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BOYNE BOARDWALK REFURBISHMENT

Natura Impact Statement

January 2024

Client:
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ROD
ROUGHAN & O'DONOVAN

Boyne Boardwalk Refurbishment

Natura Impact Statement

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1. INTRODUCTION

1.1 Introduction

Roughan & O'Donovan (ROD) was commissioned by Meath County Council (MCC) to prepare a Natura Impact Statement (NIS) for the refurbishment of the Boyne Greenway Boardwalk ("the proposed development"). It is proposed to carry out rehabilitation works to a 1.3km section of greenway from the Drogheda Ramparts through to the entrance of Oldbridge Estate, and repointing of a bridge crossing the Boyne Canal. The refurbishment of the boardwalk is required to ensure a hazard-free cycleway for users. The refurbishment includes works to correct minor defects of the deck panels, parapet posts and handrails, along the length of the boardwalk, and major refurbishment works to rebuild a 100m long section.

The requirements arising out of Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") in relation to Appropriate Assessment are transposed into Irish law by Part 5 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended) ("the Habitats Regulations"). In accordance with Article 6(3) of the Habitats Directive and Part XAB of the Planning and Development Act, an Appropriate Assessment (AA) Screening Report was prepared to assess whether or not the proposed development, either individually or in combination with other plans or projects, was likely to have a significant effect on one or more sites of Community importance for nature conservation ("European sites").

The AA Screening Report, which was prepared by ROD on behalf of MCC, in view of best scientific knowledge and the Conservation Objectives of the sites concerned that, in the absence of appropriate mitigation, the proposed development had the potential to significantly affect one European Site, namely the River Boyne and River Blackwater SAC. Therefore, a Natura Impact Statement (NIS) must be submitted in respect of the proposed development.

In accordance with Article 6(3) of the Habitats Directive and Section 177V of the Planning and Development Act 2000 (as amended), it is the Competent Authority – in this case Meath County Council – which carries out the appropriate assessment (AA) which includes inter alia (i) an examination (ii) an analysis (iii) an evaluation (iv) the making of findings (v) the making of conclusions and (vi) the making of a final determination.[1]

This document comprises the NIS in respect of the proposed development and has been prepared by ROD on behalf of MCC. It contains an examination, analysis and evaluation of the likely impacts from the proposed development, 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 proposed development will not adversely affect the integrity of those sites. 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 and sets out detailed reasons which explain the basis for such findings.

[1] *Waddenzee* (CaseC-127/02) [2004] ECR I-7405; *Commission v Spain* (Case C-404/09) [2011] E.C.R. I-11853; *Sweetman* (Case C-258/11).

1.2 Competent Experts

This NIS was prepared by Jane Stafford and reviewed by Patrick O'Shea. Jane is a Graduate Ecologist with a BS degree in Wildlife Biology from the University of Montana. Jane is a Qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Patrick is a Principal Ecologist with over ten years' experience in ecological assessment including Appropriate Assessment. He holds a degree in Botany from Trinity College Dublin and an MSc in Ecological Management and Conservation Biology from Queen's University Belfast. Patrick is a Full member of the Chartered Institute of Ecological and Environmental Management (CIEEM).

1.3 Legislative Context

Council Directive 92/43/EEC of the 21st May 1992 on the conservation of natural habitats of wild fauna and flora ("the Habitats Directive") and Directive 2009/147/EC of the European Parliament and of the Council of the 30th November 2009 on the conservation of wild birds ("the Birds Directive") list habitats and species which are important for conservation and in need of protection. This protection is afforded in part through the designation of sites which support significant examples of habitats or populations of species ("European sites"). Sites designated for birds are termed "Special Protection Areas" (SPAs) and sites designated for natural habitat types or other species are termed "Special Areas of Conservation" (SACs). The complete network of European sites is referred to as "Natura 2000".

In order to ensure the protection of European sites in the context of land use planning and development, Article 6(3) of the Habitats Directive provides for the assessment of the implications of plans and projects for European sites, as follows:

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

The requirements arising out of Article 6(3) are transposed into Irish law by European Communities (Birds and Natural Habitats) Regulations 2011 as amended[2] (S.I. No.477 of 2011) (the Habitats Regulations), including Part 5 thereof.

The determination of whether or not a plan or project meets the two thresholds for requiring AA is referred to as "Stage 1" or "AA Screening". The first threshold is reached if the plan or project is not directly connected with or necessary to the management of one or more European sites. In its ruling in *Waddenzee*[3], the Court of Justice of the European Union (CJEU) interpreted the second threshold as being reached where "*it cannot be excluded, on the basis of objective information, that* [the plan or project] *will have a significant effect on that site*". Thus, in applying the Precautionary Principle, the CJEU interpreted the word "likely" to mean that, as long as it cannot be demonstrated that an effect will not occur, that effect is considered

[2] Including inter alia S.I. 290 of 2013; SI 499 of 2013; SI 355 of 2015; the Planning, Heritage and Broadcasting (Amendment) Act 2021, Chapter 4; SI 293 of 2021.
[3] Landelijke Vereniging tot Behoud van de Waddenzee, Nederlandse vereniging tot Bescherming van Vogels *v.* Staatssecretaris van Landbouw, Naturbeheer en Visserij (Waddenzee) [2004] C-127/02 ECR I-7405.

"likely". A likely effect is considered to be "significant" only if it interrupts or causes a delay in achieving the Conservation Objectives of the site concerned.[4]

Prior to approval of a plan or project which is the subject of AA (also referred to as "Stage 2"), it is necessary to "*ascertain*" that the plan or project will not "*adversely affect the integrity of the site*". In its guidance document (EC, 2018), the European Commission stated that "*the integrity of a site involves its constitutive characteristics and ecological functions*" and that "*the decision as to whether it is adversely affected should focus on and be limited to the habitats and species for which the site has been designated and the site's conservation objectives*". Regarding the word "ascertain", the CJEU, also in *Waddenzee*, interpreted this as meaning "*where no reasonable scientific doubt remains as to the absence of such effects*". Therefore, the legal test at Stage 2 is satisfied (and the plan or project may be authorised) when it can be demonstrated beyond reasonable scientific doubt that the plan or project will not interrupt or cause delays in the achievement of the Conservation Objectives of the site or sites concerned. AA is informed by a "Natura Impact Report" (NIR) in the case of plans or a "Natura Impact Statement" (NIS) in the case of projects.

The CJEU has made a relevant judgment on what information should be contained within documents supporting AA[5] (in the NIR or NIS):

> "[The AA] *cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned.*"

The High Court and Supreme Court[6] have also provided clarity on how competent authorities should undertake AA[7] and has stated that the following four matters require to be addressed:

- First, an appropriate assessment must identify, in the light of the best scientific knowledge in the field, all aspects of the development project which can, by itself or in combination with other plans or projects, affect (a) European site(s) in the light of its conservation objectives;
- Second, there must be complete, precise and definitive findings and conclusions regarding the previously identified potential effects on any relevant European site(s) this and may not have lacunae or gaps. The requirement for precise and definitive findings and conclusions requires analysis, evaluation and decisions. Further, the reference to findings and conclusions in a scientific context requires both findings following analysis and conclusions following an evaluation each in the light of the best scientific knowledge in the field;
- Third, on the basis of those findings and conclusions, the Competent Authority (here Meath County Council) must be able to determine that no scientific doubt remains as to the absence of the identified potential effects;
- Fourth, where the aforesaid three requirements are satisfied, Meath County Council may determine that the proposed development will not adversely affect the integrity of any relevant European site. Accordingly, an appropriate

[4] Conservation Objectives are referred to, but not defined, in the Habitats Directive. In Ireland, Conservation Objectives are set for Qualifying Interests (the birds, habitats or other species for which a given European site is selected) and represent the overall target that must be met for that Qualifying Interest to reach or maintain favourable conservation condition in that site and contribute to its favourable conservation status nationally.
[5] *Sweetman v. An Bord Pleanála* [2013] Case C-258/11.
[6] See *Kelly (Eoin) v An Bord Pleanála* [2014] I.E.H.C. 400 where the High Court (Finlay Geoghegan J.) held that section 177V(1) of the Planning and Development Act 2000 (as amended) must be construed so as to give effect to Article 6(3) of the Habitats Directive, and hence, an appropriate assessment carried out under section 177V(1) of the 2000 Act must meet the requirements of Article 6(3) of the Habitats Directive as interpreted by jurisprudence of the CJEU case law; *Connelly v An Bord Pleanála* [2018] 2 I.L.R.M 453; [2018] I.E.S.C. 31.
[7] *Kelly v. An Bord Pleanála* [2014] IEHC 422.

assessment may only include a determination that the proposed development will not adversely affect the integrity of any relevant European site where upon the basis of complete, precise and definitive findings and conclusions made the Board decides that no reasonable scientific doubt remains as to the absence of the identified potential effects.

1.4 Methodology

In accordance with the requirements for AA, this NIS assesses the likely effects of the proposed development on the integrity of the European site(s) "screened in" at Stage 1. This assessment is undertaken in six steps, as follows:

1. Step 1 involves gathering all of the information and data that will be necessary for a full and proper assessment. These include, but are not limited to, the details of all phases of the plan or project, environmental data pertaining to the area in which the plan or project is located, e.g. rare or protected habitats and species or invasive species present or likely to be present, and the details of the European sites within the Zone of Influence.
2. Step 2 involves examination of the information gathered in the first step and detailed scientific analysis of the effects of the plan or project on the ecological structure and function of the receiving environment, focussing on European sites.
3. Step 3 evaluates the effects analysed in Step 2 against the Conservation Objectives of the relevant European site or sites, thereby determining whether or not they constitute adverse effects on site integrity.
4. Having established that the plan or project will adversely affect the integrity of one or more European sites, Step 4 involves the development of appropriate mitigation, including, where appropriate, monitoring and enforcement measures, to eliminate or minimise those effects such that they no longer constitute adverse effects on the integrity of the site(s) concerned, as well as consideration of the significance of any residual (post-mitigation) effects.
5. Step 5 involved the assessment of the significance of any residual effects arising from the proposed development in combination with other plans or projects.
6. Step 6 involves the final determination of whether or not the plan or project will adversely affect the integrity of one or more European sites. Notwithstanding the final recommendation made in the NIS, the responsibility for completing this step lies solely with the competent authority.

The following guidance documents informed the assessment methodology:

- EC (2021) *Assessment of plans and projects in relation to Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. Environment Directorate-General of the European Commission.
- EC (2018) *Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*. European Commission, Brussels.
- DEHLG (2010) *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities*. Department of the Environment, Heritage and Local Government, Dublin.
- NPWS (2010a) *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities*. Circular Letter NPWS 1/10 & PSSP 2/10. National Parks & Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin.

- OPR (2021) Appropriate Assessment Screening for Development Management. Office of the Planning Regulator, Dublin.

1.5 Ecological Assessment

In order to fully inform this NIS, it was necessary to establish the baseline ecological conditions in the receiving environment, particularly with regard to European sites. This was achieved by undertaking a desktop study, a field survey, and engaging in consultation with relevant stakeholders, including the National Parks & Wildlife Service (NPWS) and Inland Fisheries Ireland (IFI). The process of establishing this baseline is outlined in the subsequent subsections.

1.5.1 Desk Study

During the desk study, the statutory consultee, the NPWS, provided data on designations of sites, habitats and species of conservation interest. This included reporting pursuant to Article 17 of the Habitats Directive[8] (NPWS, 2019a, b, c) and Article 12 of the Birds Directive[9] (Eionet, 2018), as well as the Site Synopses and Conservation Objectives for the relevant European sites.

The desk study involved a thorough review of existing information relating to ecology in the vicinity of the proposed development and in the surrounding area. A number of web-based geographic information systems (GISs) were used to obtain information relating to the natural environment surrounding the proposed development. These included the NPWS *Map Viewer* (NPWS, 2023), which provided information on the locations of protected sites, the National Biodiversity Data Centre's *Biodiversity Maps* (NBDC, 2023), which provided recent and historic records of rare and protected species in the area.

As with all desk studies, the data considered were only as good as the data supplied by the recorders and recording schemes. The recording schemes provide disclaimers in relation to the quality and quantity of the data they provide, and these were considered when examining outputs of the desk study.

1.5.2 Consultations

Consultation requests were sent on the 4th of September 2023 to the Development Applications Unit (DAU) and IFI. On the 5th of September, a response was received from IFI. On the 28th of November, a response was received from the NPWS.

A summary of these consultations, relevant to this NIS, is presented in Table 1.1 below. All issues raised by the consultees have been addressed as far as possible in this NIS.

Table 1.1 Details of consultations

Consultee	Date	Summary of response
Inland Fisheries Ireland (IFI)	5th September 2023	No objections
Department of Housing, Local Government and Heritage (National Parks	24th October 2023	The following observations were received regarding nature conservation:

[8] Under Article 17, to report to the European Commission every six years on their status and on the implementation of the measures taken under the Directive.
[9] Every three years, Member States of the European Union are required by Article 12 of the Birds Directive to report on implementation of the Directive. The most recent reporting available is for the period 2008-2012.

Consultee	Date	Summary of response
& Wildlife Service)		The proposed works are within the River Boyne and River Blackwater SAC (002299) and SPA (004232) and therefore require Appropriate Assessment. 1) Any Appropriate Assessment undertaken should address the potential spread of invasive species which are prevalent along the section of the River Boyne where proposed works will be undertaken. 2) The proposed works have potential to impact on Otter (*Lutra lutra*) which are listed as a Qualifying Interest of the River Boyne and River Blackwater SAC (002299). Therefore, detailed surveys should be undertaken as part of the Appropriate Assessment process. 3) There is also potential for the proposed works to impact on Kingfisher which is the Qualifying Interest for the River Boyne and River Blackwater SPA (004232). Detailed surveys for this species should be undertaken as part of the Appropriate Assessment process.

1.5.3 Field Survey

An ecological field survey was undertaken along Greenway between the entrance to the Oldbridge Estate and the tie in with the Ramparts, downstream of the Mary McAleese Bridge, plus a buffer of 150m, on the 6th of September 2023. A survey of the area immediately surrounding the Canal Overflow and Engineers Bridge was undertaken on the 26th October 2023. The survey adhered to the methodology outlined in *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (NRA, 2009) and *Best Practice Guidance for Habitat Survey and Mapping* (Smith et al., 2011). The survey was designed to assess habitats in the area and record evidence of invasive species, Otter and Kingfisher in the area surrounding the proposed development, especially shelters or nest sites, which are vulnerable to disturbance. The survey covered the length of the proposed development on the south bank of the River Boyne, including the Boyne Boardwalk plus a 150m buffer upstream and downstream of the boardwalk, which is the standard survey distance for Otter.

1.5.4 Assessment

The ecological baseline was established by the desk study described above and the ecological field survey on the 6th of September 2023. This baseline informed the assessment of the potential ecological effects likely to arise from the proposed development, particularly with regard to European sites. Any assumptions that were made in view of gaps in the ecological data were made in strict accordance with the Precautionary Principle.

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed development consists of three elements, 1) the repair of the plastic boardwalk, the removal of the embankment and rebuilding of the section of plastic boardwalk, 2) the repointing of Engineer's Bridge and 3) the construction of a new overflow between the Boyne Canal and the Boyne.

2.1 Boardwalk Background

Through the Smarter Travel Initiative, Meath County Council (MCC) developed a greenway along the Boyne Valley linking the towns of Trim, Navan and Drogheda, with a total distance of over 50km. The initiative includes a cycling facility and local transport corridor, aiming to reduce accidents and promote safety. The scheme promotes the National Cycle Policy Framework, encouraging the community to use a sustainable mode of transport in order to reduce carbon emissions, while promoting physical activity.

Constructed in 2014, the Boyne boardwalk is an innovative cycleway facility designed by the ROD-AECOM alliance. Located along the banks of the River Boyne, the boardwalk comprises a cycle and pedestrian facility between the Drogheda ramparts and the entrance of the Oldbridge Estate visitor centre, Co. Meath. The Boyne River is a Special Area of Conservation (SAC) and a Special Protected Area (SPA) for birdlife; thus, the boardwalk was designed with an emphasis placed on sustainability and eco-friendliness. The boardwalk structure itself was composed mainly of recycled plastic.

The works to the boardwalk comprise of two sections. The first section is approximately 1.85km in length, consisting of the existing pathway on the Drogheda Ramparts. The second section of the scheme is approximately 1.7km long and runs between the western end of the Drogheda Ramparts through to the entrance of Oldbridge Estate. This section of the greenway incorporates both traditional kerbs & pavements (approximately 1,000 m) and the recycled plastic boardwalk (approximately 800m). The site compound for the proposed development is located approximately 135m south of the boardwalk, approximately 200m west of the Drogheda Bypass (M1). Figure 2.1 and Figure 2.2 below illustrate the site of the proposed development and its location.

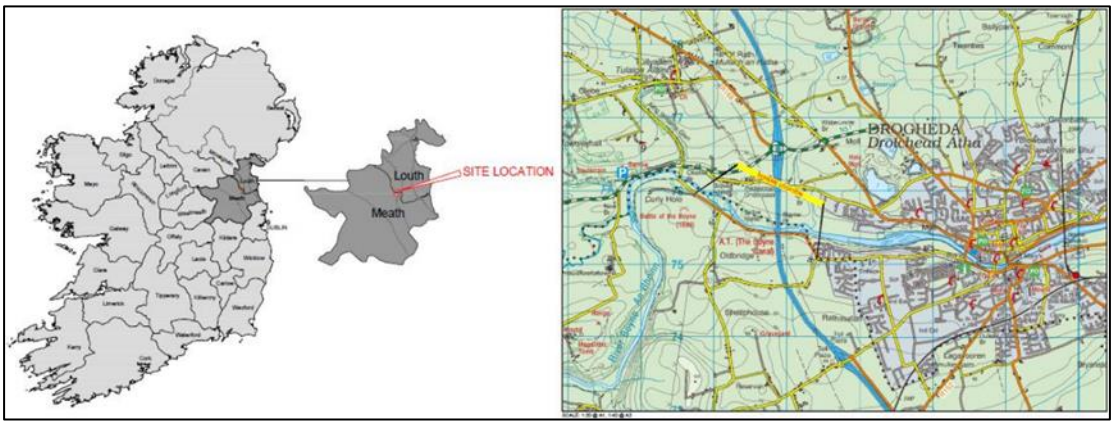


Figure 2.1 Site Location

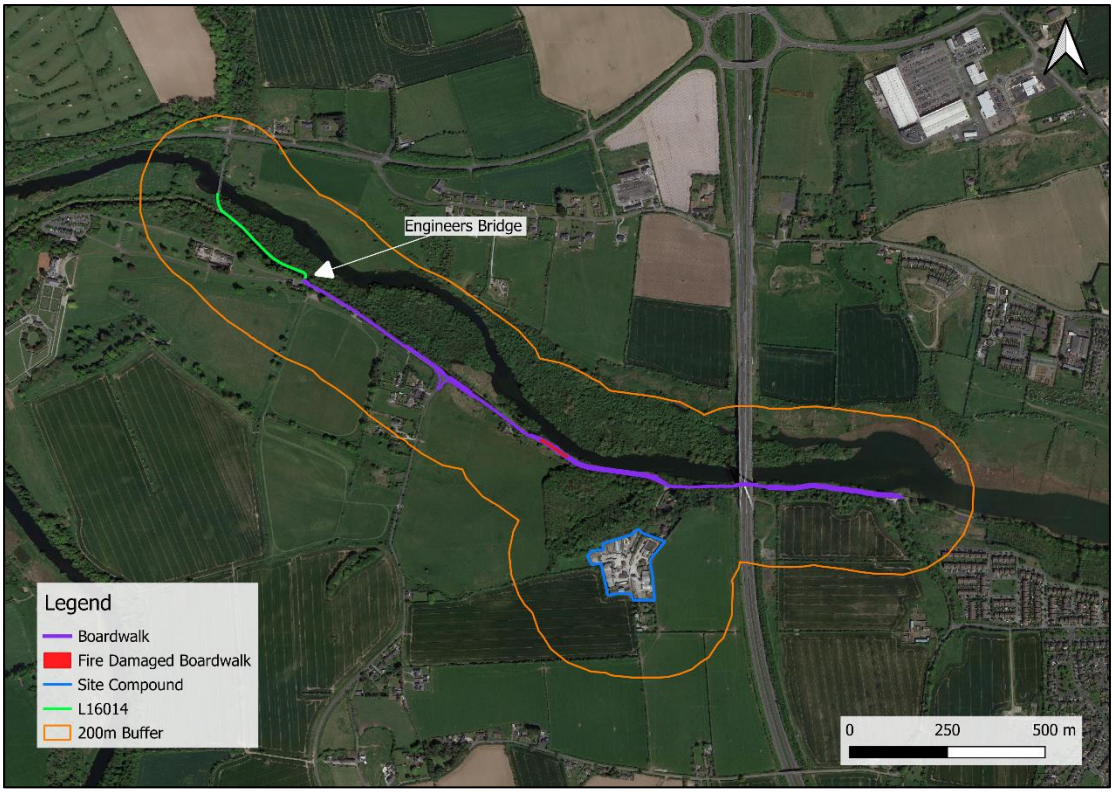


Figure 2.2 Proposed Development Site. Basemap provided by Google (2023)

The existing boardwalk structure consists of a deck approximately 3.5m wide (varies down to 2.5m in places). This is comprised of a series of transverse planks supported by longitudinal runners which in turn are supported on crossbeams. The cross beams are supported by a series ground piles at 1.8m spacings. Pedestrian parapets are provided along the length of the deck. The parapet posts are connected to the edge of the deck and support the top rail and mid-rails. Due to the inherent flexibility of the recycled plastic material, longitudinal & transverse cross bracing members span between the piles under the deck and add additional stiffness to the overall structure. The ground piles lie in silty ground along the bank of the river Boyne. A general view of the boardwalk is shown below (See Plate 2.1). Refer to Appendix A for a general arrangement of the structure.

Plate 2.1 Boyne Boardwalk (Mary McAleese Boyne Valley Bridge in background)

Approximately 100m of the boardwalk was burned in July 2018 (See Plate 2.2). As an emergency remedial measure, the destroyed boardwalk was removed and a layer of backfill was used to provide a temporary base, accompanied by a temporary fencing structure (Plate 2.3).

