ATKINS

Member of the SNC-Lavalin Group

Munster Term Maintenance Contract No 3

Blennerville Bridge Repairs - Natura Impact Statement

Transport Infrastructure Ireland

16/06/2022

Notice

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Document history

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Client signoff

Client	Transport Infrastructure Ireland
Project	Munster Term Maintenance Contract No 3
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1. Introduction

Transport Infrastructure Ireland engaged Atkins to undertake the structural assessment of Blennerville Bridge (KY-N86-001.00) as part of its role as Employer's Representative for the Munster Bridges Term Maintenance Contract No.3. The purpose of the structural assessment was to determine the extent of the damage, the impact on the load capacity of the structure and to inform the subsequent repairs to be undertaken as reactive maintenance under the Munster Bridges Term Maintenance contract. The structural assessment of the structure was undertaken in accordance with TII Publication AM-STR-06026 *The Assessment of Road Bridges and Structures*. As a result of this assessment a programme of works at KY-N86-001.00 Blennerville Bridge have been proposed.

TII engaged Atkins to undertake Screening for Appropriate Assessment and to prepare a Natura Impact Statement for proposed works at Blennerville Bridge (KY-N86-001.00).

The bridge location is shown Figure 1.1 (Drawing 5162555 / HTR / DR / 3101) and bridge layout is shown in Figure 1.2 (5162555 / HTR / DR / 3102); both are included at the end of Chapter 1.0.

A series of photos of Blennerville Bridge (KY-N86-001.00) taken during the structural inspection in October 2021 are shown in Section 1.2.

1.1. Project Description

Blennerville Bridge (KY-N86-001.00) is a five span masonry and concrete arch structure carrying the N86 national secondary road over the River Lee in the village of Blennerville, Co. Kerry. The original 1757 masonry arch structure was widened in the 1990's as part of the Blennerville Bridge Widening Scheme to provide a width out to out 11.1m, with the bridge carrying a 7m wide carriageway and 2 no. 1.5m wide footways. The northernmost span of the original masonry structure is believed to be infilled and is therefore considered part of the north abutment. The structure has a total length of 38.2m with spans varying from 4.73m to 7.23m wide. The masonry arches, piers and abutments have been gunnited throughout, most likely as part of the widening scheme works.

Blennerville Bridge Relief Arch (KY-N86-002.00) is a two span masonry and concrete arch structure located approximately 21m south of the main bridge. The masonry arch structure comprises two spans of 2.74m and 2.88m respectively with a total length of 6.9m. Both arches are gunnited throughout. Similar to the main bridge, the original masonry structure was widened with a single span reinforced concrete arch as part of the Blennerville Bridge Widening Scheme in the 1990's.

The widening scheme also included the construction of additional spans comprising T5 precast prestressed reinforced concrete beams between the two masonry arch structures and on the south approach. All spans are enclosed by the original masonry wing walls and the new reinforced concrete wing walls with masonry cladding. No access is provided to the spans with the condition of the prestressed beams unknown.

1.1.1. Proposed Works

The works to Blennerville Bridge comprise the reconstruction of the masonry cutwaters at both the west and east elevations of the structure. The original masonry arch bridge forms the west elevation of the structure, with the east elevation formed by the reinforced concrete arch widening works completed in the 1990's. The west masonry cutwaters are in poor condition with the cutwater of the southernmost collapsed to the springing point of the arch. The remaining 4 no. west cutwaters show signs of masonry damage also. The existing cutwaters are to be taken down to springing height, with the construction of new capping from springing height using existing stone. The spandrel walls behind the existing cutwaters are to be reconstructed using existing stone also. The mortar to be used in the works will be NHL mortar to match the existing.

The east cutwaters comprise reinforced concrete construction extended from the piers of the reinforced concrete arches. The cutwaters are clad with masonry with masonry capping constructed on top. Areas of masonry loss are noted to the cutwaters at present with the cutwaters to also be taken down to springing level. The existing masonry cladding and capping will be removed to store and the reinforced concrete cutwater will be demolished.

The existing masonry capping and cladding will be used to construct the new capping and spandrel wall cladding respectively. The works are envisaged to take 5 weeks to complete.

