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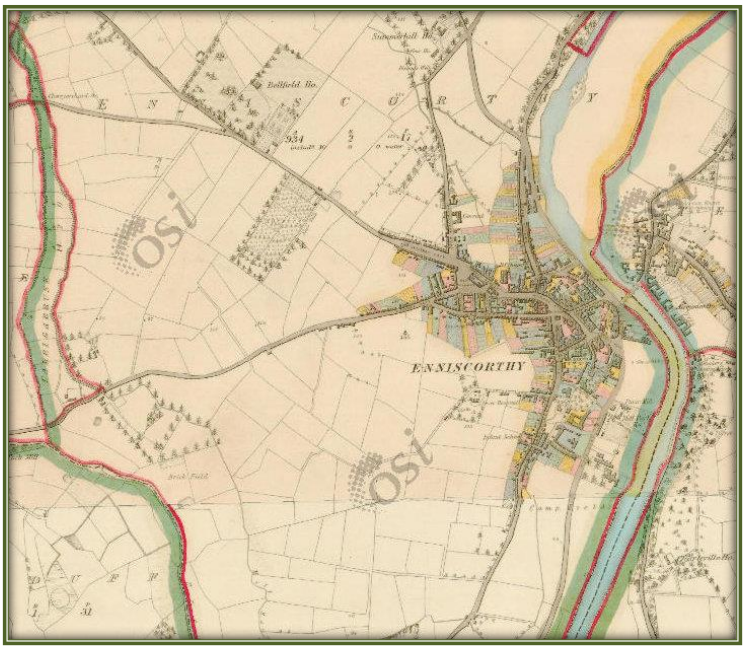
NATURA IMPACT STATEMENT OF A PROPOSED DEVELOPMENT AT ENNISCORTHY RURAL, ENNISCORTHY, CO. WEXFORD

IN LINE WITH THE REQUIREMENTS OF ARTICLE 6(3) OF THE EU HABITATS DIRECTIVE



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1 INTRODUCTION

1.1 REQUIREMENT FOR AN APPROPRIATE ASSESSMENT

In November 2020, Whitehill Environmental was appointed by Torca Developments Ltd to provide the necessary information to allow the competent authority (in this case An Bord Pleanála) to conduct an Article 6 (3) Appropriate Assessment for a proposed strategic housing development in Enniscorthy Rural, Enniscorthy, Co. Wexford. This information is being submitted as a Natura Impact Statement (NIS). This NIS was undertaken on the basis that pathways for effects on ground and surface waters exist between the application site and identified Natura 2000 sites.

The purpose of this NIS was to determine the appropriateness of the proposed project, in the context of the conservation status of the site or sites. In Ireland, an Appropriate Assessment takes the form of a Natura Impact Statement (NIS), which is a statement of the likely impacts of the plan or project on a Natura 2000 site. The NIS comprises a comprehensive ecological impact assessment of the plan or project and it examines the direct and indirect impacts that the plan or project might have on its own or in combination with other plans or projects on one or more Natura 2000 sites in view of the sites' conservation objectives.

1.2 THE AIM OF THE REPORT

This Natura Impact Statement (NIS) has been prepared in accordance with the current guidance (DoEHLG, 2009, Revised February 2010), and it provides an assessment of the potential impacts of the development at Enniscorthy Rural, Enniscorthy, Co. Wexford on sites designated under the Natura 2000 network.

An NIS should provide the information required in order to establish whether or not a proposed development is likely to have a significant impact on certain Natura sites in the context of their conservation objectives and specifically on the habitats and species for which the Natura 2000 conservation sites have been designated. In the case of this development at Enniscorthy Rural, the Natura 2000 sites are the Slaney River Valley SAC and the Wexford Harbour and Slobs SPA.

Accordingly, a comprehensive assessment of the ecological impacts of this application was carried out by Noreen McLoughlin, MSc, MCIEEM of Whitehill Environmental. This assessment allowed areas of potential ecological value and potential ecological constraints associated with this proposed development to be identified and it also enabled potential

ecological impacts associated with the proposed development to be assessed and mitigated for.

1.3 REGULATORY CONTEXT

RELEVANT LEGISLATION

The Birds Directive (Council Directive2009/147/EC) recognises that certain species of birds should be subject to special conservation measures concerning their habitats. The Directive requires that Member States take measures to classify the most suitable areas as Special Protection Areas (SPAs) for the conversation of bird species listed in Annex 1 of the Directive. SPAs are selected for bird species (listed in Annex I of the Birds Directive), that are regularly occurring populations of migratory bird species and the SPA areas are of international importance for these migratory birds.

The EU Habitats Directive (92/43/EEC) requires that Member States designate and ensure that particular protection is given to sites (Special Areas of Conservation) which are made up of or support particular habitats and species listed in annexes to this Directive.

Articles 6(3) and 6(4) of this Directive also call for the undertaking of an Appropriate Assessment for plans and projects not directly connected with or necessary to the management of, but which are likely to have a significant effect on any European designated sites (i.e. SACs and SPAs).

The Water Framework Directive (WFD) (2000/60/EC), which came into force in December 2000, establishes a framework for community action in the field of water policy. The WFD was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003). The WFD rationalises and updates existing legislation and provides for water management on the basis of River Basin Districts (RBDs). RBDs are essentially administrative areas for coordinated water management and are comprised of multiple river basins (or catchments), with cross-border basins (i.e. those covering the territory of more than one Member State) assigned to an international RBD. The aim of the WFD is to ensure that waters achieve at least good status by 2021 and that status does not deteriorate in any waters.

Appropriate Assessment and the Habitats Directive

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora – the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats

and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as *Natura 2000*. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC).

Articles 6(3) and 6(4) of the Habitats Directive sets out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

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

Article 6(4) deals with the steps that should be taken when it is determined, as a result of appropriate assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case.

Article 6(4) states:

"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."

The Appropriate Assessment Process

The aim of Appropriate Assessment is to assess the implications of a proposal in respect of a designated site's conservation objectives.

The 'Appropriate Assessment' itself is an assessment which must be carried out by the competent authority which confirms whether the plan or project in combination with other plans and projects will have an adverse impact on the integrity of a European site.

Screening for Appropriate Assessment shall be carried out by the competent authority as set out in Section 177U(1) and (2) of the Planning and Development Act 2000 (as amended) as follows:

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

(2) A competent authority shall carry out a screening for appropriate assessment under subsection (1) before—

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

(b) consent for a proposed development is given.'

The competent authority shall determine that an Appropriate Assessment is not required if it can be excluded, that the proposed development, individually or in combination with other plans or project will have a significant effect on a European site.

Where the competent authority cannot exclude the potential for a significant effect on a European site, an Appropriate Assessment shall be deemed required.

Where an Appropriate Assessment is required, the conclusions of the Appropriate Assessment Report (Natura Impact Statement (NIS)) should enable the competent authority to ascertain whether the plan or proposed development would adversely affect the integrity of the European site. If adverse impacts on the integrity of a European site cannot be avoided, then mitigation measures should be applied during the appropriate assessment process to the point where no adverse impacts on the site remain. Under the terms of the

Habitats Directive consent can only be granted for a project if, as a result of the appropriate assessment either (a) it is concluded that the integrity of any European sites will not be adversely affected, or (b) after mitigation, where adverse impacts cannot be excluded, there is shown to be an absence of alternative solutions, and there exists imperative reasons of overriding public interest for the project should go ahead.

Section 177(V) of the Planning and Development Act 2000 (as amended) outlines that the competent authority shall carry out the Appropriate Assessment, taking into account the Natura Impact Statement (amongst any other additional or supplemental information). A determination shall then be made by the competent authority in line with the requirements of Article 6(3) of the Habitats Directive as to whether the plan or proposed development would adversely affect the integrity of a European site, prior to consent being given.

2 METHODOLOGY

2.1 APPROPRIATE ASSESSMENT

This NIS has been prepared with reference to the following:

- European Commission (2018). Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- European Commission (2001). Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- European Commission (2006). Nature and Biodiversity Cases: Ruling of the European Court of Justice.
- European Commission (2007). Clarification of the Concepts of: Alternative Solution, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.
- Department of Environment, Heritage and Local Government (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.

The EC Guidance sets out a number of principles as to how to approach decision making during the process. The primary one is 'the precautionary principle' which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty.

When considering the precautionary principle, the emphasis for assessment should be on objectively demonstrating with supporting evidence that:

- There will be no significant effects on a Natura 2000 site;
- There will be no adverse effects on the integrity of a Natura 2000 site;
- There is an absence of alternatives to the project or plan that is likely to have an adverse effect to the integrity of a Natura 2000 site; and
- There are compensation measures that maintain or enhance the overall coherence of Natura 2000.

This translates into a four stage process to assess the impacts, on a designated site or species, of a policy or proposal.

The EC Guidance states that "each stage determines whether a further stage in the process is required". Consequently, the Council may not need to proceed through all four stages in undertaking the Appropriate Assessment.

The four-stage process is:

Stage 1: Screening – The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant;

Stage 2: Appropriate Assessment – The consideration of the impact on the integrity of the Natura 2000 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 3: Assessment of Alternative Solutions – The process which examines alternative ways of achieving objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site;

Stage 4: **Assessment where no alternative solutions exist and where adverse impacts remain –** An assessment of the 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.

In complying with the obligations set out in Articles 6(3) and following the guidelines described above, this screening statement has been structured as a stage by stage approach as follows:

- Description of the proposed project;
- Identification of the Natura 2000 sites close to the proposed development;
- Identification and description of any individual and cumulative impacts on the Natura 2000 sites likely to result from the project;
- Assessment of the significance of the impacts identified above on site integrity. Exclusion of sites where it can be objectively concluded that there will be no significant effects;
- Description of proven mitigation measures.

2.2 STATEMENT OF COMPETENCY

This NIS was carried out by Noreen McLoughlin, BA, MSc, MCIEEM. Noreen has an honours degree in Zoology and an MSc in Freshwater Ecology from Trinity College, Dublin and she has been a full member of the Chartered Institute of Ecology and Environmental Management for over thirteen years. Noreen has over 15 years' experience as a professional ecologist in Ireland.

2.3 DESK STUDIES & CONSULTATION

Information on the site and the area of the proposed development was studied prior to the completion of this statement. The following data sources were accessed in order to complete a thorough examination of potential impacts:

- National Parks and Wildlife Service - Aerial photographs and maps of designated sites, information on habitats and species within these sites and information on protected plant or animal species, conservation objectives, site synopses and standard data forms for relevant designated sites.
- Environmental Protection Agency (EPA)- Information pertaining to water quality, geology and licensed facilities within the area;
- Myplan.ie – Mapped based information;
- National Biodiversity Data Centre (NBDC) – Information pertaining to protected plant and animal species within the study area;
- Bing maps & Google Street View – High quality aerials and street images;
- Torca Developments Ltd / McGill Planning – Plans and Information Pertaining to the Development;
- Wexford County Council – Information on planning history in the area for the assessment of cumulative impacts.

2.4 FIELD BASED STUDIES

A visit to the site of the proposed application in Enniscorthy was conducted on June 5th 2020, when field notes, species lists and photographs were taken. The site was surveyed in accordance with the Heritage Council's Habitat Survey Guidelines (Smith et al., 2010) and the Institute of Environmental Assessment's Guidelines for Baselines Ecological Assessment (IEA, 1995). Habitats within the application site were classified in accordance to Level 3 of A Guide to Habitats in Ireland (Fossit, 2000). Additional faunal surveys of the site were carried out in June 2020 and January 2021.

2.5 ASSESSMENT METHODOLOGY

The proposed development was assessed to identify its potential ecological impacts and from this, the Zone of Influence (ZoI) of the proposed development was defined. Based on the potential impacts and their ZoI, the Natura 2000 sites potentially at risk from direct, indirect or in-combination impacts were identified. The assessment considered all potential impact sources and pathways connecting the proposed development to Natura 2000 sites, in view of the conservation objectives supporting the favourable conservation condition of the site's Qualifying Interests (QIs) or Special Conservation Interests (SCIs).

The conservation objectives relating to each Natura 2000 site and its QIs/SCIs are cited generally for SACs as "to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or Annex II species for which the SAC has been selected", and for SPAs "to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA".

As defined in the Habitat's Directive, the favourable conservation status of a habitat is achieved when:

- Its natural range and area it covers within that range is stable or increasing;
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future;

The favourable conservation status of a species is achieved when:

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

Where site-specific conservation objectives (SSCOs) have been prepared for a European site, these include a series of specific attributes and targets against which effects on conservation condition, or integrity, can be measured. Where potential significant effects are identified, then these SSCOs should be considered in detail.

3 SCREENING

3.1 DEVELOPMENT DESCRIPTION

Torca Developments Ltd have indicated their intention to shortly apply to An Bord Pleanála for planning permission for a residential development on a site at Enniscorthy Rural, Enniscorthy, Co. Wexford. This proposed strategic housing development (SHD) will comprise:

A residential development of 233 no. units (53 no., 3-4 bed houses and 180 no. 1/2/3 bed duplexes/apartments). Provision of a creche. Associated car parking, bicycle parking, and open spaces/landscaping. Vehicular and pedestrian accesses provided via Carley's Bridge Road to the north west, pedestrian/cyclist access via Carley's Bridge Road to the north and Millbrook Residential Estate to the east of the site. All associated site works including boundary treatments, plant, bin stores, site services and connections to facilitate the development.

An extract from the planning drawings can be seen in Figure 1.

Wastewater

Wastewater from the application site will be directed to the Enniscorthy Wastewater Treatment plant and Irish Water have approved this connection.

Surface Water Treatment

Sweeney Consulting Engineers Limited have carried out calculations, in accordance with SUDS guidelines, to determine the volume of attenuation required for the proposed development site. It is proposed to split the stormwater drainage network for the development into two zones. There will be an attenuation system for each zone and the attenuated stormwater will discharge into the River Urrin. Stormwater runoff will be limited to the greenfield run-off rate and in addition, attenuation will be provided for a 1 in 30 year storm event, and the site will be designed to accommodate the additional waters generated in a 1 in 100 year storm event, without flooding any property within the proposed development or any neighbouring property.

Construction Management Plan

A Construction Management Plan has been prepared for this proposed development by Traynor Environmental Ltd. This plan has been reviewed and its implementation has been assessed as part of the final Natura Impact Statement and Ecological Impact Statement. The plan has taken into account the mitigation measures in this EcIA report and the NIS.

Flood Risk Assessment

A Site Specific Flood Risk Assessment for the site has been prepared by IE Consulting, in accordance with "The Planning System and Flood Risk Management Guidelines – DoEHLG-200". The primary flood risk to the proposed site can be attributed to a fluvial flood event in the River Urrin and River Lyre adjacent to the western and south-western boundary of the site. The site is not at risk of groundwater flooding.

A detailed Digital Terrain Model (DTM) has been developed for the site. Utilising the DTM, and the predicted 1 in 100 year (1% AEP) and 1 in 1000 year (0.1% AEP) flood levels, the flood extents have been delineated over the full extent of the DTM. This analysis has determined that the south-western area of the site falls within Flood Zone 'A' and Flood Zone 'B'. The majority of the area of the site where development is proposed is located in Flood Zone 'C'.

Secondary pluvial flood risk can also be attributed to a potential surcharge of the urban drainage network and /or damage to the water supply infrastructure in the vicinity of the site. It is anticipated that any flooding due to surcharge of the foul sewer located close to the northern boundary of the site would spill out onto Carley's Bridge Road and be picked up by existing stormwater gullies located in the road. It is not anticipated that these waters would enter the boundary of the site. It is also predicted that any flooding due to a surcharge of the stormwater or foul manholes within the site would likely cause these waters to spill out onto the proposed development site and flow downhill in a southerly direction toward the River Urrin, before spilling into the river and away from the site. It is not anticipated that this would result in any ponding or flooding within the site.

Secondary flood risk can be attributed to a potential surcharge due to a blockage in the bridge located on the River Lyre adjacent to the north-western boundary of the proposed development site. In the event the bridge becomes blocked and begins to surcharge flood waters would surcharge/back up the River Lyre, overtop the bank and potentially spill out onto the surrounding land and would eventually flow in a southerly direction into the River Urrin and away from the proposed development site. Therefore, this secondary flood risk to the site is considered LOW.