Plate 2.2 Burned section of boardwalk (Source: Drogheda Life, 2018)

Plate 2.3 **Temporary pedestrian and cycle path where boardwalk was burnt (current condition)**

2.2 Proposed Boardwalk Repair and Reconstruction Works

ROD were appointed by MCC in June 2023 to undertake a detailed visual inspection along the length of the existing boardwalk to evaluate the current condition of the structure and determine the extent of required remedial works in addition to the rehabilitation of the burned section. The proposal for remedial works (the proposed development) is outlined below.

2.2.1 Site Location and Description

The proposed development is located on the southern bank of the River Boyne, running parallel to Oldbridge Road. The site is to the west of Drogheda Town within the Boyne Valley and passes under the M1 motorway at the Mary McAleese Bridge. The location of the proposed development is shown above in Figures 2.1 and 2.2.

2.2.2 Burned Section

The burned section of the boardwalk requires a total rebuild. This will involve traffic management, removal of the existing fence and roadside traffic blocks, excavation of the embankment, installation of plastic piles to original foundation level, repair of kerbing, rebuilding of deck superstructure, and the removal of traffic management and reopening of boardwalk. It is proposed to replace the temporary embankment (100m section) with a new recycled plastic boardwalk, identical to the original. The embankment will be removed using an excavator from the roadside to the level of the floodplain (up to 1m). The excavator will work from the road. No machinery will be permitted to track on the floodplain. The material will be removed from site. The 3.5m wide recycled plastic boardwalk deck will be supported by recycled plastic piles driven into the floodplain. The boardwalk will be constructed with the use of piles inserted from the roadside using a bucket. The remaining components of the boardwalk will be

installed by hand without the aid of vehicular traffic within the flood plain. Traffic management put in place along the Oldbridge Road.

2.2.3 Deck Panels

The deck defects present are mainly related to slip / trip hazards. These defects may deteriorate if left in place over time. It is proposed to carry out repairs on the small number of damaged panels.

The deck will require the replacement of damaged panels, 12 in total, with 8 being within one 25m section. The panels will be loosened and removed with new panels fixed in their place. Sections of the boardwalk may have to be closed off while repairs take place.

2.2.4 Posts

The main defect in the parapet posts is the lateral misalignment. These could deteriorate in time and lead to knock on effects to the rails and connections. It is proposed to take down affected posts and replace with new ones with a stronger connection. The removal and replacement of 98 posts is required.

2.2.5 Rail Connections

The main defect encountered in the rails is the connection to the parapet posts. It is proposed that repairs are carried out to the connections (steel angle with slotted holes). This is to be carried out to the 6% that have failed and on the verge of failing (approx. 151 connections). The loose rail connection repair requires the implementation of slotted hole steel angles at 151 rail connection locations. This requires re-drilling of the rails (where the previous bolt hole is deteriorated), a slotted bolt system is employed which allows for movement without damaging the posts and rails, the loose rails are reconnected to the posts and bolts tightened according to the relevant spec.

2.2.6 General Defects

Traffic Signs and Road Markings

The main defects were non-standard installations and faded road markings. It is proposed that the road markings are reinstated, and non-compliant traffic signs / road mirrors are either removed or else a more compliant system reinstated.

Gullies

The gully covers will be replaced with a more compliant system suitable for pedestrians where required.

Kerbing

The recycled plastic kerbing is misaligned mainly at the western end of the boardwalk. These kerbs will be taken up and reset such that they are flush, leaving no loose screws or bolts, to prevent trip hazards.

Settlements

Some areas of the boardwalk have undergone vertical deformation due to settlement of the piles, particularly between Ch. 1+215 – Ch. 1+219, where it is worst. This is likely a result of the poor ground conditions in the area. It was also noted that more settlement occurred on the eastern half of the boardwalk adjacent to the Boyne River and as such, flooding may have played a part here. If the settlement has resulted from consolidation over the past 10 years, then future settlement is unlikely. If the settlement were to continue, however, then the rails, deck panels and posts may deform too much, or the connections could fail.

As the deck settlement is a result of the piles settling, it is proposed to dismantle the deck over the affected area and rebuild at the correct level. Once the deck is dismantled and the piles exposed, the individual piles can be raised by bolting on new material such that the top of pile level is reset. The deck can then be reassembled to the correct level.

2.2.7 Vegetation Clearance

Vegetation clearance which is part of ongoing routine maintenance measures up to 0.5m width from the boardwalk.

2.2.8 Construction Period and Programmes

The construction period is expected to be approximately 3 months. The program of construction has not been determined at the time of writing.

2.3 Repointing of Engineers Bridge

Engineers Bridge crosses the Boyne Canal next to the entrance to the Oldbridge estate (see Plate 2.4). Masonry repointing of five to ten square-meters will be carried out as required for this bridge. The repointing works will utilise masonry stone and an estimated 0.125 to 0.25 metres cubed of natural hydraulic lime mortar. For works at Engineers Bridge, the local road, L16014, between Engineers Bridge and Obelisk Bridge will be used as a site compound. This road is currently closed due to works taking place on the Obelisk Bridge. A method statement and risk assessment for these works are provided in Appendix B.

Plate 2.4 Engineer's Bridge

2.4 Replacement of Boyne Canal Overflow

The existing 300mm Boyne Canal overflow (see Plate 2.5) will be replaced by 5-10 No. 225mm overflow pipes, placed side by side. The area of the canal around the existing overflow will be dewatered using a dam made of sandbags. Any water ingress will be pumped out. A trench will be excavated across the road and the existing pipe will be removed and replaced with 5-10 no. 225mm pipes. The trench will be backfilled using the original material and the road reinstated. The new pipes will discharge into the existing masonry chamber on the north side of road. The roadway between Engineers Bridge and Obelisk Bridge (L16014) is currently closed and will also act as a site compound for the replacement of canal overflow.

Plate 2.5 Location of the existing overflow pipe in the Boyne Canal

Plate 2.6 Overflow chamber (with the L16014 road directly behind it)

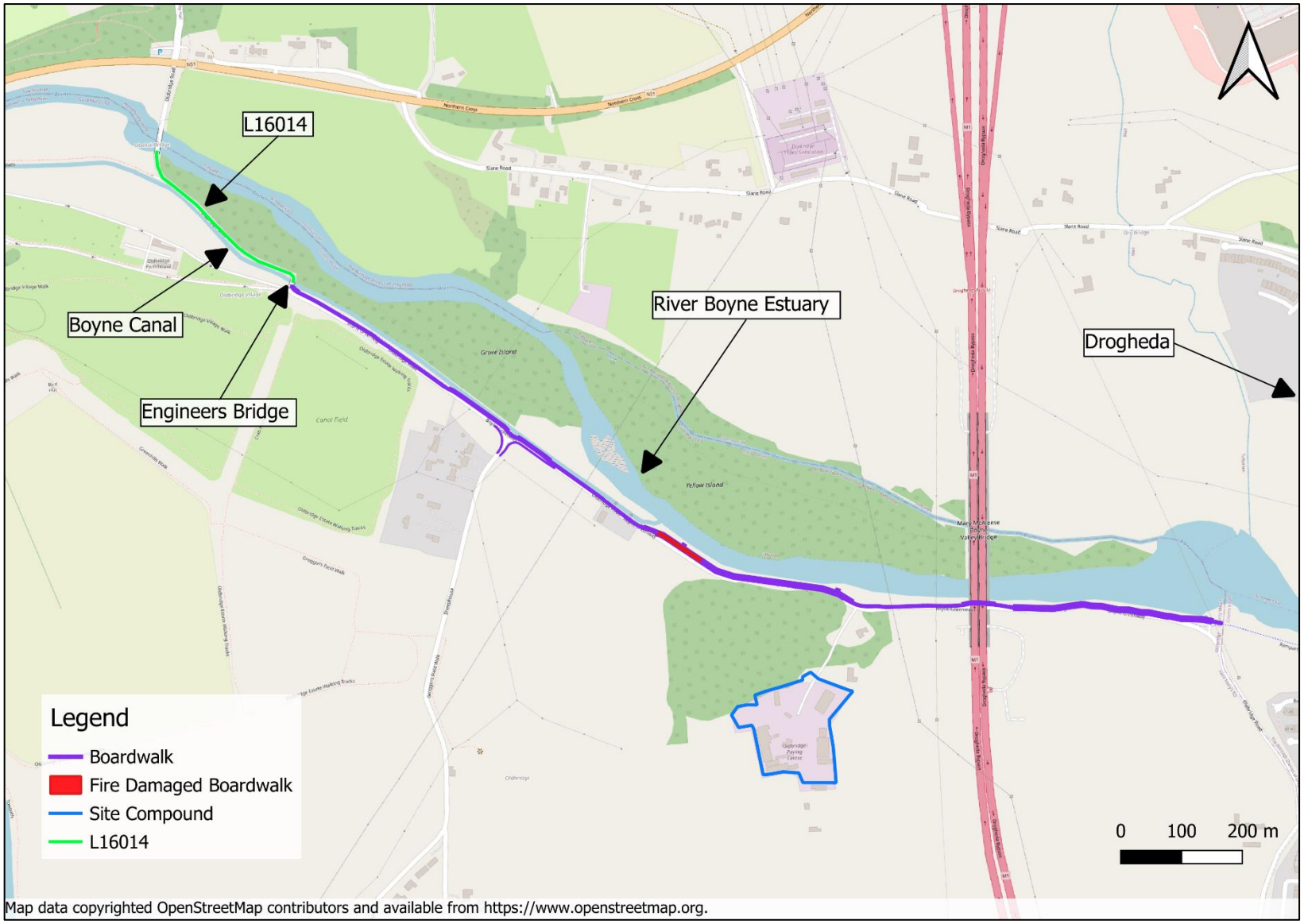


Figure 2.3 Location of the proposed development site in Drogheda, Co Meath

2.5 Receiving Natural Environment

The Boyne boardwalk is located adjacent to the L16014 roadway, which crosses the Boyne Canal via Engineer's Bridge, and crosses the River Boyne via Obelisk Bridge. The River Boyne flows in a southeast direction parallel to the proposed development, with the Boyne Canal running between it and the proposed development. The receiving environment is dominated by agricultural fields with rural dwellings, and an extensive wet woodland surrounding the River Boyne. The majority of this woodland is found on two islands, namely Grove Island and Yellow Island. The woodlands on these islands are dominated by willow (*Salix* spp.) (NPWS, 2014). A pocket of woodland dominated by Alder (*Alnus glutinosa*) is located along the Boyne Canal (NPWS, 2014). Grove Island lies on the southern side of the River Boyne, between the canal and the river. Yellow Island is located on the northern banks of the River Boyne, downstream of Grove Island. The canal overflow pipe flows into the woodland on Grove Island. Oldbridge Estate is located directly southwest of Engineers Bridge. The Battle of the Boyne visitor center is approximately 575m west of Engineers Bridge. Mary McAleese Bridge runs above the most downstream extents of the boardwalk. Drogheda is approximately 1km downstream of the proposed development.

The embankment, which was constructed as a temporary measure along the burned section of the boardwalk, is located within the floodplain of the River Boyne. The repointing work on Engineers Bridge will be directly over the Boyne Canal. The canal overflow pipe is within 60m of Engineers Bridge and drains into the adjacent wet woodland.

2.5.1 Field survey results

Flora

An extensive wet woodland surrounds the River Boyne, running adjacent to and overlapping with the proposed development. Himalayan Balsam (*Impatiens glandulifera*) was found in the woodland and along the banks of the River Boyne. Reed Canary Grass (*Phalaris arundinacea*) dominates the River Boyne flood plain which sits approximately 1m above the normal river level (Plate 2.7). The vegetation present within the floodplain comprised: Willows (*Salix sp*.), Reed Canary Grass (*Phalaris arundinacea*), Hedge Bind Weed (*Calystegia sepium*), Horsetail Sp. (*Equisetum*), Meadow Vetchling (*Lathyrus pratensis*), Creeping Buttercup (*Ranunculus repens*), Meadowsweet (*Filipendula ulmaria*), Flag Iris (*Iris pseudacorus*), Nettle (*Urtica dioica*), Broadleaved Dock (*Rumex obtusifolius*), Dandelion (*Taraxacum officinale*), Common Reed (*Phragmites australis*) and Pendulus sedge (*Carex pendula*).

Otter

No Otter signs or shelters (holts or couches) were recorded on the south bank of the River Boyne along the length of the proposed development or within 150m of the boardwalk.

Kingfisher

No suitable Kingfisher nesting habitat was recorded on the south bank of the River Boyne along the length of the proposed development.

Invasive and Alien Species

The field surveys confirmed the presence of Himalayan Balsam within the site. This species is listed on the Third Schedule of the Habitats Regulations and, as such, Regulation 49 of those regulations apply to this species. Himalayan Balsam is present

along the length of the banks of the Boyne Canal and the River Boyne. It is immediately adjacent to the existing boardwalk on both the road and river sides.

Plate 2.7 Temporary embankment constructed in footprint of burned section of boardwalk.

2.6 Likely Effects on the Natural Environment

During the construction phase, the proposed development is likely to give rise to environmental and ecological impacts arising from works within the burned section of the boardwalk, works on engineers bridge and the replacement of the Boyne Canal overflow pipe. The repair works along other sections of the boardwalk are not considered to give rise to impacts to the natural environment. Additionally, it is considered that the operational phase of the proposed development does not have the potential to cause impacts to the natural environment as it will involve pedestrians and cyclists using the greenway where there is existing use and the improvement works of the proposed development will not cause a change in the level of use of the greenway.

Habitat Loss/Fragmentation

Excavation of the embankment and replacement with a boardwalk will involve the removal of stone and hardstanding. Once removed, vegetation of the floodplain will be able to expand back towards the boardwalk. Masonry and repointing works on engineer's bridge have the potential to negatively impact water quality if sediment and pollutants enter the canal and flow to the River Boyne. This may lead to habitat degradation in the River Boyne. The replacement of the overflow pipe will involve the excavation of a trench on an existing road, road embankment and canal bank.

Disturbance/Displacement

Minor levels of disturbance will occur during construction of the proposed development as a result of noise, lighting and vibration. This could cause disturbance to birds and other wildlife.

Excavation of the temporary embankment at the burned section of the boardwalk will involve an excavator working regularly at this section of the works. Similarly, the replacement of the overflow pipeline in the Boyne Canal will require the excavation of a trench and dewatering of this area of the canal. These measures will also be a source of disturbance during the construction phase of the proposed development.

Masonry and repointing works to engineer's bridge will not lead to significant levels of disturbance, as the works will be temporary, and limited to the bridge itself. Visual disturbance from personnel and operating plant is not considered to cause significant disturbance as human activity at the location of the greenway is regular from greenway users and wildlife will be habituated to the presence of humans.

Water Quality

The proposed development has the potential to cause pollution to the aquatic environment from accidental spillages of hydrocarbons and mortar, run-off or sedimentation to the River Boyne. Notwithstanding the above, the risk of pollution and sedimentation from the works on the boardwalk to the river is considered low as there will be no in-stream works and the excavator will work from the road or the embankment. The repointing of Engineers Bridge has the potential cause pollution via the spillage of mortar into the canal, which then may reach the River Boyne. Excavation during the replacement of the canal overflow pipe also has the potential to cause pollution to the aquatic environment, as sediment may travel downstream into the River Boyne.

Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy (the Water Framework Directive or 'WFD') requires that each Member State protect and improve water quality in all waters so that good ecological status is achieved. Additionally, proposed actions (within discrete River Basin Management Plans) are also required, to secure national natural water resources for the future. The EPA is the competent authority responsible for monitoring, protecting, and improving the water environment in the Republic of Ireland.

In accordance with WFD guidelines, water quality 'Status' is assigned using a variety of available data on aquatic flora and fauna (including fish), the availability of nutrients, and aspects like salinity, temperature and pollution by chemical pollutants. Morphological features, such as quantity, water flow, water depths and structures of the riverbeds, are also taken into account.

The original EPA water quality classification system (the 'Quality Rating System' or 'Q-values') is also used to assess water quality in Irish rivers, taking into account aquatic macrophytes, phytobenthos and hydromorphology. The Quality Rating System has been shown to be a robust and sensitive measure of riverine water quality and has been linked with both chemical status and land-use pressures in catchments. Individual macroinvertebrate species are ranked for their sensitivity to organic pollution and the Q-value is assessed based, primarily, on their relative abundance within a biological sample. A review of both the internal EPA Q-value status and WFD surface water status for the relevant watercourses was undertaken.

The EPA's online map viewer provides access to information at individual waterbody level in Ireland. Waterbodies can relate to surface waters (these include rivers, lakes, estuaries [transitional waters], and coastal waters) or to groundwater. The water quality results for transitional and ground waterbodies in the surrounding environment are as follows:

- An EPA water monitoring station approximately 65m downstream of Obelisk Bridge rates the water quality of the River Boyne as 'Good' (Score: 4).
- The River Boyne has been assigned a Transitional Waterbody WFD Status (2016-2021) of 'Moderate'.
- The River Boyne is at risk of failing meet its Water Framework Directive (WFD) objectives by 2027.
- The Drogheda ground waterbody has been assigned a WFD Status (2016-2021) of 'Good.
- The Drogheda ground waterbody is at risk of failing meet its Water Framework Directive (WFD) objectives by 2027.

Invasive Species

The proposed development has the potential to cause the spread invasive species both downstream and beyond this area to other sites. Additionally, vegetation clearance is proposed up to 0.5m from the edge of the boardwalk for its entire length. If this is undertaken in the late summer when seed pods have matured, the clearance would be likely to cause further spread of this species.

3. IDENTIFICATION OF ADVERSE EFFECTS

3.1 Establishing the Zone of Influence

Section 3.2.3 of DEHLG (2010) outlines the procedure for selecting the European sites to be considered in AA. It states that European sites potentially affected should be identified and listed, bearing in mind the potential for direct, indirect and in-combination effects. It also states that the specific approach in each case is likely to differ depending on the scale and likely effects of the plan or project. However, it advises that the following sites should generally be included:

- All European sites within or immediately adjacent to the plan or project area;
- All European sites within the Zone of Influence of the plan or project; and
- In accordance with the Precautionary Principle, all European sites for which there is doubt as to whether or not they might be significantly affected.

The Zone of Influence of a project is the geographic extent over which significant ecological effects are likely to occur. In the case of projects, the guidance recognises that the zone of influence must be established on a case-by-case basis using the Source-Pathway-Receptor Model (OPR, 2021). A project may only lead to significant effects on the integrity of the European site where all three elements of Source-Pathway-Receptor are linked. In the absence of one element of this model, likely significant effects can be screened out with confidence. The assessment should make reference to the following key variables:

- The nature, size and location of the project;
- The nature of the impacts which may arise from the project;
- The sensitivities of the ecological receptors; and,
- The potential for in-combination effects.

For example, in the case of a project that could affect a watercourse, it may be necessary to include the entire upstream and/or downstream catchment in order to capture all European sites with water-dependent features of interest. Having regard to the above key variables, the Zone of Influence was defined as:

- The entire area within 200m of the proposed development for noise and visual disturbance.
- The downstream distance from the proposed development to where it meets the Irish Sea. This is considered the maximum possible distance for downstream impacts due to water quality or spread of invasive species to occur.

Therefore, this is considered to be the Zone of Influence for any potential impacts of the proposed development. This is maximum distance at which hydrological impacts could potentially occur downstream of the proposed development. Beyond 200m around the proposed development site, there will be no discernible increase in noise, vibration or visual disturbance to birds and other species in the wider area.

A geographical representation of the Zone of Influence was produced in QGIS 3.16.9. using the proposed development boundary and publicly available OpenStreet Maps. This was used in combination with NPWS shapefiles to identify the boundaries of European sites in relation to the Zone of Influence. The Zone of Influence is illustrated in Figure 3.1 and Figure 3.2.

Four European sites occur within the Zone of Influence for the proposed development. Table 3.1 lists and describes how this site is connected to the proposed development. Detailed descriptions of this site are provided in Section 3.2.

Table 3.1 European sites located within the Zone of Influence

European site [site code]	Are there potential pathways for impacts from the proposed development to this site? Explain.
River Boyne and River Blackwater SAC [002299]	**Yes**. The proposed development is within this European site, therefore pathways for impacts from the proposed development to this European site exist.
River Boyne and River Blackwater SPA [004232]	**Yes**. The proposed development is within this European site, therefore pathways for impacts from the proposed development to this European site exist.
Boyne Coast and Estuary SAC [001957]	**Yes**. The proposed development is located upstream of this European site at a hydrological distance of 5km. Therefore, there is potential for impacts to this site via hydrological pathways from the proposed development.
Boyne Estuary SPA [004080]	**Yes**. The proposed development is located upstream of this European site at a hydrological distance of 4.6km. Therefore, there is potential for impacts to this site via hydrological pathways from the proposed development.

