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EIRPSAN BRIDGE MANAGEMENT SYSTEM

Task Order No. 265
Leinster Bridges – Term
Maintenance Contract No. 3

Natura Impact Statement No. 2



April 2021 v2



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1. INTRODUCTION

1.1 Background

The EIRSPAN Bridge Management System covers all aspects of bridge management, including routine maintenance. Over the past number of years routine maintenance contracts have been undertaken by private contractors under Bridge Term Maintenance contracts.

This contract will run until 2021, where it is intended to carry out annual routine maintenance work between 1st March and 30th September in each of the years 2018, 2019, 2020 and 2021, with a defects period extending for a further year.

Bridge inspections are carried out according to the EIRSPAN Bridge Management System Routine Maintenance Manual (TII, 2017). The undertaking of bridge inspections generates data that is entered into an EIRSPAN database and works orders are produced for each bridge, which details the works to be undertaken for each component of that bridge. The works orders detail "routine maintenance works" as set out in the manual.

Routine maintenance works are defined in the guidance document as "*works that are carried out at regular intervals*", the objective of which is to "*undertake cleaning and minor maintenance works to avoid or delay the development of deterioration*" (TII, 2017). Appendix J of the manual details the work specifications for routine maintenance works.

Non-routine or reactive works, which usually occur as a result of isolated incidents such as collisions or erosion damage due to floods (TII, 2017), are not included in the Works Orders under the Leinster Bridges Term Maintenance Contract No. 3. Such works will be subject to Screening for Appropriate Assessment as they arise.

During the last programme of maintenance works, 2013-2015 Term Maintenance Contract No. 2, in-stream maintenance works included works to bridge elements such as piers, wing walls and abutments. However, as much of this work was carried out during the 2013-2015 maintenance contract, the scale of interventions required in 2018 and 2019 is such that many bridges require little or no in-stream works.

As the maintenance contract is to run over a 4-year period, the Contractor is required to employ a suitably qualified ecologist to provide advice on the ecological features and constraints at specific bridge locations as the project progresses.

The Contractor is expected by the Contract to adhere to the level of best practice as espoused in these and other accepted/published best practice for on-site works; these requirements are also specifically included in the Contract. As part of the Contract, a Resident Engineer (RE) will oversee works on behalf of Transport Infrastructure Ireland (TII).

In accordance with Article 6(3) of Council Directive 92/43/EEC of 21st May 1992 on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive"), as transposed into Irish law by Part 5 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended) ("the Habitats Regulations") and Part XAB of the Planning and Development Act, 2000 (as amended) ("the Planning and Development Act"), an Appropriate Assessment (AA) Screening Report was prepared to assess whether or not the proposed routine maintenance works, either individually

or in combination with other plans or projects, were likely to have adverse effects on one or more sites of Community importance (“European sites”) for nature conservation.

The AA Screening for the works, which was carried out by TII, concluded, in view of best scientific knowledge and the Conservation Objectives of the sites concerned, that, in the absence of appropriate mitigation, the proposed works were likely to have adverse effects on one or more European sites. TII’s determination was based on the works involving in-stream concrete works within or upstream of European sites. On the basis of this conclusion, TII, in its capacity as the Competent Authority at the screening stage, determined that AA was required in order to assess the implications of the proposed works.

This document comprises the NIS in respect of the proposed works at three structures and has been prepared by ROD on behalf of TII. It contains an examination, analysis and evaluation of the likely impacts from the proposed works, both individually and in combination with other plans and projects, in view of best scientific knowledge and the Conservation Objectives of the European sites concerned. It also prescribes appropriate mitigation to ensure that the proposed works will not adversely affect the integrity of those sites. Finally, it provides complete, precise and definitive findings which are capable of removing all reasonable scientific doubt as to the absence of adverse effects on the integrity of the European sites concerned.

Approvals under Section 50 of the Arterial Drainage Act, 1945 (as amended) were received from the Office of Public Works (OPW) on 3rd September 2020 for the works at Ballyragget Bridge and Tagoat Bridges. Any conditions attached to the Section 50 permissions have been included in the mitigation measures in this NIS.

1.2 Legislative Context

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

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

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

The requirements arising out of Article 6(3) are transposed into Irish law by Part 5 of the Habitats Regulations, and the assessment is referred to as “Appropriate Assessment” (AA).