The works will be undertaken within temporary dry working areas located at the base of each cutwater, formed by the placement of sealed 1t sand bags on the existing reno mattress at both elevations of the structure. The dry working areas will contain any falling material from the works and prevent contamination of the surrounding watercourse. The tidal nature of the watercourse at the location means the working areas will be overtopped at each high tide with any fallen material retrieved from the working areas prior to the overtopping and removed from site in order to prevent contamination. The water contained within the working areas once the tide has dropped below sand bag level will be pumped out to a settlement bund located adjacent to the car park at the southeast of the structure.

Access to the working areas will be provided from the existing bridge structure, with ladders providing access to the scaffolding erected in the working area at each cutwater. A lane closure will be required over the structure for the duration of the works with short term road closures required to facilitate the key phases of the works, such as the installation and removal of the sand bags at the base of each cutwater.

A site compound will be located off the structure, in an area of the nearby car park located southeast of the structure. It may be necessary to store small amounts of fuel within the site compound and thus away from the bridge. Any refuelling to be done will be restricted to within the site compound area with drip trays in place. Furthermore, any chemical, fuel and oil stores will be located on an impervious base within a secured bund with a storage capacity 110% of the stored volume. The appointed Contractor will determine the need for welfare facilities. If required, these will also be located away from the bridge within the site compound, as will the need to park any vehicles.

Works methods are described in full in Section 1.3 and in the accompanying Method Statement (see Appendix B).

