Natura Impact Statement

Large-Scale Residential Development

Slane Road, Drogheda. Co. Louth

Doherty Environmental Consultants Ltd.

March 2024

Large-Scale Residential Development

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Natura Impact Statement

Document Stage	Document Version	Prepared by
Final	1	Pat Doherty MSc, MCIEEM

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1.0 INTRODUCTION

Doherty Environmental Consultants (DEC) Ltd. has been commissioned by Lagan Homes to prepare a Natura Impact Statement (NIS) for a proposed Large-scale Residential Development (LRD) planning application (i.e. "the project") at Slane Road, Drogheda, Co. Louth (see Figure 1.1 for location and Figure 1.2 for site aerial). The project represents a modification of a permitted Strategic Housing Development (SHD) permission (ABP-311678-21) by way of a planning application for a large scale residential development (LRD) permission at Old Slane Road and R168, Mell/Tullyallen, Drogheda, Co.Louth.

In accordance with Article 6(3) of the Habitats Directive, as transposed into Irish law by Regulation 42(1) and Part 5 of the European Communities (Birds and Natural Habitats) Regulations 2011 – 2015 (i.e. the "Habitats Regulations") and Part XAB of the Planning and Development Act, 2000 (as amended) (i.e. the "Planning and Development Act"), a Screening Report for Appropriate Assessment (AA) was prepared for the planning permitted SHD project to assess whether it could or could not be ruled out, on the basis of objective information, that the project, either individually or in combination with other plans or projects, was likely to have a significant effect on any European Sites. The Screening Report for Appropriate Assessment was prepared by DEC Ltd. on behalf of Denis Williams Design Services. The Screening Report for Appropriate Assessment concluded, in view of best scientific knowledge and the conservation objectives of the European Sites occurring within the zone of influence of the project, that, in the absence of appropriate mitigation, it could not be ruled out at the screening stage that the project would not result in significant negative effects to six European sites, namely the River Boyne and River Blackwater SAC, River Boyne and River Blackwater SPA, Boyne Coast and Estuary SAC, the Boyne Estuary SPA; River Nanny Estuary and Shore SPA;and the North-West Irish Sea cSPA[1]. The conclusion of the Screening Report was

[1] **Hereafter all four European Site listed that occur within the Boyne catchment are to be jointly referred to as the Boyne River and Estuary European Sites; the River Boyne and River Blackwater SAC and River Boyne and River Blackwater SPA are to be jointly referred to as the River Boyne and River Blackwater European Sites; the Boyne Estuary SPA and the Boyne Estuary and Coast SAC are to be jointly referred to as the Boyne Estuary European Sites.**

informed by a highly precautionary approach and adopted a worst-case scenario. Such an approach was adopted to ensure consistency with the extremely low threshold for triggering likely significant effects as determined in both European and Irish case law and Section 177U of the Planning and Development Act. On the basis of that conclusion, it was determined that AA was required in order to assess the implications of the project for those six European Sites. In accordance with Section 177T of the Planning and Development Act, an NIS of the project was prepared in order to assist An Bord Pleanála/the competent authority in carrying out its Appropriate Assessment. In completing the Appropriate Assessment, the Board concluded that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of European sites in view of the sites' conservation objectives. This conclusion was based on a complete assessment of all aspects of the proposed project and there is no reasonable scientific doubt as to the absence of adverse effects (ABP-311678-21).

This NIS provides an examination, analysis and evaluation of the likely impacts from the Project, both individually and in combination with other plans and projects, in view of best scientific knowledge and the conservation objectives of the European Sites concerned. It also prescribes appropriate mitigation to ensure that the Project will not adversely affect the integrity of those sites identified as being at risk of likely significant effects. Finally, it provides complete, precise and definitive findings, which are capable of removing all reasonable scientific doubt as to the absence of adverse effects on the integrity of the European sites concerned.

1.1 SUMMARY OF SCREENING REPORT FOR APPROPRIATE ASSESSMENT

A Screening Report for Appropriate Assessment was prepared for the planning approved Strategic Housing Development in 2021. This screening report identified six European Sites occurring within the wider area surrounding the project site that required examination for the potential for the project to result in likely significant effects. These sites are listed and shown in Figure 1.3 below and their location with respect to the project site is also shown.

Of these six European Sites five were identified as occurring within the zone of influence of the project. These are the Boyne River and Estuaries European Sites and the River Nanny Estuary and Shore SPA. The likely significant effects to these European Sites, as identified during the Screening Report, relates to the presence of a hydrological pathway linking the project site to the River Boyne (which itself forms part of the River Boyne and River Blackwater SAC & SPA, and which in turn drains to the Boyne Estuary European Sites. Figure 1.4 shows the hydrological pathway connecting the project site to these European Sites.

During the Screening of the SHD project it could not be ruled out that the project will not result in indirect effects to these European Sites as a result of the discharge of contaminated surface water from the project site to the Boyne catchment during the construction phase and operation phase and as a result of disturbance to mobile qualifying species of the River Boyne and River Blackwater SAC and SPA. It is considered that the findings of the Screening Report for the planning approved SHD project are applicable to the currently proposed project, which represents a modification of the SHD project.

It was acknowledged during the Screening Report for the SHD project that any contaminated surface drainage waters being discharged into the River Boyne downstream of the project site are likely to be well diluted and distributed within this water body, thereby limiting their potential to result in significant downstream effects. These natural dilution and attenuation processes are also applicable to the current project. However the Screening Report and its conclusions have been underpinned by a precautionary approach and the very low threshold (i.e. the mere probability for a significant effect to occur) required to trigger a Stage 2 Appropriate Assessment and based on this approach it was found that the potential for such downstream effects to arise as a consequence of the project and to result in significant negative impacts to the conservation objectives of the Boyne River and Estuaries European Sites could not be ruled out at the screening stage. This conclusion is considered to be applicable to the current project.

The potential for indirect effects to otters, qualifying freshwater fish and kingfisher along the Mell Stream and ex-situ of the River Boyne European Sites could not be ruled out at the screening stage and were identified as requiring further examination as part of an Natura Impact Statement for the SHD project. The same potential for indirect effects to the above listed qualifying interest are considered to exist for the current LRD project and therefore require further examination as part of an Natura Impact Statement for the LRD project.

Finally the project site was identified during the screening as being located within the potential foraging range of special conservation interest bird species of the Boyne Estuary SPA and the River Nanny Estuary and Shore SPA. Species of these SPAs such as herring gull, golden plover and lapwing are known to rely on grassland habitats for foraging. The potential for the project site to function as foraging habitat ex-situ of these SPAs was identified as requiring further examination as part of a Natura Impact Statement for the project

Furthermore since the completion of the Screening exercise for the planning approved SHD project, the North-West Irish Sea cSPA has been established. The nearest point of this cSPA to the project site is approximately 5km to the east of the project site and encompasses the Boyne Estuary SPA[2]. This SPA is designated for the following special conservation interest bird species:

Common Scoter (Melanitta nigra) [A065]

Red-throated Diver (Gavia stellata) [A001]

Great Northern Diver (Gavia immer) [A003]

Fulmar (Fulmarus glacialis) [A009]

Manx Shearwater (Puffinus puffinus) [A013]

Shag (Phalacrocorax aristotelis) [A018]

Cormorant (Phalacrocorax carbo) [A017]

[2] **Note that no digital downloadable boundary for the North-West Irish Sea cSPA was available from the NPWS website or data.gov.ie at the time of writing as a such Figure 1.4 does not show the location of this SPA.**

Little Gull (Larus minutus) [A177]

Kittiwake (Rissa tridactyla) [A188]

Black-headed Gull (Chroicocephalus ridibundus) [A179]

Common Gull (Larus canus) [A182]

Lesser Black-backed Gull (Larus fuscus) [A183]

Herring Gull (Larus argentatus) [A184]

Great Black-backed Gull (Larus marinus) [A187]

Little Tern (Sterna albifrons) [A195]

Roseate Tern (Sterna dougallii) [A192]

Common Tern (Sterna hirundo) [A193]

Arctic Tern (Sterna paradisaea) [A194]

Puffin (Fratercula arctica) [A204]

Razorbill (Alca torda) [A200]

Guillemot (Uria aalge) [A199]

Of the special conservation interest bird species of this cSPA (as listed above) it is the gull species that are known to utilise grassland habitats for roosting, foraging or loafing. The foraging ranges of these gull species are well in excess of 5km and as such could potentially overlap with the project site. As such the potential for the project site to function as foraging habitat ex-situ of the North-West Irish Sea cSPA for these gull species is also identified as requiring further examination as part of a Natura Impact Statement for the project.

Based on the information set out above and the precautionary approach adopted during the consideration of the potential for likely significant effects to European Sites and the extremely low threshold required to trigger Stage 2 Appropriate Assessment, it is concluded that the potential for significant effects to the Boyne River and Estuaries European Sites; the River Nanny Estuary and Shore SPA; and the North-West Irish Sea cSPA cannot be ruled out. As such the Screening Report concluded that an NIS was required to evaluate further the potential for these impacts to result in significant adverse effects to these European Sites and where necessary prescribe mitigation measures to avoid such adverse effects.

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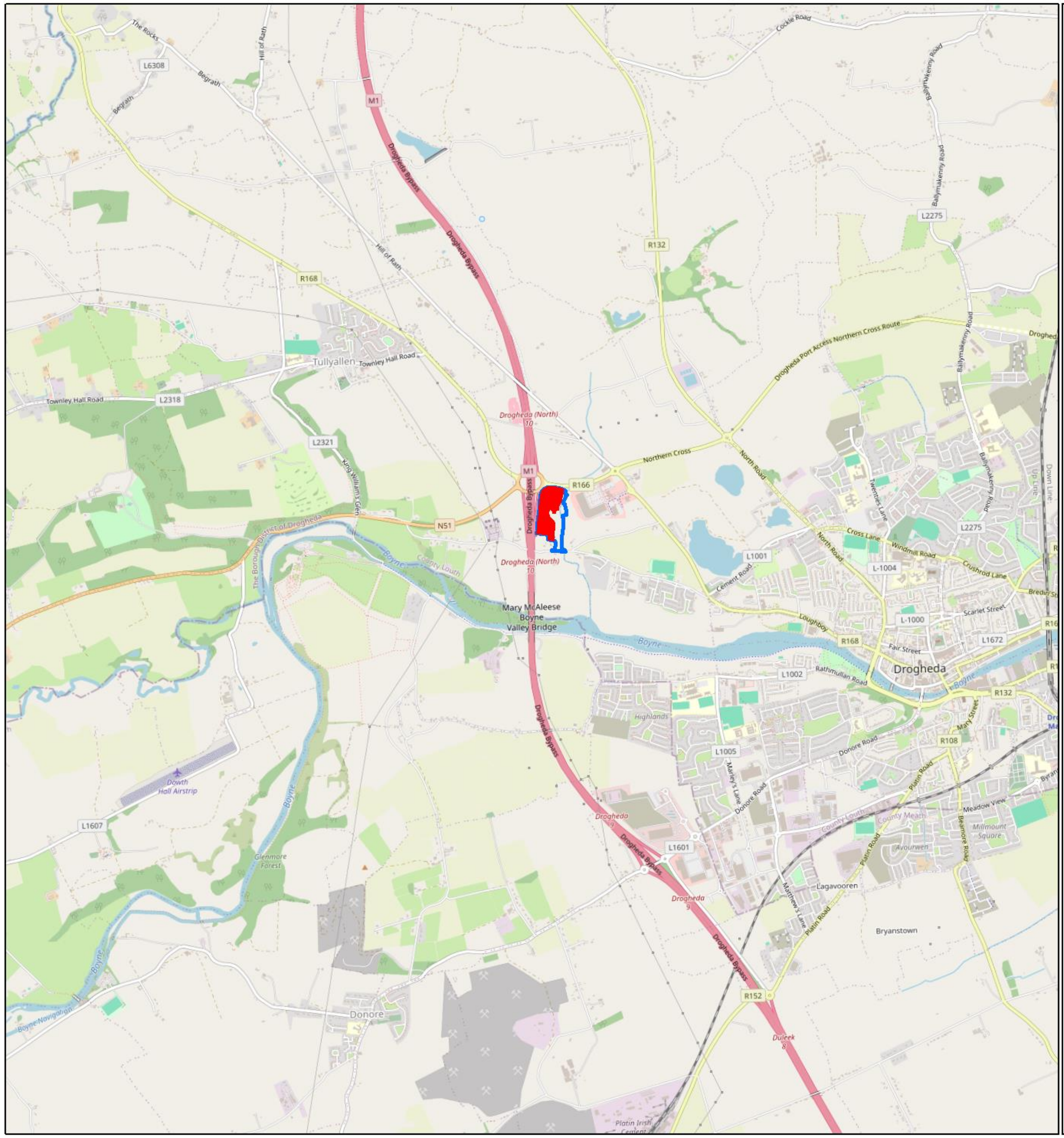


