FEHILY TIMONEY

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TRIM MILLENNIUM PEDESTRIAN BRIDGE SCHEME

Screening Report and Natura Impact Statement

Prepared for:

Meath County Council

comhairle chontae na mí
meath county council

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Screening Report and Natura Impact Statement for the Trim Millennium Pedestrian Bridge Scheme

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Abstract: This document comprises the Appropriate Assessment Screening Report and Subsequent Natura Impact Statement for the proposed Trim Millennium Pedestrian Bridge Scheme, Co. Meath. Appropriate Assessment is required under Article 6 (3) of the Habitats Directive for any project or plan likely to have a significant effect on a European (Natura 2000) site in view of its conservation objectives.

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1. INTRODUCTION

Fehily Timoney and Company (FT) were commissioned by Meath County Council to prepare a report to inform the competent authorities Appropriate Assessment process, as required by Article 6(3) of Council Directive 92/43/EEC (Habitats Directive). The preparation of the Appropriate Assessment (AA) screening report and subsequent Natura Impact Statement (NIS) is for the proposed Trim Millennium Pedestrian Bridge Scheme (proposed development).

This report presents an examination of whether the proposed development is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is based on best available scientific knowledge. This report is to inform the competent authority in completing their statutory obligation to carry out the AA screening determination and subsequent NIS determination statement.

1.1 Legislative Requirements

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) provides legal protection for habitats and species of European importance. The Directive requires that where a plan or project is likely to have a significant effect on a European Site, while not directly connected with or necessary to the nature conservation management of the site, it will be subject to 'Appropriate Assessment' to identify any implications for the European site in view of the site's Conservation Objectives. Specifically, Article 6(3) of the Habitats Directive states:

> *"6(3) Any plan or project not directly connected with or necessary to the management of the site (Natura 2000 sites) but likely to have significant effect thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

The competent authority must carry out a screening for appropriate assessment to assess, in view of best scientific knowledge, if the development, individually or in combination with another plan or project is likely to have a significant effect on the European site. If it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site, an appropriate assessment of its implications for the European Site(s) in view of the Site's conservation objectives is required to be carried out.

The provisions of Article 6(3) do not apply where the proposed plan or project is 'connected with or necessary to the management of the site'. In this case, the proposed project is not directly connected with or necessary to the management of any European site(s).

1.2 Methodology

1.2.1 Guidance

The assessment was conducted in accordance with the following guidance:

- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (European Commission, 2002).
- Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Commission Notice (2021) Brussels, 28.9.2021 C (2021) 6913 final (European Commission, 2021).
- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin (2009, updated 2010) (Environment Heritage and Local Government, 2009).
- Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC. European Commission (2019). Brussels, (2019/C 33/01). OJ C 33, 25.1.2019.
- Interpretation Manual of European Union Habitats. Version EUR 28. (European Commission, 2013)
- OPR Practice Note PN01 Appropriate Assessment Screening for Development Management, (Office of the Planning Regulator, 2021).

1.2.2 Process

The process of determining the likelihood of significant effects from a proposed project on European sites is an iterative process centred around a Source-Pathway-Receptor model. In order for an effect to be established, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potential effect is not of any relevance or significance.

- Source(s) – e.g., pollutant run-off, noise, removal of vegetation, etc.;
- Pathway(s) – functional link, or ecological pathway e.g., groundwater connecting to nearby qualifying wetland habitats; and,
- Receptor(s) –the qualifying habitats and species of European sites and ecological resources supporting those habitats/species.

In the context of this report, a source is any identifiable element of the proposed project that is known to interact with the receiving environment. A receptor is the Qualifying Interests (QI)[1] for an SAC or Special Conservation Interests (SCI)[2] for an SPA or an ecological feature that is known to be utilised by the QI/SCI. In practice, the term Qualifying Interests also applies to SCIs (and is used in this document for simplicity). A pathway is any connection or link between the source and the receptor.

[1] SACs are areas designated under the Habitats Directive to conserve habitats listed in Annex I of the Directive and plant and animal species listed in Annex II. Collectively these are referred to as the 'Qualifying Interests' or 'QIs' of the SAC.

[2] SPAs are sites classified under the Birds Directive to protect rare or vulnerable bird species listed in Annex I to the Directive as well as regularly occurring migratory species and wetlands. Wetland habitats that support internationally important populations of migratory birds may be coastal or inland. Collectively, these species and habitats are referred to as the 'Special Conservation Interests' of the SPA.

The assessment commences with a description of the project, along with a description of the receiving environment and the associated sources for impacts to the receiving environment. All elements of the project are presented including the project location and existing baseline environment. The type of impacts that are likely due to the project (Source) are identified having regard to the spatial and temporal scale of the project, resource requirements and likely emissions. These sources are then used to define the zone of influence (ZoI) of the project as detailed in Section 2.3.

The European Commission Notice (2021) on the 'Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC, states that in identifying European sites (Natural 2000 sites), which may be affected by the project, the following should be identified:

- Any European sites geographically overlapping with any of the actions or aspects of the plan or project in any of its phases, or adjacent to them;
- Any European sites within the likely zone of influence of the plan or project. European sites located in the surroundings of the plan or project (or at some distance) that could still be indirectly affected by aspects of the project, including as regards the use of natural resources (e.g., water) and various types of waste, discharge or emissions of substances or energy;
- European sites whose connectivity or ecological continuity can be affected by the plan or project.

The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have potential effects on the Qualifying Interests of a European site. The OPR (2021) practice note states that the Zone of Influence must be established on a case-by-case basis using the Source-Pathway-Receptor (S-P-R) framework and not by arbitrary distances (such as 15 km). Section 3.2 sets out the detailed rationale for the identification of relevant European sites within the ZoI based on the sources of impacts arising from the proposed project. Subsequently, an assessment is undertaken with respect to potential connectivity (Pathways) to European Sites and their qualifying interests/special conservation interests are identified.

The potential for in-combination effects with other plans and projects is examined in Section 3.3, having regard to the identified impacts of the project along the ecological pathways identified to European sites.

In section 3.4 the likelihood of significant effects of the European Sites within the ZoI is examined having regard to the sensitivity of the site with pathways for impacts associated with the project on its own and in combination with other plans and projects.

Having regard to the European Commission Communication on the Precautionary Principle (European Commission, 2021) the:

> *"absence of scientific evidence on the significant negative effect of an action cannot be used as justification for approval of this action. When applied to Article 6(3) procedure, the precautionary principle implies that the absence of a negative effect on Natura 2000 sites has to be demonstrated before a plan or project can be authorised. In other words, if there is a lack of certainty as to whether there will be any negative effects, then the plan or project cannot be approved."*

Where significant effects are determined to be likely, or where there is uncertainty regarding the likelihood of significant effects, the project will be required under law to be subjected to Appropriate Assessment.

This report is based on best scientific knowledge and has utilised ecological expertise. In addition, a detailed online review of published scientific literature was conducted. This included a detailed review of the National Parks and Wildlife Website including mapping and available reports for relevant sites and in particular sensitive qualifying interests/special conservation interests described and their conservation objectives.

1.2.3 Field Surveys

Three rounds of kingfisher surveys were carried out by an FT ecologist on the 6th of June, the 24th of July and the 8th of August 2023. These surveys were carried out by walking a transects along both banks of the River Boyne up- and downstream from the bridge and checking for kingfisher as well as potential kingfisher nesting habitat.

Aquatic surveys of the River Boyne within the vicinity of the Trim Millennium Bridge were conducted on the 10th of October 2023 by ecologists working for Triturus. These surveys included otter (*Lutra lutra*) surveys withing 150m up and downstream from the bridge, as well as in-stream and riparian habitat surveys to assess the potential presence of Annex I habitat types within the vicinity of the bridge. The habitat assessment was conducted utilising elements of the methodology given in the Environment Agency's 'River Habitat Survey in Britain and Ireland Field Survey Guidance Manual 2003' (EA, 2003) and the Irish Heritage Council's 'A Guide to Habitats in Ireland' (Fossitt, 2000).

The full aquatic report by Triturus and the summary of the kingfisher report can be found in Appendix 4.

2. CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

2.1 Receiving Environment

The site of the proposed new Trim Millennium Pedestrian Bridge Scheme is immediately adjacent to Trim town and crosses the River Boyne. The bridge will be erected at the same location as the demolished Millennium Bridge and will make use of the existing foundations and paths leading to the bridge location.

The land use classifications for the surrounding area as defined by the 2018 CORINE landcover dataset are discontinuous urban fabric (112) and pastures (231).

There are no habitats within the study area that conform to those listed under Annex I of the EU Habitats Directive.

For further details related to the ecological context of the site see the associated Ecological Impact Assessment.

2.2 Proposed Development

The proposed bridge structure is to be constructed at the same location as that of the demolished Trim Pedestrian Millennium Bridge and the existing foundations are to be reused to support the proposed bridge structure. The bridge span is 30m and it will have a clear width of 3m. The bridge deck will be prefabricated off site and installed onto the existing foundations using a crane. As the bridge is to be set above the design flood levels of the River Boyne, the deck level is set above that of the adjacent river banks and therefore approach embankments will be constructed on each side of the bridge. The approach embankments are up to 1.0m above the existing ground level and shall be constructed using imported 6N/6P fill compacted into place. The approach ramps will allow for a 3m path and will have a gradient of 1:20. The length of these will be approximately 20m from the bridge abutments and they will tie in with the existing footpaths in the vicinity of the bridge. In order to construct the approaches there will be approximately 160m^3 of topsoil and surfacing excavated while 20m^3 of 6N/6P material and 115m^3 of Engineered Fill will be imported and compacted into place. Removed topsoil and surfacing will be reused for fill and landscaping as appropriate to minimise the volume of material to be removed from site.

2.2.1 Project Description

The proposed bridge scheme will comprise of:

- New reinforced concrete abutments;
- Bridge bearings including anchors for bearings;
- Prefabricated steel bridge;
- New approach ramps;
- New footpaths;
- Timber post and rail fencing;
- Bridge deck joints;
- Bollards.

Associated ancillary works encompass:

- Welfare facility consisting of container with portaloo;
- Employee parking;
- Contractor lock-up facility;
- Bottled water for potable supply;
- Water tanker to supply water used for other purposes;
- Fuel storage with bunded area to accommodate 110% of fuel storage;
- Diesel generator;
- Storage areas;
- Waste management areas.

The site compound is proposed to be located in the grassed area adjacent to the existing Car Park and is set back ca. 50m southwest of the southern abutment. An additional storage area for materials as well as plant and machinery to be used on the northern abutment is proposed to the east of the northern abutment.

2.2.1.1 Construction Phase

Preparatory Works

- Existing reinforced concrete bankseats (ca. 2m^3 of concrete), which are located ca. 1.5m from the river (depending on water-level), will be moved back via excavator or broken into pieces by a concrete breaker (if the bankseat is attached to the foundational structure). It will remain within the site boundary and shall be reused as fill for the approach ramps.
- New reinforced concrete abutments including wingwalls will be cast in-situ atop the mass concrete foundation. Timber shuttering will be utilised and steel reinforcement will be placed inside the formwork as per the design. In Situ concrete, delivered to site by truck, will be poured into the formwork and vibrated into place using a poker. The concrete will be left to cure and the formwork will be removed. The closest face of the abutment will be approximately 1.2m from the edge of the river (depending on water levels). Each abutment will contain ca. 16.5m^3 of in-situ poured concrete which will be delivered to site by ready mix delivery trucks.
- Two coats of epoxy paint will be applied to the areas of the reinforced concrete abutment which are to be buried.
- Bridge bearings will be bolted onto the newly constructed abutment bankseats. Anchors for the bearings will be cast into the concrete when constructing the abutment. The underside of be bearing plates are to be grouted (0.1m^3 grout).
- The temporary Bailey Bridge which is currently in place and is located directly west of the proposed bridge will be removed by the Army through reverse launching of the deck. Abutment blockwork etc will be removed after the removal of the bridge deck.

Bridge Deck Installation

- The pre-fabricated steel bridge superstructure will be transported to site by lorry
- The bridge deck will be lifted onto the bearings using a crane positioned on the southern bank of the River Boyne.
- The bridge superstructure will be fixed to the bridge bearings.

Approach Ramps and Finishes

- The topsoil and existing surfacing will be removed from the area below the approach ramps to a depth of approximately 0.3m. The approach ramp and footpath on the North Abutment has a plan area of approximately 140m^2 while the approach ramps on the southern side have a plan area of approximately 400m^2. The approach ramp commences approximately 4m from the watercourse. Any grass sods will be kept aside and re-used on the new approach ramps.
- 20m^3 of 6N/6P Fill shall be imported for the backfill at the abutments and 115m^3 of Engineered Fill used to raise the approach embankments to the required bridge level approximately 1.2m above the existing ground level. The fill be compacted by vibratory roller as it is placed.
- The approach paths to the bridge will receive a bound finish to tie in with the adjacent approach paths. A total area of approximately 400m^2 will be finished with a bound macadam surfacing ca. 100mm thick.
- The side slopes of the ramps will be top soiled re-using existing topsoil and seeded with grass to match the surrounding areas, grass-sods can also be re-used here.
- Timber post and rail fencing shall be provided at each abutment to prevent falls. Posts shall be driven into the ground to the required depth.
- A bridge deck joint will be installed at each abutment at the interface between the bridge deck and the approach ramps. This will be fixed to the structure through the use of an appropriate adhesive.
- Permanent pre-cast concrete bollards will be constructed at each end of the bridge to prevent vehicular access to the bridge. The bollards will have an in-situ poured concrete footing with an approximate volume of 0.2m^3. This will be installed ca. 4m from the river (depending on water level).

2.2.1.2 Operational Phase

During operation the bridge will require ongoing periodic maintenance. This includes:

- Re-painting on a 20-25 year cycle or more frequent re-touching of paint work;
- Re-placing rubber joints when these parts weaken, expected to be required every 20 years;
- Re-placing of bearings and parapets which have a design life of 50 years, these are unbolted and replacements are bolted in.

2.2.1.3 Decommissioning Phase

During decommissioning the bridge structure can be removed by reversing the actions outlined in the construction phase. The bridge structure is self-supporting and can be craned out of position onto the river bank, where it can be transported for either recycling or refurbishment as required. The abutments are likely to remain in place for a replacement bridge structure.

2.2.1.4 Road Access

No new roads are proposed as part of the works. Access to the north abutment for construction will be obtained from the Porch Field via either Abbey Lane or the R154. Access to the south abutment for construction will be via Castle Street.

The approach paths to the proposed bridge will be reinstated upon installation of the new structure. The location and extent will be in line with what was provided prior to the demolition of the timber bridge structure.

2.2.1.5 Waste and Emissions

- General construction waste in the form of surplus fill material of the approach ramps will be removed to a licensed waste management facility;
- Dust will occur during earthworks and drilling of concrete for bearing installation and rebar fixing;
- Construction noise.

2.2.1.6 Working Hours and Workforce

All construction work will typically be conducted Monday to Friday 08:00 to 18:00. At the peak of the construction phase for the proposed development approximately 5-10 people will be working within the site. The total construction programme is estimated to be 6 months, including for the fabrication of the steel bridge off site. The estimated length of time for works on site is approximately 10-12 weeks. During the operational phase of the bridge a total of approximately two staff will access the site for maintenance approximately once a year.

2.2.1.7 Construction Materials and Volumes

- Cast In-situ Concrete: ca. 33m^3
- Precast Concrete Bollards
- Pedestrian guard railings: 61m
- Asphalt or alternative surfacing: 40m^3
- Structural Steel: 30T for Bridge Deck
- Imported 6N/6P: 20m^3
- Imported Engineered Fill: 115m^3

2.2.1.8 Vehicles and Machinery

- Tracked Excavator
- Crane
- Dumpers
- Paver
- Vibratory Roller

2.2.1.9 Fuel and Oil Management

Refuelling of machinery will be undertaken within the site compound and designated storage areas only.

2.3 Potential Interactions of the Proposed Development with the Receiving Environment

Given the ecological context and the project details set out above, the following sources for impacts are identified to have potential for interactions with the receiving environment (Table 2-1).

Assessment of Plans and Projects significantly affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC', (European Commission, 2021), the likely impacts of the project are set out relative to the following project features:

- size (e.g. in relation to direct land-take);
- overall affected area including the area affected by indirect impacts (e.g. noise, turbidity, vibrations);
- physical changes in the environment (e.g. modification of riverbeds or morphology of other water bodies, changes in the density of forest cover);
- changes in the intensity of an existing pressure (e.g. increase in noise, pollution or traffic);
- resource requirements (e.g. water abstraction, mineral extraction);
- emissions (e.g. nitrogen deposition) and waste (and whether they are disposed of on land, water or in the air)
- transportation requirements (e.g. access roads);
- duration of construction, operation, decommissioning, etc.
- temporal aspects (timing of the different stages of a plan or project).

Table 2-1: Project features from the construction, operational and decommissioning phases of the proposed development which have been identified to have sources for potential interaction with the receiving environment

Project Feature	Spatial and temporal scale of project interactions
Land Use Change (Size / area / changes to the environment / long term functional use / intensity)	**Construction:** The proposed development is small scale with the bridge and associated footpath, abutments and ancillary works largely occupying the same footprint as the previous bridge. The site compound will be established approximately 50m from the river in a grassed area adjacent to the existing carpark. The northern storage area will also be on a current greenfield site. For both areas a hardcore atop a membrane will be put down and temporary fencing will be established around it. The greenfield will be returned to its original condition after construction of the bridge. The estimated length of time required for on site works is short, just 10-12 weeks. **Operation:** The operational phase of the proposed development will be consistent with the existing land use – as the proposed development will replace a recently demolished pedestrian bridge as well as the temporary Bailey Bridge installed to facilitate pedestrian crossings before the development of a new permanent bridge. **Decommissioning:** The bridge structure can be lifted out of place by crane. The decommissioning phase will have a lesser impact than the construction phase and will be of shorter duration.
Resource Requirements and wastes	**Construction:** There are no resource requirements from any European site. Some surplus soil material may have to be removed from site.

	Operation: The operational phase of the proposed development will be consistent with the existing land use. No resource interactions will occur. **Decommissioning:** The bridge structure can be lifted out of place by crane and removed from site either for recycling or refurbishing. Concrete abutments and paths are likely to stay in place.
Emissions	**Construction:** Potential emissions from the project are: • Siltation from earthworks; • Dust from earthworks and concrete breaking; • Concrete washout; • Hydrocarbon spills from machinery; • noise. **Operation:** The operational phase of the proposed development is likely to be consistent with the existing land use. There may be minor amounts of dust emissions from the bridge into the river; however, these are consistent with existing land use before the previous bridge was removed. **Decommissioning:** During decommissioning there is a minor risk of hydrocarbon spills from the crane as well as short-term noise emissions. If concrete abutments are to be removed, there would be dust and noise emissions from concrete breaking. It is however expected that abutments will stay in-situ.

3. APPROPRATE ASSESSMENT SCREENING

3.1 Identification of European Sites that may be affected by the Proposed Development

The OPR (2021) AA Screening practice note states that the Zone of Influence must be established on a case-by-case basis using the Source-Pathway-Receptor model. The S-P-R model has been used to identify the ZoI to ensure that relevant European sites are identified. The S-P-R model minimises the risk of overlooking distant or obscure effect pathways, while also avoiding an over reliance on buffer zones (e.g. 15 km), within which all European sites should be considered. This approach follows the DoEHLG (2009 rev 2010) guidance on AA which states that:

> *"For projects, the distance could be much less than 15 km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects"*

As detailed in section 1.2.2, in order for an effect to occur, all three elements of this mechanism must be in place. The absence of one of the elements of the mechanism means there is no likelihood for the effect to occur. The potential impacts of the proposed development are set out in Section 2.3 of this report. The impact is essentially the 'source' in the S-P-R model.

These impacts may be very localised and confined to the proposed development site with no potential connectivity to a European site and therefore no potential for effects. Alternatively, where an ecological or functional pathway exists, they may give rise to a potential effect to a Qualifying Interest of a European site. This section of the report identifies the potential pathways to European sites emanating from these potential sources of impact.