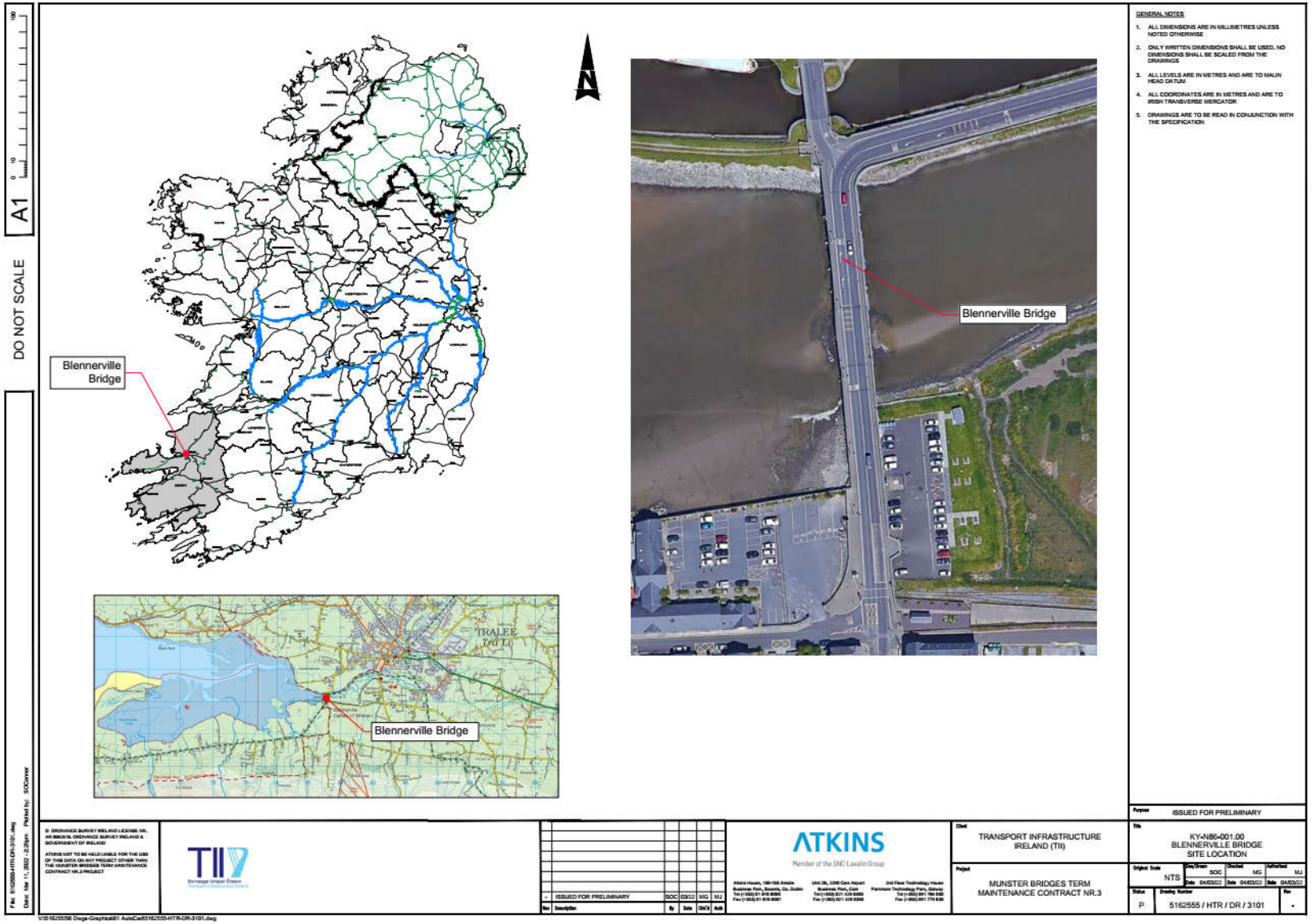

Figure 1.1 Site Location.