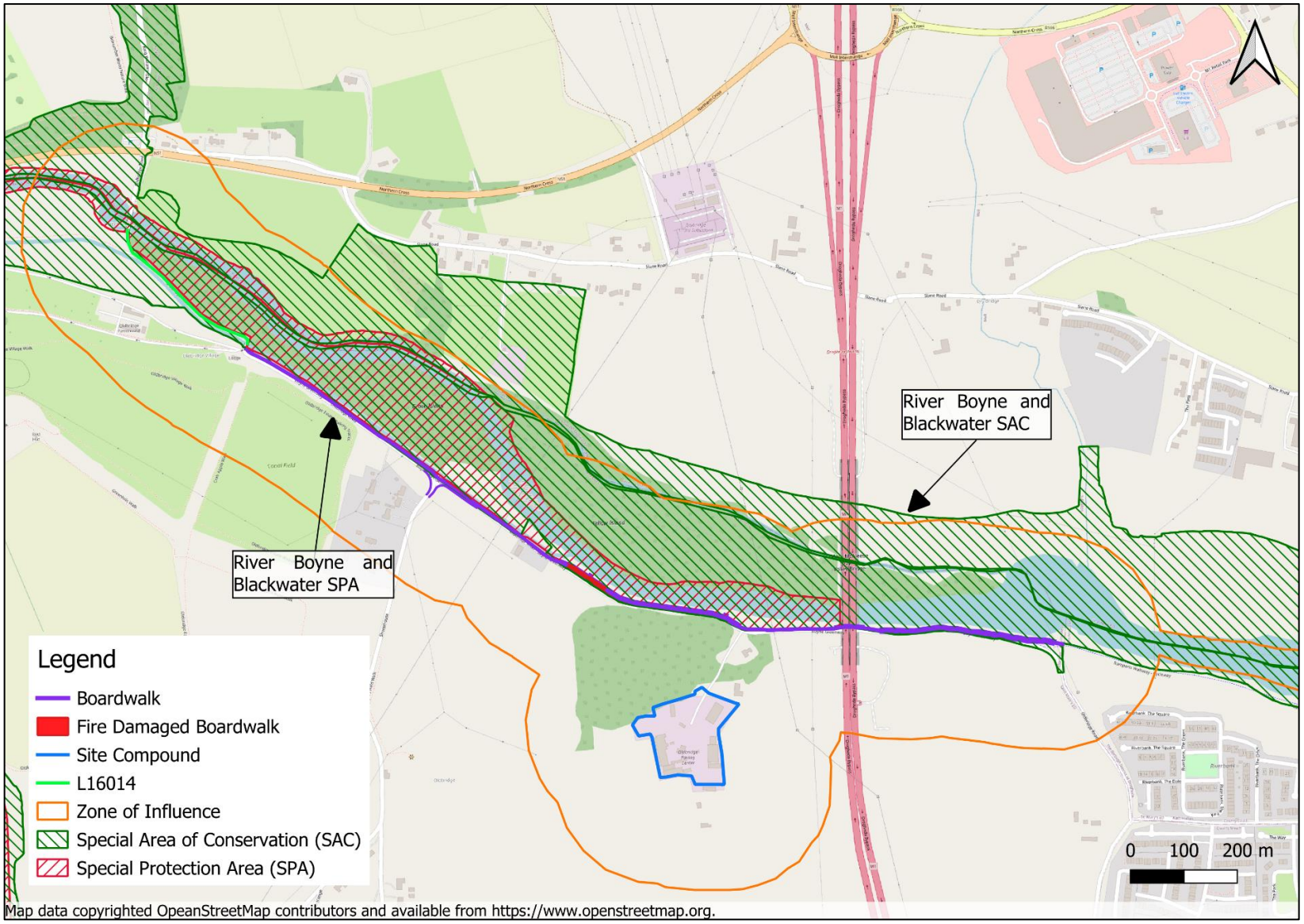


Figure 3.1 Zone of Influence and location of European sites directly surrounding the proposed development

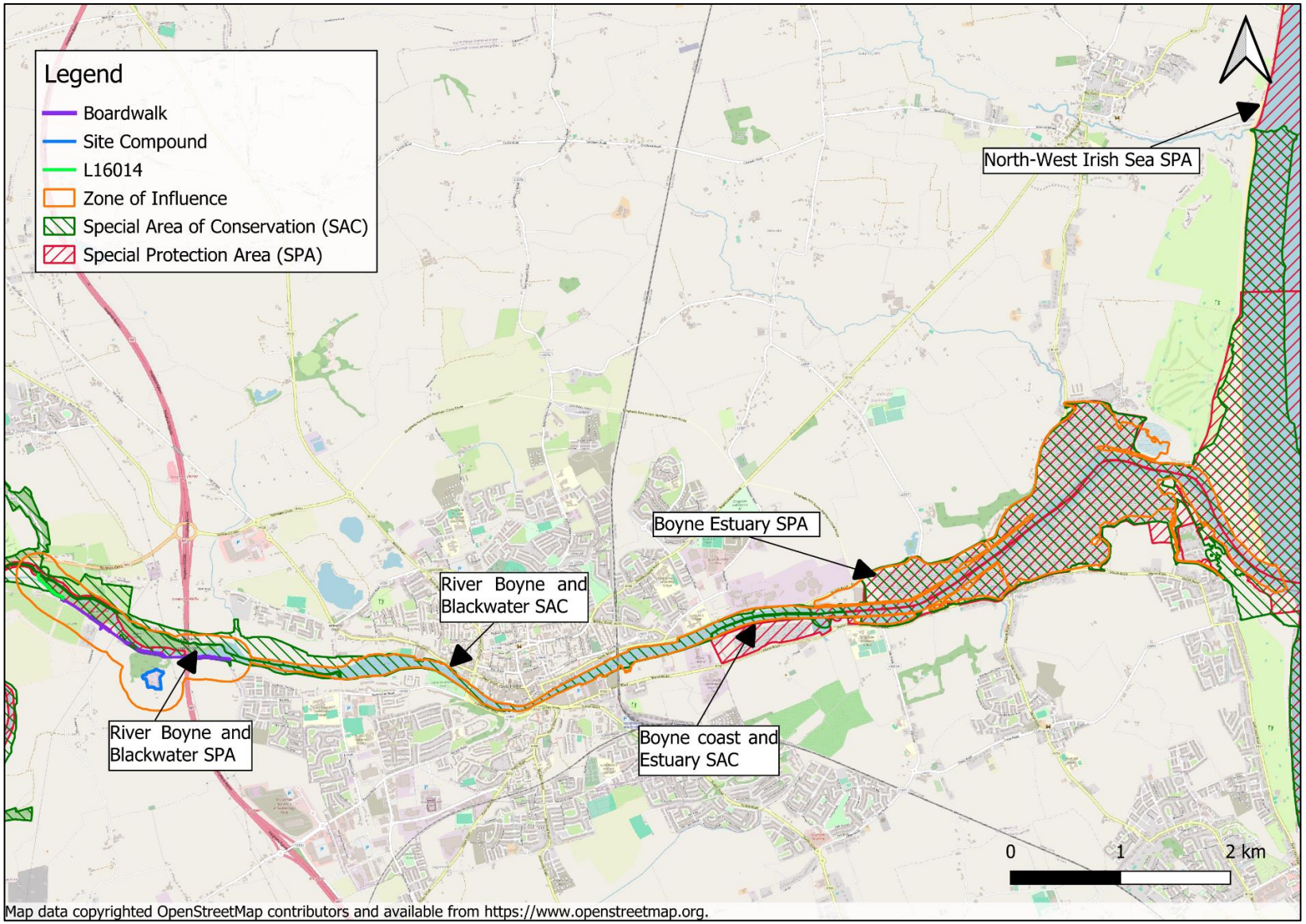


Figure 3.2 Full extent of the Zone of Influence and location of European sites

3.2 Site Descriptions

3.2.1 River Boyne and Blackwater SAC

The description of the River Boyne and Blackwater SAC provided here is based on the Conservation Objectives (NPWS, 2021) and Site Synopsis (NPWS, 2014) for the site.

Qualifying Interests of the Site

[7320] Alkaline Fens

[91E0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)*

[1099] River Lamprey (*Lampetra fluviatilis*)

[1106] Salmon (*Salmo salar*)

[1355] Otter (*Lutra lutra*)

Site Overview

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 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 sea trout fishing and extensive brown trout fishing. Atlantic Salmon (*Salmo salar*) use the tributaries and headwaters as spawning grounds.

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. In addition, the site also supports many more of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. Common Frog, another Red Data Book species, also occurs within the site. All of these animals, with the addition of the Stoat and Red Squirrel, which also occur within the site, are protected under the Wildlife Act, 1976.

The site supports populations of several species listed on Annex II of the Habitats Directive, and habitats listed on Annex I of this Directive, as well as examples of other important habitat types. Although the wet woodland areas appear small there are few similar examples of this type of alluvial wet woodland remaining in the country, particularly in the north-east. The semi-natural habitats, particularly the strips of woodland which extend along the river banks, and the marsh and wet grasslands, increase the overall habitat diversity and add to the ecological value of the site, as does the presence of a range of Red Data Book plant and animal species and the presence of nationally rare plant species.

3.2.2 River Boyne and River Blackwater SPA

Qualifying Interests of the Site

[A229] Kingfisher (*Alcedo atthis*)

The description of the River Boyne and Blackwater SAC provided here is based on the Conservation Objectives (NPWS, 2022) and Site Synopsis (NPWS, 2010b) for the site.

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 Birds Directive.

3.2.3 Boyne Coast and Estuary SAC

The description of the River Boyne and Blackwater SAC provided here is based on the Conservation Objectives (NPWS, 2012a) and Site Synopsis (NPWS, 2016) for the site.

Qualifying Interests of the Site

[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)*[10]

Site Description

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.

[10] Asterisk (*) denotes priority Annex I habitats, those which are in danger of disappearing within the EU territory.

The Boyne River channel, which is navigable and dredged, is defined by training walls, these being breached in places. Intertidal flats occur on 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 saltmarshes, 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 glassworts (*Salicornia* spp.). Common Cord-grass (*Spartina anglica*) occurs frequently on the flats and saltmarshes.

The two sand dune systems in the site, at Baltray and Mornington, are of conservation value, despite the restricted distribution of the intact areas and the high recreational pressure to which they are subjected. A gradient from embryonic dunes to Marram (*Ammophila arenaria*) dunes and then fixed dunes is shown at both systems.

The largest area of annual vegetation of drift lines within this SAC is located at Baltray, north of the estuary. The vegetation is highly representative of the habitat type, which is limited to a small number of highly specialised species that are capable of coping with harsh environmental conditions including high salinity, wind exposure, and unstable substrate and lack of soil moisture. Species present include oraches (*Atriplex spp*.), Sea Rocket (*Cakile maritima*), Prickly Saltwort (S*alsola kali*) and Sea Sandwort (*Honkenya peploides*). Embryonic dunes are particularly well-developed at Baltray where there is active accretion. Species present include Sand Couch (*Elymus farctus*), Lyme-grass (*Leymus arenarius*), Marram, Sea Sandwort and Prickly Saltwort. The embryonic dunes grade into a narrow band of shifting Marram dunes. Marram is dominant, though there are also such species as Cat's-ear (*Hypochoeris radicata*), Mouse-ear Hawkweed (*Hieracium pilosella*) and Dandelion (*Taraxacum agg*.). The areas of fixed dunes on the site have a typical diversity of species, including Marram, Red Fescue (Festuca rubra), Wild Carrot (*Daucus carota*), Common Bird'sfoot-trefoil (*Lotus corniculatus*), Common Restharrow (*Ononis repens*), Wild Thyme (*Thymus praecox),* Lady's Bedstraw (Galium verum) and Wild Pansy (*Viola tricolor*). Vegetation dominated by bryophytes and lichens is limited, though such species as *Brachythecium albicans, Hypnum cupressiforme, Peltigera canina* and *Cladonia spp*. occur. Some dune slacks may still occur at the site. A number of scarce plants such as Viper's-bugloss (*Echium vulgare*), Adder's-tongue (*Ophioglossum vulgatum*), Variegated Horsetail (*Equisetum variegatum*) and Wild Clary/Sage (*Salvia verbenaca*) have been recorded from the site in the past. The last-named species is of particular note as it is a Red Data Book species at its most northerly known Irish station.

3.2.4 Boyne Estuary SPA

The description of the River Boyne Estuary SPA provided here is based on the Conservation Objectives (NPWS, 2013a) and Site Synopsis (NPWS, 2015) for the site.

Qualifying Interests of the Site

[A048] Shelduck (*Tadorna tadorna)*

[A130] Oystercatcher (*Haematopus ostralegus)*

[A140] Golden Plover (*Pluvialis apricaria)*

[A141] Grey Plover (*Pluvialis squatarola)*

[A142] Lapwing (*Vanellus vanellus)*

[A143] Knot (*Calidris canutus)*

[A144] Sanderling (*Calidris alba)*

[A156] Black-tailed Godwit (*Limosa limosa)*

[A162] Redshank (*Tringa tetanus)*

[A169] Turnstone (*Arenaria interpres)*

[A195] Little Tern (*Sterna albifrons)*

[A999] Wetlands

Site Overview

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 500m. 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.

The Boyne Estuary is the second most important estuary for wintering birds on the Louth-Meath coastline. Black-tailed Godwit occurs here in internationally important numbers (471). A further nine species of wintering waterbirds have populations of national importance, i.e. Shelduck (218), Oystercatcher (1,179), Golden Plover (6,070), Grey Plover (146), Lapwing (4,771), Knot (1,944), Sanderling (81), Redshank (583) and Turnstone (221) - all figures are mean peaks for the 5 year period 1995/96-1999/2000. Of particular note is that the site supports 6.8% of the all-Ireland population of Knot and almost 3% of the total for Golden Plover. Other species which occur include Bar-tailed Godwit (86), Cormorant (97), Brent Goose (172), Wigeon (454), Teal (230), Dunlin (498), Curlew (395), Mallard (197), Red-breasted Merganser (14), Greenshank (6), Ringed Plover (80) and Mute Swan (13). The site provides both feeding and high-tide roost areas for the birds. The estuary also attracts large numbers of gulls in winter, including Black-headed Gull (593), Common Gull (145), Herring Gull (403) and Great Black-backed Gull (160).

Little Tern have bred here since at least 1984 and a nationally important population was recorded in 1995 (14 pairs). In the intervening years breeding numbers and fledgling success has varied significantly. In 1996 approximately 20 pairs fledged 15 - 20 chicks but in 1998 and 1999 part of the shingle bank where the birds nested was washed away by storms. In 2008 35 pairs of Little Tern were recorded.

3.3 Evaluation Against Conservation Objectives

Tables 3.2 – 3.5 below detail the evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the sites identified in Section 3.1 and described in Section 3.2. As explained in Sections 1.3 and 1.4, the assessment is carried out in view of the Conservation Objectives of the relevant European site(s), which are in turn defined by detailed Attributes and corresponding Targets. Therefore, the evaluation of whether or not a likely effect is significant (in view of the Conservation Objective in question) is made with regard to these Attributes and Targets.

Table 3.2 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the River Boyne and River Blackwater SAC [002299]

Qualifying Interest	Conservation Objective as per NPWS (2021)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Alkaline Fens [7320]	*"To maintain the favourable conservation condition of Alkaline fens in River Boyne and River Blackwater SAC, which is defined by the following list of attributes and targets"*	The Attributes of the Conservation Objectives of these Qualifying Interests focus on "*Habitat area*", "*Habitat distribution*", "*Ecosystem function: soil nutrients*", "*Ecosystem function: peat formation*", "*Ecosystem function: hydrology - groundwater levels*", "*Ecosystem function: hydrology – surface water flow*", "*Ecosystem function: water quality*", "*Vegetation composition: community diversity*", "*Vegetation composition: typical brown mosses*", "*Vegetation composition: typical vascular plants*", "*Vegetation composition: native negative indicator species*", "*Vegetation composition: non-native species*", "*Vegetation composition: native trees and shrubs*", "*Vegetation composition: algal cover*", "*Vegetation structure: vegetation height*", "*Physical structure: disturbed bare ground*", "*Physical structure: tufa formations*", "*Indicators of local distinctiveness*", and "*Transitional areas between fen and adjacent habitats*". The main areas of alkaline fen in this site are located in the vicinity of Lough Shesk, Freehan Lough and Newtown Lough, >30km upstream from the proposed development. There is no pathway for impacts from the proposed development to reach this Qualifying Interest habitat. Therefore, it can be concluded beyond reasonable scientific doubt that there is no potential for adverse effects on this Qualifying Interest as a result of the proposed development.	No
Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae*) [91E0]	*"To restore the favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* in River Boyne and River Blackwater SAC"*	The Attributes of the Conservation Objectives of these Qualifying Interests focus on "*Habitat area*", "*Habitat distribution*", "*Woodland size*", "*Woodland structure: cover and height*", "*Woodland structure: community diversity and extent*", "*Woodland structure: natural regeneration*", "*Hydrological regime: flooding depth/height of water table*", "*Woodland structure: dead wood*", "*Woodland structure: veteran trees*", "*Woodland structure: indicators of local distinctiveness*", "*Woodland structure: indicators of overgrazing*", "*Vegetation composition: native tree cover*", "*Vegetation composition: typical species*", "*Vegetation composition: negative indicator species* " and "*Vegetation composition: problematic native species*". The woodland present at Yellow Island and Grove Island correspond to the Annex I habitat [91E0] Alluvial forests (NPWS, 2021). Yellow Island is located directly across the river from the burnt section of the boardwalk. Grove Island is located between the Boyne Canal and the River Boyne. The overflow pipe is located directly adjacent to this alluvial woodland, and will increase the amount of water from the canal which flows into it. The conservation objectives document details that Himalayan Balsam has been recorded on Yellow Island and has caused significant	Yes

Qualifying Interest	Conservation Objective as per NPWS (2021)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
		negative impacts to the alluvial forest habitat. Although it is not recorded at Grove Island, it is assumed to be present. The proposed development has the potential to cause the spread of Himalayan Balsam. Himalayan Balsam may outcompete native species. Therefore, the proposed development has the potential to impact the 'Vegetation composition: typical species' and 'Vegetation composition: negative indicator species' Attributes for this Qualifying Interest. Therefore, the proposed development has the potential to result in the spread of invasive species to River Boyne and River Blackwater SAC for this Qualifying Interest.	
River Lamprey (*Lampetra fluviatilis*) [1099]	*"To restore the favourable conservation condition of River Lamprey (Lampetra fluviatilis) in River Boyne and River Blackwater SAC"*	The Attributes of the Conservation Objectives of these Qualifying Interests focus on "*Distribution*", "*Distribution of larvae*", "*Population structure of larvae*", "*Larval prey density in fine sediment*", and "*Extent and distribution of spawning nursery habitat*". River Lamprey travel upstream from the coast to upper reaches of rivers to spawn. Therefore, it is assumed that they are present in the River Boyne immediately adjacent to the proposed development. Excavation of the embankment at the burned section and repointing works at Engineers Bridge has the potential to result in water quality impacts through sedimentation of the River, this could create a barrier to the upstream migration of adult lamprey. Therefore, sedimentation has the potential to impact the 'Distribution' Attribute for this Qualifying Interest. Therefore, the proposed development has the potential to result in negative water quality impacts in River Boyne and River Blackwater SAC for this Qualifying Interest.	Yes
Atlantic Salmon (*Salmo salar*) [1106]	*"To restore the favourable conservation condition of Atlantic Salmon (Salmo salar) in River Boyne and River Blackwater SAC"*	The Attributes of the Conservation Objectives of these Qualifying Interests focus on "*Distribution extent of anadromy*", "*Adult spawning fish*", "*Salmon fry abundance*", "*Out-migrating smolt abundance*", "*Number and distribution of redds*", and "*Water quality*". Atlantic Salmon travel upstream from the coast to upper reaches of river to spawn. Therefore, it is assumed that they are present in the River Boyne immediately adjacent to the proposed development. Excavation of the embankment at the burned section has the potential to result in water quality impacts through sedimentation of the River, this could create a barrier to the upstream migration of adult salmon. Therefore, sedimentation has the potential to impact the 'Distribution' and 'Water Quality' Attributes for this Qualifying Interest.	Yes

Qualifying Interest	Conservation Objective as per NPWS (2021)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
		Therefore, the proposed development has the potential to result in negative water quality impacts in River Boyne and River Blackwater SAC for this Qualifying Interest.	
Otter (*Lutra lutra*) [1355]	*"To maintain the favourable conservation condition of Otter (Lutra lutra) in River Boyne and River Blackwater SAC"*	The Attributes of the Conservation Objectives of these Qualifying Interests focus on "*Distribution*", "*Extent of terrestrial habitat*", "*Extent of freshwater (river) habitat*", "*Extent of freshwater (lake) habitat*", "*Couching sites and holts*", "*Fish biomass available*", and "*Barriers to connectivity*". The ecological survey in September 2023 did not record Otter holts or signs along the length of the proposed development, or within 150m upstream and downstream of the boardwalk. It is not considered that excavation of the embankment or of the L16014 road will lead to significant noise disturbance for Otter. It will consist of an excavator working from the roadside or on the embankment during the daytime only. As Otter are generally nocturnal, they are unlikely to be disturbed by machinery working during the day. Additionally, Otter are habituated to human presence at this location as vehicles, walkers with dogs and cyclist activity is already frequent at this location. The proposed development will not increase barriers to connectivity for Otter, beyond the temporary and localised disturbance associated with the construction phase. Excavation of the embankment at the burned section has the potential to result in water quality impacts through sedimentation of the River, this could result in a reduction in prey availability for Otter upstream of the proposed development. Therefore, sedimentation has the potential to impact the 'Fish Biomass Availability' Attribute for this Qualifying Interest. Therefore, the proposed development has the potential to result in negative water quality impacts in River Boyne and River Blackwater SAC for this Qualifying Interest.	Yes

Table 3.3 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the River Boyne and River Blackwater SPA [004232]

Qualifying Interest	Conservation Objective as per NPWS (2022)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Kingfisher (*Alcedo atthis*) [A229]	"*To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.*"	No Attributes or Targets are defined at present for the River Boyne and River Blackwater SPA or any SPA in the Member State where Kingfisher is listed as a Qualifying Interest. According to the Generic Conservation Objectives for the SPA, favourable conservation status of a species is 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", "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"* (NPWS, 2022). The ecological survey in September 2023 indicated that there are no burrows or suitable burrowing habitat for Kingfisher (steep earth banks) along the banks of the River Boyne or near the Boyne Canal. The proposed development will not lead to an increase in greenway users, noise or visual impacts during operation, which will remain the same. Disturbance and the potential negative effects on water quality during the construction phase will be temporary and localised. Therefore, it can be concluded beyond reasonable scientific doubt that there is no potential for adverse effects on this Qualifying Interest as a result of the proposed development.	No

Table 3.4 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Boyne Coast and Estuary SAC [001957]

Qualifying Interest	Conservation Objective as per NPWS (2012a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Estuaries [1130]	*"To maintain the favourable conservation condition of Estuaries in Boyne Coast and Estuary SAC"*	These habitats are located approximately 5km downstream of the proposed development, therefore there is potential for impacts (water quality and invasive species) to be carried downstream to this SAC. The Annex I habitats for which the SAC has been selected comprise coastal, estuarine and dune habitats for which there is a high saline influence, these conditions are unsuitable for the colonisation and growth of Himalayan Balsam, therefore it is very unlikely to become a threat to these habitats. The coastal habitat supporting document (NPWS, 2012b) for this SAC details other invasive species Common Cordgrass (*Spartina anglica*), Bracken (*Pteridium aquilinum*), Sea Buckthorn (*Hippophae rhamnoides*) as the main threats to the habitats designated in this SAC, none of which were recorded at the location of the proposed development. Due to the small scale of the works required for the repointing and excavation works, any uplift of sediment into the water will have settled / assimilated in the 5km hydrological distance to this SAC. Additionally, there are high levels of turbidity in the lower reaches of the Boyne due to the tidal conditions. Therefore, any water quality impacts arising from the proposed development will be imperceptible upon reaching the SAC. Therefore, it can be concluded beyond reasonable scientific doubt that there is no potential for adverse effects on these Qualifying Interests as a result of the proposed development.	No
Tidal Mudflats and Sandflats [1140]	*"To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Boyne Coast and Estuary SAC"*		No
***Salicornia* and other annuals colonising mud and sand [1310]**	*"To restore the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in Boyne Coast and Estuary SAC"*		No
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	*"To maintain the favourable conservation condition of Atlantic salt meadows (Glauco- Puccinellietalia) in Boyne Coast and Estuary SAC"*		No
Embryonic shifting dunes [2110]	*"To restore the favourable conservation condition of Embryonic shifting dunes in Boyne Coast and Estuary SAC"*		No
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	*"To restore the favourable conservation condition of Shifting dunes along the shoreline with Ammophila arenaria (white dunes) in Boyne Coast and Estuary SAC"*		No
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]*	*"To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation (grey dunes) in Boyne Coast and Estuary SAC"*		No
Annual vegetation of drift lines [1210]	No Conservation Objective is set for Annual vegetation of drift lines in the Boyne		No