The dominant ecological pathways to consider are:

- Direct physical interactions or changes to the local environment;
- Air dispersal (noise, dust, odour emissions etc.);
- Hydrological interactions; and
- Dispersal patterns of mobile species.

In order to determine the potential effects of the proposal, information on the qualifying features, known vulnerabilities and threats to site integrity pertaining to any potentially affected European sites has been reviewed. Background information on threats to individual sites and vulnerability of habitats and species that was used during this assessment included the following:

- Ireland's Article 17 Report to the European Commission "Status of EU Protected Habitats and Species in Ireland" (NPWS, 2019);
- Ireland's Article 12 Report to the European Commission "Bird species' status and trends reporting format for the period 2008-2012-" (NPWS, 2012);
- Site Synopses[3] ; and

[3] NPWS (2019); NPWS Database of protected site data and associated documents for each European site; available at https://www.npws.ie/protected-sites: last accessed 4th February 2024.

- NATURA 2000 Standard Data Forms[4].

The assessment considers the SSCOs of each of the sites with pathways for effect. Since the conservation objectives for the European sites focus on maintaining the favourable conservation condition of the QIs/SCIs of each site, the screening process has concentrated on assessing the potential effects of the proposed development against the QIs/SCIs of each site. The conservation objectives for each site have been taken into account throughout the assessment process (See Appendix 3 for reference list).

3.1.1 Zone of Influence of the proposed development

The Zone of the proposed project have been identified as:

- Any European sites hydrologically connected to the proposed development;
- Any European sites with groundwater dependent habitats within the catchment area of the proposed development;
- All SAC's designated for Lesser Horseshoe bats within 10 km of the proposed development;
- All SPAs within 15 km SPA's and SPA's designed for Greylag and Barnacle Geese within 25km of the proposed development;
- Any European sites within 2 km of the proposed development, with potential impacts from habitat loss, noise, lighting, invasive species and dust.

[4] NPWS (2019); NPWS Database of protected site data and associated documents for each European site; available at https://www.npws.ie/protected-sites: last accessed last accessed 4th February 2024.

Table 3-1: Identification of European Sites within the Zone of Influence of the Proposed Development

European Site (Code)	List of Qualifying Interests	Distance from the proposed development (km)	Criteria	Pathway for potential effects	Considered further in screening (Y/N)
River Boyne and River Blackwater SAC (Site code: 002299) https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002299.pdf Accessed 22/01/2024	• Alkaline fens [7230] • Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, Salicion albae)* [91E0] • River Lamprey *Lampetra fluviatilis* [1099] • Salmon *Salmo salar* [1106] • Otter *Lutra lutra* [1355]	Direct distance: 0m	The proposed development overlaps with the SAC. Hydrologically connected European Site (surface water)	The construction and decommissioning of the proposed bridge may cause temporary effects on surface water quality due to noise, sediment, runoff, concrete washout and potential oil spills from plant and machinery.	Y
River Boyne and River Blackwater SPA (Site code: 004232) https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004232.pdf Accessed 22/01/2024	• Kingfisher *Alcedo atthis* [A229]	Direct distance: 0m	The proposed development overlaps with the SPA. Hydrologically connected European Site (surface water) Mobile Species: Kingfisher	Effects on mobile species. Kingfisher could be indirectly affected by a reduction of surface water quality within the SPA and tributaries used by this species. Therefore there are pathways for effects identified.	Y
Boyne Estuary SPA (Site code: 004080) https://www.npws.ie/sites/default/files/protected-	• Shelduck (*Tadorna tadorna*) [A048] • Oystercatcher (*Haematopus ostralegus*) [A130] • Golden Plover (*Pluvialis apricaria*) [A140] • Grey Plover (*Pluvialis squatarola*) [A141]	Direct distance: ca. 35.7km northeast	Hydrologically connected European Site (surface water)	There is a very remote hydrological pathway to this European site.	N

European Site (Code)	List of Qualifying Interests	Distance from the proposed development (km)	Criteria	Pathway for potential effects	Considered further in screening (Y/N)
sites/conservation_objectives/CO004080.pdf Accessed 22/01/2024	• Lapwing (*Vanellus vanellus*) [A142] • Knot (*Calidris canutus*) [A143] • Sanderling (*Calidris alba*) [A144] • Black-tailed Godwit (*Limosa limosa*) [A156] • Redshank (*Tringa totanus*) [A162] • Turnstone (*Arenaria interpres*) [A169] • Little Tern (*Sterna albifrons*) [A195] • Wetland and Waterbirds [A999]	In-stream distance: ca. 53.8km northeast		This connection is considered remote and unlikely to be a viable pathway for significant effects resulting from a project of the size and scale as the proposed development.	
Boyne Coast and Estuary SAC (Site code: 001957) https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001957.pdf Accessed 22/01/2024	• Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (G*lauco-Puccinellietalia maritimae*) [1330] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Direct distance: ca. 36.8km northeast In-stream distance: ca. 54.1km northeast	Hydrologically connected European Site (surface water)	There is a very remote hydrological pathway to this European site. This connection is considered remote and unlikely to be a viable pathway for significant effects resulting from a project of the size and scale as the proposed development.	N

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World Topographic Map: Esri, HERE, Garmin, FAO, NOAA, USGS
World Imagery: Earthstar Geographics
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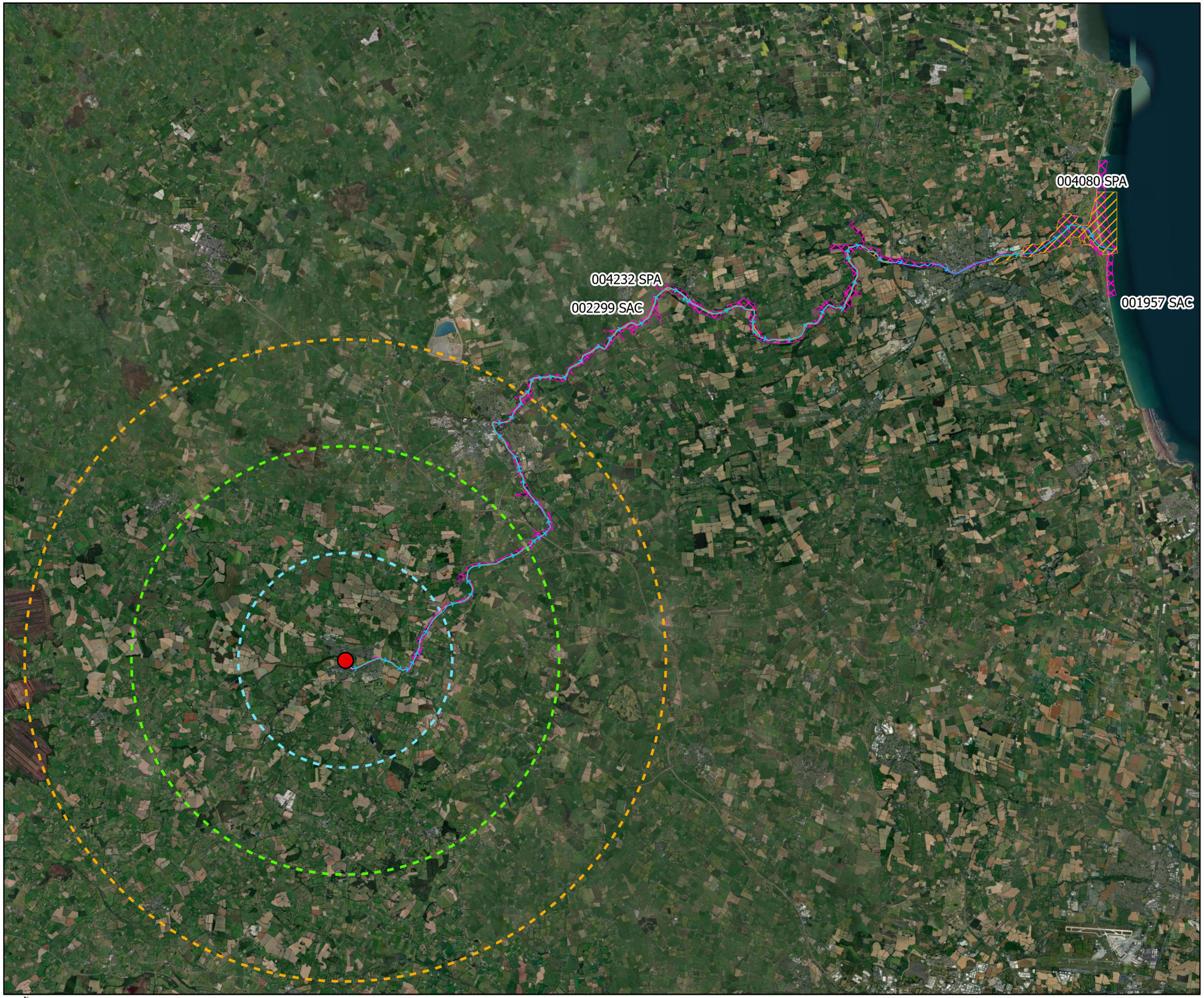

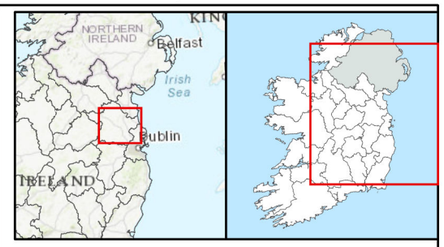

Legend

- Site Location
- Down-Stream Hydrological Connectivity
- 5km Buffer
- 10km Buffer
- 15km Buffer
- SPA
- SAC

N
W E
S

0 2.5 5 10 Kilometers

TITLE:	European Sites within the Potential Zone of Influence and Pathway Consideration Zone - Including Hydrological Connectivity
PROJECT:	Trim Millennium Pedestrian Bridge Scheme
FIGURE NO:	3 1
DRAWING NO:	*Project* | *Originator* | *Volume* | *Location* | *Type* | *Role* | *Number* P22256 — FT — XX — ZZ — FG — EN — 00001
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3.2 In-combination Effects

Article 6(3) of the Habitats Directive requires an assessment of a plan or project to consider other plans or projects that might, in combination with the plan or project, have the potential to adversely affect European sites.

Section 2.1 receiving environment overview - identifies the overall characteristics of the area with respect to existing condition and general land use. All developments from the receiving area were considered; the area considered is defined by the authoring ecologist using criteria which depend on the characteristics of the proposed development and the associated sources (identified above); these criteria include:

- Having direct or indirect connectivity to a European site;
- Being in close proximity to a European site;
- Being of a substantial scale relative to the conditions and/or current works taking place in the surrounding landscape;
- Having disperse emissions or far-reaching sources for effects;
- Having sources for effects to ecological connectivity.

These factors are considered in the context of characteristics of the proposed development (detailed in Section 2.3.) and on this basis a planning search radius of 500m was selected - in line with the ZOI - to be used to search for projects within the receiving environment. The sources for effects from the proposed development are considered in combination with the potential sources for effects from the receiving environment for potential additive or interactive effects.

Plans of relevance within the receiving environment or in-combination with effects arising from the proposed development:

- Meath County Development Plan 2021-2027;
- No other relevant plans were identified.

The proposed development is very small in size and has low potential impacts which may cause temporary effects to the receiving environment. The operational phase is consistent with existing land use. Consequently it is not expected that proposed development will have any significant in-combination effects with the above plans.

Projects considered for possible in-combination effects from the proposed development:

Further to section 2.1 – which details the existing land uses and general characteristics of the area – a focus was placed on current and future development applications. To identify projects for consideration for the in-combination effects section, the Dept of Housing, Local Government and Heritage planning database was used[5]. A review of all planning applications within the identified zone was conducted focusing on all application within the past 5 years[6] (see Appendix 3 for full details).

[5]https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de; 15th January 2024

[6] planning application have a standard lifespan of 5 years as per Section 40 (3)(b) of the Planning & Development Act 2000, as amended; therefore, these are viewed the 'live' applications, all other projects are considered as part of the site context.

There are a number of medium and small-scale developments within the receiving area.

Residential developments include the erection of a three storey apartment building with up to 12 residential units (planning reference: 221176), as well as the demolition of an existing dwelling, garage and associated outbuildings to erect seven residential units in their place (planning reference: 211914), and some applications for single residential units.

Commercial developments include a 3 and 4 storey extension (total 43 new bedrooms) to an existing hotel (planning reference: TA190860) within the architectural conservation area and the demolition of part of a supermarket building and several new extensions to that building (planning reference: TA191322).

Other applications refer to extensions to buildings, installing solar panels on roofs, change of use applications as well as applications for retention of building features or use changes.

Due to the scale, location and nature of these developments, it has been ruled out that there is a risk of significant in-combination effects between the proposed development and any of these applications.

3.3 Likelihood of Potential Significant Effects arising from the Proposed Development

This section of the report explains the metrics used when assessing if the potential effects (previously identified) are likely to results in significant implications for European sites.

The European sites with evident pathways for potential effects arising from the sources for impact from the proposed project - either alone or in combination - are:

- River Boyne and River Blackwater SAC (002299)
- River Boyne and River Blackwater SPA (004232)
- Boyne Estuary SPA (004080)
- Boyne Coast and Estuary SAC (001957)

The EC (2021) Guidance notes that the significance of the effects will vary depending on factors such as the magnitude of impact, the type, extent, duration, intensity, timing, probability, in-combination effects and the vulnerability of the habitats and species concerned.

These sites are now examined for the potential for likely significant effects. The following parameters are described when characterising impacts (following guidance from the Chartered Institute of Ecology and Environmental Management, Environmental Protection Agency and National Roads Authority):

- Direct and Indirect effects - An effect can be caused either as a direct or as an indirect consequence of a Plan/Project.
- Magnitude - Magnitude measures the size of an impact, which is described as high, medium, low, very low or negligible.
- Extent - The area over that the effect occurs – this should be predicted in a quantified manner.
- Duration - The time that the effect is expected to last prior to recovery or replacement of the resource or feature.
    - Temporary: Effects up to 1 Year;
    - Short Term: Effects lasting 1-7 years;

- Medium Term: Effects lasting 7-15 years;
- Long Term: Effects lasting 15-60 years; and
- permanent: Effects lasting 60 years.

The EC (2021) outlines the following potential changes that may occur at a European site, which may result in effects on the function of the site:

- Reduction of habitat area, habitat degradation or fragmentation;
- Disturbance to species, reduction in species populations and density;
- Changes in ecological functions and/or features that are essential for the ecological requirements of habitats and species (e.g. water quality and quantity);
- Interference with the key relationships that define the structure and function of the site.

The guidance document outlines the following criteria for assessing significance, indicators of significance, in view of the site-specific conservation objectives e.g.:

- Degree of habitat loss (absolute, relative), changes in habitats structure;
- Risk of species populations' displacement, level of disturbance, reduction of species home range, feeding area, refuge areas, alteration of favourable condition for breeding;
- Importance of the habitats and species affected, e.g. representativeness, local variety;
- Importance of the site (e.g. limit of distribution area for certain habitats and species, stepping stone, important for ecological connectivity);
- Disruption or alteration of ecological functions;
- Changes to key ecological features of the site (e.g. water quality).

The potential for the proposed development to have likely significant effects on European sites examined in Table 3-2 on the basis of the source-pathway-receptor connectivity, and the sensitivity of the European sites qualifying interests to the effects of the impacts.

The Habitats Directive requires the focus of the assessment at this stage to be on the Conservation Objectives of a site. Site-Specific Conservation Objectives (SSCOs) have been prepared for a number of European sites. These detailed SSCOs aim to define favourable conservation condition for the qualifying habitats and species at that site by setting targets for appropriate attributes which define the character habitat. The maintenance of the favourable condition for these habitats and species at the site level will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

> *"Favourable conservation status of a species can be described as being achieved when: 'population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis."*
> *"Favourable conservation status of a habitat can be described as being achieved when: 'its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable".*

A Generic Conservation Objective for a SAC is provided below:

> *"To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected".*

A Generic Conservation Objective for a SPA is provided below:

> *"To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA".*

Table 3-2: Assessment of Likely Significant Effects arising from the Proposed Development on European Sites within the Zone of Influence and Pathway Consideration Zone

Site Name (Site Code)	Criteria for assessing potential changes that may occur at a European site, which may result in effects on the function of the site:[7]	Assessment of effects on the European sites functionallity	Assessment of the significance of effects either alone and in-combination with other plans or projects	Likely Effect
River Boyne and River Blackwater SAC (002299)	Reduction of habitat area, habitat degradation or fragmentation.	There will be no direct reduction of Annex I habitat or habitat fragmentation. Pollution of surface water with dust, concrete or hydrocarbons might have an indirect effect on habitats within the SAC.	The proposed project could contribute to degradation of aquatic habitat downstream.	Y
	Disturbance to species, reduction in species populations and density.	Siltation and water pollution caused by concrete or hydrocarbon spills, could have an effect on spawning grounds of river lamprey and salmon, and could have an indirect effect on otter. Noise could have a direct effect on otter, which has foraging habitat in the Boyne River.	The proposed project could contribute to the reduction in species population and density of QI species.	Y
	Changes in ecological functions and/or features that are essential for the ecological requirements of habitats and species (e.g., water quality and quantity).	Sediment, concrete and hydrocarbons can have a temporary negative effect on water quality in the SAC.	The proposed project could contribute to changes in ecological functions and/or features that are essential for the ecological requirement of habitats and species.	Y
	Interference with the key relationships that define the structure and function of the site.	Potential spills of concrete or hydrocarbons as well as siltation could cause pollution of surface water. This has the potential to interfere with	The proposed project could contribute to interference with the key relationships that define the structure and function of the site.	Y

[7] Taken from the EC (2021) Guidelines

Site Name (Site Code)	Criteria for assessing potential changes that may occur at a European site, which may result in effects on the function of the site:[7]	Assessment of effects on the European sites functionallity	Assessment of the significance of effects either alone and in-combination with other plans or projects	Likely Effect
		the key relationships that define the structure and function of the site.		
River Boyne and River Blackwater SPA (004232)	Reduction of habitat area, habitat degradation or fragmentation.	There will be no direct reduction of Annex I habitat or habitat fragmentation. Potential significant effect on water quality could have an indirect effect on habitats within the SPA which in turn could cause a reduction of prey availability for kingfisher. There is no suitable breeding habitat for kingfisher near the bridge.	The proposed project could contribute to degradation of this habitat and adjacent habitats.	Y
	Disturbance to species, reduction in species populations and density.	Siltation and water pollution caused by hydrocarbon or concrete spills, could have an effect on spawning grounds of fish and could therefore reduce prey availability for kingfisher. This in turn could cause a reduction in species population of kingfisher in the area. Noise during works could cause temporary disturbance to foraging kingfisher outside of the breeding season.	The proposed project could contribute to the reduction in species population and density of QI species.	Y
	Changes in ecological functions and/or features that are essential for the ecological requirements of habitats and species (e.g., water quality and quantity).	Potential significant effect on water quality could reduce prey availability for kingfisher.	The proposed project could contribute to changes in ecological functions and/or features that are essential for the ecological requirement of habitats and species.	Y

Site Name (Site Code)	Criteria for assessing potential changes that may occur at a European site, which may result in effects on the function of the site:[7]	Assessment of effects on the European sites functionallity	Assessment of the significance of effects either alone and in-combination with other plans or projects	Likely Effect
	Interference with the key relationships that define the structure and function of the site.	Potential significant effect on water quality could reduce prey availability for kingfisher.	The proposed project could contribute to interference with the key relationships that define the structure and function of the site.	Y

3.4 Screening Conclusion

This stage one screening for AA of the proposed Trim Millennium Pedestrian Bridge scheme in County Meath demonstrates that the proposed development is likely to have significant effects on two European sites.

The AA screening process has considered potential effects which may arise during the construction and operational phases as a result of the implementation of the proposed development. Through an assessment of the pathways for effects and an evaluation of the sources for impacts, taking account of the processes involved and the distance of separation from European sites, it has been evaluated that there are likely adverse effects on the qualifying interests, special conservation interest or the conservation objectives of two designated European site.