The determination of whether or not a plan or project meets the two thresholds for requiring AA is referred to as “Stage 1” or “AA Screening”. The first threshold is reached if the plan or project is not directly connected with or necessary to the management of one or more European sites. In its ruling in the Waddenzee case¹, the Court of Justice of the European Union (CJEU) interpreted the second threshold as being reached where “*it cannot be excluded, on the basis of objective information, that [the plan or project] will have a significant effect on that site*”. Thus, in applying the Precautionary Principle, the CJEU interpreted the word “likely” to mean that, as long as it cannot be demonstrated that an effect will not occur, that effect is considered “likely”. A likely effect is considered to be “significant” only if it interrupts or causes a delay in achieving the Conservation Objectives of the site concerned.²

Prior to approval of a plan or project which is the subject of AA (also referred to as “Stage 2”), it is necessary to “ascertain” that the plan or project will not “*adversely affect the integrity of the site*”. In its guidance document (EC, 2001), the European Commission stated that “*the integrity of a site involves its ecological functions*” and that “*the decision as to whether it is adversely affected should focus on and be limited to the site’s conservation objectives*”. Regarding the word “ascertain”, the CJEU, also in its ruling in the Waddenzee case, interpreted this as meaning “*where no reasonable scientific doubt remains as to the absence of such effects*”. Therefore, the legal test at Stage 2 is satisfied (and the plan or project may be authorised) when it can be demonstrated beyond reasonable scientific doubt that the plan or project will not interrupt or cause delays in the achievement of the Conservation Objectives of the site or sites concerned. AA is informed by a “Natura Impact Report” (NIR) in the case of plans or a “Natura Impact Statement” (NIS) in the case of projects.

The CJEU has made a relevant judgment on what information should be contained within documents supporting AA³ (in the NIR or NIS):

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

The Irish High Court has also provided clarity on how competent authorities should undertake valid and lawful AA⁴, directing that the AA:

“Must identify, in the light of the best scientific knowledge in the field, all aspects of the development project which can, by itself or in combination with other plans or projects, affect the European site in the light of its conservation objectives. This clearly requires both examination and analysis.”

“Must contain complete, precise and definitive findings and conclusions and may not have lacunae or gaps. The requirement for precise and definitive findings and conclusions appears to require examination, analysis, evaluation and decisions. Further, the reference to findings and conclusions in a scientific context requires both findings following analysis and conclusions following an evaluation of each in the light of the best scientific knowledge in the field.”

¹ Landelijke Vereniging tot Behoud van de Waddenzee, Nederlandse vereniging tot Bescherming van Vogels v. Staatssecretaris van Landbouw, Natuurbeheer en Visserij (Waddenzee) [2004] C-127/02 ECR I-7405.

² Conservation Objectives are referred to, but not defined, in the Habitats Directive. In Ireland, Conservation Objectives are set for Qualifying Interests (the birds, habitats or other species for which a given European site is selected) and represent the overall target that must be met for that Qualifying Interest to reach or maintain favourable conservation condition in that site and contribute to its favourable conservation status nationally.

³ Sweetman v. An Bord Pleanála [2013] Case C-258/11.

⁴ Kelly v. An Bord Pleanála [2014] IEHC 422.

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

In accordance with Article 6(3) of the Habitats Directive, the responsibility to screen for and carry out AA lies solely with the “competent national authorities”, i.e. those with responsibility for granting or refusing consent for plans and projects. In that respect, an AA Screening Report, NIR or NIS (if not prepared by the competent authority) does not in itself constitute a valid AA Screening or AA; it merely provides the competent authority with the information that it needs in order to screen for and carry out its AA. In Ireland, the competent authority for a given plan or project is the relevant planning authority, e.g. Transport Infrastructure Ireland.

1.3 Methodology

On the basis of the objective information provided in the AA Screening spreadsheet and in view of the Conservation Objectives of the relevant European sites, TII, as the competent authority, determined that the proposed works, either individually or in combination with other plans and projects, was likely to have a significant effect on one or more European site.

In accordance with the requirements for AA, this NIS assesses the likely effects of the proposed works on the integrity of the European sites “screened in” at Stage 1. This assessment is undertaken in six steps, as follows:

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

The following guidance documents informed the assessment methodology:

- DEHLG (2010) *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities*. Department of the Environment, Heritage and Local Government, Dublin.
- NPWS (2010) *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities*. Circular Letter NPWS 1/10 & PSSP 2/10. National Parks & Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin.
- EC (2001) *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. Environment Directorate-General of the European Commission.
- EC (2018) *Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*. European Commission, Brussels

2. EUROPEAN SITES

Section 3.2.3 of DEHLG (2010) outlines the procedure for selecting the European sites to be considered in AA. It states that European sites potentially affected should be identified and listed, bearing in mind the potential for direct, indirect and cumulative effects. It also states that the specific approach in each case is likely to differ depending on the scale and likely effects of the plan or project. In the case of the works subject to AA in this NIS, the likely zone of impact included all European sites within 500 m of the works, plus 5 km downstream of the works. There are four European sites within the likely zone of impact, namely the:

- River Barrow and River Nore SAC [000781];
- River Nore SPA [004233];
- Slaney River Valley SAC [000781]; and,
- Wexford Harbour and Slobs SPA [004076].

The four European sites where adverse effects could not be excluded are summarized below.

2.1 River Barrow and River Nore SAC

Site Overview

This site consists of the freshwater stretches of the Barrow and Nore River catchments as far upstream as the Slieve Bloom Mountains, and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The site passes through eight counties: Offaly, Kildare, Laois, Carlow, Kilkenny, Tipperary, Wexford and Waterford. Towns along the edge of the site include Mountmellick, Portarlington, Monasterevin, Stradbally, Athy, Carlow, Leighlinbridge, Graiguenamanagh, New Ross, Inistioge, Thomastown, Callan, Bennettsbridge, Kilkenny and Durrow. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow, and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore.