The finished floor levels of the proposed houses shall be constructed to a minimum level of 8.65m OD, which is 1.15m above the peak 1 in 1000 year (0.1% AEP)flood level of 7.50m OD in the River Lyre at the proposed site entrance. This shall mitigate any residual risk associated with potential future climate change.

The access road and footpath located in the western area of the site shall be raised to a minimum level of 9.35m OD at the entrance to the site, which is 1.85m above the 1 in 1000

year flood level in this location. The access road and footpath located in the southern area of the site shall be raised to a minimum level of 7.50m OD, which is 1.56m above the 1 in 1000 year flood level of 5.94m ODin this location. This shall mitigate any residual risk associated with potential future climate change.

Flood storage compensation shall be provided in the proposed green open space area to account for flood waters that may be displaced as a result of raising the grounds in the southern area of the proposed development site above the 1 in 1000 year flood level.

There are existing foul and stormwater pipes located within the site as well as an existing field drainage channel that traverses the site. It is proposed to divert the existing foul and stormwater pipes and pipe the field drainage channel so that all pipes are located within the proposed roads. In the event any of the diverted drainage was to surcharge any potential flood waters would spill onto the proposed road. These waters would be collected by the proposed road gullies within the site or continue to flow along the road to the south-western area of the site and spill into the proposed green open space in the south-western area of the site. Overall, the potential flood risk posed to the site is considered to be low.

In consideration of implementation of the recommendations of this SSFRA the flood risk to and from the proposed development site is considered to be low. Development of the site is not expected to result in an adverse impact to the hydrological regime of the area or increase flood risk elsewhere.

Landscape Plan

A comprehensive landscape plan and a Biodiversity Action Plan has been prepared for the proposed development by Landscape Design Services. The plan has been reviewed as part of this EcIA and the NIS. The plan contains recommendations for the inclusions of a large number of native Irish species, along with the creation of a number of natural habitats on the site. Where possible, natural features have been included for the attenuation of surface water. In addition, existing ecological features of the site have been incorporated. It should be noted that a minimum riparian buffer zone of 15m has been retained along the banks of the river, where no infrastructure or hard landscaping will take place. This is in accordance with IFI guidelines (*Planning for Watercourse in the Urban Environment. IFI, 2020).*

Figure 1 – Extract from Planning Drawing (as prepared by BDA Architecture)

3.2 SITE LOCATION AND SURROUNDING ENVIRONMENT

OVERVIEW

The site in question is located on the outskirts of Enniscorthy town, approximately 1.1km south-west of the town centre. Access to the site will be via a local, third class road, known locally as Carley's Bridge Road. The predominant land-uses around the site consist of agriculture and the extended urban fabric of Enniscorthy (mostly residential areas). The dominant habitats surrounding the site include improved agricultural grassland, buildings and artificial surfaces, amenity grasslands, mixed woodlands, hedgerows and treelines. The River Urrin and its riparian habitats are also adjacent to the application site.

Under the Enniscorthy Town and Environs Development Plan 2008 – 2014 (as extended to 2019), the majority of lands subject to this application are zoned R1, i.e., new residential / low medium density. The remainder, i.e., those extending along the Urrin River, have been zoned as G5, i.e., for local space and amenity.

Site location maps are shown in Figures 2 and 3, whilst an aerial photograph of the site and its surrounding habitats is shown in Figure 4.

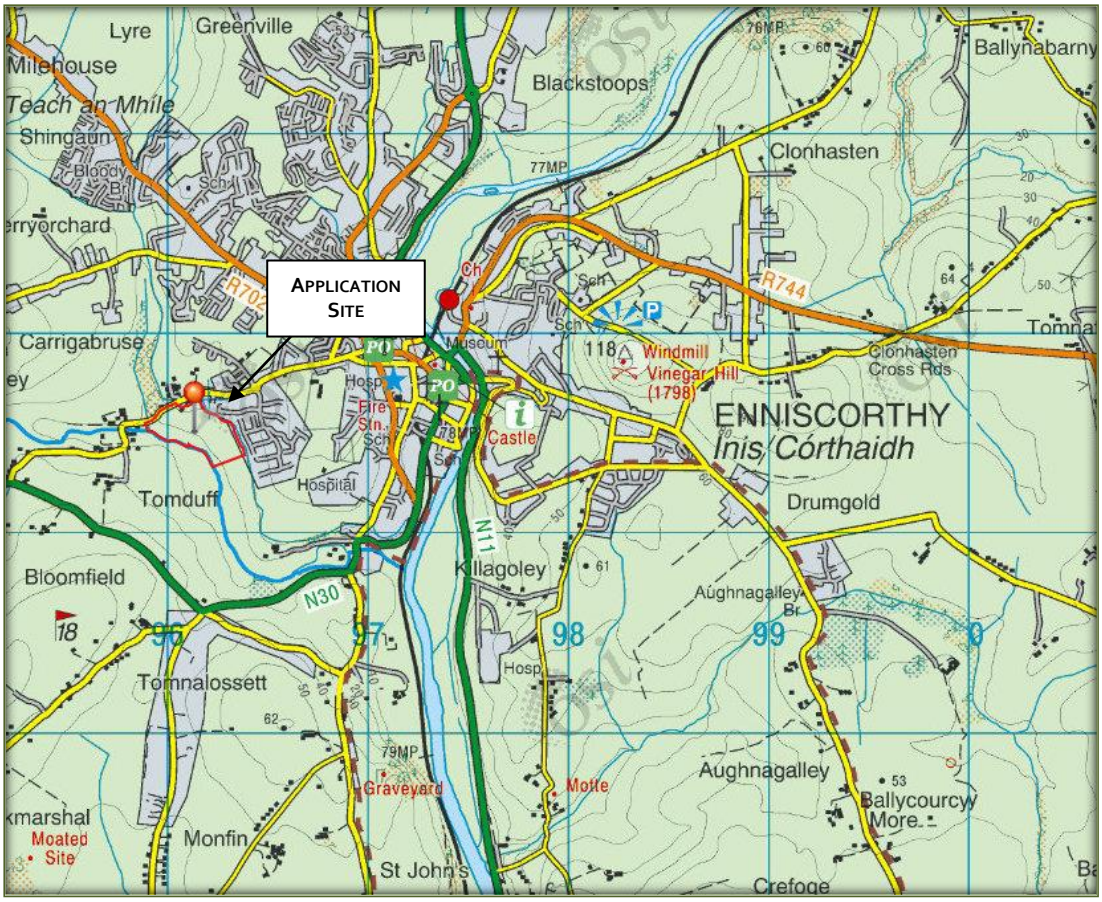


Figure 2 – Site Location Map (Site is Outlined in Red)

Figure 3 – Site Location Map (Site Outlined in Red)

HABITATS AND LAND-USE SURROUNDING THE SITE

The main habitats surrounding the site were assessed using aerial photographs and classified in accordance with Fossit (2000). The sub-urban fabric of Enniscorthy lies to the north-east and east of the site. These areas consist of buildings and artificial surfaces (BL3), along with amenity grasslands (GA2), flower beds and borders (BC4) and scattered trees and parklands (WD5). To the north-west, west and south of the application site, agriculture is the dominant land use and improved agricultural grassland (GA1) is the dominant habitat. Other habitats represented locally include treelines (WL2), hedgerows (WL1) and small areas of mixed broadleaved woodlands (WD1). There are also numerous watercourses surrounding and within the site, including the Urrin River and its tributaries.

An overview of the local habitats surrounding the application site can be seen in the aerial photograph in Figure 4.

HABITATS WITHIN THE STUDY AREA

Overview

No part of the site lies within any area that is designated for nature conservation purposes. The habitats within the site range from low – high biodiversity value. The natural habitats within the application site include areas of improved agricultural grasslands (GA1), dry meadows and grassy verges (GS2), hedgerows (WL1), treelines (WL2), drainage ditches (FW4) and depositing lowland river (FW2). These habitats are described in greater detail below, whilst a habitat map of the site is provided in Figure 5.

Habitat Description

The application site consists of two relatively well drained fields that are separated by a hedgerow. The site slopes steeply down towards the River Urrin, which flows along the western boundary of the site. The site is bounded to the north by the Carley's Bridge road, to the east by the rear gardens of the Millbrook Estate, and to the south by a small area of deciduous woodland.

The dominant habitat within the application is improved agricultural grassland (GA1). The species here are typical for this type of habitat – grasses are dominant and they include meadow grasses *Poa* sp. and rye grasses *Lolium* sp. Broadleaved species include meadow buttercup *Ranunculus acris*, creeping buttercup *Ranunculus repens*, spear thistle *Cirsium vulgare,* white clover *Trifolium repens* and red clover *Trifolium pratense*. Certain areas of the field are less improved and are more akin to a dry calcareous and neutral grassland habitat (GS1). Species noted in these areas include black medick *Medicago lupulina* and ragwort *Jacobaea vulgaris.*

There is a poorly drained hollow in the north-western section of the site, and this area has been colonised by grey willow *Salix cinerea* and compact rush *Juncus conglomeratus.* For the purpose of the habitat classification, this was categorised as scrub WS1.

In the western portion of the field, and at the bottom of the slope near to the river, the land is more poorly drained and this is indicated by the presence of rushes (*Juncus* sp), meadowsweet *Filipendula ulmaria* and horsetail *Equisetum* sp.

There are a number of watercourses on the site, including drainage ditches (FW4) along the external and internal site boundaries. The River Urrin forms the western boundary of the application site, and this is a depositing lowland river (FW2). The river at this location is approximately 8m wide and on the day of surveying it was relatively shallow and with a moderate flow. Rain levels were significantly lower than normal in the proceeding months;

therefore, discharge to this river is likely to be much reduced compared to normal levels. The clarity of the water in the river was relatively high on the day, and instream species were noted, including water crowfoot *Ranunculus penicillatus.* Bankside species included water dropwort *Oenanthe lachenalia,* water mint *Mentha aquatica* and Indian balsam *Impatiens glandulifera*. An extensive collection of household rubbish was noted in the river, likely to have been washed down during the heavy rain of early spring.

The boundaries of the site to the north, east and south consist of a mosaic of hedgerows (WL1) and treelines (WL2). Fossit defines the treeline (WL2) as a narrow row or single line of trees that is greater that 5m in height that typically occurs along field or property boundaries, whilst a hedgerow (WL1) is described as a linear feature less than 5m in height. Often, these habitats grade into and out of each other along liner boundaries, making it difficult to map accurately or clearly on a habitat map. Overall, treelines and hedgerows are an important feature of the application site and they occur along the majority of site boundaries, as well as along the internal site boundaries.

The boundaries within the site are generally well developed and structured and they have been assessed in detail as part of the accompanying arboricultural assessment that has been prepared for the site. The dominant species in these boundaries include sessile oak *Quercus petraea,* ash *Fraxinus excelsior,* beech *Fagus sylvatica*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa.* These hedgerows and treelines are associated with grassy verge habitats (dry meadows and grassy verges - GS2) and the common species along these verges are typical for agricultural verges. They include nettles *Urtica dioca*, common hogweed *Heracleum sphondylium* and Yorkshire fog *Holcus lanatus*.

When assessing the site, all boundaries were numbered and described. The most important boundaries to this assessment are described in greater detail below and their location is shown in Figure 4.

Boundary 1: This boundary forms the perimeter of the site along Carley's Bridge road and it also extends behind the farm buildings and houses in the north of the site. This boundary is dominated by a hedgerow with occasional small ash trees. Hawthorn, blackthorn and brambles *Rubus fruticosus* are all common, whilst dog rose *Rosa canina* and gorse *Ulex europaeus* are also frequent throughout it. Willow *Salix* sp. is also present. The group of trees near to the buildings include mature specimens of sessile oak, beech, sycamore *Acer pseudoplantatus*, ash and elder *Sambucus nigra.* Verging species along this boundary include nettles, male fern *Dryopteris filix-mas* and cow parsley *Anthriscus Sylvestris.*

Boundary 2: This boundary occurs along the eastern site perimeter, and it forms the rear boundary of the houses in the Millbrook Estate. It was classed as a hedgerow initially although it matures to a treeline towards the southern portion of the site. Species noted in this boundary included hawthorn, blackthorn, gorse, willow and elder, with occasional immature oak and ash. In certain mid-sections of the site, this boundary is gappy and poorly structured. In the southern section of this boundary, trees are dominant and species include oak, ash, willow and elder.

Boundary 3: This is the internal boundary feature within the site, and it has been classed as a hedgerow with some notable mature oak trees that have been classed as having high landscape value. There is a drain associated with this boundary and in the upper section of the field on the day of the survey this drain was dry and filled in with brambles. Gorse and willow are the most common species along this boundary.

Boundary 4: This boundary forms the southern perimeter of the application site, and it is a treeline with good structure. Ash is the dominant species, and elder, alder *Alnus glutinosa* and blackthorn are also common. It occurs in association with a drain.

Boundary 5: Boundary 5 extends along the banks of the Urrin River. It is a dense treeline in some parts, particularly in the southern corner of the site. It occurs on a moderately steep slope down to the river, which is at a much lower level to the ground level of the site. There is a dense thicket of vegetation at in the south-western corner of the site, where willows, alder, brambles and sycamore are all common. Of particular note here was the presence of the invasive species Indian balsam *Impatiens glandulifera*, which seems to be spreading prolifically along the entire river edge. Mature oak were also noted along the banks here. Beyond the mid-section of the site and to the north of the site, the treeline along the riverbank thins out considerably and the bank becomes fairly open and unshaded. Alder is the dominant tree along this section of the river. Balsam was noted also in this area.

Figure 4 – Boundaries Within the Study Area

Arboricultural Assessment

In addition to the ecological and biodiversity assessment of the trees and hedgerows within the application site, a separate arboricultural assessment was undertaken by Independent Tree Surveys. The report prepared undertook an assessment of the quality and value of the trees within the site, along with an assessment of the impact of the proposed development upon the tree population in and around the site.

The survey identified 41 individual trees within the application site. These trees were classified into four different tree condition categories. These categories and the proportions of trees within the application site falling into these categories are listed below.

- Category A: Trees of high value and quality – 3 trees
- Category B: Trees of moderate value and quality – 27 trees and one group of trees
- Category C: Trees of low quality and value – 9 trees, 2 groups of trees, 3 hedges
- Category U: Trees of very low value which should be removed – 2 trees

It should be understood, that whilst a tree may be of low value arboriculturally, its value in an ecological and biodiversity context can by high, as trees of poor condition can provide value to nesting birds, roosting bats as well as a wide range of invertebrates. They also form important ecological networks and ecological commuting corridors between areas of high biodiversity value.

