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EIRSPAN BRIDGE MANAGEMENT SYSTEM

Merginstown Bridge [WW-N81-010.00] Routine Maintenance

Natura Impact Statement

December 2025

ROD
ROUGHAN & O'DONOVAN

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1. INTRODUCTION

1.1 Background

Roughan & O'Donovan (ROD) was commissioned by Transport Infrastructure Ireland (TII) to prepare a Natura Impact Statement (NIS) in relation to the proposed works at Merginstown Bridge [WW-N81-010.00], in Merginstown Co. Wicklow ("the proposed works").

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 2026, where it is intended to carry out annual routine maintenance work between 1st March and 30th September.

Bridge inspections are carried out according to the *EIRSPAN Bridge Management System Routine Maintenance Manual* (TII, 2022). 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. According to the guidance document, "*Routine Maintenance comprises simple remedial works frequently or periodically required*" (TII, 2022). Another document *Leinster Bridges Term Maintenance Contract No. 4 Volume A: Work Requirements Part 2 – Specification* (TII, 2024) details the work specifications for routine maintenance works.

Non-routine maintenance works to address bridge strikes and other works which fall outside the scope of routine maintenance works, are not included in the Works Orders under the Leinster Bridges Term Maintenance Contract No. 4. Screening for Appropriate Assessment is undertaken as non-routine works arise.

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 contractually obligated to adhere to the level of best practice as described in the specification document and best practice guidance for on-site works. As part of the Contract, a Resident Engineer (RE) will oversee works on behalf of Transport Infrastructure Ireland (TII).

The AA Screening undertaken by TII concluded, in view of best scientific knowledge and the Conservation Objectives of the site concerned, that, in the absence of mitigation measures, the proposed works at Merginstown Bridge (bride ID: WW-N81-010.00) were likely to have a significant effect on the integrity of the Slaney River Valley SAC. On the basis of that conclusion, TII 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 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 and sets out detailed reasons which explains the basis for such findings.

1.2 Competent Experts

This AA Screening Report was prepared by Patrick O'Shea and Jane Stafford. Patrick is a Principal Ecologist with 13 years' experience in ecological assessment. He holds a degree in Botany from Trinity College Dublin and an MSc in Ecological Management and Conservation Biology from Queen's University Belfast. Patrick is a Full member of the Chartered Institute of Ecological and Environmental Management (CIEEM). Jane is an Ecologist with over two years' experience in ecological consultancy. She holds a BSc degree in Wildlife Biology from the University of Montana, and is a Qualifying Member of CIEEM.

1.3 Legislative Context

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

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

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

Further clarification on the use of mitigation measures was provided in *Eco Advocacy*[1], where the CJEU ruled that where constituent elements are incorporated into the design of a project as standard features required for all projects of that nature and not with the aim of reducing negative effects of a project on European sites, those features cannot be regarded as indicative of likely significant effects on European sites concerned and should not be interpreted as mitigation measures intended to avoid or reduce harmful effects of a plan or project on those European sites. The judgment stated that:

> "*In the light of the foregoing considerations, the answer to the fourth question is that Article 6(3) of the Directive 92/43 must be interpreted as meaning that, in order to determine whether it is necessary to carry out an appropriate assessment of the implications of a plan or project for a site, account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site*."

The requirements arising out of Article 6(3) are transposed into Irish law by Part XAB, including section 177AE, of the Planning and Development Act 2000 (as amended)), and in other circumstances by European Communities (Birds and Natural Habitats) Regulations 2011 as amended[2] (S.I. No.477 of 2011) (the Habitats Regulations), including Part 5 thereof.

The determination of whether or not a plan or project meets the two thresholds for requiring AA is referred to as "Stage 1" or "AA Screening". The first threshold is reached if the plan or project is not directly connected with or necessary to the management of one or more European sites. In its ruling in Waddenzee[3], the Court of Justice of the European Union (CJEU) interpreted the second threshold as being reached where "it cannot be excluded, on the basis of objective information, that [the plan or project] will have a significant effect on that site". Thus, in applying the Precautionary Principle, the CJEU interpreted the word "likely" to mean that, as long as it cannot be demonstrated that an effect will not occur, that effect is considered "likely". A likely effect is considered to be "significant" only if it interrupts or causes a delay in achieving the Conservation Objectives of the site concerned[4].

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

[1] Eco Advocacy v. An Bord Pleanála [2023] C-721/21
[2] Including inter alia S.I. 290 of 2013; SI 499 of 2013; SI 355 of 2015; the Planning, Heritage and Broadcasting (Amendment) Act 2021, Chapter 4; SI 293 of 2021.
[3] Landelijke Vereniging tot Behoud van de Waddenzee, Nederlandse vereniging tot Bescherming van Vogels *v.* Staatssecretaris van Landbouw, Naturbeheer en Visserij (Waddenzee) [2004] C-127/02 ECR I-7405.
[4] Conservation Objectives are referred to, but not defined, in the Habitats Directive. In Ireland, Conservation Objectives are set for Qualifying Interests (the birds, habitats or other species for which a given European site is selected) and represent the overall target that must be met for that Qualifying Interest to reach or maintain favourable conservation condition in that site and contribute to its favourable conservation status nationally.

or sites concerned. AA is informed by a "Natura Impact Report" (NIR) in the case of plans or a "Natura Impact Statement" (NIS) in the case of projects.

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

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

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

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

1.4 Methodology

In accordance with the requirements for AA, this NIS assesses the likely effects of the proposed 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 Zone of Influence.

[5] Sweetman v. An Bord Pleanála [2013] Case C-258/11.
[6] See Kelly (Eoin) v An Bord Pleanála [2014] I.E.H.C. 400 where the High Court (Finlay Geoghegan J.) held that section 177V(1) of the Planning and Development Act 2000 (as amended) must be construed so as to give effect to Article 6(3) of the Habitats Directive, and hence, an appropriate assessment carried out under section 177V(1) of the 2000 Act must meet the requirements of Article 6(3) of the Habitats Directive as interpreted by jurisprudence of the CJEU case law; Connelly v An Bord Pleanála [2018] 2 I.L.R.M 453; [2018] I.E.S.C. 31.
[7] Kelly v. An Bord Pleanála [2014] I.E.H.C. 422.

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:

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

1.5 Ecological Assessment

In order to fully inform this NIS, it was necessary to establish the baseline ecological conditions in the receiving environment, particularly with regard to European sites. This was achieved by undertaking a desktop study and field surveys.

1.5.1 Desk Study Methodology

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

The desk study involved thorough reviews of existing information relating to ecology in the vicinity of the proposed works. A number of web-based geographic information systems (GISs) were used to obtain information relating to the natural environment surrounding the proposed works. These included the NPWS *Map Viewer* (NPWS, 2025b), which provided information on the locations of protected sites, the Environmental Protection Agency's (EPA) Unified GIS Application, which provided data in relation to the Water Framework Directive Risk/Status of waterbodies in the Zone of Influence, the National Biodiversity Data Centre's *Biodiversity Maps* (NBDC, 2025), which provided recent and historic records of rare and protected species in the area, and Ordnance Survey Ireland's *GeoHive*, which provided additional information on the wider environment. In 2023, the NPWS also provided a shapefile containing spatial data of records for Freshwater Pearl Mussel in Leinster which was reviewed as part of the desk study. A similar sensitive data request for the same data set was made in 2025, however at the time of writing, a response has not been received.

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

1.5.2 Field Survey Methodology

Ecological surveys at Merginstown Bridge was carried out on the 14th of April 2023, and the 8th of January 2026. The surveys were undertaken by an ecologist from Roughan & O'Donovan, accompanied by an Engineer. The purpose of the surveys was to identify:

- Signs of rare and/or protected species e.g. Otter.
- Rare and/or protected habitats.
- Invasive Species

The survey methods were based on the following guidelines:

- *Ecological Survey Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (TII, 2008c).
- *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (TII, 2009).
- *Best Practice Guidance for Habitat Survey and Mapping* (Smith et al., 2011).

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

The habitats within the vicinity of the structure were surveyed. Any habitats corresponding to types listed on Annex I to the Habitats Directive were classified based on the Interpretation Manual of European Union Habitats (EC, 2013). A systematic search was undertaken within the vicinity the bridge, and 150m upstream and downstream of it, for signs of rare and/or protected species (e.g. kingfisher, otter, etc.) (nests, prints, spraints, holts, feeding remains etc.).

An invasive species survey was undertaken to identify species subject to restrictions under Regulation 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended). Other invasive species which can negatively impact biodiversity were also recorded. The ecological surveys were undertaken outside the optimum survey season for invasive species, when plants have either died back but some parts e.g. dead canes may be visible.

1.5.3 Assessment

Once established, the ecological baseline in the receiving environment was used to inform the assessment of the likely ecological effects of the proposed works, particularly with regard to European sites. Any assumptions that had to be made in view of gaps in the ecological data or other information were made in strict accordance with the Precautionary Principle.

2. DESCRIPTION OF THE PROPOSED WORKS

2.1 Overview of the Proposed works

Merginstown Bridge is a single span concrete bridge located on the N81 in the Townland of Merginstown Glen, Co. Wicklow. It approximately 1.2km south of the Merginstown crossroads. The bridge has an overall length of 11.42m and crosses the Carrigower River which is a tributary of the River Slaney. Merginstown Bridge is displayed below in Plates 2-1 and 2-2. A drawing of Merginstown Bridge is presented in Appendix A. A sketch of scour repair to be undertaken at Merginstown Bridge is presented in Appendix B.

Plate 2-1 Merginstown Bridge from the downstream / southwest side.

Plate 2-2 The N81 at Merginstown Bridge.

2.2 The Proposed Works

This section contains a description of the proposed works. The descriptions are taken from the *Leinster Bridges Term Maintenance Contract No. 4 Volume A: Works Requirements Part 2: Specification* (TII, 2024). Any further details on the description of how the works will be carried out, the timing, the need for temporary works, site access, etc., that are required in order to avoid adverse effects on the integrity of European sites are presented in Section 5.2 (Mitigation Measures). A drawing of the bridge is presented in Appendix A to this NIS. A sketch of scour repair to be undertaken at Merginstown Bridge is presented in Appendix B.