Overall, the site is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II to the Habitats Directive. Furthermore, it is of high conservation value for the populations of bird species that use it. The occurrence of several Red Data Book plant species including three rare plants in the salt meadows [REDACTED]

Qualifying Interests of the Site

- [1130] Estuaries
- [1140] Mudflats and sandflats not covered by seawater at low tide
- [1170] Reefs
- [1310] Salicornia and other annuals colonising mud and sand
- [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)
- [1410] Mediterranean salt meadows (*Juncetalia maritimi*)
- [3260] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation

2.2 River Nore SPA

Site Overview

The River Nore SPA is a long, linear site that includes the following river sections: the River Nore from the bridge at Townparks, (north-west of Borris in Ossory) to Coolnamuck (approximately 3 km south of Inistioge) in Co. Kilkenny; the Delour River from its junction with the River Nore to Derrynaseera bridge (west of Castletown) in Co. Laois; the Erkina River from its junction with the River Nore at Durrow Mills to Boston Bridge in Co. Laois; a 1.5 km stretch of the River Goul upstream of its junction with the Erkina River; the Kings River from its junction with the River Nore to a bridge at Mill Island, Co. Kilkenny. The site includes the river channel and marginal vegetation. For a large part of its course the River Nore traverses Carboniferous limestone plains; it passes over a narrow band of Old Red Sandstone rocks below Thomastown. The River Nore SPA is of high ornithological importance as it supports a nationally important population of Kingfisher, a species that is listed on Annex I of the E.U. Birds Directive. A survey in 2010 recorded 16 probable and 6 possible Kingfisher territories within the SPA. The population within the site was, therefore, estimated to be 22 pairs.

Qualifying Interests of the Site

[A229] Kingfisher (*Alcedo atthis*)

Sensitivities of the Site and its Qualifying Interests

The main threats which have been identified for this site include: landfill sites; drying out and reclamation of land; and, port areas. The most important threats to and pressures acting on Kingfisher include: pollution of surface waters; invasive species; anthropogenic changes in hydraulic conditions; outdoor recreation; agriculture; and, transport infrastructure. All of these threats and pressures are important insofar as they provide for habitat loss and reductions in habitat quality, and are all considered to be of low importance.

2.3 Wexford Harbour Slobs SPA

Site Overview

Wexford Harbour is the lowermost part of the estuary of the River Slaney, a major river that drains much of the south-east region. The site is divided between the natural estuarine habitats of Wexford Harbour, the reclaimed polders known as the North and South "Slobs" and the tidal section of the River Slaney. The seaward boundary extends from the Rosslare peninsula in the south to the area just west of The Raven Point in the north. Shallow marine water is a principal habitat, but at low tide extensive areas of intertidal flats are exposed. Wexford Harbour and Slobs is one of the top three sites in the country for numbers and diversity of wintering birds. The combination of estuarine habitats, including shallow waters for grebes, diving ducks and sea ducks, and the farmland of the polders, which include freshwater drainage channels, provides optimum feeding and roost areas for a wide range of species.

Qualifying Interests of the Site

[A004] Little Grebe (*Tachybaptus ruficollis*)

[A005] Great Crested Grebe (*Podiceps cristatus*)

[A017] Cormorant (*Phalacrocorax carbo*)

[A028] Grey Heron (*Ardea cinerea*)

- [A037] Bewick's Swan (*Cygnus columbianus bewickii*)
- [A038] Whooper Swan (*Cygnus cygnus*)
- [A046] Light-bellied Brent Goose (*Branta bernicla hrota*)
- [A048] Shelduck (*Tadorna tadorna*)
- [A050] Wigeon (*Anas penelope*)
- [A052] Teal (*Anas crecca*)
- [A053] Mallard (*Anas platyrhynchos*)
- [A054] Pintail (*Anas acuta*)
- [A062] Scaup (*Aythya marila*)
- [A067] Goldeneye (*Bucephala clangula*)
- [A069] Red-breasted Merganser (*Mergus serrator*)
- [A082] Hen Harrier (*Circus cyaneus*)
- [A125] Coot (*Fulica atra*)
- [A130] Oystercatcher (*Haematopus ostralegus*)
- [A140] Golden Plover (*Pluvialis apricaria*)
- [A141] Grey Plover (*Pluvialis squatarola*)
- [A142] Lapwing (*Vanellus vanellus*)
- [A143] Knot (*Calidris canutus*)
- [A144] Sanderling (*Calidris alba*)
- [A149] Dunlin (*Calidris alpina*)
- [A156] Black-tailed Godwit (*Limosa limosa*)
- [A157] Bar-tailed Godwit (*Limosa lapponica*)
- [A160] Curlew (*Numenius arquata*)
- [A162] Redshank (*Tringa totanus*)
- [A179] Black-headed Gull (*Chroicocephalus ridibundus*)
- [A183] Lesser Black-backed Gull (*Larus fuscus*)
- [A195] Little Tern (*Sterna albifrons*)
- [A395] Greenland White-fronted Goose (*Anser albifrons flavirostris*)
- [A999] Wetland and Waterbirds

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the Wexford Harbour and Slob SPA come from fertilisation, aquaculture, grazing and hunting. Roads, urbanisation and human recreational activities also act as pressures on this site.