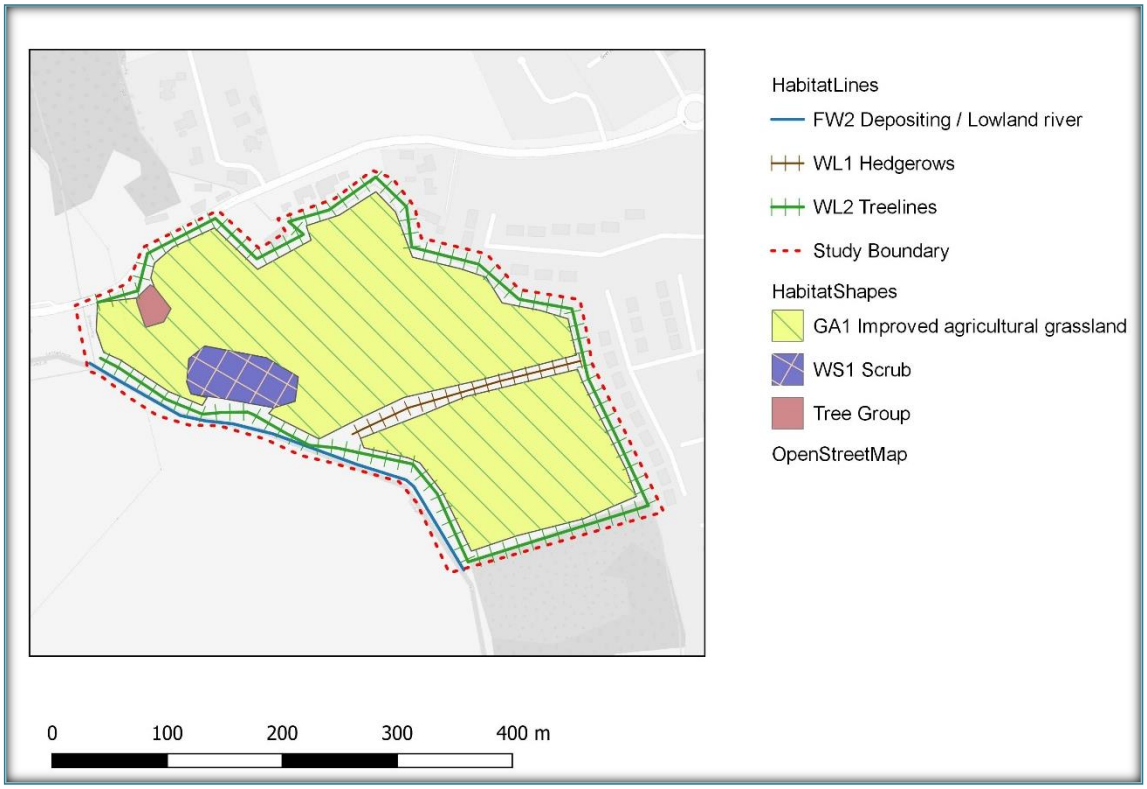


Figure 5 – Habitat Map showing the Extent of Dominant Habitat Features within the Study Area

Rare and Protected Plant Species

An examination of the website of the National Parks and Wildlife, the National Biodiversity Data Centre and the Online Atlas of Vascular Plants for Ireland revealed that there are no records for any plant species protected under the Flora Protection Order from within the 10km square (S93) of the proposed application sites.

Invasive Species

Records for the presence of Japanese knotweed *Fallopia japonica* and Indian balsam *Impatiens glandulifera* exist for the Enniscorthy Rural townland. These are high impact invasive species. They spread rapidly and easily and have a significant negative impact upon native flora and local biodiversity. These species are both listed under Schedule Three of the Birds and Habitats Regulations 2011.

During the site walkover, no incidences of Japanese knotweed were noted. However, Indian balsam was noted as occurring extensively along the riparian edge of the River Urrin, most notability in the south-western corner. It is also extending into the lower section of the drain that bisects the site.

MAMMALS

The mammal survey undertaken by Brian Keely of Wildlife Surveys Ireland determined that no otter holts were noted along the riverbank, within open ground or in the hedgerows. One partial spraint was discovered on a rock in the river, but it is possible that this is a mink spraint as the size of the spraint fragment was very small. The spraint was dried and several days to weeks old and it did not have a strong odour. No otter prints were noted in mud or sand along the riverbank. No otters or badgers were seen or heard during the nighttime survey work and there are no badger setts on the site.

A bat survey of the site recorded the following species:

- Common pipistrelle *Pipistrellus pipistrellus*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Leisler's bat *Nyctalus leisleri*
- Daubenton's bat *Myotis daubentoniid*

FISHERIES

Information on the fisheries of Urrin River upstream of Enniscorthy was obtained from the Inland Fisheries Ireland Water Framework Directive (WFD) mapping application. This interactive facility highlights the location of the WFD monitoring sites for fish in Ireland. The closest WFD monitoring point to the application site is on the Urrin River at Buck's Bridge, which is approximately 12km upstream of the application site. The last survey year was 2014. Species present in the Urrin River at this site include brown trout, European eel and salmon. Overall, species richness scored 3 and the WFD fish ecological status was described as good. All lamprey species and salmon are protected under the EU Habitats Directive.

WATER FEATURES AND QUALITY

The application site is within the Slaney and Wexford Harbour Hydrometric Area and Catchment and the Urrin Sub-Catchment and Sub-Basin. The application site is adjacent to the Urrin River, which flows along the north-western boundary of the site. In addition, the River Lyre is close to the application site and its confluence with the River Urrin is in the north-western section of the site. There are also drains along the north-eastern and southern site boundaries and in addition, there is another drain within the application site which occurs in association with the treeline that transects the site from east to west. These drains lead to the Urrin River.

The Urrin River flows past the site in a southerly / easterly direction until its confluence with the River Slaney downstream of Enniscorthy and approximately 1.4km downstream of the application site.

The EPA have defined the ecological status of the Urrin River and its tributaries within this sub-catchment as being of moderate ecological status. Under the requirements of the Water Framework Directive in Ireland this is unsatisfactory and good status must be reached by 2021. The Slaney River downstream of Enniscorthy is classed by the EPA as a transitional water body and they refer to it as the Upper Slaney Estuary. This has been classed as good ecological status and under the requirements of the Water Framework Directive this status is satisfactory and it must be maintained.

EPA Biological Water Quality

The results of the most recent Q value assessment for the upstream and downstream stations of the Urrin River are presented in Table 1.

Year	Site Name & Location	Q Value & Status
2019	Verona Bridge – 1.5km upstream	Q3-4 Moderate
2019	John's Bridge – 1.1km downstream	Q4 Good

Table 1 – Summary of the Recent EPA Results for Water Quality in the Urrin River

Bankside Q Analysis

As part of the field work for this site, a two-minute kick sample of the river was taken from a point within the application site. The sample was retained in a tray and examined on the bankside for a period of time to assess the approximate abundance of certain indicator species. The mayfly *Baetis rhodani* was the dominant organism in the sample, whilst Simuliidae (black fly larvae) were also common. Caseless caddis from the Hydropsychidae family were frequent. For the purpose of the Q assessment as defined by the EPA, these taxa are all group C organisms, which means they are relatively tolerant of organic pollution. Group A taxa are the most sensitive species, and these did occur in the sample in small to fair numbers. They were represented by mayflies from the Heptageniidae family. Group B taxa are slightly less sensitive, and they were represented by stoneflies from the Leuctridae families.

Overall, based on the relative abundance of the indicator taxa, the river at this point was assigned a Q4, i.e., good status. This status aligns with the 2019 result obtained by the EPA for John's Bridge, which is 1.1km downstream.

Aside from the biological status, there is a high amount of domestic rubbish in the river.

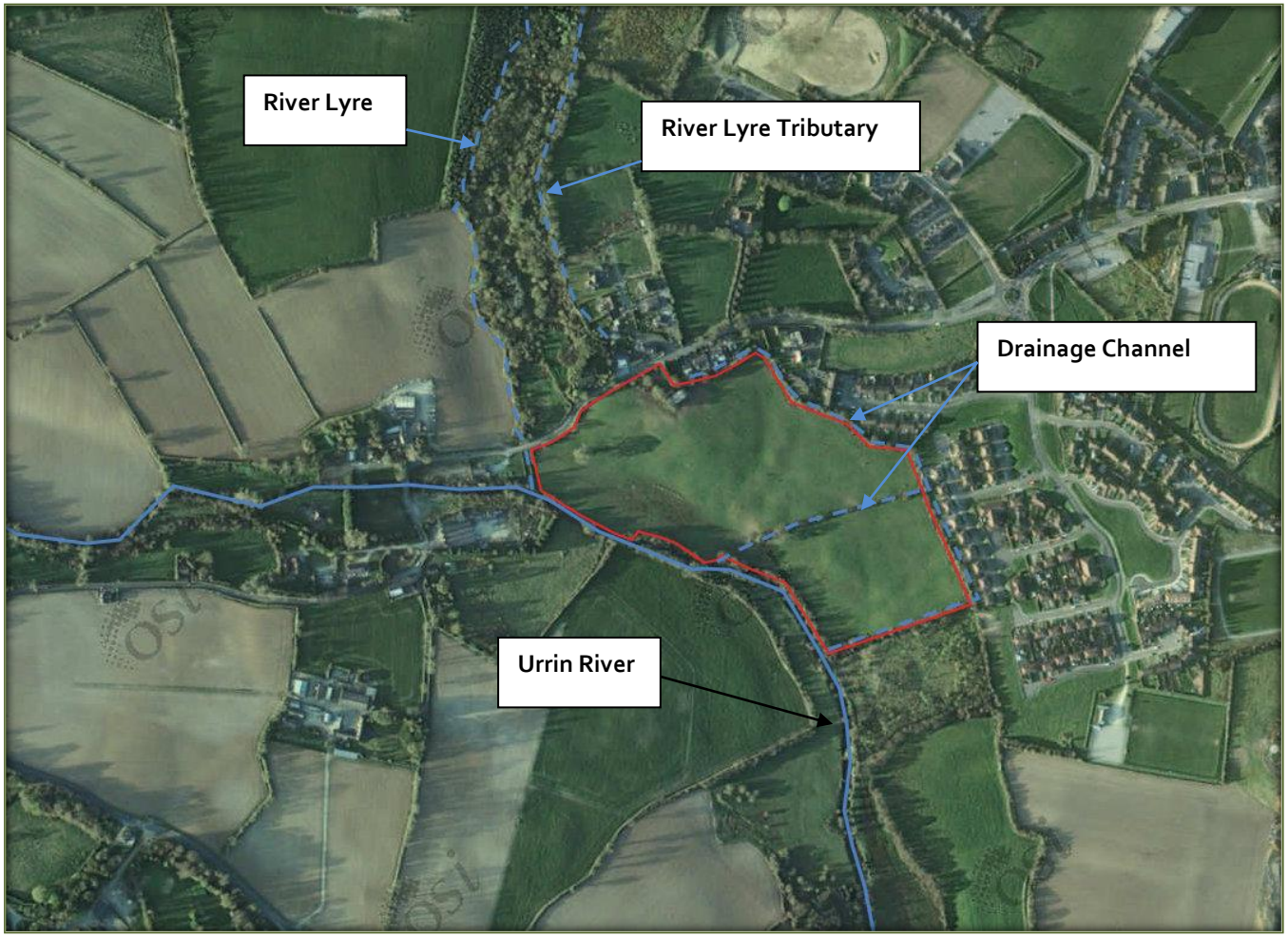


Figure 4 – Aerial Photograph of the Study Area (Outlined in Red) and its Surrounding Habitats. Watercourses are Highlighted in Blue

3.3 NATURA 2000 SITES IDENTIFIED

In accordance with the guidelines issued by the Department of the Environment and Local Government, a list of Natura 2000 sites within 15km of the proposed development have been identified and described according to their site synopsis, qualifying interests and conservation objectives. In addition, any other sites further than this, but potentially within its zone of interest were also considered. The zone of impact may be determined by an assessment of the connectivity between the application site and the designated areas by virtue of hydrological connectivity, atmospheric emissions, flight paths, ecological corridors etc.

For significant effects to arise, there must be a potential impact facilitated by having a *source*, i.e., the proposed development and activities arising out of its construction or operation, a *receptor*, i.e., the European site and its qualifying interests and a subsequent *pathway* or *connectivity* between the source and receptor, e.g., a water course. The likelihood for significant effects on the European site will largely depend on the characteristics of the source (e.g., nature and scale of the construction works), the characteristics of the existing pathway and the characteristics of the receptor, e.g., the sensitivities of the Qualifying Interests (habitats or species) to changes in water quality.

There are three Natura 2000 sites within 15km of this proposed development. In addition, there are two additional Natura 2000 sites that are hydrologically connected to the proposed site. These sites are summarised in Table 2. The location of the application site in relation to these designated areas is shown in Figures 5 and 6, whilst a full synopsis of these sites can be read online on the website of the National Parks and Wildlife Service (www.npws.ie).

Site Name & Code	Distance	Qualifying Interests	Potential Significant Effects?
Slaney River Valley SAC 000781	977m south-east / 1.4km downstream via Urrin River	• Estuaries • Mudflats and sandflats not covered by seawater at low tide • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) • Mediterranean salt meadows (Juncetalia maritimi) • Water courses of plain to	*There is a source-pathway-receptor linkage between the application site and this SAC, therefore significant effects arising on this SAC due to run-off from constructional and operational works cannot be ruled out.*

		montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation • Old sessile oak woods with Ilex and *Blechnum* in the British Isles • Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) • Freshwater Pearl Mussel *(Margaritifera margaritifera)* • Sea Lamprey *(Petromyzon marinus)* • Brook Lamprey *(Lampetra planeri)* • River Lamprey *(Lampetra fluviatilis)* • Twaite Shad *(Alosa fallax fallax)* • Salmon *(Salmo salar)* • Otter *(Lutra lutra)* • Common Seal *(Phoca vitulina)*	
Wexford Harbour and Slobs SPA 004076	1km south-east / 1.4km downstream via Urrin River	• Little Grebe *(Tachybaptus ruficollis)* • Great Crested Grebe *(Podiceps cristatus)* • Cormorant *(Phalacrocorax carbo)* • Grey Heron *(Ardea cinerea)* • Bewick's Swan *(Cygnus columbianus bewickii)* • Whooper Swan *(Cygnus cygnus)* • Light-bellied Brent Goose *(Branta bernicla hrota)* • Shelduck *(Tadorna tadorna)* • Wigeon *(Anas penelope)* • Teal *(Anas crecca)* • Mallard *(Anas platyrhynchos)* • Pintail *(Anas acuta)* • Scaup *(Aythya marila)* • Goldeneye *(Bucephala clangula)* • Red-breasted Merganser	*There is a source-pathway-receptor linkage between the application site and this SPA, therefore significant effects arising on this SPA due to run-off from constructional and operational works cannot be ruled out.*

		(Mergus serrator) • Hen Harrier *(Circus cyaneus)* • Coot *(Fulica atra)* • Oystercatcher *(Haematopus ostralegus)* • Golden Plover *(Pluvialis apricaria)* • Grey Plover *(Pluvialis squatarola)* • Lapwing *(Vanellus vanellus)* • Knot *(Calidris canutus)* • Sanderling *(Calidris alba)* • Dunlin *(Calidris alpina)* • Black-tailed Godwit *(Limosa limosa)* • Bar-tailed Godwit *(Limosa lapponica)* • Curlew *(Numenius arquata)* • Redshank *(Tringa totanus)* • Black-headed Gull *(Chroicocephalus ridibundus)* • Lesser Black-backed Gull *(Larus fuscus)* • Little Tern *(Sterna albifrons)* • Greenland White-fronted Goose *(Anser albifrons flavirostris)* • Wetland and Waterbirds	
Blackstairs Mountains SAC 000770	13.3km north-west	• Northern Atlantic wet heaths with *Erica tetralix* • European dry heaths	*No ecological connectivity between this SAC and the application site and therefore significant effects can be ruled out.*

Table 2 – Natura 2000 Sites Within 15km of the Proposed Site

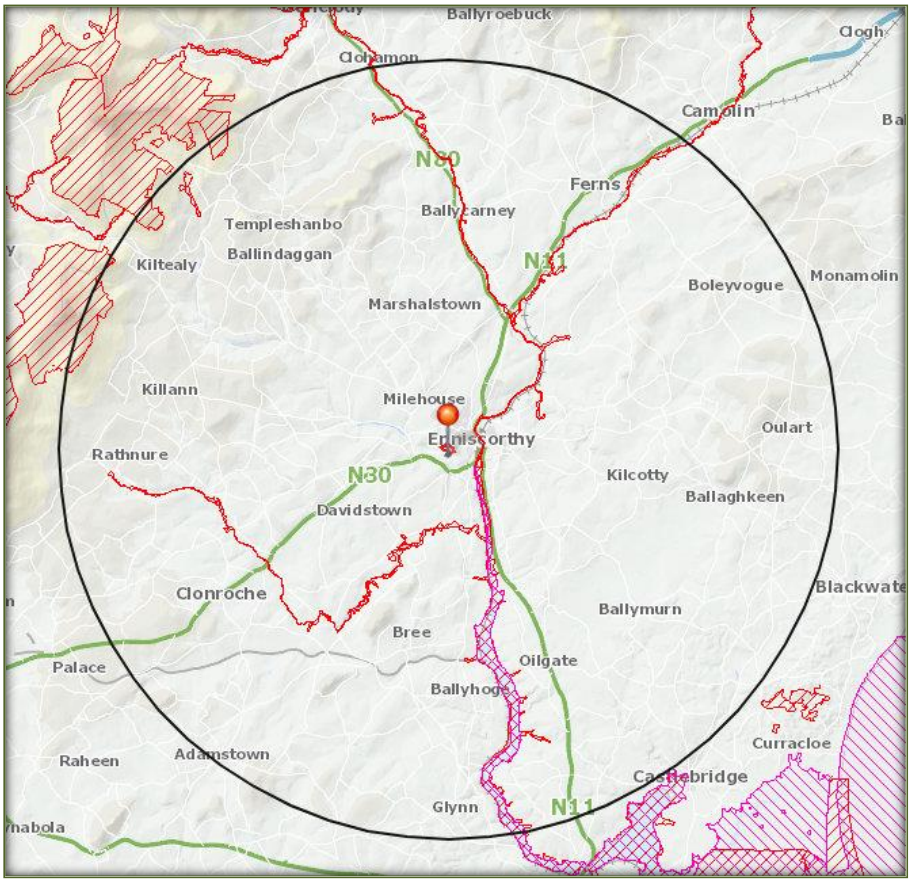


Figure 5 – The Application Site (Outlined in Red) in relation to the Slaney River Valley SAC (Red Hatched Areas) and the Wexford Harbour and Slobs SPA (Pink Hatched Areas)

Figure 6 – The Application Site (Outlined in Red) in relation to the Slaney River Valley SAC (Red Hatched Areas) and the Wexford Harbour and Slobs SPA (Pink Hatched Areas). The Potential Pollution Pathway (Urrin River) is Indicated with a Blue Dashed Line.