2.2.1 Bridge Surface Maintenance

Sweeping and cleaning ($20m^2$)

All debris, silt and vegetation shall be removed from the bridge surface using a mechanical road sweeper or other appropriate means, such as an ordinary sweeping brush (with the Employer's Representative's consent). A total area of $20m^2$ of the carriageway will be swept and cleaned.

Hosing of the drainage system (14m)
Drainage on the east and west rubbing strip (a total length of 14m) will be hosed to remove silt, debris and vegetation and all deposits for off-site disposal. No waste will be discharged on-site. Drainage will be rodded and/or suctioned, unless agreed with the Employer's Representative. Power hosing will not be undertaken to clean drainage, and the contents of any rodded gully / outlet will not be pushed out into / discharged to the watercourse. The deposits will be transported in permitted waste vehicles in compliance with the Waste Management (Collection Permit) Regulations, 2007 as amended, and the waste disposed of at licensed/permitted waste facilities.

2.2.2 Footways / Median Sweeping and Cleaning

Sweeping and cleaning (90m^2)
A total area of approximately 90m^2 of the rubbing strips will be swept and cleaned to remove debris and the build-up of silt from the drainage channels. All materials will be removed using mechanical road sweeper or other appropriate means, such as an ordinary sweeping brush (with the Employer's Representative's consent). Vegetation growth in soft verges either side of rubbing strips shall be strimmed back.

2.2.3 Vegetation Removal from Embankments/Revetments

Removal of vegetation (4m^2)
Approximately 1m^2 of grass and light vegetation growth at each of the four corners of the bridge will be strimmed to a height of 75mm. Any stumps of vegetation with a diameter greater than 100mm shall have horizontal saw cuts made into the stub to promote natural rotting. Roots will not be grubbed out. Any roots remaining after the above work shall be treated with root killer, with the approval of the Employer's Representative.

2.2.4 Scour Repair of the Riverbed

Scour Repair (minimum 5m^2, to a depth of 0.7m)
Significant scour is present at the downstream end of the concrete apron. The concrete apron is not centred within the footprint of the bridge, as is typical of bridge aprons. The apron is upstream of the bridge, with the downstream end of the apron just below the upstream end of the bridge.

At the downstream end of the apron, a void has formed across the width of the river. It is unclear if the scour has resulted from turbulence below the apron or due to water passing under the apron structure. The full extent and cause of the void will be determined as part of the works, which will inform the type of repairs undertaken.

The areas where repairs are required will be accessed on foot. In order to inspect the area, the riverbed below the apron will be dewatered. Depending on the nature of the void, the affected areas will be either filled with Class 1C stone (<300mm diameter), or mass concrete not less than grade C20/25. This work will be undertaken in accordance with *Leinster Bridges Term Maintenance Contract No. 4 Volume A: Work Requirements Part 2 – Specification* (TII, 2024), and any additional measured proposed in this NIS.

The scour repair is expected to take approximately one week to complete, and will only be undertaken during the period beginning 1st July and ending 30th September. The area requiring scour repair is presented below in Plate 2-3.

Plate 2-3 Location of the proposed scour repair.

2.3 Receiving Natural Environment

2.3.1 General Description and Context

Merginstown Bridge carries the N81 over the Carrigower River. The Carrigower River joins the Slaney River approximately 6km downstream of Merginstown Bridge. The habitats in the surrounding area, classified in accordance with Fossitt (2000), are wet grassland (GS4), with dense bracken (HD1) to the east of the bridge, and depositing / lowland river (FW2) (the Carrigower River). The Carrigower River is a shallow watercourse with a riverbed consisting of the concrete apron, silt and some exposed gravel.

Floating river vegetation corresponding to the Annex I habitat 'Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation (3260)' is present immediately upstream and downstream of the structure. This habitat is not in the proposed works area, and is shown in Plate 2-3 below. The habitat is dominated by water crowfoot. Crowfoot-dominated reaches frequently have low diversity and are of low conservation value, and an abundance of the species generally indicates poor condition and damage (NPWS, 2019b).

The photographic record of the river at Merginstown Bridge indicated that the flow is variable, with the channel almost completely dried out in September 2024 (Plate 2-4).

Plate 2-3 ***Ranunculion fluitantis*** **and** ***Callitricho-Batrachion*** **vegetation (3260) upstream (top) and downstream (bottom) of Merginstown Bridge.**

Plate 2-4 The riverbed at Merginstown Bridge during a dry period.

2.3.2 Water Quality

The Water Framework Directive (WFD) requires that each EU Member State protects and improves water quality in all waters so that good ecological status is achieved. Additionally, proposed actions (within discrete River Basin Management Plans) are also required, to secure national natural water resources for the future. The EPA is the Competent Authority responsible for monitoring, protecting and improving the water environment in the Republic of Ireland. In accordance with WFD guidelines, water quality 'Status' is assigned using a variety of available data on aquatic flora and fauna (including fish), the availability of nutrients, and aspects like salinity, temperature and pollution by chemical pollutants. Morphological features, such as quantity, water flow, water depths and structures of the riverbeds, are also taken into account.

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

The online EPA Unified GIS Application provides access to information at individual waterbody level and at Water Management Unit level for all the River Basin Districts in Ireland. Waterbodies can relate to surface waters (these include rivers, lakes, estuaries [transitional waters], and coastal waters) or to groundwater. The 'Poor' and 'Moderate' statuses of the waterbodies are indicated to be as a result of poor Phytoplankton and Macroinvertebrate Status, respectively as per the EPA Catchments website.

An EPA River monitoring station is located at the bridge. The Q-value here for the Carrigower River is 'High' (4-5). The WFD status is 'Good,' and the river is not at risk of failing to meet its WFD objectives by 2027. The proposed works are located in the Ballyglass WFD sub-catchment. The WFD status for this waterbody is 'Good', and it is not at risk of failing to meet its WFD objective by 2027.

2.3.3 Flora and Fauna

No protected or invasive species were identified in proximity of Merginstown Bridge, and no signs of Otter were recorded at Merginstown Bridge. However, there are records of otter (NBDC, 2025) and freshwater pearl mussel upstream and downstream of the works (NPWS, 2023).

2.4 Potential Impacts on the Natural Environment

Construction Phase

Water Quality

Given the nature and scale of the proposed bridge surface maintenance, sweeping and cleaning of the footways / median, and vegetation removal from embankments, these works do not have the potential to give rise to water quality impacts. However, there is a risk of pollution to the river during the scour repairs as a result of pollution and the mobilisation of sediment.

Disturbance / Barrier to Movement

The proposed works will involve the presence of workers and equipment on the river banks and in the river for a period of approximately one week. The scour repairs, which are across the width of the river, will require dewatering of the works area. This could result in a temporary barrier to movement while the works area is dewatered.

Injury and Mortality

In-stream works have the potential to result in the injury or direct loss of aquatic life.

Operational Phase

Once the works are completed, the operational phase of the bridge maintenance works will not result in any negative impacts on the natural environment. The level of the apron and the riverbed downstream will not be altered. There will be no impacts to fish passage in the Carrigower River during the operational phase.

3. IDENTIFICATION OF ADVERSE EFFECTS

3.1 Establishing the Zone of Influence

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

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

The "Zone of Influence" of a plan or project is the geographic extent over which significant ecological effects are likely to occur. In the case of projects, the guidance recognises that the Zone of Influence must be established on a case-by-case basis using the Source-Pathway-Receptor Model (OPR, 2021) with reference to the following key variables:

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

For example, in the case of a project that could affect a watercourse, it may be necessary to include the entire upstream and/or downstream catchment in order to capture all European sites with water-dependent features of interest.

For example, in the case of a project that could affect a watercourse, it may be necessary to include the entire upstream and/or downstream catchment in order to capture all European sites with water-dependent features of interest.

Having regard to the above key variables, the Zone of Influence was defined as:

- The entire area within 500m of the proposed works.
- The downstream extent of the Carrigower River as far as the Slaney River.

The distance of 500m is beyond the maximum distance at which potential impacts to birds and mammals may occur via noise and visual disturbance, considering the existing noise and visual disturbance at the location. The downstream extent of the Carrigower River as far as the Slaney River is considered to be the maximum distance at which potential impacts may occur, including via hydrological connections, i.e., surface water pathways.

European sites outside of the Zone of Influence are excluded due to various factors such as considerable overland or upstream distance, lack of hydrological connection and/or lack of supporting habitat for qualifying interest species in the vicinity of the proposed works. There are no pathways for impact arising from the proposed works to reach those sites, therefore there is no potential for adverse effects to occur to the qualifying interests of those European sites.

A geographical representation of the Zone of Influence was produced in ArcGIS 10.5 using the boundary of the proposed works and publicly available Ordnance Survey Ireland maps. This was used in combination with NPWS shapefiles to identify the boundaries of European sites in relation to the Zone of Influence (Figure 3-1). It was determined that one European site, the Slaney River Valley SAC, occurs within the Zone of Influence. The potential for pathways for impacts from the proposed works to this site are assessed Table 3-1 below. Detailed descriptions of the Slaney River Valley SAC are given in Section 3.2.