2.4 Slaney River Valley SAC

Site Overview

The Slaney River Valley comprises the freshwater stretches of the River Slaney (a major river that drains much of the south-east region) as far as the Wicklow Mountains flowing through the Counties of Wicklow, Wexford and Carlow. The tidal and freshwater boundary of the River Slaney is defined as the Old Bridge in Enniscorthy under section 10 of the Fisheries (Consolidation) Act, 1959. However, Inland Fisheries Ireland advise there is no saline influence at Enniscorthy and that this is the case for some distance downstream until Mackmine Bridge. The site supports populations of several species listed on Annex II to the Habitats Directive, and habitats listed on Annex I of this Directive, as well as important numbers of wintering wildfowl including some species listed on Annex I to the Birds Directive. The presence of wet and broadleaved woodlands increases the overall habitat diversity and the occurrence of a number of Red Data Book plant and animal species adds further importance to the site. Overall it is of considerable conservation significance.

Qualifying Interests of the Site

- [1130] Estuaries
- [1140] Mudflats and sandflats not covered by seawater at low tide
- [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)
- [1410] Mediterranean salt meadows (*Juncetalia maritimi*)
- [3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation
- [91A0] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles
- [91E0] *Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)

- 
- [1095] Sea Lamprey (*Petromyzon marinus*)
 - [1096] Brook Lamprey (*Lampetra planeri*)
 - [1099] River Lamprey (*Lampetra fluviatilis*)
 - [1103] Twaité Shad (*Alosa fallax*)
 - [1106] Atlantic Salmon (*Salmo salar*)
 - [1355] Otter (*Lutra lutra*)
 - [1365] Common (Harbour) Seal (*Phoca vitulina*)

Sensitivities of the Site and its Qualifying Interests

The greatest pressures/threats to the integrity of the Slaney River Valley SAC come from agriculture, fishing, and industrial activities. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of Habitats Directive Annex II animal species within it. The spread of exotic species is reducing the quality of the woodlands within the site.

3. THE PROPOSED WORKS

3.1 Installation of concrete bases to corrugated culverts

Concrete bases are required to prevent corrosion of corrugated steel culverts. The following description of the proposed works is taken from the *Lot 3 Leinster Bridges Term Maintenance Contract No. 3 Volume A: Works Requirements Part 3: Specification*:

The contractor shall remove all silt/debris and deposit buildups from the structure ensuring appropriate downstream silt containment measures are in place. The existing invert shall be prepared for the installation of the sprayed concrete invert by cleaning back to bright steel. Removal of all detrimental contamination and corrosion products using handheld tools to produce a generally bright appearance overall. The surfaces shall be free of embedded abrasive particles and corrosion products when viewed through a x10 illuminated magnifying glass. The invert shall then be coated with a corrosion inhibitor such as Galvafruid manufactured by Fosroc or equivalent approved. An anti-corrosion steel primer such as Nitoprime Zincrich Plus by Fosroc or equivalent to be used to prime the steel. Where site conditions allow, a flume shall be created to convey the river/stream flows through the culvert. Supervision of any necessary pumping is required to ensure pumps do not switch off resulting in downstream going dry.

3.2 Installation of concrete apron

The following description of the proposed works is taken from the *Lot 3 Leinster Bridges Term Maintenance Contract No. 3 Volume A: Works Requirements Part 3: Specification*:

Base protection shall be provided where there is evidence of water ponding around wing/spandrel/retaining walls. This will take the form of a sloped concrete apron. Where wing wall footings have been identified as at risk of undermining, by washout, embankment instability or other means, mass concrete of not less than Grade C20/25 shall be placed and compacted in any void and an apron of not less than 300mm depth (below ground level) and 300mm width provided immediately in front of the wall over the length and width specified or otherwise directed by the Employers Representative.

3.3 Masonry repointing and repair

The following description of the proposed works is taken from the *Lot 3 Leinster Bridges Term Maintenance Contract No. 3 Volume A: Works Requirements Part 3: Specification*:

Prior to commencement of all repointing and repair works, all vegetation and algae to be removed from face of walls and arch barrel soffits in accordance with the specification. Loose and cracked pointing shall be raked out to sound material and the joint cleaned. All such joints and joints with deep pointing shall be repointed flush with the masonry face. All repointing shall be undertaken with lime mortar. The colour of the mortar shall match the existing to the reasonable satisfaction of the Engineer.

Repointing shall only be undertaken by stonemasons who have attended the TII approved 'Masonry Arch Bridge Repair Workshop' or are members of the Guild of Master Craftsmen and their qualifications shall be submitted to the Employers Representative. Hand pointing only required to a depth not exceeding 50 mm.