3.4 IDENTIFICATION OF POTENTIAL IMPACTS

The proposed development at Enniscorthy Rural will occur adjacent to the Urrin River, which is a tributary of the River Slaney, a designated SAC and SPA. Therefore potential impacts upon these Natura 2000 sites arising from the construction and operation of this proposed development cannot be ruled out.

Only those features of the development that have the potential to affect the integrity and conservation objectives of the identified Natura sites and protected species have been considered. A number of factors were examined at this stage and dismissed or carried forward for Appropriate Assessment as relevant. The following areas were examined in relation to potential impacts from the proposed development on the Natura 2000 sites identified:

1. Deterioration of surface water quality in designated areas arising from pollution from surface water run-off during site preparation and construction;
2. Deterioration in ground or surface water quality in designated areas arising from pollution during the operation of the proposed development;
3. Risk to Annex I or Annex II species associated with the site;
4. Cumulative impacts with other proposed/existing developments.

3.5 SCREENING CONCLUSIONS

The proposed development is not directly connected with or necessary to the nature conservation management of the designated site. Therefore, following consideration of the location of the Slaney River Valley SAC and the Wexford Harbour and Slobs SPA in relation to the proposed development at Enniscorthy Rural, and the potential impacts that may occur, this project must proceed to the next stage of Appropriate Assessment, namely the Natura Impact Assessment.

4 STAGE II – APPROPRIATE ASSESSMENT

4.1 INTRODUCTION

The main objective of this stage (Stage 2, Natura Impact Statement) in the Appropriate Assessment process is to determine whether the proposed development at Enniscorthy Rural (either alone or in combination with other plans, programmes and projects) will result in significant adverse impacts to the integrity of the Slaney River Valley SAC and the Wexford Harbour and Slobs SPA with respect to these site's structures, species, functions and/or conservation objectives. This stage also outlines the mitigation measures that should be taken in order to avoid any negative impacts of this application, should it receive consent.

In this section, the Natura 2000s site identified in the previous section will be described in greater detail in terms of their site characteristics and conservation objectives (with reference to NPWS site synopsis for both sites).

4.2 NATURA 2000 SITES IDENTIFIED

SLANEY RIVER VALLEY SAC 000781

This site comprises the freshwater stretches of the Slaney as far as the Wicklow Mountains and a number of tributaries the larger including the Bann, Glasha, Clody, Derry, Derreen, Douglas and Carrigower Rivers, as well as the estuary at Ferrycarrig and Wexford Harbour. The site flows through the counties of Wicklow, Wexford and Carlow. The river is up to 100m wide in places and it is tidal at the southern end from Edermine Bridge below Enniscorthy.

Floating river vegetation is found along much of the freshwater stretches within the site. Species present here include pond water-crowfoot (*Ranunculus peltatus*), water-crowfoot (*Ranunculus* spp.), canadian pondweed (*Elodea canadensis*), broad-leaved pondweed (*Potamogeton natans*), water milfoil (*Myriophyllum* spp.), common club-rush (*Scirpus lacustris*), water-starwort (*Callitriche* spp.), hemlock water-dropwort, fine-leaved water-dropwort (*Oenanthe aquatica*), common duckweed (*Lemna minor*), yellow water-lily (*Nuphar lutea*), unbranched bur-reed (*Sparganium emersum*) and the moss *Fontinalis antipyretica*. Two rare aquatic plant species have been recorded in this site: short-leaved water-starwort (*Callitriche truncata*), a very rare, small aquatic herb found nowhere else in Ireland; and opposite-leaved pondweed (*Groenlandia densa*).

Good examples of wet woodland are found associated with Macmine marshes, along banks of the Slaney and its tributaries and within reed swamps. grey willow (*Salix cinerea*) scrub and pockets of wet woodland dominated by alder (*Alnus glutinosa*) have become established

in places. Ash (*Fraxinus excelsior*) and birch (*Betula pubescens*) are common in the latter and the ground flora is typical of wet woodland with meadowsweet (*Filipendula ulmaria*), angelica (*Angelica sylvestris*), yellow iris, horsetail (*Equisetum* spp.) and occasional tussocks of greater tussock-sedge (*Carex paniculata*). These woodlands have been described as two types: one is quite eutrophic, is dominated by willow and is subject to a tidal influence. The other is flushed or spring-fed subject to waterlogging but not to flooding and is dominated by alder and ash.

Old oak woodlands are best represented at Tomnafinnoge though patches are present throughout the site. At Tomnafinnoge the wood is dominated by mature, widely spaced sessile oak (*Quercus petraea*), which were planted around 1700, with some further planting in 1810. There is now a varied age structure with over-mature, mature and young trees; the open canopy permits light to reach the forest floor and encourages natural regeneration of oak. As well as oak, the wood includes the occasional beech (*Fagus sylvatica*), birch (*Betula* sp.), rowan (*Sorbus aucuparia*) and scots pine (*Pinus sylvestris*).

The shrub layer is well-developed with hazel (*Corylus avellana*) and holly (*Ilex aquifolium*) occurring. The ground layer consists of great wood-rush (*Luzula sylvatica*) and bilberry (*Vaccinium myrtillus*), with some bracken (*Pteridium aquilinum*) and brambles (*Rubus fruticosus* agg.). Herbaceous species in the ground layer include primrose (*Primula vulgaris*), wood-sorrel (*Oxalis acetosella*), common cow-wheat (*Melampyrum pratense*) and bluebell (*Hyacinthoides non-scripta*). Many of the trees carry an epiphytic flora of mosses, polypody fern (*Polypodium vulgare*), and lichens such as *Usnea comosa, Evernia prunastri, Ramalina* spp. and *Parmelia* spp.

Below Enniscorthy there are several areas of woodland with a mixed canopy of oak, beech, sycamore (*Acer pseudoplatanus*), ash and generally a good diverse ground flora. Near the mouth of the river at Ferrycarrig is a steep south facing slope covered with oak woodland. Holly and hazel are the main species in the shrub layer and a species-rich ground flora typical of this type of oak woodland has abundant ferns - *Dryopteris filix-mas, Polystichum setiferum, Phyllitis scolopendrium* - and mosses - *Thuidium tamariscinum, Mnium hornum, Eurynchium praelongum.*

At the southern end of the site, the Red Data Book species yellow archangel (*Lamiastrum galeobdolon)* occurs. Three more Red Data Book species have also been recorded from the site: basil thyme (*Acinos arvensis*), blue fleabane (*Erigeron acer*) and small cudweed (*Filago minima*). A nationally rare species summer snowflake (*Leucojum aestivum*) is also found within the site.

Mixed woodlands occur at Carrickduff and Coolaphuca in Bunclody. Oak trees, which make up the greater part of the canopy, were originally planted and at the present time are not regenerating actively. In time, if permitted, the woodland will probably go to beech. A fair number of yew (*Taxus baccata*) trees have also reached a large size and these, together with holly give to the site the aspect of a south-western oak wood.

The site is considered to contain a very good example of the extreme upper reaches of an estuary. Tidal reedbeds with wet woodland are present in places. The fringing reed communities support sea club-rush (*Scirpus maritimus*), grey club-rush (*S. tabernaemontani*) and abundant common reed (*Phragmites australis*). Other species occurring are bulrush (*Typha latifolia*), reed canary-grass (*Phalaris arundinacea*) and branched bur-reed (*Sparganium erectum*). The reed-swamp is extensive around Macmine, where the river widens and there are islands with swamp and marsh vegetation. Further south of Macmine are expanses of intertidal mudflats and sandflats and shingly shore often fringed with a narrow band of salt marsh and brackish vegetation. Narrow shingle beaches up to 10 m wide occur in places along the river banks and are exposed at low tide. Upslope the shingle is sometimes colonised by saltmarsh rush (*Juncus gerardi*), townsend's cord-grass (*Spartina townsendii*), common saltmarsh-grass (*Puccinellia maritima*), sea aster (*Aster tripolium*), hemlock water-dropwort (*Oenanthe crocata*) and non-native and invasive himalayan balsam (*Impatiens glandulifera*).

The salt marsh at Castlebridge is dominated by Mediterranean salt meadows. The main community is characterized by the presence of sea rush (*Juncus maritimus*). red fescue (*Festuca rubra*) and creeping bent-grass (*Agrostis stolonifera*) are both abundant within this vegetation type. Other species present include autumn hawkbit (*Leontodon autumnalis*), sea milkwort (*Glaux maritima*), silverweed (*Potentilla anserina*), long-bracted sedge (*Carex extensa*), parsley water-dropwort (*Oenanthe lachenalii*), curled dock (*Rumex crispus*), sea arrowgrass (*Trigolchin maritima*), smooth sow-thistle (*Sonchus oleraceus*), sea plantain (*Plantago maritima*), wild celery (*Apium graveolens*), spear-leaved orache (*Atriplex prostrata*), white clover (*Trifolium repens*), sea aster and saltmarsh rush. These species vary in cover values and salt marsh rush may occasionally be dominant. Species such as hard-grass (*Parapholis strigosa*) and common saltmarsh-grass are found along some of the tracks, while common saltmarsh-grass is also more common around the mouths of the creeks and along some of the drainage channels.

The marsh is perched on ground that is bisected by a number of channels which extend a considerable distance inland. The site is notable for the presence of borrer's saltmarsh-grass (*Puccinnellia fasciculata*), which is found along the cattle tracks of the marsh. Another notable feature is the transition from saltmarsh to brackish marsh communities, which is quite extensive and diverse. The marsh is generally in good condition.

A significant area of Atlantic salt meadows also occurs at Castlebridge. This habitat is characterised by the presence of grassy upper saltmarsh vegetation communities dominated by red fescue and/or creeping bent-grass. Other species present include saltmarsh rush, sea milkwort (*Glaux maritima*), sea aster, sea arrowgrass (*Triglochin maritimum*), sea plantain, common scurvygrass (*Cochlearia officinalis*), and curled dock (*Rumex crispus*). sea rush may be present in this habitat and has cover values between 0-10%.

Wexford Harbour is an extensive, shallow estuary which dries out considerably at low tide exposing large expanses of mudflats and sandflats. Within these habitats four biological community complexes have been recorded: estuarine muds dominated by polychaetes and crustaceans community complex; sand dominated by polychaetes community complex; mixed sediment community complex; and fine sand with *Spiophanes bombyx* community complex. The harbour is largely sheltered by the Raven Point to the north and Rosslare Point in the south.

Other habitats present within the site include species-rich marsh in which sedges such as *Carex disticha, Carex riparia* and *Carex vesicaria* are common. Among the other species found in this habitat are yellow iris (*Iris pseudacorus*), water mint (*Mentha aquatica*), purple loosestrife (*Lythrum salicaria*) and soft rush (*Juncus effusus*). Extensive marshes occur to the west of Casltebridge associated with the tidal areas of the River Sow.

The site supports populations of several species listed on Annex II of the EU Habitats Directive including sea lamprey (*Petromyzon marinus*), river lamprey (*Lampetra fluviatilis*) and brook lamprey (*Lampetra planeri*), otter (*Lutra lutra*), salmon (*Salmo salar*), small numbers of Freshwater pearl mussel (*Margaritifera margaritifera*) and in the tidal stretches, twaite shad (*Alosa fallax fallax*). A survey of the Derreen River in 1995 estimated the population of freshwater pearl mussel at about 3,000 individuals. This is a significant population, especially in the context of eastern Ireland. The Slaney is primarily a spring salmon fishery and is regarded as one of the top rivers in Ireland for early spring fishing. The upper Slaney and tributary headwaters are very important for spawning. The site supports

regionally significant numbers of common seal. This Annex II species occurs year-round in Wexford Harbour where several sandbanks are used for breeding, moulting and resting activity. At least 27 common seal regularly occur within the site.

The site is of high ornithological importance also, with internationally important populations of mute swan, light-bellied brent goose, bar-tailed godwit and black-tailed godwit occurring. There are at least a further 18 species of wintering waterfowl which occur in numbers of national importance, i.e. great-crested grebe, cormorant, shelduck, teal, scaup, goldeneye, redbreasted merganser, oystercatcher, golden plover, grey plover, lapwing, knot, sanderling, dunlin, curlew, redshank, black-headed gull and lesser black-backed gull.

Several of the above populations represent substantial proportions of the national totals, especially shelduck (6.1%), scaup (5.9%), red-breasted merganser (5.6%), grey plover (18.8%, the top site in the country) and black-headed gull (6.1%). A nesting colony of little egret has recently become established within the site (12+ pairs in 2003) and birds are present in the area throughout the year. The sheltered estuarine habitat to the west of Wexford Bridge is the favoured location. Another very localised breeding species, reed warbler, is well established within the swamp vegetation along the River Slaney and on the South Slob (estimated as at least 10 pairs). The River Slaney supports typical riparian species, including dipper and kingfisher. The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include pine marten, badger, IRISH hare and Daubenton's bat. The common frog (*Rana temporaria*), another Red Data Book species, also occurs within the site.

Agriculture is the main landuse. Arable crops are important. Improved grassland and silage account for much of the remainder. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of Annex II animal species within it. Run-off is undoubtedly occurring, as some of the fields slope steeply directly to the river bank. In addition, cattle have access to the site in places. Fishing is a main tourist attraction along stretches of the Slaney and its tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place. There are some gravel pits along the river below Bunclody and many of these are active. There is a large landfill site adjacent to the river close to Hacketstown and at Killurin. Boating, bait-digging and fishing occur in parts of Wexford Harbour.

Waste water outflows, runoff from intensive agricultural enterprises, a meat factory at Clohamon and a landfill site adjacent to the river and further industrial development

upstream in Enniscorthy and in other towns could all have potential adverse impacts on the water quality unless they are carefully managed. The spread of exotic species is reducing the quality of the woodlands.

The site supports populations of several species listed on Annex II of the E.U. Habitats Directive, and habitats listed on Annex I of this Directive, as well as important numbers of wintering wildfowl including some species listed on Annex I of the E.U. Birds Directive. The presence of wet and broadleaved woodlands increases the overall habitat diversity and the occurrence of a number of Red Data Book plant and animal species adds further importance to the site. Overall it is of considerable conservation significance.

The Natura Standard Data form for this SAC (NPWS, 2015) has identified the highest threats to the integrity and conservation status of this site. These main threats include forest and plantation management and use, invasive non-native species, cultivation and diffuse pollution to surface waters arising from agriculture and forestry. These threats come from both outside and inside influences.

The conservation objective (generic) of the River Slaney Valley SAC is:

To maintain / restore the favourable conservation status of the qualifying interests of this SAC.

The Department of Arts, Heritage and the Gaeltacht has published the Site Specific Conservation Objectives (SSCOs) for this SAC, along with supporting documents for the woodland habitats and the marine habitats of this SAC (NPWS, 2011). These document were referred to during the preparation of this report to assist in the identification of potential impacts upon the qualifying interests and conservation objectives of this SAC. The qualifying interests were considered to be relevant or non-relevant based on their location and their sensitivity to the impacts arising from the construction and operation of the proposed development. The NPWS Article 17 reports (2013) on the status of EU Protected Habitats and Species in Ireland were also referred to.