Qualifying Interest	Conservation Objective as per NPWS (2012a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
	Coast and Estuary SAC. The Attributes and Targets used for the assessment are taken from the North Dublin Bay SAC Conservation Objectives (NPWS, 2013b). The Conservation Objective for this habitat is *"To restore the favourable conservation condition of Annual vegetation of drift lines in this SAC."*		
Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	*The status of Mediterranean salt meadows (Juncetalia maritimi) as a qualifying Annex I habitat for Boyne Coast and Estuary SAC is currently under review. The outcome of this review will determine whether a site-specific conservation objective is set for this habitat.* The Attributes and Targets used in the assessment are taken from the Dundalk Bay SAC Conservation Objectives (NPWS, 2011). The Conservation Objectives for this habitat are *"To maintain the favourable conservation condition of Mediterranean salt meadows in this SAC."*		No

Table 3.5 Evaluation of the likely effects of the proposed development in view of the Conservation Objectives of the Boyne Estuary SPA [004080]

Qualifying Interest	Conservation Objective as per NPWS (2013a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Shelduck (*Tadorna tadorna*) [A048]	*"To maintain the favourable conservation condition of Shelduck in Boyne Estuary SPA"*	The Attributes of the Conservation Objectives of these Qualifying Interests focus on "*Population trend*" and "*Distribution*". There is suitable supporting habitat (mudflats) for these Qualifying Interest species located approximately 1km downstream of the proposed development, it is therefore assumed that these species may be present at this location. There are some fields to the north and south of the proposed development which provide suitable supporting habitat for some Qualifying Interest species within the Zone of Influence. However, these are screened by existing treelines along road and on the north side of the Boyne, and there is an abundance of fields in the surrounding area, therefore there is no potential for noise and/or visual disturbance to impact to these species as a result of the proposed development. Due to the small scale of the works required for the proposed development, any uplift of sediment into the water will have settled / assimilated in the 1km hydrological distance to the supporting habitats of this SPA. Therefore, any water quality impacts arising from the proposed development will be imperceptible for Qualifying Interest bird species foraging in mudflat habitats. Therefore, it can be concluded beyond reasonable scientific doubt that there is no potential for adverse effects on these Qualifying Interests as a result of the proposed development.	No
Oystercatcher (Haematopus ostralegus) [A130]	*"To maintain the favourable conservation condition of Oystercatcher in Boyne Estuary SPA"*		No
Golden Plover (*Pluvialis apricaria*) [A140]	*"To maintain the favourable conservation condition of Golden Plover in Boyne Estuary SPA"*		No
Grey Plover (*Pluvialis squatarola*) [A141]	*"To maintain the favourable conservation condition of Grey Plover in Boyne Estuary SPA"*		No
Lapwing (*Vanellus vanellus*) [A142]	*"To maintain the favourable conservation condition of Lapwing in Boyne Estuary SPA"*		No
Knot (*Calidris canutus*) [A143]	*"To maintain the favourable conservation condition of Knot in Boyne Estuary SPA"*		No
Sanderling (*Calidris alba*) [A144]	*"To maintain the favourable conservation condition of Sanderling in Boyne Estuary SPA"*		No
Black-tailed Godwit (*Limosa limosa*) [A156]	*"To maintain the favourable conservation condition of Black-tailed Godwit in Boyne Estuary SPA"*		No
Redshank (*Tringa totanus*) [A162]	*"To maintain the favourable conservation condition of Redshank in Boyne Estuary SPA"*		No

Qualifying Interest	Conservation Objective as per NPWS (2013a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
Turnstone (*Arenaria interpres*) [A169]	*"To maintain the favourable conservation condition of Turnstone in Boyne Estuary SPA"*		No
Little Tern (*Sterna albifrons*) [A195]	*"To maintain the favourable conservation condition of Little Tern in Boyne Estuary SPA"*	The Attributes of the Conservation Objectives of Little focus on "*Breeding population abundance: apparently occupied nests (AONs)*", "*Productivity rate: fledged young per breeding pair*", "*Distribution: breeding colonies*", "*Prey biomass available*", "*Barriers to connectivity*" and "*Disturbance at the breeding site Level of impact*". Given that this site is approximately 4.6km downstream of the proposed development, the proposed development does not have the potential to affect Little Tern through disturbance. There is potential for the proposed development to result in the release of pollutants such as mortar or sediment which may enter the River Boyne and flow to Boyne Estuary. However, given the significant hydrological distance, the assimilative capacities of the River Boyne and Boyne Estuary, and due to the fact that it is a tidal waterbody and flows through an urban centre and industrial port, there are no anticipated impacts as a result of pollution events during construction. Little Tern generally feed along the coast and in estuaries, within 5km of their nesting sites (Woodward et al., 2019), and therefore any disturbance generated by the proposed development would not significantly affect this species. Therefore, it can be concluded beyond reasonable scientific doubt that there is no potential for adverse effects on these Qualifying Interests as a result of the proposed development.	No
Wetland and Waterbirds [A999]	*"To maintain the favourable conservation condition of the wetland habitat in Boyne Estuary SPA as a resource for the regularly-occurring migratory waterbirds that utilise it"*	The Attributes of the Conservation Objectives of this Qualifying Interest focus on "*Habitat Area*". Due to the small scale of the works required for the excavation and repointing works, any uplift of sediment into the water will have settled / assimilated in the 1km hydrological distance to the supporting habitats of this SPA. Therefore, any water quality impacts arising from the proposed development will be imperceptible for Qualifying Interest bird species foraging in mudflat habitats.	No

Qualifying Interest	Conservation Objective as per NPWS (2013a)	Does the proposed development provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Likely Significant Effect
		Therefore, it can be concluded beyond reasonable scientific doubt that there is no potential for adverse effects on this Qualifying Interest as a result of the proposed development.	

3.4 Summary of Adverse Effects

In Section 3.1, it was established that four European sites, namely the River Boyne and River Blackwater SAC, the River Boyne and River Blackwater SPA, the Boyne Coast and Estuary SAC and the Boyne Estuary SPA occur within the Zone of Influence of the proposed development. It was determined that potential pathways for effects exist between the proposed development these sites. No pathways for effects exist between the proposed development and any other European site. The European sites are described in detail in Section 3.2.

In Section 3.3, it was established, in the absence of appropriate mitigation, interruptions or delays in achieving certain Conservation Objectives for one site, i.e. adverse effects, cannot be ruled out. A summary of the Qualifying Interests where adverse effects could not be ruled out for the River Boyne and River Blackwater SAC are presented below:

- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0];
- River Lamprey (*Lampetra fluviatilis*) [1099];
- Atlantic Salmon (*Salmo salar*) [1106]; and
- Otter (*Lutra lutra*) [1355].

4. ASSESSMENT OF ADVERSE EFFECTS

4.1 Approach to Assessment

In Section 3 of this NIS, adverse effects on the integrity of the River Boyne and River Blackwater SAC were identified. In accordance with European Commission guidance (EC, 2021), the identification of these effects was focussed on and limited to the Conservation Objectives of the site.

Section 4 provides a detailed analysis and evaluation of the adverse effects identified in Section 3 (as summarised in Section 3.4). In order to fully assess the implications of the proposed development for the European site concerned, each of the potential adverse effects is evaluated with reference to the Attributes and Targets which define the Conservation Objectives of those sites.

4.2 River Boyne and River Blackwater SAC

The Qualifying Interests for which the River Boyne and River Blackwater SAC has been selected and which could be adversely affected, were identified in Section 3.

4.2.1 Alluvial Forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-padion, Alion incanae, Salicion albae*) [91E0]

The Attributes for 'Alluvial Forests with *Alnus glutinosa* and *Fraxinus excelsior'* are:

- Habitat area
- Habitat Distribution
- Woodland size
- Woodland structure: cover and height
- Woodland structure: community diversity and extent
- Woodland structure: natural regeneration
- Hydrological regime: flooding depth/height of water table
- Woodland structure: dead wood
- Woodland structure: veteran trees
- Woodland structure: indicators of local distinctiveness
- Woodland structure: indicators of overgrazing
- Vegetation composition: native tree cover
- Vegetation composition: problematic native species
- Vegetation composition: typical species
- Vegetation composition: negative indicator species

The proposed development is located adjacent to this habitat. There will be no impact on the habitat area, habitat distribution, woodland size, woodland structure, hydrological regime, or vegetation composition with regard to native tree cover and problematic native species. During the works on the boardwalk, machinery will be limited to the roadways and hard-surfaces and will not enter the floodplain. Any vegetation clearance will be minor maintenance work within 0.5m of the boardwalk, and this will not include any areas of Alluvial Woodland. For the canal overflow pipe, a trench will be excavated from the canal to the overflow chamber located within the woodland. Given that the chamber is located directly adjacent to the L16014 roadway (see Plate 2.5), this will not result in land-take from the alluvial woodland and will not result in the loss of trees. The proposed development will not result in the increase of

common nettle or any other negative indicator species in this habitat. The canal overflow pipe flows directly into the Alluvial Woodland. Water will continue to flow into the woodland at times of high water, during which, the woodland will already be flooded. Therefore, proposed development will not result in a change to the hydrological regime for this Qualifying Interest. Therefore, the proposed development will not lead to a delay or interruption in the achievement of the Conservation Objectives, as defined by the Attributes habitat area, habitat distribution, woodland size, woodland structure, hydrological regime, or vegetation composition, and no mitigation is required.

The proposed development has the potential to lead to an increase in negative indicator species, which may in-turn outcompete typical species. The site-specific Target for Vegetation composition: negative indicator species is "*Negative indicator species cover not greater than 10%; regeneration of negative indicator species* absent". The site-specific Target for Vegetation composition: typical species is "*At least 1 target species for 91E0* woodlands present; at least 6 positive indicator species for 91E0* woodlands present*". The woodland present at Yellow Island and Grove Island correspond to the Annex I habitat [91E0] Alluvial forests (NPWS, 2021). Yellow Island is located directly across the river from the burnt section of the boardwalk. Grove Island is located between the Boyne Canal and the River Boyne. Himalayan Balsam is present throughout the area, on the banks of the River Boyne and in the wet woodlands adjacent to it. Himalayan Balsam seed pods 'explode' to disperse seeds, particularly when they are disturbed. The River Boyne and the Boyne Canal offer these seeds a method of further dispersal, should they enter the water and travel downstream. The movement of machinery, soil and vegetation during the construction phase of the proposed development have the potential to cause further spread of Himalayan Balsam downstream and beyond the proposed development site. Therefore, the proposed development has the potential for adverse effects on the 'vegetation composition: negative indicator species' and 'vegetation composition: typical species' attributes for this habitat, and mitigation measures are required.

4.2.2 River Lamprey (*Lampetra fluviatilis*) [1099]

The Attributes for 'River Lamprey' are:

- Distribution of larvae
- Population structure of larvae
- Larval lamprey density in fine sediment
- Extent and distribution of spawning nursery habitat
- Distribution

There is potential for excavation of the embankment at the burned section to result in the release of pollutants such as hydrocarbons and sediment which may lead to a reduction in water quality. Furthermore, excavation of the L16014 road and the repointing works at Engineers Bridge may result in the release of pollutants into the canal, which may then enter the River Boyne and reduce water quality. However, as lamprey spawn in the upper reaches of rivers, and the development is within the tidal reach of the River Boyne, there are no pathways for larva to be impacted by the proposed development. Therefore, the proposed development will not result negative impacts on the 'distribution of larvae', 'population structure of larvae', 'larval lamprey density in fine sediment' and 'extent and distribution of spawning nursery habitat' attributes for this Qualifying Interest. Therefore, the proposed development will not have adverse effects on the attributes for this Qualifying Interest, and no mitigation is required.

The site-specific Target for Distribution is "*restore access to all water courses down to first order streams*". Artificial barriers are known to impede the passage of River Lamprey. There will be no artificial barriers implemented for the proposed development. There is potential for excavation of the embankment at the burned section to result in the release of pollutants such as hydrocarbons or sediment which may lead to a reduction in water quality. Furthermore, excavation of the L16014 road and the repointing works at Engineers Bridge may result in the release of pollutants into the canal, which may then enter the River Boyne and result in water quality impacts. This act as a barrier for lamprey, as it could deter them from this area of the river, which could create a barrier to the upstream migration of adult lamprey. Therefore, the proposed development has the potential for adverse effects on the 'Distribution' attribute for River Lamprey, and mitigation measures are required.

4.2.3 Atlantic Salmon (*Salmo salar*) [1106]

The Attributes for 'Atlantic Salmon' are:

- Salmon fry abundance
- Number and distribution of redds
- Distribution: extent of anadromy
- Adult spawning fish
- Out-migrating smolt abundance
- Water quality

Salmon spawn in the upper reaches of rivers, and the proposed development is within the tidal reaches of the River Boyne. As such, the proposed development will not result negative impacts on 'salmon fry abundance' or the 'number and distribution of redds' attributes. Therefore, the proposed development will not have adverse effects on these attributes for this Qualifying Interest, and no mitigation is required.

The site-specific Target for Distribution: extent of anadromy is "*100% of river channels down to second order accessible from estuary*." This attribute is measured by the percentage of the river which is accessible. Repointing works at Engineers Bridge may result in the release of pollutants into the canal, which may then enter the River Boyne, reducing water quality and leading to habitat degradation. This could deter Salmon from this area of the river and downstream of it, which could in-turn create a barrier to the upstream migration of adult Salmon. Therefore, the proposed development has the potential for adverse effects on the 'Distribution: extent of anadromy' attribute for Atlantic Salmon, and mitigation measures are required.

The site-specific Target for adult spawning fish is "*Conservation limit (CL) for each system consistently exceeded*." Repointing works at Engineers Bridge may result in the release of pollutants into the canal, which may then enter the River Boyne, reducing water quality and leading to habitat degradation. This could deter Salmon from this area of the river, which could create a barrier to the upstream migration of adult salmon and prevent spawning. Therefore, the proposed development has the potential for adverse effects on the 'Adult spawning fish' attribute for Atlantic Salmon, and mitigation measures are required.

The site-specific Target for Out-migrating smolt abundance is "*no significant decline*." The main threats to out-migrating smolt abundance are estuarine pollution, predation, and sea lice (NPWS, 2014). As far as approximately 1.5km upstream of the proposed development, the river is tidal. Repointing works at Engineers Bridge may result in the release of pollutants into the canal, which may then enter the River Boyne, reducing

water quality and leading to habitat degradation. Therefore, the proposed development has the potential for adverse effects on the 'Out-migrating smolt abundance' attribute for Atlantic Salmon, and mitigation measures are required.

The site-specific Target for Water quality is "*At least Q4 at all sites sampled by EPA*." The River Boyne has a Q-value of 4 at its nearest water monitoring station to the proposed development, located at Obelisk Bridge. There is potential for excavation of the embankment at the burned section to result in the release of pollutants such as hydrocarbons or sediment which may lead to a reduction in water quality. Furthermore, excavation of the L16014 road and the repointing works at Engineers Bridge may result in the release of pollutants into the canal, which may then enter the River Boyne and result in water quality impacts. Therefore, the proposed development has the potential for adverse effects on the 'Water quality' attribute for Atlantic Salmon, and mitigation measures are required.

4.2.4 Otter (*Lutra lutra*) [1355]

The Attributes for 'Otter' are:

- Distribution
- Extent of terrestrial habitat
- Extent of freshwater (river) habitat
- Extent of freshwater (lake) habitat
- Couching sites and holts
- Fish biomass available
- Barriers to connectivity

NPWS identifies a 10m buffer along rivers and around water bodies as critical for Otters (NPWS, 2021). The ecological survey in September 2023 did not identify any Otter holts or signs along the length of the proposed development or within 150m upstream or downstream of the boardwalk. The proposed development will result in no land-take other than the removal of the temporary embankment. As such the boardwalk and overflow pipe works, will not result in a reduction in terrestrial habitat, and this will return the area currently under the footprint of the embankment to more natural floodplain habitat. Additionally, there will be no impacts on the hydrological regime as a result of the proposed development, and no lakes exist within the Zone of Influence. Excavation works will be conducted from the roadside or on the embankment during the daytime only. As Otter are generally nocturnal, they are unlikely to be disturbed by machinery working during the day. Additionally, Otter are likely habituated to human presence at this location as vehicles, walkers with dogs and cyclist activity is already frequent at this location. The proposed development will not increase barriers to connectivity for Otter, beyond the temporary and localised disturbance associated with the construction phase. The proposed development will not result negative impacts on the 'Distribution', 'Extent of terrestrial habitat', 'Extent of freshwater (river) habitat', 'Extent of freshwater (lake) habitat' and 'Couching sites and holts' attributes. Therefore, the proposed development will not have adverse effects on these attributes for this Qualifying Interest, and no mitigation is required.

The site-specific Target for Fish biomass available is "*no significant decline*." There is potential for excavation of the embankment at the burned section to result in the release of pollutants such as hydrocarbons or sediment which may lead to a reduction in water quality. Furthermore, excavation of the L16014 road and the repointing works at Engineers Bridge may result in the release of pollutants into the canal, which may then enter the River Boyne and further reduce water quality. This could create a barrier

to the movement of fish throughout the River Boyne, which could result in a reduction in prey availability for Otter. Therefore, the proposed development has the potential for adverse effects on the 'Fish biomass available' attribute for Otter, and mitigation measures are required.

4.2.5 Conclusion

In the absence of appropriate mitigation, the construction of the proposed development has the potential to adversely affect the Conservation Objectives for 'Alluvial Forests,' 'River Lamprey,' 'Salmon,' and 'Otter' in the River Boyne and River Blackwater SAC through impacts on invasive species and water quality. The 'Vegetation composition: negative indicator species' attribute for 'Alluvial Forests' has the potential to be adversely affected by the spread of invasive species (namely Himalayan Balsam). The 'Distribution' attribute for 'River Lamprey', the 'Distribution: extent of anadromy', 'Adult spawning fish', 'Out-migrating smolt abundance' and 'Water quality' attributes for 'Atlantic Salmon', and the 'Fish biomass available' and 'Barriers to connectivity' attributes for Otter have the potential to be adversely affected by negative water quality impacts. Therefore, mitigation is required to avoid these adverse effects.

5. MITIGATION

5.1 Principles and Approach

Section 4 of this NIS assessed the adverse effects likely to arise from the proposed development on the specific Attributes and Targets which define the Conservation Objectives for a number of Qualifying Interests of the River Boyne and River Blackwater SAC. This section prescribes mitigation measures to ensure their full and proper implementation aimed at mitigating these adverse effects, thereby protecting the integrity of this European site during the construction phase of the proposed development.

The mitigation measures prescribed in this NIS have been designed according to the principle of a mitigation hierarchy, as outlined in the European Commission's guidance document *Assessment of plans and projects in relation to Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (EC, 2021). According to this hierarchy, mitigation measures first suggest *avoidance* (i.e. preventing significant impacts from happening in the first place) and then *reduction* of impact (i.e. reducing the magnitude and/or likelihood of an impact).

As mitigation measures are related directly to impacts and only indirectly to receptors and as, in this case, all of the affected receptors have been identified as being affected by the same set of impacts, to describe mitigation measures under the headings of the relevant receptors would lead to undue repetition. Therefore, the measures prescribed in this NIS are described under the headings of the types of impacts which they are intended to mitigate.

The mitigation measures are prescribed in Section 5.2 and a protocol to ensure their full and proper implementation is prescribed in Section 5.3. The significance of any residual effects following the inclusion of mitigation measures is evaluated in Section 5.4. As per the assessment of adverse effects in Section 4, this evaluation is made in view of the relevant Conservation Objectives.

5.2 Mitigation Measures

A suitably qualified and experienced Ecological Clerk of Works (ECoW) will be employed by the Contractor for the duration of the construction phase to ensure that the mitigation measures contained in this NIS are adhered to. The ECoW will have power to stop the works if further mitigation measures are required.

5.2.1 Spread of Himalayan Balsam

The following mitigation applies to 'Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) in the River Boyne and River Blackwater SAC. All works in proximity to the River Boyne will follow best practice guidance, as per the following documents:

- TII (2020a). The Management of Invasive Alien Plant Species on National Roads – Standard. Transport Infrastructure Ireland, Dublin.
- TII (2020b). The Management of Invasive Alien Plant Species on National Roads – Technical Guidance. Transport Infrastructure Ireland, Dublin.
- TII (2010). The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads, Ireland: National Roads Authority.

- Kelly, J., Maguire, C.M. and Cosgrove, P.J. (2008). Best Practice Management Guidelines Himalayan balsam *Impatiens glandulifera*. Prepared for NIEA and NPWS as part of Invasive Species Ireland.
- IFI (2013). Best Practice for Control of Himalayan balsam *Impatiens glandulifera*. Inland Fisheries Ireland.

The following mitigation measures relating to the prevention of spread of invasive species will apply during the construction of the proposed development:

General Control and Management Procedures

- Construction works shall not commence if Himalayan Balsam plants that are present have gone to seed (late-August to October).
- All vehicles and equipment employed on the construction site (e.g. excavators) will be thoroughly brushed down prior to arrival and on departure from site to prevent the spread of Himalayan Balsam seeds.
- Any soil and topsoil required on the site will be sourced from a stock that has been screened for the presence of invasive species and where it is confirmed that none are present.
- Any material excavated which is not being reused in the same area will be treated as contaminated material and disposed of in a licenced facility. The contractor will be required to obtain a licence, as required under Regulation 49 of the EC (Birds and Natural Habitats) Regulations 2011 (SI 477) for the removal of soil containing Himalayan Balsam seed.