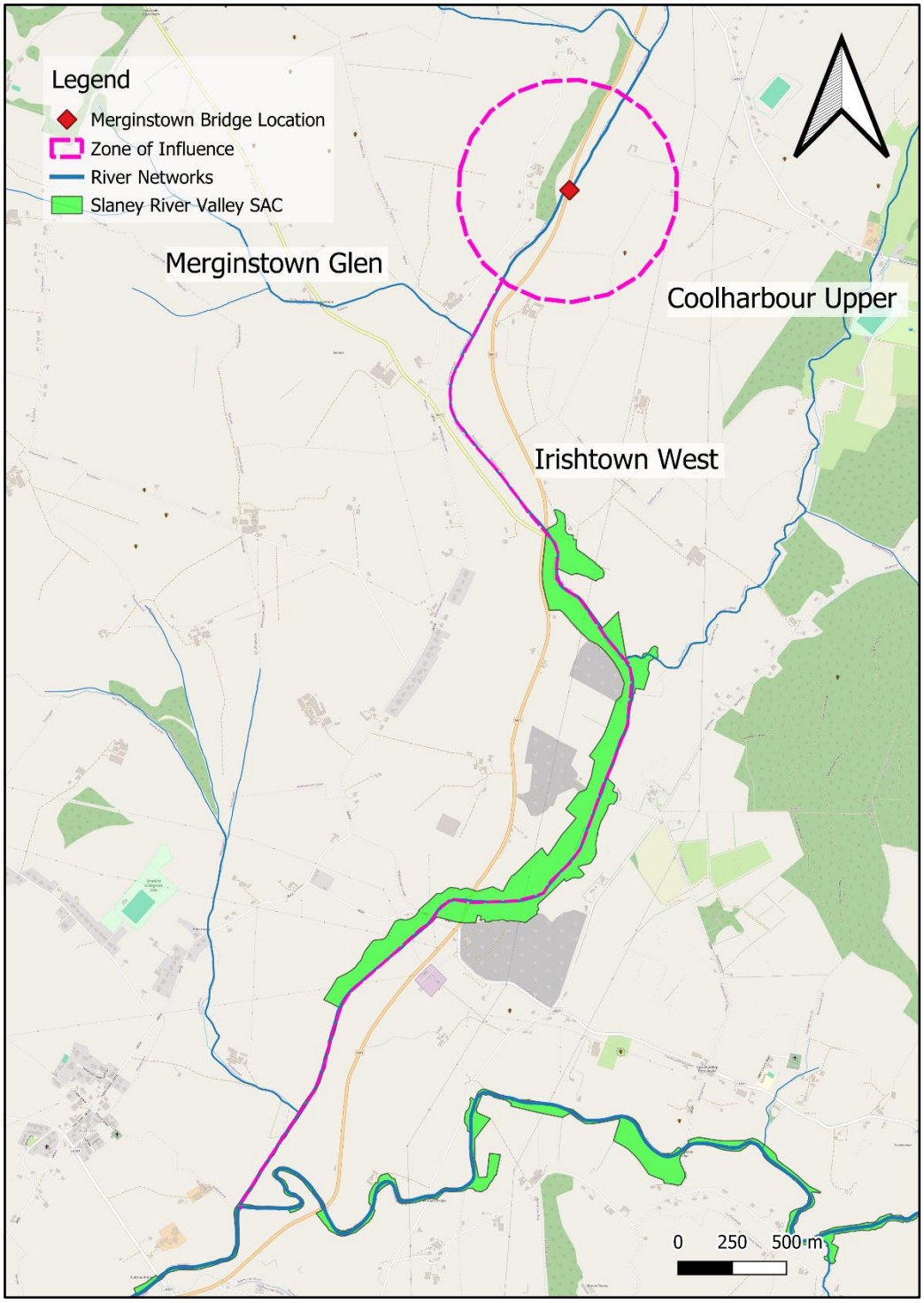

Figure 3-1 **Location of European sites in relation to the Zone of Influence of the proposed works.**

Table 3-1 European sites located within the Zone of Influence.

European site [site code]	Are there potential pathways for impacts from the proposed works to this site?
Slaney River Valley SAC [000781]	**Yes.** The proposed works are located 1.9km upstream of the Slaney River Valley SAC. Scour repairs are required across the full width of the river. The method for repairing the scour will in accordance with the contract, and will involve dewatering part or all of the river bed and adding either stone or concrete to the affected area. Therefore, adverse effects cannot be excluded.

3.2 Site Description

Slaney River Valley SAC

The information presented in this section was taken from the site synopsis document (NPWS, 2015) for the Slaney River Valley SAC.

This site comprises the freshwater stretches of the River Slaney as far as the Wicklow Mountains; a number of tributaries, the larger of which include the Bann, Boro, Glasha, Clody, Derry, Derreen, Douglas and Carrigower Rivers; the estuary at Ferrycarrig; and Wexford Harbour. The site flows through the Counties of Wicklow, Wexford and Carlow. Towns along the site but not within it include Baltinglass, Hacketstown, Tinahely, Tullow, Bunclody, Camolin, Enniscorthy and Wexford. The river is up to 100 m wide in places and is tidal at the southern end from Edermine Bridge below Enniscorthy. In the upper and central regions almost as far as the confluence with the Derry River the geology consists of granite. Above Kilcarry Bridge, the Slaney has cut a gorge into the granite plain. The Derry and Bann Rivers are bounded by a narrow line of uplands which corresponds to schist outcrops. Where these tributaries cut through this belt of hard rocks they have carved deep gorges, more than two miles long at Tinahely and Shillelagh. South of Kildavin the Slaney flows through an area of Ordovician slates and grits.

Qualifying Interests of the Site

[1130] Estuaries

[1140] Mudflats and sandflats not covered by seawater at low tide

[1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

[1410] Mediterranean salt meadows (*Juncetalia maritimi*)

[3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-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*)

[1029] Freshwater Pearl Mussel (*Margaritifera margaritifera*)

[1095] Sea Lamprey (*Petromyzon marinus*)

[1096] Brook Lamprey (*Lampetra planeri*)

[1099] River Lamprey (*Lampetra fluviatilis*)

[1103] Twaite Shad (*Alosa fallax*)

[1106] Atlantic Salmon (*Salmo salar*)

[1355] European Otter (*Lutra lutra*)

[1365] Common (Harbour) Seal (*Phoca vitulina*)

Site Overview

Floating river vegetation is found along much of the freshwater stretches within the site. Species present here include Pond Water-crowfoot (*Ranunculus peltatus*), other water-crowfoot species, Canadian Pondweed (*Elodea canadensis*), Broad-leaved Pondweed (*Potamogeton natans*), water-milfoils (*Myriophyllum spp*.), Common Club-rush (*Scirpus lacustris*), water-starworts (*Callitriche spp*.), Hemlock Water-dropwort (*Oenanthe crocata*), Fine-leaved Water-dropwort (*O. aquatica*), Common Duckweed (*Lemna minor*), Yellow Water-lily (*Nuphar lutea*), Unbranched Bur-reed (*Sparganium* emersum) and the moss *Fontinalis antipyretica*. Two rare aquatic plant species which are legally protected under the Flora (Protection) Order, 2022, have been recorded in this site: Short-leaved Water-starwort (*Callitriche truncata*), a very rare, small aquatic herb found nowhere else in Ireland, and Opposite-leaved Pondweed (*Groenlandia densa*).

Good examples of wet woodland are found associated with Macmine marshes, along the banks of the Slaney and its tributaries, and within reedswamps. Rusty Willow (*Salix cinerea subsp. oleifolia*) scrub and pockets of wet woodland dominated by Alder (*Alnus glutinosa*) have become established in places. Ash (Fraxinus excelsior) and Downy Birch (*Betula pubescens*) are common in the latter and the ground flora is typical of wet woodland, with Meadowsweet (*Filipendula ulmaria*), Wild Angelica (*Angelica sylvestris*), Yellow Iris (*Iris pseudacorus*), horsetails (*Equisetum spp*.) and occasional tussocks of Greater Tussock-sedge (*Carex paniculata*). These woodlands have been described as two types: one is quite eutrophic, dominated by willow and subject to a tidal influence; while the other is flushed or spring-fed, subject to waterlogging but not to flooding, and dominated by Alder and Ash.

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

The shrub layer is well-developed with Hazel (*Corylus avellana*) and Holly (*Ilex aquifolium*) occurring. The ground layer consists of Great Wood-rush (*Luzula sylvatica*) and Bilberry (*Vaccinium myrtillus*), with some Bracken (*Pteridium aquilinum*) and Bramble (*Rubus fruticosus agg*.). Herbaceous species in the ground layer include Primrose (*Primula vulgaris*), Wood-sorrel (*Oxalis acetosella*), Common Cow-wheat (*Melampyrum pratense*) and Bluebell (*Hyacinthoides non-scripta*). Many of the trees carry an epiphytic flora of mosses, Polypody (*Polypodium vulgare*), and lichens such as *Usnea comosa*, *Evernia prunastri*, *Ramalina spp*. and *Parmelia spp.* Tomnafinnoge Wood is a remnant of the ancient Shillelagh oak woods, and it appears that woodland has always been present on the site. In the past, the wood was managed as a Hazel coppice with Oak standards, a common form of woodland management in England but not widely practised in Ireland. The importance of the woodland lies in the size of the trees, their capacity to regenerate, their genetic continuity with ancient woodland and their historic interest. The nearest comparable stands are at Abbeyleix, Co. Laois and Portlaw, Co. Waterford.

Below Enniscorthy there are several areas of woodland with a mixed canopy of oak, Beech, Sycamore (*Acer pseudoplatanus*), Ash and generally a good diverse ground flora. Near the mouth of the river at Ferrycarrig is a steep south facing slope covered with oak woodland. Holly and Hazel are the main species in the shrub layer and a species-rich ground flora typical of this type of oak woodland has abundant ferns (*Dryopteris filix-mas, Polystichum setiferum* and *Phyllitis scolopendrium*) and mosses (*Thuidium tamariscinum, Mnium hornum* and *Eurynchium praelongum*). North of Bunclody, the river valley still has a number of dry woodlands though these have mostly been managed by the estates, with the introduction of Beech and occasional conifers. The steeper sides are covered in a thick scrub from which taller trees protrude.

At the southern end of the site, the Red Data Book species Yellow Archangel (*Lamiastrum galeobdolon*) occurs. Three more Red Data Book species have also been recorded from the site: Blue Fleabane (*Erigeron acer*), Basil Thyme (*Acinos arvensis*), and Small Cudweed (*Logfia minima*). Basil Thyme and Small Cudweed are protected under the Flora (Protection) Order, 2015. A nationally rare species, Summer Snowflake (*Leucojum aestivum*), is also found within the site.