4. THE STRUCTURES

4.1 County Kilkenny

4.1.1 Ballyragget Pipe Bridge [KK-N77-005.00]

Ballyragget Pipe Bridge is a corrugated steel pipe measuring 2.85 m in diameter and 26 m in length. The slope of the culvert is ~1:650. The bridge is located c. 300 m west of Ballyragget, Co. Kilkenny (ITM 644526.97670897.65). It is within the River Barrow and River Nore SAC and flows into the River Nore SPA <30 m downstream.

During the survey in 2018, the stream was 1 m wide and < 10 cm deep. The stream drains a field which regularly floods and flows into the River Nore, which is 80 m downstream of the culvert. During dry periods there is no flow. Plate 4.1A and 4.1B below show the pipe inlet.

The results of the hydraulic analysis obtained for the Ballyragget structure show that the Q100 (including 20% extra for climate change) flood level rises by a maximum of 192 mm within the structure between the existing scenario for the structure and the proposed scenario after the maintenance works are undertaken. The lands adjacent to the channel are agricultural and flood often from the River Nore. Impacts as a result of the proposed culvert maintenance upstream and downstream are considered negligible. The works at Ballyragget Pipe Bridge are expected to take approximately one week.



Plate 4.1A



Plate 4.1B

The following works are proposed at this structure:

- Installation of concrete base (70 m²).

The Qualifying Interests of the River Barrow and River Nore SAC and the River Nore SPA are listed in Section 2.1 and 2.2 respectively. The work elements along with the potential for the works to have adverse effects is discussed in Table 4.1 below.

Table 4.1 Works elements and potential to lead to adverse effects.

Works element	Is there potential for adverse effects?
Installation of concrete base	Yes - Installing the concrete base will require dewatering of the channel at this structure which could lead to impacts on aquatic life, including Qualifying Interests of the SAC and SPA. Mitigation measures are required to prevent adverse effects.

The works could lead to the accidental introduction of cementitious materials, sediment and other pollutants to the watercourse. There is potential for adverse effects on Freshwater Pearl Mussel, White-clawed Crayfish, Lamprey species, Atlantic Salmon, Otter and Kingfisher. The remaining Qualifying Interests are associated with estuarine habitats downstream below the tidal limit (>50 km downstream at Inistoige) or are terrestrial habitats which are not hydrologically connected to or present at the location of the works.

The stream does not contain suitable habitat for Freshwater Pearl Mussel because it is not permanently wet. [REDACTED] A survey of the main channel of the River Nore immediately downstream of the confluence of the stream and the River Nore did not record any Freshwater Pearl Mussel. [REDACTED]

[REDACTED]

The River Nore SPA is designated for the protection of Kingfisher (Section 2.2). There will be no direct physical loss, disturbance or damage to suitable Kingfisher nesting habitat inside or outside the SPA.

Mitigation

In order to avoid adverse effects on the Qualifying Interests as a result of the proposed works, the following mitigation measures will be implemented:

Installation of concrete base (70 m²)

- In order to protect fisheries, in-stream works will only be undertaken during the period beginning 1st July and ending 30th September, subject to agreement with IFI.
- The Contractor will procure a suitably qualified Ecologist to oversee the works and provide advice in relation to the works, impacts and mitigation measures.
- The installation of the concrete base will take place in dry weather and when no heavy rain is forecast in the next seven days. The commencement of the works will be approved by the Employer's Representative.
- Water will be diverted away from the works area using temporary dams above and below the structure. The dams will be constructed using sandbags and plastic sheeting or similar. Rubber 'aqua dams' are also acceptable. The area between the dams will then be dewatered using a pump.
- A flume will be constructed to carry the stream through the culvert while allowing the concrete base to be installed. The flume will have a screen at the inlet to prevent fish and debris entering it.
- All water being pumped out will pass through a silt trap to prevent silt entering the water downstream. The silt trap will be approved by the Employer's Representative and the Contractor's Ecologist.
- The pump will be supervised at all times to ensure it is operating correctly. A secondary pump will be available on site as a backup for the primary pump.
- During dewatering, the culvert will be supervised by the Contractor's Ecologist, and any fish or crayfish will be removed by hand and placed in the river immediately downstream of the dewatered area. A suitable receptor site for crayfish will be determined by the Contractor's Ecologist prior to dewatering. The dams will be checked prior to cleaning of the structure base to ensure there are no leaks.
- Following dewatering, any silt, gravel or other debris in the culvert will be removed either by hand using buckets or by suction to a vehicle on the bridge deck, where it will be disposed of off-site. If power hosing is used to loosen debris from the culvert, the water shall be clean, fresh and potable and obtained from a Public Utility Undertaking approved by the Employer's Representative.
- Any material scoured from the base prior to concrete pouring, including the contents of the silt trap, will be collected and disposed of off-site.
- A corrosion inhibitor and primer will be applied to the steel. These products will be approved for use in water and certified as non-toxic to aquatic ecosystems. Products containing polyurethane based coatings are considered the safest for

use in aquatic environments, whereas products containing 4-tert-butylphenol (4tBP) should be avoided. The selected product will be approved for use by the Employer's Representative and the Contractor's Ecologist.