Specific Control and Management Procedures

- In advance of the works beginning in summer / autumn 2024, the control of Himalayan Balsam is required to reduce the risk of spread. The aim of the control measures before the construction phase is to ensure that plants in seed are not present during the construction phase. It should be noted that despite this control, seeds will be present in the area and the area should still be considered contaminated.
- Plants within 3m of the new overflow, the new boardwalk and the existing boardwalk should be pulled in mid-May to mid-June, before the seed capsules appear.
- The plant should be hand-pulled as they have a shallow root ball and are easily removed in this manner.
- Hand pulling should be repeated later in the season, prior to the works, as seeds from the previous season will germinate and produce new plants following initial hand-pulling early in the season (mid-May to mid-June). The repeat hand-pulling should be carried out prior to the development of seed pods, as interference when the seed pods are developed will cause the seed to spread.
- To manually remove the plant, the stem should be gripped about 0.5m above the ground and carefully pulled.
- Pulled plants should be broken to discourage flowering. The pulled plants can be left to rot naturally or removed from site to a licenced facility. If plants are to be transported off site, a licence will be required under Regulation 49 of the EC (Birds and Natural Habitats) Regulations 2011 (SI 477).

5.2.2 Water Quality

The following mitigation applies to 'River Lamprey,' 'Salmon,' and 'Otter' in the River Boyne and River Blackwater SAC. All works will follow best practice guidance, as per the following documents:

- *Guidelines on Protection of Fisheries during Construction Works in and adjacent to Waters* (IFI, 2016).
- *C532 Control of water pollution from construction sites: guidance for consultants and contractors* (CIRIA, 2001).
- *Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes* (TII, 2008b).

Wastewater drainage from all construction facilities will be contained and disposed of in an appropriate manner to prevent water pollution and in accordance with the relevant statutory requirements. The following mitigation measures relating to the protection of water quality will apply during the construction phase of the proposed development. Given the full and proper implementation of these water quality protection measures, the construction and maintenance of the proposed development will not give rise to adverse effects.

Excavation

The following mitigation measures relating to the protection of water quality will apply during the excavation of the boardwalk embankment and of the L16014 road for the overflow pipe:

- Excavation works will take place in dry weather and will not take place if rain is forecast for the 24 hours before or after the works begin. This will be approved by the Employer's Representative.
- During the excavation of the embankment, double silt fences will be installed within the floodplain at the toe of the embankment. Silt fences will be installed prior to the commencement of works.
- Straw bales will be made available to be used as required and as directed by the ECoW.
- The mitigation measures will be monitored by the ECoW during the excavation works to ensure that they are working effectively and will advise the contractor and Employer's Representative of any changes that are required to improve their effectiveness.
- A Construction Management Plan (CMP) will be prepared by the contractor and approved by the Employers Representative and the ECoW.
- Equipment and machinery will be inspected for defects on an ongoing basis.
- Fuel storage tanks shall have secondary containment provided by means of an above ground bund to capture any oil leakage and will be stored at the site compound.
- Storage tanks and associated provision, including bunds, will conform to the current best practice for oil storage and will be undertaken in accordance with Best Practice Guide BPGCS005 – Oil Storage Guidelines (Enterprise Ireland).

Repointing Over Water

The use of mortar over the canal must be carefully controlled to avoid spillage which has a deleterious effect on water chemistry and aquatic habitats and species. The following mitigation measures relating to the protection of water quality will apply during the works at Engineers Bridge:

- Repointing and masonry will take place in dry weather and will not take place if rain is forecast for the 24 hours before after the works begin. This will be approved by the Employer's Representative.
- All repointing will be undertaken by hand, using hand-held tools.
- Only one bucket of mortar will be brought to the works area at any time.
- A mobile catch-net will be used to prevent wet concrete falling into the canal.
- The catch-net will be approved by the Employer's Representative and the ECoW.
- There will be no spills of mortar or similar materials hosed into surface water drains. Such spills shall be contained immediately, and runoff prevented from entering any watercourse.

Construction of New Canal Overflow

- A dam consisting of sandbags will be installed around the overflow pipe.
- Any remaining water will be removed using a pump, and pumped into the canal.
- All water being pumped out will pass through a silt sock to prevent silt entering the water downstream. The silt sock will be approved by the Employer's Representative and the Contractor's Ecologist.
- The pump will be supervised at all times by the Contractor to ensure is it operating correctly.

5.3 Implementation

In order to give effect to the mitigation prescribed in this NIS it should be a condition of any consent granted in respect of the proposed development that all of the mitigation, including monitoring and enforcement, prescribed in this NIS be binding. Accordingly, all of the mitigation prescribed shall be transposed into the Contract documents for the construction of the proposed development.

During construction, all works must comply with relevant legislation and guidelines in order to reduce and minimise environmental impacts and to protect all ecological receptors. In particular, there must be full compliance with the following:

- The mitigation prescribed in this NIS and the accompanying planning application.
- Any conditions which might be attached to the proposed development's planning consent.
- *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters* (IFI, 2016).
- *C532 Control of water pollution from construction sites: guidance for consultants and contractors* (CIRIA, 2001).
- *C648 Control of water pollution from linear construction projects: technical guidance* (CIRIA, 2006).
- *Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes* (TII, 2008a).
- *Guidelines for Ecological Survey Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (TII, 2008a).
- TII (2020a). The Management of Invasive Alien Plant Species on National Roads – Standard. Transport Infrastructure Ireland, Dublin.
- TII (2020b). The Management of Invasive Alien Plant Species on National Roads – Technical Guidance. Transport Infrastructure Ireland, Dublin.

- All applicable legislative requirements in relation to environmental protection.

This list is non-exhaustive. All environmental commitments/requirements and relevant legislation and guidelines which are current at the time of construction will be followed.

5.4 Residual Effects

5.4.1 Alluvial forests, River Lamprey, Atlantic Salmon and Otter

The mitigation prescribed in Section 5.2 and the implementation measures prescribed in Section 5.3 will reduce all negative impacts to imperceptible levels.

Therefore, given the full and proper implementation of the mitigation prescribed in this NIS, it can be concluded beyond all reasonable scientific doubt that construction and operation of the proposed development will not adversely affect the integrity of the River Boyne and River Blackwater SAC, with regards to the Conservation Objectives for Alluvial Forests, River Lamprey, Atlantic Salmon and Otter.

6. IN-COMBINATION EFFECTS

6.1 Introduction

Article 6(3) of the Habitats Directive requires that AA be carried out in respect of plans and projects that are likely to have significant effects on European sites, "*either individually or in combination with other plans or projects*". Therefore, regardless of whether or not the likely effects of a plan or project are significant when considered on their own, the significance of the combined effects of the plan or project under assessment and other plans and projects must also be evaluated.

6.2 Methodology

Plans and projects with potential for interactions with the proposed development were selected for assessment. For the purposes of the assessment, small scale and domestic developments were not considered given the nature of the proposed development and the fact that these developments would be subject to stringent planning controls. Plans and projects with planning permission in the Zone of Influence within the last ten years were considered, which aligned with the following criteria:

- within 200m of the proposed development;
- within 200m of the River Boyne and River Blackwater SAC.

The ePlanning websites for Louth and Meath County Councils and the EIA Portal was used to search for planning applications.

6.3 Outcome

Table 6-1 below details the assessment of the likelihood of significant effects arising from the proposed development in combination with other plans or projects. This assessment was undertaken in view of the Conservation Objectives of the relevant European sites and found that the proposed development does not have the potential to adversely affect any European site in combination with other plans or projects.

Table 6-1 Assessment of potential adverse effects on the integrity of European sites from the proposed development in combination with other plans and projects.

Plan or Project	Description of Plan or Project	In-Combination Effect(s)
Planning Reg. Ref.: 2360345 **Planning Authority:** Louth County Council **Applicant:** Tullybrook Developments Limited **Address:** Slane Road, Drogheda, Co. Louth	Permission for the construction of a part three / part four storey apartment / duplex block (known as Block 3) (2,473.87sq.m GIA) containing 23no. apartment units comprising 11no. 2-bedroom units and 12no. 3-bedroom units with associated private rear gardens and balconies; and shared landscaped communal open space (184sq.m). The proposed development also involves the provision of high quality landscaped public open space (625sq.m), 23no. car parking spaces including 3no. accessible parking spaces, and 4no. EV charging spaces and 88no. bicycle parking spaces, 44no. of which are secured, and covered spaces located at lower ground floor level of the proposed building with the remaining 44no. cycle spaces located at surface level. The primary pedestrian / vehicular / cycle access to serve the proposed development is provided via the existing entrance from Slane Road and a newly constructed internal road delivered under planning permission Reg. Ref: 06510077 (as extended under Reg. Ref:12510022, Reg. Ref: 1858 and Reg. Ref: 211431). Planning permission is also sought for all associated site development and landscape works including the provision of external bin store (17.3sq.m GIA), internal meter room, internal cold water storage tank, stair and lift cores and associated lobbies and circulation space, boundary treatment, hard and soft landscaping, pathways, access steps and associated railings to the open space, provision of foul, service water and water services on site with connections and modifications to existing network.	**No.** This project is located approximately 460m north of the proposed development, across the River Boyne. This project did not progress to stage 2 of Appropriate Assessment, due to a lack of pathways to European sites. There is capacity for wastewater treatment in Drogheda (Uisce Éireann, 2023). Given this, and the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Authority: Louth County Council **Applicant:** Tullybrook Developments Limited **Address:** Slane Road, Drogheda, Co. Louth	The construction of 18 no. residential dwellings (1,987.0 sqm GFA) including 12 no. three-bedroom duplex units (Block 3) with associated external circulation space (42.6 sqm) all with associated private balconies and an associated communal open space (0.021 ha) and 2 no. housing blocks (Block 1 and Block 2) comprising 3 no. two-bedroom units and 3 no. three-bedroom units all with associated private gardens. A total of 19 no. residential car parking spaces are proposed including 2 no. accessible parking spaces, and 4 no. EV charging spaces. A total of 49 no. residential bicycle parking spaces are proposed comprising of 42 no. spaces for residents and 7 no. visitor spaces. The proposed development will also consist of the construction of a creche (244 sqm GFA) with associated outdoor play area (85 sqm) and informal open space (900 sqm), 10 no. car parking spaces including 1 no. accessible parking space and 2 no. EV charging spaces and 9 no. bicycle parking spaces. The proposed development will also include internal roads and footpaths including a bus layby and the provision of 2 no. high quality landscaped public open spaces (0.358 ha total) including a new landscaped public pathway along the Mell Stream. The primary pedestrian / vehicular / cycle access to serve the proposed development is provided via the existing entrance from Slane Road on a newly constructed internal road delivered under planning permission Reg. Ref: 06510077 (as extended under Reg.	**No.** This project is located approximately 360m north of the proposed development, across the River **Boyne.** There is capacity for wastewater treatment in Drogheda (Uisce Éireann, 2023). Given this, and the assimilative capacity of the River Boyne and Boyne Estuary and provided the mitigation measures in relation to water quality and otter disturbance in the NIS are adhered to, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.

Plan or Project	Description of Plan or Project	In-Combination Effect(s)
	Ref: 12510022, Reg. Ref: 1858 and Reg. Ref: 211431). The proposed creche will be served by a dedicated internal shared surface access route with a turning circle. Planning permission is also sought for all ancillary site and development works to facilitate the development, including 14 no. external bin stores (21.2 sqm total); external sheltered bicycle store (12.8 sqm); public lighting; mechanical and electrical installations; retaining walls; realignment of the Mell Stream, boundary treatments; hard and soft landscaping; SuDS; water, surface water drainage and foul drainage works; and all associated site strip and excavation works above and below ground.	
Planning Authority: Louth County Council **Applicant:** Tullybrook Developments Limited **Address:** Slane Road, Drogheda, Co. Louth	The proposed development will consist of the construction of a three-storey apartment/ duplex block (known as Block 13) containing 20no. apartment units comprising of 10no. 2-bedroom Universal Design units and 10no. 3-bedroom units, 12no. residential blocks comprising of 27no. 3-bedroom semi-detached and terrace units, of with associated private rear gardens and balconies; and shared landscaped communal open space (317sq.m). The proposed development also involves the provision of high quality landscaped public open space, 68no. car parking spaces including 2no. accessible parking spaces, and 9no EV charging spaces and 92no bicycle parking spaces, 47no. of which are secured, and covered spaces located at lower ground floor level of the proposed building with the remaining 45no. cycle spaces located at grade. The primary pedestrian / vehicular / cycle access to serve the proposed development is provided via the existing entrance from Slane Road on a newly constructed internal road delivered under planning permission Reg. Ref:06510077 (as extended under Reg. Ref.12510022, Reg. Ref. 1858 and Reg. Ref. 211431). Planning permission is also sought for all associated site development and landscape works including the provision of bin stores, boundary treatment, hard and soft landscaping, pathways, access steps and associated railings to the open space, provision of foul, service water and water services on site with connections and modifications to existing network.	**No.** This project is located approximately 260m north of the proposed development, across the River **Boyne.** There is capacity for wastewater treatment in Drogheda (Uisce Éireann, 2023). Given this, and the assimilative capacity of the River Boyne and Boyne Estuary and provided the mitigation measures in relation to water quality and otter disturbance in the NIS are adhered to, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: 21414 **Planning Authority:** Louth County Council **Applicant:** Louth & Meath Education & Training Board **Address:** Marley's Lane / Rathmullen Road, Drogheda, County Louth	**Planning Application Lodged:** 15th April 2021 Permission for proposed development will consist of a new two-storey administrative headquarters building. The building will be exclusively occupied by the applicant (LMETB) for the purposes of administering educational & training services in the Louth & Meath areas. The proposed development also provides for 57 no surface car parking spaces, cycle parking, landscaping and boundary treatment, signage and all associated site development works. Vehicular access to the proposed development is provided via a new access off Marley's Lane.	**No.** This project is located within the grounds of the existing Saint Oliver's Community College, in close proximity of the River Boyne (approximately 140m south), and is approximately 740m downstream of the proposed development. Given the fact that this project will occur on existing college grounds, the capacity for wastewater treatment in Drogheda and the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects (Uisce Éireann, 2023).

Plan or Project	Description of Plan or Project	In-Combination Effect(s)
Planning Reg. Ref.: ABP308224 **Planning Authority:** An Bord Pleanála **Applicant:** Louth County Council **Address:** St. Dominick's Bridge, Ballsgrove, Moneymore, Drogheda, Co. Louth	**Planning Application Lodged:** 21st September 2020 Bridge refurbishment works at St. Dominick's Bridge, Co. Louth. The proposed works are to be carried out along the existing St. Dominick's Bridge situated over the main channel of the River Boyne approximately 1.5rKm (River Kilometres) upstream of the M1 crossing of the river, to the west of Drogheda.	**No.** This project is located over the River Boyne and is approximately 2.5km downstream of the proposed development. This project is similar in nature to the proposed development. Provided the mitigation measures outlined in the NIS for the proposed development is adhered to, and given assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: 20275 **Planning Authority:** Louth County Council **Applicant:** Maybeck Limited **Address:** Lagavooren, Donore Road, Drogheda, Co Louth	**Planning Application Lodged:** 16th April 2020 Permission for amendments to previously permitted development granted under PL18176 for development at site previously used as the Roadstone Batching Plant that incorporates the lower section of the previous batching plant, bounded by Donore Road to the north, the Watery Steps to the east, the upper section of the batching plant to the south and the Bloomsbury Centre to the west. The amendments to the development will consist of A. Removal of the basement car park and proposed 28 no. surface car parking spaces located to the rear of Block A. B. Modification of the 66 apartment layouts to accommodate elderly residents, comprising of 4 no. 1 bedroom apartments, 54 no. 2 bedroom apartments and 8 no. 3 bedroom apartments. The total number and mix of units and gross floor areas have not changed. C. Modification to the elevations and sections to reflect the amended apartment layouts. D. Minor modification of the positioning of the 3 blocks on the site and their composition. E. Modification of the communal facility, bin stores and general landscaping. F. Adjustment of the existing vehicular site access off Donore Road and introduction of two new pedestrian site access points; one at the foot of the Water Steps with a proposed ESB substation and a second access point off Donore Road, all as granted under PL 18176. G. All associated amendments to roof plant, site lighting, signage, services, landscaping, external furniture, related infrastructure and site development works in conjunction with the amendments noted in points A-F.	**No.** This project is approximately 200m south of the River Boyne, and approximately 2.6km downstream of the proposed development. Roadways, treelines and hedgerows, fields, car parks and residential and commercial developments lie between this project and the River Boyne. This project did not progress to stage 2 of Appropriate Assessment, due to its nature and scale. Given this, and the capacity for wastewater treatment in Drogheda and the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects (Uisce Éireann, 2023).
Planning Reg. Ref.: 21258 **Planning Authority:** Louth County Council **Applicant:** Hallscotch Venture Ltd. **Address:** Marsh Road, Drogheda, Co Louth	**Planning Application Lodged:** 11th March 2021 SHD Stage 3 Application has been lodged to An Bord Pleanala (Stage 2 Ref. 19/560) 275 no. apartments accommodated in 4no. buildings ranging in height from 5 to 12 storeys 219 no. of the apartments are 2 bed and 56 no. are 1 bed. apartment blocks are provided with bicycle and bin stores at ground floor level. Block A is 8 storeys and will comprise 59 no. apartments, with 2 no. retail/café/restaurant units (c. 292 sqm Gross Floor Area at ground floor level. Block B is 8 storeys and will comprise 63 no. apartments. Block C comprises two elements that are 8 and 12 storeys and will comprise 98 no. apartments, with a residential management area (c. 355 sqm GFA)	**No.** This project is located on the southern bank of the River Boyne, within 10m of the river. It is approximately 3.1km downstream of the proposed development. The area in which this project is situated is densely urban. Provided the mitigation measures outlined in the NIS for the proposed development are adhered to, and given the capacity for wastewater treatment in Drogheda and the assimilative capacity of the River

Plan or Project	Description of Plan or Project	In-Combination Effect(s)
	at ground floor level. Block D is 5 storeys and will comprise 55 no. apartments, with Childcare Facility (c. 300 sqm GFA) and outdoor play area at ground floor level. All apartments are provided with balconies or outdoor private areas. 94 no. car parking spaces are provided for residential, childcare, commercial, visitor/drop-off and GoCar/Car Sharing (2 no. spaces). This includes 84 no. parking spaces at surface level and 10 no. spaces at third floor level within the multi-storey car park serving Scotch Hall centre. 301 no. bicycle parking spaces are provided in total, consisting of 90 no. spaces at surface level and 211 no. spaces in dedicated secure facilities in the apartment blocks. Primary vehicular and pedestrian access is provided from the existing access road to the west of the site. New public pedestrian and bicycle access is provided from the existing waterfront promenade and from Marsh Road. Marsh Road will also be used for occasional vehicular access to existing warehouse units adjacent to the southern site boundary. All ancillary site development works, including: boundary treatments, demolition of structures on site, provision of cycleway along waterfront, upgrades to pedestrian access along Poorhouse Lane, site infrastructure, utilities, services and plant. Public open space of c. 1,998 sqm is provided, including a new public square and waterfront promenade. communal amenity space of c. 2,154 sqm is provided at surface level and in the form of external roof terraces on Blocks C and D. The development consists of the carrying out of works on a site containing 2 no. Protected Structures: a Limestone Marker (RPS DB-366) and an Arched Road Bridge (RPS DB-367). A Natura Impact Statement accompanies this application. The application may also be inspected online at www.scotchhallshd.com	Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects (Uisce Éireann, 2023).
Planning Reg. Ref.: 19265 **Planning Authority:** Louth County Council **Applicant:** Hallscotch Venture Ltd. **Address:** Scotch Hall/Southbank Development, Marsh Road, Drogheda, Co Louth	**Planning Application Lodged:** 9th April 2019 This application has been deemed withdrawn. Permission for surface car park with 263 spaces, including riverside walkway and all attendant site works.	**No.** This project borders the River Boyne and is located within the grounds of Scotch Hall Shopping Centre. Given the scale of this project, that it takes place on existing commercial grounds, and the assimilative capacity of the River Boyne and Boyne Estuary it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: 22629; 17387 **Planning Authority:** Louth County Council **Applicant:** J. Murphy Developments Ltd	**Planning Application Lodged:** 8th August 2022 Extension of Duration for planning ref. no. 17 387 Permission for development to consist of the construction of a total of 133 no. two storey residential dwellings in a mix of detached, semi-detached and terraced form. Vehicular access is from the Marsh Road (R150). The development also provides for all associated site development works including alterations to ground levels, internal roads, car-parking, footpaths, open space, public lighting, landscaping and boundary treatments. The	**No.** This project is located approximately 240m south of the River Boyne, and within 10m of the Boyne Estuary SPA. Drogheda Wastewater Treatment Plant is located adjacent to it to the north and west. It is approximately 4.4km downstream of the proposed development. This project did not progress to stage 2 of Appropriate Assessment, due to its scale and the

Plan or Project	Description of Plan or Project	In-Combination Effect(s)
Address: Newtown View, Marsh Road, Newtown, Lagavooren, Drogheda, Co. Louth	application site was previously granted planning permission under ref. no. 06/52 for 260 no. residential units.	nature of the project. Given this, and given the capacity for wastewater treatment in Drogheda and the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects (Uisce Éireann, 2023).
Planning Reg. Ref.: 20733 **Planning Authority:** Louth County Council **Applicant:** Drogheda Port Company **Address:** Tom Roe's Point, Drogheda, Co Louth.	**Planning Application Lodged:** 18th September 2020 Permission for the construction of a new cargo warehouse building on the existing quay side storage area and all associated site development works.	**No.** This project is located in Drogheda Port, approximately 50m north of the River Boyne, and approximately 5.9km downstream of the proposed development. This project is situated in an industrial area with warehouse-type units already in place at this location. An Appropriate Assessment Screening Report and Environmental Impact Assessment Screening Report were prepared for this project, and both concluded that the project would not require either an NIS or an EIAR. Given the setting of this project and conclusions of the Appropriate Assessment Screening Report and Environmental Impact Assessment, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: SH305552 **Planning Authority:** Meath County Council **Applicant:** Trailford Ltd **Address:** Rathmullan Road, Rathmullan, Drogheda, Co. Meath	**Planning Application Lodged:** 3rd October 2019 Demolition of existing farm buildings/structures (1160sqm) on site; (ii) construction of 661 no. residential dwellings and a neighbourhood centre adjacent to the site's eastern boundary, consisting of a childcare facility (486sqm), café (63sqm) and retail unit (318sqm); (iii) a 4-arm signalised junction and works to Rathmullan Road, including the widening of the existing carriageway to 6 metres and the provision of a 2 metre wide footpath linking the proposed development to the River Boyne Boardwalk; (iv) 2 no. priority junctions (one along the site's eastern boundary to provide access to the neighbourhood centre and one along the site's southern boundary to provide a second access to the development), realignment and upgrade works to the un-named local road along the site frontage to the south of the new signalised junction with Rathmullan Road; (v) Construction of a strategic foul water pumping station in the north-eastern corner of the site; and (vi) all associated site, landscaping and infrastructural works, including foul and surface water drainage, attenuation areas, open space areas, boundary walls and fences, internal roads and cycle paths and footpaths. The 661 no. residential dwellings consist of the following: • 509 no. double storey semi-detached and terraced houses comprising 158 no. 2-	**No.** This project is located within 20m of the River Boyne and is approximately 200m southwest of the proposed development. The potential effects arising from this project and the proposed development are similar. However, provided the mitigation measures outlined in the Natura Impact Statement for the proposed development is adhered to, and given the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.

