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Report in Support of Appropriate
Assessment (AA) Screening

Proposed Social Housing at Clonteg More,
Coachford, Co. Cork.

On Behalf of
Walsh Design Group

February 2024

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Project	Report in Support of Appropriate Assessment (AA) Screening for Proposed Social Housing at Clontear More, Coachford, Co. Cork.	
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1. Introduction

1.1 Background

The information in this report has been compiled by DixonBrosnan Environmental Consultants, on behalf of the applicant. It provides information on and assesses the potential for a proposed social housing development at Clonteag More, Coachford, Co. Cork, to impact on any European sites within its likely Zone of Impact. The information in this report forms part of and should be read in conjunction with the planning application documentation being submitted to the planning authority in connection with the proposed development.

The Birds Directive (2009/147/EC) and the Habitats Directive (92/42/EEC) put an obligation on EU Member States to establish the Natura 2000 network of sites of highest biodiversity importance for rare and threatened habitats and species across the EU. In Ireland, the Natura 2000 network of European sites comprises Special Areas of Conservation (SACs, including candidate SACs) and Special Protection Areas (SPAs, including proposed SPAs). SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is selected correspond to the qualifying interests of the sites and from these the conservation objectives of the site are derived. The Birds and Habitats Directives set out various procedures and obligations in relation to nature conservation management in Member States in general, and of the European sites and their habitats and species in particular. A key protection mechanism is the requirement to consider the possible nature conservation implications of any plan or project on the Natura 2000 site network before any decision is made to allow that plan or project to proceed. Not only is every new plan or project captured by this requirement but each plan or project, when being considered for approval at any stage, must take into consideration the possible effects it may have in combination with other plans and projects when going through the process known as Appropriate Assessment (AA).

The obligation to undertake Appropriate Assessment (AA) derives from Article 6(3) and 6(4) of the Habitats Directive, and both involve a number of steps and tests that need to be applied in sequential order. Article 6(3) is concerned with the strict protection of sites, while Article 6(4) is the procedure for allowing derogation from this strict protection in certain restricted circumstances. As set out in the Planning and Development Act 2000 as amended, a screening for appropriate assessment of an application for consent for the proposed development must be carried out by the competent authority to assess, in view of best scientific knowledge, if the proposed development, individually or in combination with another plan or project is likely to have a significant effect on any European site. Each step in the assessment process precedes and provides a basis for other steps. The results at each step must be documented and recorded carefully so there is full traceability and transparency of the decisions made.

1.2 Aim of Report

The purpose of this report is to inform the AA process as required under the Habitats Directive (92/43/EEC) in instances where a plan or project may give rise to significant impacts on a European site. This report aims to inform the Appropriate Assessment process in determining

whether the development, both alone and in combination with other plans or projects, are likely to have a significant impact on the European sites in the study area, in the context of their conservation objectives and specifically on the habitats and species for which the sites have been designated.

This report has been prepared with regard to the following guidance documents, where relevant:

- *Managing Natura 2000 Sites: The Provision of Article 6 of the Habitats Directive 92/43/EEC (European Commission (EC), 2018);*
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodical;*
- *Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission (EC), 2021);*
- *Guidance Document on Article 6(4) of the Habitats Directive 92/43/EEC (European Commission, (EC) 2007);*
- *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (Department of Environment, Heritage and Local Government, 2010 revision);*
- *Appropriate Assessment under Article 6 of the Habitats Directive; Guidance for Planning Authorities. Circular NPW 1/10 and PSSP 2/10 (Department of Environment, Heritage and Local Government, 2010);*
- *Guidelines for Good Practice Appropriate Assessment of Plans under Article 6(3) Habitats Directive (International Workshop on Assessment of Plans under the Habitats Directive, 2011);*
- *Commission notice Guidance document on wind energy developments and EU nature legislation, (EC 2020);*
- *Communication from the Commission on the precautionary principle. European Commission (EC 2000);*
- *Assessment of plans & projects in relation to N2K sites – Methodological Guidance (EC 2021);*
- *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive (EC 2021) and*
- Office of Planning Regulator OPR Practice Note PN01 Appropriate Assessment Screening for Development Management.
- **1.3 Authors of Report**

This report and survey work was completed by Carl Dixon MSc (Ecological Monitoring) and Dr. Sorcha Sheehy PhD (Ecology/ornithology).

Carl Dixon holds an Honours Degree (BSc) in Ecology and a Masters (MSc) in Ecological Monitoring from UCC. He is a senior ecologist who has over 25 years' experience in ecological assessment. Prior to setting up DixonBrosnan Environmental Consultants in 2000, Carl set up and ran Core Environmental Services which included REPS planning for landowners and ecological assessments. Carl has particular experience in freshwater ecology, including electrofishing fish stock assessments and water quality assessments. He also has considerable experience in habitat mapping and mammal ecology including survey work and reporting in relation to Badgers and bats. Other competencies include surveys for invasive species and bird surveys. Carl has extensive experience with regards to EIAR and NIS mitigation and impact assessment. He has experience in large-scale industrial developments with extensive experience in complex assessments as part of multi-disciplinary teams. Such projects include gas pipelines, incinerators, electrical cable routes, oil refineries and quarries.

Sorcha Sheehy PhD (Ecology/ornithology) is an ecologist and ornithologist who has worked for 15 years in environmental consultancy. She has worked on Screening/NISs for a range of small and large-scale projects with expertise in assessing impacts on birds. Sorcha's PhD research focused on bird behaviour at airports, where she studied bird avoidance behaviour and collision risk to aircraft. Her research involved field observations, post-mortem analysis and radar surveys. Sorcha has worked on bird collision risk assessments at airports throughout Ireland including Dublin airport, Cork airport, Shannon airport and Kerry airport. During her consultancy work Sorcha carried out field-based surveys and environmental reports including NIS, AA screening and EIARs. Notable projects include the Arklow Bank Wind Park, Indaver Ireland Waste Management Facility at Ringaskiddy, Irving Oil Whitegate Refinery (IOWR), Shannon LNG and Greenlink Interconnector.

2. Regulatory Context and Appropriate Assessment Procedure

2.1 Regulatory Context

The Habitats Directive (Council Directive 92/43/EEC on the *Conservation of Natural Habitats and of Wild Fauna and Flora*) aims to maintain or restore the favourable conservation status of habitats and species of community interest across Europe. The requirements of these directives are transposed into Irish law through the European Communities (Birds and Natural Habitats Regulations 2012-2022).

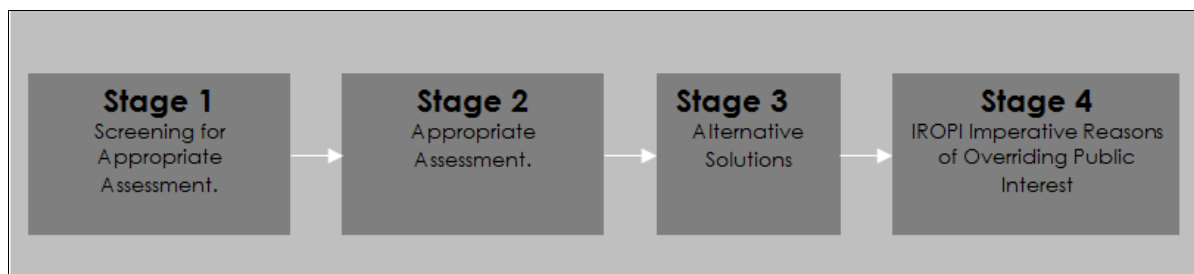
Under the Directive a network of sites of nature conservation importance have been identified by each Member State as containing specified habitats or species requiring to be maintained or returned to favourable conservation status. In Ireland the network consists of SACs and SPAs, and also candidate sites, which form the Natura 2000 network of European sites.

Article 6(3) of Council Directive 92/43/EEC of 21st May 1992 on the *Conservation of Natural Habitats and of Wild Fauna and Flora* (as amended) (hereafter 'the Habitats Directive') requires that, any plan or project not directly connected with or necessary to the management of a designated site, but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. A competent authority (e.g. the EPA or Local Authority) can only agree to a plan or project after having determined that it will not adversely affect the integrity of the site concerned.

The possibility of a significant effect on a designated or “European” site has generated the need for an appropriate assessment to be carried out by the competent authority for the purposes of Article 6(3). A Stage Two Appropriate Assessment is required if it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site. The first (Screening) Stage for appropriate assessment operates merely to determine whether a (Stage Two) Appropriate Assessment must be undertaken on the implications of the plan or project for the conservation objectives of relevant European sites.

2.2 Appropriate Assessment Procedure

The assessment requirements of Article 6(3) establish a stage-by-stage approach. This assessment follows the stages outlined in the 2001 European Commission publications “Assessment of plans and projects significantly affecting European sites: methodological guidance on the provisions of Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC” (2001) and 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 (EC, 2019);



The stages are as follows:

Stage One: Screening — the process which identifies any appreciable impacts upon a European site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant;

Stage Two: Appropriate assessment — the consideration of the impact on the integrity of the European site of the project or plan, either alone or in combination with other projects or plans, with respect to the site’s structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;

Stage Three: Assessment of alternative solutions: The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European site. It is confirmed that no reliance is placed by the developer on Stage Three in the context of this application for development consent;

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain — an assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed (it is important to note that this guidance does not deal with the assessment of imperative reasons of overriding public interest). Again, for the avoidance of doubt, it is confirmed that no reliance is placed by the developer on Stage Four in the context of this application for development consent.

It is the responsibility of the competent authority, to make a decision on whether or not the proposed development should be approved, taking into consideration any potential impact upon any European site within its likely zone of impact.

3. Receiving Environment

3.1 Existing site

The proposed development is located at Clonteag More, Coachford, Co. Cork just north of the main street of Coachford village. The village of Coachford is located c.10.7km northwest of Ballincollig and c.11.8km east of Macroom. The site area within the application redline boundary is 1.01ha.

The proposed development site is located on a greenfield site, with the regional route R619 running along the south-eastern boundary and a small local road running along the western boundary. Although Coachford village is located to the immediate south of the site, the area is largely rural in nature and is dominated agricultural and silvicultural land uses.

3.2 Proposed development

The proposed housing development will consist of a mix of residential unit types and associated ancillary works (roads, sanitary services, SUDS, utilities, landscaped green areas, parking areas, service diversions, retaining structures and ancillary works to adjoining roads, traffic calming, drainage upgrades, miscellaneous works etc.) to create a high-quality development.

Layout plans have been prepared for the Council owned sites which indicates.