Large-Scale Residential Development
Slane Road, Drogheda

Figure 1.1

Site Location

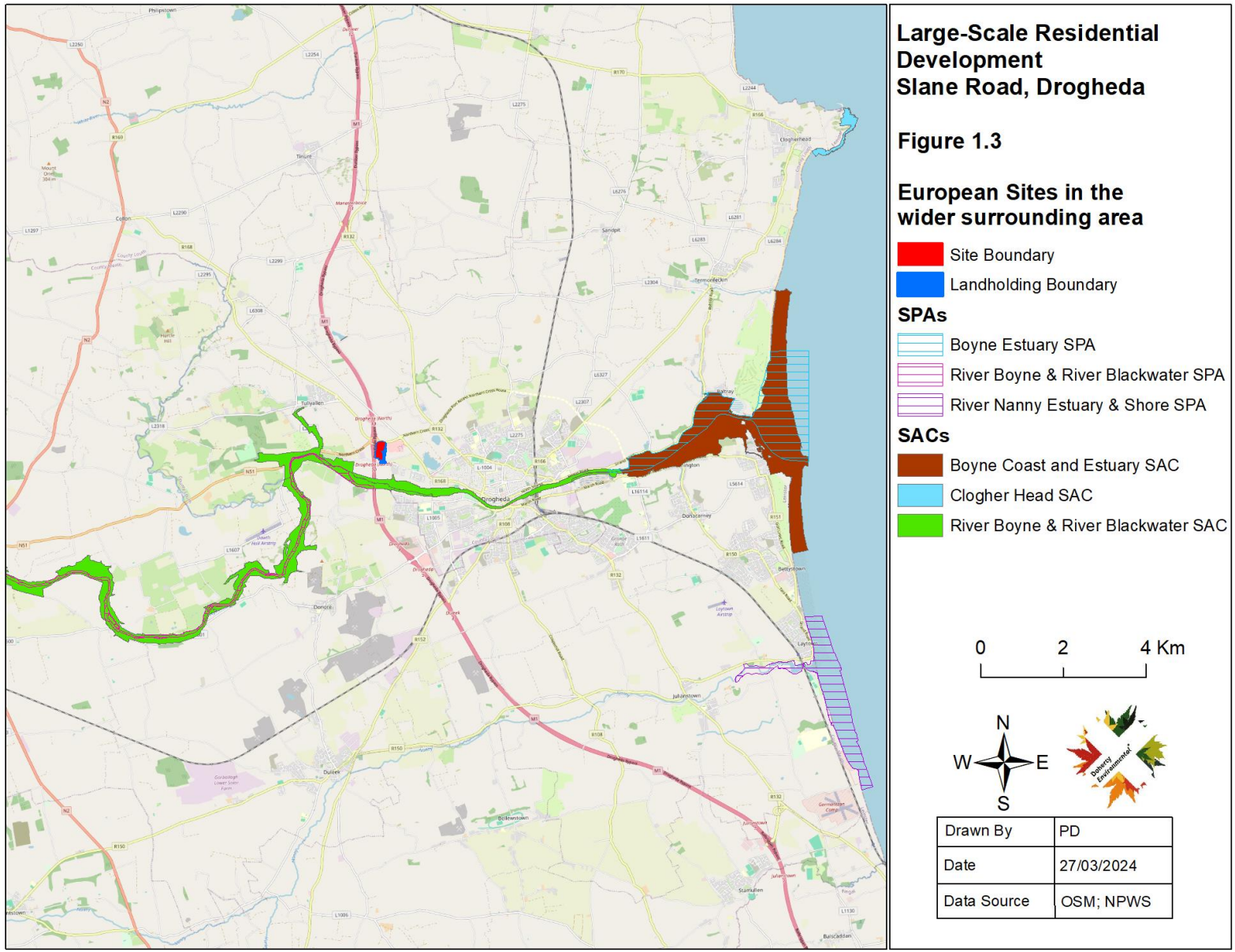
Site Boundary
Landholding Boundary

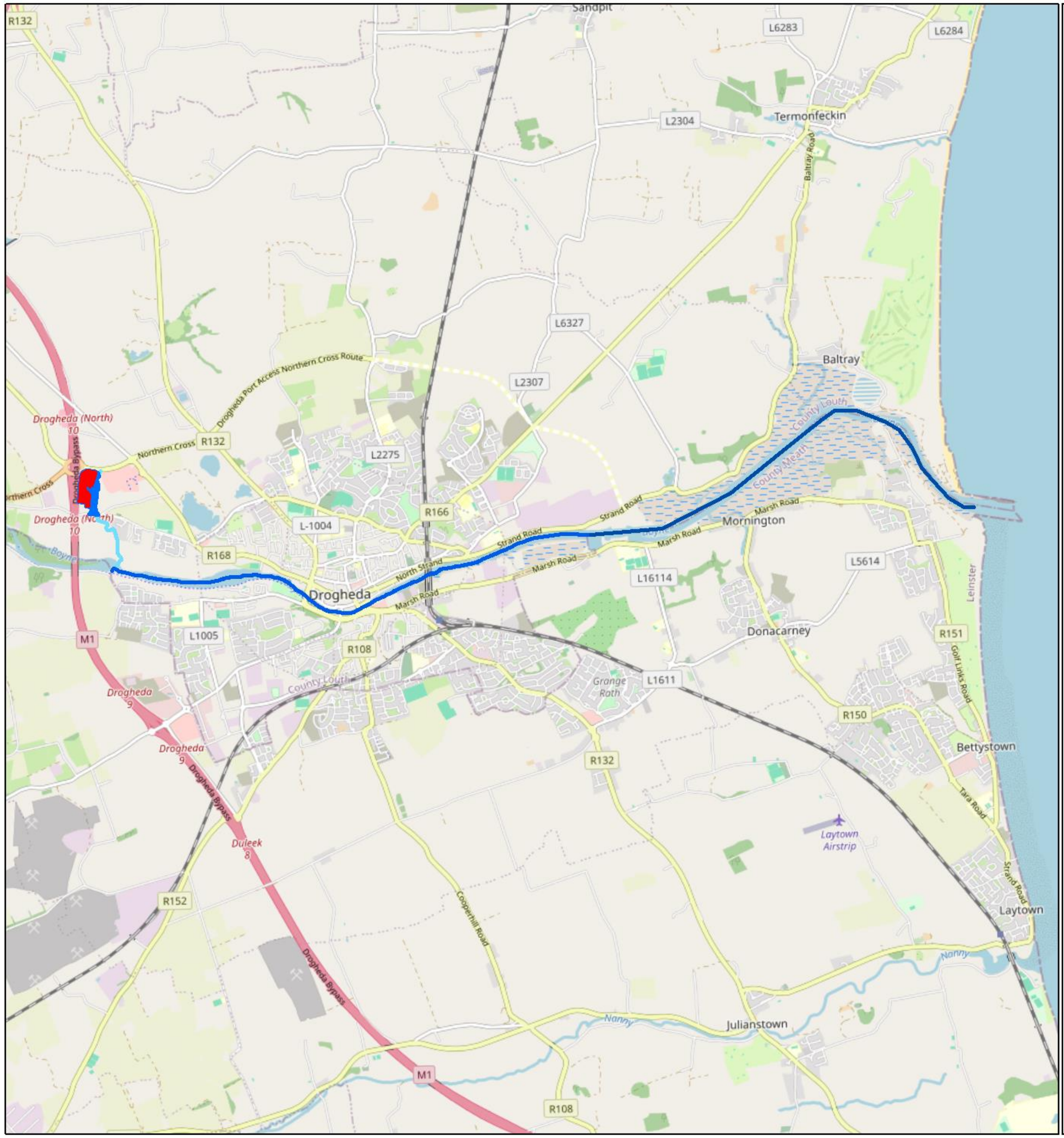
0 0.75 1.5 Km

N
W E
S

Drawn By	PD
Date	27/03/2024
Data Source	OSM

Figure 1.2: Site Layout


Large-Scale Residential Development
Slane Road, Drogheda
Figure 1.3
European Sites in the wider surrounding area
Site Boundary
Landholding Boundary
SPAs
Boyne Estuary SPA
River Boyne & River Blackwater SPA
River Nanny Estuary & Shore SPA
SACs
Boyne Coast and Estuary SAC
Clogher Head SAC
River Boyne & River Blackwater SAC
0 2 4 Km
N
W E
S
Drawn By PD
Date 27/03/2024
Data Source OSM; NPWS



Large-Scale Residential Development Slane Road, Drogheda

Figure 1.4

Hydrological Pathway

Site Boundary
Landholding Boundary

Watercours Name

Mell Stream
River Boyne
River Boyne Estuary

0 1 2 Km

N W E S

Drawn By	PD
Date	27/03/2024
Data Source	OSM; NPWS

1.2 GUIDANCE & METHODS

This NIS has been undertaken in accordance with National and European guidance documents: Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities (DEHLG 2010) and *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites – Methodological Guidance of the Provisions of Article 6(3) and (4) of the Habitats directive 92/43/EEC.* The following guidance documents were also of relevance during this the preparation of this NIS:

- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (2010). DEHLG.
- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites – Methodological Guidance of the Provisions of Article 6(3) and (4) of the Habitats Directive 92/42/EED. European Commission (2021).
- Managing Natura 2000 Sites – The provisions of Article 6 of the Habitats directive 92/43/EEC. European commission (2018).

The information provided in this NIS is also guided by European and Irish case law guiding the approach to Stage 2 Appropriate Assessment. In particular it is noted that the consideration of impacts provided in Section 4 this NIS has been undertaken in the absence of any regard to construction phase best practice measures and design measures that aim to safeguard the receiving environment and the Boyne River and Estuaries European Sites from potential adverse impacts.

1.2.1 Background to Habitats Directive Article 6 Assessments

The EC (2021) guidelines outline the stages involved in undertaking an assessment of a project under Article 6(3) and 6(4) of the Habitats Directive. The assessment process comprises the three stages outlined below. This NIS presents the findings of an examination, analysis and evaluation of the project to inform a Stage 2 Appropriate Assessment of the project.

- Stage 1 – Screening: This stage defines the proposed project, establishes whether the proposed project is necessary for the conservation management of the European Site

and assesses the likelihood of the project to have a significant effect, alone or in combination with other plans or projects, upon a European Site.

- Stage 2 – Appropriate Assessment: If a plan or project is likely to have a significant affect an Appropriate Assessment must be undertaken. Case law has established that such an Appropriate Assessment, to be lawfully conducted, in summary:

  (i) must identify, in the light of the best scientific knowledge in the field, all aspects of the proposed development which can, by itself or in-combination with other plans or projects, affect the conservation objectives of the European site;

  (ii) must contain complete, precise and definitive findings and conclusions and may not have lacunae or gaps; and

  (iii) may only include a determination that the proposed development will not adversely affect the integrity of any relevant European site where the competent authority decides (on the basis of complete, precise and definitive findings and conclusions) that no reasonable scientific doubt remains as to the absence of the identified potential effects. If adverse impacts can be satisfactorily avoided or successfully mitigated at this stage, so that no reasonable doubt remains as to the absence of the identified potential effects, then the process is complete. If the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to stage three and, if necessary, stage four.

- Stage 3 – This stage of the process is governed by Article 6(4) and arises where adverse effects on the integrity of a European site cannot be excluded and where the developer considers that the plan or project is necessary for imperative reasons of overriding public interest. This is only possible if there are no alternative solutions, the imperative reasons of overriding public interest are duly justified, and if suitable compensatory measures are adopted to ensure that the overall coherence of the European Sites is protected.

1.3 ECOLOGICAL SURVEYS & METHODS

As part of the EcIA and Natura Impact Statement for the planning-approved SHD project, field surveys were completed to determine the presence of kingfisher and otter breeding and resting sites along the section of the Mell Stream to the east of the project site. The surveys were also completed to establish whether or not the stream is relied upon by these species as a foraging habitat.

The surveys for otters comprised a walked transect of the stretch of the Mell Stream along the eastern boundary of the site. The survey was completed on the 15th November 2019; 17th December 2019; and 2nd September 2020. An updated survey of the stream and habitat conditions at the project site was completed on the 16th November 2023.

An initial habitat assessment for the suitability of the Mell Stream corridor to function as suitable foraging, nesting or roosting habitat for kingfisher. This survey was completed in November 2019 when no suitable breeding habitat for kingfisher was identified as occurring along the Mell Stream (see Section 2.1 below for further details). Additional surveys comprising a minimum time duration of 1-hour vantage point watches for the presence of foraging kingfisher along the Mell Stream corridor from a point within the site, towards the northern end of the site, was completed on the 15th November 2019; 17th December 2019; 2nd September 2020; 24th March 2021; 1st April 2021 and 21st April, 2021. The location of the vantage point is shown on Figure 2.1.