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

The site is considered to contain a very good example of the extreme upper reaches of an estuary. Tidal reedbeds with wet woodland are present in places. The fringing reed communities support Sea Club-rush (*Scirpus maritimus*), Grey Club-rush (*S. tabernaemontani*) and abundant Common Reed (*Phragmites australis*). Other species occurring are Bulrush (*Typha latifolia*), Reed Canary-grass (*Phalaris arundinacea*) and Branched Bur-reed (*Sparganium erectum*). The reedswamp is extensive around Macmine, where the river widens and there are islands with swamp and marsh vegetation. Further south of Macmine are expanses of intertidal mudflats and sandflats and shingle shore often fringed with a narrow band of saltmarsh and brackish vegetation. Narrow shingle beaches up to 10 m wide occur in places along the river banks and are exposed at low tide. Upslope the shingle is sometimes colonised by Saltmarsh Rush (*Juncus gerardii*), Townsend's Cord-grass (*Spartina townsendii*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Aster (*Aster tripolium*), Hemlock Water-dropwort and the non-native and invasive Himalayan Balsam (*Impatiens glandulifera*).

The salt marsh at Castlebridge is dominated by Mediterranean salt meadows. The main community is characterized by the presence of Sea Rush (*Juncus maritimus*). Red Fescue (*Festuca rubra*) and Creeping Bent-grass (*Agrostis stolonifera*) are both abundant within this vegetation type. Other species present include Autumn Hawkbit (*Leontodon autumnalis*), Sea Milkwort (*Glaux maritima*), Silverweed (*Potentilla anserina*), Long-bracted Sedge (*Carex extensa*), Parsley Water-dropwort (*Oenanthe lachenalii*), Curled Dock (*Rumex crispus*), Sea Arrowgrass (*Trigolchin maritima*), Smooth Sow-thistle (*Sonchus oleraceus*), Sea Plantain (*Plantago maritima*), Wild Celery (*Apium graveolens*), Spear-leaved Orache (*Atriplex prostrata*), White Clover (*Trifolium repens*), Sea Aster and Saltmarsh Rush.

These species vary in cover values and Salt marsh Rush may occasionally be dominant. Species such as Hard-grass (*Parapholis strigosa*) and Common Saltmarsh-grass are found along some of the tracks, while Common Saltmarsh-grass is also more common around the mouths of the creeks and along some of the drainage channels.

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

A significant area of Atlantic salt meadows also occurs at Castlebridge. This habitat is characterised by the presence of grassy upper saltmarsh vegetation communities dominated by Red Fescue and/or Creeping Bent-grass. Other species present include Saltmarsh Rush, Sea Milkwort (*Glaux maritima*), Sea Aster, Sea Arrowgrass (*Triglochin maritimum*), Sea Plantain, Common Scurvygrass (*Cochlearia officinalis*), and Curled Dock (*Rumex crispus*). Sea Rush may be present in this habitat and has cover values between 0-10%.

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

Other habitats present within the site include species-rich marsh in which sedges such as *Carex disticha, Carex riparia* and *Carex vesicaria* are common. Among the other species found in this habitat are Yellow Iris, Water Mint (*Mentha aquatica*), Purple Loosestrife (*Lythrum salicaria*) and Soft Rush (*Juncus effusus*). Extensive marshes occur to the west of Castlebridge associated with the tidal areas of the River Sow.

The site supports populations of several species listed on Annex II of the E.U. Habitats Directive, including Sea Lamprey, River Lamprey and Brook Lamprey, Otter, Salmon, small numbers of Freshwater Pearl Mussel, and in the tidal stretches, Twaite Shad. A survey of the Derreen River in 1995 estimated the population of Freshwater Pearl Mussel at about 3,000 individuals. This is a significant population, especially in the context of eastern Ireland. The Slaney is primarily a spring salmon fishery and is regarded as one of the top rivers in Ireland for early spring fishing. The upper Slaney and tributary headwaters are very important for spawning. The site supports regionally significant numbers of Common Seal. This Annex II species occurs year-round in Wexford Harbour where several sandbanks are used for breeding, moulting and resting activity. At least 27 Common Seal regularly occur within the site.

The site is of high ornithological importance also, with internationally important populations of Mute Swan (300), Light-bellied Brent Goose (200), Bar-tailed Godwit (1,843) and Black-tailed Godwit (350) occurring – all figures are average peaks for the five winters, 1995/96-99/2000.

There are at least a further 18 species of wintering waterfowl which occur in numbers of national importance, i.e. Great-crested Grebe (123), Cormorant (443), Shelduck (903), Teal (800), Scaup (416), Goldeneye (151), Red-breasted Merganser (226), Oystercatcher (1,800), Golden Plover (3,000), Grey Plover (1,412), Lapwing (5,000), Knot (566), Sanderling (262), Dunlin (3,037), Curlew (1,300), Redshank (535), Black-headed Gull (6,136) and Lesser Black-backed Gull (1,036). Several of the above populations represent substantial proportions of the national totals, especially Shelduck (6.1%), Scaup (5.9%), Red-breasted Merganser (5.6%), Grey Plover (18.8%, the top site in the country) and Black-headed Gull (6.1%).

A nesting colony of Little Egret has recently become established within the site (12+ pairs in 2003) and birds are present in the area throughout the year. The sheltered estuarine habitat to the west of Wexford Bridge is the favoured location. Another very localised breeding species, Reed Warbler, is well established within the swamp vegetation along the River Slaney and on the South Slob (estimated as at least 10 pairs). The River Slaney supports typical riparian species, including Dipper and Kingfisher.

The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger, Irish Hare and Daubenton's Bat. Common Frog (*Rana temporaria*), another Red Data Book species, also occurs within the site.

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

Waste water outflows, runoff from intensive agricultural enterprises, a meat factory at Clohamon, a landfill site adjacent to the river, and further industrial development upstream in Enniscorthy and in other towns could all have potential adverse impacts on the water quality unless they are carefully managed. The spread of exotic species is reducing the quality of the woodlands.

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

3.3 Evaluation against Conservation Objectives

Table 3-2 below details the evaluation of the likely effects of the proposed works, as outlined in Section 2.4 above, in view of the Conservation Objectives of the site identified in Section 3.1 and described in Section 3.2. As explained in Sections 1.3 and 1.4, AA is carried out in view of the Conservation Objectives of the relevant European sites, which are in turn defined by detailed Attributes and corresponding Targets. Therefore, the evaluation of whether or not a likely effect constitutes an adverse effect is made with regard to these Attributes and Targets.

Table 3-2 Evaluation of the likely effects of the proposed works in view of the Conservation Objectives of the Slaney River Valley SAC.

Qualifying Interest	Conservation Objective as per NPWS (2011)	Does the proposed works provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Estuaries [1130]	"*To maintain the favourable conservation condition of Estuaries in the Slaney River Valley SAC*"	The conservation objectives document for this site provides the locations for estuaries [1130] and intertidal mudflats and sandflats [1140] as approximately 70km and 90.7km downstream, respectively, of the proposed development. Mapping is not provided for the location of Atlantic salt meadows [1330] or Mediterranean salt meadows [1410] within the SAC. In accordance with the precautionary principle, it has been assumed that these habitats are present at the upper limit of the transitional water body of the River Slaney, which based on EPA mapping (EPA, 2025), is located over 70km downstream of the proposed works. Considering the distance between the proposed works and this European site, as well as the assimilative capacity of the Carrigower River and the River Slaney, any potential water quality impacts which could arise would dissipate long before reaching these habitats. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed works will not have an adverse effect in relation to these Qualifying Interests.	No
Mudflats and sandflats not covered by seawater at low tide [1140]	"*To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in the Slaney River Valley SAC*"		No
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	No site-specific conservation objectives are available for this Qualifying Interest. For the purpose of this report, the Conservation Objective is taken as: "*To restore the Favourable conservation condition of Atlantic salt meadows in the River Barrow and River Nore SAC*" (as per the Conservation in the River Barrow and River Nore SAC [002162] (NPWS, 2025a).		No

Qualifying Interest	Conservation Objective as per NPWS (2011)	Does the proposed works provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	No site-specific conservation objectives are available for this Qualifying Interest. For the purpose of this report, the Conservation Objective is taken as: "T*o restore the favourable conservation condition of Mediterranean salt meadows in the River Barrow and River Nore SAC*" (as per the Conservation in the River Barrow and River Nore SAC [002162] (NPWS, 2025a).		No
Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260]	"*To maintain the favourable conservation condition of Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation in the Slaney River Valley SAC*"	This habitat is present immediately upstream and downstream of the proposed works. This SAC is 1.9km downstream of the proposed works. Therefore, the closest possible location of this habitat in the SAC is 1.9km downstream, and the proposed works will not result in the reduction of this habitat in the SAC. Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could result in deterioration in water quality in the SAC. Therefore, adverse effects cannot be excluded.	Yes
Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0]	"*To restore the favourable conservation condition of old sessile oakwoods with Ilex and Blechnum in the Slaney River Valley SAC*"	This is a terrestrial habitat which is not located in the vicinity of the proposed works. Given the nature and location of the proposed works, there are no pathways for adverse effects on the integrity of the SAC, in relation to this Qualifying Interest.	No

Qualifying Interest	Conservation Objective as per NPWS (2011)	Does the proposed works provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
***Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [91E0]**	"*To restore the favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion) in the Slaney River Valley SAC*"	This is a terrestrial-based habitat, and a pathway for effects only exists during periods of flooding. The nearest known location of this habitat is located approximately 8.5km downstream of the proposed works (NPWS, 2011), however there may be unmapped areas of this habitat upstream of this. A pathway between the proposed works and this QI would only exist during high flow events, when the volume and velocity of water in the river are much higher than normal. The works will be undertaken during the summer months and will not be undertaken when high rainfall is forecast in the catchment, however, in the highly unlikely event that a flood occurs during the works, which will be undertaken over the course of a single week, the level of dilution would be such that any pollutants would be diluted to the point of not leading to an adverse effect on this qualifying interest very quickly and certainly before reaching the SAC 1.9km downstream. Considering this, the distance between the proposed works and this European site, which is 1.9km downstream at it's closest point, as well as the assimilative capacity of the Carrigower River and the River Slaney, any potential water quality impacts which could arise would dissipate during floods long before reaching this European site. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed works will not have an adverse effect in relation to this Qualifying Interest.	No