- 6no. 3 bed houses,
- 10no. 2 beds houses and
- 10no. 1 bed apartments:

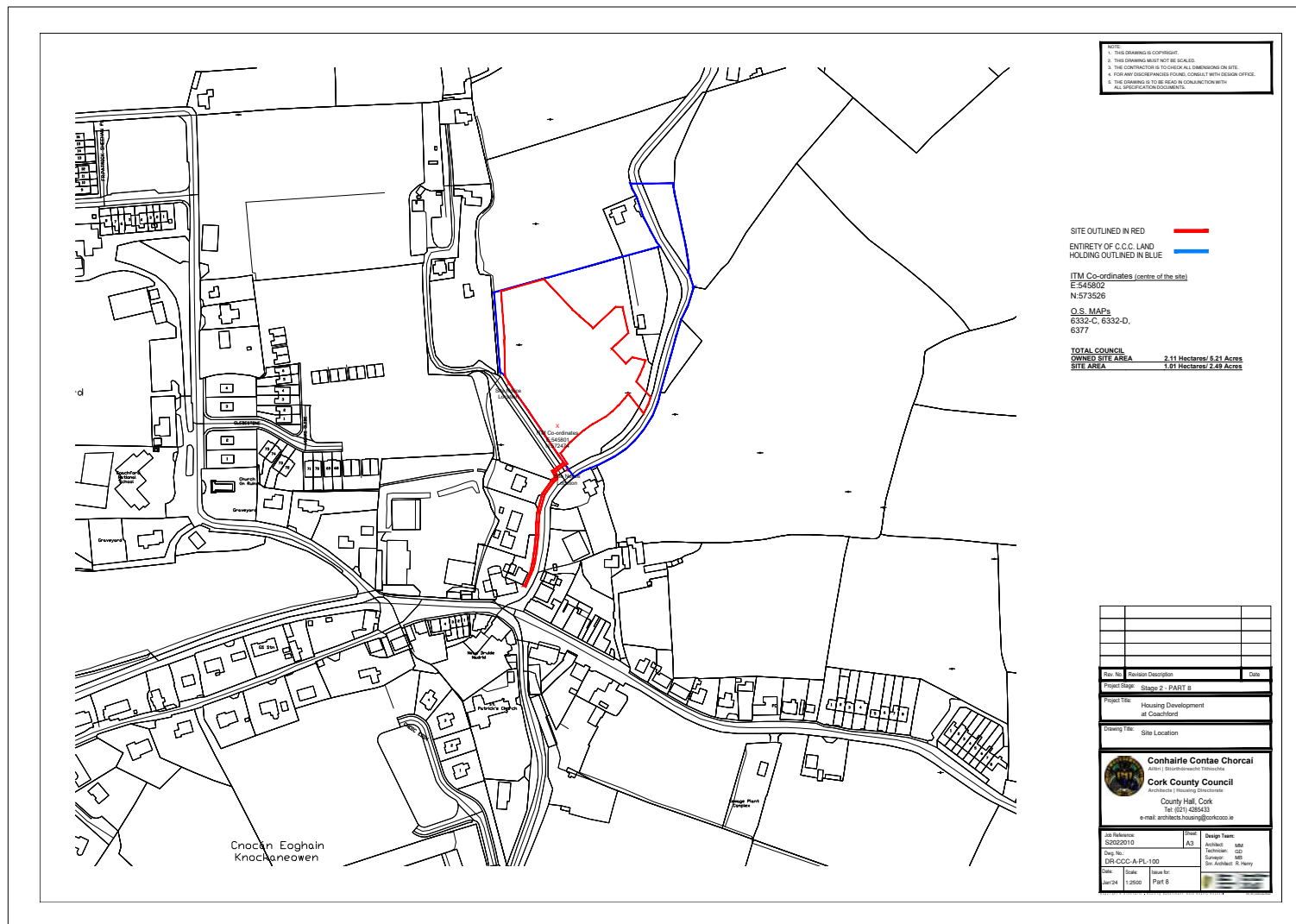


Figure 1. Proposed development site (approximate location) | Source Cork County Council

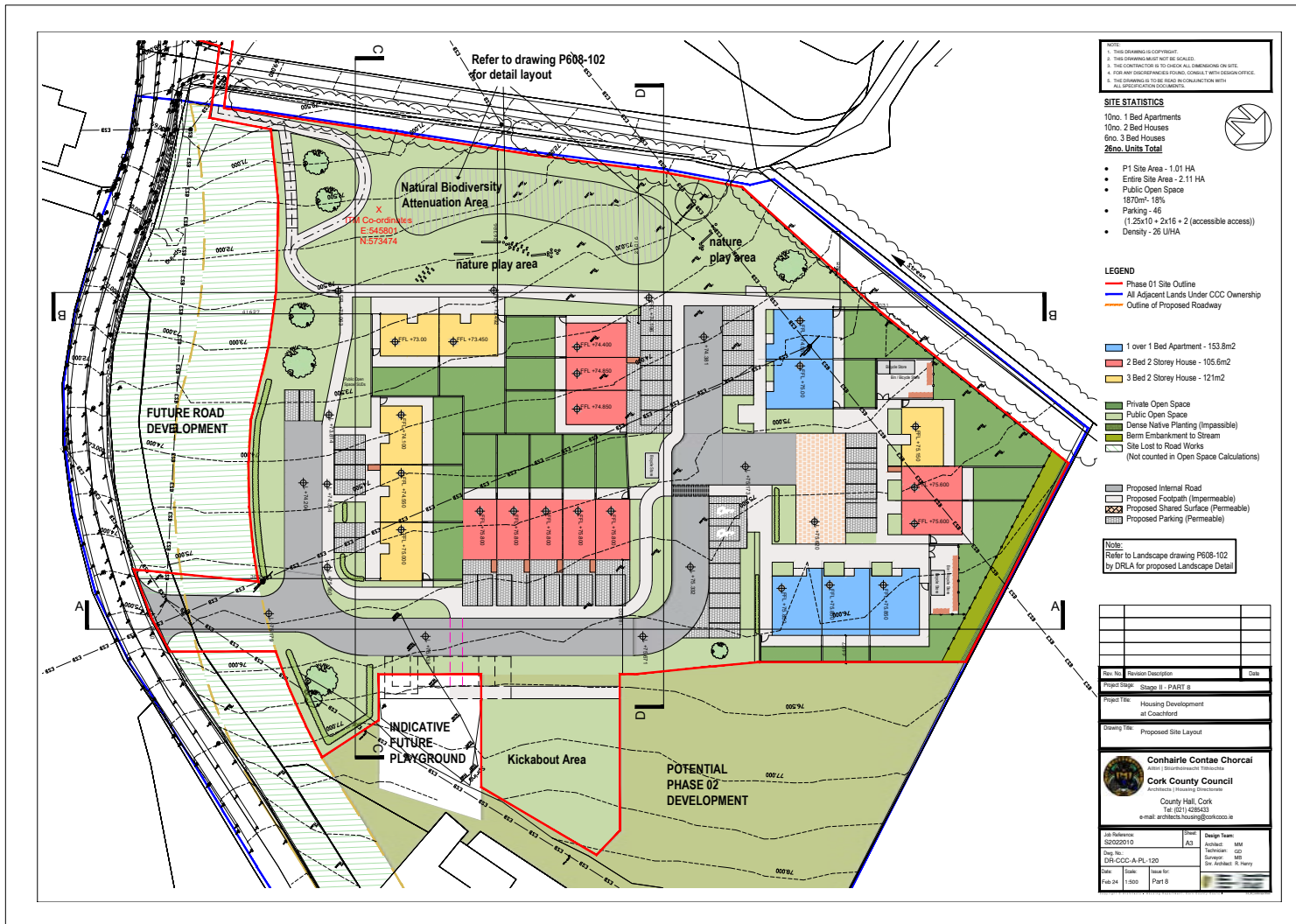


Figure 2. Site layout | Source Cork County Council

3.3 Surface Water

The proposed storm sewer collection system consists of a 100mm diameter pipe collection network around each house in accordance with TGD part H discharging to 225mm diameter uPVC sewer or larger in the public areas of the development. The surface water network layout is shown in drawing no. 23028-XX-XX-XX-XX-DR-WDG-CE-002 and the typical details for the surface water infrastructure are shown on drawing no. 23028-XX-XX-XX-XX-DR-WDG-CE-500.

The surface water sewers have been designed using the Causeway Flow design software and the Wallingford procedure for the design and analysis of urban drainage. The surface water system for the development is a single network falling generally from north to south, exiting the site in its southern corner and continuing under the R619 to its junction with the R618 in Coachford Village. It is intended to discharge the stormwater to an existing culvert on the southern side of the R618 at the junction.

In accordance with the recommendations of sustainable urban drainage systems (SuDS) the allowable stormwater discharge from the surface water network was calculated by means of the QBAR equation for small rural catchments (< 25 km²) as indicated in the institute of Hydrology, UK Report No. 124.

This single network is designed to fall generally from north to south and exit the development in the southernmost corner at the junction between the R619 and the L-96192-11. To reduce the forward flow from the developed site to a maximum of the QBAR greenfield runoff rate of 10.06 l/s a hydrobrake shall be constructed in a manhole prior to the sewer exiting the site. Choking the flow to this rate will result in the requirement for temporary attenuation storage. A certain amount of attenuation storage shall be provided in the roadside swales, but the primary storage element shall be a shallow detention basin in the lower, southwest area of the site. These features are described in more detail in the drainage impact assessment below.

It is intended to continue the new surface water network southwards under the R619 to Coachford Village where it is proposed to discharge the stormwater to an existing culvert on the southern side of the R618 at the junction.

SuDS measures are proposed for the development in both public and private areas in accordance with the guidance from the County Development Plan 2022 Advice Note 1 on Surface Water management and the CIRIA SuDS Manual C753.

The Measures proposed will decrease the impact of the development on the receiving environment and also provide amenity and biodiversity in many cases. Regular maintenance of the SuDS measures will be required to ensure that they are effective throughout their design life. The following paragraphs describe the following SuDS features proposed: a detention basin, permeable paving, underdrained roadside swales, bio-retention tree pits, bio-retention raingardens and water butts.

3.4 Wastewater

The layout of the proposed wastewater drainage network for the development is shown on WDG drawing no. 23028-XX-XX-XX-XX-DR-WDG-CE-002 and the typical details for the wastewater infrastructure are shown on drawing no. 23028-XX-XX-XX-XX-DR-WDG-CE-501.

1 conventional piped, gravity sewer network is proposed. The network will generally fall from the north to the south where it will connect to existing Irish Water infrastructure near the junction of the R619 and the L-96192-11 just south of the site.

All sewers within the curtilage of individual houses are to be installed in accordance with TGD Part H (2010) and will consist of 100 mm diameter uPVC Sewers from individual houses laid to falls of min 1:60 to connect to a 150mm and 225mm uPVC sewer to be laid under the estate road. Inspection chambers will be constructed within 1m of the boundary of each private property in accordance with Irish Water Standard Details.

All wastewater sewers in the public realm have been designed in compliance with Irish Water's Code of Practice for Wastewater Infrastructure – A Design and Construction Guide for Developers (Revision 2) July 2020. All construction details within the public realm will be in accordance with Irish Water, Wastewater Infrastructure Standard Details (Revision 4), July 2020.

A pre-connection enquiry was submitted to Irish Water to assess the feasibility of providing a connection to the site and Irish Water subsequently issued a confirmation of feasibility for the development. A wastewater connection for the site is feasible without infrastructure upgrade by Irish Water.

For the purposes of clarity, the wastewater sewer system has been designed using the following parameters, as required in Irish Water document IW-CDS-5030-03 Section 3.6:

- Flow per person: 150 L/day
- Average persons per household: 2.7 persons
- Unit consumption allowance (infiltration): 10%
- Minimum velocity for pipe running full: 0.75 m/sec
- Peak flow: 6 DWF

The population equivalent (PE) for the development is: 26 dwellings x 2.7 = 70.

4. Screening

4.1 Introduction

This section contains the information required for the competent authority to undertake screening for AA for the proposed development.

The aims of this section are to:

- Determine whether the proposed development is directly connected with, or necessary to, the conservation management of any European Sites (also known as Natura 2000 Sites);
- Provide information on, and assess the potential for the proposed development to significantly effect on European sites; and

- Determine whether the proposed development, alone or in combination with other projects, is likely to have significant effects on European sites in view of their conservation objectives.

The proposed development is not directly connected with, or necessary to the conservation management of any European sites.

4.2 Zone of Impact

The likely Zone of Impact (Zoi) comprises the area within which the proposed development may potentially affect the conservation objectives or qualifying interests (QI) of a European site. There is no recommended likely Zone of Impact, and guidance from the National Parks and Wildlife Service (NPWS) and CIEEM (2018) recommends that the distance should be evaluated on a case-by- case basis with reference to the nature, size and location of the project, the sensitivities of the ecological receptors, and the potential for in-combination effects (cumulative).