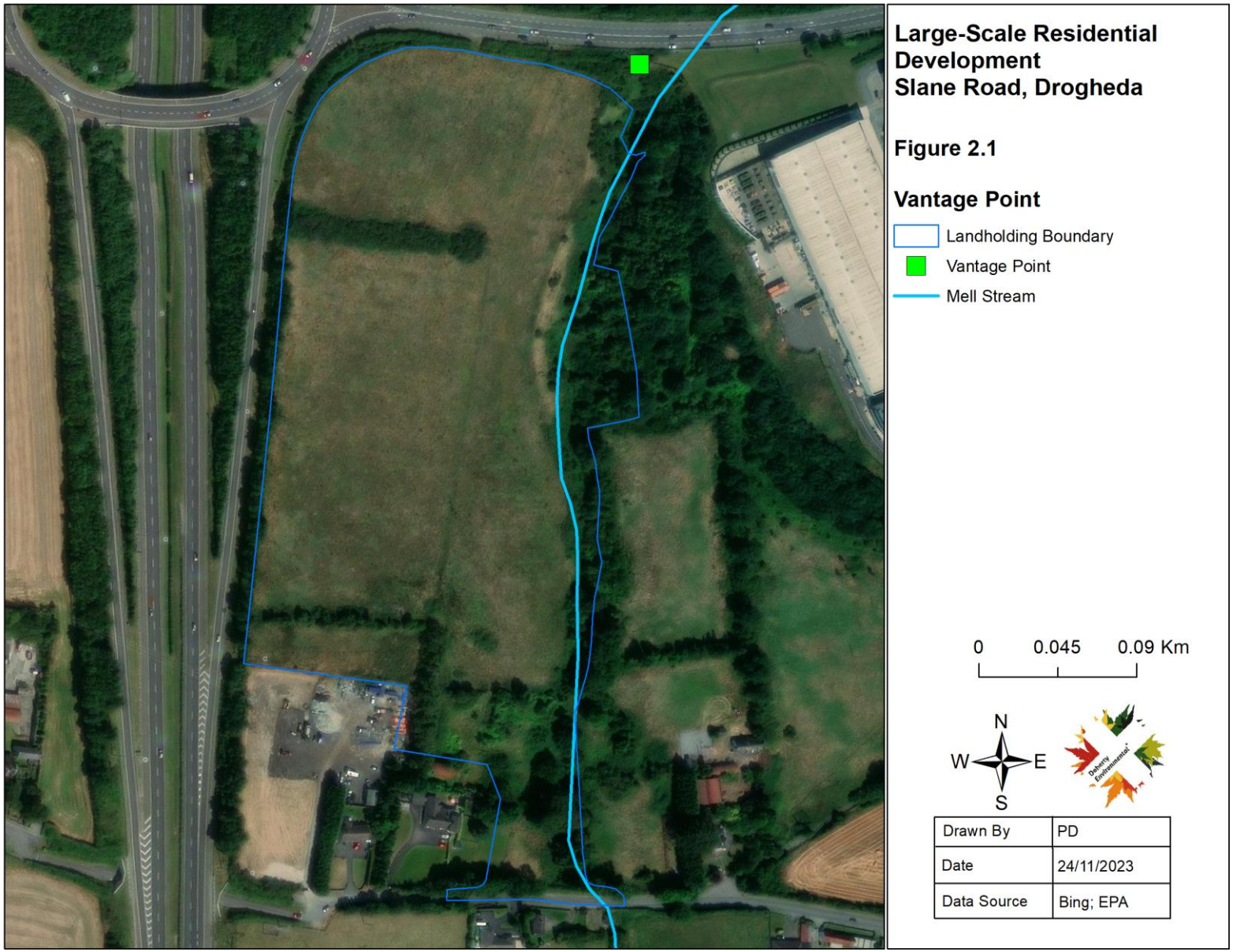
A search for field signs indicating the presence of otters along the Mell Stream was completed during all four survey dates. These field signs, as described in Neal & Cheeseman (1996) and Bang & Dahlstrom (2006), include:

- mammal breeding and resting places, such as setts, holts, lairs;
- pathways & prints;
- faecal deposits & latrines (and dung pits used as territorial markers);
- feeding signs (snuffle holes);
- hair; and
- scratch marks.

The surveys for otters were completed after periods of dry weather when field signs were more likely to be present.

The results of the kingfisher and otter surveys are described in Section 4.1 below. The survey effort and methods for both otters and kingfisher are consistent with best practice guidelines (see NRA, 2009) and provides evidence for this Natura Impact Statement that is based on best scientific information.

Conditions on site have been surveyed for their potential to function as a foraging habitat for wintering birds. Dedicated surveys for the presence of special conservation interest bird species or waterbirds of SPAs in the wider surrounding area were completed during the 2019/2020 and the 2020/2021 non-breeding bird season, when wintering special conservation interests of these SPAs are present. The surveys are also pertinent to the North-West Irish Sea cSPA as all wetland/water bird species, including all gull species were recorded during these surveys.


Large-Scale Residential Development
Slane Road, Drogheda
Figure 2.1
Vantage Point
Landholding Boundary
Vantage Point
Mell Stream
0
0.045
0.09 Km
N
W
E
S
Drawn By
PD
Date
24/11/2023
Data Source
Bing; EPA

Special conservation interest bird species of the SPAs in the wider surrounding area are known to rely on terrestrial grassland sites for foraging and roosting, especially during high tide when intertidal foraging habitats are inundated. For instance, golden plover and lapwing, both of which are special conservation interest bird species for both or one (respectively) of the SPAs in the wider surrounding area (e.g. Boyne Estuary SPA and River Nanny Estuary and Shore SPA) are considered to be examples of terrestrial waders. Gull species, which are special conservation interest bird species of the River Nanny Estuary and Shore SPA and the North-West Irish Sea cSPA are also known to utilise terrestrial grassland habitat. Given that the greatest likelihood of these species occurring at the project site was during high tides, field surveys were completed to coincide with high tide when waders and other waterbirds are most likely to use terrestrial habitats for foraging or roosting. There is no formal methodology published for the surveying of wintering waterbirds on terrestrial grassland sites. Surveys of waterbirds at low-tide to inform IWeBS surveys and surveys at coastal SPAs rely on 4 low-tide survey counts completed between the months of September and March. This is consistent with the British Trust for Ornithology (BTO) method of four surveys during the winter season, ideally during the months of November to February. During the high-tide roost survey of the Severn Estuary Archer (2019) completed monthly surveys between December to February, as well as completing passage surveys in spring and autumn. The winter bird surveys were completed on the following dates:

15th November 2019 – 12:00 – 13:30; high tide at 12:50

17th December 2019: 11:30 – 14:30: high tide at 12:10

29th January 2021 – 11:30 – 14:30; high tide at 12:00

12th February 2021 – 11:00 – 14:00, high tide at 11:30.

25th February 2021 – 10:00 – 12:00, high tide at 10:30

24th March 2021 – 09:00 – 11:00, high tide at 08:05

1st April 2021 – 14:30 – 16:30, high tide at 15:30

16th April 2021 – 13:30 – 15:30, high tide at 13:45

Surveys on the above listed dates were completed from the vantage point location shown on Figure 2.1. Following the completion of the vantage point survey a return transect was walked from north to south through the site. Based on the survey effort required for low tide surveys and the survey effort used to inform other large-scale projects it is considered that the survey effort undertaken to establish the use of the project site by terrestrial waders provides a robust evidence base for the examination of this aspect in this Natura Impact Statement and is representative of best scientific information. The results of the high tide roost surveys are summarised in Section 4.2 below.

1.4 PROJECT OVERVIEW

Lagan Homes Tullyallen Ltd intend to make a planning application for planning permission to modify a permitted Strategic Housing Development (SHD) permission (ABP-311678-21) by way of a planning application for a large-scale residential development (LRD) permission at Old Slane Road and R168, Mell/Tullyallen, Drogheda, Co. Louth.

The modifications to the permitted SHD (APB-311678-21) will amend the mix of housing from 237no. dwellings units including 151no. apartments and 86no. houses, to 237no dwellings consisting of 40no. apartments and 197no. houses with associated modifications to the road layout and distribution of public open space, car parking site services and site development works. A creche was permitted as part of the original SHD. The creche has been redesigned as a standalone building. The proposed development affects 207no. of the 237no. permitted dwellings.

1.5 CONSTRUCTION PHASE SURFACE WATER MANAGEMENT

The construction phase surface water management will be as per the details set out for the planning approved SHD project. These details are set out below.

The main contractor will be responsible for pollution prevention for the duration of the works.

As fuels and oils are classed as hazardous materials, any on-site storage of fuel/oil, all storage tanks and all draw-off points will be bunded (or stored in double-skinned tanks) and located in the dedicated site compound.

The site works shall incorporate engineering measures such as the installation of a drainage system with settlement/silt collection ponds and provision of temporary interceptor(s). These surface water drainage management features will be installed as the first item of works for each phase of the development prior to their commencement.

Also, during the construction phase, standard construction phase silt and petrochemical interception will be carried out on all runoff and pumped water from site works.

Further, a silt curtain will be installed along the entire length of the eastern boundary of the site, between the site works and the watercourse. The purpose of this membrane will be to prevent any sediment discharge from draining into the watercourse.

1.6 OPERATION PHASE SURFACE WATER MANAGEMENT

1.6.1 Surface Water

It is proposed to drain surface water through the site via a series of sewers, ultimately discharging to the existing stream via a new sewer and headwall to be constructed at the south-east of the site. Note that this headwall is to be constructed as part of the permitted 30 unit development outside the project site boundary, and has been designed to serve the subject development.

The discharge rate will be restricted to the greenfield equivalent runoff rate, as calculated in Engineer's Report (provided under separate cover), by a Hydrobrake or similar approved flow control device. Excess flows over and above the greenfield runoff will be attenuated in an underground storage tank located in the open space at the ease of the site. The attenuation has been designed to accommodate runoff volumes up to the 1-in-100-year storm, accounting for a 20% increase due to climate change.

While it is proposed to provide 2 no. attenuation tanks, as per the permitted development, it is now proposed to construct just one outfall to the existing stream. The northern attenuation tank will discharge back into the on-site drainage network at a restricted rate, with the discharge rate from the Hydrobrake at the southern attenuation tank adjusted to account for the revision. The permitted northern outfall is at a steep embankment, so by removing the northern outfall this alteration minimises the works required at the stream and simplifies the construction programme.

The proposed development is designed to incorporate best drainage practice.

It is proposed to incorporate a Storm Water Management Plan through the use of various SuDS techniques to treat and minimise surface water runoff from the site. The methodology involved in developing a Storm Water Management Plan for the subject site is based on recommendations set out in the Greater Dublin Strategic Drainage Study (GDSDS) and in the SuDS Manual (Ciria C753). Based on three key elements – Water Quantity, Water Quality and Amenity – the targets of the SuDS train concept have been implemented in the design, providing SuDS devices for Source Control, Site Control and Regional Control.

1.6.1.1 Source Control

Permeable Paving:

It is proposed to introduce permeable paving at private paved garden areas throughout the development. Downpipes from the houses will drain to filter drains beneath the permeable paving to facilitate maximum infiltration of surface water from roof areas.

The goal of permeable paving is to control stormwater at the source to reduce runoff. In addition to reducing surface runoff, permeable paving has the dual benefit of improving water quality by trapping suspended solids and filtering pollutants in the substrata layers.

1.6.1.2 Site Control

Tree Pits:

It is proposed to introduce tree planting throughout the site, including roadside tree pits. Surface water runoff from the roads will drain to the tree pits before discharging to the below-ground surface water network.

Roads will have the most pollutants and it is appropriate to provide an at-source treatment SuDS technique to address this. The proposed tree pits will provide infiltration, optimise the retention time, and provide quality improvement to the storm water runoff, in particular the first flush from the roads. The tree pits will include an underlying 225mm diameter perforated pipe surrounded in stone, which discharges to the main surface water network.

Trees can help control storm water runoff because their leaves, stems, and roots slow rain from reaching the ground and capture and store rainfall to be released later. Trees help to attenuate flows, trap silts and pollutants, promote infiltration and prevent erosion. Incorporating tree planting offers multiple benefits, including attractive planting features, improved air quality and increased biodiversity whilst helping to ensure adaptation to climate change.

1.6.1.3 Regional Control

Underground Attenuation and Flow Control:

The attenuation storage required for the 1-in-100-year storm will be provided in below ground attenuation storage tanks located in the open space at the east of the site. Flows will be controlled by a Hydrobrake or similar approved flow control device, limited to the greenfield equivalent runoff rate (as calculated in Section 3.3 below), with excess flows being attenuated in the tank before outfalling by gravity to the tributary stream at the east of the site.

Petrol Interceptor:

A Petrol interceptor is to be installed before the surface water outfall to the existing stream. Petrol Interceptors will remove hydrocarbons from surface flows, protecting the natural watercourse.

Petrol interceptors work on the premise that some hydrocarbons, such as petroleum and diesel, are less dense than water and float on the top of surface water flows. Typically, it is runoff from roads and other trafficked areas that are contaminated with hydrocarbons. The petrol interceptor will prevent a layer of hydrocarbons and other light pollutants in contaminated waters from entering the water course.

Note that all of the other SuDS features described above are upstream of the proposed petrol interceptor and will serve to slow and treat surface water runoff.

1.6.1.4 Treatment Train Summary

The SuDS treatment train at the site includes open green spaces and permeable paving to slow and intercept rainwater. Tree pits will further slow and reduce the runoff rate, while providing treatment of runoff, particularly from the roads. The use of these SuDS measures will encourage

infiltration of surface water into the ground, with rainwater from roads will be directed towards tree pits. During large storm events, there is a high-level overflow from these tree pits into an adjacent gully, which discharges to the below-ground sewer network.

After these SuDS devices, rainwater will make its way into the below ground sewer network, which includes perforated filter drains where appropriate beneath permeable paving. The runoff is restricted to the greenfield equivalent rate, and excess storm water above this rate is directed to the proposed below ground attenuation. Finally, a petrol interceptor is proposed as a final measure, but as noted above, all of the other SuDS features described are upstream of the proposed petrol interceptor and will serve to slow and treat surface water runoff before it reaches the interceptor or the outfall to the existing stream.

1.6.2 Foul Drainage

It is proposed to drain wastewater from the site by gravity, through a series of 150mm and 225mm diameter drains, to the new pumping station at the south-west of the site. As this is the low point of the site, this proposal allows for the drainage to discharge by gravity without resulting in excessive invert depths.

Uisce Éireann will ultimately decide on the feasibility of the existing wastewater infrastructure to cater for the proposed development. In this regard, a Pre-Connection Enquiry was submitted to Uisce Éireann, and a Confirmation of Feasibility Letter was received, dated 26th of April 2024. The letter notes that connection to the existing Uisce Éireann network, via the permitter pumping station and rising main, is feasible without any infrastructure upgrades required.

1.6.3 Water Supply

The water supply for the proposed amendment will be as per the details set out for the planning approved SHD project. These details are set out below.

Water supply from the site will be from the existing Irish Water network east of the site. The proposed watermain will be laid throughout the site with various valves, hydrants, meters etc in accordance with Irish Water's Code of Practice. The proposed watermain network will be

located outside a 20m wide riparian strip along the stream and also outside the 1 in 1000 year flood event.

1.7 CONSTRUCTION SEQUENCE

The construction sequence will be as per the details set out for the planning approved SHD project. These details are set out below.