Qualifying Interest	Conservation Objective as per NPWS (2011)	Does the proposed works provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029]	"*The status of the freshwater pearl mussel (Margaritifera margaritifera) as a qualifying Annex II species for the Slaney River Valley SAC is currently under review. The outcome of this review will determine whether a site-specific conservation objective is set for this species.*" For the purpose of this report, the Conservation Objective is taken as: "*To restore the favourable conservation condition of Freshwater Pearl Mussel in Lower River Suir SAC,*" (as per the Conservation in the Lower River Suir SAC [002137] (NPWS, 2017)).	[redacted] The closest possible location of freshwater pearl mussel within the SAC is 1.9km downstream of the proposed works. The riverbed at the bridge consists of the concrete apron, silt, and some exposed gravels. During works undertaken in 2024, the river was almost entirely dried out and consisted almost entirely of silt. Therefore, the habitats at the bridge and immediately downstream of the bridge are not suitable for this species. Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could result in deterioration in water quality in the SAC. Therefore, adverse effects cannot be excluded.	Yes
Brook Lamprey (*Lampetra planeri*) [1096]	"*To restore the favourable conservation condition of Brook lamprey in the Slaney River Valley SAC*"	The closest possible location of lamprey within the SAC is 1.9km downstream of the proposed works. Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could result in deterioration in water quality in the SAC. Therefore, adverse effects cannot be excluded.	Yes
River Lamprey (*Lampetra fluviatilis*) [1099]	"*To restore the favourable conservation condition of River lamprey in the Slaney River Valley SAC*"		Yes

Qualifying Interest	Conservation Objective as per NPWS (2011)	Does the proposed works provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Sea Lamprey (*Petromyzon marinus*) [1095]	"*To restore the favourable conservation condition of Sea lamprey in the Slaney River Valley SAC*"	In-stream scour repair may result in disturbance, displacement, physical harm, and a barrier to movement to fish. There is juvenile lamprey (ammocoetes) habitat present downstream of the apron where the works will take place. While the watercourse is seasonally dry, there may be deeper areas of still water at the bridge which retain still water during these periods. Habitat suitable for ammocoetes will be directly affected by the proposed works. Therefore, adverse effects on the Conservation Objectives for these Qualifying Interests cannot be excluded.	Yes
Twaite Shad (*Alosa fallax*) [1103]	"*To restore the favourable conservation condition of Twaite shad in the Slaney River Valley SAC*"	Twaite shad are found in coastal and estuarine waters, and come as far as the tidal reaches of rivers to spawn, which based on EPA mapping (EPA, 2025), are located over 70km downstream of the proposed works. Any potential water quality impacts which could arise would dissipate long before reaching the habitats of this species. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed works will not have an adverse effect on the Conservation Objective for this Qualifying Interest.	No
Atlantic Salmon (*Salmo salar*) [1106]	"*To restore the favourable conservation condition of Salmon in the Slaney River Valley SAC*"	The riverbed at the bridge consists of the concrete apron, silt, and some exposed gravels. During works undertaken on the bridge in 2024, the river was almost entirely dried out and the riverbed consisted almost entirely of silt. Therefore, the habitat at the bridge and immediately downstream of the bridge are not suitable for salmon to spawn. Salmon are sensitive to water quality impacts. Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could result in deterioration in water quality in the SAC. Dewatering of the works area could result in the entrapment of salmon and smolts, and the creation of a barrier to the movement of fish upstream. Therefore, adverse effects cannot be excluded.	Yes

Qualifying Interest	Conservation Objective as per NPWS (2011)	Does the proposed works provide for any potential delay or interruption in the achievement of this Conservation Objective, as defined by its Attributes and Targets?	Adverse Effect
Otter (*Lutra lutra*) [1355]	"*To restore the favourable conservation condition of Otter in the Slaney River Valley SAC*"	Although no signs of otter were identified during the ecological surveys, otter are assumed to be present along the Carrigower River. The works will last approximately one week. During this time otter, would be deterred from works area when people are present. Considering the short duration of the work, this does not constitute an adverse effect. Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could result in deterioration in water quality in the SAC. Therefore, adverse effects cannot be excluded.	Yes
Harbour Seal (*Phoca vitulina*) [1365]	*"To maintain the favourable conservation condition of Harbour Seal in the Slaney River Valley SAC"*	Harbour seal utilise coastal and estuarine habitats, and the lower reaches of rivers, which based on EPA mapping (EPA, 2025), are located approximately 70km downstream of the proposed works. As such, disturbance to this species will not occur as a result of the proposed works. Considering the distance between the proposed works and this European site, as well as the assimilative capacity of the Carrigower River and the River Slaney, any potential water quality impacts which could arise would dissipate before reaching these habitats. Therefore, it can be concluded beyond reasonable scientific doubt that the proposed works will not have an adverse effect in relation to this Qualifying Interest.	No

3.4 Summary of Adverse Effects

In Section 3.1, it was established that one European site, the Slaney River Valley SAC, occurs the zone of influence of the proposed works and that there are no pathways for effects between the proposed works and any other European sites.

In Section 3.3, it was established that, in the absence of appropriate mitigation, interruptions or delays in achieving the Conservation Objectives for the site, i.e., adverse effects on the integrity of the site, as a result of the proposed works, cannot be ruled out. The Qualifying Interests identified is given in Table 3-3 below.

Table 3-3 Summary of the Qualifying Interests for which, in view of their Conservation Objectives, adverse effects cannot be excluded.

European site	Qualifying Interest
Slaney River Valley SAC	Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260] Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029] Brook Lamprey (*Lampetra planeri*) [1096] River Lamprey (*Lampetra fluviatilis*) [1099] Sea Lamprey (*Petromyzon marinus*) [1095] Atlantic Salmon (*Salmo salar*) [1106] Otter (*Lutra lutra*) [1355]

4. ASSESSMENT OF ADVERSE EFFECTS

4.1 Attributes and Targets

In Section 3.0 of this NIS, potential adverse effects of the proposed works on the integrity of the Slaney River Valley SAC were identified. In accordance with EC (2021), the identification of these effects was focussed on and limited to the Conservation Objectives of this site.

Section 4.0 provides a detailed analysis and evaluation of the adverse effects identified in Section 3.0. In order to fully assess the implications of the proposed works for the Slaney River Valley SAC, each of the potential adverse effects is evaluated with reference to the Attributes and Targets which define the Conservation Objectives of the site.

4.2 Slaney River Valley SAC

4.2.1 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260]

The Conservation Objective for this Qualifying Interest is given in Table 3-2 above. The Attributes of this Conservation Objective are:

- Habitat distribution
- Habitat area
- Hydrological regime: river flow
- Hydrological regime: tidal influence
- Substratum composition: particle size range
- Water quality: nutrients
- Vegetation composition: typical species
- Floodplain connectivity: area

Habitat distribution and Habitat area

Habitat distribution is measured by occurrence, with a target of 'No decline, subject to natural processes'. Habitat area is measured in kilometres, with a target of 'Area stable at 12.6km or increasing, subject to natural processes' (this only applies to the tidal sub-type). This SAC is 1.9km downstream of the proposed works. Considering the location of the proposed works, and the nature and scale of the works, the proposed works will not result in the direct reduction of the distribution or area of this habitat in the SAC.

Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could result in negative water quality effects downstream, which may lead to the deterioration of this habitat, resulting in a reduction in the distribution and area of this Qualifying Interest in the SAC.

Hydrological regime

'Hydrological regime: tidal influence' is measured by daily water level fluctuations in metres, with a target to 'Maintain natural tidal regime'. The disturbance associated with the tidal regime is the primary driver of the tidal sub-type and rare associated species (NPWS, 2011). Given the distance between the bridge and the tidal extent of this waterbody (over 70km downstream), and considering the dilution capacity of the Carrigower River and the River Slaney the proposed works will not impact the tidal regime for this Qualifying Interest.

'Hydrological regime: river flow' is measured by metres per second, with the target to 'Maintain appropriate hydrological regimes'. Considering the duration of the proposed works, and the nature and scale of the works, the works will not affect the river flow in the River Slaney.

Substratum composition: particle size range

The substratum composition is measured in millimetres, with the target 'For the tidal sub-type, the substratum of the channel must be dominated by particles of sand to gravel, with silt at the river margins'. Given the location of the bridge, and the nature and scale of the proposed works, the works will not impact the tidal sub-type of the substratum composition in the River Slaney.

Water quality: nutrients

Water quality is measured in milligrams per litre, with the target 'The concentration of nutrients in the water column must be sufficiently low to prevent changes in species composition or habitat condition'. Dewatering, the use of wet concrete in the riverbed, and the spillage could result in negative water quality impacts via pollution and sedimentation. This may result in changes in species composition or habitat condition downstream of the works. As such, there is a risk to a change in the nutrient composition in the upstream extent of the river habitat in this SAC as a result of the proposed works.

Vegetation composition: typical species

Vegetation composition is measured by occurrence, with the target of 'Typical species of the relevant habitat sub-type reach favourable status'. Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could result in negative water quality effects downstream, which may lead to the deterioration of this habitat. This may lead to indirect impacts to species downstream of the works in the upstream extent of this SAC, potentially affecting the species composition of this Qualifying Interest.

Floodplain connectivity: area

Floodplain connectivity is measured in hectares, with a target for 'The area of active floodplain at and upstream of the habitat must be maintained.' Considering the temporary nature and scale of the works, the floodplain connectivity of this Qualifying Interest will not be affected by the works.