In ecological and environmental impact assessment, for an effect to occur there must be a risk enabled by having a source (e.g., construction works at a proposed development site), a 'receptor' (e.g., SAC or other ecologically sensitive feature), and a pathway between the source and the receptor (e.g. a watercourse which connects the proposed development site to the SAC). A 'receptor' is defined as the Special Conservation Interest (SCI) of SPAs or Qualifying Interest (QI) of SACs for which conservation objectives have been set for the European sites being screened.

Consideration is therefore given to the source-pathway-receptor linkage and associated risks between the proposed development and European sites. For a significant effect to occur there needs to be an identified risk whereby a source (e.g., contaminant or pollutant arising from construction activities) affects a particular receptor (i.e. European site) through a particular pathway (e.g. a watercourse which connects the proposed development with the European site).

The identification of risk does not automatically mean that an effect will occur, nor that it will be significant. The identification of these risks means that there is a possibility of environmental or ecological damage occurring. The level and significance of the effect depends upon the nature of the consequence, likelihood of the risk and characteristics of the receptor.

The precautionary principle is applied for the purposes of screening to ensure that consideration and pre-emptive action is undertaken where there is a lack of scientific evidence. It is noted that mitigation measures are not taken into account in the AA screening assessment process.

4.3 Field Study

A site walkover survey was carried out on 11th of January and 15th of February 2024 to identify the habitats, flora and fauna present at the site. Surveys relevant to this AA screening report are discussed below. The surveys assessed the potential for all Qualifying Interests (QIs)/ Special Conservation Interests (SCIs) of European sites and third schedule invasive species to occur within the proposed site.

4.4 Source-Pathway-Receptor Model

The likely effects of the proposed development on any European site have been assessed using a source-pathway-receptor model, where:

- A 'source' is defined as the individual element of the proposed development that has the potential to impact on a European site, its qualifying features and its conservation objectives.
- A 'pathway' is defined as the means or route by which a source can affect the ecological receptor.
- A 'receptor' is defined as the SCI of SPAs or QI of SACs for which conservation objectives have been set for the European sites being screened.

A source-pathway-receptor model is a standard tool used in environmental assessment. In order for an effect to be likely, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism results in no likelihood for the effect to occur. The source-pathway-receptor model was used to identify a list of European sites, and their QIs/SCIs, with potential links to European sites. These are termed as 'relevant' European sites/QIs/SCIs throughout this report.

4.5 Likely Significant Effect

The threshold for a Likely Significant Effect (LSE) is treated in the screening exercise as being above a de minimis level. The opinion of the Advocate General in CJEU case C-258/11 outlines:

“the requirement that the effect in question be ‘significant’ exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on a European site are thereby excluded.

If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill.”

In this report, therefore, 'relevant' European sites are those within the potential Zol of activities associated with the construction and operation of the proposed development, where LSE pathways to European sites were identified through the source-pathway-receptor model.

4.6 Screening Process

The Screening for Appropriate Assessment will incorporate the following steps:

Definition of the likely Zone of Impact for the proposed development;

- Identification of the European sites that are situated (in their entirety or partially or downstream) within the likely Zone of Impact of the proposed development;
- Identification of the most up-to-date QIs and SCIs for each European site within the likely Zone of Impact;
- Identification of the environmental conditions that maintain the QIs/SCIs at the desired target of Favourable Conservation Status;

- Identification of the threats/impacts – actual or potential that could negatively impact the environmental conditions of the QIs/SCIs within the European sites;
- Highlighting the activities of the proposed development that could give rise to significant negative impacts; and
- Identification of other plans or projects, for which in-combination impacts would likely have significant effects.

4.7 Desktop Review

A desktop review facilitates the identification of the baseline ecological conditions and key ecological issues relating to European sites and facilitates an evaluation assessment of potential in-combination impacts. Sources of information used for this report include reports prepared for the Coachford area and information from statutory and non-statutory bodies. The following sources of information and relevant documentation were utilised:

- National Parks & Wildlife Service (NPWS) - www.npws.ie
- Environmental Protection Agency (EPA) – www.epa.ie
- National Biodiversity Data Centre (NBDC) – www.biodiversityireland.ie
- *Cork County Development Plan 2022-2028*;
- Birdwatch Ireland - <http://www.birdwatchireland.ie/>
- Invasive Species Ireland - <http://www.invasivespeciesireland.com/>
- *Best Practice Guidance for Habitat Survey and Mapping* (Heritage Council, 2011)
- *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (National Roads Authority, 2009) and
- *Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)* European Union, 2017.

5. European Sites

5.1 Designated sites within Zone of Impact

In accordance with the European Commission Methodological Guidance (EC 2018), a list of European sites that can be potentially affected by the proposed development has been compiled. All candidate SAC's (cSAC) and SPAs sites within the likely Zone of Impact of the proposed development have been identified in **Table 1** and shown in **Figure 3**.

The proposed development site does not overlap with any European sites. The proposed development site is potentially hydrologically connected to one European site i.e. Cork Harbour SPA, which is located 24.2km southeast of the proposed development site. The Knockaneowen Stream, a 2nd order tributary of the River Lee is located along the western boundary of the proposed development site. The River Lee meets Cork Harbour SPA c.32.6km downstream of the proposed development site. Although unlikely given the

distances involved, there is potential hydrological connection between the proposed development site and Cork Harbour SPA.

Wastewater from the site will ultimately discharge into River Lee via the Coachford Wastewater treatment plant (WWTP) approximately 32.5km upstream of Cork Harbour SPA. This could potentially impact on water quality within the Cork Harbour SPA.

Although unlikely given the distance involved, surface water run-off during the construction or operational phases as well as wastewater discharges from the proposed development could potentially impact on Cork Harbour SPA via the Knockaneowen Stream and River Lee. Given the distance from Cork Harbour SPA, the proposed development site will not provide significant *ex-situ* habitats for SCI birds of Cork Harbour SPA or any other European site.

Therefore, a source-pathway-receptor link has been identified between the source (proposed development) and the receptor (Cork Harbour SPA) via a potential pathway (surface water and wastewater discharges during operation). Further information on the Cork Harbour SPA is provided below and a full site synopsis included **Appendix 1**.

Given the distances involved and/or the lack of significant hydrological connection, no potential pathway for impact has been identified between the proposed development and any other European site.

Table 1. Designated sites and their location relative to the proposed development site

European sites name and code	Distance from site boundary (at closest point) and potential source-pathway-receptor link	Qualifying interests (QI)/ Special Conservation Interests (SCI)
Special Area of Conservation (SAC)		
The Gearagh SAC (site code 00108)	<p>11.8km southwest. No hydrological or other pathway to this site.</p> <p>Given the distance from the proposed development site and absence of significant pathways for impact, this site has been screened out from further assessment.</p>	<p>3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation</p> <p>3270 Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation</p> <p>91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles</p> <p>91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)</p> <p>1355 <i>Lutra lutra</i> (Otter)</p>
Special Protection Area (SPA)		
Cork Harbour SPA (site code 004030)	<p>24.2km southeast (32.6km downstream)</p> <p>The Knockaneowen Stream, a 2nd order tributary of the River Lee is located along the western boundary of the proposed development site. The River Lee meets Cork Harbour SPA c. 32.6km downstream of the proposed development site. Although unlikely given the distances involved, there is potential hydrological connection between the proposed development site and Cork Harbour SPA. Therefore, although unlikely, surface water run-off during the construction or operational phases could potentially flow into the Cork Harbour SPA via the Knockaneowen Stream.</p> <p>Wastewater from the site will ultimately discharge into River Lee via the Coachford Wastewater treatment plant (WWTP) approximately 32.5km upstream of Cork Harbour SPA. This could potentially impact on water quality within the Cork Harbour SPA.</p> <p>Although unlikely given the distance involved, surface water run-off/discharges</p>	<p>Birds</p> <p>A193 Common Tern (<i>Sterna hirundo</i>)</p> <p>A028 Grey Heron (<i>Ardea cinerea</i>)</p> <p>A130 Oystercatcher (<i>Haematopus ostralegus</i>)</p> <p>A140 Golden Plover (<i>Pluvialis apricaria</i>)</p> <p>A157 Bar-tailed Godwit (<i>Limosa lapponica</i>)</p> <p>A056 Shoveler (<i>Anas clypeata</i>)</p> <p>A156 Black-tailed Godwit (<i>Limosa limosa</i>)</p> <p>A052 Teal (<i>Anas crecca</i>)</p> <p>A183 Lesser Black-backed Gull (<i>Larus fuscus</i>)</p> <p>A054 Pintail (<i>Anas acuta</i>)</p> <p>A149 Dunlin (<i>Calidris alpina</i>)</p> <p>A017 Cormorant (<i>Phalacrocorax carbo</i>)</p> <p>A162 Redshank (<i>Tringa totanus</i>)</p> <p>A004 Little Grebe (<i>Tachybaptus ruficollis</i>)</p> <p>A050 Wigeon (<i>Anas penelope</i>)</p> <p>A160 Curlew (<i>Numenius arquata</i>)</p>

European sites name and code	Distance from site boundary (at closest point) and potential source-pathway-receptor link	Qualifying interests (QI)/ Special Conservation Interests (SCI)
	<p>during the construction or operational phases as well as wastewater discharges from the proposed development could potentially impact on Cork Harbour SPA via the Knockaneowen Stream and River Lee.</p>	<p>A005 Great Crested Grebe (<i>Podiceps cristatus</i>) A069 Red-breasted Merganser (<i>Mergus serrator</i>) A048 Shelduck (<i>Tadorna tadorna</i>) A142 Lapwing (<i>Vanellus vanellus</i>) A179 Black-headed Gull (<i>Chroicocephalus ridibundus</i>) A182 Common Gull (<i>Larus canus</i>) A141 Grey Plover (<i>Pluvialis squatarola</i>) Habitats Wetlands</p>
<p>The Gearagh SPA (site code 004109)</p>	<p>13.3km southwest. No hydrological or other pathway to this site.</p> <p>Based on maximum foraging distances for SCI species (SNH 2016), the proposed development site will not form a significant foraging area for these species.</p> <p>Given the distance from the proposed development site and absence of significant pathways for impact, this site has been screened out from further assessment.</p>	<p>A050Wigeon (<i>Anas penelope</i>) A052Teal (<i>Anas crecca</i>) A053Mallard (<i>Anas platyrhynchos</i>) A125Coot (<i>Fulica atra</i>) A999 Wetland and Waterbirds</p>
<p>Mullaghanish to Musheramore Mountains SPA (site code 004162)</p>	<p>14.5km northwest. No hydrological or other pathway to this site.</p> <p>Based on maximum foraging distances for SCI species (SNH 2016), the proposed development site will not form a significant foraging area for these species.</p> <p>Given the distance from the proposed development site and absence of significant pathways for impact, this site has been screened out from further assessment.</p>	<p>A082 Hen Harrier (<i>Circus cyaneus</i>)</p>



Figure 3. European sites within likely zone of impact of proposed development site | Source EPA Envision mapping | Not to scale

5.2 Cork Harbour SPA (site code 004030) Site Synopses

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay, Ringabella Creek and the Rostellan and Poul nabibe inlets.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Mallard, Pintail, Shoveler, Redbreasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Greenshank, Blackheaded Gull, Common Gull, Lesser Black-backed Gull and Common Tern. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Cork Harbour has a nationally important breeding colony of Common Tern (102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower.

A full site synopsis for the Cork Harbour SPA is included as **Appendix 1** of this report.

5.3 European sites – Features of interests and conservation objectives.

The EU Habitats Directive contains a list of habitats (Annex I) and species (Annex II) for which SACs must be established by Member States. Similarly, the EU Birds Directive contains lists of important bird species (Annex I) and other migratory bird species for which SPAs must be established. Those that are known to occur at a site are referred to as ‘qualifying interests’ and are listed in the Natura 2000 forms which are lodged with the EU Commission by each Member State. A ‘qualifying interest (QI)’ (or ‘special conservation interest (SCI)’ in the case of SPAs) is one of the factors (such as the species or habitat that is present) for which the site merits designation. The National Parks and Wildlife Service (NPWS) are responsible for the designation of SACs and SPAs in Ireland.