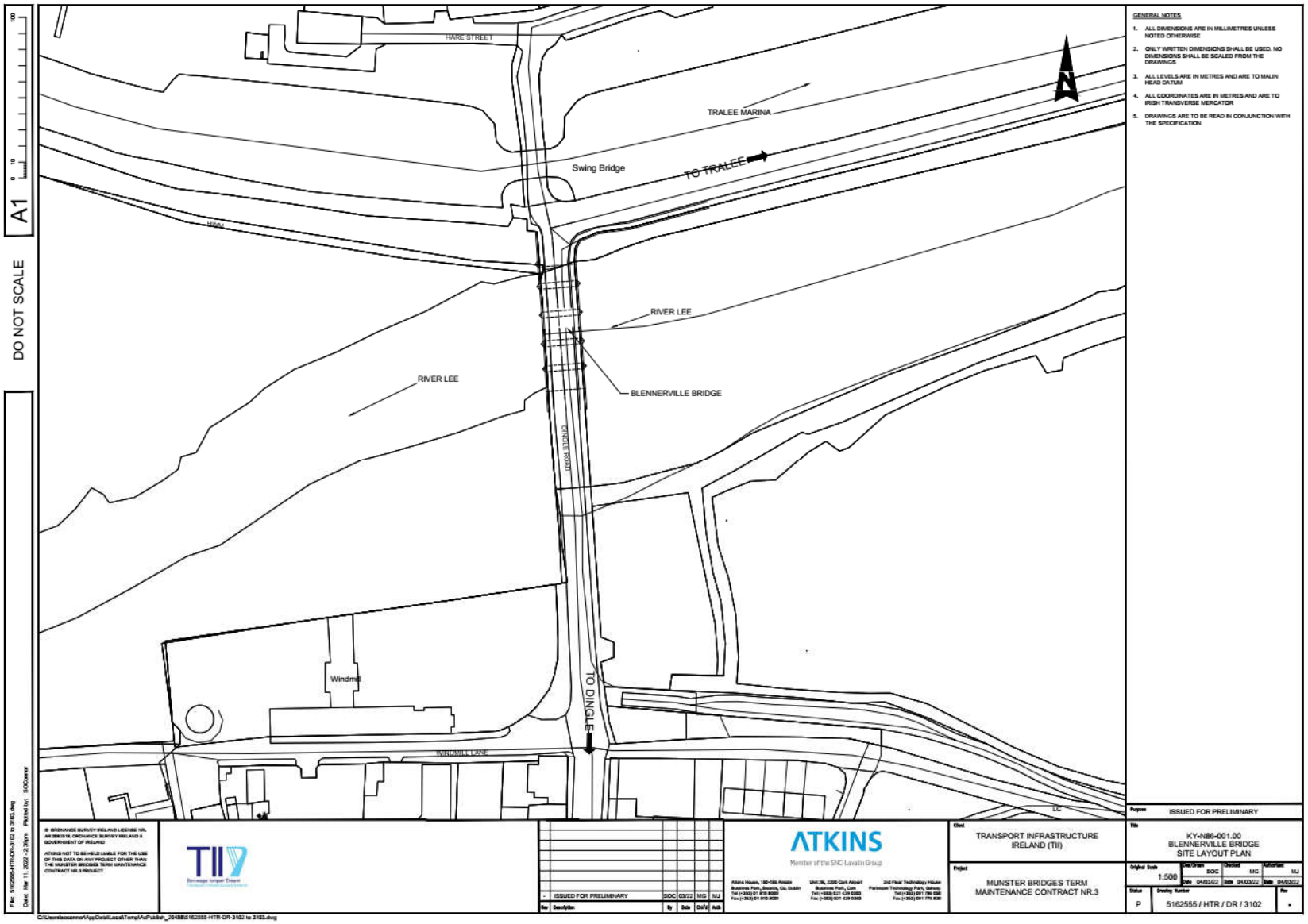

Figure 1.2 Site Layout Plan.

1.2. Bridge Photos

The following series of photos were taken during the structural assessment of Blennerville Bridge (KY-N86-001.00) and Blennerville Bridge Relief Arch (KY-N86-002.00) at low tide in October 2021. Access to all parts of the bridge were facilitated during this survey work.

Plate 1.1 Bridge surface looking south.

Plate 1.2 View of the east footway and parapet.

Plate 1.3 View of the west footway and parapet.

Plate 1.4 View of the NW embankment.

Plate 1.5 **View of the NW wing wall and infilled north span.**

Plate 1.6 **View of the SW wing wall with detached pattress plate and previous concrete repair evident.**

Plate 1.7 View of the SE wing wall with high tide staining evident.

Plate 1.8 View of the NE wing wall with high tide staining evident.

Plate 1.9 View of the west spandrel wall with vegetation growth evident.

Plate 1.10 View of the north face of pier 1.

Plate 1.11 View of the west cutwater of pier 1 with cracked and missing masonry evident.

Plate 1.12 View of the north face of pier 2 with 10mm wide vertical crack evident from quarter point of arch down to riverbed at middle of structure.

Plate 1.13 Missing masonry to the east cutwater of pier 2.

Plate 1.14 Masonry loss and separation to the west cutwater of pier 2.

Plate 1.15 View of the west cutwater of pier 3 with masonry loss evident and cracking to the gunnite layer on the south face.

Plate 1.16 Collapsed west cutwater of pier 4.

Plate 1.17 Missing and cracked masonry to the east cutwater of pier 4.

Plate 1.18 View of arch barrel in span 3 with extensive cracking to the gunnite layer at both quarter points.

Plate 1.19 Multiple pattress plates at the west elevation of span 5 arch barrel.

Plate 1.20 View of the riverbed at the east elevation.

Plate 1.21 View of the east elevation.

Plate 1.22 View of the west elevation.

1.3. Works Methods

The following descriptions are extracted from the Contractor's (Cumnor) Method Statement which is included in full in Appendix B.

The proposed project comprises the following methods of work: -

1.3.1. Traffic Management

A traffic diversion will be needed for setting up the 1T sand bags. Traffic management will be set up as set out in Figure 1.3 below for all other works.