In the absence of mitigation measures (which have not been considered at the screening stage), likely significant effects of the proposed development, individually or in combination with other plans or projects on the special conservation interests/qualifying interests of the River Boyne and River Blackwater SAC and the River Boyne and River Blackwater SPA, cannot be excluded on the basis of objective scientific information.

Thus, mitigation measures are required to avoid and/or minimise effects to water quality. This evaluation is made in view of the conservation objectives of the habitats or species for which these sites have been designated.

4. NATURA IMPACT STATEMENT

4.1 Introduction

The screening assessment (Section 3 of this report), which was carried out to determine the likelihood of significant effects on European sites from the proposed development, has concluded as follows:

> *In the absence of mitigation measures (which have not been considered at the screening stage), likely significant effects of the proposed development, individually or in combination with other plans or projects on the special conservation interests/qualifying interests of the River Boyne and River Blackwater SAC and the River Boyne and River Blackwater SPA, cannot be excluded on the basis of objective scientific information.*

Having identified ecological pathways for potential effects to European sites at screening stage (above), it is identified that a Stage 2 Nature Impact Statement (NIS) is required. The Stage 2 Appropriate Assessment assesses whether the proposed development alone, or in-combination with other plans, programmes, and/or projects, would result in adverse effects on the integrity of the two European site brought forward from the screening (those considered in Table 3 2 for which there are "Potential Pathway for Significant Effects" and/or "Potential for In-Combination Effects") with respect to site structure, function and/or conservation objectives.

The AA Screening identified two European sites with pathway receptors for potential effects arising from the implementation of the proposed development. Appendix 2 characterises each of the qualifying features of the two European sites brought forward from Stage 1 in context of each of the sites' vulnerabilities.

4.2 Types of Potential Effects

Assessment of potential effects on European sites is conducted utilising a standard source-pathway model (see approach referred to under Sections 3.1. The 2001 European Commission AA guidance outlines the following potential changes that may occur at a designated site, which may result in effects on the integrity and function of that site: loss/reduction of habitat area; habitat or species fragmentation; disturbance to key species; reduction in species density; changes in key indicators of conservation value (water quality etc.); and climate change. Each of these potential changes are considered below and in Table 4-1**.** with reference to the QIs/SCIs of all of the European sites brought forward from Stage 1 of the AA process (see Section 3).

Table 4-1: Conservation Objectives and Targets for Relevant Qualifying Interests with Potential for adverse Effects on the Site Integrity of the River Boyne and River Blackwater SAC8

Species/ Habitat	Conservation Objective	Attribute	Measure	Target	Potential for Adverse Effects on Site Integrity from the Project	Potential effect in-combination with other plans or projects	Duration of Effect in the Absence of Mitigation	Conclusion
River Lamprey (Lampetra fluviatilis)	To restore the favourable conservation condition of River Lamprey in River Boyne and River Blackwater SAC	Distribution	Percentage of river accessible	Restore access to all water courses down to first order streams	This target does not have the potential to be influenced by proposed development.	N/A	N/A	No potential for the proposed development to affect this target either alone or in-combination with other plans or projects exists.
		Distribution of larvae	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	Not less than 50% of sample sites with suitable habitat positive for larval brook/river lamprey	There are potentially suitable sediment accumulations for lamprey ammocoetes a short distance downstream of the site. eDNA sampling has also proven that this species exists upstream of the proposed development site. It cannot be excluded that sediment or pollutant emissions arising from proposed project could potentially result in significant effects on this species.	Yes	Temporary - restricted to works period.	There is potential for the project to affect these targets either alone or in combination with other plans and projects.
		Population structure of larvae	Number of age/size class	At least three age/size classes of larval brook/river lamprey present				
		Larval lamprey density in fine sediment	Larval lamprey/m²	Mean density of brook/river larval lamprey in sites with suitable habitat more than 5/m²				
		Extent and distribution of spawning habitat	m² and occurrence	No decline in extent and distribution of spawning and nursery beds				
Atlantic salmon (Salmo salar)	To restore the favourable conservation condition of Atlantic Salmon in River Boyne and River Blackwater SAC	Distribution: extent of anadromy	Percentage of river accessible	100% of river channels down to second order accessible from estuary	This target does not have the potential to be influenced by proposed development.	N/A	N/A	No potential for the proposed development to affect this target either alone or in-combination with other plans or projects exists
		Adult spawning fish	Number	Conservation limit (CL) for each system consistently exceeded	There are suitable holding areas for adult migrating salmon downstream of the proposed development and suitable spawning areas just upstream of the development. eDNA sampling has also proven that this species exists upstream of the proposed development site. It cannot be excluded that sediment or pollutant emissions arising from proposed project could potentially result in significant effects on this species.	Yes	Temporary - restricted to works period.	There is potential for the Proposed development to affect these targets either alone or in combination with other plans and projects.
		Salmon fry abundance	Number of fry/5 minutes electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 minutes sampling				
		Out-migrating smolt abundance	Number	No significant decline				
		Number and distribution of redds	Number and occurrence	No decline in number and distribution of spawning redds due to anthropogenic causes				
		Water quality	EPA Q value	At least Q4 at all sites sampled by EPA				

[8] The Conservation objectives for the River Boyne and River Blackwater SAC can be found here: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002299.pdf

Species/ Habitat	Conservation Objective	Attribute	Measure	Target	Potential for Adverse Effects on Site Integrity from the Project	Potential effect in-combination with other plans or projects	Duration of Effect in the Absence of Mitigation	Conclusion
Otter (*Lutra lutra*)	To maintain the favourable conservation condition of Otter in River Boyne and River Blackwater SAC	Distribution	Percentage positive survey sites	No significant decline	These targets do not have the potential to be influenced by proposed development.	N/A	N/A	No potential for the proposed development to affect these targets either alone or in-combination with other plans or projects exists.
		Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 447.6ha along riverbanks/ lake shoreline/around ponds				
		Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 263.3km				
		Extent of freshwater (lake) habitat	Hectares	No significant decline. Area mapped and calculated as 31.6ha				
		Barriers to connectivity	Number	No significant increase				
		Couching sites and holts	Number	No significant decline				
		Fish biomass available	Kilograms	No significant decline	Sediment or pollutant emissions arising from proposed project could potentially result in negative effects on fish spawning habitat, thereby reducing fish biomass in otter foraging territories.	Yes Potential to affect this target by contributing to a cumulative deterioration in water quality exists.	Temporary due to the duration of the project.	Yes, potential for the proposed development to affect this target either alone or in-combination with other plans or projects exists.
Alkaline Fens	To maintain the favourable conservation condition of Alkaline Fens in River Boyne and River Blackwater SAC	Habitat area	Hectares	Area stable or increasing, subject to natural processes	The project has no potential to influence these measures.	N/A	N/A	No potential for the project to affect these targets either alone or in combination with other plans or projects exists.
		Habitat	Occurrence	No decline, subject to natural processes				
		Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil pH and nutrient status within natural ranges				
		Ecosystem function: peat formation	Ecosystem function: peat formation vegetation and water table levels	Ecosystem function: peat formation Percentage cover of Maintain active peat formation, where appropriate				
		Ecosystem function: hydrology - groundwater levels	Water levels (centimetres); duration of levels; hydraulic gradients; water supply	Maintain, or where necessary restore, appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat				

Species/ Habitat	Conservation Objective	Attribute	Measure	Target	Potential for Adverse Effects on Site Integrity from the Project	Potential effect in-combination with other plans or projects	Duration of Effect in the Absence of Mitigation	Conclusion
		Ecosystem function: hydrology - surface water flow	Drain density and form	Maintain, or where necessary restore, as close as possible to natural or semi-natural, drainage conditions.				
		Ecosystem function: water quality	Various	Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat	Based on the precautionary principle it has to be assumed that this Annex 1 habitat could occur within the zone of influence of the project. Sediment or pollutant emissions arising from proposed development could potentially result in negative effects	Yes	Temporary - restricted to works period.	There is proposed development for the project to affect these targets either alone or in combination with other plans and projects.
		Vegetation composition: community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes				
		Vegetation composition: typical brown mosses	Percentage cover at a representative number of monitoring stops	Maintain adequate cover of typical brown moss species				
		Vegetation composition: typical vascular plants	Percentage cover at a representative number of monitoring stops	Maintain adequate cover of typical vascular plant species				
		Vegetation composition: native negative indicator species	Percentage cover at a representative number of monitoring stops	Cover of native negative indicator species at insignificant levels				
		Vegetation composition: non-native species	Percentage cover at a representative number of monitoring stops	Cover of non-native species less than 1%				
		Vegetation composition: native trees and shrubs	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 10%				
		Vegetation composition: algal cover	Percentage cover at, and in local vicinity of, a representative number of monitoring stops	Cover of algae less than 2%				
		Vegetation structure: vegetation height	Percentage cover at a representative number of monitoring stops	At least 50% of the live leaves/flowering shoots are more than either 5cm or 15cm above ground surface depending on community type				

Species/ Habitat	Conservation Objective	Attribute	Measure	Target	Potential for Adverse Effects on Site Integrity from the Project	Potential effect in-combination with other plans or projects	Duration of Effect in the Absence of Mitigation	Conclusion
		Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of monitoring stops	Cover of disturbed bare ground not more than 10%				
		Physical structure: tufa formations	Percentage cover in local vicinity of a representative number of monitoring stops	Disturbed proportion of vegetation cover where tufa is present is less than 1%				
		Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes				
		Transitional areas between fen and adjacent habitats	Hectares; distribution	Maintain adequate transitional areas to support/protect the alkaline fen ecosystem and the services it provides				
Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicon albae)	To restore the favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicon albae) in in River Boyne and River Blackwater SAC	Habitat area	Hectares	Area stable or increasing, subject to natural processes	The proposed development has no potential to influence these measures.	N/A	N/A	No potential for the proposed development to affect these targets either alone or in combination with other plans or projects exists.
		Habitat distribution	Occurrence	No decline, subject to natural processes				
		Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and “small” woods at least 3ha in size				
		Hydrological regime: flooding depth/height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation				
		Woodland structure: dead wood	Number per hectare	At least 19 stems/ha of dead wood of at least 20cm diameter				
		Woodland structure: indicators of overgrazing Occurrence All five indicators of overgrazing absent	Woodland structure: indicators of overgrazing Occurrence All five indicators of overgrazing absent	Woodland structure: indicators of overgrazing Occurrence All five indicators of overgrazing absent				

Species/ Habitat	Conservation Objective	Attribute	Measure	Target	Potential for Adverse Effects on Site Integrity from the Project	Potential effect in-combination with other plans or projects	Duration of Effect in the Absence of Mitigation	Conclusion
		Woodland structure: cover and height	Percentage; metres; centimetres	Total canopy cover at least 30%; median canopy height at least 7m; native shrub layer cover 10-75%; native herb/dwarf shrub layer cover at least 20% and height at least 20cm; bryophyte cover at least 4%	Based on the precautionary principle it is assumed that this Annex 1 habitat could occur within the zone of influence of the proposed development. Sediment or pollutant emissions arising from proposed project could potentially result in negative effects	Yes	Temporary - restricted to works period.	There is potential for the proposed development to affect these targets either alone or in combination with other plans and projects.
		Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types				
		Woodland structure: natural regeneration	Seedling: sapling: pole ratio	Seedlings, saplings and pole age-classes of target species for 91E0* woodlands and other native tree species occur in adequate proportions to ensure survival of woodland canopy				
		Woodland structure: veteran trees	Number per hectare	No decline				
		Woodland structure: indicators of local distinctiveness	Occurrence; population size	No decline in distribution and, in the case of red listed and other rare or localised species, population size				
		Vegetation composition: native tree cover	Percentage	No decline. Native tree cover at least 90% of canopy; target species cover at least 50% of canopy				
		Vegetation composition: typical species	Occurrence	At least 1 target species for 91E0* woodlands present; at least 6 positive indicator species for 91E0* woodlands present				
		Vegetation composition: negative indicator species	Occurrence	Negative indicator species cover not greater than 10%; regeneration of negative indicator species absent				
		Vegetation composition: problematic native species	Percentage	Cover of common nettle (Urtica dioica) less than 75%				

4.2.1 Conservation Objectives and Targets for Special Conservation Interests of the River Boyne and River Blackwater SPA[9]

The conservation objective for the River Boyne and River Blackwater SPA is to maintain the favourable conservation objectives of the Special Conservation Interest Kingfisher (*Alcedo atthis*), which 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, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The Trim Millennium Pedestrian Bridge Scheme has no potential to affect any of the above measures.

4.3 Mitigation Measures

This section outlines measures that have been incorporated into the proposed development in order to mitigate against potential effects to European sites as identified above. The proposed development was prepared in an iterative manner whereby the project design (including the location of the proposed structure) and AA documents have informed subsequent versions of the other. These mitigation measures ensure that there will be no significant effects to the ecological integrity of any European site from implementation of the proposed development. The mitigation measures most relevant to the protection of European sites are identified below; further measures related to the protection of species such as bats can be found in the associated EcIA however, these are not relevant to the AA Process. The following design and best practice measures have been incorporated into the proposed development as well as the following bespoke mitigation measures.

4.3.1 Mitigation by Avoidance and Design

With regards to the proposed pedestrian bridge scheme, the following design and best practice measures are incorporated into the proposed project:

- The bridge and footprint of ancillary structures such as footpaths and ramps will utilise the existing footprint
- The bridge will utilise existing foundation for the abutments;
- No in-stream works will take place for the installation of the bridge and ancillary infrastructure;
- The bridge is pre-fabricated and will be lifted into place in one piece by a crane, which will be located on the southern bank of the River Boyne;
- No new roads will be established to build the proposed bridge development;
- For decommissioning the self-supporting bridge structure can be lifted off the abutments via crane in one piece.

[9] The Conservation objectives for the River Boyne and River Blackwater SPA can be found here: CO004232.pdf (npws.ie)

Further mitigation measures prescribed to reduce and/or avoid the potential for the proposed pedestrian bridge development to adversely affect the integrity of the River Boyne and River Blackwater SAC and SPA are prescribed hereunder.

Table 4-2: Details of Mitigation Measures to be Implemented for the proposed Trim Millennium Pedestrian Bridge Scheme

No.	Mitigation Measure	How Measure Will Avoid/Reduce Adverse Effects	Implementation of Mitigation Measure and Level of Success	Monitoring Scheme to Prevent Mitigation Failure
MITIGATION MEASURES TO BE IMPLEMENTED PRIOR TO CONSTRUCTION				
1	Toolbox Talk Toolbox talks will be undertaken with construction staff on the implementation and maintenance of mitigation measures	Toolbox talks will ensure all staff working on site are aware of mitigation procedures and potential hazards and will be able to comply with measures.	Toolbox talks will be provided to all staff upon induction and at site meetings thereafter. High probability of success.	The Contractor's Construction Manager will deliver talks as required and ensure full compliance.
MITIGATION MEASURES TO BE IMPLEMENTED DURING CONSTRUCTION				
2	A regular review of weather forecasts of heavy rainfall is required. Weather forecasts will be reviewed daily. Earthworks and concrete works will not take place during periods of heavy rainfall (>10mm/hour) or in the 24-hour period following heavy rainfall.	This measure will minimise the generation of suspended solids, dust and any other contaminant mobilisation which may enter the nearby open watercourse.	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	The Contractor's Construction Manager will ensure the effective operation and maintenance of mitigation measures during the construction process.
3	Any earthen (sod) banks to be excavated within the grassy areas will be carefully opened with the surface sods being stored separately and maintained for use during reinstatement.	This measure will minimise the generation of suspended solids, dust and any other contaminant mobilisation which may enter the nearby open watercourse.	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	The Contractor's Construction Manager will ensure the effective operation and maintenance of mitigation measures during the construction process.
4	Spoil management: Any temporary spoil heaps will be more than 20m away from the watercourse. The heaps will be surrounded by silt fences and preferably	This measure will minimise the generation of suspended solids, dust and any other contaminant	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial	The Contractor's Construction Manager will ensure the effective operation and

No.	Mitigation Measure	How Measure Will Avoid/Reduce Adverse Effects	Implementation of Mitigation Measure and Level of Success	Monitoring Scheme to Prevent Mitigation Failure
	placed in a well vegetated area. Compact the surface of any stored soil or spoil heaps and keep their height to less than 2m. In heavy rainfall spoil heaps must be covered with geotextile to prevent erosion when not in use. Any surplus material will be transported off site and disposed of at a fully authorised soil recovery facility.	mobilisation which may enter the nearby open watercourse.	works in combination with competent supervisory staff overseeing the works. High probability of success.	maintenance of mitigation measures during the construction process.
5	***Construction waste reduction and reuse*** Where suitable and where it is safe to do so; re-use of broken concrete components from demolished abutments, excavated stone, soil etc. as suitable fill or landscaping material elsewhere on site (see section 2 for details of materials proposed to be re-used); ***Construction waste disposal*** Where waste disposal (including excess excavated material) is unavoidable, waste will only be recovered or disposed of at an authorised site with a current Waste License or permit in accordance with the waste management acts, 1996 to 2008. This will not apply to the reuse of excavated uncontaminated soil and other naturally occurring material within the site boundary.	This measure will minimise the amount of waste generated on site and will reduce the amount of vehicles delivering materials and removing wastes from the site. This in turn will reduce the generation of suspended solids, dust, smoke and any other contaminant mobilisation which may enter the nearby open watercourse or air.	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	The Contractor's Construction Manager will ensure the effective operation and maintenance of mitigation measures during the construction process.
6	Stockpile management:	This measure will minimise the generation of suspended solids,	Mitigation measures will be implemented by the Client	The Contractor's Construction Manager

No.	Mitigation Measure	How Measure Will Avoid/Reduce Adverse Effects	Implementation of Mitigation Measure and Level of Success	Monitoring Scheme to Prevent Mitigation Failure
	Stockpiles will be restricted to less than 2m in height. Store all materials separately in bunded, safe areas greater than 20m from a watercourse which will be subject to approval by the site manager. Any surplus material will be transported off site and disposed of at a fully authorised soil recovery facility.	dust and any other contaminant mobilisation which may enter the nearby open watercourse.	through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	will ensure the effective operation and maintenance of mitigation measures during the construction process.
7	Temporary silt fences will be installed along the river bank to isolate works from the watercourse and around soil stockpiles. A twin layer of silt fencing will be installed at all locations. Additional silt fencing will be kept on site in case of an emergency break out of silt laden run-off and for repairs.	This measure will minimise ingress of suspended solids into the adjacent waterbody.	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	The Contractor's Construction Manager will ensure the effective operation and maintenance of mitigation measures during the construction process.
8	Concrete Management Concrete management will take place as to best practice measures to ensure no concrete emissions will enter the River Boyne.	This measure will minimise the risk of pollution entering the River Boyne.	Concrete mitigation measures will be implemented in full by the Environmental Manager appointed by the client. High probability of success.	The Contractor's Construction Manager will monitor the implementation of the mitigation measures.
9	Any hazardous materials to be stored on site will be stored in bunded storage tanks – the bund area will have a volume of at least 110 % of the volume of such materials stored. No hazardous materials will be stored within 20m of any watercourses or other surface water feature.	This measure will reduce the risk of hydrocarbons reaching the waterways within the catchment of the proposed works.	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	The Contractor's Construction Manager will ensure the effective operation and maintenance of mitigation measures during the construction process.