The conservation objectives for Cork Harbour SPA site are detailed in: NPWS (2014) *Conservation Objectives: Cork Harbour SPA 004030. Version 1*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and SACs and SPAs are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network. European and national legislation places a collective obligation on Ireland and its citizens to maintain at favourable conservation status sites designated as SACs and SPAs. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within European sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. Favourable conservation status of a habitat is achieved when its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable. The species and habitats listed as SCIs for the Cork Harbour SPA and specific conservation objectives are included in **Table 2**.

Table 2. Special Conservation Interests (SCIs) for Cork Harbour SPA

Species code	Species		Conservation objective
A056	Shoveler	<i>Anas clypeata</i>	Maintain
A149	Dunlin	<i>Calidris alpina</i>	Maintain
A140	Golden Plover	<i>Pluvialis apricaria</i>	Maintain
A050	Wigeon	<i>Anas penelope</i>	Maintain
A028	Grey Heron	<i>Ardea cinerea</i>	Maintain
A069	Red-breasted merganser	<i>Mergus serrator</i>	Maintain
A142	Lapwing	<i>Vanellus vanellus</i>	Maintain
A130	Oystercatcher	<i>Haematopus ostralegus</i>	Maintain
A141	Grey plover	<i>Pluvialis squatarola</i>	Maintain
A052	Teal	<i>Anas crecca</i>	Maintain
A054	Pintail	<i>Anas acuta</i>	Maintain
A157	Bar-tailed Godwit	<i>Limosa lapponica</i>	Maintain
A162	Redshank	<i>Tringa totanus</i>	Maintain
A183	Lesser Black-backed gull	<i>Larus fuscus</i>	Maintain
A179	Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Maintain
A004	Little Grebe	<i>Tachybaptus ruficollis</i>	Maintain
A160	Curlew	<i>Numenius arquata</i>	Maintain
A182	Common Gull	<i>Larus canus</i>	Maintain
A048	Shelduck	<i>Tadorna tadorna</i>	Maintain
A017	Cormorant	<i>Phalacrocorax carbo</i>	Maintain
A193	Common Tern	<i>Sterna hirundo</i>	Maintain
A005	Great crested grebe	<i>Podiceps cristatus</i>	Maintain
A156	Black-tailed Godwit	<i>Limosa limosa</i>	Maintain
A999	Wetlands and waterbirds		Maintain

Restore = Restore favourable conservation condition, Maintain = Maintain favourable conservation condition

To acknowledge the importance of Ireland's wetlands to wintering waterbirds, "Wetland and Waterbirds" may be included as a Special Conservation Interest for some SPAs that have been designated for wintering waterbirds and that contain a wetland site of significant importance to one or more of the species of Special Conservation Interest. Thus, a further objective is to maintain or restore the favourable conservation condition of the wetland habitat within the Cork Harbour SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

5.4 Status of qualifying interests for the Cork Harbour SPA

Cork Harbour SPA is a large, sheltered bay system that is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl, for which it is amongst the top ten sites in the country. Owing to the sheltered conditions, the intertidal flats are often

muddy in character but described principally as ‘mixed sediment to sandy mud with polychaetes and oligochaetes’. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Peringia (Hydrobia) ulvae*, *Nephtys hombergi*, *Nereis diversicolor* and *Corophium volutator*, all of which provide a food source for many wintering waterbird species. Salt marshes are scattered through the site and these provide high tide roosts for waterbirds (NPWS 2014b).

The specific conservation objectives for the species listed as conservation interests for the Cork Harbour SPA (**Table 3**) are to maintain a favourable conservation condition of the non-breeding/breeding waterbirds and to maintain the favourable conservation condition of the wetland habitat at Cork Harbour SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

Table 3. SCI species for which a potential impact has been identified – specific targets

Species/Habitats	Attribute	Measure	Target
Little Grebe Great Crested Grebe Cormorant Grey Heron Shelduck	Population trend	Percentage change	Long term population trend stable or increasing
Wigeon Teal Pintail Shoveler Red-breasted Merganser Oystercatcher Golden Plover Grey Plover Lapwing Dunlin Black-tailed Godwit Bar-tailed Godwit Curlew	Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by each species, other than that occurring from natural patterns of variation

Species/Habitats	Attribute	Measure	Target
Redshank Black-headed Gull Common Gull Lesser Black-backed Gull			
Common Tern	Breeding population abundance: apparently occupied nests (AONs)	Number	No significant decline
	Productivity rate: fledged young per breeding pair	Mean number	No significant decline
	Distribution: breeding colonies	Number; location; area (hectares)	No significant decline
	Prey biomass available	Kilogrammes	No significant decline
	Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase
	Disturbance at the breeding site	Level of impact	Human activities should occur at levels that do not adversely affect the breeding common tern population
Wetlands	Habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,587 hectares, other than that occurring from natural patterns of variation

The Conservation Objectives Supporting document for Cork Harbour SPA (NPWS, 2014c) provides a review of the site conservation condition and population trends for Cork Harbour SPA with regard to species' all-Ireland and international trends. All-Ireland trends follow I-WeBS data 1994-2015 (Birdwatch Ireland 2022) while International trends follow Wetlands

International (2012). The conservation status of Cork Harbour SPA's SCI birds are included in **Table 4**.

Table 4. Conservation Status of SCI species within Cork Harbour

Special Conservation Interests	BoCCI Category ¹	Site conservation condition ²	Current All-Ireland Trend ³	Current International Trend ⁴
Shelduck	Amber	Unfavourable	Declining	Increasing
Wigeon	Amber	Unfavourable	Declining	Stable
Teal	Amber	Intermediate (Unfavourable)	Stable	Increasing
Pintail	Amber	Highly unfavourable	Stable	Increasing
Shoveler	Red	Highly unfavourable	Stable	Increasing
Red-breasted Merganser	Amber	Highly unfavourable	Stable	n/c
Little Grebe	Green	Favourable	Increasing	Increasing
Great Crested Grebe	Amber	Unfavourable	Stable	Declining?
Cormorant	Amber	Highly unfavourable	Stable	Increasing
Grey Heron	Green	Intermediate	Stable	Increasing
Oystercatcher	Red	Intermediate (unfavourable)	Stable	Declining
Golden Plover	Red	Favourable	Declining	Declining
Grey Plover	Red	Highly unfavourable	Declining	Declining?
Lapwing	Red	Highly unfavourable	Declining	Stable
Dunlin	Red	Unfavourable	Declining	Stable
Black-tailed Godwit	Red	Favourable	Increasing	Increasing
Bar-tailed Godwit	Red	Favourable	Stable	Increasing
Curlew	Red	Unfavourable	Declining	Declining
Redshank	Red	Unfavourable	Stable	Stable/increasing
Black-headed Gull	Amber	Highly unfavourable	n/c	n/c
Common Gull	Amber	Highly unfavourable	n/c	n/c
Lesser Black-backed Gull	Amber	Highly unfavourable	n/c	n/c

1. Gilbert et al. 2021. 2. NPWS, 2014c, 3. Birdwatch Ireland I-WeBS 1994-2015, 4. Wetlands International (2012)

6. Water Quality

6.1 River Basin Management Plan for Ireland 2022-2027 (3rd Cycle)

The Water Framework Directive (WFD) sets out the environmental objectives which are required to be met through the process of river basin planning and implementation of those plans. Specific objectives are set out for surface water, groundwater and protected areas. The challenges that must be overcome in order to achieve those objectives are very significant. Therefore, a key purpose of the River Basin Management Plan (RBMP) is to set out priorities and ensure that implementation is guided by these priorities.

The EPA has published an updated draft Catchment Assessment for each of our 46 catchments. These assessments provide an overview of the situation in the catchment, draw comparison between Cycle 2 and Cycle 3, and will help support the draft River Basin Management Plan 2022-2027 public consultation process. The third cycle RBMP, which was published in July 2022, aims to build on the progress made during the second cycle. Key measures during the first cycle included the licensing of urban waste-water discharges (with an associated investment in urban waste-water treatment) and the implementation of the Nitrates Action Programme (Good Agricultural Practice Regulations). The former measure has resulted in significant progress in terms both of compliance levels and of the impact of urban wastewater on water quality. The latter provides a considerable environmental baseline which all Irish farmers must achieve and has resulted in improving trends in the level of nitrates and phosphates in rivers and groundwater. It is acknowledged, however, that sufficient progress has not been made in developing and implementing supporting measures during the first and second cycles.

Overall, RBMP assesses the quality of water in Ireland and presents detailed scientific characterisation of our water bodies. The characterisation process also takes into account wider water quality considerations, such as the special water-quality requirements of protected areas. The characterisation process identifies those water bodies that are *At Risk* of not meeting the objectives of the WFD, and the process also identifies the significant pressures causing this risk. Based on an assessment of risk and pressures, a programme of measures has been developed to address the identified pressures and work towards achieving the required objectives for water quality and protected areas. Data relating to the watercourses in the vicinity of the proposed development site are provided in **Table 5** and the location of these shown in **Figure 4**. While waterbodies in the vicinity of the proposed development site i.e. Lee (Cork)_080 (Knockaneowen Stream) and the Iniscarra area of the River Lee were classified as 'At Risk' during the 2nd Cycle of the WFD, during the 3rd cycle these have been upgraded to 'Not at risk' with a 'Good' water quality status.

Table 5. River Basin Management Plan (RBMP) data

Catchment: Lee, Cork Harbour and Youghal Bay (Code 19)
<p>This catchment includes the area drained by the River Lee and all streams entering tidal water in Cork Harbour and Youghal Bay and between Knockaverry and Templebreedy Battery, Co. Cork, draining a total area of 2,153km². The largest urban centre in the catchment is Cork City. The other main urban centres in this catchment are Ballincollig, Macroom, Carrigaline, Crosshaven, Blarney, Glanmire, Middleton, Carrigtohill, Cobh, Passage West and Belvelly. The total population of the catchment is approximately 328,854 with a population density of 153 people per km².</p> <p>Several small coastal rivers drain the area to the southeast of Cork Harbour and the area at the eastern extreme of the catchment is drained by the Womanagh River which flows into the sea on the western side of Youghal Bay.</p> <p>The Lee-Cork Harbour catchment comprises 18 sub-catchments with 92 river water bodies, three lakes, 13 transitional, six coastal water bodies and 16 groundwater bodies. There are five heavily modified and no artificial water bodies in the catchment.</p> <p>The proposed development site is located within the Lee[Cork]_SC_040 sub catchment.</p> <p>Summary of WFD 2nd Cycle.</p>

Catchment: Lee, Cork Harbour and Youghal Bay (Code 19)

Two out of four river water bodies within this sub-catchment are AT RISK: Dripsey_010 due to Poor biological status; Lee (Cork)_080 due to Moderate biological status. One lake water body is AT RISK, Inniscarra due to Moderate biological status (driven by chlorophyll, phytoplankton and macrophytes). The significant issues within Dripsey_010 were identified as siltation and elevated nutrients from forestry activities (both clearfelling and aerial fertilisation). Waste water treatment may be impacting nutrient concentrations within Dripsey_010.

Recycling of nutrients from lake sediments is a likely significant pressure within Inniscarra. In addition Inniscarra is a Heavily Modified water body created by the damming of the River Lee with Carrigdrohid Dam. Lee (Cork)_080 may also be impacted by this impoundment.