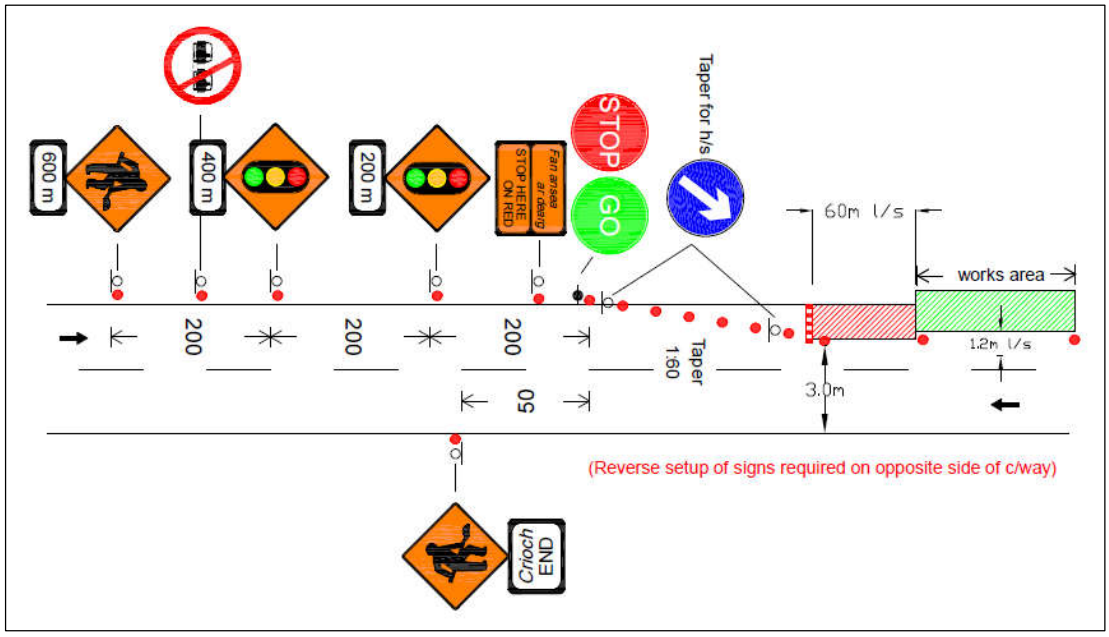

Figure 1.3 Traffic management proposals.

Site vehicles will park within the temporary traffic management set up. All materials will be store within the traffic management set up

The proposed traffic diversion is as shown on Figure 1.4 with appropriate signage.

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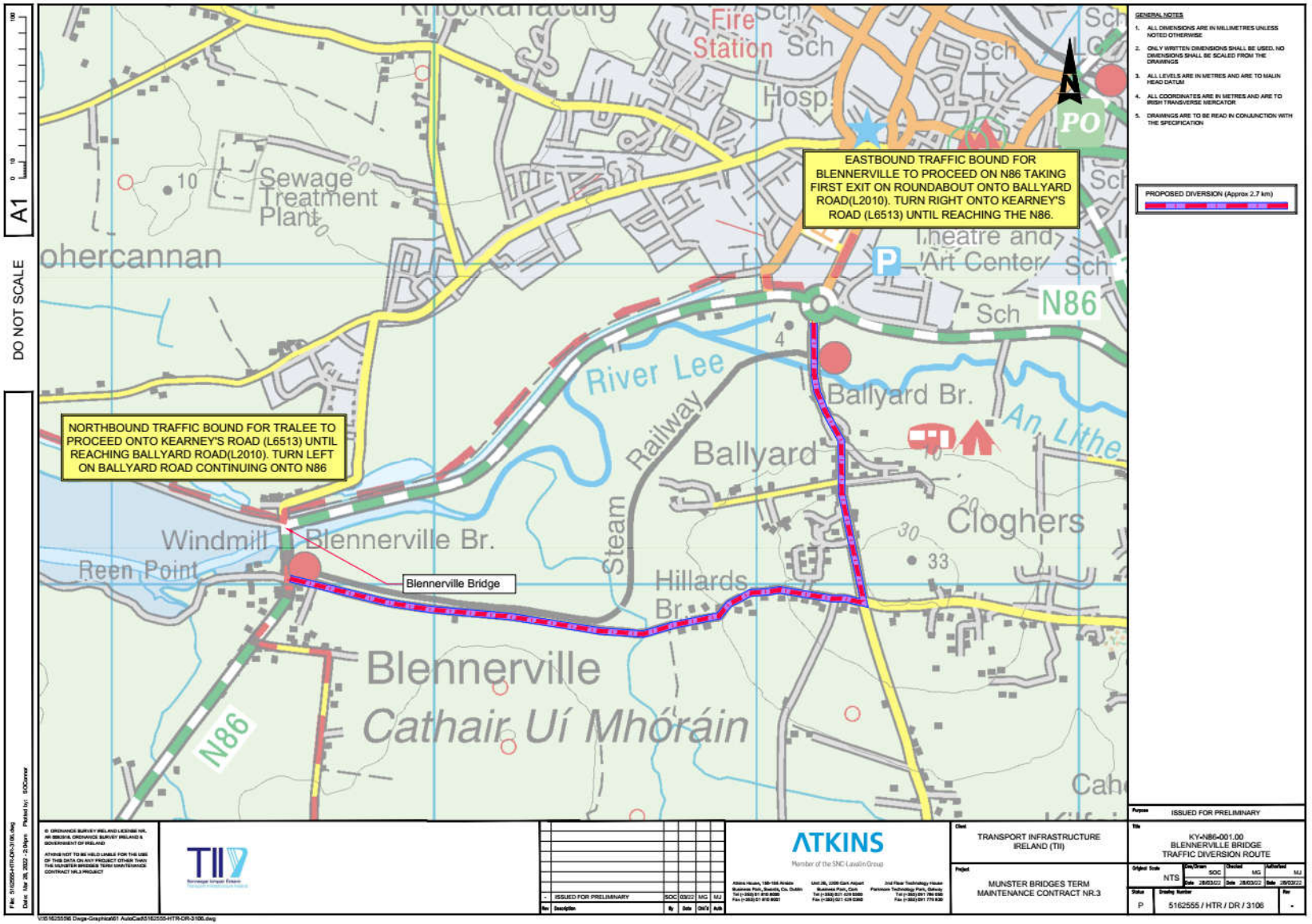