No.	Mitigation Measure	How Measure Will Avoid/Reduce Adverse Effects	Implementation of Mitigation Measure and Level of Success	Monitoring Scheme to Prevent Mitigation Failure
10	Appropriate spill control equipment, such as oil soakage pads, will be kept within the construction area and in each item of plant to deal with any accidental spillage.	This measure will reduce the risk of hydrocarbons reaching the waterways within the catchment of the proposed works.	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	The Contractor's Construction Manager will ensure the effective operation and maintenance of mitigation measures during the construction process.
OPERATIONAL PHASE MITIGATION MEASURES				
11	Areas of the side-slopes of the new approach ramps which cannot be covered with existing sods, will be seeded with a diverse native grassland and meadow flower mix as soon as practicable. Mixes shall be a selected combination of appropriate grasses and wildflowers and appropriate to the particular site and soil conditions. Appropriate species to be included are laid out in the Ecological Impact Assessment.	This measure will minimise generation of suspended solids by preventing the generation of silted runoff.	Mitigation measures will be inspected by a suitably qualified person appointed by the client. High probability of success.	Meath County Council will ensure proper management of the feature during the operational phase.
12	Shrubby vegetation will be planted to shield concrete abutments from sight. The shrubs planted will be of native species which are tolerant of the wet soil near the river. These can be selected from several willow species and hawthorn.	This measure will ensure that the planted vegetation fits into the surrounding environment and will prevent the spread of invasive ornamental shrubs.	Mitigation measures will be inspected by a suitably qualified person appointed by the client. High probability of success.	Meath County Council ensure proper management of the feature during the operational phase.
DECOMMISSIONING PHASE MITIGATION MEASURES				

No.	Mitigation Measure	How Measure Will Avoid/Reduce Adverse Effects	Implementation of Mitigation Measure and Level of Success	Monitoring Scheme to Prevent Mitigation Failure
13	All mitigation measures regarding site supervision, earthworks, works near watercourses, vegetation, plant and machinery and spoil and waste management outlined for the Construction Phase, will also be employed during the Decommissioning Phase.	This will ensure that no damage is done to the environment during decommissioning of the proposed bridge.	Mitigation measures will be implemented by the Client through the Contractor awarded the contract to carry out remedial works in combination with competent supervisory staff overseeing the works. High probability of success.	The Contractor's Construction Manager will ensure the effective operation and maintenance of mitigation measures during the decommissioning process.

4.4 Conclusion

Stage 1 AA Screening and Stage 2 AA of the Trim Millennium Pedestrian Bridge Scheme has been carried out. Implementation of the proposed development at Trim has the potential to result in effects to the integrity of European sites, if unmitigated.

The risks to the safeguarding and integrity of the qualifying interests, special conservation interests and conservation objectives of the European sites have been addressed by the inclusion of mitigation measures that will prioritise the avoidance of effects in the first place and mitigate effects where these cannot be avoided.

In-combination effects from interactions with other plans and projects was considered in the assessment and the mitigation measures incorporated into the plan are seen to be robust to ensure there will be no significant adverse effects as a result of the implementation of the proposed development either alone or in-combination with other plans/projects.

Having incorporated mitigation measures, it is concluded that the Trim Millennium Pedestrian Bridge Scheme is not foreseen to give rise to any significant adverse effects on designated European sites, alone or in combination with other plans or projects. This evaluation is made in view of the conservation objectives of the habitats or species, for which these sites have been designated.

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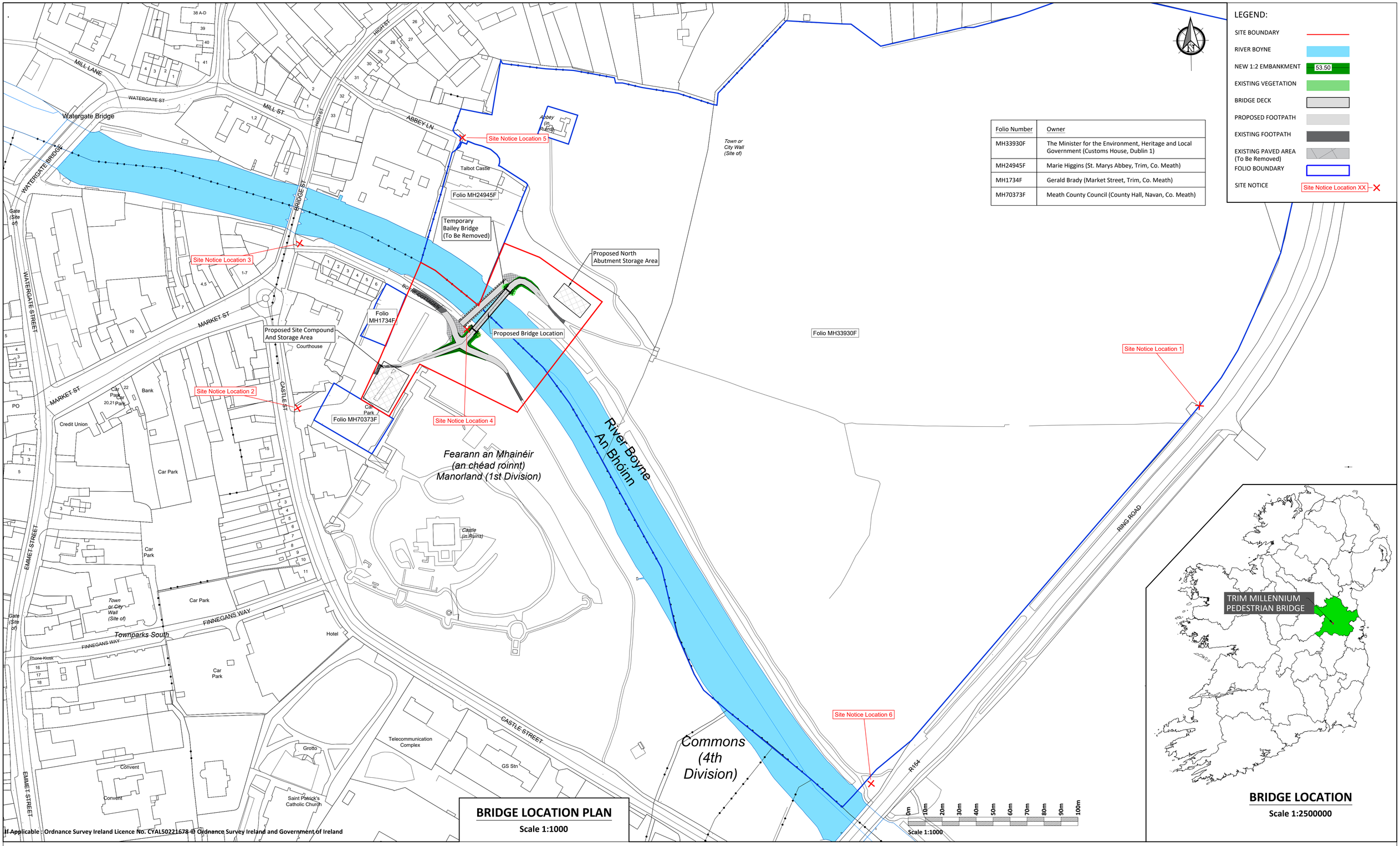
APPENDIX 1

Site Layout Drawings



LEGEND:

- SITE BOUNDARY
- RIVER BOYNE
- NEW 1:2 EMBANKMENT (53.50)
- EXISTING VEGETATION
- BRIDGE DECK
- PROPOSED FOOTPATH
- EXISTING FOOTPATH
- EXISTING PAVED AREA (To Be Removed)
- FOLIO BOUNDARY
- SITE NOTICE (Site Notice Location XX)

Folio Number	Owner
MH33930F	The Minister for the Environment, Heritage and Local Government (Customs House, Dublin 1)
MH24945F	Marie Higgins (St. Marys Abbey, Trim, Co. Meath)
MH1734F	Gerald Brady (Market Street, Trim, Co. Meath)
MH70373F	Meath County Council (County Hall, Navan, Co. Meath)

BRIDGE LOCATION
Scale 1:2500000

BRIDGE LOCATION PLAN
Scale 1:1000

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Rev.	Description	App By	Date
P01	ISSUE FOR APPROVAL	BB	19.02.24
P02	ISSUE FOR APPROVAL	BB	08.03.24
P03	FOR PLANNING	BB	31.05.24

PROJECT: TRIM MILLENNIUM PEDESTRIAN BRIDGE

CLIENT: comhairle chontae na mí / meath county council

SHEET: BRIDGE LOCATION PLANS

Date: 19.02.24	Project number: P22-256	Scale (@ A1-): 1:1000	
Drawn by: SK	Drawing Number: P22256-FT-XX-ZZ-DR-S-0001		Rev: P03
Checked by: AB			

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29 May 2024

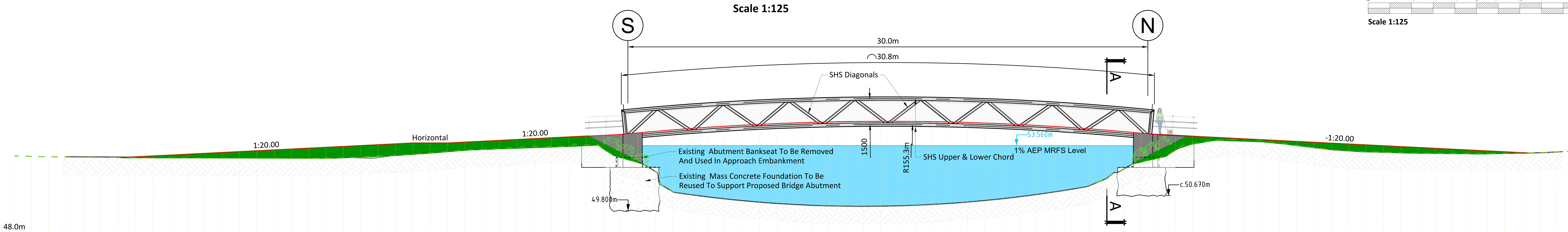
Note:
Levels given are with reference to Malin Head Benchmark

BRIDGE PLAN

Scale 1:125

0m | 1.25m | 2.50m | 3.75m | 5.00m | 6.25m | 7.50m | 8.75m | 10.00m | 11.25m | 12.50m

Scale 1:125



Chainage	Ramp/Deck	Existing Ground Level
0.000		52.946
01.000		52.923
02.000		52.903
03.000		52.891
04.000		52.878
5.000		52.866
06.000		52.854
07.000	52.895	52.841
08.000	52.945	52.829
09.000	52.995	52.827
10.000	53.045	52.828
11.000	53.095	52.825
12.000	53.145	52.821
13.000	53.195	52.818
14.000	53.245	52.814
15.000	53.295	52.811
16.000	53.345	52.807
17.000	53.395	52.809
18.000	53.445	52.813
19.000	53.495	52.838
20.000	53.545	52.897
21.000	53.595	52.948
22.000	53.645	52.973
23.000	53.695	53.045
24.000	53.695	53.118
25.000	53.695	53.203
26.000	53.745	53.292
27.000	53.795	53.331
28.000	53.845	53.379
29.000	53.895	53.450
30.000	53.945	53.494
31.000	53.995	53.504
32.000	54.045	53.510
33.000	54.095	53.582
34.000	54.145	53.369
35.000	54.195	52.865
36.000	54.283	52.572
37.000	54.373	52.053
38.000	54.456	50.884
39.000	54.533	
40.000	54.603	
41.000	54.667	
42.000	54.724	
43.000	54.775	
44.000	54.820	
45.000	54.858	
46.000	54.889	
47.000	54.914	
48.000	54.933	
49.000	54.945	
50.000	54.951	
51.000	54.950	
52.000	54.943	
53.000	54.930	
54.000	54.910	
55.000	54.883	
56.000	54.851	
57.000	54.811	
58.000	54.766	
59.000	54.714	
60.000	54.655	
61.000	54.590	
62.000	54.518	
63.000	54.440	51.636
64.000	54.356	52.188
65.000	54.265	52.604
66.000	54.185	52.837
67.000	54.135	53.294
68.000	54.085	53.672
69.000	54.035	53.833
70.000	53.985	53.895
71.000	53.935	53.940
72.000	53.885	53.824
73.000	53.835	53.694
74.000	53.785	53.555
75.000	53.735	53.434
76.000	53.685	53.315
77.000	53.635	53.245
78.000	53.585	53.195
79.000	53.535	53.169
80.000	53.485	53.131
81.000	53.435	53.107
82.000	53.385	53.103
83.000	53.335	53.093
84.000	53.285	53.094
85.000	53.235	53.097
86.000	53.185	53.103
87.000	53.135	53.116
88.000		53.138
89.000		53.186
90.000		53.236

BRIDGE ELEVATION (Viewed From South East)

Scale 1:125

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P01	ISSUE FOR APPROVAL	BB	19.02.24
P02	FOR PLANNING	BB	31.05.24

PROJECT

TRIM MILLENNIUM PEDESTRIAN BRIDGE

SHEET

PLAN & ELEVATION

CLIENT

comhairle chontae na mí
meath county council

Date	Project number	Scale (@ A1-)
19.02.24	P22-256	1:125

Drawn by	SK
Checked by	AB
Drawing Number	P22256-FT-XX-ZZ-DR-S-0002
Rev	P02

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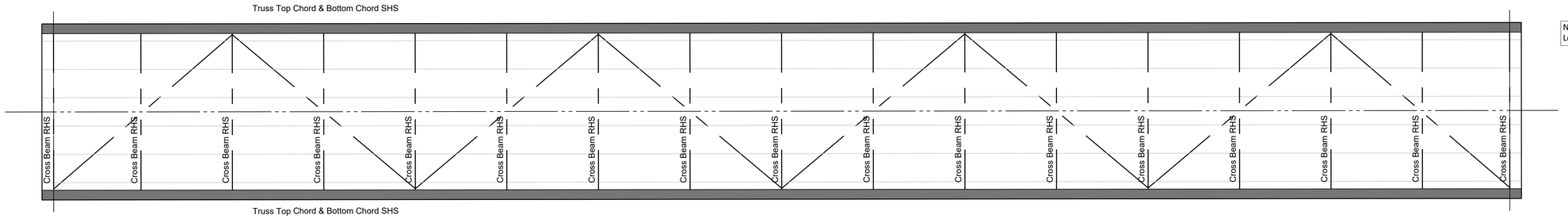
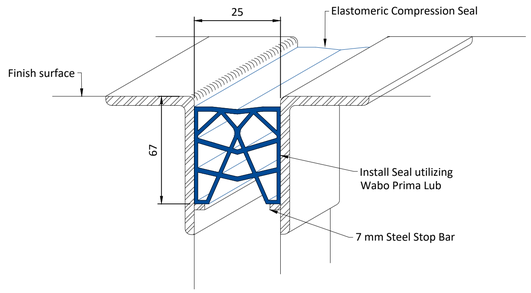
29 May 2024



Note:
Levels given are with reference to Malin Head Benchmark

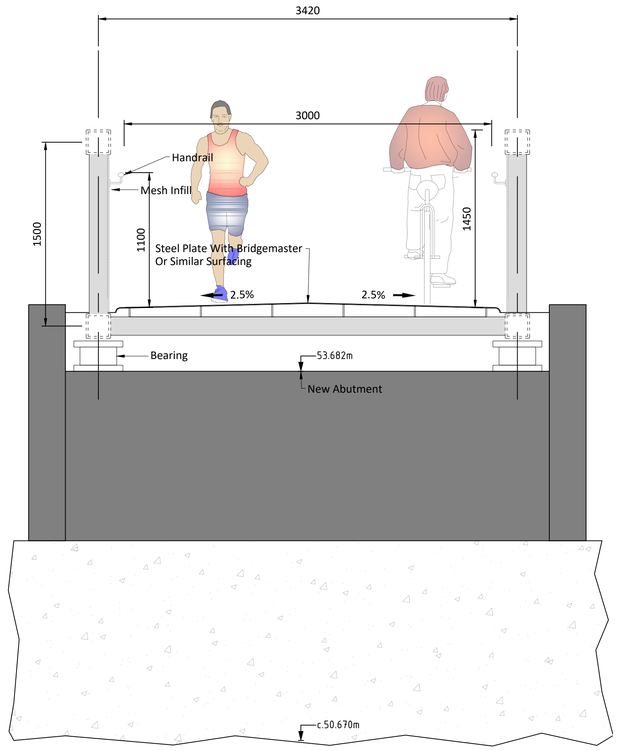
STRUCTURAL STEEL DECK PLAN

Scale 1:50



BRIDGE TO ABUTMENT JOINT DETAIL

Scale 1:5



SECTION A-A

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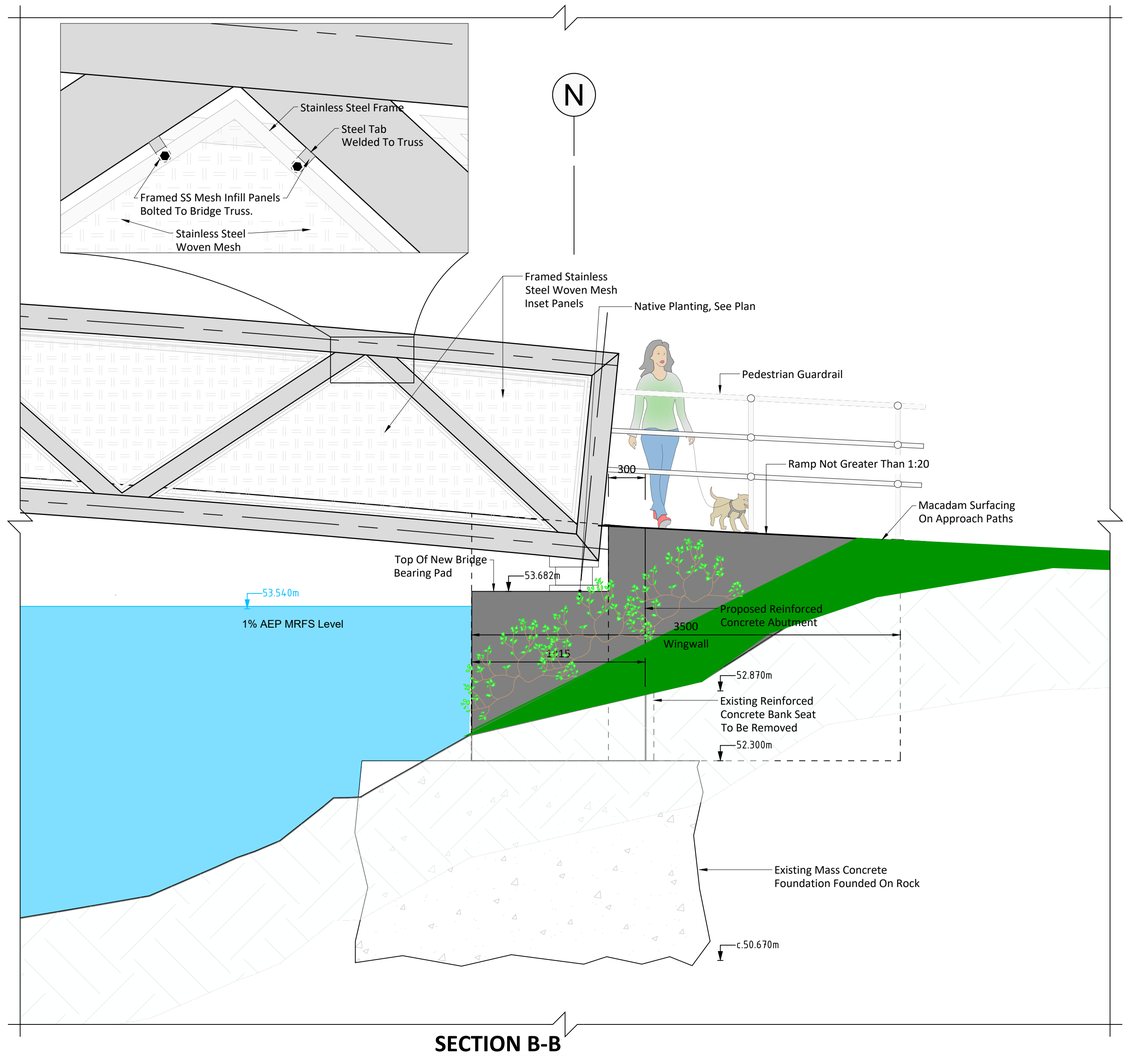

SECTION B-B

Scale 1:25

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P02	FOR PLANNING	BB	31.05.24