The construction phase will be completed in the following sequence:

Stage 1- Excavation & site preparation works

Stage 2- Substructure works

Stage 3- Superstructure works

1.8 CONSTRUCTION MATERIALS

The construction materials to be used will be as per the details set out for the planning approved SHD project. These details are set out below.

The following construction materials will be required for the works:

- Concrete: This will be delivered by readymix truck and placed directly in prepared forms.
- Hardcore: This will be stored in the Construction compounds and delivered to site location by dump truck.
- The following materials will be stored in the construction compound as shown on Figure 2.1.
- PVC Drainage Piping and fittings.
- PVC ducting
- Acodrain drainage hardware

- Concrete Blocks and premixed mortar in bins
- Recessed Metal I.C. covers.
- Limestone and Concrete Paving Materials
- Pre-bagged bedding mortars and grouts
- Concrete mini pillar vaults
- Materials for Public lighting installation
- Builders site fencing, site access and traffic control equipment

1.9 SITE OPERATIVES

It is estimated that the works associated with the provision of all dwelling will require 25 no. of site operatives.

1.10 DURATION OF THE CONSTRUCTION PHASE

It is estimated that the works will take approximately 48 months to complete.

1.10.1 Foul Drainage

The foul drainage from the site will drain to a pumping station in the south east corner of the site. The gravity foul drainage network that drains the development to the proposed pumping station has been has been designed to provide self-cleansing velocity. The effluent will then drain to the Irish Water Network in accordance their requirements. This pumping station will be constructed in accordance with Irish Water Code of Practice and requirements. The proposed foul drainage network and pump station will be located outside a 20m wide riparian strip along the stream and also outside the 1 in 1000 year flood event.

1.10.2 Water Supply

Water supply from the site will be from the existing Irish Water network located east of the site. The proposed watermain will be laid throughout the site with various valves, hydrants, meters etc in accordance with Irish Water's Code of Practice. The proposed watermain network will be located outside a 20m wide riparian strip along the stream and also outside the 1 in 1000 year flood event.

1.11 CONSTRUCTION SEQUENCE

The construction phase will be completed in the following sequence:

Stage 1- Excavation & site preparation works

Stage 2- Substructure works

Stage 3- Superstructure works

1.12 CONSTRUCTION MATERIALS

The following construction materials will be required for the works:

- Concrete: This will be delivered by readymix truck and placed directly in prepared forms.
- Hardcore: This will be stored in the Construction compounds and delivered to site location by dump truck.
- The following materials will be stored in the construction compound as shown on Figure 2.1.
- PVC Drainage Piping and fittings.
- PVC ducting
- Acodrain drainage hardware
- Concrete Blocks and premixed mortar in bins

- Recessed Metal I.C. covers.
- Limestone and Concrete Paving Materials
- Pre-bagged bedding mortars and grouts
- Concrete mini pillar vaults
- Materials for Public lighting installation
- Builders site fencing, site access and traffic control equipment

1.13 SITE OPERATIVES

It is estimated that the works associated with the provision of all dwelling will require 25 no. of site operatives.

1.14 DURATION OF THE CONSTRUCTION PHASE

It is estimated that the works will take approximately 48 months to complete.

2.0 BASELINE DESCRIPTIONS

2.1 DESCRIPTION OF THE SITE LOCATION

The project site is located in an area of agricultural land to the west of the town of Drogheda. It is located approximately 3km to the west of the town centre. The site is bounded to the west by the M1 motorway, to the north by the R168 regional road, to the east by the Mell Stream and to the south by a local third-class road.

The project site is located within the River Boyne catchment and the main channel of the River Boyne is located approximately 600m to the south of the project site. The Mell Stream forms the eastern boundary to the project site and the site lies within the sub-catchment of this stream. This stream is a direct, first order tributary of the River Boyne and merges with this river approximately 725m downstream of the project site.

The River Boyne downstream of the project site is designated as the River Boyne and River Blackwater SAC, while the eastern boundary of the River Boyne and River Blackwater SPA downstream terminates adjacent to the River Boyne confluence with the Mell Stream. The section of the Boyne River at, immediately upstream and downstream of its confluence with the Mell Stream is representative of a transitional waterbody (i.e. it is subject to and influenced by tidal waters). The current water quality of lower transitional waters of the River Boyne are classed as being of Moderate Status and are of less than Good Status. Catchments.ie have identified pressures to this waterbody as relating to agricultural pressures and urban waste water pressures. Discharges from roads, motorway, other human activities and agricultural fertilisation have also been identified as sources of threats and pressures to the River Boyne and the River Boyne and River Blackwater SAC and SPA.

The site is underlain by karst geology and has been selected as a County Geological Heritage site. The topography of the site generally rises gently from south to north. However the Mell Stream flows along the base of a steep v-shaped valley. Steep slopes occur along the majority of the site's eastern boundary, however towards the south of the site the slopes give way to a shallower graded slope.

The land cover within the project site is dominated by improved agricultural grassland (GA1). Hedgerows and treelines occur within the site. A riparian treeline occurs along the Mell Stream towards the south of the site but further north on the steep, western bankside of the stream valley the cover is comprised of a mix of grassland and low scrub dominated by Ulex europaeus.

2.1.1 Results of Otter & Kingfisher Surveys

No field signs indicating the presence of otters along the Mell Stream corridor were identified during any of the four otter surveys completed along this watercourse. No holts or couches were identified. The Mell Stream is representative of a minor spate watercourse at the project site and based on the results of the surveys and the conditions encountered along the stream, it does not represent a principal watercourse relied upon by otters for foraging.

The Mell Stream corridor does not offer suitable nesting habitat for kingfishers, which require steep, vertical to near vertical banks of soft exposed earth faces for their nests. No such banks occur along the section of the Mell Stream flowing through the site. The majority of the stream corridor also lacks suitable perch sites for foraging or roost site for this species.

No kingfishers were observed on site during the 1-hour (minimum-length) watches completed from the vantage point to the north of the project site. In addition no incidental records of this species were recorded during otter surveys along the stream. Based upon the results of the field surveys and the conditions occurring at the project site the Mell Stream does not provide suitable habitat for kingfishers and is not relied upon by this species.

2.1.2 Results of Winter Waterbird Bird Surveys

2.1.2.1 Habitat Condition

Wintering wetland bird species such as golden plover and lapwing as well as other waterbirds such as herring gull etc. are known to rely on (for the former 2 species) and opportunistically use grassland and arable land for feeding and roosting. These species generally prefer to use areas of open and expansive grassland and arable land for feeding and roosting (FAS, 2017) and are less associated with enclosed and small field sizes (Milsom et al. 1998). Given the relatively small field size associated with the footprint of the project site, the field pattern does not represent optimal expansive and open habitat for such species.

Wintering waterbirds that forage on grassland habitats prefer short sward grassland, with the optimum height for species such as golden plover and lapwing reported to be around 7cm tall (Gillings & Fuller, 1999). Gregory (1987) found lapwing avoided grassland habitats with swards more than 10cm in height, while Milsom *et al.* (1998) demonstrated that both golden plover and lapwing preferred to feed in fields that had been mown twice rather than once during the season and virtually avoided unmown fields. The sward conditions within the project site during all surveys between November 2019 and February 2021 were representative of an unmown and ungrazed sward. Sward height has been maintained at approximately 25cm during the 2019/2020 and 2020/2021 winter season, with no evidence of mowing or grazing being undertaken. No change in the condition of the sward are recorded during more recent surveys in November 2023. The sward conditions on site during the baseline field surveys were representative of sub-optimal grassland for wintering waterbirds associated with the Boyne Estuary SPA; the River Nanny Estuary and Shore SPA; and the North-West Irish Sea cSPA.

In addition to the unsuitable condition of the grassland sward for supporting foraging waterbirds, the regular presence of buzzards over the project site and in woodland habitat to the east of the project site (observed during site visits in December 2019, September 2020; and January 2021)

is likely to further undermine the likelihood of the project site and surrounding area to be used as a foraging habitat by waterbirds.

2.1.2.2 Results of Surveys

No special conservation interest bird species of the Boyne Estuary SPA, the River Nanny Estuary and Shore SPA or the North-West Irish Sea cSPA were observed foraging, roosting or loafing within the project site or the surrounding area during all winter season surveys. Only one common snipe, which is a species not associated with either SPA, was observed on the site during the field survey in January 2021.

Based upon the results of the field surveys and the evaluation of the habitat conditions at the project site, the project site does not provide suitable habitat for special conservation interest bird species or waterbirds of the Boyne Estuary SPA; the River Nanny Estuary and Shore SPA; or the North-West Irish Sea cSPA and such species do not rely on the project site as an ex-situ foraging/roosting habitat.

2.2 DESCRIPTION OF THE EUROPEAN SITES

2.2.1 River Boyne and River Blackwater SAC

This site comprises the freshwater element of the River Boyne as far as the Boyne Aqueduct, the Blackwater as far as Lough Ramor and the Boyne tributaries including the Deel, Stoneyford and Tremblestown Rivers. These riverine stretches drain a considerable area of Meath and Westmeath, and smaller areas of Cavan and Louth. The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[7230] Alkaline Fens

[91E0] Alluvial Forests*

[1099] River Lamprey (Lampetra fluviatilis)

[1106] Atlantic Salmon (Salmo salar)

[1355] Otter (Lutra lutra)

The main areas of alkaline fen in this site are concentrated in the vicinity of Lough Shesk, Freehan Lough and Newtown Lough. . The hummocky nature of the local terrain produces frequent springs and seepages which are rich in lime.

Wet woodland fringes many stretches of the Boyne. The Boyne River Islands are a small chain of three islands situated 2.5 km west of Drogheda. The islands were formed by the build-up of alluvial sediment in this part of the river where water movement is sluggish. All of the islands are covered by dense thickets of wet, willow (Salix spp.) woodland, with the following species occurring: Osier (S. viminalis), Crack Willow (S. fragilis), White Willow (S. alba), Purple Willow (Salix purpurea) and Rusty Willow (S. cinerea subsp. oleifolia). A small area of Alder (Alnus glutinosa) woodland is found on soft ground at the edge of the canal in the north-western section of the islands. Along other stretches of the rivers of the site Rusty Willow scrub and pockets of wet woodland dominated by Alder have become established, particularly at the river edge of mature deciduous woodland. Ash (Fraxinus excelsior) and Downy Birch (Betula pubescens) are common in the latter, and the ground flora is typical of wet woodland with Meadowsweet (Filipendula ulmaria), Wild Angelica (Angelica sylvestris), Yellow Iris (Iris pseudacorus), horsetails (Equisetum spp.) and occasional tussocks of Greater Tussock-sedge (Carex paniculata).

Along much of the Boyne and along tributary stretches are found areas of mature deciduous woodland on the steeper slopes above the floodplain marsh or wet woodland vegetation. Many of these are planted in origin. However the steeper areas of King Williams Glen and Townley Hall wood have been left unmanaged and now have a more natural character. East of Curley Hole the woodland has a natural appearance with few conifers. Broadleaved species include oaks (Quercus spp.), Ash, willows, Hazel (Corylus avellana), Sycamore (Acer pseudoplatanus), Holly (Ilex aquifolium), Horse-chestnut (Aesculus hipposcastanum) and the shrubs Hawthorn (Crataegus monogyna), Blackthorn (Prunus spinosa) and Elder (Sambucus nigra). Southwest of Slane and in Dowth, some more exotic tree species such as Beech (Fagus sylvatica), and occasionally Lime (Tilia cordata), are seen.

The Boyne and its tributaries form one of Ireland’s premier game fisheries and the area offers a wide range of angling, from fishing for spring salmon and grilse to seatrout fishing and extensive brown trout fishing. Atlantic Salmon (Salmo salar) use the tributaries and headwaters as

spawning grounds. Although this species is still fished commercially in Ireland, it is considered to be endangered or locally threatened elsewhere in Europe and is listed on Annex II of the Habitats Directive. Atlantic Salmon run the Boyne almost every month of the year. The Boyne is most important as it represents an eastern river which holds large three-sea-winter fish from 20-30 lb. These fish generally arrive in February, with smaller spring fish (10 lb) arriving in April/May. The grilse come in July, water permitting. The river gets a further run of fish in late August and this run would appear to last well after the fishing season. The salmon fishing season lasts from 1st March to 30th September. The Blackwater is a medium sized limestone river which is still recovering from the effects of the arterial drainage scheme of the 1970s. Salmon stocks have not recovered to the numbers that existed pre-drainage. The Deel, Riverstown, Stoneyford and Tremblestown Rivers are all spring-fed, with a continuous high volume of water. They are difficult to fish because some areas are overgrown, while others have been affected by drainage with resultant high banks.