4.2.2 Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029]

The Conservation Objective for this Qualifying Interest is given in Table 3-2 above. The status of the freshwater pearl mussel for the Slaney River Valley SAC is currently under review. For the purpose of this report, the Conservation Objective is taken from the Conservation Objectives in the Lower River Suir SAC, as "*To restore the favourable conservation condition of Freshwater Pearl Mussel in Lower River Suir SAC*" (NPWS, 2017). The Attributes of these Conservation Objectives can be summarised as follows:

- Distribution
- Population size
- Population structure: recruitment
- Population structure: adult mortality
- Suitable habitat: extent
- Suitable habitat: condition

- Water quality: macroinvertebrate and phytobenthos (diatoms)
- Substratum quality: filamentous algae (macroalgae); macrophytes (rooted higher plants)
- Substratum quality: sediment
- Substratum quality: oxygen availability
- Hydrological regime: flow variability
- Host fish
- Fringing habitat: area and condition

Distribution, and Population size and structure

[redacted] As the Carrigower River is seasonally dry at Merginstown Bridge, it is unsuitable habitat for freshwater pearl mussel. The closest possible location of freshwater pearl mussel within the SAC is 1.9km downstream of the proposed works. Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could lead to negative water quality effects at and downstream of the works. This may deteriorate the river habitat in the Carrigower River, and further downstream in the SAC. Poor habitat quality may lead a reduction the distribution of freshwater pearl mussel downstream in the SAC, over time, resulting a change in the population size and structure.

Suitable habitat, Water quality, and Substratum quality

Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during the scour repair could lead to negative water quality effects downstream, which may result in poor water quality, and creating unsuitable habitat for freshwater pearl mussel.

Hydrological regime: flow variability

Hydrological regime is measured in metres per second, with the target to 'Maintain appropriate hydrological regime'. The scour repair works will require the isolation of the works area across the width of the river. The water flow will be diverted around the scour repair for the duration of the works. Considering the temporary nature and scale of the works, the hydrological regime in this SAC will not be affected by the works.

Host fish

Host fish is measured by number, with the target to 'Maintain sufficient juvenile salmonids to host glochidial larvae'. Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could lead to negative water quality effects downstream. This may deteriorate the river habitat in the Carrigower and downstream in the SAC. Poor habitat quality may lead a reduction in the distribution and population of salmonids in the river system, reducing host availability for juvenile mussels.

Fringing habitat: area and condition

Fringing habitat is measured in hectares, with the target to 'Restore the area and condition of fringing habitats necessary to support the population'. No works will be undertaken in the SAC. The scour repair works will require the isolation of the works area across the width of the river. The water flow will be diverted around the scour repair for the duration of the works. Any impacts to the surrounding terrestrial habitats will be minor and temporary. Considering this, and the location, scale, and temporary nature of the works, fringing habitat in this SAC will not be affected by the works.

4.2.3 Fish Species (Brook Lamprey, River Lamprey, Sea Lamorey, and Atlantic Salmon)

The fish species which are listed as Qualifying Interests of the Slaney River Valley SAC and are potentially adversely affected by the proposed works are river lamprey, brook lamprey, sea lamprey, and Atlantic salmon. The Conservation Objectives for each of these species are given in Table 3-2 above. The Attributes of these Conservation Objectives can be summarised as follows:

- Distribution / Extent of anadromy
- Adult spawning fish
- Salmon fry abundance
- Out-migrating smolt abundance
- Number and distribution of redds
- Water quality
- Population structure of juveniles
- Juvenile density in fine sediment
- Extent and distribution of spawning habitat
- Availability of juvenile habitat

Distribution / Extent of anadromy

Distribution is measured in the percentage of the river which is accessible. Scour repair is required across the width of the Carrigower River. The works are approximately 1.9km upstream of this SAC. In-stream works could act as a barrier to movement for fish species, preventing fish upstream from moving downstream into the SAC, and creating an ex-situ barrier to fish migrating to spawning grounds, and potentially resulting in the physical harm and / or mortality of fish utilising the watercourse. However, this is a temporary barrier, which will be removed after the duration of the works (c. 1 week), restoring the connectivity of the river. As such, the distribution / extent of anadromy in the SAC will not be affected by the proposed works.

Adult spawning fish and Out-migrating smolt abundance (salmon)

Adult spawning fish is measured by number, with a target of the conservation limit (CL) for each system consistently exceeded. A conservation limit is defined by the North Atlantic Salmon Conservation Organisation (NASCO) as "the spawning stock level that produces long-term average maximum sustainable yield as derived from the adult to adult stock and recruitment relationship", based on the Standing Scientific Committee of the National Salmon Commission's annual model output of CL attainment levels. (NPWS, 2011). Out-migrating smolt abundance is measured by number, with the target of 'No significant decline'.

Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could lead to negative water quality effects. This may deteriorate the river habitat in the Carrigower and downstream in the SAC. Fish migrating in the Carrigower River, including smolts migrating downstream towards the SAC, may become injured or killed as a result of in-stream works.

Salmon fry abundance and Number and distribution of redds (salmon)

Salmon fry abundance is measured by number of fry per 5 minutes of electrofishing, with a target to 'Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 min sampling'. This target is the threshold value for rivers currently exceeding their conservation limit. The number and distribution of redds is measured by number and occurrence, with a target of 'No decline in number and distribution of spawning redds due to anthropogenic causes'.

Salmon spawn in clean gravels. The riverbed a the bridges is made up of the concrete apron and silt, with small areas of exposed gravel. Periodically, the river channel dries up almost entirely. Therefore, it is not suitable for salmon spawning. However, dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair may result negative impacts to the habitats downstream, potentially reducing suitable breeding habitat, and directly impacting redds through sedimentation. Pollution and sedimentation may also lead to ex-situ negative water quality effects to salmon fry in the Carrigower River, as well as impacts to individuals in the upstream section of the SAC. This may reduce their abundance in this river, and in-turn, in the SAC.

Water quality (salmon)

Water quality is measured by EPA Q value, with a target of 'At least Q4 at all sites sampled by EPA'. Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could lead to negative water quality effects downstream in the SAC.

Population structure of juveniles, Juvenile density in fine sediment and Availability of juvenile habitat (lampreys)

Juvenile density in fine sediment is measured by juveniles/m², with a target of 'Mean catchment juvenile density of brook/river lamprey at least 2/m²'. The availability of juvenile habitat is measured by the number of positive sites in 2nd order channels (and greater), downstream of spawning areas, with a target of 'More than 50% of sample sites positive'.

Juvenile lamprey burrow in areas of fine sediment in still water (NPWS, 2011). There are areas of riverbed at Merginstown bridge and downstream of it which provide suitable habitat for juvenile lamprey. In-stream works may result in direct physical harm to juvenile lamprey which may be present in the riverbed. Additionally, dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair could lead to negative water quality effects downstream, deteriorating the river habitat in the Carrigower River and downstream in the SAC. As well as a reduction in the availability of juvenile habitat, poor habitat quality may lead reduced biological fitness, and eventually leading to a change in the population structure of lamprey in the SAC.

Extent and distribution of spawning habitat (lampreys)

The extent and distribution of spawning habitat is measured by m² and occurrence, with a target of 'No decline in extent and distribution of spawning beds'. Lampreys spawn in clean gravels (NPWS, 2011), with river and sea lamprey spawning in swift currents, and brook lamprey spawning in slow currents (Kurz & Costello, 1999). There may be suitable spawning habitat for lamprey at Merginstown Bridge and downstream of it, however the nearest area of spawning habitat in the SAC is approximately 1.9km downstream of the proposed works. Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair may result negative impacts to the habitats downstream in the SAC via sedimentation and pollution, potentially reducing the extent and distribution of spawning habitat.

4.2.4 Otter (*Lutra lutra*) [1355]

The Conservation Objective for this Qualifying Interest is given in Table 3-2 above. The Attributes of this Conservation Objective can be summarised as follows:

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

Distribution, Extent of freshwater (river) habitat, and Barriers to connectivity

Scour repair is required across the width of the Carrigower River, at a depth of 0.7m. In-stream works may result in disturbance to Otter, and act as a barrier to movement. However, Otter are a highly mobile species, and can avoid and return to the area when the temporary works are complete. Considering this, and given the location, nature, and scale of the proposed works, the proposed works will not affect the distribution of Otter and the extent of their river habitat in this SAC, and will not create a barrier to connectivity.

Extent of terrestrial, marine, and freshwater (lake/lagoon) habitats

The bridge is located in the upper river system upstream of this SAC. Given the location, scale and temporary nature of the proposed works, it can be concluded that they will not affect the extent of terrestrial, marine, or freshwater (lake/lagoon) habitats in this SAC.

Couching sites and holts

Couching sites and holts are measured by number, with a target of 'No significant decline'. The proposed works are located 1.9km upstream of this SAC. Given the location, the temporary nature and scale of the works, it can be concluded that the proposed works will not result in a decline in couching sites and holts in this SAC.

Fish biomass available

Dewatering, the use of wet concrete in the riverbed, and the accidental spillage of material during scour repair may result ex-situ negative water quality effects such as pollution and sedimentation downstream of the works in the Carrigower River and in the upper extent of this SAC. This could lead to a reduction in prey biomass for Otter.

4.2.5 Conclusion

In the absence of appropriate mitigation, the proposed works have the potential to adversely affect the Conservation Objectives for water courses of plain to montane levels, freshwater pearl mussel, sea lamprey, brook lamprey, river lamprey, Atlantic salmon, and otter in the Slaney River Valley SAC arising from in-stream works during the construction phase of the proposed works. Therefore, mitigation is required to avoid these adverse effects. The proposed works do not provide for any other adverse effects on the SAC during either the construction phase or the operational phase.

5. MITIGATION

5.1 Principles and Approach

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

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

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

5.2 Mitigation Measures

- The Contractor will procure a suitably qualify Ecologist to oversee the works and provide advice in relation to the works, impacts and mitigation measures.
- A temporary site construction compound location for the proposed works has not yet been identified. In line with Holohan & Others v An Bord Pleanála (C-461/17)[10], the location of construction compound will be determined at a later stage. The location of construction compound will be selected using the criteria outlined below, which will ensure the avoidance of adverse effects:
    - Existing Entrance: The selected construction compound site preferably will have its own entrance that does not require the creation of a new one.
    - Proximity to Construction works: The site must be located a maximum distance of 500 meters from the works area. This ensures efficient access to the construction area, and that the compound will be located at least 1.4km from the Slaney River Valley SAC.
    - Tree and Vegetation Conservation: No trees or vegetation will be cleared/ felled for the construction of the temporary working area. The site will be selected in a way that preserves the existing vegetation and soil resources.
    - Surface Type Specification: A site with an existing hard stand or car park is preferred. However, a grassy area can also be considered, though it may require additional preparations for the construction activities (i.e. the installation of geotextile membrane and stone), with approval from the Employer's Representative.