Waterbodies relevant to the proposed project (3rd Cycle)

Waterbody	WFD Risk	WFD Status (2016-2021)	Significant Pressure	Pressure Category
Lee(Cork)_080 (Knockaneowen Stream)	Not at risk	Good	No	-
Inniscarra	Not at risk	Good	No	-
Lee Cork Estuary Upper	At risk	Poor	Yes	Urban runoff, urban wastewater
Lee Cork Estuary Lower	At risk	Moderate	Yes	Urban runoff, urban wastewater
Lough Mahon	At risk	Moderate	Yes	Urban runoff, urban wastewater

Source: EPA envision mapping and www.catchments.ie



Figure 4. WFD status (2016-2021) of waterbodies in the vicinity of the proposed development | Source: EPA Envision mapping <https://gis.epa.ie/EPAMaps/> | not to scale

6.2 Urban Wastewater Treatment Directive

The Wastewater Discharge (Authorisation) Regulations 2007 (S.I. 684 of 2007) gives effect to the requirements of the Urban Wastewater Treatment Directive (Directive 91/271/EEC) and the Water Framework Directive (2000/60/EC) in Ireland. The Urban Wastewater Treatment Directive (UWWTD) lays down the requirements for the collection, treatment and discharge of urban wastewater and specifies the quality standards which must be met — based on agglomeration size — before treated wastewater is released into the environment.

The priority objective for this river basin planning cycle is to secure compliance with the Urban Wastewater Treatment Directive and to contribute to the improvement and protection of waters in keeping with the water-quality objectives established by this Plan. Achieving this objective entails addressing waste-water discharges and overflows where protected areas (i.e., designated bathing waters, shellfish waters and Freshwater Pearl-Mussel sites) or high-status waters are at risk from urban waste-water pressures.

As part of the proposed development wastewater discharging from the proposed development will be conveyed to the Coachford WWTP (D0427-01) for treatment prior to discharging into the River Lee.



7. Site Survey



A site walkover survey was carried out on the 11th of January and 15th of February 2024. The terrestrial and aquatic habitats within or adjacent to the proposed development site were classified using the classification scheme outlined in the Heritage council publication *A Guide to Habitats in Ireland* (Fossitt, 2000) and cross referenced with Annex I/qualifying habitats, where required. No rare species or habitats were recorded within the proposed development site. Habitats recorded within the proposed development site are detailed in **Table 6** and illustrated in **Figure 5**.

No Annex I habitats were recorded during the site survey. No rare species were recorded during the site survey, nor are they expected to occur given that the habitats within the proposed development site are dominated by managed habitats.

Table 6. Habitats recorded within proposed development site



Habitat	Comments
Treeline WL2/Earth bank BL2	<p>Running along the northern boundary of the site there is a short section of earth bank with a treeline (H1) which has developed from an overgrown hedge. There is one mature oak along this treeline (See plate 2). In general, the treeline is dominated by Hawthorn, Holly and occasional Elm. Wild Rose was also noted as well as Bramble, Ivy, Herb Robert, Harts tongue fern, Soft shield fern, Cleavers and Nettle.</p> <p>Running along the local road at the western boundary, a treeline has developed on an elevated bank with no significant areas of stonewall (H2). Trees along this treeline include immature Ash, mature Hawthorn, Willow and Sycamore. Immature Elm are occasional. Understory species include Male fern, Rush, Bramble, Cocksfoot, Cleavers, Creeping buttercup, Honeysuckle, Gorse and Harts tongue Fern. Trees are generally devoid of significant cracks or crevices are generally multi-stemmed and without significant dense Ivy growth. They are considered of negligible potential for bats, although they could forage along this treeline.</p>  <p>Plate 1. Short section of treeline along northern boundary</p>

Habitat	Comments
	 <p data-bbox="437 1037 1203 1066">Plate 2. Large mature multi-stemmed oak along northern boundary</p>  <p data-bbox="437 1877 1110 1906">Plate 3. Treeline on elevated bank along western boundary</p>



Habitat	Comments
	 <p data-bbox="437 1037 1110 1066">Plate 4. Treeline on elevated bank along western boundary</p>
<p data-bbox="204 1155 352 1184">Treeline WL2</p>	<p data-bbox="437 1155 1378 1402">A semi mature treeline along the western boundary separates the site from the Knockaneowen Stream (H3). Large amounts of Cherry laurel were recorded in the understory of this boundary habitat. Bramble, Hawthorn, Herb Robert, Cleavers, Soft shield fern and Holly were recorded. Occasional trees include semi-mature ash Hawthorne, Sycamore and Semi mature Oak. Trees are generally devoid of significant cracks or crevices are generally multi-stemmed and without significant dense Ivy growth. They are considered of negligible potential for bats, although they could forage along this treeline.</p> <p data-bbox="437 1435 1378 1525">Where the proposed footpath exits the site there is a section of stone wall/earth bank with Elm, Blackthorn and one semi-mature Sycamore. A small drain runs along the site boundary at this location.</p> 



Habitat	Comments
	<p data-bbox="437 253 911 282">Plate 5. Treeline along western boundary</p>  <p data-bbox="437 1093 911 1122">Plate 6. Treeline along western boundary</p>  <p data-bbox="437 1637 963 1666">Plate 7. Treeline where footpath exits the site.</p>
<p data-bbox="204 1693 416 1845">Dry meadows and grassy verge GS2 (outside proposed development site boundary)</p>	<p data-bbox="437 1693 1374 1816">On the southern boundary of the site, running between an existing concrete fence and the R619 regional road, there is a band of dry meadows and grassy verge habitat which has been cleared at some time in the past. Species recorded include Rush, Cocksfoot, Creeping buttercup, Ribwort plantain, Nettle and Bramble.</p>


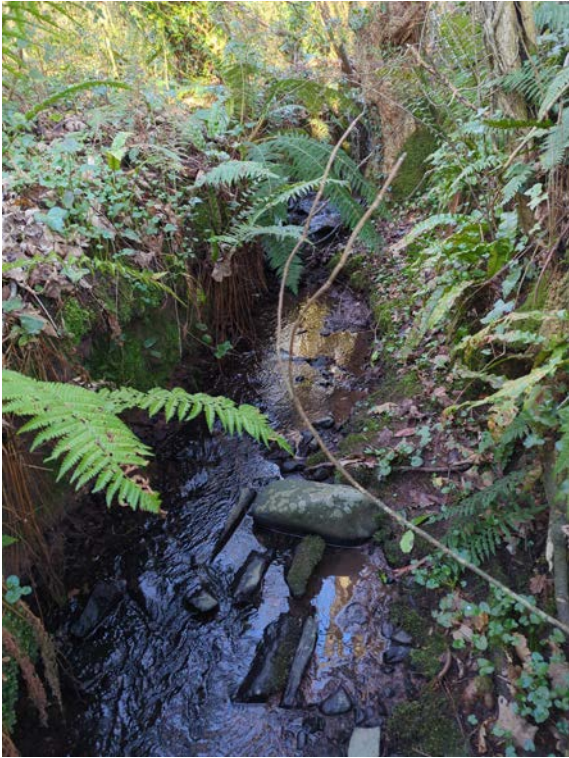
Habitat	Comments
	 <p data-bbox="437 1037 1278 1066">Plate 8. Dry meadows and grassy verge habitat along southern boundary</p>
<p data-bbox="204 1099 413 1182">Hedgerow WL1/Earth bank BL2/Scrub WS1</p>	<p data-bbox="437 1099 1378 1249">Along the southern boundary, where the concrete fence ends, there is an old earth bank field boundary with Harts tongue fern, Herb Robert, Nettle, Bramble, Honeysuckle (H4). The hedgerow that was initially present here been cut back. There are now some stumps of occasional Hawthorn, Sycamore and Elm. Most of this boundary habitat is located outside the proposed development site boundary.</p> <p data-bbox="437 1283 1378 1496">Running along the R619 road on the south-eastern side of the site there is a wide band of scrub emerging into the grassland. It is dominated by dense thickets of Bramble with Gorse, immature Elm, immature Ash as well as Cleavers, and Willowherb grass. Occasional Willow, Hawthorn and Blackthorn were also recorded. Some old silage bales in this area have been grown over by Nettles, Bramble, etc some taller tussocky grass species including False oat grass, Cocksfoot and Field Thistle are present. In one corner there are for mature Cypress along the boundary.</p>  <p data-bbox="437 1989 1182 2018">Plate 9. Cut back hedgerow on earth bank on southern boundary</p>



Habitat	Comments
	 <p data-bbox="437 712 1082 741">Plate 10. Scrub emerging along south-eastern boundary</p>  <p data-bbox="437 1572 1082 1601">Plate 11. Mature cypress trees along southern boundary</p>
Drainage ditch FW4	As above small drain/watercourse emerges from the site onto the R619 road. At this location it goes outside the field boundary to a culvert. Flows are low and insufficient size to support fish or significant invertebrate populations.

Habitat	Comments
	 <p data-bbox="437 992 1098 1021">Plate 12. Small drain emerges from the site onto the R619</p>  <p data-bbox="437 1787 1374 1816">Plate 13. Small drain running along southern boundary of site adjoining the R619.</p>
Scrub WS1	<p data-bbox="437 1848 1378 1966">The northwest/interior of the site is dominated by Willow scrub with occasional immature Elder. Although there is some grazing by horses, pressure is low which has allowed this scrub to become established. Trees are generally widely spaced with a grassy understory. The absence of understory vegetation means area of scrub does not provide</p>

Habitat	Comments
	<p data-bbox="437 253 1382 315">particular cover for wildlife and does not have its own microclimate. The boundaries of this area are poorly defined as individual trees encroach into the adjoining grassland.</p>  <p data-bbox="437 797 1008 828">Plate 14. Willow scrub at northwest interior of site.</p>  <p data-bbox="437 1312 927 1344">Plate 15. Willow scrub adjoining grassland</p>

Habitat	Comments
	 <p data-bbox="437 1037 1299 1066">Plate 16. Poached areas of grassland along poorly defined scrub boundary</p>
Improved agricultural grassland GA1	<p data-bbox="437 1099 1380 1279">The remainder of the site consist of improved agricultural grassland on relatively soft ground. Some water logging was recorded in parts due to poor drainage. However, it is likely to dry up during the summer months. Some poaching of softer ground by horses was noted. Species noted include common grass species with a limited variety of herbaceous species, including Creeping buttercup, Daisy, Nettle, Willowherb, Ragweed and Nettle.</p>  <p data-bbox="437 1771 903 1800">Plate 17. Improved agriculture grassland</p>

Habitat	Comments
	 <p data-bbox="437 707 903 739">Plate 18. Improved agriculture grassland</p>
<p data-bbox="204 770 413 920">Upland (eroding) river FW1 (outside proposed development site boundary)</p>	<p data-bbox="437 770 1374 987">Outside the western boundary of the site is the Knockaneowen Stream. This is a small watercourse with high banks on both sides. The stream has a natural riffle glide sequence. Although unlikely to be of significant value, it could potentially support brown trout along its reach. However, this population may not be sustainable during periods of dry weather. The substrate consists of mixture of gravels with high levels of siltation. Heavy shading along banks with adjoining treeline/woodland. This stream is culverted downstream of the site under the adjoining road.</p>  <p data-bbox="437 1798 1294 1830">Plate 19. Knockaneowen Stream to the west of proposed development site</p>

Habitat	Comments
	 <p data-bbox="437 1037 1377 1093">Plate 20. Emergence point of Knockaneowen culvert downstream of proposed development site</p>
<p data-bbox="204 1128 413 1341">Stone walls and other stonework BL2/Amenity grassland GA2/Buildings and artificial surfaces BL3</p>	<p data-bbox="437 1128 1353 1234">The proposed footpath along the R619 includes gardens, with domestic shrubs, newly build stone walls as well as small sections of old stone wall and amenity grassland. Species recorded along this area include Holly, Buddleia and Winter heliotrope.</p> <p data-bbox="437 1265 1310 1319">Along the walls Pennyworth, Bramble, Bittercress, Willowherb, Herb Robert, Spleenwort, Dandelion, Red fescue, Ragweed and Cleavers were recorded.</p> <p data-bbox="437 1350 1353 1404">A small number of trees are present along the roadway including Sycamore and Willow nd these are discussed in Section 7.2.2 below.</p>  <p data-bbox="437 1912 1241 1939">Plate 21. Section of older stonewall at the curve where the roads meet</p>

Habitat	Comments
	 <p data-bbox="437 734 847 763">Plate 22. Stone walls along gardens</p>
	 <p data-bbox="437 1384 1206 1413">Plate 23. Older section of stone wall with some specialised species</p>
	 <p data-bbox="437 1917 1294 1977">Plate 24. Lower section of the wall with dense climbers and some common species such as cleavers, pennywort etc</p>

Habitat

Comments



Plate 25. Amenity grassland



Plate 26. Final section of proposed footpath where it meets the village.