These site specific conservation objectives for both SACs and SPAs aim to define the favourable conservation condition for the particular habitats or species at that site. They outline certain attributes (e.g., distribution, population structure, water quality) for different species and habitats with targets, which define favourable conditions for a habitat or species at a particular site. The maintenance of habitats and species within the Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at national level. For the Slaney River

Valley SAC, these site specific conservation objectives can be downloaded on the NPWS website. Any potential threats to the attributes and targets as defined in these site specific conservation objectives were assessed and where necessary, mitigated for.

For each Qualifying Interest of the SAC, the specific conservation objective is either to *maintain or restore* the favourable conservation condition of that interest, by defining a list of attributes and targets which are indicative of the conservation status of that interest. For habitats, the main attributes include habitat area; habitat and community distribution; vegetation structure/composition and physical structure. The main target is to ensure that the habitats are stable or increasing in area and that the other attributes are maintained or restored. For the Annex II species of the SAC, the main attributes are population trend and distribution, whilst the targets aim to ensure that the long term population trends of the species are stable or increasing and that there is no significant decrease in the numbers or range of areas used by the species, other than that occurring from natural patterns of variation.

WEXFORD HARBOUR AND SLOBS SPA 004076

Wexford Harbour is the lowermost part of the estuary of the River Slaney. The site is divided between the natural estuarine habitats of Wexford Harbour and the reclaimed polders known as the north and south 'slobs'. The seaward boundary extends from the Rosslare peninsula in the south to the area just west of The Raven Point in the north, while the inner boundaries of the site extend to Ferrycarrig Bridge and towards Castlebridge. Shallow marine water is a principal habitat, but at low tide extensive areas of intertidal flats are exposed. These vary from rippled sands in exposed areas to sandy-muds in the more sheltered areas, especially at Hopeland and the inner estuary to the west of Wexford bridge. Salt marshes fringe the intertidal flats, especially in the sheltered areas. The slobs are two flat areas of farmland, mainly arable and pasture grassland, empoldered behind 19th century sea-walls. The lands are drained by a network of channels which flow into two central channels, in parts several hundred metres in width. Water from the channels is pumped into the sea with electric pumps. The channels often support swamp vegetation. Several conifer plantations are included, especially on the south slob.

This site is of international importance for several species of waterfowl but also because it regularly supports well in excess of 20,000 waterfowl. It is one of the top three sites in the country for numbers and diversity of wintering birds. Of particular importance is that it is one of the two most important sites in the world for Greenland white-fronted goose *Anser albifrons flavirostris*. It also has internationally important populations of light-bellied Brent

goose *Branta bernicla hrota*, Bewick's swan *Cygnus columbarius bewickii* and black-tailed godwit *Limosa lapponica*, and is now one of the few sites in the country which supports a regular flock of Bewick's swan. There are at least a further 22 species of wintering waterfowl which occur in numbers of national importance. Several of these represent substantial proportions of the national totals, especially wigeon *Anas penelope* (3.1%), mallard *Anas platyrhynchos* (3.6%), pintail *Anas acuta* (3.3%), scaup *Aythya marila* (4.9%), red-breasted merganser *Mergus serrator* (4.1%), golden plover *Pluvialis apricaria* (3.7%), grey plover *Pluvialis squatarola* (11.3%), lapwing *Vanellus vanellus* (5.1%) and black-tailed godwit *Limosa limosa* (3.6%). Numbers of wintering birds are often swelled by hard-weather movements from Europe, notably golden plover and lapwing. The site is a regular location for ruff *Philomachus pugnax* during passage and in winter, and is regularly visited by a range of other passage waders, most notably wood sandpiper *Tringa glareola*, spotted redshank *Tringa erythropus* and green sandpiper *Tringa ochropus*. Short-eared owl *Asio flammeus* is a regular visitor in small numbers to the slobs during winter. A nesting colony of little egret *Egretta garzetta* has recently become established within the site and birds are present in the area throughout the year. The Eurasian tree sparrow *Passer montanus*, a Red Data Book species, breeds here also. Part of the North Slob is a Nature Reserve and much of the slob is managed for the benefit of the wintering geese. Monitoring of the wintering birds of the slobs extends back to the 1960s and nowadays there is an ongoing monitoring and research programme. The North Slob has a wildfowl collection and an interpretative centre. The site supports saltmarsh grass *Puccinellia fasciculata*, a Red Data Book species, and has a good population of Irish hare *Lepus timidus hibernicus*.

The Natura Standard Date form for this SPA (NPWS, 2014) has identified the highest threats to the integrity and conservation status of this site. These threats include fertilisation, aquaculture, grazing, urbanisation and forestry.

The Department of Arts, Heritage and the Gaeltacht has published the Site Specific Conservation Objectives (SSCOs) for the Wexford Harbour and Slobs SPA (NPWS, 2012). This document was referred to during the preparation of this report to assist in the identification of potential impacts upon the qualifying interest and conservation objectives of this SPA.

Non-Relevant Qualifying Interests of the SAC / SPA

The Slaney River Valley SAC is a very large, long, linear site, consisting of an area of over 6,000 hectares. The Wexford Harbour and Slobs SPA is also a large site with an area of 5,979 hectares. All qualifying interests of the SPA have been considered to be relevant to this

assessment as they are water dependent; however, certain qualifying interests of the SAC will not be impacted upon from this proposed development, either due to the distances involved, because they occur upstream of Enniscorthy or because they are features that are not sensitive to changes in water quality. These features can be screened out from the AA process. These non-relevant features of the SAC and the reason for their exclusion are listed in Table 3.

Designated Features	Reason for Exclusion
• Mudflats and sandflats not covered by seawater at low tide • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) • Mediterranean salt meadows (*Juncetalia maritimi)*	Map 4 and 5 of the SSCOs for this SAC indicate that these marine habitats occur downstream of Ferrycarrig. This is a distance of over 20km downstream of Enniscorthy. Given the downstream distances involved from the application site and these Features of Interest, it can be concluded that the construction and operation of the proposed development will have no impacts upon these qualifying habitats or the attributes and targets which define their favourable conservation status.
• Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) • Old sessile oak woods with Ilex and Blechnum	Map 6 of the SSCO Document (NPWS, 2012) maps the extent of these woodland habitats within the Slaney River Valley SAC. Both these habitats occur at various locations throughout the SAC; however, none occur within the zone of influence of Enniscorthy or the application site. The main threats and pressures to both these habitats include invasive species, grazing of forests, problematic native species and dumping. The proposed development will not lead to any increase in the threats or pressures that could negatively affect these habitats. It can therefore be concluded that the construction and operation of the proposed development will have no impacts upon these qualifying habitats or the attributes and targets which define their favourable conservation status
• Freshwater Pearl Mussel *Margaritifera margaritifera*	At the present time, the status of this species as a qualifying feature of this SAC is under review. Any records for this rare species from within this SAC are for areas upstream of the application site, from the Derreen River, south of Tullow in Co. Carlow. Therefore, the proposed development will not have any impacts upon this species.
• Harbour seal *Phoca vitulina*	Map 7 of the SSCO for this SAC illustrate the breeding, resting and moulting sites of the

	seal. These all occur within Wexford Harbour, which is over 20km downstream of Enniscorthy. It can therefore be concluded that the construction and operation of the proposed development will have no impacts upon this species or the attributes and targets which define its favourable conservation status

Table 3 – The Qualifying Interests of the Slaney River Valley SAC

(Screened Out)

RELEVANT QUALIFYING INTERESTS OF THE SAC

Table 4 describes the qualifying interests of the Slaney River Valley SAC that have the potential to be impacted upon from the proposed development. These features have been screened in. In assessing these features, the latest Article 17 reports published by the NPWS (2019) were referred to.

Qualifying Interest	Reason for Inclusion	Potential Impacts/Effects	Overall Conservation Objective and Article 17 Report Summary
Estuaries Habitat Code 1130	The EU interpretation manual describes this habitat as the downstream part of a river valley, subject to the tide and extending from the limit of brackish waters. River estuaries are coastal inlets where, unlike 'large shallow inlets and bays' there is generally a significant freshwater influence. Estuaries, from the high water mark to the sub-tidal, are frequently observed to be composed of a range of distinct substrates. The estuarine portion of the Slaney River Valley SAC extends from just downstream of Enniscorthy. Therefore, it can be concluded that this habitat is potentially within the zone of influence of the application site. The Article 17 Report for this habitat states that pollution to surface water is a threat / pressure of high importance in this habitat. Any deterioration in the water quality of the estuary arising from the construction or operation of the proposed development would be a negative impact on this habitat. Therefore, mitigation measures will be required to protect water quality in the River Slaney and its tributaries, to ensure that the targets and attributes that define the favourable conservation condition of this habitat are maintained.	Possible indirect / cumulative impacts or effects on this habitat include: • Loss or decrease in the quality or area of this habitat due to pollution or a decrease in water quality arising from run-off from the construction and operation of the proposed development. Run-off may contain cement, hydrocarbons and silt which could all lead to negative impacts upon this qualifying feature. • Changes in the community distribution and / or community types in the estuary due to pollution, increase in siltation levels etc.	**Conservation Objective:** To *maintain* the favourable conservation condition of this habitat. **Article 17 Summary** Future Prospects – Inadequate Overall Trend - Deteriorating

Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation Habitat Code 1130	This habitat is also commonly known as floating river vegetation. It's definition is wide and *Ranunculus, Callitriche, Potamogeton* and *Myriophyllum* species are often present. Pressures on this habitat include eutrophication, overgrazing and alien species. River connectivity with the floodplain is essential for the functioning of this habitat. According to the SSCOs for this SAC and the accompanying Map 6, suitable conditions for this habitat downstream of Enniscorthy are likely, therefore impacts upon this habitat from the proposed development are possible and in keeping precautionary principle, mitigation measures will be required.	Possible indirect effects on this habitat arising from: • Loss or decrease in the quality or area of this habitat due to pollution or a decrease in water quality	**Conservation Objective:** To *maintain* the favourable conservation condition of this habitat. **Article 17 Summary** Future Prospects – Inadequate Overall Status - Inadequate
• River lamprey (*Lampetra fluviatilis*) • Brook lamprey (*Lampetra planeri)* • Sea Lamprey *Petromyzon marinus*	River and brook lamprey have been recorded throughout the Slaney catchment and are considered widespread, whilst sea lamprey also spawn in the main channel of this SAC downstream of Enniscorthy (King and Linnane, 2004). River lampreys require clean gravels, fine sediments and free upstream migration to complete their life cycle. The main threat to this species is dredging, changes to siltation patterns, sedimentation of spawning gravels and the introduction of weirs or other impediments to their migration. They are also sensitive to changes in water quality arising from diffuse or point source pollution. The Article 17 report for these species details a 10km^2 distribution map. This shows that the application site is within the current range and distribution for both the river and brook lamprey, and within the range only for the sea lamprey (S93). Therefore as these species are potentially within the zone of influence of this application site, mitigation measures will be included to protect this species and the habitat it depends on.	Possible effects on these species arising from: • An increase in the siltation load or changes to the siltation patterns in the habitat of this species due to inadequate siltation control strategies from proposed development. • Eutrophication – both adult and ammocoete life stages of the lamprey are vulnerable to the effects of pollution.	**Conservation Objective:** To *maintain* the favourable conservation condition of this habitat. **Article 17 Summary** <u>Brook Lamprey</u> Future Prospects – Favourable Overall Status – Favourable <u>Brook Lamprey</u> Future Prospects – Unknown Overall Status – Unknown <u>Sea Lamprey</u> Future Prospects – Bad Overall Status – Bad

• Twaite Shad *Alosa fallax fallax*	The twaite shad lives in the lower reaches of estuaries or at sea as adults. They travel upriver in the estuaries and spawn at the upper tidal reaches, after which they return to the estuary. The main pressures for this species include invasive species (e.g., dace, asian clam), fishing and inbreeding with allis shad. Generally, they are not overly sensitive to changes in water quality, however for the purpose of this assessment they were considered as relevant. The Article 17 report for this species records their current range as within the 10km² of this application site, therefore it potentially does occur within the zone of influence of the proposed development. A report on the twaite shad from the Slaney River Valley SAC (King and Linnane, 2004) concluded that the status of the shad in this SAC is very vulnerable, whilst the SSCOs state that regular breeding of this species has not been confirmed in recent years (King and Roache, 2008). Mitigation measures will be included as part of this assessment to prevent any impacts upon this species arising from a decrease in water quality.	Possible direct / indirect effects on this species due to: • A decrease in water quality in the habitat of this species due to contaminated run off or pollution from the site. • An increase in the siltation levels habitat of this species due to run off from the site.	**Conservation Objective:** To *restore* the favourable conservation condition of this species. **Article 17 Summary** Future Prospects – Bad Overall Status - Bad
Salmon (*Salmo salar*)	Salmon occur throughout the Slaney system and its tributaries, including the Urrin River. The requirements of salmon depend on their life stage but clean, unpolluted water is a requirement throughout the life cycle. They are very sensitive to changes in water quality and increases in sedimentation (<25 mg/L annual average). The main pressures and threats to this species come from agricultural intensification, run-off from agriculture, forestry and household waste waters and poaching. The Article 17 report for this species details a 10km² distribution map. This shows that the application site is within the current range and distribution of the salmon (S93).	Possible effects upon this species arising from: • An increase in the siltation load in the habitat of this species arsing from inadequate siltation control strategies. • Eutrophication – Possible effects upon this species due to the pollution of its habitat with cement, silt or oil.	**Conservation Objective:** To *restore* the favourable conservation condition of this species. Future Prospects – Inadequate Overall Status - Inadequate

	Therefore mitigation measures will be included to protect the salmon from any negative impacts arising from the above development.		
Otter (*Lutra lutra*)	The otter occurs throughout the Slaney SAC. The presence of this species is positively correlated with good water quality and deterioration of same will lead to impacts upon this species. Otters have two basic requirements – aquatic prey and safe refuges where they can rest. In freshwater areas, the diet of the otter comprises of a variety of fish from sticklebacks to salmon and eels, whilst crayfish and frogs can also be important. Impacts that reduce the availability or quality of, or cause disturbance to, their terrestrial or aquatic habitats are likely to affect otters. The main threats to otters in Ireland are thought to be: (1) habitat destruction, including river drainage and the clearance of bank-side vegetation; (2) pollution, particularly organic pollution resulting in fish kills, and (3) accidental deaths. In Ireland, the territory of female otters in mesotrophic rivers is approximately 7.5 +/- 1.5km in length (Ó Néill, L., 2008), whilst the territories of male otters in mesotrophic and oligotrophic rivers is approximately 13.2 +/- 5.3km in length, with a high degree of variability as territorial males respond quickly to social perturbation. Records exist for this species from the Urrin River at a point 1.5km upstream of the application site (latest being in 2017). Therefore, it can be concluded that this species is within the zone of influence of the application site.	Possible effects on this species due to: • A decrease in water quality in its habitat due to contaminated run off or pollution from the site – this may impact upon the diet of the otter. • Disturbance to habitats within the territory of the otter due to inappropriate disposal of waste or increases in human activity. • Disturbance to the otter arising from installation of pipes and headwalls from required attenuation tanks.	**Conservation Objective:** To *restore* the favourable conservation condition of this species. Future Prospects – Favourable Overall Status - Favourable

Table 4 – Qualifying Interests of the Slaney River Valley SAC that are Relevant to this Proposed Application (Screened In)

RELEVANT QUALIFYING INTERESTS OF THE SPA

As stated above, for the purposes of this report, all qualifying interests of the Wexford Harbour and Slobs are considered relevant to this assessment. However, the habitats of the majority of these bird species are restricted to the coastal and marine habitats of the lower Slaney Estuary and Wexford Harbour. Therefore, the proposed development is unlikely to have any direct impacts upon these species or the habitats which they dependant. In order to ascertain the potential use of the site by these Qualifying Interests, a bird survey of the site was carried out by Brian Keely of Wildlife Surveys Ireland in January 2021. It was determined that the site does not provide suitable habtiat for these species. Overall, however, to avoid indirect impacts on these species arising from the deterioration in water quality in the SPA, then mitigation measures will be required.