Figure 1.3 Traffic Diversion Route.

1.3.2. Water Safety

1. Drag line to be set up at across the arch at the opposite side of the bridge to that being worked upon.
2. All operatives to wear inflatable life vests.
3. Life buoy ring to be set up in accessible location adjacent to each cutwater that is being worked upon.

1.3.3. Sequence of works

1.3.3.1. Phasing of Works

It is proposed to undertake works this summer. It is proposed that works would take 7 weeks to complete. A summary of the phasing of works is presented below: -

- Site Mobilisation - Week 1 – Set up Traffic Management diversion, site compound set up in carpark to the southeast of the bridge. Set up localised dewatering pipes and associated settlement bund at the southeast corner of the bridge.
- Creation of sandbags / working on sections will take place in the following sequence from Week 1-6. Set up procedure includes for the installation of a geotextile screen under the areas of masonry works which is to be removed and disposed of after each working shift. A new geotextile to be erected at the start of each shift. Water within the works areas to be pumped to the settlement bund. Selected piers for each phase are not located within the same span.
    - Stage 1 - Week 2-3. Commence deconstruction works to 1st set of piers on west side of structure followed by masonry reconstruction. Complete masonry rebuild to works to 1st set of piers on west side of structure.
    - Stage 2 - Week 3-4. Commence deconstruction of 2nd set of piers on the west side of the structure. Complete masonry rebuild to works to 2nd set of piers on west side of structure.
    - Stage 3 - Week 4-5. Commence deconstruction of 3rd set of piers located on the east side of the structure. Complete masonry rebuild to works to 3rd set of piers on east side of structure.
    - Stage 4 - Week 5-6 Commence deconstruction of 4th set of piers located on the east side of the structure Complete masonry rebuild to works to 4th set of piers on east side of structure.
- Demobilisation - Week 7.

Given the short works programmes, it is possible that there may be some overlap between Stages within a given week. Note also that as the bridge is in a tidal estuary that works can only take place during the low tide window. No works will take place during high tide or on the ebb / flow tide when the works area is still under water.

1.3.3.2. General

- Set up TTMP as per plan. The road will be reduced to one lane over the area of works.
- Safety barriers to be placed around the works area.
- Vikron spray will be used on any PPE and tools used that will enter the watercourse.
- Site Compound to be set up in carpark to the SE of the bridge
- NHL5 Mortar to be mixed in bunded area in site compound.
- Stone for rebuilding to be kept on the bridge adjacent to the cutwater.