Figure 5. Habitats recorded within proposed development site (habitats along proposed footpath are discussed in Table 4)

8. Potential Impacts

Potential impacts relate to habitat loss, changes to water quality (during construction and operation), the spread of invasive species and disturbance effects during the proposed works. Based on the *Managing Natura 2000 Sites: The Provision of Article 6 of the Habitats Directive 92/43/EEC* (European Commission (EC), 2018 and CIEEM guidelines ‘*Guidelines for Ecological Impact Assessment*’ (CIEEM, 2019) impacts are listed as significant using a combination of professional judgement and criteria or standards where available, if impacts have the potential to have a significant impact on the ecological integrity on the habitats and species for which the site is designated.

The potential impacts associated with the proposed works are discussed in the following sections with respect to their likelihood to have significant impacts on European sites.

As part of the assessment direct, indirect and in-combination impacts on all relevant QIs/SCIs were considered. Direct impacts refer to habitat loss or fragmentation arising from land-take requirements for development. Indirect and secondary impacts do not have a straight-line route between cause and effect, and it is potentially more challenging to ensure that all the possible indirect impacts of the project/plan - in combination with other plans and projects have been established.

Potential impacts were identified as follows:

- Potential impacts from loss of habitat
- Potential impacts from noise and disturbance
- Potential impacts from surface water runoff
- Potential impacts from wastewater discharges
- Spread of invasive species
- In-combination impacts

8.1 Potential impacts from loss of habitat

The works area is located over 11km from the closest European site. An ecological appraisal of the site indicates that it supports common habitats which are not of high value in the context of European designations. The habitats recorded within the works area do not correspond to habitats listed on Annex I of the Habitats Directive.

The proposed development site is located within improved agricultural grassland and scrub. There are no wetlands or suitable grassland habitats which could provide foraging or roosting habitat for wading birds within or in immediate proximity to the proposed site boundary. The grassland habitats within the site could potentially provide roosting or foraging habitat for wading birds and waterfowl. However, there is nothing to differentiate this grassland habitat from similar areas of habitat in the wider landscape. Given its distance from the SPA and the absence of wetland habitats in the vicinity, this site does not provide critical roosting or foraging habitat for SCI birds. The proposed development will not result in any significant loss of *ex situ* foraging or roosting habitat for SCI birds for the Cork Harbour SPA.

Considering the above, there will be no significant impact on European sites from loss of habitat due to the proposed development.

8.2 Potential impacts from noise and disturbance

Potentially increased noise and disturbance associated with the site works could cause disturbance/displacement of fauna. If of sufficient severity, there could be impacts on reproductive success. Disturbance can cause sensitive species, such as birds, to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.

The potential effects and impacts of disturbance have been widely recognised in wildlife conservation legislation, as has the need to develop conservation measures for birds whilst taking human activities into account. Article 4.4 of the Bird's Directive (79/409/EEC) requires member states to "*take appropriate steps to avoid... any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this Article*". This specifically relates to conservation measures concerning Annex I species.

The wintering birds listed as qualifying interests for the Cork Harbour SPA are strongly associated with estuarine shoreline areas or wetlands - habitat types absent from the proposed development area.

It is noted that the proposed development area is located 24.2km from the SPA boundary. As noted in **Section 8.1**, this area does not provide critical habitat for SCI birds. Given the absence of valuable habitats within and in the vicinity of the site, any increases in disturbance at the site during construction and operation will not impact on SCI birds.

No valuable habitat for SCI species was recorded within or adjacent to the proposed development area. The construction phase of the project will increase noise and disturbance. However, given the lack of valuable habitat for SCI species on or near the proposed development area no impact on birds listed as qualifying interests for the Cork Harbour SPA is predicted to occur.

8.3 Potential impacts from surface water runoff

Potential impacts on aquatic habitats which can arise from surface water emissions associated with the construction phase of the proposed development include increased silt levels in surface water run-off, inadvertent spillages of hydrocarbons from fuel and hydraulic fluid and spillage of cementitious materials.

Silt-laden stormwater run-off during site preparation, site clearance and construction of site access roads as well as spillages of fuel and oil and concrete / cement run-off could potentially impact on water quality within the Knockaneowen Stream and receptors downstream of the proposed development site. However, as noted above, Cork Harbour SPA is located c.32.6km downstream of the site. Given the small scale of the proposed development and the distance downstream, there is no potential for minor siltation and hydrocarbon runoff during construction works to impact on Cork Harbour SPA.

During operation SuDS measures are proposed for the development in both public and private areas in accordance with the guidance from the County Development Plan 2022 *Advice Note 1 on Surface Water management and the CIRIA SuDS Manual C753*. The proposed surface water network has been tested with the Causeway Flow software, simulating rainfall events up to and including the 24-hour, 100 year storm with a 20% addition allowed for climate change. Modelling shows that no flooding occurs in any rainfall event tested.

During operation surface water from the site will discharge to the existing combined sewer on the adjoining road. There will be no direct discharges to local surface waters and no potential for impact on Cork Harbour SPA downstream. Therefore, surface water runoff during construction and operation will not impact on the conservation objectives of Cork Harbour SPA.

8.4 Potential impacts from discharges of wastewater during operation

The proposed housing development could potentially result in an increase in nutrients discharging to the River Lee from the Coachford WWTP (D0427-01). Increased nutrients can potentially impact on freshwater and estuarine habitats by changing baseline ecological conditions and increasing algal growth. Although unlikely given the distance downstream

(32.5km), this could impact on feeding success for birds listed as qualifying interests for the Cork Harbour SPA.

Wastewater from the proposed development will be conveyed for treatment to Coachford WWTP. The Coachford agglomeration is served by a wastewater treatment plant with a Plant Capacity Population Equivalent (P.E.) of 1,600. The WWTP obtained a discharge licence (Reg: D0427-01) from the EPA and has assigned emission limit values (ELV's) for a range of parameters to ensure a high degree of protection to the River Lee, the Lee Estuary and surrounding waters.

Treated effluent from the proposed development will discharge from the Coachford WWTP via the main treated effluent line. The discharge licence assigns ELV's for total phosphorous (Total P), chemical oxygen demand (COD), total suspended solids (TSS), biological oxygen demand (BOD), Ammonia, pH and orthophosphate. The ELVs are set based on the full design capacity (P.E. 1,600) and are aimed at providing a high degree of protection to the receiving waterbody and to ensure the receiving waterbody is capable of accommodating the proposed discharge without causing or exacerbating a breach in the relevant standards.

It is noted that the proposed occupancy of the housing development is approximately 70 PE (based on 2.7 persons per dwelling). In 2022 the agglomeration PE for Coachford WWTP was 665. The proposed development would increase the current WWTP P.E. from 665 to 735, which is well within the 1,600 P.E. design capacity. Thus, given the limited scale of the proposed development and the ability of the WWTP to cater for the additional loading, no impact is expected.

The 2021 AER notes that the final effluent from the Primary Discharge Point was non-compliant with the Emission Limit Values in 2021. The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence for the following: Total Nitrogen mg/l, Ammonia-Total (as N) mg/l.

In relation to ongoing monitoring of water quality, the 2021 AER also noted the following:

- The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.
- The ambient monitoring results do not meet the required EQS at the upstream and the downstream monitoring locations. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.
- The discharge from the wastewater treatment plant does not have an observable impact on the water quality.
- The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

A new WWTP has been operational at Coachford since early 2022. The non-compliance detailed above was recorded prior to the upgrade of the WWTP.

A pre-connection enquiry was submitted to Irish Water to assess the feasibility of providing a connection to the site and Irish Water subsequently issued a confirmation of feasibility for the development. A wastewater connection for the site is feasible without infrastructure upgrade by Irish Water.

The addition of the effluent discharge from the proposed housing development to the Coachford WWTP is well within its design capacity and will not comprise the operational capability of the WWTP to treat effluent to comply with emission limit values. Therefore, the impacts from the proposed development will be negligible given the current operating conditions at the WWTP. Minor increases in nutrient levels potentially discharged by the WWTP will not have a significant impact water quality within the River Lee and/or the Cork Harbour SPA. Therefore, no impact on water quality within European sites from wastewater discharges is predicted to occur.

8.5 Spread of Invasive Species

No third schedule invasive species were recorded within the proposed development area. While Cherry Laurel, which is classified as a high-impact species by the NBDC, was recorded, given the distance from European sites, there is no pathway for impact with this species.

Therefore, there is no risk to Cork Harbour SPA via impacts from the spread of invasive species.

8.6 In-combination Impacts

In-combination impacts refer to a series of individually modest impacts that may in combination produce a significant impact. The underlying intention of this in combination provision is to take account of in-combination impacts from existing or proposed plans and projects and these will often only occur over time. Other developments near site and potential in-combination impacts are identified in **Table 11** In the absence of any significant impacts on qualifying interests or conservation objectives associated with this project no significant in-combination impacts have been identified.

Table 11. Other developments near site and potential in-combination impacts

Plans and Projects	Key Policies/Issues/Objectives Directly Related to the Conservation of the Natura 2000 Network	Impact
River Basin Management Plan 2022-2027	<p>The project should comply with the environmental objectives of the Irish RBMP which are to be achieved generally by 2027.</p> <ul style="list-style-type: none"> • Ensure full compliance with relevant EU legislation • Prevent deterioration • Meeting the objectives for designated protected areas • Protect high status waters • Implement targeted actions and pilot schemes in focus sub-catchments aimed at: targeting water bodies close to meeting their objective and addressing more complex issues which will build knowledge for the third cycle. 	<p>The implementation and compliance with key environmental policies, issues and objectives of this management plan will result in positive in-combination effects to European sites. The implementation of this plan will have a positive impact for the biodiversity. It will not contribute to in-combination or cumulative impacts with the proposed development.</p>