Plan or Project	Description of Plan or Project	In-Combination Effect(s)
	bed houses, 269 no. 3-bed houses and 82 no. 4-bed houses; and • 152 no. apartments (in Blocks B1, B2, B3, C, D, E & G which vary from 3 to 5 storeys in height) comprising 13 no. 1-bed apartments and 139 no. 2-bed apartments. A total of 1,366 no. car parking spaces are proposed, including 1018 no. spaces (2 no. on curtilage spaces per dwelling) serving the proposed dwellings, 195 no. spaces serving the proposed apartments; 111 no. spaces serving visitors to the development; and 42 no. spaces serving the proposed neighbourhood centre. A total of 188 no. bicycle parking spaces are proposed, including 154 no. spaces serving the proposed apartments and 34 no. spaces serving the proposed neighbourhood centre. The development also features 9.15 hectares of public open space, including landscaped play spaces and pocket parks throughout the development and 6.13 hectares of landscaped open space provided adjacent to the Boyne River and M1 motorway frontages. This application is accompanied by an Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS).	
Planning Reg. Ref.: 236005 **Planning Authority:** Louth County Council **Applicant:** Sionna Homes Ltd. **Address:** Boyne Road, Drogheda, Co. Louth.	**Planning Application Lodged:** 31st March 2023 Planning permission is sought by Sionna Homes Ltd for a Large-Scale Residential Development (LRD) on a site which extends to c.3.8 ha, on lands at Boyne Road, Drogheda, Co. Louth. The application is being made under the provisions of the Planning and Development (Amendment)(Large Scale Residential Development) Act 2021. The proposed development will consist of: i) The Construction 192 no. residential units comprising of: a. 42 no. dwellings (22 no. 3-beds, and 20 no. 4-beds) b. 150 no. apartments (41 no. 1-beds, 95 no. 2-beds, and 14 no. 3-bed) ii) New vehicular, cycle and pedestrian access to the site from the Newtown Road (L2307) including new crossing points; iii) Replacing and upgrading of existing pedestrian steps to the site from Strand Road (R167) iv) The provision of non-residential uses on the site: a. Childcare facility/Creche (394 sq.m) b. Café (81 sq.m) c. Gymnasium (554 sq.m) d. Community Workspace/Community Space (77 sq.m) v) The provision of 196 no. basement and surface level parking spaces, incluiding EV spaces, Disabled parking spaces, and Go Car spaces; vi) The provision of 344 no. sheltered cycling spaces for residents 122 no. visitor cycle spaces; vii) The provision of public and private open space; viii) The provision of cycle paths throughout the site; ix) The provision of Landscaping including planting, public art and play equipment; x) The provision of Attenuation ponds; xi) The provision of public lighting throughout the subject site; xii) All internal roads, tracks and paths, incluiding signage throughout the site; xiii) All associated development and infrastructure works including traffic calming on Newtown Road and Newtown Link Road; xiv) Demolition of existing buildings on site (2,113.4 sq.m); A Natura Impact Statement (NIS) has been included with this application. All application documentation and information including the NIS is available to view online at the following website set up by the applicant: www.BoyneRoadLRD.com.	**No.** This project is located approximately 25m north of the River Boyne and is approximately 4.7km downstream of the proposed development. The potential effects arising from this project and the proposed development are similar. However, provided the mitigation measures outlined in the Natura Impact Statement for the proposed development is adhered to, and given the capacity for wastewater treatment in Drogheda and the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects (Uisce Éireann, 2023).

Plan or Project	Description of Plan or Project	In-Combination Effect(s)
Planning Reg. Ref.: 14207 **Planning Authority:** Louth County Council **Applicant:** Drogheda Borough Council **Address:** Scotch Hall, Drogheda, County Louth	**Planning Application Lodged:** 11th June 2014 NIS Application to An Bord Pleanala. Drogheda Borough Council intend to make an application for approval to An Bord Pelanal to carry out development which involves the installation of a pontoon & anchorage system in the River Boyne on the south side of the river in the vicinity of the area of Drogheda known as Scotch Hall. The proposed development consists of 1) a pontoon system 80m long & 2.5m wide. It is to be situated approximately 10m from the south quay of the river 2) A 24m long 1.5m wide access gangway from the quayside at Scotch Hall 3) an anchorage system consisting either of a system of changes & anchors or of piles secured in the riverbed at 10 to 15m from the pontoon & each block would be connected to the pontoon using a heavy steel chains. The alternative system would consist of 4 piles set into a concrete block set in the river bed. In either case a pile would be required to support the landward end of the pontoon gangway. A natura impact statement has been prepared in respect of the proposed development.	**No.** This project is located in the River Boyne and is approximately 3.2 km downstream of the proposed development. Provided the mitigation measures outlined in the NIS for the proposed development are adhered to and given the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: 315072 **Planning Authority:** An Bord Pleanála **Applicant:** Louth County Council **Address:** In the townlands of Mell and Moneymore, Drogheda, Co. Louth.	**Planning Application Lodged:** 9th November 2022 The proposed works are comprised of the construction stages of the Boyne Greenway – North Bank in Drogheda, County Louth, an Outdoor Recreation and Infrastructure Scheme (ORIS) Project 2022. Works to be undertaken include the provision of a path with a total length of c. 1.6km long. Of this c. 660m is a completely new path which will run through mainly scrub habitat. The remainder of the proposed works consists of the enhancement of an existing 950m pathway including widening of the existing tarmacadam path from 2m to 3m with a bitmac surface, resurfacing of poor-quality surfaces, and provision of lighting. The proposed works go from Boyne Hall estate connecting to an existing footpath perpendicular to the Lower Mell street, running through the footpath up to the Horse lane, connecting back to Lower Mell street.	**No.** This project is approximately 630m east and 1 km downstream of the proposed development. Provided the mitigation measures outlined in the NIS for the proposed development are adhered to and given the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: ABP: 311678 **Planning Authority:** Louth County Council **Applicant:** Loughdale Properties Ltd **Address:** Old Slane Road, Mell / Tullyallen, Drogheda, Co. Louth.	**Planning Application Lodged:** 15th October 2021 237 no. residential units (86 no. houses, 151 no. apartments), creche and associated site works.	**No.** This project is approximately 630m northwest of the proposed development. Provided the mitigation measures outlined in the NIS for the proposed development are adhered to and given the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.

Plan or Project	Description of Plan or Project	In-Combination Effect(s)
Planning Reg. Ref.: 308628 **Planning Authority:** An Bord Pleanála **Applicant:** CAP Developments LLC **Address:** Drogheda IDA Business and Technology Park, Donore Road, Drogheda, Co. Meath	**Planning Application Lodged:** 10th November 2020 110kV gas insulated switchgear substation compound, associated dropdown transmission lines, and associated development at Drogheda IDA Business and Technology Park, Donore Road, Drogheda, Co. Meath	**No.** This project is approximately 1.5 km south of the proposed development. Provided the mitigation measures outlined in the Environmental Impact Assessment Report for the proposed development are adhered to and given the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: ABP: 305552 **Planning Authority:** Meath County Council **Applicant:** Trailford Ltd **Address:** Rathmullan Road, Rathmullan, Drogheda, Co. Meath.	**Planning Application Lodged:** 3rd October 2019 Demolition of existing buildings/structures on site and construction of 661 no. residential units (509 no. houses and 152 no. apartments), childcare facility and associated site works.	**No.** This project is approximately 280 m south of the proposed development, on the opposite bank of the River Boyne. Provided the mitigation measures outlined in the NIS and Environmental Impact Assessment Report for the proposed development are adhered to and given the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: ABP: 305110 **Planning Authority:** Louth County Council **Applicant:** Ravala Limited **Address:** Newtown, Marsh Road & McGraths Lane Railway Terrace, Drogheda, Co. Louth.	**Planning Application Lodged:** 9th August 2019 450. no residential units (81 no. houses and 369 no. apartments), creche and associated site works.	**No.** This project is approximately 3.8 km east and 4km downstream of the proposed development. Provided the mitigation measures outlined in the NIS and Environmental Impact Assessment Report for the proposed development are adhered to and given the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: ABP: 305819 **Planning Authority:** Louth County Council **Applicant:** Lagan Homes Drogheda Limited **Address:** Lands at Newtownstalaban, Newfoundwell Road, Drogheda, Co. Louth.	**Planning Application Lodged:** 1st November 2019 217 no. residential units (137 no. houses, 80 no. apartments) creche and associated site works.	**No.** This project is approximately 4 km northeast of the proposed development. Given that this project is located in an existing residential area and given available capacity in the Drogheda Wastewater Treatment Plant, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects (Uisce Éireann, 2023).

Plan or Project	Description of Plan or Project	In-Combination Effect(s)
Planning Reg. Ref.: ABP: 313586 **Planning Authority:** Meath County Council **Applicant:** Dawn Meats Ireland (Unlimited Company) **Address:** Painestown, Seneschalstown, Dollardstown, Hayestown-Carnuff Little & Ardmulchan, Navan, Co. Meath	**Planning Application Lodged:** 16th May 2022 The development consists of the construction of an extension to an existing wastewater treatment plant (WWTP) where the works include:- a) Demolition of an existing storage building (17.50m2) and construction of a new single-storey industrial type building to enclose the DAF unit granted planning permission under planning reference LB180300 and to provide new enclosed storage and control rooms (total floor area 119m2). b) Install a new sludge press at intake to WWTP, change aeration tank to anoxic tank, install 2 no. additional aeration tanks, alteration to perimeter berm to increase the footprint of WWTP, by 539m2 to that granted planning permission under planning permission LB180300. C) Treated wastewater rising main from the site of the proposed development to new discharge point at the River Boyne (distance 7.2km), where pipeline shall be laid along a section of Windmill Road, the L1013, Yellow Furze Road, the L1600 (Boyne Road), and the unnamed local road leading from the L1600 to the private lands abutting the River Boyne at the discharge point. This planning application is accompanied by an Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS). This application relates to a development which is for the purposes of an activity which holds an Industrial Emissions Licence (Reg No. P0811-02). Significant Further Information/Revised plans submitted on this application.	**No.** This project is approximately 20 km upstream of the proposed development. Provided the mitigation measures outlined in the Natura Impact Statement and Environmental Impact Assessment Report for the proposed development is adhered to and given the assimilative capacity of the River Boyne and Boyne Estuary, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: ABP: WW0422 **Planning Authority:** Meath County Council **Applicant:** Irish Cement Limited **Address:** Donore Quarry, Donore, Co. Meath.	**Planning Application Lodged:** 21st April 2016 Licence to discharge trade effluent to waters. The status of this application is: *Allow appeal amend conditions*	**No.** This project is approximately 2.8 km southwest and 6.3 km upstream of the proposed development. Given the conclusions of the Appropriate Assessment Screening Report, and the assimilative capacity of the River Boyne, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: ABP: PA0050 **Planning Authority:** Meath County Council **Applicant:** Irish Cement Limited **Address:** Donore Quarry, Donore, Co. Meath.	**Planning Application Lodged:** 4th August 2017 10 year permission to facilitate further replacement of fossil fuels with alternative fuels and allow for the introduction of alternative raw materials in the manufacturing of cement.	**No.** This project is approximately 3.7 km south of the proposed development. Provided the mitigation measures outlined in the Natura Impact Statement and Environmental Impact Assessment Report for the proposed development is adhered to, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.

Plan or Project	Description of Plan or Project	In-Combination Effect(s)
Planning Reg. Ref.: ABP: 248028 **Planning Authority:** Meath County Council **Applicant:** Solar Farmers Limited **Address:** Julianstown East and West and Ninch, County Meath.	**Planning Application Lodged:** 13th March 2018 Solar voltaic panel array with a maximum export capacity of 20 MW of 88,800 no. solar panels. A Natura Impact Statement accompanied the planning application.	**No.** This project is approximately 8 km southeast of the proposed development. Provided the mitigation measures outlined in the Natura Impact Statement for the proposed development is adhered to, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.
Planning Reg. Ref.: ABP: 309308 **Planning Authority:** Meath County Council **Applicant:** Irish Cement Limited **Address:** Platin and Cruicerath, Drogheda, Co. Meath	**Planning Application Lodged:** 26th January 2021 20 year permission for a 13.5 hectare extension to existing Overburden Management Facility The application is accompanied by an Environmental Impact Assessment Report (EIAR). The application requires an Industrial Emissions Directive (IED) Licence and the facility operates pursuant to an existing IED Licence (EPA Ref No. P0030-05.	**No.** This project is approximately 3.3 km southwest of the proposed development. Given that this project is located in an existing overburden management facility, a provided the mitigation measures outlined in the Environmental Impact Assessment Report for the proposed development is adhered to, it can be concluded that the proposed development and this project will not lead to in-combination adverse effects.

7. CONCLUSION

This NIS has been prepared in accordance with the relevant provisions of the Habitats Directive and the Habitats Regulations, as well as the relevant case law and current guidance. It has demonstrated that, in the absence of appropriate mitigation, Meath County Council, individually or in combination with other plans or projects, could adversely affect the integrity of one European site, namely of River Boyne and River Blackwater SAC. in view of their Conservation Objectives. In light of this finding, this NIS has prescribed appropriate mitigation to eliminate or minimise such effects. Any residual effects, either individually or in combination with other plans or projects, have been assessed as not constituting adverse effects on the integrity of the European sites concerned. This assessment has been undertaken on the basis of the best scientific knowledge in the field and the Precautionary Principle. No reasonable scientific doubt remains as to the absence of such effects.

It is the considered opinion of ROD, as the author of this NIS, that, in making its AA in respect of the Boyne Boardwalk Refurbishment, Meath County Council, as the Competent Authority in this case, may determine that, given the full and proper implementation of the mitigation prescribed in this NIS, the proposed development, either individually or in combination with other plans or projects, will not adversely affect the integrity of the River Boyne and River Blackwater SAC. Furthermore, ROD recommends that it be a binding condition of any consent granted in respect of the proposed development that the mitigation prescribed in this NIS be fully and properly implemented.

8. REFERENCES

CIRIA (2001) *C532 Control of water pollution from linear construction projects: technical guidance*. Construction Industry Research and Information Association, London.

CIRIA (2006) *C532 Control of water pollution from construction sites: guidance for consultants and contractors*. Construction Industry Research and Information Association, London.

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). Official Journal of the European Communities, L206/7.

Cutts, N., Hemingway, K. & Spencer J. (2013). *Waterbird Disturbance Mitigation Toolkit, Version 3.2*. University of Hull.

Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (the Birds Directive). Official Journal of the European Union, *L20/7.*

DEHLG (2010) *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities*. Department of Environment, Heritage and Local Government, Dublin.

Eionet (2018) *Population status and trends at the EU and Member State levels: 2013 - 2018. Article 17 Assessments*. <http://bd.eionet.europa.eu/article17/> [Accessed: January 2022]. European Topic Centre on Biological Diversity.

EC (2018) *Managing Natura 2000 sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC.* European Commission, Brussels.

EC (2021) *Assessment of Plans and Projects in Relation to Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. European Commission Environment Directorate-General.

Enterprise Ireland. Best Practice Guide BPGCS005 – Oil Storage Guidelines.

European Communities (Birds and Natural Habitats) Regulations, 2011. *SI No. 477/2011.*

European Communities (Birds and Natural Habitats) (Amendment) Regulations, 2013. *SI No. 499/2013*.

European Communities (Birds and Natural Habitats) (Amendment) Regulations, 2015. *SI No. 355/2015*.

Inland Fisheries Ireland (IFI). (2013) *Best Practice for Control of the Invasive Himalayan Balsam (Impatiens glandulifera).* Inland Fisheries Ireland, Dublin.

Inland Fisheries Ireland (IFI). (2016) *Guidelines for the Protection of Fisheries During Construction Works in and Adjacent to Waters.* Inland Fisheries Ireland, Dublin.

Kelly, J., Maguire, C.M. and Cosgrove, P.J. (2008). *Best Practice Management Guidelines Himalayan balsam Impatiens glandulifera.* Prepared for NIEA and NPWS as part of Invasive Species Ireland.

National Biodiversity Data Centre (NBDC) (2023) *Biodiversity Maps* <https://maps.biodiversityireland.ie> [Accessed December 2023]. National Biodiversity Data Centre, Waterford.

National Parks and Wildlife Service (NPWS) (2010a) *Circular NPW 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities*. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2010b) *Site Synopsis for the River Boyne and Blackwater SPA [004232].* National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2011) *Conservation Objectives for Dundalk Bay SAC [004026]*. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2012a) *Conservation Objectives for Boyne Coast and Estuary SAC [001957]*. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2012b) *Boyne Coast and Estuary SAC (site code 1957) Conservation objectives supporting document - coastal habitats.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

National Parks and Wildlife Service (NPWS) (2013a) *Conservation Objectives for the Boyne Estuary SPA [004080]*. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2013b) *Conservation Objectives for North Dublin Bay SAC [000206]*. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2014) *Site Synopsis for River Boyne and River Blackwater SAC [002299]*. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2015) *Site Synopsis for Boyne Estuary SPA [004080]*. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2016) *Site Synopsis for Boyne Coast and Estuary SAC [001957]*. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2019a) *The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview*. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2019b) *The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessment.* National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2019c) *The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessment*. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2021) *Generic Conservation Objectives for River Boyne and River Blackwater SAC [004232]*. Updated March 2021. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

National Parks and Wildlife Service (NPWS) (2022) *First Order Site-specific Conservation Objectives for River Boyne and River Blackwater SPA [004232]*. Updated March 2021. National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin.

NRA. (2009) *Guidelines for Assessment of Ecological Impacts of National Road Schemes.* National Roads Authority.

OPR (2021) *Appropriate Assessment Screening for Development Management: OPR Practice Note PN01.* Office of the Planning Regulator, Dublin.

People Over Wind and Peter Sweetman *v.* Peter Sweetman *v.* Coillte Teoranta [2018] C-323/17.

Planning and Development Act, 2000. *No. 30 of 2000.*

Planning and Development (Amendment) Act, 2002. *No. 32 of 2002.*

Planning and Development (Strategic Infrastructure) Act, 2006. *No. 27 of 2006.*

Planning and Development (Amendment) Act, 2010. *No. 30 of 2010*.

Smith, G, F., O'Donoghue, P., O'Hora, K. & Delaney, E. (2011) *Best Practice Guidance for Habitat Survey and Mapping*. Heritage Council of Ireland.

Spencer, Ellsworth. (2005). *Heavy construction equipment noise study using dosimetry and time-motion studies*. Journal of The Acoustical Society of America - J ACOUST SOC AMER. 118. 10.3397/1.2756307.

TII. (2008a)*. Guidelines for Ecological Survey Techniques for Protected Flora and Fauna during the Planning of National Road Schemes.* Transport Infrastructure Ireland, Dublin*.*

TII (2008b) *Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes.* Transport Infrastructure Ireland, Dublin*.*

TII (2010). *The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads*. Transport Infrastructure Ireland, Dublin.

TII (2020a). *The Management of Invasive Alien Plant Species on National Roads – Standard.* Transport Infrastructure Ireland, Dublin

TII (2020b). *The Management of Invasive Alien Plant Species on National Roads – Technical Guidance*. Transport Infrastructure Ireland, Dublin.

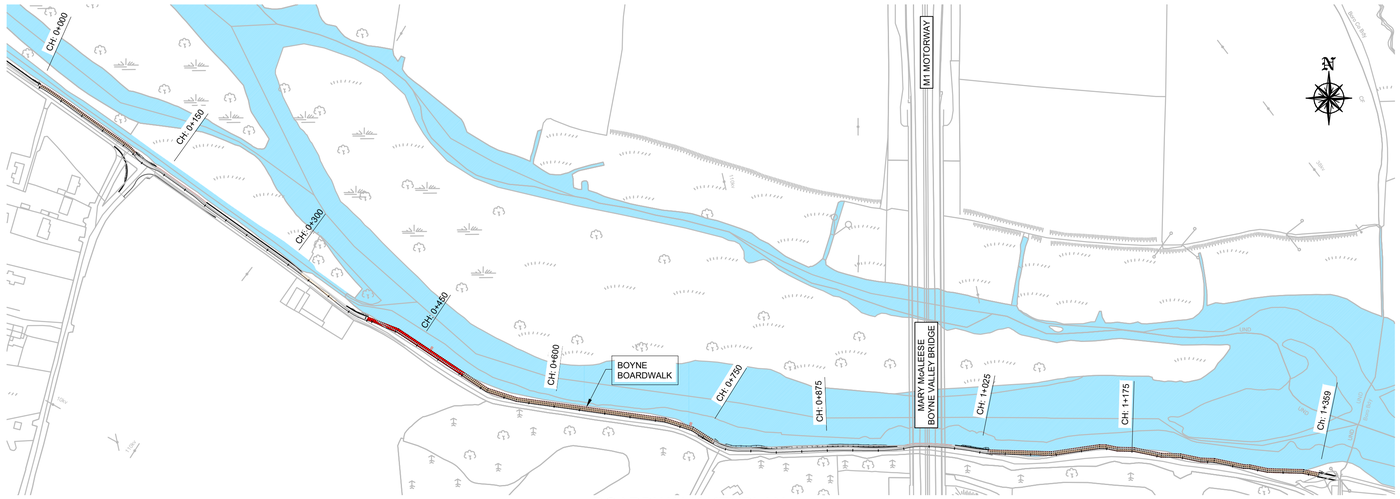
Uisce Éireann. (2016). *Guidance on the Management of Himalayan Balsam.* Irish Water Himalayan Balsam Management Guidance Document.