- While the concrete is setting, the dams will be checked daily to ensure they are working correctly.
- The concrete base will be checked by the Employer's Representative prior to removal of the dam to ensure the base is dry.
- Any temporary lighting will be restricted to the works area and will avoid illumination of the watercourse. The area inside the dam will be fitted with a ramp to allow Otter to escape. Otter will be prevented from entering pipes by using screens, silt bags or other capping.
- All equipment, including PPE, which comes into contact with the watercourse will be cleaned prior to use and will be disinfected prior to leaving each site using Virkon Aquatic or similar. Equipment will be disinfected at least 20 m from the watercourse.
- A method statement will be produced by the Contractor and approved by the Employer's Representative and the Contractor's Ecologist. It will also be submitted to IFI for approval. The method statement will contain the following measures to protect water quality:
 - Cementitious material shall not be allowed to enter the watercourse.
 - Plant are not permitted to enter the watercourse.
 - Stockpiling of materials and/or storage of fuels shall not be permitted at the site.
 - Refuelling shall not be permitted within 50 m of the watercourse.
 - Spill kits shall be available on-site.

Removal of exposed rebar on northeast spandrel wall next to fence (0.1 m²)

- The works will be undertaken on foot.
- Concrete will be mixed in a watertight container at least 20 m from the watercourse.
- Only one bucket of mixed concrete will be brought to the works site at any time.
- A mobile catch-net will be used to prevent wet concrete falling on the ground or entering the watercourse.
- The catch-net will be approved by the Employer's Representative and the Contractor's Ecologist.
- Wet concrete will only be used where no rain is forecast for at least 12 hours.
- All equipment including PPE which comes into contact with watercourses will be clean and will be disinfected prior to leaving each site using Virkon Aquatic or similar.

Assessment of in-combination effects

Due to the small scale and temporary nature of the proposed works and provided the mitigation described above is followed, there is no potential for in-combination effects within other plans and projects.

Residual Impacts and Conclusion/ Recommendation

It is the considered opinion of ROD, as the author of this NIS, that, in making its AA in respect of the works proposed at Ballyragget Pipe Bridge [KK-N77-005.00], Transport Infrastructure Ireland, as the Competent Authority in this case, can determine that, given the full and proper implementation of the mitigation prescribed in this NIS, the proposed works, either individually or in combination with other plans or projects, will not adversely affect the integrity of the River Barrow and River Nore SAC, the River Nore SPA or any other European site.

4.2 County Wexford

4.2.1 Tagoat Bridge [WX-N25-002.00]

Tagoat Bridge is a single-span, 9.6 m long and 2.5 m wide masonry arch bridge, which is extended by a 17 m long, 1.7 m diameter corrugated pipe. A shallow stream flows through it and it is easily accessible on foot. The structure is located in the village of Tagoat, Co. Wexford (ITM 709895 611434). The structure is 4 km upstream of the South Slobbs which are part of the Wexford Harbour and Slobbs SPA, and 7 km upstream of Wexford Harbour which is designated as the Slaney River Valley SAC. Plate 4.2 below shows the inlet.

The results of the hydraulic analysis obtained for the Tagoat structure show that the Q100 (including 20% extra for climate change) flood level rises by a maximum of 224 mm within the structure between the existing scenario for the structure and the proposed scenario after the maintenance works are undertaken. Flooding stays in bank along the entire modelled reach in all scenarios. The proposed works will not lead to any change in flow through the culvert and the gradient, which is 1.79% and cross section will remain the same as before the proposed works. The only difference will be a slight deepening of the channel upstream of the culvert. Impacts as a result of the proposed culvert maintenance upstream and downstream are considered negligible.

The works at Tagoat Bridge are expected to take approximately one week and will include the installation of the concrete base in the masonry arch as well as the corrugated steel structure.



Plate 4.2

The following works are proposed at this structure:

- Installation of concrete base (40 m²).
- Removal of exposed rebars on northeast spandrel wall next to fence (0.1 m²).

The Qualifying Interests of the Wexford Harbour and Slobs SPA and the Slaney River Valley SAC are listed in Sections 2.3 and 2.4 respectively. The work elements along with the potential for the works to have adverse effects is discussed in Table 4.2 below.

Table 4.2 Works elements and potential to have adverse effects.

Works element	Is there potential for adverse effects?
Installation of concrete base	Yes. Installation of the concrete base has the potential to lead to water quality impacts arising from the introduction of cementitious materials, sediment and other pollutants to the watercourse.
Removal of exposed rebars on northeast spandrel wall next to fence	Yes. The use of wet concrete close to the watercourse which flows into two European sites has the potential to lead to adverse effects arising from the introduction of cementitious materials, sediment and other pollutants to the watercourse.

The works could lead to the accidental introduction of cementitious materials, sediment and other pollutants to the watercourse. There is potential for adverse effects on the Qualifying Interests of the European Sites that occur downstream of the works.