[10] Case C-461/17 Holohan v. An Bord Pleanála, paragraphs 46 & 47

- Facility Requirements: The selected site should be able to accommodate facilities for plant and machinery, materials and temporary welfare facilities.
- Minimum Distance from Surface Water Bodies: The site is required to be situated a minimum distance of 20 meters away from any surface water bodies such as rivers, lakes, ponds, or streams.
- Environmental Impact: Consideration will be given to any potential environmental impact of the compound, such as soil erosion, runoff, and disturbance to local habitats, wildlife and water quality. Best practice construction methods will be implemented relation to local habitats and water quality and are not included in order to avoid or reduce impacts to European sites.

- In-stream works will only be undertaken during the period beginning 1st July and ending 30th September, unless agreed with IFI.
- In-stream works will comply with IFI (2016) *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*, as well as CIRIA (2001) *C532 Control of water pollution from construction sites: guidance for consultants and contractors*.
- Electrofishing shall be carried out in advance of any in-stream works in order to ensure that the area is clear of fish, including Lamprey ammocoetes. Should any be fish be found, they shall be translocated downstream to a location predetermined by the Contractor's Ecologist, where suitable habitat is present. Electrofishing shall only be carried out under licence from IFI. Any silt removed from the riverbed will be checked for the presence of ammocoetes by the Contractor's Ecologist, and any ammocoetes found will be translocated to the location predetermined where suitable habitat for this species is present.
- No machinery is permitted in the water. Concrete will be pumped from a cement lorry parked on the carriageway. 1C material will be lifted to the scour repair using an excavator from the bridge deck or the river bank. The 1C material will then be put in place by hand. 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.
- If wet concrete is to be used below the waterline, it will only be applied when rain is not forecast for the 24 hours before the commencement of the works. This will be approved by the Employer's Representative.
- The concrete will be checked by the Employer's Representative prior to removal of the dam to ensure that it is dry.

The scour repair works shall be carried out in the dry. The works will be carried out using one of the following methods.

Method 1

- Double sealed sandbags will be used to create a dam around half of the watercourse, starting from the upstream side, to allow water to escape naturally. This will displace flow to one side of the river, and will allow the contractor to inspect the void and determine the extent and cause of the void.
- Any remaining water in the dry area will be pumped out, with appropriate screens fitted to the pump to avoid fish entering the system. The discharge pipe of such a pumping system will have a silt sock attached to prevent the discharge of silt laden water back into the watercourse, or water shall be discharged to the grassy embankment and allowed to filter through the vegetation. The pump will be

supervised at all times to ensure is it operating correctly. The silt sock will be approved by the Employer's Representative and the Contractor's Ecologist.

- Once the void is assessed, the void will be filled with Class 1C material or mass concrete on the dry side of the river, while flow is diverted to the other side.
- Once the 1C material has been used to fill the void, or once the concrete has fully dried, the dam will be removed, with approval from the Employer's Representative. The dam will be removed starting at the downstream side, to allow the water level to slowly rise into the riverbed. The upstream side will be opened last, preventing water from flowing through suddenly, and washing out the any sediment.
- This methodology will be replicated for the opposite side of the river in order to complete the scour repair works.

Method 2

- Double sealed sandbags will be used to create a dam around the entire works area across the full width of the river, starting at the upstream side to allow water to escape naturally. This will allow the contractor to inspect the void and determine the extent and cause of the void.
- A flume will be installed to maintain water flow between the upstream and downstream ends of the dam. The flume will be suitably sized for the volume of water in the river. If a pump is required, it will be fitted with appropriate screens to avoid fish entering the system. The discharge pipe of such a pumping system will have a silt sock attached to prevent the discharge of silt laden water back into the watercourse, or water shall be discharged to the grassy embankment and allowed to filter through the vegetation. The pump will be supervised checked three times per day to ensure is it operating correctly. The silt sock will be approved by the Employer's Representative and the Contractor's Ecologist.
- Once water flow has been established between upstream and downstream of the works and the works area has been completely isolated, any remaining water in the works area will be pumped out, with appropriate screens fitted to the pump to avoid fish entering the system. The outlet will have a silt sock attached to prevent the discharge of silt laden water back into the watercourse. The pump will be supervised at all times to ensure is it operating correctly. The silt sock will be approved by the Employer's Representative and the Contractor's Ecologist.
- Once the void is assessed, the void will be filled with Class 1C material or mass concrete. No machinery is permitted in the riverbed. Material will be taken to the works are by hand, using a wheelbarrow or by pumping concrete.
- Once the 1C material has been used to fill the void, or once the concrete has fully dried, the dam will be removed. This will be approved by the Employer's Representative. The downstream dam will be removed first, to allow the water level to slowly rise. The upstream side will then be opened, which will prevent a surge of water flowing through the former works area.
- When the dams have been removed and the river is flowing as normal, the flume pipe will then be removed. Any silt build-up on the silt sock will be removed and disposed of off-site.

5.3 Implementation

The works will be supervised by the Employer's Representative. It is the responsibility of the Employers Representative to ensure that the works are undertaken in accordance with the contract specification and the mitigation measures contained in this NIS.

The Contractor will procure a suitably qualify Ecologist to oversee the works and provide advice in relation to the works, impacts and mitigation measures. The Contractor's Ecologist must possess training, experience and knowledge appropriate to the role, including an NFQ Level 8 qualification or equivalent and any other qualifications necessary to fulfil the role. The ECoW will be present on site during the following activities:

- Scour repair and set-up for the instream elements of the proposed works, including:
  - Dam construction and installation
  - Flume installation
  - Dam removal

A method statement will be produced by the Contractor and approved by the Employers Representative and the Contractor's Ecologist in advance of the works. The method statement will comply with *Leinster Bridges Term Maintenance Contract No. 4 Volume A: Works Requirements Part 2: Specification* (TII, 2024) and the mitigation measures contained in this NIS. The notes of the ECoW will be submitted to the Employer's representative, when present on site.

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

- The mitigation prescribed in this NIS.
- All applicable legislative requirements in relation to environmental protection.
- All relevant construction industry guidelines, including:
  - *C532 Control of water pollution from construction sites: guidance for consultants and contractors* (CIRIA, 2001).
- The Transport Infrastructure Ireland (TII) Environmental Assessment and Construction Guidelines, specifically:
  - *Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes* (TII, 2008a).

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

5.4 Residual Effects

It is considered that the mitigation prescribed in Section 4 will reduce all negative impacts on from the proposed works to imperceptible levels. Any residual effects will not adversely affect the integrity of the Slaney River Valley SAC, or any other European site. Therefore, given the full and proper implementation of the mitigation prescribed in this NIS, it can be concluded beyond all reasonable scientific doubt that the proposed maintenance works at Merginstown Bridge will not adversely affect the integrity the Slaney River Valley SAC or any other European sites in view of their Conservation Objectives.

6. IN-COMBINATION EFFECTS

6.1 Introduction

Article 6(3) of the Habitats Directive requires that AA be carried out in respect of plans and projects that are likely to have adverse effects on European sites, "either individually or in combination with other plans or projects". Therefore, the combined effects of the plan or project under assessment and other past, present or foreseeable future plans or projects must also be examined, analysed and evaluated.

6.2 Methodology

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

The assessment in this NIS has considered in-combination effects that are:

(a) Likely;

(b) Significant; and,

(c) Relating to a future event which is reasonably foreseeable.

The following data sources have been consulted to identify the plans and projects within the 1km boundary:

- Proposed works and developments that have been granted planning permission within the preceding five years in the immediate vicinity of the proposed works, as recorded in the Wicklow County Council Planning Portal (accessed on 24th of June 2025);
- An Coimisiún Pleanála Website;
- Projects listed on the EIA Portal;
- Wicklow County Development Plan 2022-2028.

6.3 Assessment of Effects

Table 6-1 below details the assessment of the likelihood of adverse effects arising from the proposed works in combination with other plans or projects. The potential combination of effects on European sites arising from the routine maintenance works at all structures in Leinster was also taken into account and considered in the assessment of in-combination effects. This assessment was undertaken in view of the Conservation Objectives of the relevant European sites and found that, given the implementation of the mitigation measures in Section 4 of this NIS, the proposed works does not have the potential to adversely affect any European site in combination with other plans or projects.

Table 6-1 Assessment of adverse effects arising from the proposed works in combination with other plans or projects.

Existing Project/ Plan	Description of project/ plan	Likely In-combination Effects
EIRSPAN Bridge Management System - Leinster Bridges **Carrigower Bridge (WW-N81-09.00) Routine Maintenance**	This structure is located approximately 1.9km downstream of Merginstown Bridge. The works at this structure consist of sweeping and cleaning of the bridge surface, removal of vegetation from the embankments and the replacement of fencing, vegetation removal and masonry repointing ($8.25m^2$) and repair ($1m^3$) of the wing and spandrel walls, and the removal of approximately $1m^2$ of branches and debris form the watercourse. The routine maintenance at this bridge was subject to an Appropriate Assessment Screening, which concluded that Stage 2 Appropriate Assessment was not required.	The proposed works at this structure are similar in nature and scale to those at Merginstown Bridge. Given the temporary nature and scale of the proposed works at these structures, the distance between Merginstown Bridge and Carrigower Bridge, and to the nearest European site, and the findings of the AA Screening for Carrigower Bridge, there will be no adverse effects on any European sites as a result of the routine maintenance at this structure in combination with those at Merginstown Bridge.

Existing Project/ Plan	Description of project/ plan	Likely In-combination Effects
EIRSPAN Bridge Management System - Leinster Bridges **Annalecky Bridge (WW-N81-11.00) Routine Maintenance**	This structure is located approximately 830m upstream of Merginstown Bridge. The works at this structure consist of sweeping and cleaning of the bridge surface and the rubbing strips, polysulphide sealant application between the rubbing strips and parapets, and masonry repointing on the parapets (c. 0.1m^2 of mortar required). The routine maintenance at this bridge was subject to an Appropriate Assessment Screening, which concluded that Stage 2 Appropriate Assessment was not required.	The proposed works at this structure are similar in nature and scale to those at Merginstown Bridge. Given the temporary nature and scale of the proposed works at this structure, the distance from these structures to the nearest European site, and the findings of the AA Screening for Annalecky Bridge, there will be no adverse effects on any European sites as a result of the routine maintenance at this structure in combination with those at Merginstown Bridge.