PROJECT
TRIM MILLENNIUM PEDESTRIAN BRIDGE

CLIENT
comhairle chontae na mí
meath county council

SHEET
SECTIONS & DETAILS

Date 19.02.24	Project number P22-256	Scale (@ A1-) 1:25
Drawn by SK	Drawing Number P22256-FT-XX-ZZ-DR-S-0003	Rev P02
Checked by AB		

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29 May 2024

Tie In Path With Existing Approach Path

Tie In Path With Existing Approach Path

S

N

30.0m

Native Planting

Native Planting

1:2 Side Slope

1:2 Side Slope

Pedestrian Guardrail

Bollard

3000 Clear

B

B

Pedestrian Guardrail

Bollard

Native Planting

Native Planting

Existing Pump Station

RIVER BOYNE

Proposed New Pedestrian Bridge

Tie In With Existing Footpath

Tie In With Existing Footpath

LEGEND:

- SITE BOUNDARY
- RIVER BOYNE
- NEW 1:2 EMBANKMENT 53.50
- EXISTING VEGETATION
- BRIDGE DECK
- PROPOSED FOOTPATH
- EXISTING FOOTPATH

Note:
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FINAL PLAN

Scale 1:125

0m 1.25m 2.50m 3.75m 5.00m 6.25m 7.50m 8.75m 10.00m 11.25m 12.50m

Scale 1:125

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PROJECT

TRIM MILLENNIUM PEDESTRIAN BRIDGE

CLIENT

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meath county council

SHEET

PROPOSED FINAL LAYOUT OF BRIDGE AND APPROACH RAMPS

Date 31.05.24	Project number P22-256	Scale (@ A1-) 1:125	
Drawn by SK	Drawing Number P22256-FT-XX-ZZ-DR-S-0004		Rev P01
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29 May 2024

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APPENDIX 2

Supporting Information for European Sites and Nationally designated Sites

European sites with functional connectivity (ecological pathways) to the area including their Qualifying Interests, known threats and pressures

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
001957	Boyne Coast and Estuary SAC	Shifting dunes along the shoreline with Ammophila arenaria - white dunes [2120], Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330], Mudflats and sandflats not covered by seawater at low tide [1140], Fixed coastal dunes with herbaceous vegetation - grey dunes [2130], Estuaries [1130], Annual vegetation of drift lines [1210], Embryonic shifting dunes [2110], Salicornia and other annuals colonising mud and sand [1310]	D01.01, E05, G05.04, H01, D01.05, E03.03, E03.01, G01.03.02, J02, J02.02, G03, K02, G05, J02.12.01, G01.02, E01, I01, J02.01.03, L07, J02.12, J03.03	Paths, tracks, cycling tracks, Storage of materials, Vandalism, Pollution to surface waters (limnic & terrestrial, marine & brackish), Bridge, viaduct, Disposal of inert materials, Disposal of household or recreational facility waste, Off-road motorized driving, Human induced changes in hydraulic conditions, Removal of sediments (mud...), Interpretative centres, Biocenotic evolution, succession, Other human intrusions and disturbances , Sea defense or coast protection works, tidal barrages, Walking, horseriding and non-motorised vehicles, Urbanised areas, human habitation, Invasive non-native species, Infilling of ditches, dykes, ponds, pools, marshes or pits, Storm, cyclone, Dykes, embankments, artificial beaches, general, Reduction, lack or prevention of erosion
002299	River Boyne and River Blackwater SAC	Atlantic salmon (Salmo salar) [1106], Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0], Alkaline fens [7230], Otter (Lutra lutra) [1355], River lamprey (Lampetra fluviatilis) [1099]	A01, A03, A05.02, A07, A08, A10.01, B01.02, C01.01, E03.02, J02, D01.02, E05, D01.05, G05, E01.04, G05.06, J02.10, G01, J02.15, E02, J02.05.02, H01, E03.04, G02.10, I01, J02.11	Cultivation, Mowing or cutting of grassland, Stock feeding, Use of biocides, hormones and chemicals, Fertilisation, Removal of hedges and copses or scrub, Artificial planting on open ground (non-native trees), Sand and gravel extraction , Disposal of industrial waste, Human induced changes in hydraulic conditions, Roads, motorways, Storage of materials, Bridge, viaduct, Other human intrusions and disturbances , Other patterns of habitation, Tree surgery, felling for public safety, removal of roadside trees, Management of aquatic and bank vegetation for drainage purposes, Outdoor sports and leisure activities, recreational activities, Other human induced changes in hydraulic conditions, Industrial or commercial areas, Modifying structures of inland water courses, Pollution to surface waters (limnic & terrestrial, marine & brackish), Other discharges, Other sport or leisure complexes,

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
				Invasive non-native species, Siltation rate changes, dumping, depositing of dredged deposits
004080	Boyne Estuary SPA	Oystercatcher (Haematopus ostralegus) [A130], Lapwing (Vanellus vanellus) [A142], Sanderling (Calidris alba) [A144], Little Tern (Sterna albifrons) [A195], Black-tailed Godwit (Limosa limosa) [A156], Knot (Calidris canutus) [A143], Shelduck (Tadorna tadorna) [A048], Golden Plover (Pluvialis apricaria) [A140], Redshank (Tringa totanus) [A162], Wetland and Waterbirds [A999], Grey Plover (Pluvialis squatarola) [A141], Turnstone (Arenaria interpres) [A169]	J02.05, E01, F01, G01.02, F02.03, J02.11, G02.01, I01, J02.01.02	Modification of hydrographic functioning, general, Urbanised areas, human habitation, Marine and Freshwater Aquaculture, Walking, horseriding and non-motorised vehicles, Leisure fishing, Siltation rate changes, dumping, depositing of dredged deposits, Golf course, Invasive non-native species, Reclamation of land from sea, estuary or marsh
004232	River Boyne and River Blackwater SPA	Kingfisher (Alcedo atthis) [A229]	D01.02, J02, E01, X, E01.03	Roads, motorways, Human induced changes in hydraulic conditions, Urbanised areas, human habitation, No threats or pressures, Dispersed habitation

Qualifying Interests of SACs that have undergone assessment including summaries of current threats and sensitivities

EU Code	Qualifying Interests	Article 17 Report Summary - Threats and Pressures	Threats and Pressures Codes	Known Threats and Pressures	Sensitivity of Qualifying Interests
[1099]	River Lamprey (Lampetra fluviatile)	The main pressures on River Lampreys are associated with hydropower infrastructure and changes in rainfall due to climate change. The use of synthetic and natural fertilisers, drainage and also infrastructure related to shipping are also condidered to be pressures on the species.	A19, A20, A31, D02, E03, N01, N02, N03	Application of natural fertilisers on agricultural land, Application of synthetic (mineral) fertilisers on agricultural land, Drainage for use as agricultural land, Hydropower (dams, weirs, run-off-the-river), including infrastructure, Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging), Temperature changes (e.g. rise of temperature & extremes) due to climate change, Increases or changes in precipitation due to climate change	Surface water dependent. Highly sensitive to hydrological change. Availability of suitable spawning ground is a considerable issue for the species.
[1106]	Salmon (Salmo salar)	Known pressures include exploitation at sea in commercial fisheries, interceptory fisheries in coastal waters, aquaculture and predation. In addition, the negative influence of climate change on prey structure as well as alterations in habitat and water quality are also pressures on the species.	A25, A26, B23, D02, F12, F28, G11, G19, G20, I02, J01, K05, L06, N01	Agricultural activities generating point source pollution to surface or ground waters, Agricultural activities generating diffuse pollution to surface or ground waters, Forestry activities generating pollution to surface or ground waters, Hydropower (dams, weirs, run-off-the-river), including infrastructure, Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water, Modification of flooding regimes, flood protection for residential or recreational development, Illegal harvesting, collecting and taking, Other impacts from marine aquaculture, including infrastructure, Abstraction of	Disease, parasites and barriers to movement.

EU Code	Qualifying Interests	Article 17 Report Summary - Threats and Pressures	Threats and Pressures Codes	Known Threats and Pressures	Sensitivity of Qualifying Interests
				water, flow diversion, dams and other modifications of hydrological conditions for freshwater aquaculture, Other invasive alien species (other than species of Union concern), Mixed source pollution to surface and ground waters (limnic and terrestrial), Physical alteration of water bodies, Interspecific relations (competition, predation, parasitism, pathogens), Temperature changes (e.g. rise of temperature & extremes) due to climate change	
[1130]	Estuaries	Most of the pressures on estuaries come from various sources of pollution, including domestic wastewater, agriculture and marine aquaculture. Alien invasive species such as the naturalised Pacific oyster (Magalana gigas) are also recognised as a significant pressure	A28, F20, G16, I02, XU	Agricultural activities generating marine pollution, Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro- particular pollution, Marine aquaculture generating marine pollution, Other invasive alien species (other than species of Union concern), Unknown pressure	Inappropriate development, changes in turbidity
[1140]	Mudflats and sandflats not covered by seawater at low tide	Pressures on mudflats and sandflats are partly caused by pollution from agricultural, forestry and wastewater sources, as well as impacts associated with marine aquaculture, particularly the Pacific oyster (Magallana gigas).	A28, F20, G16	Agricultural activities generating marine pollution, Residential or recreational activities and structures generating marine pollution (excl. marine macro- and micro- particular pollution, Marine aquaculture generating marine pollution	Surface and marine water dependent. Moderately sensitive to hydrological change. Moderate sensitivity to pollution. Changes to salinity and tidal regime. Coastal development.
[1210]	Annual vegetation of drift lines	Most of the pressures on drift lines are associated with activities such as recreation and coastal defences, which can interfere with sediment dynamics.	C01, F01, F06, F07, F08	Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell), Conversion from other land uses to housing, settlement or recreational areas	Overgrazing and erosion. Changes in management.

EU Code	Qualifying Interests	Article 17 Report Summary - Threats and Pressures	Threats and Pressures Codes	Known Threats and Pressures	Sensitivity of Qualifying Interests
				(excluding drainage and modification of coastline, estuary and coastal conditions), Development and maintenance of beach areas for tourism and recreation incl. beach nourishment and beach cleaning, Sports, tourism and leisure activities, Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defence or coast protection works and infrastructures)	
[1310]	Salicornia and other annuals colonising mud and sand	Pressures on salicornia mud are caused by alien species and overgrazing by livestock	A09, I02	Intensive grazing or overgrazing by livestock, Other invasive alien species (other than species of Union concern)	Marine water dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal regime. Infilling, reclamation, invasive species.
[1330]	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	The main pressures on Atlantic salt meadows are from agriculture, including ecologically unstable grazing regimes and land reclamation, and the invasive non-native species common cord-grass (Spartina anglica).	A09, A33, A36, F07, F08, I02	Intensive grazing or overgrazing by livestock, Modification of hydrological flow or physical alternation of water bodies for agriculture (excluding development and operation of dams), Agriculture activities not referred to above, Sports, tourism and leisure activities, Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defence or coast protection works and infrastructures),	Marine and groundwater dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal regime. Overgrazing, erosion and accretion.

EU Code	Qualifying Interests	Article 17 Report Summary - Threats and Pressures	Threats and Pressures Codes	Known Threats and Pressures	Sensitivity of Qualifying Interests
				Other invasive alien species (other than species of Union concern)	
[1355]	Otter (Lutra lutra)	There are no pressures facing this species	Xxp, Xxt	No pressures, No threats	Surface and marine water dependent. Moderately sensitive to hydrological change. Sensitivity to pollution.
[2110]	Embryonic shifting dunes	The majority of pressures on this habitat are associated with recreation and coastal defences, which can interfere with sediment dynamics.	C01, E03, F01, F06, F07, F08, L01, L02	Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell), Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging), Conversion from other land uses to housing, settlement or recreational areas (excluding drainage and modification of coastline, estuary and coastal conditions), Development and maintenance of beach areas for tourism and recreation incl. beach nourishment and beach cleaning, Sports, tourism and leisure activities, Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defence or coast protection works and infrastructures), Abiotic natural processes (e.g. erosion, silting up, drying out, submersion, salinization), Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices)	Overgrazing, and erosion. Changes in management.

EU Code	Qualifying Interests	Article 17 Report Summary - Threats and Pressures	Threats and Pressures Codes	Known Threats and Pressures	Sensitivity of Qualifying Interests
[2120]	Shifting dunes along the shoreline with white dunes (Ammophila arenaria)	Most of the pressures on marram dunes are caused by the interference on sediment dynamics due to recreation and coastal defences.	E01, E03, F01, F06, F07, F08, I02, L01	Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels), Shipping lanes, ferry lanes and anchorage infrastructure (e.g. canalisation, dredging), Conversion from other land uses to housing, settlement or recreational areas (excluding drainage and modification of coastline, estuary and coastal conditions), Development and maintenance of beach areas for tourism and recreation incl. beach nourishment and beach cleaning, Sports, tourism and leisure activities, Modification of coastline, estuary and coastal conditions for development, use and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defence or coast protection works and infrastructures), Other invasive alien species (other than species of Union concern), Abiotic natural processes (e.g. erosion, silting up, drying out, submersion, salinization)	Overgrazing, and erosion. Changes in management.
[2130]	Fixed coastal dunes with herbaceous vegetation (grey dunes)	Pressures on fixed dunes are associated with recreation and ecologically unsuitable grazing practices.	A02, A09, A10, F07, F08, I02, L02	Conversion from one type of agricultural land use to another (excluding drainage and burning), Intensive grazing or overgrazing by livestock, Extensive grazing or undergrazing by livestock, Sports, tourism and leisure activities, Modification of coastline, estuary and coastal conditions for development, use	Overgrazing, and erosion. Changes in management.

EU Code	Qualifying Interests	Article 17 Report Summary - Threats and Pressures	Threats and Pressures Codes	Known Threats and Pressures	Sensitivity of Qualifying Interests
				and protection of residential, commercial, industrial and recreational infrastructure and areas (including sea defence or coast protection works and infrastructures), Other invasive alien species (other than species of Union concern), Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices)	
[7230]	Alkaline fens	The main pressures facing this habitat are land abandonment (and associated succession), overgrazing, drainage and pollution.	A06, A09, A26, J01, K01, K02, K04, L02, N02, N03	Abandonment of grassland management (e.g. cessation of grazing or of mowing), Intensive grazing or overgrazing by livestock, Agricultural activities generating diffuse pollution to surface or ground waters, Mixed source pollution to surface and ground waters (limnic and terrestrial), Abstraction from groundwater, surface water or mixed water, Drainage, Modification of hydrological flow, Natural succession resulting in species composition change (other than by direct changes of agricultural or forestry practices), Temperature changes (e.g. rise of temperature & extremes) due to climate change, Increases or changes in precipitation due to climate change	Surface and groundwater dependent. Highly sensitive to hydrological changes. Inappropriate management.

Special Conservation Interests and Vulnerabilities of SPAs that have undergone assessment

Species Code	Common Name	Scientific Name	Threats and Pressures Codes	Known Threats and Pressures
A048	Common Shelduck	Tadorna tadorna	F01, F02, G01, H03, M01	Marine and Freshwater Aquaculture, Fishing and harvesting aquatic resources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Changes in abiotic conditions
A130	Eurasian Oystercatcher	Haematopus ostralegus	C03, F01, F02, G01, H03, J02	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic resources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions
A140	European Golden Plover	Pluvialis apricaria	A02, A04, B01, C01, C03, F01, G01, H03, J01, K03, M02	Modification of cultivation practices, Grazing, Forest planting on open ground, Mining and quarrying, Renewable abiotic energy use, Marine and Freshwater Aquaculture, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Fire and Fire suppression, Interspecific faunal relations, Changes in biotic conditions
A141	Grey Plover	Pluvialis squatarola	C03, F01, F02, G01, H03, J02, J03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic resources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Other Ecosystem Modifications, Changes in abiotic conditions
A142	Northern Lapwing	Vanellus vanellus	A02, C03, F01, G01, H03	Modification of cultivation practices, Renewable abiotic energy use, Marine and Freshwater Aquaculture, Outdoor sports and leisure activities, recreational activities, Marine water pollution

Species Code	Common Name	Scientific Name	Threats and Pressures Codes	Known Threats and Pressures
A143	Red Knot	Calidris canutus	C03, F01, F02, G01, H03, J02, J03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic resources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Other Ecosystem Modifications, Changes in abiotic conditions
A144	Sanderling	Calidris alba	C03, F01, G01, H03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Changes in abiotic conditions
A162	Common Redhank	Tringa totanus	C03, F01, F02, G01, H03, J02, J03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Fishing and harvesting aquatic resources, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Human induced changes in hydraulic conditions, Other Ecosystem Modifications, Changes in abiotic conditions
A169	Ruddy Turnstone	Arenaria interpres	C03, F01, G01, H03, J03, M01	Renewable abiotic energy use, Marine and Freshwater Aquaculture, Outdoor sports and leisure activities, recreational activities, Marine water pollution, Other Ecosystem Modifications, Changes in abiotic conditions
A229	Common Kingfisher	Alcedo atthis	A11, D01, G01, H01, I01, J02	Agriculture activities not referred to above, Roads, paths and railroads, Outdoor sports and leisure activities, recreational activities, Pollution to surface waters (limnic & terrestrial, marine & brackish), Invasive non-native species, Human induced changes in hydraulic conditions

Conservation objectives that have been considered by the assessment are included in the following NPWS/Department of Culture, Heritage and the Gaeltacht documents

NPWS (2012) Conservation Objectives for Boyne Coast and Estuary SAC [IE0001957] Version 1.
NPWS (2021) Conservation Objectives for River Boyne and River Blackwater SAC [IE0002299] Version 1.
NPWS (2013) Conservation Objectives for Boyne Estuary SPA [IE0004080] Version 1.
NPWS (2022) Generic Conservation Objectives for River Boyne and River Blackwater SPA [IE0004232] Version 9.