Mitigation

In order to avoid adverse effects on the Qualifying Interests as a result of the proposed works, the following mitigation measures will be implemented:

Installation of concrete base (40 m²)

- In order to protect fisheries, in-stream works will only be undertaken during the period beginning 1st July and ending 30th September, subject to agreement with IFI.
- The Contractor will procure a suitably qualified Ecologist to oversee the works and provide advice in relation to the works, impacts and mitigation measures.
- The installation of the concrete base will take place in dry weather and when no heavy rain is forecast in the next seven days. The commencement of the works will be approved by the Employer's Representative.
- Water will be diverted away from the works area using temporary dams above and below the structure. The dams will be constructed using sandbags and plastic sheeting or similar. Rubber 'aqua dams' are also acceptable. The area between the dams will then be dewatered using a pump.
- A flume will be constructed to carry the stream through the culvert while allowing the concrete base to be installed. The flume will have a screen at the inlet to prevent fish and debris entering it.
- All water being pumped out will pass through a silt trap to prevent silt entering the water downstream. The silt trap will be approved by the Employer's Representative and the Contractor's Ecologist.
- The pump will be supervised at all times to ensure it is operating correctly. A secondary pump will be available on site as a backup for the primary pump.
- During dewatering, the culvert will be supervised by the Contractor's Ecologist, and any fish or crayfish will be removed by hand and placed in the river immediately downstream of the dewatered area. A suitable receptor site for crayfish will be determined by the Contractor's Ecologist prior to dewatering. The dams will be checked prior to cleaning of the structure base to ensure there are no leaks.
- Following dewatering, any silt, gravel or other debris in the culvert will be removed either by hand using buckets or by suction to a vehicle on the bridge deck, where it will be disposed of off-site. If power hosing is used to loosen debris from the culvert, the water shall be clean, fresh and potable and obtained from a Public Utility Undertaking approved by the Employer's Representative.
- Any material scoured from the base prior to concrete pouring, including the contents of the silt trap, will be collected and disposed of off-site.
- A corrosion inhibitor and primer will be applied to the steel. These products will be approved for use in water and certified as non-toxic to aquatic ecosystems. Products containing polyurethane based coatings are considered the safest for use in aquatic environments, whereas products containing 4-tert-butylphenol (4tBP) should be avoided. The selected product will be approved for use by the Employer's Representative and the Contractor's Ecologist.
- While the concrete is setting, the dams will be checked daily to ensure they are working correctly.

- Any temporary lighting will be restricted to the works area and will avoid illumination of the watercourse. The area inside the dam will be fitted with a ramp to allow Otter to escape. Otter will be prevented from entering pipes by using screens, silt bags or other capping.
- The concrete base will be checked by the Employer's Representative prior to removal of the dam to ensure the base is dry.
- All equipment, including PPE, which comes into contact with the watercourse will be cleaned prior to use and will be disinfected prior to leaving each site using Virkon Aquatic or similar. Equipment will be disinfected at least 20 m from the watercourse.
- A method statement will be produced by the Contractor and approved by the Employers Representative and the Contractor's Ecologist. It will also be submitted to IFI for approval. The method statement will contain the following measures to protect water quality:
 - Cementitious material will not be allowed to enter the watercourse.
 - Plant are not permitted to enter the watercourse.
 - Stockpiling of materials and/or storage of fuels shall not be permitted at the site.
 - refuelling shall not be permitted within 50 m of the watercourse.
 - Spill kits shall be available on-site.

Removal of exposed rebar on northeast spandrel wall next to fence (0.1 m²)

- The works will be undertaken on foot.
- Concrete will be mixed in a watertight container at least 20 m from the watercourse.
- Only one bucket of mixed concrete will be brought to the works site at any time.
- A mobile catch-net will be used to prevent wet concrete falling on the ground or entering the watercourse.
- The catch-net will be approved by the Employer's Representative and the Contractor's Ecologist.
- Wet concrete will only be used where no rain is forecast for at least 12 hours.
- All equipment including PPE which comes into contact with watercourses will be clean and will be disinfected prior to leaving each site using Virkon Aquatic or similar.

Assessment of in-combination effects

Due to the small scale, location and temporary nature of the proposed works and provided the mitigation described above is followed, there is no potential for in-combination effects within other plans and projects.

Residual impacts and conclusion/recommendation

It is the considered opinion of ROD, as the author of this NIS, that, in making its AA in respect of the works proposed at Tagoat Bridge [WX-N25-002.00], Transport Infrastructure Ireland, as the Competent Authority in this case, can determine that, given the full and proper implementation of the mitigation prescribed in this NIS, the proposed works, either individually or in combination with other plans or projects, will

not adversely affect the integrity of the Wexford Harbour and Slobbs SPA, the Slaney River Valley SAC or any other European site.

4.3 County Wicklow

4.3.1 Mattymount Bridge [WW-N81-004.00]

Mattymount Bridge is a three-span masonry arch bridge which crosses a small river, East Spinans, 45 m upstream of the confluence with the River Slaney. The bridge is located c. 3 km north of Baltinglass, Co. Wicklow (ITM 687720 691492) and is within the Slaney River Valley SAC. The spans range from 2.45 m to 3 m in diameter. A series of rock ramps are immediately below the bridge. Plates 4.3A and 4.3B show the bridge outlet, and Plate 4.5C shows the wingwall and scour damaged masonry. The works at Mattymount Bridge are expected to take approximately one week.