7. CONCLUSION

This NIS has been prepared in accordance with the relevant provisions of the Habitats Directive, the Habitats Regulations and the Planning and Development Act, as well as the relevant case law and current guidance. It has demonstrated that, in the absence of appropriate mitigation, the proposed bridge maintenance works at Merginstown Bridge, individually or in combination with other plans or projects, would adversely affect the integrity of the Slaney River Valley SAC. In light of this finding, this NIS has prescribed appropriate mitigation to eliminate or minimise such effects. Any residual effects, either individually or in combination with other plans or projects, have been assessed as not constituting adverse effects on the integrity of any European site. This assessment has been undertaken on the basis of the best scientific knowledge in the field and the Precautionary Principle and no reasonable scientific doubt remains as to the absence of such effects.

It is the considered opinion of ROD, as the author of this NIS, that, in making its AA in respect of the proposed bridge maintenance works at Merginstown Bridge, Transport Infrastructure Ireland (TII), as the Competent Authority in this case, should 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.

8. REFERENCES

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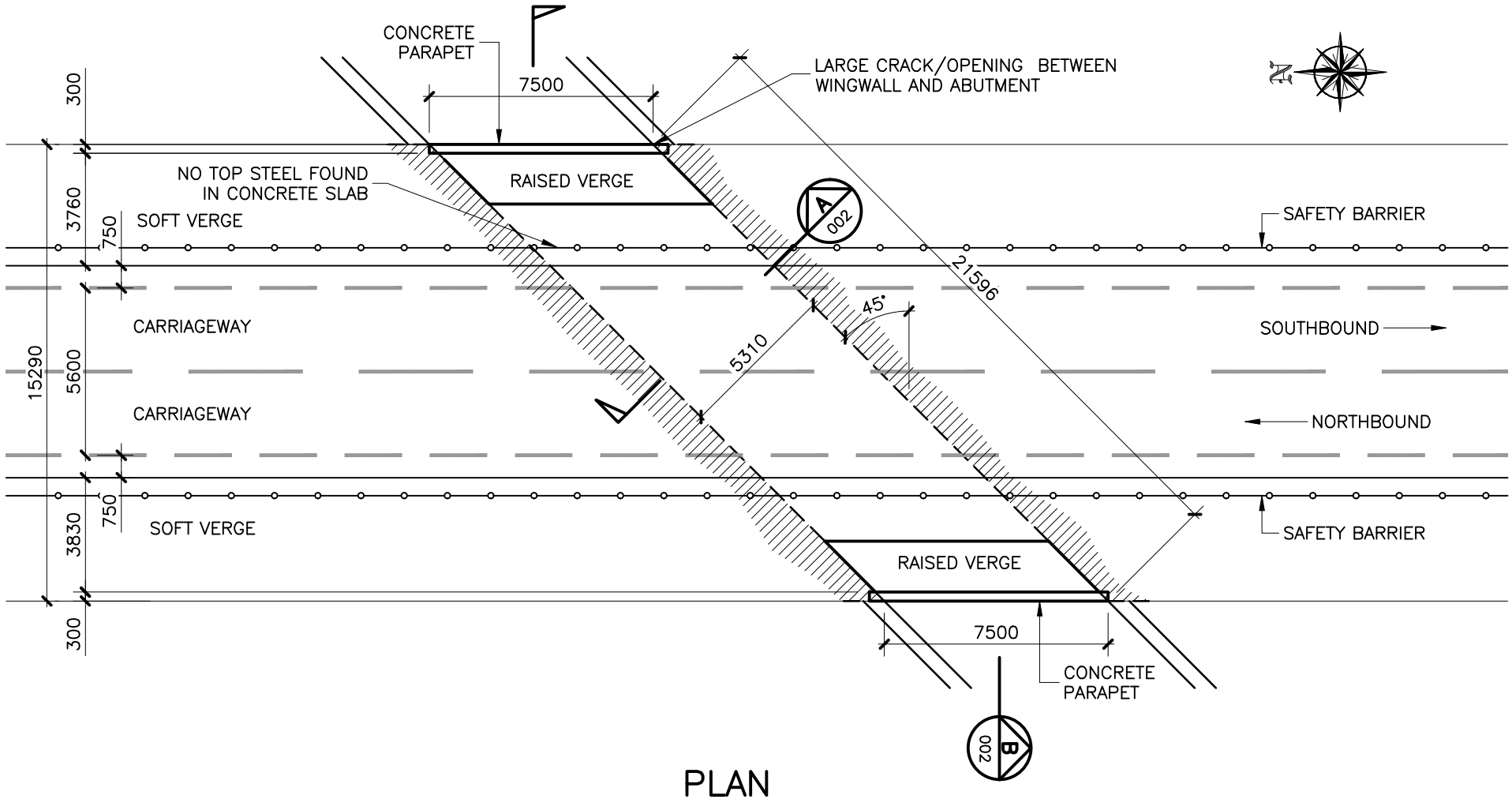
APPENDIX A

MERGINSTOWN BRIDGE: PLAN ON EXISTING BRIDGE



PLAN

SCALE 1:200

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

An tÚdarás um Bóithre Náisiúnta
National Roads Authority

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Project Title	EIRSPAN STRUCTURAL ASSESSMENTS: CARLOW, KILKENNY AND WEXFORD BRIDGES
Drawing Title	MERGINSTOWN BRIDGE: PLAN ON EXISTING BRIDGE

Date	Scale	CAD File	Project No.
JAN. 10	AS SHOWN	09180-041&042	09180

Drawn	Checked	Approved	Drawing No.	Rev.
PD	PK	JK	001	-

Jan 20, 2010 - 2:09pm

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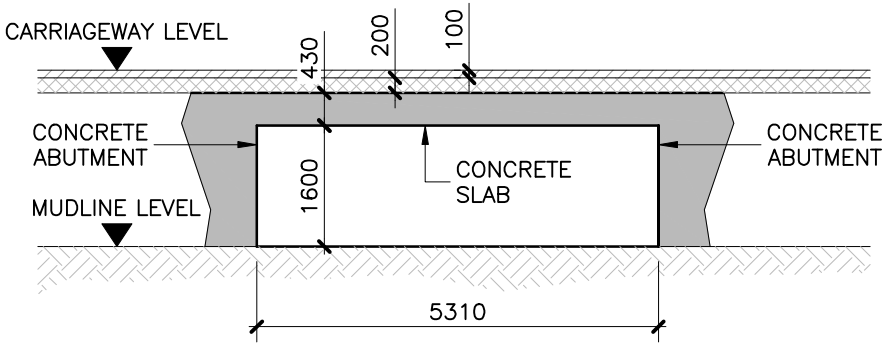

SECTION A
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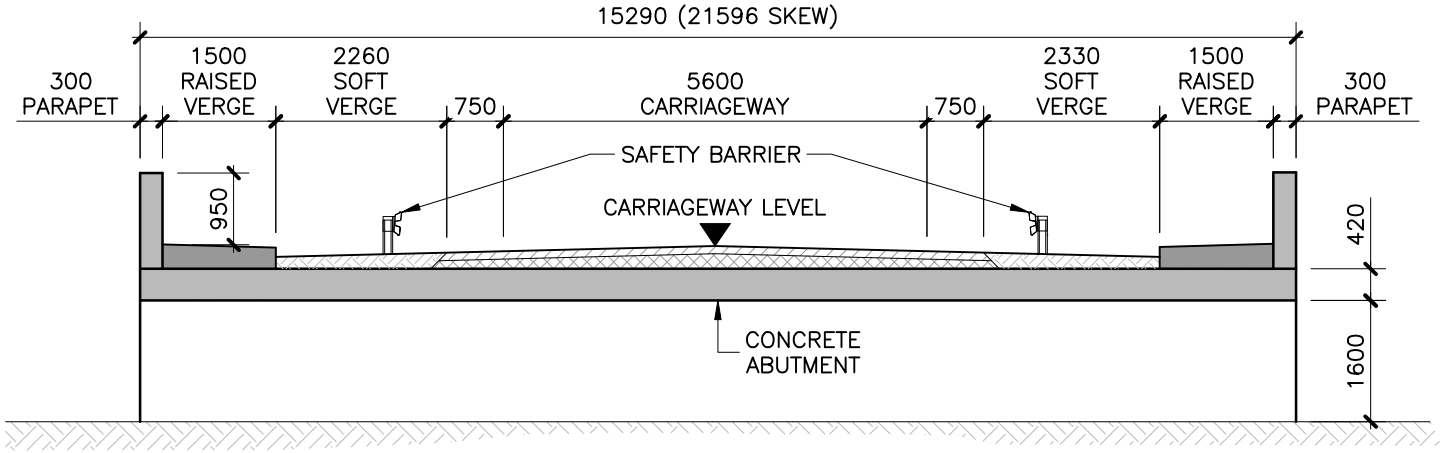

SECTION B
SCALE 1:100
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Project Title	EIRSPAN STRUCTURAL ASSESSMENTS: CARLOW, KILKENNY AND WEXFORD BRIDGES
Drawing Title	MERGINSTOWN BRIDGE: SECTION THROUGH EXISTING BRIDGE

Date	Scale	CAD File	Project No.
JAN. 10	AS SHOWN	09180-041&042	09180

Drawn	Checked	Approved	Drawing No.	Rev.
PD	PK	JK	002	-

Jan 20, 2010 - 2:09pm Drawing Location: L:\acaddwg\2009\09180\Drgs\BRIDGE SKETCHS\09180-041&042.dwg

APPENDIX B

MERGINSTOWN BRIDGE: SKETCH OF SCOUR REPAIR TO BE UNDERTAKEN

Proj.: LBTMC 4
Title: WW-N81-010.00 - Merginstown Bridge - Scour repair