This site is also important for the populations of two other species listed on Annex II of the E.U. Habitats Directive which it supports, namely River Lamprey (Lampetra fluviatilis), which is present in the lower reaches of the Boyne River, and Otter (Lutra lutra), which can be found throughout the site

2.2.1.1 Documented threats & pressures

The NPWS Site Synopsis for this SAC states that intensive agriculture and the associated spreading of slurry and fertiliser poses a threat to the water quality of this SAC. The NPWS have documented threats and pressures to the SAC in their 2018 Natura 2000 Data Return Form. The threats and pressures to this SAC have been ranked in terms of low, medium and high impacts. The medium to high threats and pressures listed for this SAC are as follows the EU Natura 2000 threats and pressure codes precedes each of the threats and pressures listed below):

H01 - Pollution to surface waters (limnic, terrestrial, marine & brackish) - high

E01.04 – other patterns of habitation - medium

A07 – use of biocides, hormones and chemicals - medium

E03.02 - disposal of industrial waste - medium

G02.10 - other sport / leisure complexes

D01.02 - roads, motorways - medium

J02.11 - Siltation rate changes, dumping, depositing of dredged deposits - medium

A05.02 - stock feeding - medium

A10.01 - removal of hedges and copses or scrub – medium

E05 - Storage of materials – medium

J02.15 - Other human induced changes in hydraulic conditions - high

I01 - invasive non-native species – high

C01.01 - Sand and gravel extraction – medium

A01 – Cultivation – medium

B01.02 - artificial planting on open ground (non-native trees)

A08 – Fertilisation – medium

E03.04 - Other discharges

J02.10 - management of aquatic and bank vegetation for drainage purpose - medium

J02 - human induced changes in hydraulic conditions - medium

E02 - Industrial or commercial areas - high

2.2.1.2 Conservation Objectives

No Site-specific Conservation Objectives have been published for the River Boyne and River Blackwater SAC. The generic Conservation Objectives for this SAC is to maintain the

favourable conservation status of the habitat and species for which the SAC is designated. The favourable conservation status of Annex 2 species will be achieved when:

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

Favourable conservation status of Annex 1 habitat is achieved when:

- its natural range, and area it covers within that range, are 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, and;
- the conservation status of its typical species is favourable.

2.2.1.3 Qualifying Features of Interest occurring within the Zone of Influence of the Project

No examples of the qualifying habitat alluvial forests or alkaline fens occur downstream of the project site and there is no pathway connecting the project site to this qualifying habitat. As such they do not occur within the zone of influence of the project and are not considered further in this Natura Impact Statement. Given the presence of a hydrological pathway between the project site and this SAC and the mobile nature of all three qualifying species of this SAC, all are considered to occur within the zone of influence of the project.

2.2.2 River Boyne and River Blackwater SPA

The River Boyne and River Blackwater SPA is a long, linear site that comprises stretches of the River Boyne and several of its tributaries; most of the site is in Co. Meath, but it extends also into Cos Cavan, Louth and Westmeath. It includes the following river sections: the River Boyne from the M1 motorway bridge, west of Drogheda, to the junction with the Royal Canal, west of Longwood, Co Meath; the River Blackwater from its junction with the River Boyne in Navan to the junction with Lough Ramor in Co. Cavan; the Tremblestown River/Athboy River from the junction with the River Boyne at Kilnagross Bridge west of Trim to the bridge in Athboy, Co. Meath; the Stoneyford River from its junction with the River Boyne to Stonestown Bridge

in Co. Westmeath; the River Deel from its junction with the River Boyne to Cummer Bridge, Co. Westmeath. The site includes the river channel and marginal vegetation. Most of the site is underlain by Carboniferous limestone but Silurian quartzite also occurs in the vicinity of Kells and Carboniferous shales and sandstones close to Trim. The site is a Special Protection Area (SPA) under the E.U. Birds Directive of special conservation interest for the following species: Kingfisher. A survey in 2010 recorded 19 pairs of Kingfisher (based on 15 probable and 4 possible territories) in the River Boyne and River Blackwater SPA. A survey conducted in 2008 recorded 20-22 Kingfisher territories within the SPA. Other species which occur within the site include Mute Swan (90), Teal (166), Mallard (219), Cormorant (36), Grey Heron (44), Moorhen (84), Snipe (32) and Sand Martin (553) – all figures are peak counts recorded during the 2010 survey. The River Boyne and River Blackwater Special Protection Area is of high ornithological importance as it supports a nationally important population of Kingfisher, a species that is listed on Annex I of the E.U. Birds Directive.

2.2.2.1 Existing threats & Pressures to the River Boyne and River Blackwater SPA

The Natura 2000 Standard Data Form for the SPA has identified the following pressures as having a medium to high negative impacts to its conservation status:

D01.02 – roads, motorways - high

J02 - human induced changes in hydraulic conditions - medium

E01 - Urbanised areas, human habitation - high

E01.03 - dispersed habitation - high

2.2.2.2 River Boyne and River Blackwater SPA Conservation Objectives

No Site-specific Conservation Objectives for the River Boyne and River Blackwater SPA.

The site-specific Conservation Objectives for SPA and kingfisher which is the only special conservation interest of the SPA are as described for Annex 2 species detailed in Section 2.2.1.2 above.

2.2.2.3 Special Conservation Interests occurring within the Zone of Influence of the Project

Given the presence of a hydrological pathway linking the project site to the River Boyne and the reliance on this watercourse by Kingfishers this special conservation interests of the SPA is considered to occur within the zone of influence of the project.

2.2.3 Boyne Coast and Estuary SAC

Boyne Coast and Estuary SAC is a coastal site which includes most of the tidal sections of the River Boyne, intertidal sand- and mudflats, saltmarshes, marginal grassland, and the stretch of coast from Bettystown to Termonfeckin that includes the Mornington and Baltray sand dune systems.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1130] Estuaries

[1140] Tidal Mudflats and Sandflats

[1210] Annual vegetation of drift lines

[1310] Salicornia Mud

[1330] Atlantic Salt Meadows

[2110] Embryonic Shifting Dunes

[2120] Marram Dunes (White Dunes)

[2130] Fixed Dunes (Grey Dunes)*

2.2.3.1 Existing threats & Pressures to the Boyne Coast and Estuaries SAC

The Natura 2000 Standard Data Form for the SAC has identified the following pressures as having a medium to high negative impacts to its conservation status:

D01.05 – Bridge; viaduct - medium

J02.01.03 - infilling of ditches, dykes, ponds, pools, marshes or pits - medium

K02 - Biocenotic evolution, succession - high

L07 - storm, cyclone - high

J02.02 - Removal of sediments (mud...) - medium

J02.12 - Dykes, embankments, artificial beaches, general - medium

H01 - Pollution to surface waters (limnic, terrestrial, marine & brackish) - high

G01.03.02 - off-road motorized driving - medium

G01.02 - walking, horseriding and non-motorised vehicles - medium

I01 - invasive non-native species - high

E01 - Urbanised areas, human habitation - medium

2.2.3.2 Boyne Coast and Estuaries SAC Conservation Objectives

Site-specific Conservation Objectives have been published for this SPA. The site-specific conservation objectives for this SPA are detailed in Section 4 below.

2.2.3.3 Qualifying Features of Interest occurring within the Zone of Influence of the Project

Of the eight qualifying habitats of this SAC only estuaries and tidal mudflats and sandflats occur downstream within the channel section of the River Boyne and its estuary. All other habitats are either: not influenced by lotic processes and freshwater/transitional water quality or are located outside the estuary on the Irish Sea coast line where they will not be sensitive to any discharges derived from the project site. As such only estuaries and tidal mudflats and sandflats are considered further as part of this Natura Impact Statement and all other qualifying habitat are eliminated at this stage from further consideration.

2.2.4 Boyne Estuary SPA

This moderately-sized coastal site is situated west of Drogheda on the border of Counties Louth and Meath. The site comprises most of the estuary of the Boyne River, a substantial river which drains a large catchment. Apart from one section which is over 1 km wide, its width is mostly less than 500 m. The river channel, which is navigable and dredged, is defined by training walls, these being breached in places. Intertidal flats occur along the sides of the channelled river. The sediments vary from fine muds in the sheltered areas to sandy muds or sands towards the river mouth. The linear stretches of intertidal flats to the north and south of the river mouth are mainly composed of sand. One or more species of Eelgrass (Zostera spp.) occur in the estuary. Parts of the intertidal areas are fringed by salt marshes, most of which are of the Atlantic type, and dominated by Sea-purslane (Halimione portulacoides). Other species present include Common Saltmarsh-grass (Puccinellia maritima), Sea Plantain (Plantago maritima), Lax-flowered Sea-lavender (Limonium humile) and Glasswort (Salicornia spp.). Common Cord-grass (Spartina anglica) occurs frequently on the flats and salt marshes. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species:

Shelduck,

Oystercatcher,

Golden Plover,

Grey Plover,

Lapwing,

Knot,

Sanderling,

Black-tailed Godwit,

Redshank,

Turnstone and

Little Tern.

The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

2.2.4.1 Existing threats & Pressures to the Boyne Estuary SPA

The site-specific conservation objectives supporting documentation for the SPA has identified sources of disturbance to the special conservation interest bird species of the SPA. The activities that have been identified as having moderate to high disturbance impacts are as follows:

- Aircrafts (Moderate)
- Power-boating and water skiing (Moderate)
- Sailing (Moderate)
- Walking including dog walking (Moderate to High)
- Horse-riding (Moderate)
- Other hunting/shooting (Moderate)

2.2.4.2 Boyne Estuary SPA Conservation Objectives

Site-specific Conservation Objectives have been published for this SPA. The site-specific conservation objectives for this SPA are detailed in Section 4 below.

2.2.4.3 Special Conservation Interests occurring within the Zone of Influence of the Project

All special conservation interests bird species and wetland habitats consisting of estuaries and tidal mudflats and sandflats are considered to occur within the zone of influence of the project site given the hydrological pathway linking the project site to these features of the SPA.

The potential for the project site to function as an ex-situ foraging/roosting habitat for special conservation interest bird species or waterbirds of the SPA, and particularly golden plover and lapwing, was identified as requiring further examination during the screening of the project. The results of the winter bird surveys detailed in Section 2.1.2 above indicate that the project site does not have the potential to function as a high-value foraging/roosting site for such bird species and is not relied upon or used by these species as an ex-situ site. Based upon the results of these

surveys the potential for the project site to function as an ex-situ foraging/roosting habitat is not a factor that has the potential to link the project to this SPA and is therefore not considered further as part of this Natura Impact Statement.

2.2.5 River Nanny Estuary and Shore SPA

The site comprises the estuary of the River Nanny and sections of the shoreline to the north and south of the estuary (c. 3 km in length), in Co. Meath. The estuarine channel, which extends inland for almost 2 km, is narrow and well sheltered. Sediments are muddy in character and edged by saltmarsh and freshwater marsh/wet grassland. The saltmarsh is best developed in the eastern portion of the estuarine channel, with species such as Sea Plantain (Plantago maritima), Sea Aster (Aster tripolium), Red Fescue (Festuca rubra) and Sea Purslane (Halimione portulacoides) occurring. Further up the estuary, the marsh habitats support species such as Bulrush (Typha latifolia) and Yellow Flag (Iris pseudacorus). The shoreline, which is approximately 500 m in width to the low tide mark, comprises beach and intertidal habitats. It is a well-exposed shore, with coarse sand sediments. The welldeveloped beaches, which are backed in places by clay cliffs, provide high tide roosts for the birds. The village of Laytown occurs in the northern side of the River Nanny estuary. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Oystercatcher, Ringed Plover, Golden Plover, Knot, Sanderling and Herring Gull. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds. This is an important site for wintering waders, with nationally important populations of Golden Plover (1,759), Oystercatcher (1,014), Ringed Plover (185), Knot (1,140) and Sanderling (240) present (all figures are mean peaks for the 5 year period 1995/96- 1999/2000). The populations of Knot and Sanderling are of particular note as they represent approximately 4% of their respective national totals. Herring Gull (609) also occurs here in nationally important numbers. A range of other waterbirds also occurs, including Cormorant (35), Light-bellied Brent Goose (145), Mallard (76), Grey Plover (55), Lapwing (1,087), Dunlin (721), Bar-tailed Godwit (59), Curlew (107), Redshank (150), Turnstone (59), Blackheaded Gull (926), Common Gull (66) and Great Black-backed Gull (70). The site is of most importance as a roost area for the birds but the intertidal flats also provide feeding habitat. The River Nanny Estuary and Shore SPA is of ornithological importance as it supports five species of wintering waterbirds and one gull species in numbers of national importance. The regular occurrence of two species listed on Annex I of the E.U. Birds Directive, i.e. Golden Plover and Bar-tailed Godwit, is of note.

2.2.5.1 Existing threats & Pressures to the River Nanny Estuary and Shore SPA

The site-specific conservation objectives supporting documentation for the SPA has identified sources of disturbance to the special conservation interest bird species of the SPA. The activities that have been identified as having moderate to high disturbance impacts are as follows:

- Aircrafts (Moderate)
- Power-boating and water skiing (Moderate)
- Sailing (Moderate)
- Walking including dog walking (Moderate to High)
- Horse-riding (Moderate)
- Other hunting/shooting (Moderate)

2.2.5.2 River Nanny Estuary and Shore SPA Conservation Objectives

Site-specific Conservation Objectives have been published for this SPA. The site-specific conservation objectives for this SPA are detailed in Section 4 below.

2.2.5.3 Special Conservation Interests occurring within the Zone of Influence of the Project

The potential for the project site to function as an ex-situ foraging/roosting habitat for special conservation interest bird species or waterbirds of the SPA, and particularly golden plover and herring gull was identified as requiring further examination during the screening of the project. The results of the winter bird surveys detailed in Section 2.1.2 above indicate that the project site does not have the potential to function as a high value foraging/roosting site for such bird species and is not relied upon or used by these species as an ex-situ site. Based upon the results of these surveys the potential for the project site to function as an ex-situ foraging/roosting habitat is not a factor that has the potential to link the project to this SPA. Given that this factor was the only pathway identified as having any potential to link the project to this SPA and given the confirmed absence of such a pathway (following the completion of the winter surveys) it can be concluded that there is no pathway connecting the project to this SPA and therefore the project will not have the potential to result in adverse effects to this SPA and it can be excluded from further consideration as part of this Natura Impact Statement.

2.2.6 North-West Irish Sea cSPA

The North-west Irish Sea cSPA constitutes an important resource for marine birds. The estuaries and bays that open into it along with connecting coastal stretches of intertidal and shallow subtidal habitats, provide safe feeding and roosting habitats for waterbirds throughout the winter and migration periods. These areas, along with more pelagic marine waters further offshore, provide additional supporting habitats (for foraging and other maintenance behaviours) for those seabirds that breed at colonies on the north-west Irish Sea's islands and coastal headlands. These marine areas are also important for seabirds outside the breeding period.

his SPA extends offshore along the coasts of counties Louth, Meath and Dublin, and is approximately 2,333km2 in area. This SPA is ecologically connected to several existing SPAs in this area.