Plate 4.3A



Plate 4.3B



Plate 4.3C

The proposed works at this bridge are:

- Installation of concrete scour apron below masonry repairs (1 m²).
- Repair of masonry on wingwall down to water level (1 m²).

The Qualifying Interests of the Slaney River Valley SAC are listed in Section 2.4. The work elements along with the potential for the works to lead to adverse effects is discussed in Table 4.3 below.

Table 4.3 Works elements and potential to lead to adverse effects.

Works element	Is there potential for adverse effects?
Installation of concrete scour apron below masonry repairs	Yes. Installation of the concrete apron along the wing wall will require the area to be dewatered. Mitigation is required. Plate 4.3C shows the damaged wingwall.
Repair of masonry on wingwall down to water level	Yes. This work will involve the use of wet concrete over water; therefore, mitigation is required. Plate 4.3C shows the damaged wingwall.

The Qualifying Interests of the SPA and SAC which occur downstream of the structure are considered to be at risk from water quality impacts arising from the introduction of cementitious materials, sediment and other pollutants to the watercourse.

There is potential for adverse effects on Water courses of plain to montane levels with the *Ranunculon fluitantis* and *Callitricho-Batrachion* vegetation, Freshwater Pearl Mussel, Lamprey species, Atlantic Salmon and Otter. The remaining Qualifying Interests are associated with estuarine habitats downstream below the tidal limit (>50 km downstream) or are terrestrial habitats which are not hydrologically connected to the works.

Mitigation

The following mitigation applies to the works which are screened in Table 4.5. In order to avoid adverse effects on the Qualifying Interests as a result of the proposed works, a number of mitigation measures are required:

Installation of concrete scour apron below masonry repairs (1 m²)

- In order to protect fisheries, in-stream works will only be undertaken during the period beginning 1st July and ending 30th September, subject to agreement with IFI.
- The Contractor will procure a suitably qualified Ecologist to oversee the works and provide advice in relation to the works, impacts and mitigation measures.
- The installation of the concrete apron will only take place where rain is not forecast for the 24 hours before after the works begin. This will be approved by the Employer's Representative.
- A dam will be constructed around the damaged masonry from the upstream end, which will allow water to escape naturally.
- Any remaining water will be removed using a pump. All water being pumped out will pass through a silt trap to prevent silt entering the water downstream. The silt trap will be approved by the Employer's Representative and the Contractor's Ecologist.
- During dewatering, the culvert will be supervised by Contractor's Ecologist, and any fish or crayfish will be removed by hand and placed in the river immediately downstream of the dewatered area. A suitable receptor site for crayfish will be determined by the Contractor's Ecologist prior to dewatering.
- The pump will be supervised at all times to ensure it is operating correctly. A secondary pump will be available on site as a backup for the primary pump.
- Following dewatering, any silt, gravel or other debris along the damaged area will be removed.

- Concrete will be mixed at least 20 m from the watercourse.
- Only one bucket of wet concrete will be brought to the works area at any time.
- The concrete apron will be checked by the Employer's Representative prior to removal of the dam to ensure that the apron is dry.
- Any temporary lighting will be restricted to the works area and will avoid illumination of the watercourse. The area inside the dam will be fitted with a ramp to allow Otter to escape. Otter will be prevented from entering pipes by using screens, silt bags or other capping.
- All equipment, including PPE, which comes into contact with the watercourse will be clean prior to use and will be disinfected prior to leaving each site using Virkon Aquatic or similar.

Repair of masonry on wingwall above the water level (1 m²)

- The damaged area will be dewatered as described above.
- Repointing will be undertaken on foot from the dewatered area.
- A catch-net will be placed flush with the bridge to catch any spilled mortar and which will be removed from site after the works.
- The catch net will be approved by the Employer's Representative and the Contractor's Ecologist.
- Repointing will not take place if rain is forecast in the following 12 hours.
- Only one bucket of wet mortar will be brought to the work site at any time by each person carrying out the repointing.
- No machinery will be permitted in the water.
- All equipment including PPE which comes into contact with watercourses will be clean and will be disinfected prior to leaving each site using Virkon Aquatic or similar.

Assessment of in-combination effects

Due to the small scale and temporary nature of the proposed works, there is no potential for in-combination effects with other work elements or with other plans and projects.

Residual impacts and conclusion/recommendation

It is the considered opinion of ROD, as the author of this NIS, that, in making its AA in respect of the works proposed at Mattymount Bridge [WW-N81-004.00], Transport Infrastructure Ireland, as the Competent Authority in this case, can determine that, given the full and proper implementation of the mitigation prescribed in this NIS, the proposed works, either individually or in combination with other plans or projects, will not adversely affect the integrity of the Slaney River Valley SAC or any other European site.

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