A summary of information regarding each of the Special Conservation Interests of the SPA is presented in Table 5. This information considers population data, if available, and the requirements and sensitivities of the species. Information from Crowe (2005), Colhoun and Cummins (2013), NPWS (2011) and iWeBs was considered.

Species	Ecological Information
Little grebe *Tachybaptus ruficollis*	Little grebe breed at the edges of shallow, freshwater rivers, streams, loughs and ponds. In winter they extend their habitat to include sheltered coastal habitats. They feed on a range of invertebrates, small fish and molluscs. The SPA population of Little Grebe is considered to have *Intermediate (unfavourable)* conservation condition. iWeBS data indicates that recent numbers have been just above the threshold for national importance.
Great Crested Grebe *Podiceps cristatus*	The Great-crested Grebe winter distribution is widespread in Ireland with the greatest concentration in the north midlands and northeast with birds from the continent joining the resident population. Their diet consists mainly of fish. The SPA population of Great Crested Grebe is considered to have Intermediate (unfavourable) conservation condition. Recent iWeBS data indicates that numbers in recent years are typically above the threshold for national importance.
Cormorant *Phalacrocorax carbo*	Cormorants are amber-listed in Ireland due to their localised breeding population. They breed in colonies around the coast of Ireland, then winter at sea and inland. Their diet consists of fish. The SPA population of cormorant is considered to have favourable conservation condition. Recent iWeBS data indicates that numbers in recent years are consistently well above the threshold for national importance.
Grey Heron *Ardea cinerea*	Grey heron feed along the edge of a wide range of wetland habitats including estuaries, streams and lakes. Their diet consists of fish, amphibians, small mammals, insects and reptiles. Numbers of grey heron in the SPA have generally increased steadily and the population is currently stable. The SPA

	population of grey heron is considered to have favourable conservation condition.
Bewick's Swan *Cygnus columbianus*	The northwest European population of Bewicks swan breeds in Russia. They are primarily herbivorous feeding on aquatic plants, grasses and agricultural plants such as grains and vegetables. Use of agricultural habitats has increased over the years and as part of management practices at the slobs fodder beet is grown for wintering geese and swan populations. The majority of the Bewicks Swan population in Ireland occur in Co. Wexford. Declines in numbers at the site since the late 1990's have mirrored the national decline. Bewicks swan is considered to have highly unfavourable conservation condition. Recent iWeBS counts (2012/2013 and 2013/2014) indicate numbers present fall below the threshold for national importance.
Whooper Swan *Cygnus cygnus*	Whooper swans are primarily herbivorous, feeding on aquatic plants, grasses and agricultural plants such as grain and vegetables. The 2010 Whooper swan census (Hall et al, 2012) indicated that just over 50% of the habitat usage records for whooper swans were for dry improved pasture with 37.5% seen on arable land. Whooper swan in Ireland are part of the Icelandic population which migrate south for the winter to Ireland and the UK. Whooper swan numbers at the site showed a steady increase to winter 2008 but recent iWeBS data suggest there has been a decline in numbers since this time. The most recent count (2013/2014) indicates that the population did not reach the threshold for International importance. The SPA population of whooper swan is considered to have favourable conservation condition. They forage exclusively in the north slob and south slob sub-sites of the SPA.
Light-bellied Brent Goose *Branta bernicla hrota*	The light-bellied brent geese that winter in Wexford are part of the population that breed in the Canadian Arctic. They feed on Zostera beds, as well as on algae and in adjacent terrestrial fields when these resources become depleted. Recent iWeBS data indicates numbers have been well in excess of the threshold for international importance. Numbers in Wexford have shown high inter-annual variation but the overall trend has been towards increasing number since the late 1990's. The SPA population of Light-bellied Brent Goose is considered to have favourable conservation condition.
Shelduck *Tadorna tadorna*	Shelduck are amber listed in Ireland as the majority of the wintering population occurs at less than ten sites. Their chief source of food is the estuarine snail Hydrobia ulvae, spatial distribution of Shelduck within estuaries is strongly influenced by the behaviour of this prey, particularly in relation to water depth. Numbers in Wexford have been relatively stable since 2002/2003. The SPA population of shelduck is considered to have intermediate (unfavourable) conservation condition. Recent iWeBS data indicates numbers significantly exceed the threshold for national importance.
Wigeon *Anas penelope*	Wigeon are common and widespread throughout Ireland in the winter where they occur on the coast and in inland wetlands, lakes and rivers. Away from coasts they graze on algae and also regularly feed on grasslands and cereal crops. They are an amber-listed species of conservation concern. The SPA population of wigeon is considered to have intermediate (unfavourable) conservation condition. Recent iWeBS data indicates numbers significantly exceed the threshold for national importance.

Teal *Anas crecca*	Teal are widespread in Ireland on wetlands both coastal and inland. They feed predominately on small seeds, with algae (Ulva spp.) and molluscs also taken. The latest available iWeBS counts indicate that numbers of this species have declined in recent years, with the latest published count (2013/2014) below the threshold for national importance. The SPA population of teal is considered to have Favourable conservation condition.
Mallard *Anas platyrhynchos*	Mallard are a widespread wintering species in all wetland habitats, though don't tend to be as numerous as wigeon or teal. They have a variable diet including plant material, molluscs and crustaceans, and grain and stubble. Recent iWeBS data indicates numbers significantly exceed the threshold for national importance. Mallard is considered to have intermediate (unfavourable) conservation condition
Pintail *Anas acuta*	Pintail are red-listed in Ireland due to a significant decrease in the numbers wintering in Ireland. The European population has been assessed as declining due to a moderate ongoing decline. They feed mainly on plant seeds and underwater plants. They winter in large flocks in coastal lagoons, estuaries and large inland lakes. Numbers of pintail in the SPA have been highly variable with season peak counts often doubling or halving between successive seasons. Recent iWeBS data indicates numbers significantly exceed the threshold for national importance. The SPA population of pintail is considered to have Favourable conservation condition.
Scaup *Aythya marila*	Scaup are a winter visitor from Iceland, northern Europe and western Siberia. They occur around coastal estuaries and bays, on brackish lagoons and in shallow marine waters. They feed principally on crustaceans and molluscs. After a decline in numbers at the site in the 1990's numbers recovered somewhat between 2002 and 2008, but have declined again in recent years with a peak count of just 2 in 2013/2014. The SPA population of scaup is considered to have favourable conservation condition.
Goldeneye *Bucephala clangula*	Goldeneye are a winter visitor from Finland/Scandanavia that winter on coastal estuaries and inland lakes. They feed on invertebrates. Numbers at the site have fluctuated widely between years. Numbers in winter 2013/2014 exceeded the threshold for national importance, though this has not typically been the case in previous years. The SPA population of goldeneye is considered to have unfavourable conservation condition.
Red-breasted Merganser *Mergus serrator*	Red-breasted Merganser winter in brackish and marine waters, particularly in shallow protected estuaries and bay and lagoons, and also offshore. They feed on fish, predominately small cod, hake and plaice. Recent iWeBS data indicates numbers significantly exceed the threshold for national importance. The SPA population of Red-breasted merganser is considered to have intermediate (unfavourable) conservation condition.
Hen Harrier *Circus cyaneus*	Hen Harrier are an amber-listed bird of conservation concern due to a decline in the breeding population. They breed mainly in heather moorland and young forestry plantations. They are widespread in winter, found in open low-lying countryside and along the coast. They feed on small birds and mammals. The site contains a winter roost for this species with up to eight individuals recorded, while the slobs provide good foraging habitats.
Coot *Fulica atra*	Coot are found wintering in a variety of wetland habitats. They are omnivorous and feed on plant shoots, seeds, insects, algae and fish.

	Numbers declined from peaks observed in 1994/1995-2000/1, but stabilised in the period 2003-2008 and recent data indicates numbers remain stable though counts do not exceed the threshold for national importance. The SPA population of coot is considered to have unfavourable conservation condition.
Oystercatcher *Haematopus ostralegus*	Oystercatcher winter in all coastal habitats, particularly favouring open sandy coasts. Their diet includes large invertebrates particularly mussels and cockles. They also occasionally feed on grasslands where they prey on tipulid larvae and earthworms. The trend in numbers at the site has been generally stable over the years, with recent figures showing numbers fluctuate above and below the threshold for national importance. The SPA population of oystercatcher is considered to have favourable conservation condition.
Golden Plover *Pluvialis apricaria*	Golden Plover are red-listed in Ireland due to a large decline in the breeding population. In winter they are found in large, densely-packed flocks, and in a variety of habitats both coastal and inland. They feed on invertebrates and plant material. iWeBS data indicate that Golden Plover numbers fluctuate significantly from winter to winter below and above the threshold for international importance. The latest published count (2013/2014) was a 5-year peak. The SPA population of golden plover is considered to have favourable conservation condition.
Grey Plover *Pluvialis squatarola*	Grey plover are a winter visitor from Siberia. They are amber-listed as the majority of birds winter at less than ten sites. They feed on a variety of burrowing intertidal invertebrates. They winter at coastal sites, mostly along eastern and southern coasts in large muddy estuaries. The general historical trend was for a decline in numbers from the late 1990's to around 2006. iWeBS data indicates numbers vary from year to year but typically exceed the threshold for national importance. Grey plover is considered to have unfavourable conservation condition.
Lapwing *Vanellus vanellus*	Lapwing are a red-listed species of conservation concern. They winter in large flocks in a variety of habitats including most of the major wetlands. They feed on soil and surface-living invertebrates. The gradual long-term decline in lapwing numbers in the SPA is consistent with the national trend for this species. The SPA population of lapwing is considered to have unfavourable conservation condition.
Knot *Calidris canutus*	Knot winter on the coasts of Ireland, preferring estuarine sites with extensive areas of muddy sands. They feed on bivalve mussels and crustaceans in the upper surface of the sediment. Numbers at the site declined from the mid 1990's, but recovered somewhat from around 2005. Knot is considered to have unfavourable conservation condition.
Sanderling *Calidris alba*	Sanderling are a winter visitor from Siberia. They are mostly found along sandy coastlines, especially non-estuarine. They feed predominately on small invertebrates. iWeBs data indicates the numbers of this species have fluctuated above and below the threshold for national importance in recent years. The SPA population of sanderling is considered to have intermediate (unfavourable) conservation condition.

Dunlin *Calidris alpina*	Dunlin are common along coastal areas in Ireland, especially on tidal mudflats and estuaries. They feed on small invertebrates of estuarine mudflats, particularly polychaete works and small gastropods. They feed in the muddier sections of the estuaries close to the tide edge. The trend for Dunlin is similar to that for knot, with numbers recovering from a significant decline ca. 20 years ago. The SPA population of dunlin is considered to have highly unfavourable conservation condition.
Black-tailed Godwit *Limosa limosa*	Black-tailed godwit are a winter visitor from Iceland. They winter in a variety of habitats both inland and coastal and feed on a range of invertebrates. iWeBS data indicates that numbers of this species have generally exceeded the threshold for international importance in recent years. The SPA population is considered to have favourable conservation condition.
Bar-tailed Godwit *Limosa lapponica*	Bar-tailed Godwit are a winter visitor from Scandanavia. They winter entirely in coastal habitats. They feed on invertebrates, predominately polychaete worms. iWeBS data indicates that numbers of this species tend to fluctuate year to year but have generally exceeded the threshold for national importance in recent years. The SPA population of bar-tailed Godwit is considered to have intermediate (unfavourable) conservation condition.
Curlew *Numenius arquata*	Curlew winter in a wide range of wetland habitats both coastal and inland. They feed mostly on invertebrates including ragworms, crabs and molluscs. The long-term trend for decline at this SPA is consistent with the national trend. iWeBS data indicates that curlew numbers dipped below the threshold for national importance in the winter 2013/2014 but had exceeded the threshold in preceding years. The SPA population of curlew is considered to have unfavourable conservation condition.
Redshank *Tringa totanus*	Redshank winter all around the coast of Ireland, but favour mudflats, large estuaries and inlets. They feed along the upper shore of estuaries and along muddy river channels on *Hydrobia* sp. (bivalve mollusc), *Corophium* sp.(amphipod) and nereid worms (polychaete). iWeBS data indicates that numbers at the site has fluctuated above and below the threshold for national importance. The SPA population of redshank is considered to have favourable conservation condition.
Black-headed Gull *Chroicocephalus ridibundus*	Black-headed gull feed by direct predation, piracy and scavenging, and have a varied diet composed of animal and vegetable matter, those often found feeding on insects especially in arable fields. They breed on the coast and on the larger inland lakes in Ireland. Black-headed gull are a red-listed breeding species of conservation concern. Their conservation condition is not currently assessed as they are not counted routinely during iWeBS surveys. They occur in all sub-sites within the SPA.
Lesser Black-backed Gull *Larus fuscus*	Lesser Black-backed Gull are mainly a summer visitor to lakes and coasts in Ireland, then wintering in Iberia and northwest Africa. Some birds from Iceland winter in small numbers along the eastern and southern coasts of Ireland. They have a varied diet including fish, insects and waste. Their conservation condition is not currently assessed as they are not counted routinely during iWeBS surveys. The Inner South Harbour subsite supported the highest number of foraging black-headed gull.
Little Tern *Sterna albifrons*	Little tern is a rare summer visitor. They nest colonially on the ground on shingle beaches making them vulnerable to poor weather and ground

	predators. They feed mainly on marine fish. The SPA is important for little tern as it can hold a nationally important breeding colony (30 pairs were recorded in 2000).
Greenland White-fronted goose *Anser albifrons flavirostris*	Greenland white-fronted geese historically wintered on bogland, callowland and rough grassland where they fed by uprooting cyperacean species in particular *Eriphorum angustifolium*. In the latter half of the 20th century they increasingly shifted to using grassland habitats and they have shown good flexibility in adapting to new food sources including agricultural stubbles and fodder beet. The decline in the global population continues and is mainly attributed to climate related changes and increased competition for nest sites with the expanding population of breeding canada geese. It is an amber-listed species of conservation concern. The most significant population of these geese in Ireland is found in the Wexford slobs which has held 25- 40% of the word wintering population. The latest international survey of Greenland White-fronted Geese in Ireland (Fox et al, 2015) found that numbers had declined ca. 9% compared to the previous years figures, though this decline was accounted for in the Islay population in Scotland. The count in Wexford was down only slightly (8110 in spring 2015 compared with 7984 in spring 2014). The North Slob is the most important sub-site for this species. The SPA population of Greenland white-fronted goose is considered to have intermediate (unfavourable) conservation condition.
Wetlands	Wetlands are also listed as a feature of the SPA. Eutrophication has the potential to alter wetland habitats as certain wetland species would be sensitive to changes in water quality. Influxes in nutrients can result in a shift in species composition toward more tolerant competitive species and a loss of rarer species which typically require lower nutrient inputs. Floristic diversity generally decreases and sensitive invertebrate species may be lost. Some aquatic plants and algae may increase in biomass.

Table 5 – Qualifying Interests of the Wexford Harbour and Slobs SPA

4.3 SSCOs OF THE QUALIFYING INTERESTS

The additional attributes and targets which define the SSCOs of the qualifying interests of the Slaney River Valley SAC which were screened into this AA are outlined below in Tables 6 – 14.

Estuaries (1130)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat Area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.
Community Distribution	Hectares	The following community types should be maintained in, or restored to, a natural condition: Mixed sediment community complex, Estuarine muds dominated by polychaetes and crustacean's community complex; and sand dominated by polychaete community complex.

Table 6 – SSCOs for Hydrophilous Tall Herb Fringe Communities

Water Courses of Plain to Montaine Levels (3260)

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat distribution	Occurrence	No decline, subject to natural processes
Habitat area	Km	Area stable at 12.6km or increasing, subject to natural processes
Hydrological regime: river flow	M/s	Maintain appropriate hydrological regimes
Hydrological regime: tidal influence	Daily water level fluctuations – metres	Maintain natural tidal regime
Substratum composition: particle size range	Mm	For the tidal sub-type, the substratum of the channel must be dominated by particles of sand to gravel, with silt at the river margins.
Water quality: nutrients	mg / l	The concentration of nutrients in the water column should be sufficiently low to prevent changes in species composition or habitat condition.
Vegetation composition: typical species	Occurrence	Typical species of the relevant habitat sub-type reach favourable status
Floodplain connectivity	Area	The area of active floodplain at and upstream of the habitat should be maintained.