Potential Natural Heritage Areas downstream of the proposed project

Site Code	Site Name	Features of Interest	Downstream distance from proposed project
001357	Trim pNHA	Freshwater marsh with species such as yellow flag (Iris pseudocarus), canary reed-grass (Phalaris arundinacea) and water mint (Mentha aquatica). Wet grassland with tall fescue (Festuca arundinacea), meadowsweet (Filipendula ulmaria) and meadow vetchling (Lathyrus pratensis) as well as strawberry clover (Trifolium fragiferum).	Ca. 3.5km
001592	Boyne Woods pNHA	Broadleaved woodland with ash (Fraxinus excelsior) is abundant, also, sessile oak (Quercus petraea), wych elm (Ulmus glabra), beech (Fagus sylvatica), sycamore (Acer pseudoplatanus) and occasionally lime (Tilia cordata x Platyphyllos), larch (Larix sp.), Scots pine (Pinus sylvestris), white willow (Salix alba) and alder (Alnus glutinosa). The woodland ground flora includes barran strawberry (Potentilla sterius), enchanters nightshade (Arcaea lutentiana) and ground-ivy (Guechoma hederacea), along with a range of ferns - harts-tongue (Phyllitis scolopendrium), male-Fern (Dryopteris fiux-mas) and soft shield-fern (Polystichum setiferum). Freshwater marsh with butterbur (Petasites hybrious) floating sweet-grass (Glyceria fluitans), reed canary-grass (Phalaris arundinacea), wild angelica (Angelica sylvestris) and marsh wound-wort (Stachys palustris) are found.	Ca. 24.8km
000553	Crewbane Marsh pNHA	Freshwater marsh with species such as yellow flag (Iris pseudocarus), creeping bent (Agrostis stolonifera), reed-grass (Glyceria maxima), marsh bedstraw (Galium paluste) and water forget-me-not (Myosotis scorpioides). Deciduous woodland with species such as ash (Fraxinus excelsior), sycamore (Acer pseudoplatanus), hawthorn (Crataegus monogyna), blackthorn (Plunus spinosa) and elder (Sambucus nigra). Badger, stoat, red squirred, pine marten and otter.	Ca. 34.46 km
001589	Rossnareen Riverbank pNHA	Round-fruited rush (Juncus compressus).	Ca. 37.7 km

Site Code	Site Name	Features of Interest	Downstream distance from proposed project
001861	Dowth Wetland pNHA	Freshwater marsh with species such as Canary Reed-Grass (Phalaris arundinacea) with Marsh Bedstraw (Galium palustre), Reed-Grass (Glyceria maxima), Meadowsweet (Filipendula ulmaria) and sedges (Carex disticha) and (Carex elata). Deciduous woodland with species such as ash (Fraxinus excelsior) and sycamore (Acer pseudoplatanus), hazel (Corylus avellana) and lime (Tilia cordata), beech (Fagus sylvatica), cherry laurel (Prunus laurocerasus) and bird cherry (Prunus avium). Red deer.	Ca. 42.9 km
001862	Boyne River Island pNHA	Riparian woodland with osier (Salix. viminalis), crack willow (S. fragilis), white willow (S. alba), purple willow (Salix purpurea) and grey willow (S. cinerea).	Ca. 46.2 km
001957	Boyne Coast And Estuary pNHA	No site synopsis available	Ca. 54.2 km

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE
& PLANNING

APPENDIX 3

Planning Application Search Results

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
211723	Conditional	The development consists of change of use of existing retail unit at ground floor level to café/bistro together with all associated site works	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
TA190860	Conditional	A partial 3 and partial 4 story extension comprising 43 bedrooms over the existing basement car park and surface car park with a first floor link to the existing hotel, minor alterations to the first floor to allow access to the link, rearrangement of the surface car park, minor elevational changes to the existing hotel, connection to public services and all associated site works. The building is located within the Trim Historic Core Architectural Conservation Area. Significant further information/revised plans submitted on this application	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale, location and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
TA191322	Conditional	1. Demolition works to the existing supermarket building north east elevation at first floor level, removal of existing yard canopy and demolition works to the yard wall to form new door openings. 2. Construction of ground floor extension (33sq.m) and first floor extension (125sq.m). 3. Internal alterations at first floor level (61sq.m) to provide new fire escape corridor. 4. Construction of housed refuse area and associated site and drainage works	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
211914	Conditional	The demolition of the existing two storey dwelling with attached garage and associated outbuildings, the construction of seven new two storey dwellings: two pairs of semi-detached houses and one terrace of three houses all with individual entrances off the Dublin Road, connection to public services, and all associated site works. A Natura Impact Assessment will be submitted to the Planning Authority with the application	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale, location and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
2169	Conditional	The development will consist of installation of p.v. solar panels on the rear of roof to dwelling house together with all associated site works	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
TA190773	Conditional	Re-constructing existing roof to form new dormer extension at first floor level, new single storey porch to front, single storey extension to rear of existing dwelling together with a single storey extension to front on north west side of dwelling. The development also includes new detached domestic garage and all associated site works. Significant further information/revised plans submitted on this application	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
22667	Conditional	Description: the development being retained consists of change of use of carport to side of dwelling previously granted planning permission under planning reference no. TA/190773 to home office and gym to include modifications to elevations together with all associated site works	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
TA200883	Conditional	The development will consist of 105kWp (350 no.) of Roof Mounted Solar PV Panels and all associated works on the uppermost level of the four-storey car park	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
221176 211907 TA190634 (these planning numbers all refer to the	Conditional - Appealed	Permission for amendments to permitted application reference no. 211907, which amended planning application reference TA t 90634 (ABP-306550-20) which amended planning application reference TT/800019. Planning application reference no. 219907 had granted permission for a three-storey apartment building containing 12 no. apartments, which amended a previously approved apartment block under planning references TA190634 (ABP-306550 20) and TT/800019, at Emmet Street, Trim, Co. Meath. The proposed amendments include 1) the revised location of Stairwell Window. 2) alterations of Window Type 2, change of dimension from 3350mm to 2530mm wide to	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature and location of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
same development with the most recent application at the top)		facilitate boiler and Flue position. 3) the inclusion of a Lift Shaft to Provide the Necessary 3450mm Height between the Finished 2nd Floor level and the underside of the Lift Eye Beam for Health and Safety Purposes. 4) a change to the North Facing Fa.-;ade, change from stone effect cladding to Painted Render. 5) the inclusion of a Roof AOV - TGD Part 8. 6) the inclusion of approx. 48 PV Panels in adherence to TGO Part L & BER and 7) all necessary ancillary and site works. The Site is within the curtilage of the Old Town Wall (a Protected Structure under the provision of the Part IV of the Planning and Development Regulations 2001) Amendments to permitted planning application reference no. TA190634 (ABP-306550-20) which granted permission for a three storey apartment building containing 11 no. apartments, which amended a previously approved apartment block under planning application reference TT/800019 at Emmet Street, Trim, Co. Meath. The proposed amendments include 1) Alterations to the northern wall of granted apartment No. 8 on the first floor and to decrease occupancy from a two storey 3 bedroom apartment to single storey 2 bedroom apartment, 2) alterations to granted apartment No. 09 on the second floor to increase the occupancy from a one bedroom to a two bedroom apartment, 3) Alterations of granted apartments No. 11 and No. 8 to accommodate 1 no. additional apartment to the north of the second storey, 4) an increase of an overall 800mm to the depth of the granted building to facilitate minimum 1.5m deep balconies, 5) An overall increase of 4 square meters to the internal gross floors area of the building and 6) All necessary ancillary site works.			

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
		The site is within the curtilage of the Old Town Wall (a Protected Structure under the provision of Part IV of the Planning & Development Regulations 2001). Significant Further information/Revised plans submitted on this application A 4 storey block containing 14no. residential units (1x 3 bed, 7x 2 bed and 6x 1 bed) to replace the block previously approved under planning ref: TT/800019, all to the rear of the existing apartment building constructed under planning permission (reg ref TT20004). The development will also comprise associated site works and landscaping to include surface car parking and bin storage, both serving the existing and new developments and connection to public services. Site access will be through the entrance to the existing development. The site is within the curtilage of the Old Town Wall (a Protected Structure under the provision of the Part IV of the Planning & Development Act 2000 and Part IV of the Planning & Development Regulations 2001). Significant further information/revised plans submitted on this application			
TA200764	Conditional	The development will consist of (a) demolition of existing shop front section of Trim Hardware Building and construct new front section to include cut stone and glazed shop front and signage, (b) new mezzanine floor within the existing shop together with revised internal plan layout. (c) The development also includes extending into the adjoining building at ground floor level and form new shop fronts facing Emmet Street and the forecourt to the building, (d) modifications to plan layout to include new front door and access stairs to first floor accommodation from Emmet	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
		Street, (e) re-construct existing living accommodation at first floor level to form 2 no. 1 bed apartments (f) modifications to existing elevations and all associated site works. Significant further information/revised plans submitted on this application			
TA201367	Conditional	Planning permission for minor alterations to previously approved Permission Reg. Ref. 98/16 at their private dwelling a Protected structure. The development will consist of Internal alterations to the rear existing 1999 single storey extension only, including modifications to internal layout, replacement external windows and doors, alterations to three existing openings, removal of one chimney and addition of new rooflights. External works will include minor revisions to drainage, landscaping, small storage shed and new garden wall	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
221371	Conditional	The development consists of retention of the change of use of two rear store rooms to bar area, retention of a single storey cleaners store located in the yard area, and use of rear yard area as a Beer Garden, retention of elevational changes to the building including, increased height to rear storerooms that have been converted into an additional bar area, provision of a covered area to the side of rear bar area, retractable awning to yard area and revisions to the windows/ roof windows to the covered beer garden area. Retention permission is also sought for a period of 10 years for a single storey prefabricated ladies toilet block which has been installed in the enclosed rear yard area and for the change of use of part of the yard area, which is located next the entrance to the car park, into additional car parking (five bays), along with four recycling banks and for the retention	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
		of a bay for hot food casual trading beside the entrance to this land from Thursday to Sunday from 4pm to 9pm daily. Planning Permission is sought to convert an existing store room within this public house to a cocktail bar, including the creation of a bar counter / servery area and permission is sought to cover the existing metal roof cladding to the rear bar area to be retained with a corrugated metal or sinusoidal curved metal, finished in a red colour, rendering and painting of the exposed blockwork to the gable end of the public house and all associated site works and services. The building is a Protected Structure and it is located within Trim Historic Core Architectural Conservation area and Trim Zone of Archaeological potential'			
TA190371	Conditional	Two storey infill dwelling with attic storage/playroom, new domestic entrance, domestic store shed to rear, connection to all mains services together with all associated site works. Significant further information/revised plans submitted on this application	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
2349	Conditional	The demolition of existing dwelling (107.2 sqm) and garage (22 sqm), the construction of new replacement single storey dwelling (130 sqm), domestic garage (32 sqm) and modification to existing entrance and all associated site works	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
22542	Conditional	The alterations to proposed dwelling previously granted TA171206. It will also include the demolition of existing garage(22m/sq) and the modifications to existing entrance and all associated site works	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
2273	Conditional	A detached storey and a half style dwelling, new site entrance, connection to existing public mains facilities and all associated site works. Significant further information/revised plans submitted on this application	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
21898	Conditional	The development consists of: Works to protected structure niah record no: 14328067. Meath Co. Co. List Protected Structures Ref: TT036-015. This structure is within the Trim Historic Core Architectural Conservation Area. 1. Demolition of late 20th century lean-to kitchen extension to rear of house. 2. Retention Permission sought for Coach House rooflights and openings, and other minor modifications to the property in recent years. 3. Permission sought for proposed new external access stairs and new external access door to existing basement room. 4. Permission sought for proposed single storey extension linking south side of house to north side of Coach House, containing dining area, kitchen, wc, pantry, and boot room. 5.	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
		Change of use of existing Coach House from storage to living space, to include playroom, living area and mezzanine. 6. All associated site works			
22598	Conditional	The development will consist/consists of: Shopfront alterations to a protected structure (Ref No. 14328064) which comprise of: fitting of new branded signage (after removal of existing signage/ or over existing signage) onto existing shopfront, replacement of existing ATM with new ATM (location retained). 2No. internally located digital marketing LED screens, to be viewed externally through the existing glazing. Minor internal alterations to existing front banking hall to consist of new internal SSBM/ATMs within a new room. These proposed works are to a proposed structure	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
221237	Conditional	The development being retained consists of (a) single storey porch to front of dwelling, (b) sun room extension to rear and (c) detached domestic garage to side/rear of existing dwelling together with all associated site works	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
22235	Conditional	Extension to rear of existing two-storey semi-detached residence consisting of bedroom and en-suite	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
			therefore no further considerations are required.		
TA200234	Conditional	The development will consist of change of use from retail to domestic use for 5 no. units as follows: (a) Retail Unit 1 - change of use to 1 no. 1 bed apartment with entrance off Haggard Street, (b) Retails Units 2 & 3 - change of use to form 1 no. 2 bed. Apartment with entrance off Haggard street, (c) Retail Unit 4 - change of use of ground floor from retail to domestic together with combing apartment at 1st floor level to form a 3 bed. Townhouse at ground and first floor level. (d) Retail Unit 5 - change of use to 1 no. 2 bed apartment with entrance off Navan Gate Street (e) The development also includes modifications to existing elevations and floor plans together with all associate site works. (f) Car parking provided to rear as per planning permission reference no: TT800005	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
TA200489	Conditional	Demolition of existing disused carpenters' workshop and construction of a single storey dwelling, connection of foul and surface water to existing services and associated site works.	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
TA202081	Conditional	The development will consist of single storey extension to side and rear of existing dwelling, modifications to existing elevations together with all associated site works. Significant Further information / Revised plans submitted on this application	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3.	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
			Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.		
21121	Conditional	Development consists of retention of revisions to the home previously granted planning permission under Planning Reg. Ref P.183/73. These revisions include, replacement of the original attached garage to the side of this home with a single storey pitched roof projection comprising utility room, guest toilet and flexi room, canopy projection to the front of this side extension and replacement front door, conversion of a first floor bedroom to en-suite and elevational changes to the original home including provision of patio door access From the kitchen/dining room into the rear garden. Retention permission is also sought for revisions to the site boundaries from that previously granted planning permission under Planning Reg. Ref P.183/73, widening of the vehicle entrance and all associated site works and services	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
TA200074	Conditional	Permission to retain the existing living room and utility extension to the south gable	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
22106	Conditional	The change of use of the ground floor from restaurant/café as permitted under TA/180122 to residential and office, changes to the elevations and ground floor plan, connection to services and all associated site works. Spicers is a protected structure and is situated within the Trim Historic Architectural Conservation Area and the Trim Zone of Archaeological Potential	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
TA190390	Unconditional	EXTENSION OF DURATION OF PLANNING PERMISSION TT130013 - Single storey extension to rear of No. 5 Castle Street, Trim, Co. Meath consisting of open plan living/dining & kitchen area	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
23889	Further Information	Change of use of existing retail shop unit to 1 no. 2 bed apartment to include modifications to existing elevations and internal plan layout together with all associated site works. The site is located within the Trim Historic Architectural Conservation Area	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
2360138	Conditional	The development will consist of (A) Change of use from retail use to café use, (B) The construction of a two-storey extension with single storey element to rear of existing building to contain seating (C) Internal alterations (D)	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3.	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
		Elevational changes including the addition of windows to northern and eastern elevations and signage to northern elevation and all associated site works and services	Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.		
TA190964	Conditional	The change of use of the ground floor from shop to restaurant/cafe, demolition of the single-storey rear structure, changes to the internal layout and all associated site works. The building is situated within the Trim Historic Core Architectural Conservation Area and the Trim Zone of Archaeological Potential. Significant further information/revised plans submitted on this application	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
22479	Conditional	A change of use from existing permitted café/bistro use to café (27 sqm) and part office (113.39 sqm) use, With new shop front /porch fascia level external signage (full width & height of fascia, 750 mm x 4040 mm approximate) and new sliding entrance door option to East (front) elevation and all other ancillary works	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
2360245	Conditional	Retention of alterations and amendments made to elevations and floor plan of existing single storey retail unit together with permission for (a) change of use from retail unit to Café, (b) amend internal layout, (c) erect signage to front elevation, (d) Complete all ancillary site works and associated site structures	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and	N	N

Project Code	Status	Overview	Characteristics of the potential interactions between the projects; sources and pathways	Is there a risk of in-combination effects	Are significant in-combination effects likely
			therefore no further considerations are required.		
22136	Conditional	The two existing 14 metre telecommunications timber support structures with antennas attached (16.5m overall height) and associated equipment within the exchange compound	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N
23215	Conditional	The change of use of the ground floor office as permitted under Planning Reg. Ref. 22/106 to a retail unit and all associated site works and services. Spicers is a protected structure and is situated within the Trim Historic Architectural Conservation Area and the Trim Zone of Archaeological Potential	The proposed bridge project has small scale temporary effects identified as can be seen in Section 2.3. Considering the scale and nature of this project it is identified that potential in combination effects are negligible and therefore no further considerations are required.	N	N

FEHILY TIMONEY

CONSULTANTS IN ENGINEERING,
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APPENDIX 4

Field Survey Reports

Aquatic baseline report for the proposed Trim Millennium Pedestrian Bridge Scheme, Trim, Co. Meath

Prepared by Triturus Environmental Ltd. for Fehily Timoney

December 2023

Please cite as:

Triturus (2023). Aquatic baseline report for the proposed Trim Millennium Pedestrian Bridge Scheme, Trim, Co. Meath. Report prepared by Triturus Environmental Ltd. for Fehily Timoney. December 2023.

Table of contents

1. Introduction

1.1 Background

Triturus Environmental Ltd. were commissioned by Fehily Timoney to conduct baseline aquatic surveys to inform NIS preparation for the proposed Trim Millennium Pedestrian Bridge scheme, located on the River Boyne, Trim, Co. Meath (**Figure 2.1**). This report provides a baseline assessment of the aquatic ecology including fisheries and biological water quality, as well as protected species and habitats in the vicinity of the proposed scheme (bridge replacement). Aquatic surveys were undertaken on the 10th October 2023.

1.2 Scheme description

A full description of the proposed scheme will be provided in the accompanying NIS report used to support consenting applications.

2. Methodology

2.1 Aquatic site surveys

Aquatic surveys of the River Boyne (EPA code: 07B04) within the vicinity of Millennium Bridge were conducted on the 10th October 2023. Survey effort focused on both instream and riparian habitats at the site and included a fisheries habitat appraisal[1], white-clawed crayfish (*Austropotamobius pallipes*) survey, otter (*Lutra lutra*) survey (within 150m radius), environmental DNA sampling, macrophyte and aquatic bryophyte survey and biological water quality sampling (Q-sampling at 2 no. locations, upstream and downstream) (**Figure 2.1**). This holistic approach informed the overall aquatic ecological evaluation of the site in context of the proposed scheme and ensured that any habitats and species of high conservation value would be detected to best inform mitigation.

In addition to the ecological characteristics of the site, a broad aquatic and riparian habitat assessment was conducted utilising elements of the methodology given in the Environment Agency's 'River Habitat Survey in Britain and Ireland Field Survey Guidance Manual 2003' (EA, 2003) and the Irish Heritage Council's 'A Guide to Habitats in Ireland' (Fossitt, 2000). This broad characterisation helped define the watercourses' conformity or departure from naturalness. The site was assessed in terms of:

- Physical watercourse/waterbody characteristics (i.e. width, depth, channel form) including associated evidence of historical drainage
- Substrate type and relative condition, listing substrate fractions in order of dominance (i.e. bedrock, boulder, cobble, gravel, sand, silt etc.)
- Flow type by proportion of riffle, glide and pool in the sampling area
- An appraisal of the macrophyte and aquatic bryophyte community at each site
- Riparian vegetation composition and bordering land use practices

Table 2.1 Location of the aquatic survey site in the vicinity of the proposed Trim Millennium Pedestrian Bridge scheme

Watercourse	EPA code	Location	X (ITM)	Y (ITM)
River Boyne	07B04	Millennium Bridge	680219	756860

[1] Site unsuitable for electro-fishing due to prohibitive depths

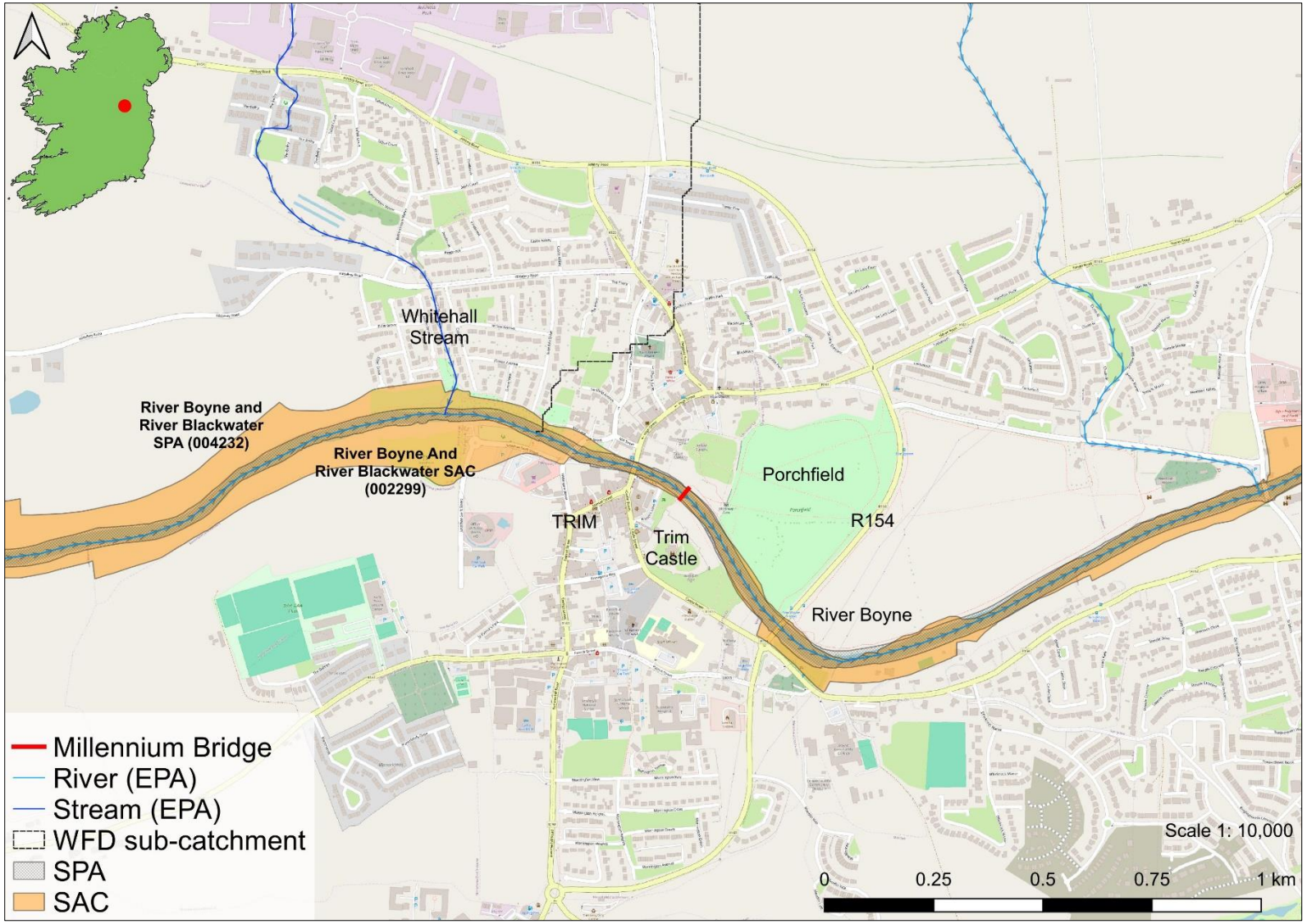

Figure 2.1 Overview of the aquatic survey sites in the vicinity of the proposed Trim Millennium Pedestrian Bridge scheme