Plans and Projects	Key Policies/Issues/Objectives Directly Related to the Conservation of the Natura 2000 Network	Impact
Inland Fisheries Ireland Corporate Plan 2021-2025	<p>To ensure that Ireland's fish populations are managed and protected to ensure their conservation status remains favourable. That they provide a basis for a sustainable world class recreational angling product, and that pristine aquatic habitats are also enjoyed for other recreational uses.</p> <p>To develop and improve fish habitats and ensure that the conditions required for fish populations to thrive are sustained and protected.</p> <p>To grow the number of anglers and ensure the needs of IFI's other key stakeholders are being met in a sustainable conservation focused manner.</p> <p>EU (Quality of Salmonid Waters) Regulations 1988. All works during development and operation of the project must aim to conserve fish and other species of fauna and flora habitat; biodiversity of inland fisheries and ecosystems and protect spawning salmon and trout.</p>	<p>The implementation and compliance with key environmental issues and objectives of this corporate plan will result in positive on-combination effects to European sites. The implementation of this corporate plan will have a positive impact for biodiversity of inland fisheries and ecosystems. It will not contribute to in-combination or cumulative impacts with the proposed works.</p>
Irish Water Capital Investment Plan 2014-2016	<p>Proposals to upgrade and secure water services and water treatment services countrywide.</p>	<p>Likely net positive impact due to water conservation and more effective treatment of water.</p>
Water Services Strategic Plan (WSSP, 2015)	<p>Irish Water has prepared a Water Services Strategic Plan (WSSP, 2015), under Section 33 of the Water Service No. 2 Act of 2013 to address the delivery of strategic objectives which will contribute towards improved water quality and biodiversity requirements through reducing:</p> <ul style="list-style-type: none"> • Habitat loss and disturbance from new / upgraded infrastructure; • Species disturbance; • Changes to water quality or quantity; and • Nutrient enrichment /eutrophication. 	<p>The WSSP forms the highest tier of asset management plans (Tier 1) which Irish Water prepare and it sets the overarching framework for subsequent detailed implementation plans (Tier 2) and water services projects (Tier 3). The WSSP also sets out the strategic objectives against which the Irish Water Capital Investment Programme is developed. The current version of the CAP outlines the proposals for capital expenditure in terms of upgrades and new builds within the Irish Water owned assets.</p> <p>No long-term in-combination effect on Natura 2000 sites will occur.</p>
NPWS Conservation Management Plans	<p>Conservation Management Plans have not been fully prepared for the European sites being assessed. However, conservation objectives are set for all sites.</p>	<p>The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest.</p> <p>A site-specific conservation objective aims to define</p>

Plans and Projects	Key Policies/Issues/Objectives Directly Related to the Conservation of the Natura 2000 Network	Impact
		<p>favourable conservation condition for a particular habitat or species at that site. The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.</p> <p>The resultant effects of conservation objectives are a net positive and there is no potential for in combination effects on European sites.</p>
WWTP discharges into Cork Harbour	A number of agglomerations discharge into Cork Harbour including Cork City WWTP, Ballincollig (via River Lee) Carrigtohill and Environs WWTP.	Discharges from municipal WWTPs are required to meet water quality standards. Irish Water Capital Investment Plan proposes to upgrade water treatment services countrywide (see above). No long-term in-combination effect on Natura 2000 sites will occur.
Other developments in the vicinity	<p>A search of developments for Coachford in the previous 24-month period (from January 2024) was carried out. As well as number of small-scale developments i.e. one-off houses, extensions to existing dwellings etc, the following larger developments were noted.</p> <p>224349. Vicars Glebe, Glebe (Townland), Coachford, Co. Cork. The construction of 45 no. houses comprising 36 no. 3 -bedroom houses and 9 no. 4-bedroom houses. The proposed development is a change to the site layout and house types previously permitted under planning reg. ref. 07/13376 (extended by 13/4965 and 17/7049). Access to the proposed development will be via the existing estate entrance to the public roadway and the permitted internal road network. Permission granted by CCC in August 2022 and construction has begun.</p> <p>224344. (Extension of duration). Glebe, Coachford, Co Cork, Residential development of 69 no. dwelling houses comprising of 30 no. four bed semi-detached dwellings, 16 no. three bed semi-detached dwelling house and 15 no. townhouses and 8 no. single storey semi-detached and all associated site works. Extension of Duration to Permission granted under Planning Ref. No. 07/13376 and extended under PI.Reg.No.s 13/4965 and 17/7049. Permission granted by CCC for Extension of permission granted April 2022 and construction has begun.</p>	<p>Future developments will only be granted permission where discharges from same meet with relevant water quality standards.</p> <p>Given the nature, extent and scale of the proposed project, it is not anticipated that it will act in-combination with the plans or projects outlined, or other plans or projects, to give rise to in-combination impacts on Cork Harbour SPA.</p>

Plans and Projects	Key Policies/Issues/Objectives Directly Related to the Conservation of the Natura 2000 Network	Impact
	<p>234312. Coachford College, Glebe, Coachford, Co.Cork. The demolition of the existing school buildings, the removal of existing pre-fabricated temporary accommodation and the construction of a new split level, part single storey, part two storey and part three storey 1000 pupil secondary school comprising a four classroom special education unit, a single storey multi purpose hall, general purpose room, general classrooms, specialist classrooms, social areas, library, administration areas, service yards, external stores, covered storage areas for construction studies, toilet and changing facilities and associated ancillary accommodation. The development also includes the provision of new site entrances, car parking area, drop-off areas, new site boundary, new ball courts, playing pitch, landscaped external areas and all associated site works. The proposed building is within the curtilage of the protected structure (RPS no. 00444) as recorded in Cork County Development Plan 2022: Volume 2. Permission granted by CCC in December 2023.</p>	

In the absence of any significant impact associated with this project no in-combination impacts on water quality have been identified. Similarly, no significant in-combination impacts in relation to noise and disturbance have been identified. No other significant in-combination impacts have been identified. There are no projects which could have a potential significant in-combination effect along with the proposed development.

Given the nature, extent and scale of the proposed project, it is not anticipated that it will act in-combination with the plans or projects outlined, or other plans or projects, to give rise to in-combination impacts on the Cork Harbour SPA.

9. Screening conclusion and statement

This AA screening report has been prepared to assess whether the proposed development, individually or in-combination with other plans or projects, and in view of best scientific knowledge, is likely to have a significant effect on any European site(s).

The screening exercise was completed in compliance with the relevant European Commission guidance, national guidance, and case law. The potential impacts of the proposed development have been considered in the context of the European sites potentially affected, their qualifying interests or special conservation interests, and their conservation objectives.

Through an assessment of the source-pathway-receptor model, which considered the ZoI of effects from the proposed development and the potential in-combination effects with other plans or projects, the following findings were reported:

- The proposed residential development at Coachford, Co. Cork, either alone or in-combination with other plans and/or projects, does not have the potential to significantly affect any European Site, in light of their conservation objectives.

Therefore, a Stage 2 Appropriate Assessment is deemed not to be required.

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Appendices

Appendix 1 Site synopses

Cork Harbour Special Protection Area (Site Code 004030)

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay and the Rostellan and Poul nabibe inlets.

Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nephtys hombergi*, *Nereis diversicolor* and *Corophium volutator*. Green algae species occur on the flats, especially *Ulva lactuca* and *Enteromorpha* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially where good shelter exists, such as at Rossleague and Belvelly in the North Channel. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Salt marsh species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Laxflowered Sea-lavender (*Limonium humile*) and Sea Arrowgrass (*Triglochin maritima*). Some shallow bay water is included in the site. Cork Harbour is adjacent to a major urban centre and a major industrial centre. Rostellan Lake is a small brackish lake that is used by swans throughout the winter. The site also includes some marginal wet grassland areas used by feeding and roosting birds.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Blacktailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl, for which it is amongst the top five sites in the country. The two-year mean of summed annual peaks for the entire harbour complex was 55,401 for the period 1995/96 and 1996/97. Of particular note is that the site supports internationally important populations of Black-tailed Godwit (905) and Redshank (1,782) - all figures given are average winter means for the two winters 1995/96 and 1996/97. At least 18 other species have populations of national importance, as follows: Little Grebe (51), Great Crested Grebe (204), Cormorant (705), Grey Heron (63), Shelduck (2,093), Wigeon (1,852), Teal (922), Pintail (66), Shoveler (57), Red-breasted Merganser (88), Oystercatcher (1,404), Golden Plover (3,653), Grey Plover (84), Lapwing (7,688), Dunlin (10,373), Bartailed Godwit (417), Curlew (1,325) and Greenshank (26). The Shelduck population is the largest in the country (over 10% of national total). The site has regionally or locally important populations of a range of other species, including Whooper Swan (10), Pochard (145) and Turnstone (79). Other species using the site include Gadwall (13), Mallard (456), Tufted Duck (113), Goldeneye (31), Coot (53), Mute Swan (38), Ringed Plover (34) and Knot (38). Cork Harbour is a nationally important site for gulls in winter and autumn, especially Black-headed Gull (4,704), Common Gull (3,180) and Lesser Black-backed Gull (1,440).

A range of passage waders occurs regularly in autumn, including such species as Ruff (5-10), Spotted Redshank (1-5) and Green Sandpiper (1-5). Numbers vary between years and usually a few of each of these species over-winter.

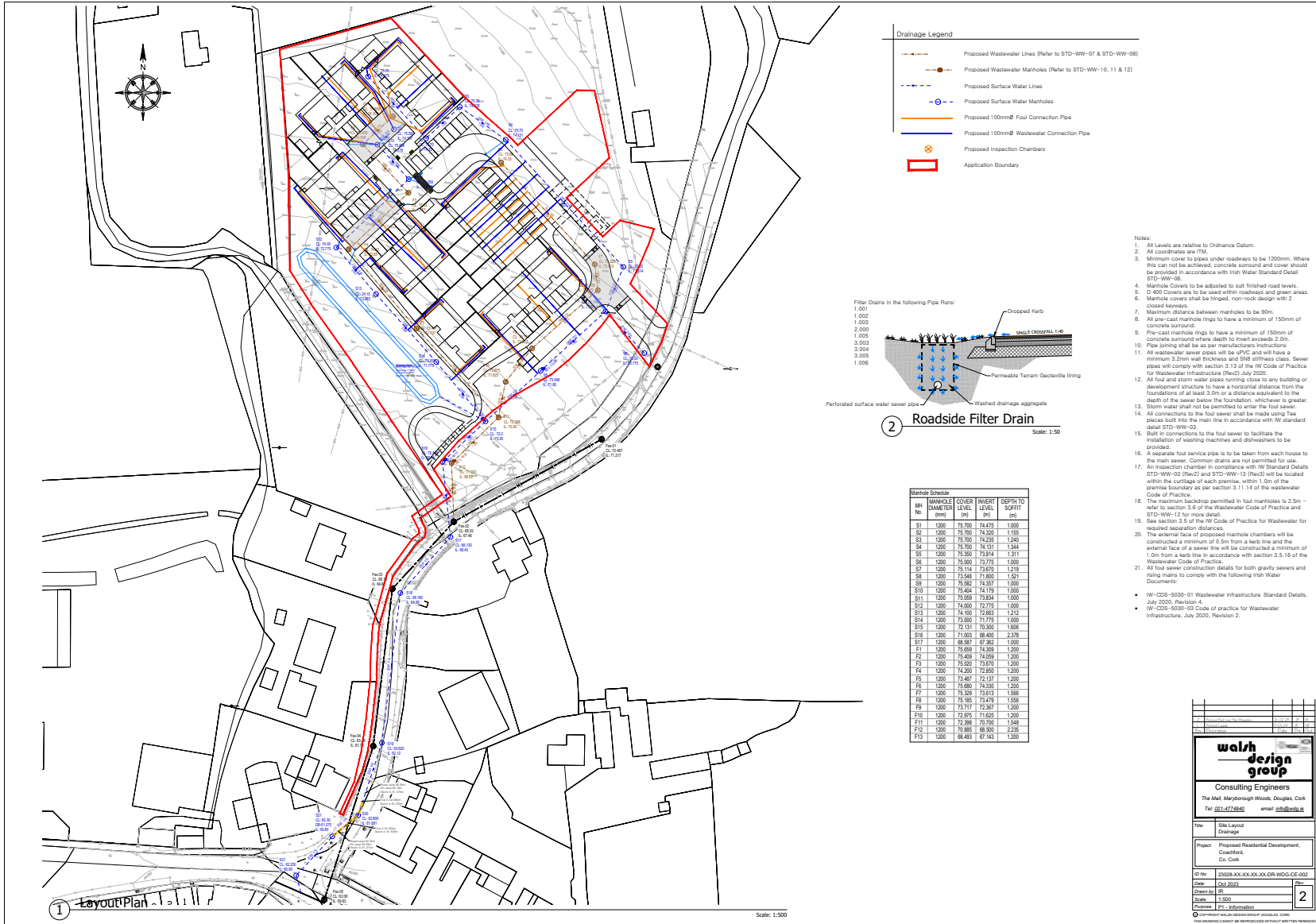
The wintering birds in Cork Harbour have been monitored since the 1970s and are counted annually as part of the I-WeBS scheme.