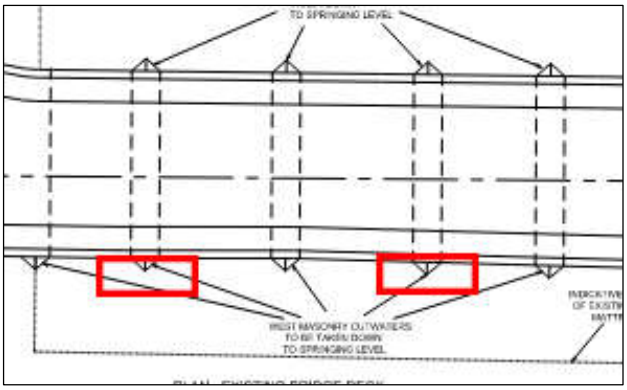
- No liquid cement will be poured for these works.
- Cumnor's Ecological Clerk of Works will monitor the performance of mitigation measures and issue reports on said performance after each site visit.
- The works are expected to take 7 weeks.
- Works will be carried out within the allowable period at low tide.
- Works to start once water has receded past the level that is to be worked upon.
- Sheeting to be applied to the face of new masonry construction each tidal cycle to prevent washout of fresh mortar. This is to be in place prior to the water reaching this level.

1.3.3.3. 1T sandbag Cofferdam Construction

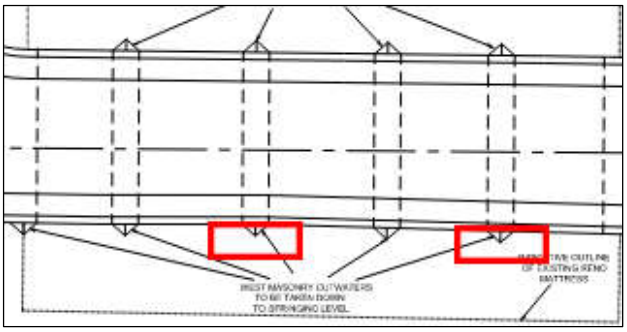
(*Note: - to be set up at each cutwater location*)

- The road will have to be closed and a diversion route put in place (see Section 1.3.1 for proposed diversion route).
- Works to take place a low tide.
- Swivel Teleporter is to be set up on road adjacent to cutwater.
- General Operatives (GO's) to access watercourse from walkway to the NW of the bridge.
- Double sealed 1T sandbags to be transported to site in flatbed truck.
- Banksman to load 1T sandbag to teleporter and direct driver to set down location.
- GO's to push 1T sandbags into place.
- Subsequent sandbags to be laid adjacent to one another until horseshoe shape is achieved.

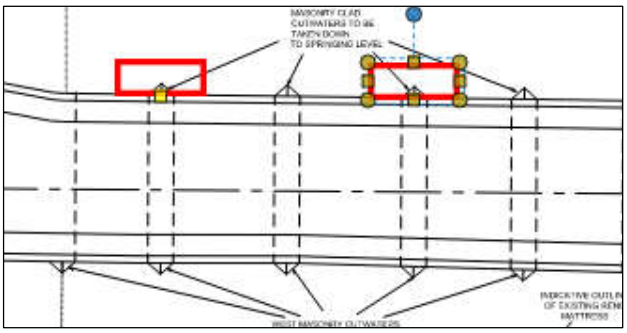
The piers will be worked on in the following sequence (see Figure 1.5). For further details of works locations see the accompanying design drawings (Figure 1.7 & 1.8).



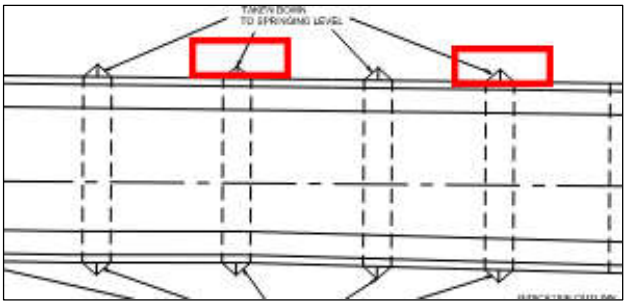
Stage 1



Stage 2



Stage 3



Stage 4

Figure 1.5 Sequencing and location of proposed works.