Uisce Éireann. (2023) *Settlements with Waste Water Discharge Authorisations.* Wastewater Treatment Capacity Register (Louth). https://www.water.ie/connections/developer-services/capacity-registers/wastewater-treatment-capacity-register/louth/.

Woodward, I., Thaxter, C.B., Owen, E. & Cook, A.S.C.P. 2019*. Desk-based revision of seabird foraging ranges used for HRA screening.* British Trust for Ornithology (BTO) Research Report 724.

APPENDIX A

Drawings



BOARDWALK KEYPLAN

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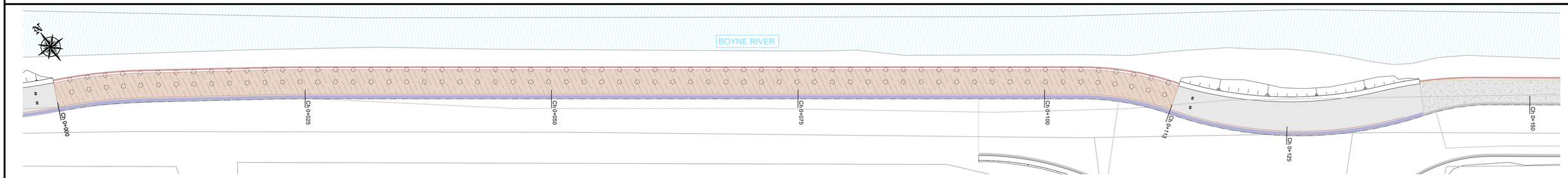
A3 SCALE 1:6000

LEGEND:

- BOARDWALK TYPE 1 (2 PILE SUPPORT)
- BOARDWALK TYPE 2 (3 PILE SUPPORT)
- BOARDWALK TYPE 3 (GROUND BEAM SUPPORT)
- FIRE DAMAGED BOARDWALK
- RECYCLED PLASTIC TOP HANDRAIL
- TIMBER FENCING
- TRAFFIC SLOT BLOCK
- CYCLEWAY
- PAVEMENT
- CONCRETE KERB
- BOLLARD POSTS
- BOYNE RIVER

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE STATED.
2. ALL CHAINAGES ARE IN METRES.
3. ALL CO-ORDINATES ARE TO IRISH TRANSVERSE MERCATOR (ITM).



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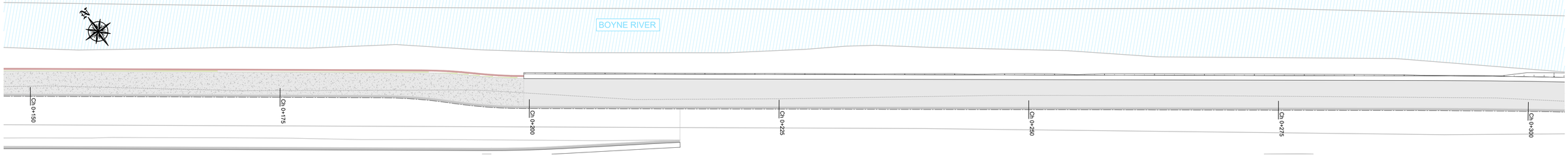

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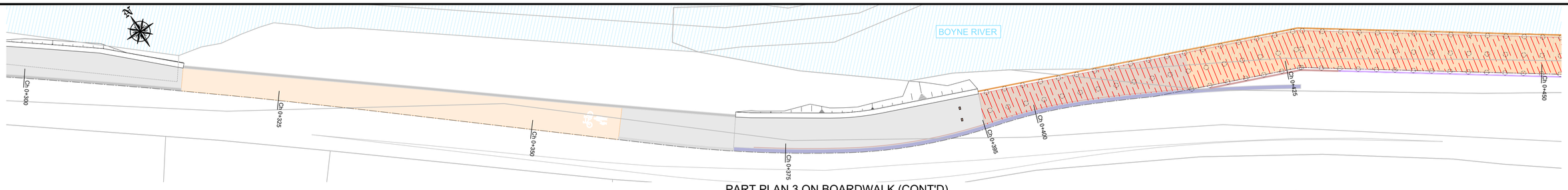

PART PLAN 3 ON BOARDWALK (CONT'D)

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A3 SCALE 1:400

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No.	Revision	Date	By	Chk'd	App'd
P01	Description	--/--/----	By	Chk'd	App'd

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Drawn	Designed	Checked	Approved	Suitability Code - Description
PC	MS	MR	JK	S3 - Review & Comment

Project Stage	Inspection Stage
Project Title	Boyne Boardwalk Refurbishment
Drawing Title	Boardwalk Details - Sheet 1
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number: BBR - ROD - SGN - SW_AE - DR - CB - 30001
Scale (A1)	As Shown
Date:	July 2023
Job No:	23.152
Rev:	P01

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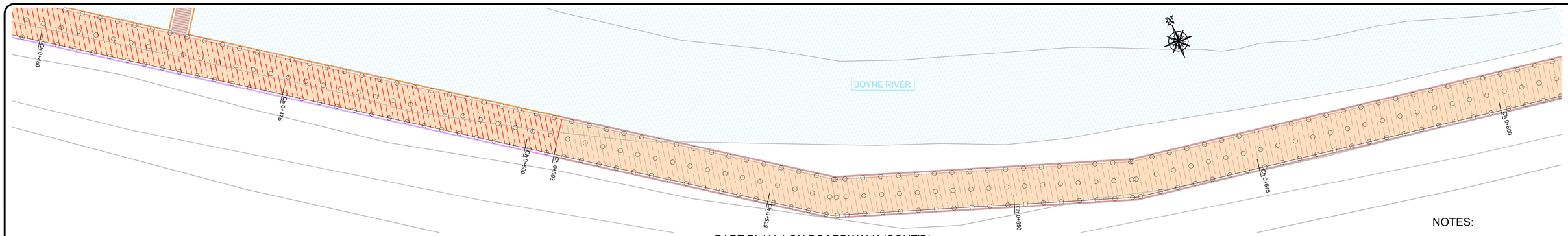

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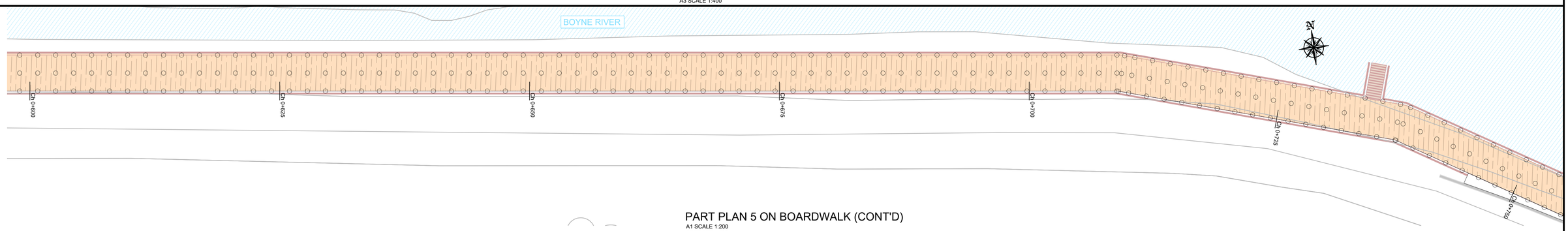

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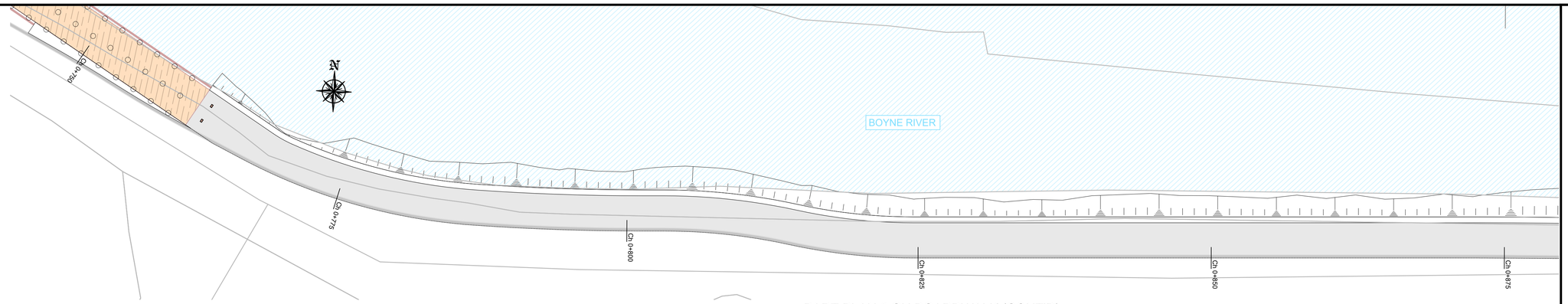

PART PLAN 6 ON BOARDWALK (CONT'D)

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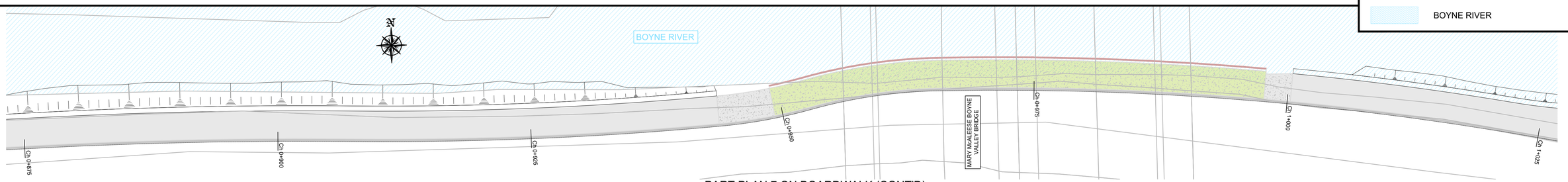
A3 SCALE 1:400

LEGEND:

- BOARDWALK TYPE 1 (2 PILE SUPPORT)
- BOARDWALK TYPE 2 (3 PILE SUPPORT)
- BOARDWALK TYPE 3 (GROUND BEAM SUPPORT)
- FIRE DAMAGED BOARDWALK
- RECYCLED PLASTIC TOP HANDRAIL
- TIMBER FENCING
- TRAFFIC SLOT BLOCK
- CYCLEWAY
- PAVEMENT
- CONCRETE KERB
- BOLLARD POSTS
- BOYNE RIVER



PART PLAN 7 ON BOARDWALK (CONT'D)

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A3 SCALE 1:400

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P01	Description	--/--/----	By	Chk'd	App'd

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Drawn	Designed	Checked	Approved	Suitability Code - Description
PC	MS	MR	JK	S3 - Review & Comment

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Drawing Title	Boardwalk Details - Sheet 2
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Job No:	23.152
Rev:	P01

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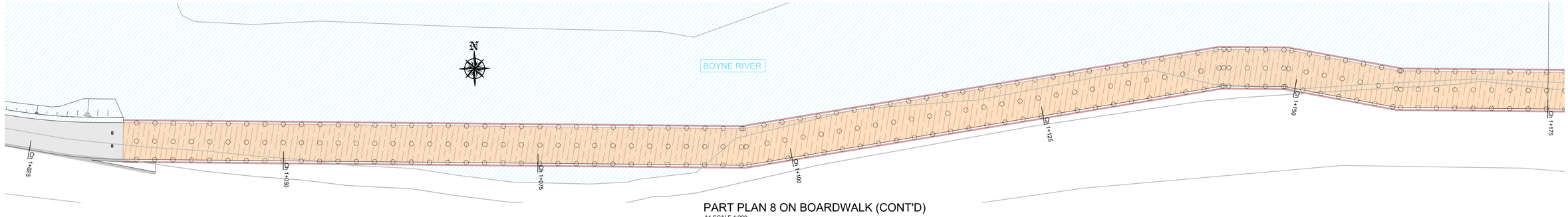

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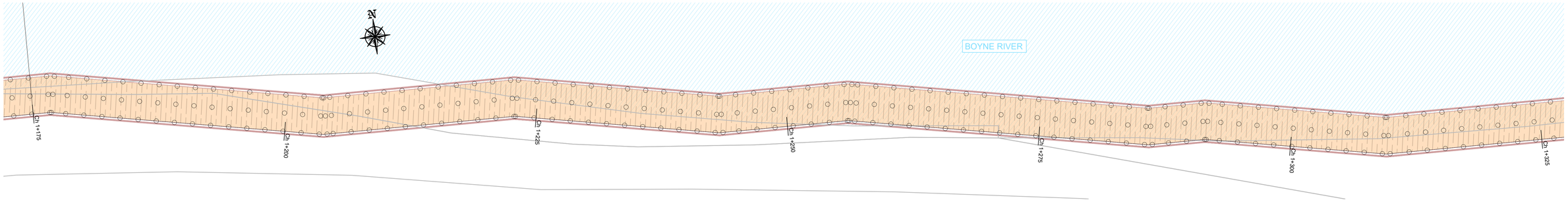

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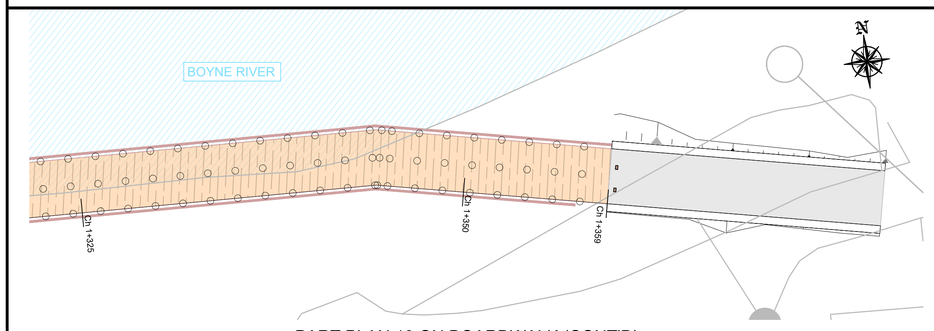

PART PLAN 10 ON BOARDWALK (CONT'D)
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LEGEND:

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- BOARDWALK TYPE 2 (3 PILE SUPPORT)
- BOARDWALK TYPE 3 (GROUND BEAM SUPPORT)
- FIRE DAMAGED BOARDWALK
- RECYCLED PLASTIC TOP HANDRAIL
- TIMBER FENCING
- TRAFFIC SLOT BLOCK
- CYCLEWAY
- PAVEMENT
- CONCRETE KERB
- BOLLARD POSTS
- BOYNE RIVER

NOTES:

1. FOR GENERAL NOTES REFER TO DRAWING BBR-ROD-SGN-SW-AE-DR-CB-30001.

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meath county council

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P01	Description	--/--/----	By	Chk'd	App'd

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Drawn	Designed	Checked	Approved	Suitability Code - Description
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Project Stage	Inspection Stage
Project Title	Boyne Boardwalk Refurbishment
Drawing Title	Boardwalk Details - Sheet 3
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number: BBR - ROD - SGN - SW_AE - DR - CB - 30003
Scale (A1)	As Shown
Date:	July 2023
Job No:	23.152
Rev:	P01

19 July 2023 10:44:47

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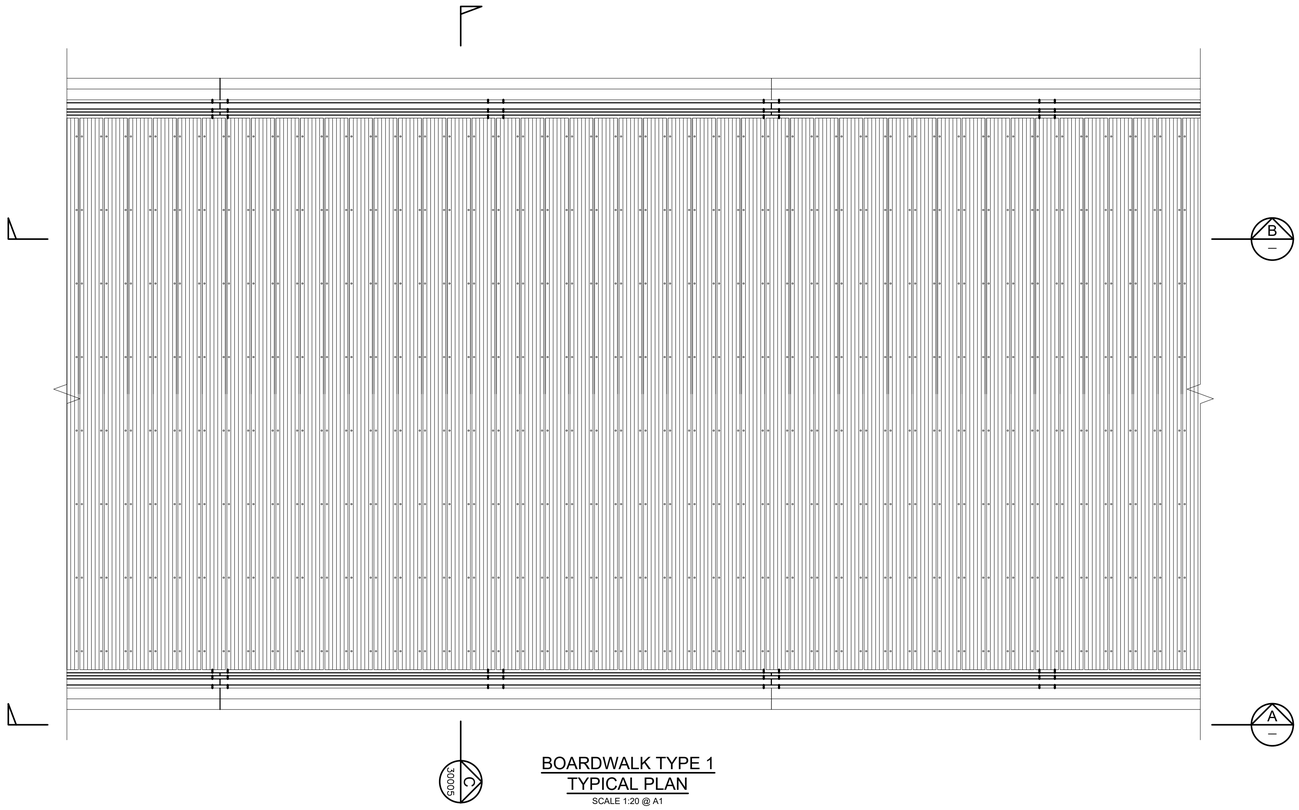
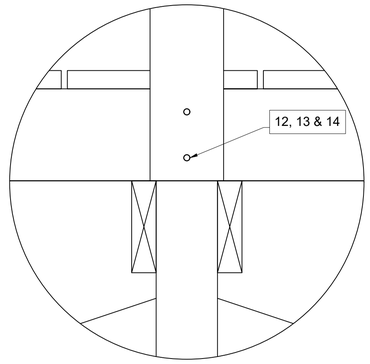
DO NOT SCALE USE FIGURED DIMENSIONS ONLY



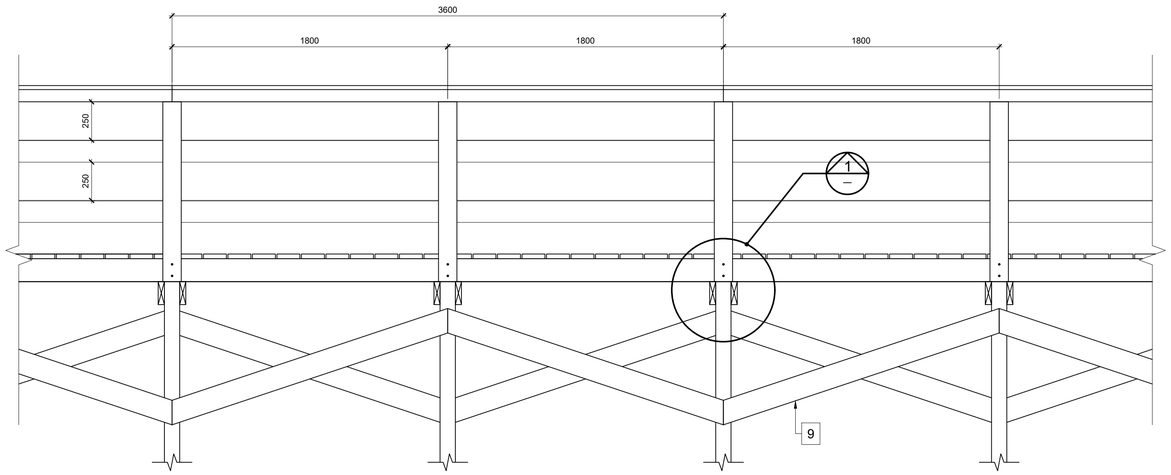
BOARDWALK TYPE 1
TYPICAL PLAN
SCALE 1:20 @ A1
SCALE 1:40 @ A3



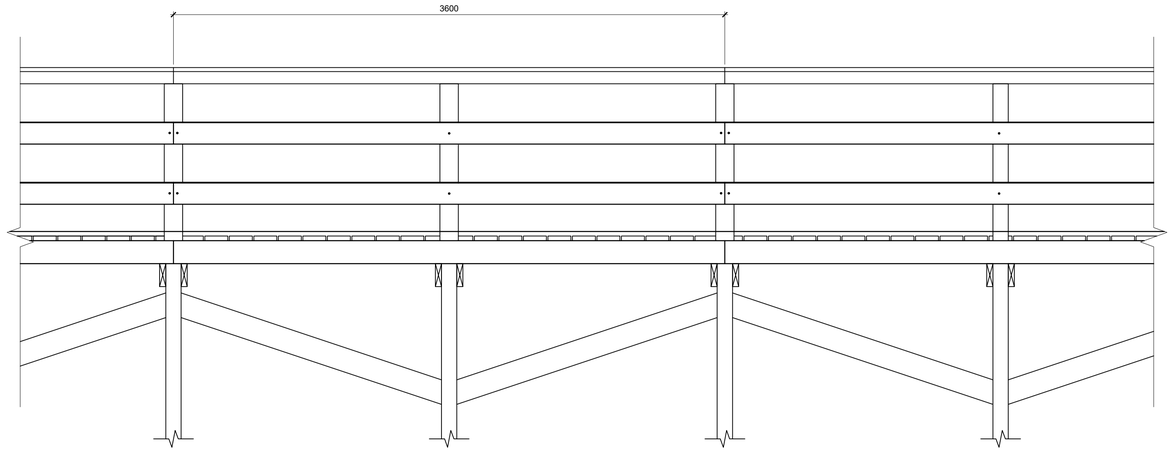
DETAIL 1
A1 SCALE 1:5
A3 SCALE 1:10

NOTES:

1. FOR GENERAL NOTES REFER TO DRAWING BBR-ROD-SGN-SW-AE-DR-CB-30001.
2. THIS DRAWING SHOUYLD BE READ IN CONJUNCTION WITH DRAWING BBR-ROD-SGN-SW_AE-DR-CB-30005.