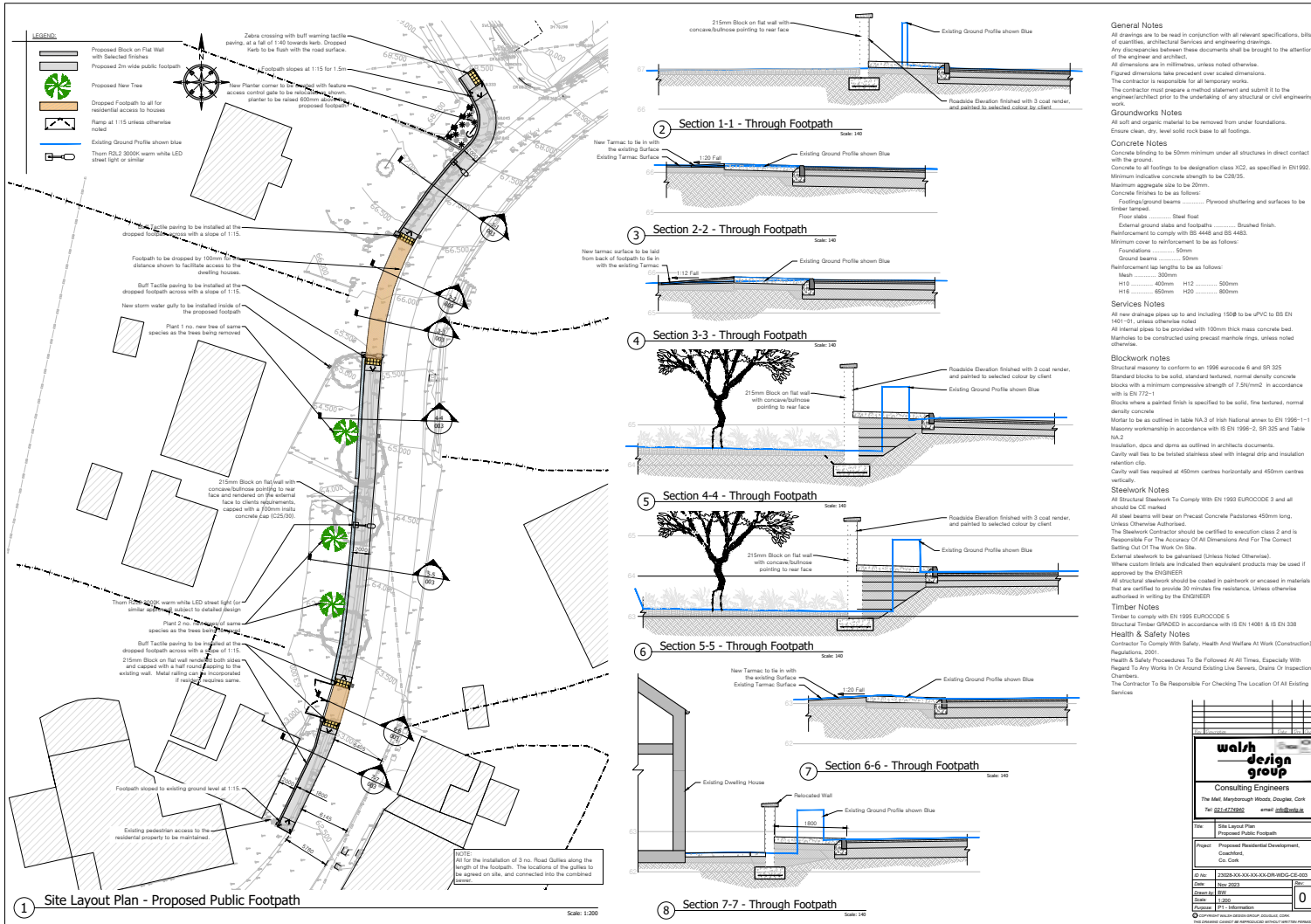
Cork Harbour has a nationally important breeding colony of Common Tern (3-year mean of 69 pairs for the period 1998-2000, with a maximum of 102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually and the chicks are ringed.

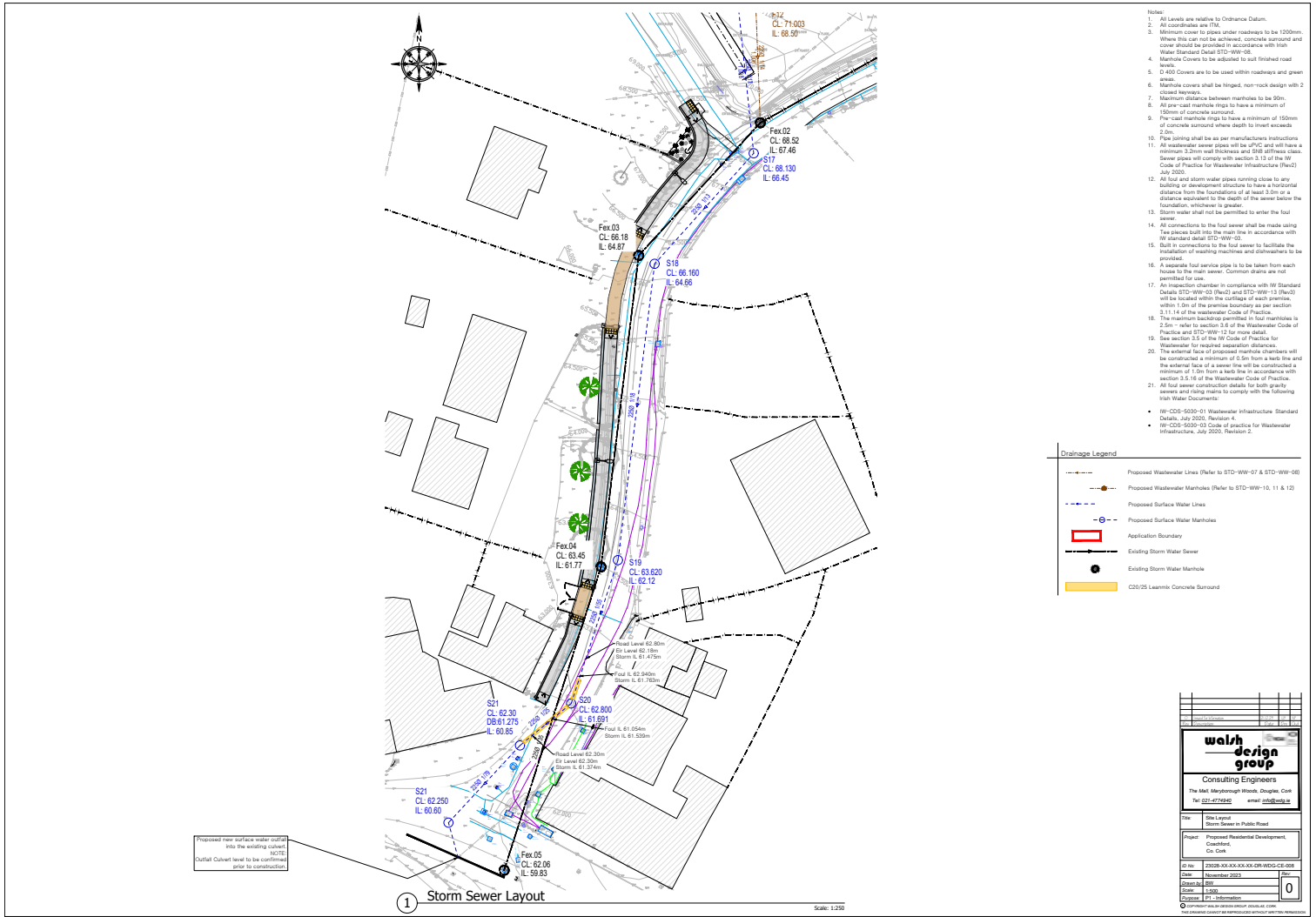
Extensive areas of estuarine habitat have been reclaimed since about the 1950s for industrial, port-related and road projects, and further reclamation remains a threat. As Cork Harbour is adjacent to a major urban centre and a major industrial centre, water quality is variable, with the estuary of the River Lee and parts of the Inner Harbour being somewhat eutrophic. However, the polluted conditions may not be having significant impacts on the bird populations. Oil pollution from shipping in Cork Harbour is a general threat. Recreational activities are high in some areas of the harbour, including jet skiing which causes disturbance to roosting birds.

Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, there are at least 18 wintering species that have populations of national importance, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Golden Plover, Bar-tailed Godwit, Ruff and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it.

Appendix 2. Site drawings







- Notes:
- All Levels are relative to Ordnance Datum.
 - All coordinates are T.M.
 - Minimum cover to pipes under roadways to be 1200mm. Where this can not be achieved, concrete surround and cover should be provided in accordance with High Water Standard Detail STD-WW-06.
 - Manhole Covers to be adjusted to suit finished road levels.
 - D 400 Covers are to be used within roadways and green areas.
 - Manhole covers shall be hinged, non-rock design with 2 closed keyways.
 - Maximum distance between manholes to be 20m.
 - All pre-cast manhole rings to have a minimum of 150mm of concrete surround.
 - The cast manhole rings to have a minimum of 150mm of concrete surround where depth to invert exceeds 2.0m.
 - Manholes shall be as per manufacturer's instructions.
 - All wastewater sewer pipes will be uPVC and will have a minimum 30mm cast thickness and shall adhere to class Sewer pipes will comply with section 3.13 of the IW Code of Practice for Wastewater Infrastructure (IWCI) July 2020.
 - All foul and storm water pipes coming close to any building or development structure to have a horizontal distance from the foundation of at least 2.0m or a distance equivalent to the depth of the sewer below the foundation, whichever is greater.
 - Storm water shall not be permitted to enter the foul sewer.
 - All connections to the foul sewer shall be made using Tee pieces built into the main line in accordance with IW standard detail STD-WW-03.
 - Built in connections to the foul sewer to facilitate the installation of washing machines and dishwashers to be provided.
 - A separate foul service pipe is to be taken from each house to the main sewer. Current drains are not permitted for use.
 - No inspection chamber in compliance with IW Standard Details STD-WW-03 (IW03) and STD-WW-13 (IW13) will be located within the curtilage of each entrance within 1.0m of the premise boundary as per section 3.1.1 of the Wastewater Code of Practice.
 - The maximum bedding depth permitted in foul manholes is 2.0m - refer to section 3.8 of the Wastewater Code of Practice and STD-WW-12 for more detail.
 - See section 3.5 of the IW Code of Practice for Wastewater for required separation distance.
 - The external face of unpressurised manhole chambers will be constructed a minimum of 0.5m from a wall line and the external face of a sewer line will be constructed a minimum of 1.0m from a wall line in accordance with section 3.5.18 of the Wastewater Code of Practice.
 - All foul sewer construction details for both gravity sewers and rising mains to comply with the following sub-Water Documents:
 - IW-C08-S030-01 Wastewater Infrastructure Standard Details, July 2020, Revision 4.
 - IW-C08-S030-03 Code of Practice for Wastewater Infrastructure, July 2020, Revision 2.

Drainage Legend

	Proposed Wastewater Lines (Refer to STD-WW-07 & STD-WW-08)
	Proposed Wastewater Manholes (Refer to STD-WW-10, 11 & 12)
	Proposed Surface Water Lines
	Proposed Surface Water Manholes
	Application Boundary
	Existing Storm Water Sewer
	Existing Storm Water Manhole
	C20/25 Leanmix Concrete Surround

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Title	Site Layout Storm Sewer in Public Road
Project	Proposed Residential Development Cork, Co. Cork
Client	
Date	November 2023
Drawing No.	0
Scale	1:250
Author	TJ - Information

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