The breeding seabird species listed for those SPAs, which abut the North-West Irish Sea SPA are: Fulmar (Lambay Island SPA); Cormorant (Skerries Island SPA; Ireland's Eye SPA; Lambay Island SPA); Shag (Skerries Island SPA; Lambay Island SPA); Lesser Black-backed Gull (Lambay Island SPA); Herring Gull (Skerries Island SPA; Ireland's Eye SPA; Lambay Island SPA); Kittiwake (Lambay Island SPA; Ireland's Eye SPA; Howth Head SPA); Roseate Tern (Rockabill SPA); Common Tern (Rockabill SPA;); Arctic Tern (Rockabill SPA); Little Tern (Boyne Estuary SPA); Guillemot (Lambay Island SPA, Ireland's Eye SPA); Razorbill (Lambay Island SPA, Ireland's Eye SPA); and Puffin (Lambay Island SPA). The Common Tern population that is listed for the nearby South Dublin Bay and River Tolka Estuary SPA is also likely to use this SPA as a foraging resource.

Informed by two surveys of the western Irish Sea region in 2016 an estimated 120,232 and 34,626 individual marine birds occurred in this SPA during autumn and winter respectively. Those marine bird species whose estimated abundances equalled or exceeded 1% of the total estimated size of the winter assemblage are: Red-throated Diver (538), Fulmar (506), Little Gull (391), Kittiwake (944), Black-headed Gull (508), Common Gull (2,866), Herring Gull (6,893), Great Black-backed Gull (2,096), Razorbill (4,638) and Guillemot (13,914). The estimated 2016 summer abundance of Manx Shearwater in the North West Irish Sea SPA is 13,010 and is of international importance. The estimated 2016 autumn and winter abundances of Great Northern Diver in the North West Irish Sea SPA is 248 and 230 respectively and are of international importance. The estimated abundances of Common Scoter over parts of this SPA can reach significant numbers (e.g. 14,567 in December 2018) which is also of international importance.

2.2.6.1 Existing threats & Pressures to the North-West Irish Sea cSPA

No existing threats or pressures to this cSPA have been published by the NPWS. Given that this cSPA encompasses both the River Nanny Estuary and Shore SPA and the Boyne Estuary SPA it is considered that the threats and pressures reported for this SPAs also apply for this cSPA.

2.2.6.2 North-West Irish Sea cSPA Conservation Objectives

Site-specific Conservation Objectives have not been published for this cSPA. The site-specific conservation objectives for the gull species of the River Nanny Estuary and Shore SPA and the Boyne Estuary SPA, as detailed in Section 4 below, considered to be applicable to for the gull species of this cSPA.

2.2.6.3 Special Conservation Interests occurring within the Zone of Influence of the Project

The potential for the project site to function as an ex-situ foraging/roosting habitat for special conservation interest gull species of the cSPA was identified as requiring further examination during the screening of the project. The results of the winter bird surveys detailed in Section 2.1.2 above indicate that the project site does not have the potential to function as a high value foraging/roosting site for such bird species and is not relied upon or used by these species as an ex-situ site. Based upon the results of these surveys the potential for the project site to function as an ex-situ foraging/roosting habitat is not a factor that has the potential to link the project to this SPA. Given that this factor was the only pathway identified as having any potential to link the project to this cSPA and given the confirmed absence of such a pathway (following the completion of the winter surveys) it can be concluded that there is no pathway connecting the project to this cSPA and therefore the project will not have the potential to result in adverse effects to this cSPA and it can be excluded from further consideration as part of this Natura Impact Statement.

3.0 CONSIDERATION OF POTENTIAL IMPACTS TO EUROPEAN SITES

3.1 WATER RUNOFF

The potential impacts that may arise as a result of the project relate to the discharge of contaminated water from the project site during the construction phase and operation phase to the Mell Stream and on to the Boyne River and Estuaries European Sites.

Earthworks associated with the construction phase of the project will denude surfaces and have the potential to generate silt-laden runoff from the project site. In the event that water generated at the construction footprint is of a poor water quality standard or becomes contaminated from construction works, its discharge will have the potential to perturb water quality in the Mell Stream and downstream along the main channel of the River Boyne. In addition, potentially contaminating materials such as oils, fuels, lubricants, other construction related solutions and cement-based products will be used on site during the construction phase and the accidental emission of such material via surface water runoff or its penetration to groundwater and discharge via karstic conduits to the Mell Stream and on to the River Boyne will have the potential to undermine water quality within the river and contribute to existing water quality pressures to the River Boyne Estuary.

During the operation phase surface water generated at the project site will discharge via the proposed surface water pathway to the Mell Stream to the Southeast of the project site and will be conveyed downstream to the River Boyne. The potential will exist for surface water runoff from car parking areas to be contaminated in the event of fuel leaks or accidental spills. Any untreated discharge of contaminated water runoff from the project site to the Mell Stream and on to the River Boyne could contribute to existing pressures to water quality within the Boyne River and Estuaries European Sites.

While it is noted that the uncontrolled release of contaminated drainage waters to the Mell Stream and indirectly to the River Boyne is likely to be rapidly diluted and distributed within tidal waters of the River Boyne at its confluence with the Mell Stream, any deposition of contaminants such as hydrocarbons or cement material to the lotic habitats and intertidal habitats further downstream could result in the contamination of benthic fauna and epifauna which function as a prey resource of freshwater qualifying fish species and the wetland bird species of the Boyne Estuary SPA. The toxic effect of such contaminants, particularly

hydrocarbons, on feeding, growth, development and reproduction are known to cascade and bioaccumulate throughout the food chain affecting benthic fauna, fish, birds, including kingfisher and mammal, including otters (Ferrando, 2015).

The significance of the impact of the uncontrolled release of contaminants from the project site to the River Boyne and downstream to intertidal habitats of the Boyne Estuary and associated fauna will depend upon the frequency of the release and the concentration of contaminating materials in surface water discharging from the site. In a worst-case scenario the ongoing discharge of waters with high concentrations of contaminating substances could over time lead to the deposition of such contaminants in lotic and wetland intertidal habitats. Revitt et al. (2014) demonstrated the potential of car parking areas to result in a build-up of diffuse pollution loads on their surfaces with subsequent mobilization and direct discharge to receiving waters. In the absence of appropriate design safeguards (such as the inclusion of attenuation and hydrocarbon interceptors) the discharge of such contaminated surface water from the project site during the operation phase could represent a source of ongoing contamination to surface drainage waters being discharged to the Mell Stream and downstream to the River Boyne. Accidental spillages of contaminating materials during the construction phase and/or operation phase could also represent sources of acute pollution to these watercourses.

The exposure of lotic and estuarine fauna, including fish, birds and mammals, to such contaminants can result in disturbance and stress effects. Upon detection of such contaminants mobile species such as fish, kingfishers and wetland birds or otters may simply move away from the affected area, with the potential to result in a decline in the distribution of these species within the Boyne River and Estuaries European Sites. For sessile benthic fauna, upon which the freshwater qualifying fish species of the SAC and many of the wetland bird species of the SPA rely, there will be no potential for escape and their exposure to contaminants may result in biological changes designed to aid survival. In some cases these benthic species may acclimatise to contaminated conditions, while in others the contaminants may lead to mortality and changes in the population and community structure of intertidal wetland habitats. Such an effect would have the potential to undermine the conservation status of lotic and wetland habitats occurring downstream of the project, with consequent effects of qualifying species such as Atlantic salmon, lamprey species, kingfishers, otters and wetland bird species further downstream at the Boyne Estuary SPA.

3.2 DISTURBANCE TO KINGFISHERS & OTTERS

Surveys were completed at the project site along the Mell Stream to determine whether or not this watercourse is relied upon by kingfishers and/or otters as a breeding site, resting place or foraging resource. The details of the surveys completed have been provided in Section 1.3 above and the results have been described in Section 2.1.1 above. As noted above the Mell Stream is not relied upon by either of these species and does not offer optimum foraging habitat for them. Based upon the conditions occurring along the Mell Stream and the absence of both species during field surveys, activities during the construction phase of the project will not have the potential to result in a disturbance effect to these species and will not have the potential to interfere with the conservation status of the populations of both species supported by the River Boyne and River Blackwater SAC.

Given the sub-optimal conditions along the Mell Stream adjacent to the project site, the absence of any evidence of use of this stretch of the stream by both species and the set back of the project site from the Mell Stream by 20m for the majority of the project, there will be no potential for the operation phase of the to result in a disturbance effect to these species or interfere with the future conservation prospects for the populations of both species supported by the River Boyne and River Blackwater SAC.

In light of the above it is considered that the project will not have the potential to result in a disturbance effect to either otters or kingfisher and thus this potential effect is not considered further in this Natura Impact Statement.

3.3 IN-COMBINATION EFFECTS

The potential exists for the project to overlap with other construction projects within the Boyne catchment downstream of the project site. A review of the Louth and Meath County Council planning portal was completed on the 1st March 2024 to identify other recently approved or live planning applications, with which the project could combine to result in negative effects to the water quality of the River Boyne and adverse effects to the conservation status of the qualifying feature of interest/special conservation interests of the Boyne River and Estuaries European Sites. A number of planning applications were identified between the project site and the Boyne Estuary in the immediate vicinity of the River Boyne corridor. However the majority of these planning applications relate to the minor project associated with changes to existing dwellings

or commercial buildings. Such projects are of a small scale and are not considered to present a risk of likely significant effects, alone or in-combination with other plans or projects, the Boyne River and Estuaries European Sites. This consideration is supported by the findings of the Local Authority Planners who state in the planners reports for such projects that there will be no risk of likely significant effects to European Sites. Given the above such projects are not itemised in this section. As such only three larger scale projects were identified as occurring downstream of the project site along either the Mell Stream or the River Boyne corridors. These projects are listed below and the potential for the current project to combine with these projects is also examined.

Planning Reference 221018: this project relates to the construction of an 8,005sqm assisted living facility with a total of 98 accommodation units in a range of accommodation types as follows: A) 28 no. reablement studios designed to help people to retain or regain their skills and confidence so they can learn to manage again after a period of illness. B) 52 no. 1 bedroom assisted living suites, C) 16 no. 2 bedroom assisted living suites. D) 2 no. 1 bed units to be provided through the subdivision of an existing house on site for use as assisted living suites, or as staff/visitor accommodation. The proposed facility will include cafe/restaurant facilities, staff and administration spaces, nurses station, recreation rooms, meeting spaces, treatment rooms and landscaped gardens together with all associated site development works including boundary walls and fences, car parking, waste water pumping station, surface water attenuation and connections to pubic utilities, as well as plant rooms, a bin store, roof mounted solar panels and an ESB substation. The facility will deliver a range of tailored care packages to elderly residents on a rental basis only, none of the units will be made available for sale.

In the event that the construction phase of this project is to overlap with the construction phase of the current project the potential would exist for cumulative impacts to surface water quality and for the discharges of polluted waters from both proposed development sites to the European Sites downstream. However it is noted that an Natura Impact Statement has been prepared for this residential development project and has specified a range of mitigation measures that aim to avoid the potential for this project to result in negative impacts to surface water quality and adverse effects to the European Sites downstream. The Natura Impact Statement for this project concludes that with the implementation of all mitigation measures the project will not have the potential, alone or in-combination with other plans or projects, to result in adverse effects to European Sites.

An Appropriate Assessment of this project has been completed by the Planning Authority. The Appropriate Assessment was informed by the Natura Impact Statement and other relevant planning application documentation submitted. The Planning Authority determined that, with the implementation of all mitigation measures, the project will not have the potential, alone or in-combination with other plans or projects, to result in adverse effects to European Sites. On the basis of this finding, and the mitigation measures set out for this project, it is considered that the current project, even if its construction phase were to overlap with the construction phase of this project, will not combine with this project to result in cumulative adverse effects to European Sites downstream.

Planning Reference 22975: this project relates to the construction of an 8,005sqm assisted living facility with a total of 98 accommodation units in a range of accommodation types as follows: A) 28 no. reablement studios designed to help people to retain or regain their skills and confidence so they can learn to manage again after a period of illness. B) 52 no. 1 bedroom assisted living suites, C) 16 no. 2 bedroom assisted living suites. D) 2 no. 1 bed units to be provided through the subdivision of an existing house on site for use as assisted living suites, or as staff/visitor accommodation. The proposed facility will include cafe/restaurant facilities, staff and administration spaces, nurses station, recreation rooms, meeting spaces, treatment rooms and landscaped gardens together with all associated site development works including boundary walls and fences, car parking, waste water pumping station, surface water attenuation and connections to pubic utilities, as well as plant rooms, a bin store, roof mounted solar panels and an ESB substation. The facility will deliver a range of tailored care packages to elderly residents on a rental basis only, none of the units will be made available for sale. A screening report for Appropriate Assessment was prepared as part of the planning application documentation and concluded that this project will not have the potential, alone or in-combination with other plans or projects, to result in likely significant effects to European Sites. A screening for Appropriate Assessment was completed by the Planning Authority for this project and it was determined by the Planning Authority that this project will not have the potential, alone or in-combination with other plans or projects, to combine with other projects to result in likely significant effects. On the basis of this determination it is considered that the current project will not combine with this project to result in likely significant effects to European Sites.