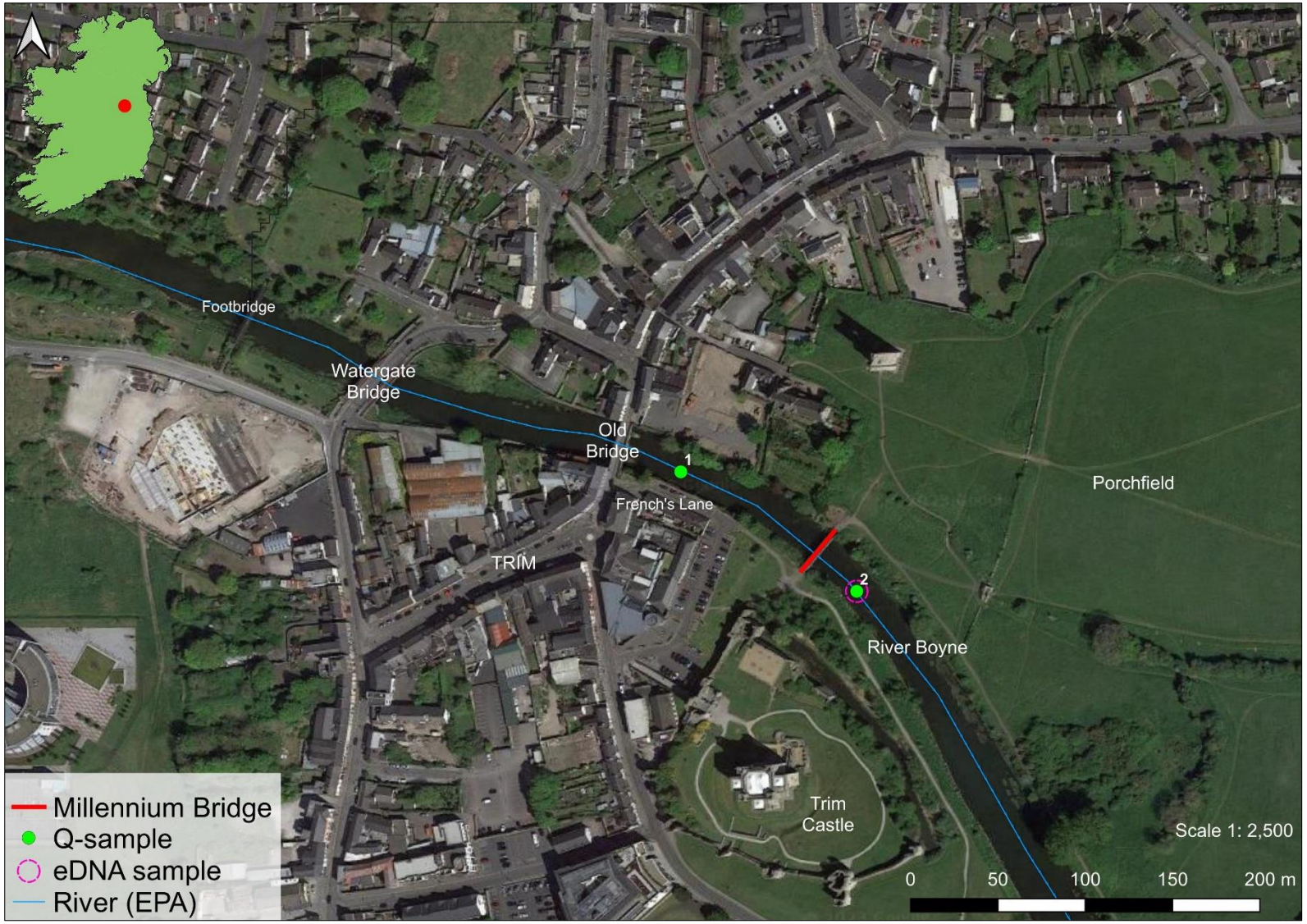

Figure 2.2 Location of the aquatic survey sites in the vicinity of the proposed Trim Millennium Pedestrian Bridge scheme

2.2 Fisheries habitat appraisal

A fisheries habitat appraisal of the River Boyne in vicinity of the existing Millennium Bridge was undertaken to establish the importance of the supporting habitats as nursery, spawning and or holding habitats for salmonids and lamprey species, but also considered European eel and other fish species. The appraisals of salmonids and lamprey were cognisant of species-specific habitat requirements and preferences as outlined in O'Grady (2006), Hendry et al. (2003), Armstrong et al. (2003), Harvey & Cowx (2003), Maitland (2003) and Hendry & Cragg-Hine (1997). River habitat surveys and fisheries assessments were also carried out utilising elements of the approaches in the River Habitat Survey Methodology (EA, 2003) and Fishery Assessment Methodology (O'Grady, 2006) to broadly characterise the riverine site (i.e., channel profile, substrata etc.).

2.3 White-clawed crayfish survey

A white-clawed crayfish (*Austropotamobius pallipes*) survey was undertaken in October 2023 under a National Parks and Wildlife (NPWS) open national licence (no. C24/2023), as prescribed by Sections 9, 23 and 34 of the Wildlife Act (1976-2023), to capture and release crayfish to their site of capture. As per Inland Fisheries Ireland aquatic biosecurity recommendations, the crayfish sampling started at the uppermost site(s) of the catchment/sub-catchments in the survey area to minimise the risk of transfer invasive propagules (including crayfish plague) in an upstream direction.

Hand-searching of instream refugia and sweep netting was undertaken according to Reynolds et al. (2010). An appraisal of white-clawed crayfish habitat in the vicinity of Millennium Bridge was conducted based on physical habitat attributes, water chemistry and incidental records in mustelid spraint. Additionally, a desktop review of crayfish records within the wider survey area was completed.

2.4 eDNA analysis

To validate site surveys, fill data lacunae and detect potentially cryptically-low populations within the study area, a composite water sample was collected from the River Boyne downstream of Millennium Bridge in October 2023 (**Figure 2.2**) and analysed for Atlantic salmon (*Salmo salar*), lamprey (*Lampetra* spp.), white-clawed crayfish and crayfish plague (*Aphanomyces astaci*) environmental DNA (eDNA).

In accordance with laboratory guidance, a composite (500ml) water sample was collected from the sampling point, maximising the geographic spread at the site (20 x 25ml samples at each site), thus increasing the chance of detecting the target species' DNA. The composite sample was filtered and fixed on site using a sterile proprietary eDNA sampling kit. The sample was stored at room temperature and sent to the laboratory for analysis with 48 hours of collection. A total of n=12 qPCR replicates were analysed for the site. Given the high sensitivity of eDNA analysis, a single positive qPCR replicate is considered as proof of the species' presence (termed qPCR No Threshold, or qPCR NT). Whilst an eDNA approach is not currently quantitative, the detection of the target species' DNA indicates the presence of the species at and or upstream of the sampling point. Please refer to **Appendix A** for full eDNA laboratory analysis methodology.

2.5 Biological water quality (Q-sampling)

The River Boyne at Millennium Bridge was assessed for biological water quality through Q-sampling in October 2023, with a sample collected upstream and downstream of the existing bridge. The 2 no. samples were taken with a standard kick sampling hand net (250mm width, 500µm mesh size) from areas of riffle/glide utilising a 2-minute kick sample, as per Environmental Protection Authority (EPA) methodology (Feeley et al., 2020). Large cobble was also washed at each site for 1-minute (where present) to collect attached macro-invertebrates (as per Feeley et al., 2020). Samples were elutriated and fixed in 70% ethanol for subsequent laboratory identification to species level. Samples were converted to Q-ratings as per Toner et al. (2005) and assigned to WFD status classes (**Table 2.2**). Any rare invertebrate species were identified from the NPWS Red List publications for beetles (Foster et al., 2009), mayflies (Kelly-Quinn & Regan, 2012), stoneflies (Feeley et al., 2020) and other relevant taxa (i.e. Byrne et al., 2009; Nelson et al., 2011).

Table 2.2 Reference categories for EPA Q-ratings (Q1 to Q5) (Toner et al., 2005)

Q value	WFD status	Pollution status	Condition
Q5 or Q4-5	High status	Unpolluted	Satisfactory
Q4	Good status	Unpolluted	Satisfactory
Q3-4	Moderate status	Slightly polluted	Unsatisfactory
Q3 or Q2-3	Poor status	Moderately polluted	Unsatisfactory
Q2, Q1-2 or Q1	Bad status	Seriously polluted	Unsatisfactory

2.6 Macrophytes and aquatic bryophytes

Surveys of the macrophyte and aquatic bryophyte community were conducted by instream wading, with specimens collected (by hand or via grapnel) for on-site identification. An assessment of the aquatic vegetation community helped to identify any rare macrophyte species listed under the Flora (Protection) Order, 2022 and or Irish Red list for vascular plants (Wyse-Jackson et al., 2016) or habitats corresponding to the Annex I habitats, e.g., 'Water courses of plain to montane levels, with submerged or floating vegetation of the *Ranunculion fluitantis* and *Callitricho-Batrachion* (low water level during summer) or aquatic mosses [3260]' (more commonly referred to as 'floating river vegetation').

2.7 Otter signs

The presence of otter (*Lutra lutra*) was determined through the recording of otter signs within 150m radius of each survey site. Notes on the age and location of signs (ITM coordinates) were made, in addition to the quantity and visible constituents of spraint (i.e. remains of fish, crustaceans, molluscs etc.).

2.8 Biosecurity

A strict biosecurity protocol following IFI (2010) and the Check-Clean-Dry approach was adhered to during surveys for all equipment and PPE used. Disinfection of all equipment and PPE before and after

use with Virkon™ was conducted to prevent the transfer of pathogens or invasive propagules between survey sites. Surveys were undertaken at sites in a downstream order to minimise the risk of upstream propagule mobilisation. Care was given towards preventing the spread or introduction of highly virulent crayfish plague, known throughout the Boyne catchment with checking, cleaning, disinfecting and drying of equipment undertaken after the survey to prevent spread of crayfish plague. All Triturus staff are certified in 'Good fieldwork practice: slowing the spread of invasive non-native species' by the University of Leeds.

3. Desktop review

3.1 Fisheries asset of the survey area

The River Boyne rises in Co. Kildare and flows for over 110km in a north easterly direction through counties Offaly, Meath and Louth before entering the Irish Sea at Drogheda. The Boyne was subject to extensive arterial drainage from 1969 until 1985 and this has significantly impacted fisheries habitat (Massa-Gallucci & Mariani, 2011).

The River Boyne is a designated salmonid watercourse under the European Communities (Quality of Salmonid Waters) Regulations, 1988 (S.I. No. 293/1988) and is ranked 5th nationally in terms of the amount of fluvial habitat accessible to Atlantic salmon (*Salmo salar*) (5.93% of national; McGinnity et al., 2003). The Boyne is a renowned wild brown trout (*Salmo trutta*), Atlantic salmon and (in its lower reaches) sea trout fishery (O'Reilly, 2009). In addition to salmonids, the river also supports three-spined stickleback (*Gasterosteus aculeatus*), minnow (*Phoxinus phoxinus*), stone loach (*Barbatula barbatula*), pike (*Esox lucius*), roach (*Rutilus rutilus*) and European eel (*Anguilla anguilla*) (Gordon et al., 2023; Kelly et al., 2011a, 2011b). Whilst *Lampetra* sp. ammocoetes (likely brook lamprey *Lampetra planeri*) are widespread throughout both the Boyne, densities have been recorded as low (O'Connor, 2006) and the species is known to suffer from the impacts of continued arterial drainage throughout the catchment (IFI, 2013).

3.2 Protected aquatic species

A comprehensive desktop review of available data from the National Biodiversity Data Centre (NBDC), Inland Fisheries Ireland (IFI), Botanical Society of Britain and Ireland (BSBI), National Crayfish Plague Surveillance Programme (NCPSP), Environmental Protection Agency (EPA) and Triturus databases for the River Boyne in the vicinity of Trim identified a low number of records for rare and or protected aquatic species.

White-clawed crayfish (*Austropotamobius pallipes*) are known form the River Boyne in the vicinity of Trim although the most recent record is from 2006 (0.3km upstream of survey area). Crayfish plague has been known from the Boyne catchment since the 1980s (Matthews & Reynolds, 1992) and has also been detected in recent years (Triturus data).

Otter (*Lutra lutra*) records were widespread on the River Boyne in the Trim area, including within the town (Old Bridge) (NBDC data).

4. Results of aquatic surveys

4.1 Aquatic survey

The River Boyne in the vicinity of Millennium Bridge was a high energy lowland river (FW2: Fossitt, 2000) that was 18-20m wide and ranged from 1.2-1.8m deep. The river had been historically modified and deepened with steeply sloping banks (particularly on the eastern bank). Upstream of the existing Millennium footbridge the river flowed between retaining walls (both banks) in the vicinity of Old Bridge. The profile comprised fast-flowing glide with occasional pool. Riffle and shallower glide was present locally in the vicinity of the existing footbridge (including at a historic weir). Deeper glide predominated downstream. The substrata were dominated by partially bedded cobble and boulder with frequent but scattered mixed gravels. Despite high flow rates at this location, siltation was moderate. Areas of sand were present but localised. Soft sediment accumulations were frequent along channel margins and in association with instream macrophyte beds.

The modified section of channel upstream of the existing footbridge supported sparse macrophyte growth due to the compacted bed and absence of riparian fringes although the moss *Fontinalis antipyretica* and *Leptodictyum riparium* were present on larger boulder, with scattered common clubrush (*Schoenoplectus lacustris*). Downstream of the footbridge, the macrophyte community was dominated by abundant common clubrush which forms extensive stands throughout the channel for much of the years (pers. obs.). Scattered stands of branched bur-reed (*Sparganium erectum*) were also present with occasional water mint (*Mentha aquatica*) and blue water-speedwell (*Myosotis scorpioides*). Deeper glide and flow refugia supported highly localised curled pondweed (*Potamogeton crispus*), perfoliate pondweed (*Potamogeton perfoliatus*) and water starwort (*Callitriche* sp.). Invasive *Elodea* sp. was also present in deeper glide but rare overall. The aquatic vegetation community was not representative of any Annex I habitats (e.g. floating river vegetation [3260]). Filamentous algal cover was low (2%) but its presence indicated eutrophication. The littoral zones and sloping banks were dominated by reed-canary grass (*Phalaris arundinacea*) with mature scrubby treelines of grey willow (*Salix cinerea*), osier (*Salix viminalis*), crack willow (*Salix fragilis*), sycamore (*Acer psuedoplatanus*), ash (*Fraxinus excelsior*) and hawthorn (*Crataegus monogyna*) with localised dense bramble (*Rubus fruticosus* agg.) along the eastern bank.

The River Boyne in vicinity of the existing Millennium Bridge was considered a good quality salmonid spawning and nursery habitat given the dominance of glide habitat, hard substrata and flow refugia. Undercut banks (mostly along the western bank downstream but also along retaining walls) provided valuable holding areas for adult salmonids although the deeper glide downstream of the survey site provided higher quality holding habitat. This area was dominated by clubrush beds and of high value as both a coarse fish nursery and European eel habitat. Whilst localised and limited in extent, soft sediment accumulations along channel margins provided some suitability for lamprey ammocoetes although such areas were typically sub-optimal due to compaction and high sand content. Despite good physical suitability (abundant instream refugia), no white clawed crayfish were recorded by sweep netting or hand searching. However, white-clawed crayfish were detected via eDNA sampling, in addition to Atlantic salmon and lamprey (*Lampetra* sp.) (**Table 4.1**). Two regular otter spraint sites were recorded on a retaining wall ledge and stormwater inflow pipe upstream of the existing footbridge (ITM 680125, 756899 & ITM 680135, 756921).

Biological water quality, based on Q-sampling, was calculated as **Q3-4 (moderate status)** both upstream (site 1) and downstream (site 2) of Millennium Bridge (**Appendix A**). No macro-invertebrate species of conservation value greater than 'least concern', according to national red lists, were recorded via Q-sampling.

Plate 3.1 Millennium Bridge, October 2023 (facing upstream)

Plate 3.2 The modified River Boyne at Old Bridge, located upstream of Millennium Bridge

Plate 3.3 Facing downstream to Millennium Bridge from French's Lane, October 2023

Plate 3.4 Facing upstream from Millennium Bridge towards Old Bridge

Plate 3.5 Facing downstream from Millennium Bridge, October 2023

Plate 3.6 Facing downstream to Boyne Bridge

4.2 White-clawed crayfish

No white-clawed crayfish were recorded via hand-searching or sweep netting of instream refugia during the October 2023 survey. However, environmental DNA sampling detected the presence of crayfish from the River Boyne (see section 4.3 below).

4.3 eDNA analysis

Atlantic salmon, lamprey (*Lampetra* sp.) and white-clawed crayfish eDNA was detected in composite water samples taken from the River Boyne downstream of Millennium Bridge (12, 12 & 2 positive qPCR replicates out of 12, respectively) (**Table 4.1; Appendix B**).

The invasive pathogen crayfish plague was also detected in the sample (11 positive qPCR replicates out of 12) (**Table 4.1; Appendix B**).

Table 4.1 eDNA results collected downstream of Trim Millenium Pedestrian Bridge (positive qPCR replicates out of 12 in parentheses)

Watercourse	White-clawed crayfish	Crayfish plague	Atlantic salmon	*Lampetra* sp.[2]
River Boyne, Millennium Bridge	**Positive (2/12)**	**Positive (11/12)**	**Positive (12/12)**	**Positive (12/12)**

[2] eDNA techniques are unable to reliably distinguish between brook lamprey (*Lampetra planeri*) and river lamprey (*Lampetra fluviatilis*)

4.4 Biological water quality (macro-invertebrates)

No rare or protected macro-invertebrate species (according to national red lists) were recorded in the biological water quality samples taken from a 2 no. riverine sites in October 2023 (**Appendix A**).

Sites 1 and 2 on the River Boyne (**Figure 4.1**) achieved **Q3-4 (moderate status)** water quality based on the dominance of EPA group C (moderate water quality indicator taxa with lower numbers of EPA group A and B (clean water indicator species). EPA group A taxa included small number of the mayfly species *Ecdyonurus dispar, Heptagenia sulphurea* and *Ephemera danica* (**Appendix A**). The most abundant EPA group C taxa included the mayflies *Baetis rhodani* and *Seratella ignita* (**Table 4.2**).