SECTION A
A1 SCALE 1:20
A3 SCALE 1:40



SECTION B
A1 SCALE 1:20
A3 SCALE 1:40

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meath county council

No.	Revision	Date	By	Chk'd	App'd
P01	Description	--/--/----	By	Chk'd	App'd

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Drawn	Designed	Checked	Approved	Suitability Code - Description
PC	MS	MR	JK	S3 - Review & Comment

Project Stage	Inspection Stage
Project Title	Boyne Boardwalk Refurbishment
Drawing Title	Boardwalk Details - Sheet 4
Drawing Number	Project | Originator | Volume | Location | Type | Role | Number: BBR - ROD - SGN - SW_AE - DR - CB - 30004
Scale (A1)	As Shown
Date:	July 2023
Job No:	23.152
Rev:	P01

19 July 2023 11:39:19

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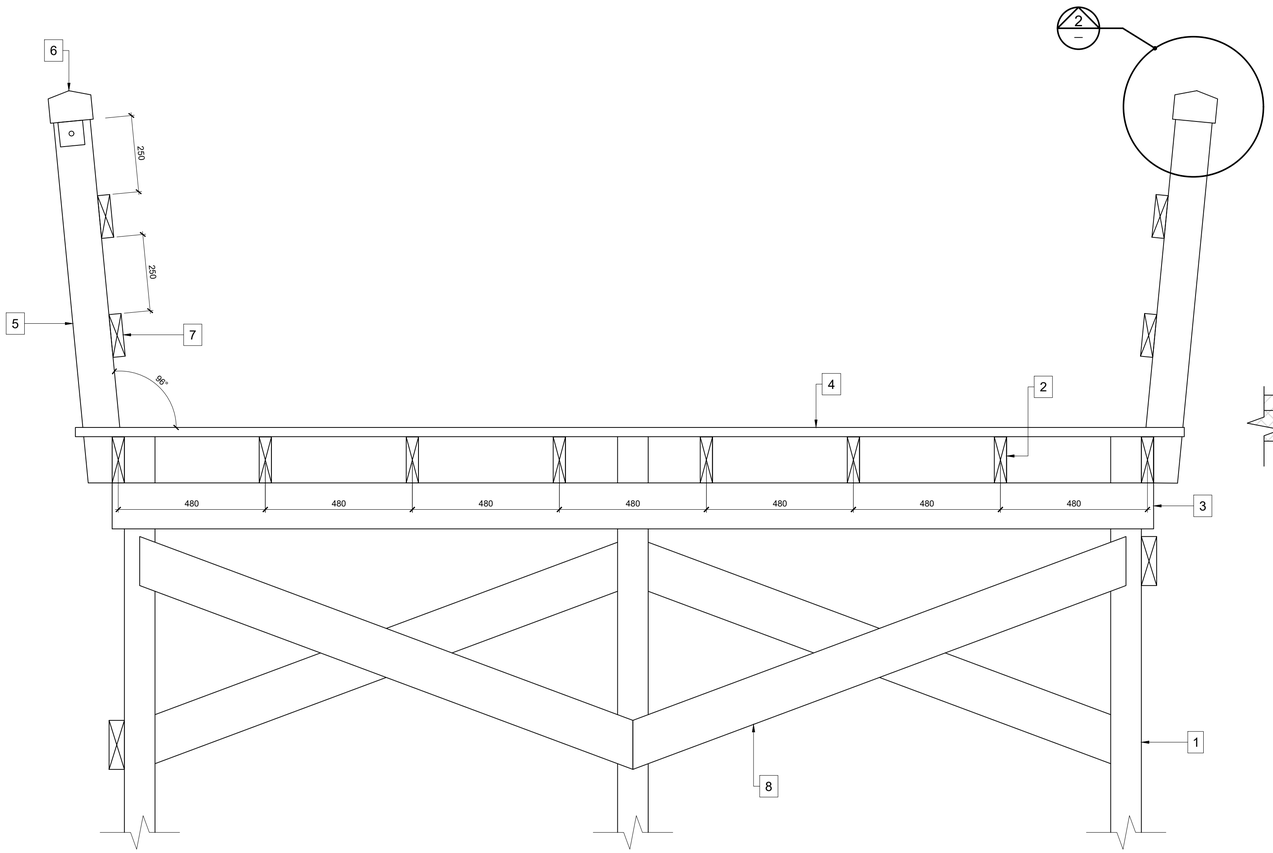
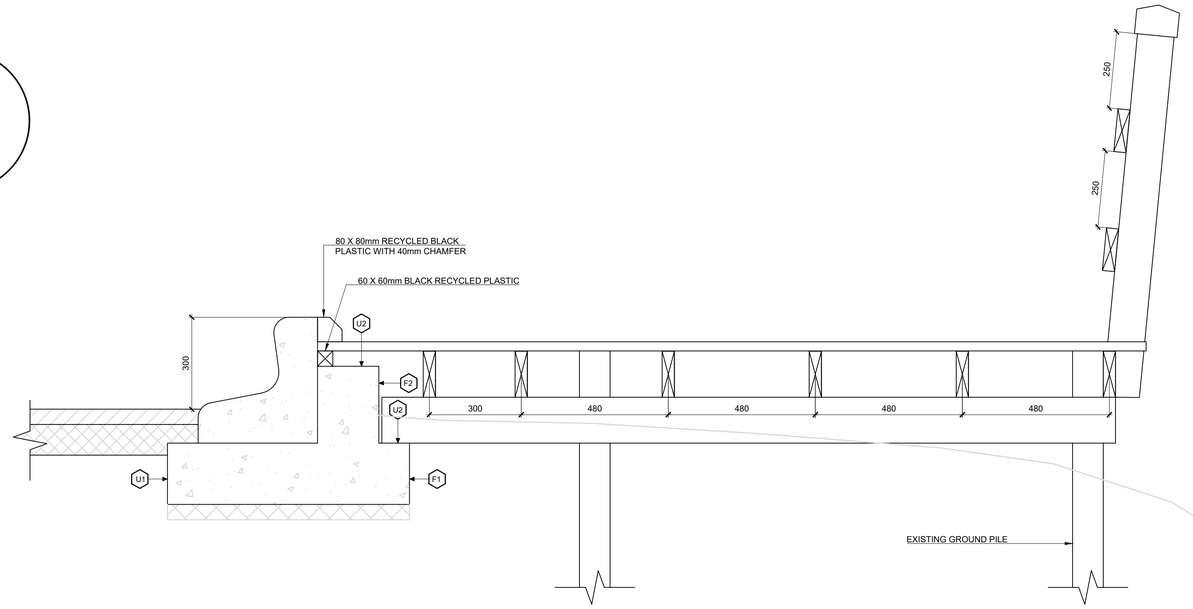
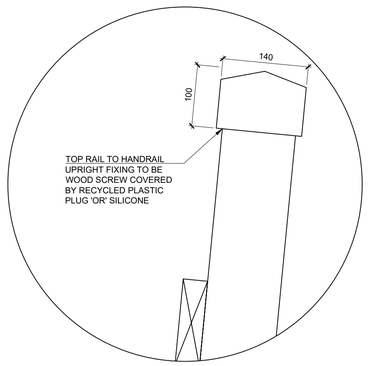


SECTION C
A1 SCALE 1:10
A3 SCALE 1:20
30004

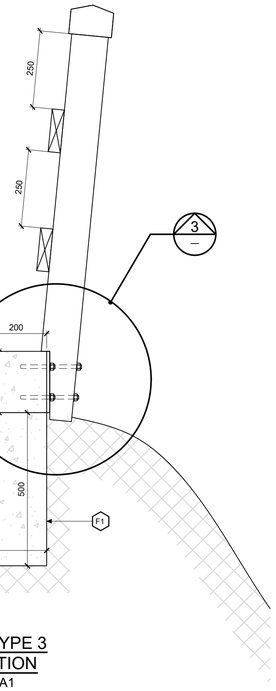


BOARDWALK TYPE 2
TYPICAL SECTION
SCALE 1:10 @ A1
SCALE 1:20 @ A3

ITEM	DESCRIPTION	DIMENSION
1	GROUND PILE	100 X 100 X 3600
2	SUPPORT RUNNER	150 X 40 X 3600
3	CROSS BEAMS	150 X 40 X 3400
4	RIGID DECKING	150 X 30 X 3600
5	HANDRAIL UPRIGHT	100 X 100 X 1300
6	HANDRAIL TOP RAIL	100 X 140 X 3600
7	MID-RAIL	150 X 40 X 3600
8	CROSS BRACING TRANSVERSE	150 X 40 X 2000
9	CROSS BRACING LONGITUDINAL	150 X 40 X 2000
10	-	-
11	-	-
12	WASHER	M12
13	NUT	M12 X 1.75
14	LOCKBOLT	M12 X 260



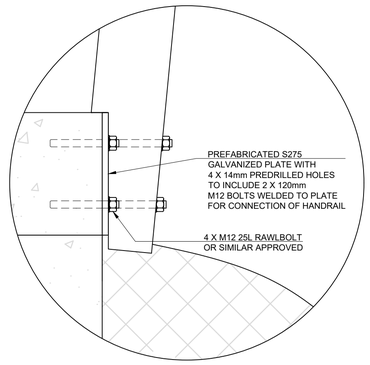
DETAIL 2
A1 SCALE 1:5
A3 SCALE 1:10



BOARDWALK TYPE 3
TYPICAL SECTION
SCALE 1:10 @ A1
SCALE 1:20 @ A3

NOTES:

1. FOR GENERAL NOTES REFER TO DRAWING BBR-ROD-SGN-SW-AE-DR-CB-30001.
2. THIS DRAWING SHOUYLD BE READ IN CONJUNCTION WITH DRAWING BBR-ROD-SGN-SW_AE-DR-CB-30004.
3. ITEMS 1, 2, 3, 4, 7, 8 AND 9 TO BE BLACK RECYCLED PLASTIC.
4. ITEMS 5 AND 6 TO BE BLACK REINFORCED IMPACT-RESISTANT POLYPROPLENE COMPOSITION.



DETAIL 3
A1 SCALE 1:5
A3 SCALE 1:10

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meath county council

No.	Revision	Date	By	Chk'd	App'd
P01	Description	--/--/----	By	Chk'd	App'd

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UK t +44 (0) 113 360 1720

Drawn	Designed	Checked	Approved	Suitability Code - Description
PC	MS	MR	JK	S3 - Review & Comment

Project Stage	Inspection Stage
Project Title	Boyne Boardwalk Refurbishment
Drawing Title	Boardwalk Details - Sheet 5

Drawing Number	Project	Originator	Volume	Location	Type	Role	Number
	BBR	ROD	SGN	SW_AE	DR	CB	30005

Scale (A1)	Date:	Job No:	Rev:
As Shown	July 2023	23.152	P01

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APPENDIX B

ENGINEERS BRIDGE METHOD STATEMENT & RISK ASSESSMENT

Method Statement & Risk Assessment

Project: Engineer's Bridge Rehabilitation

Document Title:	Method Statement – Engineer's Bridge, Oldbridge - Rehabilitation	Document Number	Rev
		Met St-01	**01**

Prepared By: MCC Transportation	**Date:**	Signature:
Reviewed By:	**Date:**	**Signature:**

Detail and Scope of Work	**The scope of works includes:** · Site Set up · Site Clearance · Third Party Utility Liaison · Traffic Management-closure and diversion · Working over adjacent to existing watercourse; · Environmental control measures; · Excavations; · Masonry works; rebuild and repointing with NHL mortars

Plant Requirements And Equipment Generally

Plant

Quantity	Description	Certification Yes / No
1	7.5t Excavators	☐
2	6t Dumpers	
		☐
		☐

Tools/ small Plant

Quantity	Description	Certification Yes / No
As req	Signs to TSM Ch 8	☐
As req	Cones to TSM Ch 8	☐
		☐
	5kva generators Range of small tools and plant Access towers/platforms	☐

Labour Resources

Quantity	Position and Specific Job Description	Certification Yes / No
1	Foreman	☐
		☐
3	Skilled Operatives	☐
		☐
		☐

Note: Names, job descriptions and CV details of key personnel utilised in this Method Statement to be available on request.

Materials Required

Quantity	Description	Supplier / Manufacturer	Technical Sheet Agreement Yes / No
			☐
	Masonry/Stone	TBC	☐
	Lime mortar	TBC	☐
			☐
			☐
			☐
			☐

Personnel and Vehicular Access	As per TTM arrangement in compliance with TSM Ch 8, via main road and signed/ detailed access /egress points only.

Method Statement & Risk Assessment

Project: Engineer's Bridge Rehabilitation

Document Title:	Method Statement – Engineer's Bridge, Oldbridge - Rehabilitation	Document Number	Rev
		Met St-01	01

Temporary Works Design Required	N/A	**Responsibility for Temporary Works Design**	N/A

Witness / Hold Points

Item	Description	Hold Point	Witness Point	Responsibility	Appropriate Form / Checklist
1	Establish TM	☐	☑		
2	Confirmation of extent of De-vegetation	☑	☐		
3	Conformation of extent of masonry/re-pointing works	☑	☐		
		☐	☐		

Hold points shall be identified at stages of the work where checks shall be necessary before continuing. The authority for release of the hold point shall be identified above.

There shall be no instream works without consultation and agreement with IFI.

Witness points shall be identified at stages of the work where witness points shall be required.

Document Title:	Method Statement – Engineer's Bridge, Oldbridge - Rehabilitation	Document Number	Rev
		Met St-01	01

Works Sequence and Method	1. Service providers shall be contacted prior to mobilization 2. IFI shall be contacted and method statements agreed in advance of works. 3. Contractor will mobilize to Site with mobile welfare facilities. 4. An onsite survey of existing site services will also be conducted on with the area CAT scanned and any existing service locations logged and highlighted by engineer. 5. A tool box talk shall be given on the existing services, site risks and the works to be undertaken. 6. The required Traffic Management System will be put in place as detailed on TTM drgs. All staff setting up, altering or removing traffic management to have complete 3 day Sign, Lighting and Guarding course. 7. All works completed/maintained by trained personnel. Advance signage is important to warn all locals and other users of the works being undertaken. 8. This bridge will be reduced to a closure for the period of upper level works with approved diversion signed clearly as detailed in TTM Plan 9. The structure is then cleared of all vegetation manually by Contractor's crew, trimming where applicable. Access shall be via a mix of ladder and towers were higher level attention is required. 10. The structure shall be power-washed by the same crew – no chemicals will be used in the completion of the power-washing works. 11. Coping stones, sections of damaged parapet walls and damaged spandrel walls are then removed by Contractor's masons and set aside for reuse. Upper level roadside pointing and repairs/stitching are completed initially with the paving works under TTM to remove closure as soon as possible. 12. Subsequently lower level works to the piers and cutwaters etc and any rear wall works are completed post removal of diversion. 13. The required areas to parapets spandrels and arches are raked out and repointed with pinnings as required. All pointing works in done in a "tub" scenario to stop any lime mortar reaching the water course. The "tub" is made up of a plastic coffin tank (similar to domestic attic header tank) with a polythene "slide" nailed to the wall being repointed with a 2x1 lath. Alternately a sheet of polythene will be fixed to the area beneath lime application works. 14. The "tub" arrangement is moved along with the proceeding repointing works and allows any raked off old mortar or any new mortar drips to fall onto polythene and slide to the tub thus avoiding watercourse. 15. Alternately in the use of a platform all platforms are lined to protect against any material entering the watercourse. 16. The traffic management diversion is then removed and low level works completed. 17. At low level sections of masonry required will be rebuilt and repointed as required by Contractor's masons. 18. Any waste material generated onsite will be disposed off site in accordance with the relevant waste management legislation 19. On completion of works items Contractor will tidy site, remove TM and demobilise.

Method Statement & Risk Assessment

Project: Engineer's Bridge Rehabilitation

Document Title:	Method Statement – Engineer's Bridge, Oldbridge - Rehabilitation	Document Number	Rev
		Met St-01	01

Note:

- ***Ensure you have consulted with the most up to date service drawings and relevant appendix***
- ***Ensure you have made contact with the relevant service provider.***
- ***No work is to commence until all services are identified, moved or protected in agreement with the utility provider.***
- ***Ensure you have assessed Traffic Management for the works.***
- ***Ensure you have you made arrangements for access and egress to and from the works area.***

Hazard Identification, Risk Assessment and Control Measures

RISK RATING:

L = Likelihood
1 ***Remote-*** Unlikely to occur in the relevant period.
2 ***Occasional-*** likely to occur at least once in the relevant period.
3 ***Probable-*** likely to occur several times in the relevant period

S = Severity
1 ***Negligible-*** very minor, little consequence
2 ***Marginal -*** First aid accident/ routine repair
3 ***Serious -*** Loss of time/injury, illness or damage or environmental impact.
4 ***Critical -*** major injury, illness or damage, or major environmental impact.
5 ***Catastrophic -*** Death or total system loss.

R = Risk Rating (likelihood x severity)

Low (L) = 1 – 4
Medium (M) = 5– 8
High (H) = 9 – 15

GENERAL NOTES:
1) Everybody has the responsibility to familiarise themselves with the Construction Stage Health and Safety Plan and Safety Statement which is available in the Site Office.
2) Everybody has the responsibility to familiarise themselves with the site environmental plan and consider the environmental aspects when assessing the risks.
3) All activities should be in the Low (L) risk category.
4) All operatives must be SAFE PASS trained.

Work Activity	Potential Hazards	Person(s) at Risk	Risk Rating			Control Measures (to Control and Reduce Risk)	Residual Risk Rating	Responsibility
			L	S	R			
Placing TTM	Adjacent Traffic	Public/Operatives/Road Users	2	5	M	It is every ones responsibility to familiarise themselves with the Const Stage Safety and Health Plan. Toolbox talk, Proper Training, Clean and appropriate PPE All works to comply with TSM Ch8	L	All
	Moving Plant within works area	Motorists /operatives/pedestrians	1	4	M	Tool box talk; adequate Training; highlighting of public zones.	L	Site Supervisor
Placing advance coning/Closing Road	Adjacent Traffic	Public /Operatives	1	5	M	Working behind cones / / Cat 3 Hi Vis at all times	M	Site Supervisor
	Falling Stones	All	4	3	h	Remove loose materials from side slopes	M	All
Excavation	Collapse and engulfment	Operatives	3	5	H	Batters to be excavated safe angle, competent person to assess slope stability.	H	Site Supervisor
Excavation	Electrocution, injury from plant	Operatives and driver	2	5	H	Cat scan of area, consultation with service providers in advance, permit to dig system.	H	All

Method Statement & Risk Assessment

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Work Activity	Potential Hazards	Person(s) at Risk	Risk Rating			Control Measures (to Control and Reduce Risk)	Residual Risk Rating	Responsibility
			L	S	R			
Excavation	Falls	All	2	3	M	Edge Protection to be provided	L	All
Manual Handling	Personal injury	Operatives	1	5	L	Lift assessment, exercise due care in lifting and correct manual handling procedures.	L	All
Excavation	Crushing Injury	All	2	5	H	Provide Banks man to keep personnel away from plant. And to guide the movement of plant	L	All
Lifting Equipment	Falling items/lift failure	Operatives	2	4	M	Certified lifting equipment only, slinger handler operations	M	All
Working Adjacent to Live Traffic Generally	Oncoming traffic	Operatives / Drivers	2	5	H	Access/egress via signed access points only. All works within works area, Tool box talk Trained Road Operatives only.	M	Operatives
Working on or above water	Drowning	Operatives/Drivers	1	5	M	Buoyancy aids, life buoy on site for all involved. (Precaution only – as only low level water) Specific tool box talk to address water risk aspects	L	Operatives
Concreting/Lime mortar works	Skin burning	Operatives	1	2	L	Tool Box Talk/Training and appropriate PPE at all times	L	Operatives
Working around plant and machinery	Striking/crushing	Operatives/drivers/public	1	5	M	Tool Box Talk/Training for all/ Site security/Public security	L	Operatives/ staff

Method Statement & Risk Assessment

Project: Engineer's Bridge Rehabilitation

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		Met St-01	01

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Work Activity	Potential Hazards	Person(s) at Risk	Risk Rating			Control Measures (to Control and Reduce Risk)	Residual Risk Rating	Responsibility
			L	S	R			
	Environmental Issues	**Risk Factor**				**Mitigation**		
Works generally	Pollution of watercourses	Watercourse locally	1	3	L	No tools/plant to be cleaned in watercourses, any run off to be allowed settle prior to meeting watercourse, no excavated material to be deposited in watercourse; All towers platforms to be lined, Use Tub as required when pointing	L	All
Works generally	Fuel/oil spillages	Generally to watercourses and adjacent lands	2	2	M	All plant should be well maintained with inspections for drips on an ongoing basis.	M	All
Works generally	Noise Vibration	Personnel and environment generally	1	3	L	Plant shall be well maintained and switched off when idle; work during daylight should be considered to avoid nuisance; if protected species encountered relevant measures should be taken to minimize disruption	L	All
Works Generally	Contamination of ground water and surface water	Watercourses and adjacent lands	1	2	L	Excess surface water should be bunded to avoid watercourses; excess groundwater should be allowed seep naturally;	L	All
Works generally	Exhaust emissions	Environment generally/air quality	1	4	M	Machinery should be properly maintained and switched off when idle	M	All
Works generally	Vegetation and soil protection	Local area to works	2	2	L	Excavated material to be minimized and kept away from watercourses and adjacent areas	L	All
Works generally	Invasive Species e.g. Japanese Knotweed/ Himalayan Balsam	Local to works and between work sites	3	3	H	Areas of Invasive Species to be identified and highlighted. Any plant in contact with it shall be washed before being transferred to other sites. Biosecurity operating procedures to apply.	L	All