Planning Reference 22954: this project relates to a retail and commercial development comprising the provision of 10 no. retail units including a part-licenced anchor retail supermarket store (Unit 1) (4,085sq.m gfa), a DIY/Home store, including a garden centre (Unit 10) (2,350sq.m gfa), 8 no. smaller retail/commercial units, including a café and pharmacy (Units 2-8) (ranging in size from 300sq.m – 760sq.m gfa) and 1 no. single storey Drive-Thru Restaurant/Café unit (375sq.m). A deliveries area, service yard and ground mounted plan units will be provided to the side (south) and rear (west) of Retail Unit 1, a dedicated set down point is also proposed adjacent to the front entrance to Retail Unit 1. Deliveries will also be accommodated to the rear (south) of the proposed retail units (Units 2-10) with a truck turning area provided to the rear (south) of unit 10. Dock levellers will also be provided to the rear of units 2-10 to facilitate loading and unloading of goods. A total of 311 no. car parking spaces are proposed to serve the proposed development, including 23 no. accessible parking spaces, 2 no. click and collect spaces and 17 no. parent and child spaces. A bus/coach parking area comprising 4 no. bus/coach parking spaces is also provided within the eastern portion of the site, adjacent to the Trinity Street Frontage. 104 no. bicycle parking spaces are proposed at surface level to serve the proposed retail units. A partially covered pedestrian circulation space will be provided to the front of each of the proposed retail units.

In the event that the construction phase of this project is to overlap with the construction phase of the current project the potential would exist for cumulative impacts to the water quality of the Mell Stream and for the discharges of polluted waters from both proposed development sites to the European Sites downstream. However it is noted that an Natura Impact Statement has been prepared for this retail and commercial project and has specified a range of mitigation measures that aim to avoid the potential for this project to result in negative impacts to the water quality of the Mell Stream and adverse effects to the European Sites downstream. The Natura Impact Statement for this project concludes that with the implementation of all mitigation measures the project will not have the potential, alone or in-combination with other plans or projects, to result in adverse effects to European Sites. On the basis of this finding, and the mitigation measures set out for this project, it is considered that the current project, even if its construction phase were to overlap with the construction phase of this project, will not combine with this project to result in cumulative adverse effects to European Sites downstream.

Planning Reference 211046: this project relates to a Louth County Council Part 8 planning application for the development of 20 no. residential units. A screening for Appropriate

Assessment was completed by the Planning Authority for this project and it was determined by the Planning Authority that this project will not have the potential, alone or in-combination with other plans or projects, to combine with other projects to result in likely significant effects. On the basis of this determination it is considered that the current project will not combine with this project to result in likely significant effects to European Sites.

Planning Reference 1858: this project relates to an extension of duration of a permitted development that will consist of Permission for a Residential development of 190 units & a 430 sq.m. creche which, shall comprise of 3-bed apartments, 2-bed apartments, 4-bed houses, 3-bed houses, 2-bed dwellings, 3-bed duplex units, connection to public services & all associated site works. This project is located approximately 185m to the east, southeast of the current project site and the Mell Stream flows through the boundary of this project site. In the absence of adequate measures to safeguard the water quality of the Mell Stream during the construction phase and/or operation phase phase of this development the potential will exist for this project to result in similar impacts to water quality are identified for the current project. In the event that the construction phases of both developments are to overlap the potential will existing for cumulative negative impacts to the water quality of the Mell Stream and for adverse effects to the freshwater Annex 2 species of the River Boyne and River Blackwater SAC occurring downstream along the River Boyne and River Blackwater SAC and the wetland habitats and birds species of the Boyne Estuary European Sites further downstream.

In addition, in the absence of appropriate mitigation measures for both this project and the current project the potential will exist for the operation phases of both to pose a risk to the water quality of the Mell Stream and consequent risks (as described in Section 3.1 above) to the Boyne River and Estuaries European Sites.

Planning Reference 20733: this project relates to a planning application that was granted permission by Louth County Council for the construction of a new cargo warehouse building on the existing quay side storage area and all associated site development works. An Appropriate Assessment Screening Report was submitted as part of the planning documentation for this project. The Screening Report was reviewed by Louth County Council and it was determined by the planning authority that this project will not have the potential, alone or in-combination with other plans or projects, to result in likely significant effects to European Sites. Given the determination made for this project, the current project will not have the potential to

combine with this project to result in cumulative negative effects to the water quality of the River Boyne Estuary or the conservation status of the Boyne Estuary European Sites.

Planning Reference 18761: this project relates to a planning application that was granted permission by Louth County Council for a development consisting of cellular vertical storage units for bulk materials, together with associated site development works. A Natura Impact Statement was prepared for this project and mitigation measures were specified to ensure that this project does not result in the discharge of contaminated surface waters to the Boyne Estuary European Sites. Louth County Council reviewed the Natura Impact Statement and determined that provided all mitigation measures are implemented, there will be no potential for this project to adversely impact on the integrity of any European Sites. Given the findings of this assessment and the conditioning of all mitigation measures outlined in the Natura Impact Statement for this project as part of the grant of permission, there will be no potential for this project to combine with the current project to result in cumulative negative impacts to the water quality of the Boyne Estuary or adversely affect the conservation status of the Boyne Estuary European Sites.

With regard to the existing threats and pressures to the SPA and SAC as documented by the NPWS in their Natura 2000 Standard Data Return Forms and listed in Section 2.2 above it is noted that the majority of these threats/pressures are not related to the activities that will arise during the construction phase or operation phase of the project and that the project will not have the potential to result in activities that could exacerbate the risks posed by the majority of the threats and pressures listed for each of the SACs and SPAs above. However the existing threats and pressures to the Boyne River and Estuaries European Sites that are of relevance to the project and with which the project could combine to result in adverse cumulative effects are:

H01 - Pollution to surface waters (limnic, terrestrial, marine & brackish)

J02.11 - Siltation rate changes, dumping, depositing of dredged deposits

E05 - Storage of materials

E03.04 - Other discharges

E01 - Urbanised areas, human habitation

In the absence of appropriate design and mitigation measures the project will have the potential to combine with these existing threats and pressures to result in adverse cumulative effects to the Boyne River and Estuaries European Sites.

4.0 DESCRIPTION OF HOW THE PROJECT COULD AFFECT KEY HABITATS & SPECIES

An NIS is required to assess the potential for impacts to the integrity of a European Site, with respect to the site's structure and function and its Conservation Objectives. The structural and functional elements of a European Site to maintain the favourable conservation status of qualifying features of interest/special conservation interests are embedded into the list of detailed SSCOs for each of the site's interest features. As such a European Sites' SSCOs represent the parameters against which a project's potential to adversely affect the integrity of a European Sites should be considered.

Where site-specific conservation objectives have not be published for some of the European Sites (i.e. the River Boyne and River Blackwater SAC and SPA) that are assessed as part of this Natura Impact Statement, site-specific conservation objectives for these same qualifying features of interest are taken from those published for other European Sites. The site-specific conservation objective used for Atlantic salmon, river lamprey and otters are taken from the River Blackwater SAC.

Kingfisher is listed as a special conservation interest for two SPAs in Ireland, the River Boyne and River Blackwater SPA and the River Nore SPA. No detailed Conservation Objectives have been published for kingfishers for either of these SPAs. In order to assess the project against detailed Conservation Objectives, the published Conservation Objectives for other wetland bird species, resident in Ireland were used. Conservation Objectives for cormorant were selected to be used as part of this assessment. It is acknowledged that the ecology of cormorant and kingfisher differ significantly, however due to the residence of both species in Ireland during both the breeding and non-breeding season, the fact that both rely on a similar foraging resource (mainly fish species) and that no Conservation Objectives are published for any other bird species with a more similar ecology to kingfisher, published Conservation Objectives for cormorant have been used. The Conservation Objectives used for kingfisher in this assessment have been taken from River Shannon and River Fergus Estuaries SPA (004077) for breeding cormorant and Castlemaine Harbour SPA for non-breeding cormorant.

Table 4.1 lists the Conservation Objectives attributes and targets for each of the qualifying features of interest/special conservation interests of the Boyne River and Estuaries European Sites and examines the potential for the project to result in adverse effects to these attributes and targets. .

It is noted that the appraisal outlined in Table 4.1 has been completed without any regard to the mitigation measures that will be implemented as part of the project. These mitigation measures are considered later in Section 6 below.

Table 4.1: **Consideration of Potential Impact to the Site-Specific Conservation Objectives for Features of Interest occurring within the Zone of Influence of the Project**

Attribute No.	Attribute	Target	Consideration of likely significant effects
Boyne Estuary SPA			
Special conservation interest bird species			
1	Population trend	Long term population trend stable or increasing	The discharge of inadequately treated surface water from the project site to the Mell Stream and downstream to the Boyne Estuary SPA will have the potential to combine with other sources of existing pressures to water quality within the estuaries transitional waters. Adverse effects to water quality downstream at the estuary, will in turn have the potential to undermine the habitats and the associated prey resource upon which the wetland bird species of the SPA rely. Such adverse effects could, over time, result in a decline in the long-term population trend supported by the sections of the SPA surrounding the project site and discharge locations.
2	Distribution	No significant decrease in the range, timing and intensity of use of areas by the special conservation interest bird species of the SPA other than that occurring from natural patterns of variation	For reasons outlined for Attribute No. 1 above the discharge of inadequately treated and contaminated surface water from the project site will have the potential to undermine the targets for this attribute.

Boyne Coast and Estuaries SAC			
Tidal mudflats and sandflats			
3	Habitat area	The permanent habitat area is stable or increasing, subject to natural processes.	The discharge of inadequately treated and contaminated surface water to this habitat will not have the potential to undermine its extent within the SAC.
4	Community distribution	Conserve the following community types in a natural condition: Intertidal estuarine mud and fine sand with *Hediste diversicolor* and *Corophium volutator* community; and Fine sand dominated by bivalves community complex..	The discharge of inadequately treated and contaminated surface water to this habitat could contribute to water quality pressures within the estuary and result in changes to the community of infauna supported by this habitat.
Estuaries			

5	Habitat area	Area stable or increasing, subject to natural processes, including erosion and succession.	The discharge of inadequately treated and contaminated surface water to this habitat could result in changes to the vegetation community of this habitat, resulting over time in a decrease in the extent of this habitat.
6	Community distribution	Conserve the following community types in a natural condition: Intertidal estuarine mud and fine sand with *Hediste diversicolor* and *Corophium volutator* community; and Subtidal fine sand dominated by polychaetes community.	For reasons outlined for Attribute No. 5 above the discharge of inadequately treated and contaminated surface water to this habitat could result in a decrease in the distribution of this habitat.
River Boyne and River Blackwater SAC			
River Lamprey			
7	Distribution (extent of anadromy for sea lamprey)	Access to all watercourses downs to first order streams for brook and river lamprey. Greater than 75% of main stem length of rivers accessible from the estuary.	There will be no reduction in species distribution given that alterations to river morphology and structures which could limit habitat accessibility are not proposed.
8	Population structure of juveniles	At least three age/size groups present	There will be potential for the project to impact on the population structure of juveniles occurring along the River Boyne. The pathways that could affect population structure are the discharge of surface runoff from construction areas and related activities during the construction phase and from impermeable surfaces during the operation phase.

			It is noted that during normal working conditions surface water generated at active construction footprints associated with the project is predicted to drain to ground in surrounding permeable soils or hard core areas. It is expected that there will be excess surface water from such construction footprints and hard core areas only during times of excessive rainfall. The presence of the vegetated slopes along the east of the project site between the project and construction footprints and the Mell Stream will provide a buffer that will entrain runoff from these areas and assist in minimising the potential for the discharge of contaminated runoff from these areas to the stream. Notwithstanding this it is noted that precautionary measures will be put in place to ensure that any surface water runoff during such rainfall events is effectively treated prior to discharge to surrounding areas and particularly to the east of the construction footprints.
9	Juvenile density in fine sediment	Mean catchment juvenile density of at least 2/m2 for river and brook lamprey and 1/m2 for sea lamprey	For the reasons outlined for Attribute No. 8 above the project will have the potential to result in a decrease in the density of juveniles in fine sediments along the River Boyne.
10	Extent and distribution of spawning habitat	No decline in distribution and extent of spawning beds.	For the reasons outlined for Attribute No. 8 above the project will have the potential to result in a decline in distribution and extent of spawning beds.
11	Availability of juvenile habitat	More than 50% of sample sites positive	For the reasons outlined for Attribute No. 8 above the project will have the potential to result in a change to the availability of juvenile habitat.
Atlantic Salmon			
12	Distribution (extent of anadromy	100% of river channels down to second order from the estuary.	There will be no reduction in species distribution given that alterations to river morphology and structures which could limit habitat accessibility are not proposed.
13	Adult spawning fish	Conservation Limit consistently exceeded	For the reasons outlined for Attribute No. 8 above, the project will have the potential to result in a decline in the numbers of adult spawning fish supported by the River Boyne and the River Boyne and River Blackwater SAC.

14	Salmon fry abundance	Maintain or exceed 0+ fry mean catchment wide abundance threshold value. Currently set at 17 salmon fry/5 min sampling.	For the reasons outlined for Attribute No. 8 above, the project will have the potential to result in any decline in the mean catchment wide abundance value of 17 salmon fry/5 min sampling supported by the River Boyne and River Blackwater SAC.
15	Out-migrating smolt abundance	No significant decline	For the reasons outlined for Attribute No. 7 above, the project will not have the potential to result in any decline in the numbers of out-migrating smolt.
16	Number and distribution of redds	No decline in numbers or distribution	For the reasons outlined for Attribute No. 8 above, the project will have the potential to result in a decline in the number and distribution of redds.
17	Water quality	At least Q4	For the reasons outlined for Attribute No. 8 above, the project in combination with other existing pressures and potentially with other projects (see Section 3.3 above) will have the potential to result in a decline in water quality along the River Boyne that would depress the Q-value of this watercourse.
Otters			
18	Distribution	No significant decline	The project will not have the potential to result in changes to the distribution of otters within the SAC. As noted in Section 3.2 above otters do not rely on the Mell Stream and while there is a risk that the project will have the potential to combine with other pressures to result in perturbations to water quality in the River Boyne, it will not have the potential to result in an overall significant decline in the distribution of this species within the SAC. .