Table 7 – Water Courses of Plain to Montaine Levels

Sea Lamprey (1095)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution: Extent of Anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from the estuary
Population: structure of juveniles	Number of age / size groups	At least three age / size groups of brook lamprey present
Juvenile density in fine sediment	Juveniles / m^2	Mean catchment juvenile density of brook lamprey at least 1/m^2
Extent and distribution of spawning habitat	M^2 and occurrence	No decline in extent and distribution of spawning beds. Improved dispersal of spawning beds into areas upstream of barriers.
Availability of juvenile habitat	Number of positive sites in 3rd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive

Table 8 – SSCOs for Brook Lamprey

Brook Lamprey (1096)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	% of river accessible	Access to all watercourses down to first order streams
Population: structure of juveniles	Number of age / size groups	At least three age / size groups of brook lamprey present
Juvenile density in fine sediment	Juveniles / m^2	Mean catchment juvenile density of brook lamprey at least 2/m^2
Extent and distribution of spawning habitat	M^2 and occurrence	No decline in extent and distribution of spawning beds
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive

Table 9 – SSCOs for Brook Lamprey

River Lamprey (1099)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem and major tributaries down to second order accessible from estuary
Population: structure of juveniles	Number of age / size groups	At least three age / size groups of river / brook lamprey present
Juvenile density in fine sediment	Juveniles / m^2	Mean catchment juvenile density of brook / river lamprey at least 2/m^2

Extent and distribution of spawning habitat	M^2 and occurrence	No decline in extent and distribution of spawning beds
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive

Table 10 – SSCOs for River Lamprey

Twaite Shad (1103)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary
Population Structure – Age Classes	Number of Age Classes	More than one age class present
Extent and distribution of spawning habitat	M^2 and occurrence	No decline in extent and distribution of spawning habitats
Water quality – oxygen levels	Mg/l	No lower that 5mg/l
Spawning habitat quality: Filamentous algae; macrophytes; sediment	Occurrence	Maintain stable gravel substrate with very little fine material, free of filamentous algal (macroalgae) growth and macrophyte (rooted higher plants) grown

Table 11 – SSCOs for Twaite Shad

Salmon (1106)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution: extent of anadromy	% of river accessible	100% of river channels down to second order accessible from estuary
Adult spawning fish	Number	Conservation Limit (CL) for each system consistently exceeded
Salmon fry abundance	No of fry / 5 mins electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry / 5 minute sampling
Out-migrating smolt abundance	Number	No significant decline
Number and distribution of reeds	Number and Occurrence	No decline in number and distribution of spawning redds due to anthropogenic causes
Water quality	EPA Q Value	At least Q_4 at all sites sampled by the EPA.

Table 12 – SSCOs for Salmon

Otter (1355)

The SSCO for this habitat is to *restore* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	% positive survey sites	No Significant Decline
Extent of Terrestrial Habitats	Hectares	No significant decline. Area mapped and calculated as 64.7ha above high water mark (HWM); 456.4ha along riverbanks / around ponds
Extent of Marine Habitats	Hectares	No significant decline. Area mapped and calculated as 534.7ha
Extent of Freshwater (River) Habitat	Km	No significant decline. Length mapped and calculated as 264.1km
Extent of Freshwater (Lagoon/Lake) Habitats	Hectares	No significant decline. Area mapped and calculated as 0.4ha
Couching Sites and Holts	Number	No significant decline
Fish Biomass Available	Kg	No significant decline
Barriers to connectivity	Number	No significant increase

Table 13 – SSCOs for Otter

Wexford Harbour and Slobs SPA

The QI species for the Wexford Harbour and Slobs SPA are described below in Table 14 along with their SSCOs. The current site conservation condition for each bird for this SPA is also included (NPWS, 2013).

Species	SSCO	Site Conservation Condition
Little grebe *Tachybaptus ruficollis*	Maintain	Intermediate (Unfavourable)
Great Crested Grebe *Podiceps cristatus*	Maintain	Intermediate (Unfavourable)
Cormorant *Phalacrocorax carbo*	Maintain	Favourable
Grey Heron *Ardea cinerea*	Maintain	Favourable
Bewick's Swan *Cygnus columbianus*	Maintain	Highly Unfavourable
Whooper Swan *Cygnus cygnus*	Maintain	Favourable
Light-bellied Brent Goose *Branta bernicla hrota*	Maintain	Favourable
Shelduck *Tadorna tadorna*	Maintain	Intermediate (Unfavourable)
Wigeon *Anas penelope*	Maintain	Intermediate (Unfavourable)
Teal *Anas crecca*	Maintain	Favourable
Mallard *Anas platyrhynchos*	Maintain	Intermediate (Unfavourable)
Pintail *Anas acuta*	Maintain	Favourable
Scaup *Aythya marila*	Maintain	Favourable
Goldeneye *Bucephala clangula*	Maintain	Unfavourable

Red-breasted Merganser *Mergus serrator*	Maintain	Intermediate (Unfavourable)
Hen Harrier *Circus cyaneus*	Maintain	Not-Breeding at this Site
Coot *Fulica atra*	Maintain	Unfavourable
Oystercatcher *Haematopus ostralegus*	Maintain	Favourable
Golden Plover *Pluvialis apricaria*	Maintain	Favourable
Grey Plover *Pluvialis squatarola*	Maintain	Unfavourable
Lapwing *Vanellus vanellus*	Maintain	Unfavourable
Knot *Calidris canutus*	Maintain	Unfavourable
Sanderling *Calidris alba*	Maintain	Intermediate (Unfavourable)
Dunlin *Calidris alpina*	Maintain	Highly Unfavourable
Black-tailed Godwit *Limosa limosa*	Maintain	Favourable
Bar-tailed Godwit *Limosa lapponica*	Maintain	Intermediate (Unfavourable)
Curlew *Numenius arquata*	Maintain	Unfavourable
Redshank *Tringa totanus*	Maintain	Favourable
Black-headed Gull *Chroicocephalus ridibundus*	Maintain	Not Calculated
Lesser Black-backed *Gull Larus fuscus*	Maintain	Not Calculated
Little Tern *Sterna albifrons*	Maintain	Not Calculated
Greenland WF goose *Anser albifrons flavirostris*	Maintain	Intermediate (Unfavourable)
Wetlands	Maintain	-

Table 14 – Species of the Wexford Harbour and Slobs SPA (Breeding)

The Conservation Objectives for waterbird SCIs of Wexford Harbour and Slobs SPA are listed below:

Parameter	Attribute	Measure	Target
Population	Population trend	Percentage change as per population trend assessment using water bird count data collected through the Irish Wetland Bird Survey and other surveys.	Long term population trend stable or increasing
Range	Distribution	Number and range of areas used by water birds as determined by regular low tide and other water bird surveys	No significant decrease in the range, timing or intensity of use of areas by the QI, other than that occurring from natural patterns of variation

Table 15 – Conservation Objectives of the Conservation Interests of the SPA (Species)

For wetlands, the conservation objectives include:

Parameter	Attribute	Measure	Target
Area	Wetland habitat	Area (ha)	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 10,203 hectares, other than that occurring from natural patterns of variation

Table 16 – Conservation Objectives of the Conservation Interests of the SPA (Wetlands)

4.4 IDENTIFICATION OF POTENTIAL IMPACTS

INTRODUCTION

The identification of potential impacts and the assessment of their significance typically requires the identification of the type and magnitude of the impacts. For example, will the impacts be short term or long term, direct, indirect or cumulative and will they occur during construction or operation. This section will establish whether the impacts of the proposed development at Enniscorthy Rural that were identified in the previous section, are likely to occur and whether or not they are significant. These potential impacts will be examined with respect to the conservation objectives of the Natura 2000 site identified.

In the screening section of this report, the following possible future impacts on Slaney River Valley SAC and Wexford Harbour and Slobs SPA were listed. These concerns are again listed below and they will be dealt with in more detail in this section.

1. Deterioration of surface water quality in designated areas arising from pollution from surface water run-off during site preparation and construction;
2. Deterioration in ground or surface water quality in designated areas arising from pollution during the operation of the proposed development;
3. Risk to Annex I or Annex II species associated with the site;
4. Cumulative impacts with other proposed/existing developments.

CONSTRUCTIONAL IMPACTS

Deterioration in Water Quality in the SAC /SPA During Construction

There are a number of watercourses within and adjacent to the application site, whilst the River Urrin also flows along the western site boundary. Therefore, impacts upon these aquatic receptors arising from the proposed development cannot be ruled out. Site preparation and construction will involve the excavation of soil and the pouring of concrete for foundations and other hard surfaces. In addition, stormwater overflow from attenuation areas will be discharged into the River Urrin and this will necessitate the installation of a pipe and a headwall from the attenuation areas to the river.

Therefore, all these works have the potential to generate run-off into the watercourses that surround the site. The area most at risk is the south-western corner, where the road for Zone B is approximately 16m from the river, on an area of the site where topography is considerably sloped. If appropriate mitigation measures are not taken during the construction of the proposed development, then there is the possibility that water quality in

these watercourses may be negatively impacted upon. Possible direct impacts include the pollution of the waters during construction with silt, oil, cement, hydraulic fluid etc. This may affect the habitat of protected species by reducing water quality. These substances would also have a toxic effect on the ecology of the water in general, directly affecting certain species and their food supplies. In addition, an increase in the siltation levels of local waterbodies could result in the smothering of fish eggs, an increase in the mortality rate in fishes of all ages, a reduction in the amount of food available for fish and the creation of impediments to the movement of fish. Protected species in the Urrin include salmon, eel and trout. Pollution of the water with hydrocarbons, cement and concrete during the construction phase of this proposed development could also have a significant negative effect on the fish and aquatic invertebrate populations. This could be significant on an international level, as the Urrin River leads to the Slaney River Valley SAC and the Wexford Harbour and Slobs SPA.

Therefore, as there is a potential risk of direct and indirect impacts arising from the site preparation and construction of the proposed application, appropriate mitigation will be required to maintain the conservation status of the Slaney River Valley SAC and the Wexford Harbour and Slobs SPA and their protected habitats and species.

OPERATIONAL IMPACTS

Deterioration in Water Quality in the SAC Post Construction / Operation

Negative impacts upon water quality in the Slaney River Valley SAC and the Wexford Harbour and Slobs SPA arising from the operation of this proposed development have also been considered. The most likely source of pollution during the operation of the development is oil or silt contaminated surface water run-off from the site into the Urrin River. Mitigation measures to prevent surface water run-off from contaminating the local watercourses must be undertaken.

Risks to Annex I and Annex II Species

The otter, salmon, lamprey sp and twaite shad are all qualifying interests of the River Slaney SAC and they all occur within the zone of influence of the application site. Direct and indirect impacts upon these species arising from the construction and operation of this development are possible. These impacts could arise from pollution, habitat loss, habitat fragmentation and disturbance.

In addition, all bat species are listed in Annex IV of the EU Habitats Directive. Under the Irish Wildlife Acts,it is an offence to disturb, injure or kill bats or disturb or destroy their roosts without an appropriate derogation license. The treelines around the site are likely to form

important commuting corridors for bats between their roosting sites and feeding sites. In addition, the buildings proposed for demolition and certain mature trees on site may also hold suitable roosting sites for bats. Lighting from the operation of the development could also lead to impacts upon local bat populations. Therefore, mitigation measures will be required as part of this development to ensure that there will be no impacts upon local populations of bats.

As determined by a bird survey in January 2021, the improved grassland habitats within the site do not provide significant ex-situ habitats for the bird species of the Wexford Slobs SPA.

CUMULATIVE IMPACTS

The planning section of the website of Wexford County Council was examined for any recent or pending decisions for other developments within the Enniscorthy Rural area that could lead to cumulative impacts upon the designated sites when considered in combination with this application. In the five years previous to this, a number of domestic/commercial/industrial developments have been granted permission. Where necessary, these applications were accompanied by Appropriate Assessment reports (Stage 1 Screening or Stage "NIS). Future developments in the Enniscorthy Rural area and surrounding townlands will be screened for Appropriate Assessment and where necessary a full Natura Impact Statement will be carried out in order to mitigate against potential impacts.

Under the Enniscorthy Town and Environs Development Plan 2008-2014 (as extended), the application site has been zoned between R1 (New Residential / Low Medium Density) and OS (Open Space / Amenity). This plan was not accompanied by an Appropriate Assessment; however, any future plans will be required to undergo Appropriate Assessment Screening. Variation No. 2 of this plan was accompanied by an AA Screening Report.

Agriculture is a dominant feature of the area and most fields in the area are managed as improved agricultural grassland. All agricultural activities within this catchment area are required to operate within the legalisation defined in the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017 (S.I. 605 of 2017). This legalisation covers practices regarding manure storage and land-spreading, minimisation of soiled water and general good agricultural practice. Cumulative impacts arising from the combined operation of these agricultural activities with proposed application will be negligible.

With the implementation of the mitigation measures outlined in this report, it is unlikely that the proposed application will lead to any cumulative impacts upon the Slaney River Valley

SAC or Wexford Harbour and Slobs SPA when considered in combination with other developments.

5 MITIGATION MEASURES

5.1 MITIGATION

The primary method of mitigation for any development should be avoidance of that impact. Consideration was therefore given to avoiding any direct or indirect impacts on the sensitive ecological receptors within the site.

In order to avoid protect the existing ecological features on site and surrounding area, the following mitigation measures are recommended. It is recommended that the works are overseen by an Ecological Clerk of Works (ECoW) who should be employed for the duration of the works, including site preparation, main works on site and site clean up and landscaping. The mitigation measures outlined in this report are site specific and they have been incorporated into a Construction and Environmental Management Plan (Traynor Environmental Ltd).

<u>General Good Practice and Protection of Terrestrial Habitats</u>

- Site preparation and construction must be confined to the development site only and it must adhere to all the mitigation measures outlined in this NIS and the EcIA. Work areas should be kept to the minimum area required to carry out the proposed works and the area should be clearly marked out in advance of the proposed works. On foot of this NIS and the separate EcIA and the iterative process involved in the preparation of both these reports, the applicant is aware of the ecological sensitivity of the location. Upon appointment of the construction contractor, this team will also be made aware of the sensitivity of the site and the mitigation measures required to protect groundwater and surface water quality. All measures will be undertaken from initial site works until the completion of all construction works on site.

- Prior to the commencement of developments on site, the site engineer and the contractors must be made aware of the ecological sensitivity of the site and its connection to the Slaney River Valley SAC and the Wexford Harbour and Slobs. They must be made familiar with the mitigation measures outlined in this NIS report and the EcIA. It is recommended that the ECoW engages all appointed personnel in a one-day Biodiversity and Ecological Mitigation training course to highlight the importance of adhering to the mitigation measures in this NIS and the EcIA.

- In accordance with the policies and objectives of the Regional and County Development Plans, the existing green infrastructure (GI) of the site, i.e., the treelines and hedgerows, should be incorporated into the development in so far as possible. In order to prevent

damage to treelines and notable trees in the site that are to be retained, then protective barrier fencing should be erected prior to the commencement of site clearance works. This fencing should be erected just beyond the crown of the largest tree. Any natural verges or hedgerows within the site should also be fenced off prior to the commencement of works. There must be no dumping or storage of construction waste or machinery in these areas during construction. A full methodology for the protection of trees that are to be retained has been presented in the Arboricultural Method Statement.

- Where it is deemed absolutely necessary to remove trees within the treelines, then trees with no bat roost potential should be identified first prior to the removal of native trees with bat roost potential. Where it is deemed necessary to remove any tree, it must only be done outside of the bird nesting season (March – August). Trees should be soft felled where possible.

- Tree removal must only occur under guidance of a consultant arborist.

- All construction waste must be removed from site by a registered contractor to a registered site. Evidence of the movement and safe disposal of the construction waste must be retained and presented to Local Authority upon request. The applicants and construction contractors will be responsible for the safe removal of any construction waste generated on site. Removal of the construction waste should occur as soon as possible after demolition / construction works.