Table 4.2 Macro-invertebrate Q-sampling results, October 2023

Group	Family	Species	Site 1	Site 2	EPA class
Ephemeroptera	Heptageniidae	*Ecdyonurus dispar*	2		A
Ephemeroptera	Heptageniidae	*Heptagenia sulphurea*	1		A
Ephemeroptera	Ephemeridae	*Ephemera danica*		2	A
Trichoptera	Glossosomatidae	sp. indet.	12	5	B
Trichoptera	Hydroptilidae	*Hydroptila sp.*	3		B
Trichoptera	Limnephilidae	*Unidentified species*	1	2	B
Trichoptera	Limnephilidae	*Potamophylax cingulatus*		1	B
Trichoptera	Sericostomatidae	*Sericostoma personatum*	2	7	B
Odonata	Calopterygidae	*Calopteryx splendens*		1	B
Ephemeroptera	Baetidae	*Baetis rhodani*	55	36	C
Ephemeroptera	Ephemerellidae	*Serratella ignita*	18	10	C
Plecoptera	Leuctridae	*Leuctra fusca*	2		C
Trichoptera	Hydropsychidae	*Hydropsyche siltalai*	4	4	C
Trichoptera	Rhyacophilidae	*Rhyacophila dorsalis*		1	C
Coleoptera	Elmidae	*Elmis aenea*	13	5	C
Coleoptera	Elmidae	*Limnius volckmari*	4	5	C
Coleoptera	Elmidae	*Esolus parallelepipedus*	2		C
Crustacea	Gammaridae	*Gammarus duebeni*	4	24	C
Diptera	Chironomidae	Non-*Chironomus* spp.	2	6	C
Diptera	Simuliidae	sp. indet.	21	68	C
Diptera	Ceratopogonidae	sp. indet.	1	3	C
Gastropoda	Bithnyiidae	*Bithynia tentaculata*	16	25	C
Gastropoda	Lymnaeidae	*Ampullaceana balthica*	3	11	C
Gastropoda	Planorbidae	*Ancylus fluviatilis*	4	2	C
Crustacea	Asellidae	*Asellus aquaticus*		2	D
Hirudinidae	Glossiphoniidae	Glossiphonia complanata	1	1	D
Diptera	Chironomidae	Non-*Chironomus* spp.		1	E
Oligochaeta		sp. indet.		3	n/a
Abundance			**171**	**225**	
Q-rating			**Q3-4**	**Q3-4**	
WFD status			**Moderate**	**Moderate**	

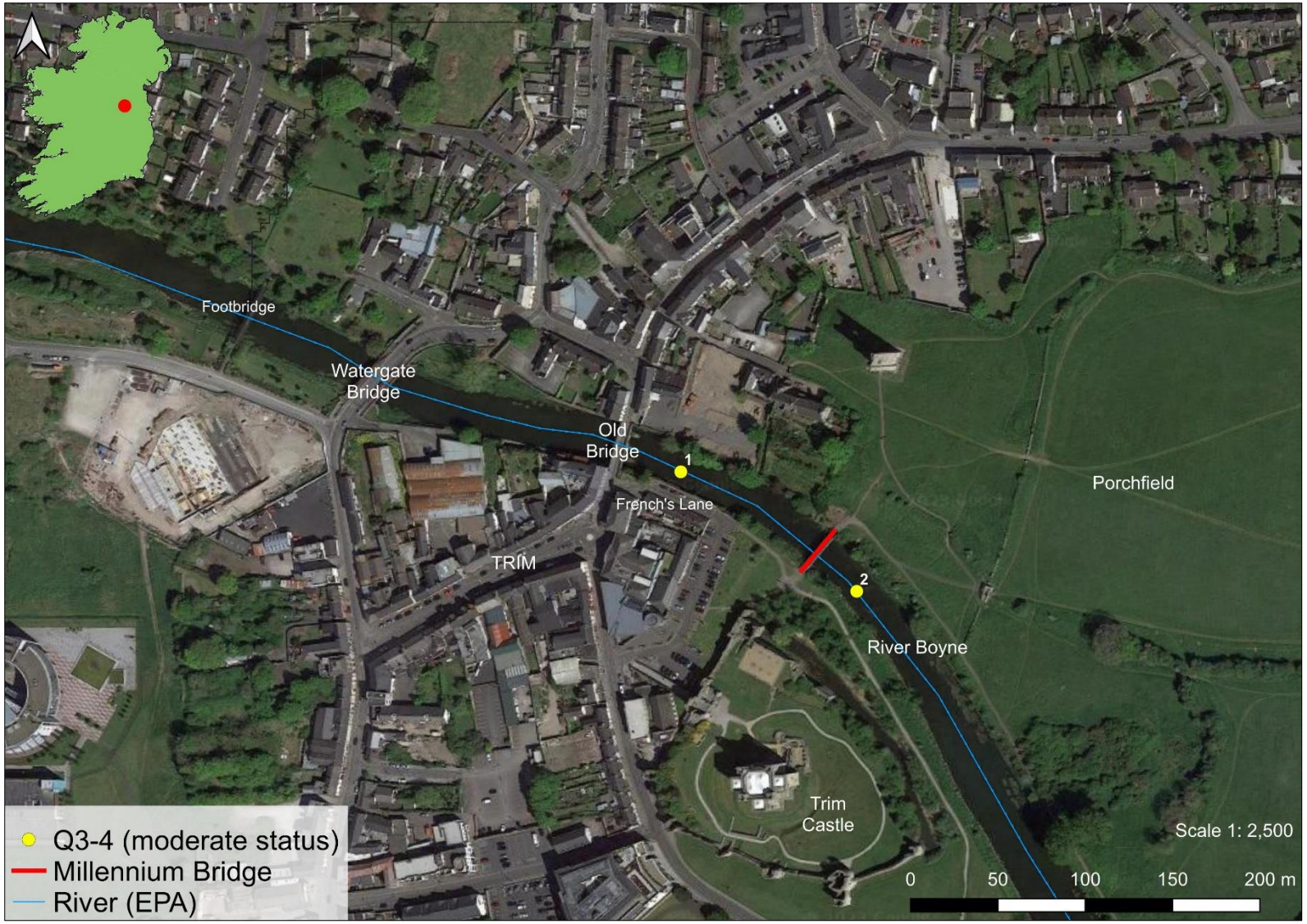

Figure 4.1 Overview of the biological water quality status in the vicinity of Millennium Bridge, October 2023

Table 4.3 Summary of aquatic species and habitats of higher conservation value recorded in the vicinity of Millennium Bridge, October 2023

Watercourse	White-clawed crayfish	Otter signs[4]	Annex I aquatic habitats	Rare or protected macrophytes/ aquatic bryophytes	Rare or protected macro-invertebrates (excl. crayfish)	Other species/habitats of high conservation value
River Boyne, Millennium Bridge	**None recorded but detected via eDNA**	**2 no. spraint sites**	Not present	None recorded	None recorded	**Atlantic salmon, *Lampetra* sp. recorded (eDNA); Red-listed European eel likely present**

Conservation value: Atlantic salmon (*Salmo salar*), brook lamprey (L*ampetra planeri*) and river lamprey (*Lampetra fluviatilis*), white-clawed crayfish (*Austropotamobius pallipes*) and Eurasian otter (*Lutra lutra*) are listed under Annex II of the Directive on the Conservation of Natural Habitats of Wild Fauna and Flora (92/43/EEC) ('EU Habitats Directive') and all are protected under the Irish Wildlife Acts 1976-2023. White-clawed crayfish (Füreder et al., 2010) are also listed as 'Endangered' according to the IUCN Red List. European eel are 'critically endangered' according to most recent ICUN red list (Pike et al., 2020) and listed as 'critically engendered' in Ireland (King et al., 2011).

[4] Otter signs within 150m of the survey site

5. Discussion

The River Boyne in the vicinity of the proposed Trim Millennium Pedestrian Bridge scheme (bridge replacement) is of international importance in terms of aquatic ecology given its location with the River Boyne And River Blackwater SAC (002299), a site designated for several aquatic species, namely Atlantic salmon, river lamprey and otter (NPWS, 2021).

Despite historical modifications from both arterial drainage and urbanisation (i.e. retaining walls, modified banks), the river at this location remains of considerable value for a range of aquatic species of high conservation value. Both Atlantic salmon and lamprey (*Lampetra* sp.) were detected via eDNA sampling and indeed spawning and nursery habitats for both species were present in vicinity of the existing footbridge. Good quality salmonid spawning and nursery habitat was located upstream of Millennium Bridge, with valuable holding areas for migratory adults present downstream (in deeper glide habitat). Spawning areas for *Lampetra* sp. were also present here although nursery areas were limited in extent and typically sub-optimal where present due to the shallow nature of sediments and or high sand content. Nevertheless, areas of marginal soft sediment downstream of Millennium Bridge likely support low densities of *Lampetra* sp. ammocetes, as routinely observed throughout the River Boyne (Gordon et al., 2023; Gallagher et al., 2022; O'Connor, 2006; Triturus data). The survey area (especially deep glide downstream) was of high suitability for Red-listed (King et al., 2011) and critically endangered (Pike et al., 2020) European eel, as well as a range of coarse fish species.

Although some good habitat suitability was present in terms of instream refugia (inclusive of old retaining walls), no white-clawed crayfish were recorded during the survey via hand searching or sweep netting. However, the species was detected by eDNA sampling (**Table 4.1**), confirming their presence at and or upstream of the sampling point. Records for crayfish are available throughout the River Boyne, including in the vicinity of Trim, although many are historical only. This is most likely due to the prevalence of crayfish plague, first known in the Boyne catchment in 1987 and detected again in recent years (Triturus 2021-2022 data). The presence of crayfish plague (confirmed via eDNA sampling) will continue to jeopardise the persistence of remaining Boyne crayfish populations. Crayfish plague is listed at one of the world's 100 worst invasive species (GISD, 2022; Lowe et al., 2000) and is becoming highly prevalent across Ireland.

Two otter spraint sites were recorded on the east and west bank of the River Boyne between Old Bridge and Millennium Bridge in October 2023. The survey area was considered to provide good foraging and commuting habitat although the generally high levels of human disturbance (urban centres, public footpaths etc.) and modified banks were unsuitable for breeding or resting areas – neither of which were identified within a 150m radius of the existing footbridge.

No rare or protected macro-invertebrate species (according to national red lists) were recorded in the samples taken from the River Boyne upstream and downstream of Millennium Bridge (**Table 4.2**). In terms of biological water quality, both sites achieved **Q3-4** (moderate status) due to the low abundances of pollution sensitive (EPA group A) taxa. Thus, the Boyne at this location failed to meet the target good status (≥Q4) requirements of the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 and the Water Framework Directive (2000/60/EC), in keeping with the most recent EPA monitoring data (2020). Significant hydromorphological modifications and

water quality pressures (including urban run-off, eutrophication & siltation) were noted during the surveys and are known to be the primary threats to water quality in the survey area (EPA data).

No examples of Annex I aquatic habitats associated with large lowland rivers including the Boyne were recorded in the study area. This included an absence of, 'Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation' [3260] or 'Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels' [6430].

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7. Appendix A – eDNA analysis lab report

Triturus

Folio No: 141-2023
Purchase Order: eDNA_OCT23
Contact: Triturus Environmental Ltd
Issue Date: 31.10.2023

eDNA Report

Technical Report

SureScreen Scientifics

Triturus

Folio No:	141-2023
Purchase Order:	eDNA_OCT23
Contact:	Triturus Environmental Ltd
Issue Date:	31.10.2023

SureScreen Scientifics

eDNA Analysis

Summary

When aquatic organisms inhabit a waterbody such as a pond, lake or river they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm the presence or absence of the target species within the waterbody.

Results

Lab ID	Site Name	OS Reference	Target Species	Sample Integrity Check	Result	Positive Replicates
11696	River Boyne, Millenium Bridge, Trim		Atlantic salmon	Pass	Positive	12
			Brook lamprey	Pass	Positive	12
			Crayfish plague	Pass	Positive	11
			White-clawed crayfish	Pass	Positive	2

Matters affecting result: none

Reported by:Lauryn Jewkes

Approved by: Chelsea Warner

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Triturus

Folio No:	141-2023
Purchase Order:	eDNA_OCT23
Contact:	Triturus Environmental Ltd
Issue Date:	31.10.2023

SureScreen Scientifics

Methodology

Samples have been analyzed for the presence of target species eDNA following readily available and scientifically published eDNA assays and protocols.

The analysis is conducted in two phases. The sample first goes through an extraction process where the filter is incubated in order to obtain any DNA within the sample. The extracted sample is then tested via real-time PCR (also called q-PCR) for each of the selected target species. This process uses species-specific molecular markers (known as primers) to amplify a select part of the DNA, allowing it to be detected and measured in 'real time' as the analytical process develops. qPCR combines amplification and detection of target DNA into a single step. With qPCR, fluorescent dyes specific to the target sequence are used to label targeted PCR products during thermal cycling. The accumulation of fluorescent signals during this reaction is measured for fast and objective data analysis. The primers used in this process are specific to a part of mitochondrial DNA only found in each individual species. Separate primers are used for each of the species, ensuring no DNA from any other species present in the water is amplified. If target species DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If target DNA is not present then amplification does not occur, and a negative result is recorded.

Analysis of eDNA requires scrupulous attention to detail to prevent the risk of false positive and false negative results. True positive controls, negative controls, and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared. Stages of the analysis are also conducted in different buildings at our premises for added security. SureScreen Scientifics Ltd is ISO9001 accredited and participates in Natural England's proficiency testing scheme for GCN eDNA testing.

Interpretation of Results

Sample Integrity Check:

Laboratory Arrival:

When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results. Any samples which fail this test are rejected and eliminated before analysis.

Degradation and Inhibition check:

Analysis of the spiked DNA marker to see if there has been degradation or inhibition of the kit or sample, between the date it was made to the date of analysis. Degradation of the spiked DNA marker may indicate a risk of false negative results. If inhibition is detected, samples are purified and re-analyzed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

Result:

Presence of eDNA (Positive/Negative/Inconclusive)

Positive: DNA was identified within the sample, indicative of species presence within the sampling location at the time the sample was taken or within the recent past.

Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for species presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. Even a score as low as 1/12 is declared positive. 0/12 indicates negative species presence.

Negative: eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of species absence, however, does not exclude the potential for species presence below the limit of detection.

Inconclusive: Controls indicate inhibition or degradation of the sample, resulting in the inability to provide conclusive evidence for species presence or absence.

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P22-256- Trim Millennium Pedestrian Bridge Scheme 2022: Ornithology Summary

Table 1: Survey Details

Survey	Date	Surveyor	Start	End	Cloud (out of 8)	Visibility	Rain	Wind
VP survey from bridge	06/07/2023	Seán Ronayne	08:30	10:30	7	Good	Dry	F3, S
Transect survey following river from 53.557693, -6.796415 to 53.555497, -6.769438	06/07/2023	Seán Ronayne	10:41	11:30	7	Good	Dry	F3, S
VP survey from bridge	24/07/2023	Seán Ronayne	09:10	11:10	2	Good	Dry	F2, N
Transect survey following river from 53.557693, -6.796415 to 53.555497, -6.769438	24/07/2023	Seán Ronayne	11:15	12:15	7	Good	Dry	F2, N
VP survey from bridge	08/08/2023	Seán Ronayne	08:30	10:30	7	Good	Dry	F1, NE
Transect survey following river from 53.557693, -6.796415 to 53.555497, -6.769438	08/08/2023	Seán Ronayne	08:30	10:30	7	Good	Dry	F1, NE

No kingfishers were present during any of the six surveys conducted. There is no suitable habitat for breeding and during the second two site visits, water levels were high, and the river was moving too fast for foraging by kingfisher. It is probable that previous sightings here refer to birds having moved out of their respective breeding territories.

Thus, works conducted during the breeding season, based on the findings of this survey, would not cause disturbance to the species. Works outside the breeding season may cause temporary disturbance.

It was noted that Peregrine Falcon was frequent in the area, with six sightings in total, spread across every survey date. The species likely breeds in Trim Castle or nearby. Works are unlikely to affect this species which shows a high degree of tolerance to human activity. As works would be focused on the river, this species is unlikely to be affected.

In terms of red-listed species (see table 2 below), swifts typically breed in cavities in buildings which could include Trim Castle. Grey wagtails nest along watercourses and could nest within the vicinity or indeed the immediate footprint of the works. Works conducted in the winter season would avoid causing direct disturbance to both of these species. Swift is unlikely to be affected because of their lack of presence in winter, and their nesting requirements, however, if works were to be conducted in summer, any active grey wagtail territory in the near vicinity or footprint of the works would need to be eliminated by a qualified ornithologist.

Table 2: Additional species recorded on surveys.

Species	Latin name	BoCCI Status	Annex I	Visit 1	Visit 2	Visit 3
Blackbird	*Turdus merula*	Green	No	✓	✓	✓
Blackcap	*Sylvia atricapilla*	Green	No	✓	✓	✓
Black-headed Gull	*Chroicocephalus ridibundus*	Amber	No	✓		
Blue Tit	*Cyanistes caeruleus*	Green	No	✓	✓	✓
Bullfinch	*Pyrrhula pyrrhula*	Green	No		✓	✓
Chaffinch	*Fringilla coelebs*	Green	No	✓	✓	✓
Chiffchaff	*Phylloscopus collybita*	Green	No	✓	✓	✓
Coal Tit	*Periparus ater*	Green	No		✓	
Collared Dove	*Streptopelia decaocto*	Green	No	✓		✓
Dipper	*Cinclus cinclus*	Green	No	✓		
Dunnock	*Prunella modularis*	Green	No	✓	✓	✓
Feral Pigeon	*Columba livia*	Green	No	✓	✓	✓

Species	Latin name	BoCCI Status	Annex I	Visit 1	Visit 2	Visit 3
Goldfinch	*Carduelis carduelis*	Green	No	✓	✓	✓
Great Tit	*Parus major*	Green	No	✓		✓
Greenfinch	*Carduelis chloris*	Amber	No	✓	✓	✓
Grey Heron	*Ardea cinerea*	Green	No	✓		
Grey Wagtail	*Motacilla cinerea*	Red	No	✓	✓	✓
Herring Gull	*Larus argentatus*	Amber	No	✓	✓	✓
Hooded Crow	*Corvus cornix*	Green	No	✓	✓	✓
House Martin	*Delichon urbicum*	Amber	No	✓	✓	✓
House Sparrow	*Passer domesticus*	Amber	No	✓	✓	
Jackdaw	*Corvus monedula*	Green	No	✓	✓	✓
Lesser Black-backed Gull	*Larus fuscus*	Amber	No	✓	✓	✓
Lesser Redpoll	*Carduelis cabaret*	Green	No	✓	✓	✓
Linnet	*Carduelis cannabina*	Amber	No	✓	✓	
Magpie	*Pica pica*	Green	No			✓
Mistle Thrush	*Turdus viscivorus*	Green	No			✓
Pied/White Wagtail	*Motacilla alba*	Green	No			✓
Raven	*Corvus corax*	Green	No		✓	✓
Robin	*Erithacus rubecula*	Green	No	✓	✓	✓
Rook	*Corvus frugilegus*	Green	No	✓		
Sand Martin	*Riparia riparia*	Amber	No	✓	✓	✓
Song Thrush	*Turdus philomelos*	Green	No	✓	✓	
Starling	*Sturnus vulgaris*	Amber	No	✓	✓	✓
Swallow	*Hirundo rustica*	Amber	No	✓	✓	✓
Swift	*Apus apus*	Red	No	✓	✓	✓
Willow Warbler	*Phylloscopus trochilus*	Amber	No		✓	✓
Woodpigeon	*Columba palumbus*	Green	No	✓	✓	✓
Wren	*Troglodytes troglodytes*	Green	No	✓	✓	✓

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