19	Extent of terrestrial habitat	No significant decline	The extent of terrestrial habitat for otter within SACs is based upon a 10m buffer zone along river banks. The project has incorporated a 20m buffer zone for the majority of all elements of the project and has maintained a minimum buffer of 15m to the southeast of the project site from the Mell Stream. It is noted that the Mell Stream does not form part of the River Boyne and River Blackwater SAC, but nevertheless the implementation of this buffer ensuring that sufficient terrestrial habitat for otters along this stream is also maintained and does not result in a reduction of such habitat.
20	Extent of marine habitat	No significant decline	The project will not have any potential to interfere with this attribute and target due to the remote location of marine otter habitat from the project site.
21	Extent of freshwater habitat (river)	No significant decline	For the reasons outlined for Attribute No. 8 above, the project will have the potential to potential to undermine this target.
22	Extent of freshwater habitat (lakes)	No significant decline	This attribute and target are not relevant to the project as no lakes occur within the catchment area.
23	Couching sites and holts	No significant decline	No couching sites or holts were identified as occurring along the Mell Stream during a field surveys in 2019 and 2020. No holts or couching sites occur in the immediate vicinity of the project and none will be disturbed by the project's activities.
24	Fish biomass	No significant decline	For the reasons outlined for Attribute No. 8 above, the project will have the potential to undermine this target.
25	Barriers to connectivity	No significant increase	For the reasons outlined for Attribute No. 1 above, the project will not have the potential to undermine this target
River Boyne and River Blackwater SPA			
Kingfisher			

26	Breeding population abundance: apparently occupied nests	No significant decline	No nest sites or suitable nesting habitat for kingfisher occur in the vicinity of the project site. As such there will be no potential for the project to result in a decline in the number of occupied nest sites supported by the SPA.
27	Productivity rate: fledged young per breeding pair	No significant decline	For the reasons outlined for Attribute No. 8, the project will have the potential to undermine this target.
28	Distribution: suitable nesting habitat	No significant decline	For the reasons outlined for Attribute No. 26 above, the project will not have the potential to undermine this target.
23	Prey biomass available	No significant decline	For the reasons outlined for Attribute No. 8, the project will have the potential to undermine this target.
24	Barriers to connectivity	No significant increase	For the reasons outlined for Attribute No. 7, the project will not have the potential to undermine this target.
25	Disturbance at breeding sites	Human activities should occur at levels that do not adversely affect the breeding population.	For the reasons outlined for Attribute No. 26 above, the project will not have the potential to undermine this target.

5.0 A DESCRIPTION OF HOW THE INTEGRITY OF THE SITE IS LIKELY TO BE AFFECTED BY THE PROJECT

EU Guidelines (2001) recommend as part of a Stage 2 Appropriate Assessment that a checklist of site integrity is carried out (see Table 5.1). This aids in establishing the nature of potential adverse effects to the integrity of the European Sites, as defined by the conservation objectives of special conservation interests occurring within the sphere of influence of the project.

Table 5.1: Checklist of Site Integrity

Conservation Objectives	
Does the Project have the potential to:	
Cause delays in progress towards achieving the conservation objectives of the site	Yes. In the absence of suitable mitigation measures the project will have the potential to contribute to water quality perturbations downstream at the Boyne River and Estuaries European Sites and undermine the status of qualifying habitats and their communities. Such effects will also have the potential to undermine the status of foraging habitat for qualifying species and special conservation interest bird species of these European Sites.
Interrupt progress towards achieving the conservation objectives of the site	Yes. See response to first question above.
Disrupt those factors that help to maintain the favourable conditions of the site	Yes. See response to first question above.
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site.	Yes. See response to first question above.
cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	Yes. See response to first question above.
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?	Yes. The discharge of potentially contaminated surface water from the project site to qualifying habitats and their intertidal communities could contribute to a localised effect to the keystone fauna communities occurring downstream of the project.

interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?	Yes. The discharge of potentially contaminated surface water from the project site could result in a decrease in the diversity of key fauna communities supported by lotic, mudflat and estuarine habitats.
reduce the area of key habitats?	Yes. The prolonged discharge of potentially contaminated surface water runoff from the project site to the Boyne River and Estuaries European Sites could contribute to a reduction in the extent of key communities supported by wetland qualifying habitats, which would in turn result in loss of the extent of lotic, mudflat and estuarine habitats that are of favourable conservation condition. Such effects will also have the potential to undermine the status of foraging habitat for qualifying species and special conservation interest bird species of the River Boyne and River Blackwater SAC and two SPAs.
reduce the population of key species?	Yes. See response to questions above.
change the balance between key species?	Yes. The prolonged discharge of potentially contaminated surface water runoff from the project site to wetland qualifying habitats could result in a reduction in the diversity of fauna communities that characterise the key communities supported by these habitats.
reduce diversity of the site?	Yes. See response to the question above.
result in fragmentation?	No.
result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)?	Yes. Any prolonged discharge of polluted surface water runoff from the project site to wetland qualifying habitats will have the potential to result in the reduction of key communities supported by these habitats.

6.0 A DESCRIPTION AND EVALUATION OF MITIGATION MEASURE

Targeted mitigation measures are provided to safeguard against the potential effects of the project to the water quality of the Mell Stream, the River Boyne downstream and the Boyne River and Estuaries European Sites during the construction phase and operation phase of the project. The measures to be implemented to protect the water quality downstream at the Boyne River and Estuaries European Sites are outlined in the following sub-sections.

6.1 MEASURES TO PROTECT SURFACE WATER QUALITY

6.1.1 Construction Phase

6.1.1.1 Best Practice

The construction phase of the project will adhere to best practice guidance, particularly the CIRIA guidance document C532 Control of water pollution from construction sites. The construction approach will also adhere to the requirements set out in the Inland Fisheries Ireland guidance document *Requirements for the Protection of Fisheries Habitat during Construction and Development Works and Development Sites*.

During construction key requirements for control of chemical pollution risk will include:

- It will be a condition of the contract between proponent and the Main Contractor that the Construction & Environmental Management Plan (CEMP) specifies how materials with the potential to adversely affect surface water quality, for example diesel and oil, will be stored and handled in a manner that minimises the risk of accidental spills or leaks. The CEMP will include all measures outlined in this NIS that aim to safeguard surface water quality runoff from the construction footprint. The CEMP will also ensure that spill containment and clean-up equipment and processes, as specified in the guidance document "GPP 22 Dealing with Spills", are provided, maintained and implemented during the construction phase of the development.

- Measures will be put in place during the construction phase to collect, attenuate, settle and treat surface water runoff prior to discharge from the site. These measures will include features outlined in Section 6.1.1.2 below.

- Storage – all equipment, materials and chemicals will be stored a minimum distance of 50m away from any surface water body (i.e. the Mell Stream). Chemical, fuel and oil stores will be sited on impervious bases and within a secured bund of 110% of the storage capacity, within the lay down area.

- The integrity and water tightness of all the bunding structures and their resistance to penetration by water or other materials stored therein shall also be tested and demonstrated.

- All fuel oil fill areas will have an appropriate spill apron and spill kits will be provided on site.

- Vehicles and refuelling – standing machinery will have drip trays placed underneath to prevent oil and fuel leaks causing pollution. Where practicable, refuelling of vehicles and machinery will be carried out on an impermeable surface in designated areas, well away from any surface waterbody.

- Maintenance – maintenance to construction plant will not be permitted on site, unless vehicles have broken down necessitating maintenance at the point of breakdown. All necessary pollution prevention measures will be put in place prior to commencement of maintenance in this instance;

- Concrete - Wet concrete operations will be carried out in dry conditions. Runoff from wastewaters or contaminated surface water runoff will be directed to construction phase surface water drainage system to be installed on site;

- Mess, sanitation and welfare facilities will be required during construction and will be located at the construction compound. Foul effluent will make use of chemical facilities with periodic removal for offsite disposal.

6.1.1.2 Pollution Prevention – Suspended solids/Silt

The prevention of siltation will be achieved through the interception and management of surface water runoff. Surface water swales will be installed around the perimeter of the

construction footprint during each phase of the project development. All surface water collected in swales will be directed, via interceptor check dams to a construction phase attenuation pond where it is allowed to settle prior to discharge. This will allow for the control and management of all surface water runoff within the site during the construction phase. All water discharging from the attenuation pond will be required to pass through a silt fence downstream of the attenuation pond. The water discharging from the attenuation pond will discharge via a buffered outfall over vegetated ground downstream of the check dam and silt fence . The location of the construction phase surface water swale and attenuation pond, check dam, buffered outfall and silt fence for each phase of construction will be agreed with the planning authority as part of the final construction management plan prior to commencement of development to ensure that surface water runoff arising from construction footprints are adequately managed and treated throughout the construction phase.

All spoil generated during the construction phase will be stored toward the west of the site at a significant distance (over 100m) from the Mell Stream. Spoil stockpiles will be covered with a waterproof membrane during periods of precipitation to prevent any material from washing out and entering the watercourse.

Excavated soil material to be re-used for landscaping purposes will be stored separately in the spoil storage area.

Standard dust suppression measures will be implemented during periods of dry weather. This will avoid any impacts arising from the spread of dust particles during the construction phase.

6.1.1.3 Measures to avoid the Spread of Non-Native Invasive Species

No non-native invasive species were identified on site during field surveys completed at the project site during 2019 and 2020. Nevertheless in order to avoid the spread of non-native invasive species during the construction phase of the project the following measures will be implemented:

- All plant, machinery and site operative clothing will be inspected prior to site access to ensure that no materials are contaminated with non-native invasive species.

- Where instream works are required all plant, machinery and site operative clothing will be cleaned and disinfected prior to entering watercourses to avoid the spread of non-native invasive species.

6.1.2 Operation Phase

6.1.2.1 Surface Water Management System

Rainwater from the roof area will be harvested on site for reuse.

A surface water management system has been designed to meet the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS). The system will collect, attenuate and treat all surface water generated from impermeable surfaces within the project site.

All surface water generated on site during the operation phase will be collected in road gullies that will direct these waters to an onsite attenuation area. The attenuation area is shown on engineers drawing number 2197-2/202/2. Discharge from the attenuation tank will be at greenfield runoff rates. A hydrobrake will be installed to provide for the control of discharge rates from the attenuation tanks. The Mell Stream will be the receiving watercourse for all surface water discharging from the operation phase attenuation tanks. Prior to discharge to the Mell Stream all surface water discharging from the attenuation area will first pass through a full hydrocarbon and silt interceptor.

The implementation of the surface water management system will ensure that all surface water generated at the site throughout the operation phase will be adequately managed and ensure no pollution threat to the Mell Stream and the River Boyne downstream and the Boyne River and Estuaries European Sites.

6.2 EVALUATION OF MITIGATION MEASURES

The mitigation measures and environmental safeguards outlined above for the construction phase of the project are taken from established best practice guidelines that have been successfully implemented for a wide range of project-level infrastructural developments. These measures have undergone extensive and rigorous monitoring for their effectiveness at

development sites where they have previously been applied to ensure adverse environmental impacts are avoided.

The results of this monitoring and the recommendation of these measures as standard best practice guidelines is based upon their high degree of success in ensuring negative environmental impacts are avoided.

The best practice guidance that have informed the mitigation measures and environmental safeguards proposed in this NIS and that will be adhered to throughout the construction and operation of the proposed development include:

- The Good Practice Guidance notes proposed by EA/SEPA/EHS:
- PPG1: General Guide to the Prevention of Water Pollution
- PPG4: The disposal of sewage where no Main Drainage is Available
- PPG5: Works In, Near or Liable to Affect Watercourses
- PPG10: Working at Construction and Demolition Sites.
- PPG21: Pollution Incident Response Planning
- PPG26: Dealing with Spillages on Highways
- CIRIA Environmental Good Practice on Site.
- CIRIA Control of Water Pollution from Construction Sites. Technical Guidance C648.
- CIRIA SuDS Manual Technical Guidance C697.
- Development on Unstable Land. Department of Environment (DOE), UK.

7.0 CONCLUSION

This NIS presents an analysis of the potential for the project to result in adverse impacts to the Boyne River and Estuaries European Sites. An evaluation of the potential impact of discharges of surface drainage waters during the construction phase and operation phase has been completed.

During the evaluation of potential impacts associated with the discharge of surface drainage waters it was found that, in the absence of mitigation measures, the potential will exist for contaminants to be released from the project site to the Mell Stream and the River Boyne and for negative impacts to lotic, tidal mudflats and sandflats and estuarine habitats and associated

qualifying fish species, kingfishers, otters and wetland bird species. A range of mitigation measures have been prescribed in this NIS that aim to avoid the discharge of contaminated surface drainage waters from the project site during the construction phase and operation phase. These mitigation measures have been evaluated and reference has been made to their successful implementation for other similar development projects. It has been concluded that, provided all mitigation measures that aim to avoid the discharge of contaminated surface drainage waters are implemented, the potential for this impact to occur will be eliminated and associated adverse impacts to the Boyne River and Estuaries European Sites will not arise.

Based upon the information provided in this NIS, it is the considered view of the authors of this NIS that it can be concluded by Louth County Council/ the competent authority that the project will not, alone or in-combination with other plans or projects, result in significant adverse effects to the integrity and conservation status of European Sites in view of their Conservation Objectives and on the basis of best scientific evidence and there is no reasonable scientific doubt as to that conclusion.

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