- All topsoil generated from site works should be stored within the application site until it is required for landscaping. It must not be stored outside the site boundaries and it must not be used for the infilling of any area outside of the site. It must be stored at appropriate locations within the site, away from the river and drainage ditches. If there is more top soil than is needed for landscaping, it must be removed from site by a registered contractor for appropriate use elsewhere. The end location of the top soil must be identified and records presented to the local authority if requested.

- A detailed landscape plan has been prepared for the site, which incorporates the creation of many habitats and biotomes, using mostly native species. The concepts presented in this landscape plan must be implemented as part of this development. The landscaping works should be overseen by a professional who can ensure the delivery of the landscape plans as described.

- Indian balsam occurs along the banks of the River Urrin in the southern section of the site and this is a listed invasive species. A treatment plan for the removal of this species should be provided and work should be initiated prior to the commencement of site works. Unlike Japanese knotweed, balsam is relatively easy and cost effective to remove. The plants have a shallow root ball and can be easily pulled out. This should be done before the plant flowers and seeds. Chemical treatment is also an option, but along watercourses this is not ideal, as it allows for the possibility of pollution of the water with herbicides.

- Water safety measures such as railings along the River Urrin should not impede the free access of mammals along the riparian verges.

Protection of Water Quality

- The overarching plan for the development allows for a maintenance of a 15m buffer zone along the River Urrin. Some works will be required in this zone during construction, namely the installation of the drainage pipes from the attenuation tanks, the associated head walls for these pipes and outlet from the existing field drain into the Urrin. The maintenance of this 15m buffer will allow for optimal ecological functioning of the River Urrin, whilst maintaining an ecological corridor for species such as the otter.

- All guidelines within the document *Inland Fisheries Ireland Requirements for the Protection of Fisheries Habitats during Construction and Development Works and River Sites* (www.fisheriesireland.ie) and the updated guidelines *entitled Guidelines on Protection of Fisheries During Construction Works in And Adjacent to Waters (2016)* should be adhered to and they include:

  - Consultation with Inland Fisheries Ireland (IFI) to ensure that the development proceeds with due regard to the provisions of the Fisheries Acts and Habitats Regulations;
  - Consultation with IFI in order to determine the correct timing of works on the site;
  - There should be no in stream works carried out within the streams without prior approval from IFI.

- IFI have also recently launched new guidelines entitled *Planning for Watercourse in the Urban Environment (IFI, 2020).* This outlines provisions for buffer zones, sustainable drainage systems and flood control. The maintenance of a 15m buffer zone as recommended by IFI has been noted and incorporated into the overall site plan.

- Efficient construction practices and sequences should be employed on site, and this will minimise soil erosion and potential pollution of local watercourses with soil and sediment. This is especially important given the significant slope on the site that leads to the river. Unnecessary clearance of vegetation should be avoided and only areas necessary for building works should be cleared. Existing grassed embankments and vegetated areas around the perimeters of the site and along the field drains should be retained where possible. Supplemental planting and careful management of these areas will increase the biodiversity value of the site in the future. The retention of these areas will also help retain storm water run-off from the site during construction and operation. Works within the site should be avoided during periods of heavy rainfall. These measures are included in the Biodiversity Action Plan prepared by Landscape Design Services.

- It is vital that there is no deterioration in water quality in the River Urrin or its tributaries. This will protect both habitats and species that are sensitive to pollution. Therefore, strict controls of erosion, sediment generation and other pollutants associated with the construction process should be implemented, including the provision of attenuation measures, silt traps or geotextile curtains to reduce and intercept sediment release into any local watercourses. Guidelines in the following best practice documents should be adhered to:

  - Construction Industry Research and Information Association (CIRIA) (2005) *Environmental Good Practice on Site (C692)*
  - Construction Industry Research and Information Association (2001) *Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532)*
  - Construction Industry Research and Information Association (2000) *Environmental Handbook for Building and Civil Engineering Projects (C512)*
  - Environmental Protection Agency (2015) *List of Waste and Determining if Waste is Hazardous or Non-Hazardous*
  - Environment Agency *et al*. (2015) Guidance on the Classification and Assessment of Waste, Technical Guidance WM3

- The construction team must implement the following site-specific mitigation measures. These measures have been incorporated into a Construction and Environment Management Plan and they must be overseen by the ECoW.

- Surface waters from the construction site should be managed using a system of temporary on-site attenuation features, and these should be fitted with silt barrier devices such as silt fences or silt busters.
- Silt fences and berms should be installed prior to the commencement of construction on site. These should be set back at a minimum of 10m from the River Urrin and other watercourses on the site. The silt fences should be sturdy and constructed of a suitable geotextile membrane to ensure that water can pass through, but that silt will be retained. An interceptor trench will be required in front of this interceptor fence. The silt fence must be capable of preventing particles of 425μm from passing though.
- The silt fences should be monitored daily to ensure that they remain functional throughout the construction of the proposed development. Maintenance of the fences should be carried out regularly. Fences should be inspected thoroughly after periods of heavy rainfall.
- Discharge water generated during laying on concrete should be removed off site for treatment and disposal.

- Works on the installation of the pipes from the attenuation tanks, the construction of the headwall and the piping of the mid-site drain into the Urrin will require works within the immediate buffer zone of the Urrin. Initial works will involve digging a trench to accommodate the 900m pipe. These works must not lead to an excessive run off of silt into the river. Silt barriers and fences should be used around the river banks to catch any silt that falls into the river arising the trenching and pipe laying works. The works should be carried out in dry weather. The trench must be infilled and stabilised immediately and vegetation along the route restored.
- For the installation of the headwall, the following measures have been outlined in the CEMP. These measures must be implemented in full. All works should be overseen by an environmental engineer and the ECoW
  - The timing of head wall installation will be scheduled to ensure no instream works shall be carried out during the closed season for instream works. (October 1st to June 30th). IFI will be notified prior to works taking place. The timing of works shall be in accordance with to IFI (2016) *Guidelines on the Protection of Fisheries during Construction Works in and Adjacent to Water.* Works associated with the headwall construction will be supervised by an Ecological Clerk of Works (ECoW).
  - The CEMP prepared by Traynor Environmental Ltd has described the installation of the headwall and the following methodology has been detailed.

- Prior to installation of the headwall, a dry section will be created within the river bank using sand bags.

- Sand will be delivered to site via the agreed access into the works area. 1ton sands bags will be filled (with the use of a suitable sized excavator) at least 3om away from the watercourse. Bags will be doubled up.

- A sand bag bund will be constructed out from the river bank to create a dry working area measuring approximately 4.0m wide x 2.0m long. A double row of bags will be placed on the bed of the river, with a single row (placed centrally above the bottom rows). Care will be taken when removing wet sand bags in order to prevent potential sand entering the river.

- Any remaining surface water within the bunded area will be pumped from within the bund using a suitably sized de-watering pump to the pre-constructed settlement area described below before being discharged and entering the watercourse.

- The excavator will commence excavation works and reduce the ground to the correct formation level. A depth of 100mm of semi dry concrete will be placed and compacted underneath the headwall structure.

- A settlement area for treatment of pumped water from excavations/the bunded area will be established on site. The settlement area will consist of silt fence material surrounded by a row of sandbags. A dewatering/silt bag will be fitted at the discharge point. Alternatively silt laden waters will be tankered off site to a licenced facility.

- Precast headwall will be delivered to site, offloaded and lifted into place using the on-site excavator. Headwall to be checked for plumbness once dropped into position. The headwall will consist of reinforced pre-cast concrete and will be installed on a concrete blinding base.

- The proposed discharge pipe will be fitted with a hydro break.

- The outfall pipe to have non-return valve installed to prevent flooding of the interceptor in the event of highwater level in the river.

- Biosecurity measures will be strictly adhered to throughout the proposed works. Measures will be in accordance with IFI (2010) Biosecurity Protocol for Field

Survey Work. Where staff are working instream, staff footwear and PPE will be inspected on daily completion of the works and vegetation or debris removed. Footwear will be dipped in or scrubbed with a disinfectant solution (e.g. 1% solution of Virkron Aquatic or another proprietary disinfection product) and thoroughly dried afterwards. Sand bags placed instream will not be re-used in other watercourses.

- The following pollution control measures must also be employed on site:

  - A dedicated re-fuelling location must be established on site, and this must be situated away from any watercourse on site.
  - Spill kits stations must be provided at the fuelling location for the duration of the works.
  - Staff must be provided with training on spill control and the use of spill kits.
  - All fuel storage containers must be appropriately bunded, roofed and protected from vehicle movements. These bunds will provide added protection in the event of a flood event on site.
  - All chemicals must be stored as per manufacturer's instructions. A dedicated chemical bund will be provided on site.
  - Storage of fuel, and servicing and refuelling of equipment or machinery must be at least 20m from ground clearance or rock-breaking activities.
  - The dedicated refuelling area must be underlain by concrete hard standing. All fuel and oil tank should be inspected on a regular basis for signs of spillages, leaks and damage during use. A record of these inspections must be kept, and any improvements needed be carried out immediately.
  - The risk of fuel spillages on a construction site is at its greatest when refuelling plant. Therefore, only designated trained and competent operatives should be authorised to refuel plant on site. Plant and equipment should be brought to a designated refuelling area rather than refuelling at numerous locations about the site.
  - Chemicals used on site must be returned to the site compound and secured in a lockable and sealed container overnight in proximity to the fuel storage area.
  - Drip trays must be utilised on site for all pumps situated within 20m away from ground clearance areas.
  - Procedures and contingency plans must be established on site to address cleaning up small spillages as well as dealing with an emergency incident. A stock of absorbent materials such as sand, spill granules, absorbent pads and booms must be kept on site, on plant working near the river and at the refuelling area.

- Daily plant inspections must be completed by all plant operators on site to ensure that all plant is maintained in good working order. Where leaks are noted on these inspection sheets, the plant must be removed from operations for repairs.
- All personnel should observe standard precautions for handling of materials as outlined in the Safety Data Sheets (SDS) for each material, including the use of PPE. Where conditions warrant, emergency spill containment supplies should be available for immediate use.

- Best practice concrete / aggregate management measures must be employed on site. These will include:

  - A designated concrete wash out area should be set up on site; typically, this will involve washing the chutes, pumps into a designated IBC before removing the waste water off site for disposal. These procedures should be covered during a Site Safety & Environmental Induction session.
  - Best practice in bulk-liquid concrete management should be employed on site addressing pouring and handling, secure shuttering, adequate curing times etc.
  - Stockpile areas for sands and gravel must be kept to a minimum size, well away from the drains and watercourses (minimum 50m).
  - Where concrete shuttering is used, measures must be put in place to prevent against shutter failure and control storage, handling and disposal of shutter oils.
  - Activities which result in the creation of cement dust must be controlled by dampening down the areas.
  - Raw and uncured waste concrete must be disposed of by removal from the site;
  - Stockpile areas for sands and gravel will be kept to a minimum size, well away from the River Urrin or its tributaries.

- The SUDS proposals outlined for this site must be adhered to in full and only clean-surface water from the site should be discharged to the River Urrin, at the appropriate greenfield run-off rate. Silt and oil interceptors must be incorporated to ensure clean discharge and these must be serviced regularly.

- A maintenance plan should be development for the foul drainage system to prevent any impacts upon the River Urrin arising from surcharge from the foul sewer as a result of a secondary pluvial flood event.

PROTECTION OF BATS AND OTHER MAMMALS

- The bat and mammal report has included a number of mitigation measures to reduce impacts from lighting schemes associated with the proposed development. These include:

  - Lighting around the buildings should be tightly controlled and ornamental lighting should be avoided entirely. Lighting should respond to a motion trigger or be switched off at night after typical active hours (e.g. 11pm to 6 am).

  - Lighting should not spill on or be directed to the river or its riparian corridor (15m)

  - Spotlights must not be introduced as these are hugely disruptive to most wildlife and cannot be targeted to the required area but create light pollution over a huge radius.

  - Dark corridor for the movement of bats throughout the site should be maintained. Lighting should be directed downwards away from the treetops.

  - All luminaires shall lack UV elements when manufactured and shall be LED.

  - A warm white spectrum (ideally <2700Kelvin) shall be adopted to reduce blue light component

  - Luminaires shall feature peak wavelengths higher than 550nm

  - Tree crowns shall remain unilluminated especially the free-standing oak to the south of the access road (southwest corner of the proposal).

  - Planting shall provide areas of darkness suitable for bats and badgers to feed and commute through the site.

- Bat boxes should be provided to compensate for the potential loss of roost sites from tree removal. 6 x 2F Schwegler bat boxes are recommended for erection along the river or alternatively, access could be provided for bats to certain elements of the buildings. All boxes should be away from illumination.

- Prior to the felling of any tree, the tree should be inspected by a bat specialist prior to felling. If bats are present, a derogation license should be obtained from NPWS and additional measures to mitigate against the loss of a roost shall be implemented.

- The hedgerow in the middle of the site will be removed (Boundary 3, Figure 7). This feature is likely to be a commuting corridor for mammals that use the site. In order to reduce the impact of the development on small mammals such as field mice, pygmy shrews and hedgehogs, two 600mm diameter wildlife tunnels have been included as compensation in this area.

- Prior to the commencement of works to install the pipe and headwall from the attenuation tank, the EcOW must ensure that no otter holts have been constructed along the river banks at the point of works or for a distance 5m either site of the headwall location.

Biodiversity Enhancement

- The landscaping of the site offers the potential for biodiversity enhancements within the site. Future landscaping of the site should adhere to the following recommendations:

    - The natural verges along the treelines and hedgerows that are to be retained should be retained and managed appropriately for the benefit of wildlife. They should not be sprayed with herbicide and a low intensity mowing or strimming regime should be incorporated. This will benefit local pollinators.

    - Only native trees and shrubs should be used in the landscaping.

    - A proportion of the grassland / parkland habitats within the site should be managed through methods that mimic traditional grassland management (low level mowing regimes). This will benefit local pollinators. Locally sourced wildflower seed would also be beneficial;

    - Where possible the importation of topsoil from outside the area should be avoided;

    - Allow some areas to go 'wild' where bramble and scrub, etc. can develop;

    - Garden plants that have the potential to become invasive must be avoided.

6 APPROPRIATE ASSESSMENT CONCLUSION

This current NIS has been undertaken to evaluate the potential impacts of the proposed development with regard to the effects upon the conservation objectives and qualifying interests (including the habitats and species) of Slaney River Valley SAC and the Wexford Harbour and Slobs SPA. It is considered that following mitigation, that the proposed project does not have the potential to significantly affect the conservation objectives of these aforementioned Natura 2000 sites and the integrity of these sites as a whole will not be adversely impacted.

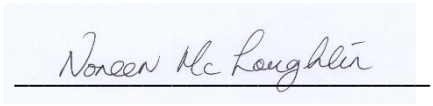
The qualifying interests of the site and their potential to be impacted upon from the potential development were listed in Section 4.2. It is considered that these potential impacts can be successfully mitigated against. With implementation of the mitigation measures there will be no deterioration in water quality or impacts upon any designated habitat or any species dependent on these designated habitats.

In light of the above, it is considered that the proposed works do not have the potential to significantly affect the conservation objectives or qualifying interests of the Slaney River Valley SAC and the Wexford Harbour and Slobs SPA. The integrity of the site will not be adversely affected. Table 4 follows the integrity of the SAC / SPA checklist, which shows that the integrity of the site would not be affected by the proposed development.

Conservation Objective: Does the project have the potential to:	**Yes / No**
Cause delays in progress towards achieving the conservation objectives of the site?	N
Interrupt progress towards achieving the conservation objectives of the site?	N
Disrupt those factors that help to maintain the favourable conditions of the site?	N
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?	N
Other Objectives: does the project have the potential to:	
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	N
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?	N

Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?	N
Reduce the area of key habitats?	N
Reduce the population of key species?	N
Change the balance between key species?	N
Reduce diversity of the site?	N
Result in disturbance that could affect population size or density or the balance between key species?	N
Result in fragmentation?	N
Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)	N

Table 4 – Integrity of Site Checklist (From NPWS, Information Checklist for AA, Box 6, EC (2002)



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