proposed Development, individually or in-combination with other plans or projects, will not adversely affect the integrity of any European Site.

BIBLIOGRAPHY

Bibby, C., Burgess, N.D., Hill, D., & Mustoe, S. (2000) *Bird Census Techniques – Second Edition*. Academic Press, London, England.

BoCCI 2021. Birds of Conservation Concern in Ireland 4: 2020-2026. Available Online at: <https://birdwatchireland.ie/app/uploads/2021/04/BOCCI-2020-2026.pdf>. Accessed on 17/09/2024.

British Bryological Society. Atherton, I., Bosanquet, S. and Lawley, M. eds., 2010. Mosses and liverworts of Britain and Ireland: a field guide. Plymouth.

CIEEM, 2018. Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine version 1.3. Chartered Institute of Ecological and Environmental Management, Winchester.

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) and Directive 2009/147/EC (codified version of Directive 79/409/EEC as amended) (Birds Directive) – transposed into Irish law as European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477/2011).

DoEHLG (2010). Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Revision, February, 2010. Department of the Environment, Heritage and Local Government.

EC (2021) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission.

EC (2018) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission.

EC (2013). Interpretation Manual of European Union Habitats. Version EUR 28. European Commission, DG Environment.

EC (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. Office for Official Publications of the European Communities, Luxembourg. European Commission.

EC (2006) Nature and biodiversity cases: Ruling of the European Court of Justice. Office for Official Publications of the European Communities, Luxembourg.

Environmental Protection Agency [online]. Available at: <http://www.epa.ie>. [Accessed 17/09/2025].

European Communities (Conservation of Wild Birds) Regulations, 1985, SI 291/1985 and amendments – <http://www.irishstatutebook.ie>

European Communities (Natural Habitats) Regulations, SI 94/1997, SI 233/1998 and SI 378/2005 – <http://www.irishstatutebook.ie>

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

Galway County Development Plan 2022 – 2028

Galway City Council Development Plan 2023-2029

Lewis, L. J., Coombes, D., Burke, B., O'Halloran, J., Walsh, A., Tierney, T. D. and Cummins, S. (2019). Countryside Bird Survey: Status and trends of common and widespread breeding birds 1998-2016. *Irish Wildlife Manuals*, No. 115. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

Lewis, L. J., Burke, B., Fitzgerald, N., Tierney, T. D. and Kelly, S. (2019). Irish Wetland Bird Survey: Waterbird Status and Distribution 2009/10-2015/16. *Irish Wildlife Manuals*, No. 106. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

NPWS (2024). Irelands 4th National Biodiversity Plan 2023-2030. Department of Housing, Local Government and Heritage, Dublin, Ireland.

NPWS (2019) The Status of EU Protected Habitats and Species in Ireland. Habitat Assessments Volume 2. Version 1.0. Unpublished Report, National Parks and Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

NPWS (2019), The Status of EU Protected Habitats and Species in Ireland. Species Assessments Volume 3, Version 1.0. Unpublished Report, National Parks and Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

NPWS (2017) Conservation Objectives: Lough Corrib SAC 000297. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

NPWS (2013). Conservation Objectives: Galway Bay Complex SAC 000268. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013) Conservation Objectives: Inner Galway Bay SPA 004031. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NRA/TII (2009). Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes. Dublin: National Roads Authority.

National Biodiversity Data Centre [online]. Available at: <http://www.biodiversityireland.ie/> [Accessed 17/09/2025].

Northern and Western Regional Assembly Regional Spatial and Economic Strategy 2020-2032

Scottish Natural Heritage (SNH) (2016). Assessing connectivity with Special Protection Areas (SPAs). Scottish Natural Heritage, Inverness, Scotland.

Stace, C., 2019. New Flora of the British Isles, 4th Edition. CandM Floristics.

Smith *et al.*, (2011). Best Practice Guidance for Habitat Survey and Mapping. The Heritage Council

Thaxter, C. B., Lascelles, B., Sugar, K., Cook, A. S. C. P., Roos, S. Bolton, M., Langston, R. H. W. and Burton, N. H. K. (2012). Seabird foraging ranges as a preliminary tool for identifying candidate Marine Protection Areas. *Biological Conservation*, 156: 53-61. <https://doi.org/10.1016/j.biocon.2011.12.009>

Woodward, I. D., Frost, T. M., Hammond, M. J., & Austin, G. E. (2019). Wetland Bird Survey Alerts 2016/2017: Changes in numbers of wintering waterbirds in the Constituent Countries of the United Kingdom. Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs) and Areas of Special Scientific interest (AS. Thetford.