1.3.3.4. Masonry Works (West side of Bridge)

- All works to be carried out at low tide.
- 4ft scaffold to be erected at each side of the cutwater to access the top of the cutwater.
- Scaffold will be founded on the reno mattress and the 1 T sand bags.
- Scaffold to be designed and TWDC[1] signed off before erection.
- All scaffold materials to be steam cleaned prior to being put in the water.
- Scaffold to be lowered from the bridge and erected in the area of works.
- At low tide the sandbag coffer dam will be pumped out with a 4 inch pump pumping to settlement bund to the SE side of the bridge. This area will be bunded off with sandbags allowing the pumped water to filter through the ground (see Figure 1.6).

Figure 1.6 Location of settlement bund for water management.

- Existing cutwater masonry to be taken down by hand to springing point of bridge.
- Stone to be stored for reuse.
- Geotextile screen to be set up under area of repointing/ stone rebuilding. This is to be removed and disposed of at the end of each work shift before the tide comes back in. Geotextile screen is to prevent contaminants entering the watercourse, with loose materials to be removed with it.
- Screen to be folded in on top of itself and placed in high strength bag.
- Bag to be lifted out of works area using teleporter.

[1] Temporary Works Design Certificates.

- New screen to be erected at the start of the following shift.
- Cutwater spandrel stone to be broken back to allow for masonry repair.
- Spandrel wall to be repaired to planar surface.
- New cutwater capping to be built using reclaimed masonry to shape as detailed in drawings.
- Loose and cracked pointing shall be raked out to sound material and the joint cleaned.
- All repointing shall be undertaken with lime mortar in accordance with the contents of CCSPW- 02400[2] and CC-SCD-02407[3].
- Missing or deteriorated pointing to be carefully raked out by hand to a depth of twice the joint thickness and the joint dampened down.
- All repointing is to be done using NHL 5, manufacturer's instructions to be followed.
- Mortar for new and repointing existing masonry work shall be NHL5 lime mortar Mix Reference (a) in accordance with Table 24/4 of Transport Infrastructure Ireland Publication CC-SPW-02400.
- If the masonry structure to be repaired is dry, dampen it down before the mortar is applied.
- If it rains after the mortar is applied, cover the masonry structure to protect it.
- All joints to be tamped with stiff brush once mortar is stiff.

1.3.3.5. Masonry Works (East side of Bridge)

- All works to be carried out at low tide.
- 4ft scaffold to be erected at each side of the cutwater to access the top of the cutwater.
- Scaffold to be designed and TWDC signed off before erection.
- All scaffold materials to be steam cleaned prior to being put in the water.
- Scaffold to be lowered from the bridge and erected in the area of works.
- At low tide the sandbag coffer dam will be pumped out with a 4 inch pump pumping to settlement bund to the SE side of the bridge. This area will be bunded off with sandbags allowing the pumped water to filter through the ground (see Figure 1.6).
- Existing cutwater masonry to be taken down by hand to springing point of bridge.
- Stone to be stored for reuse.
- Existing cutwater masonry cladding to be taken down by hand to springing point of bridge.
- Stone to be stored for reuse.
- Concrete cutwater to be cut with concrete saw in 100mm sections and broken out using electric kango hammers to allow for masonry cladding.

[2] https://www.tiipublications.ie/library/CC-SPW-02400-03.pdf

[3] https://www.tiipublications.ie/library/CC-SCD-02407-01.pdf

- Spandrel wall to be repaired to planar surface.
- New cutwater capping to be built with using reclaimed masonry to shape as detailed in drawings.
- New cutwater cladding to be at built at springing point level.

1.3.3.6. Removal of 1T sandbag Cofferdam Construction

(*Note: - to be set up at each cutwater location*)

- The road will have to be closed and a diversion route put in place.
- Works to take place a low tide.
- Swivel Teleporter to set up on road adjacent to cutwater.
- GO's to access watercourse from walkway to the NW of the bridge.
- Double sealed 1T sandbags to be lifted from riverbed and placed in flatbed truck.
- Banksman to load 1T sandbag to teleporter and direct driver to set down location.
- All sandbags to be removed in this manner.
- The tide will fill in any mud that has been displaced from the mudflat.

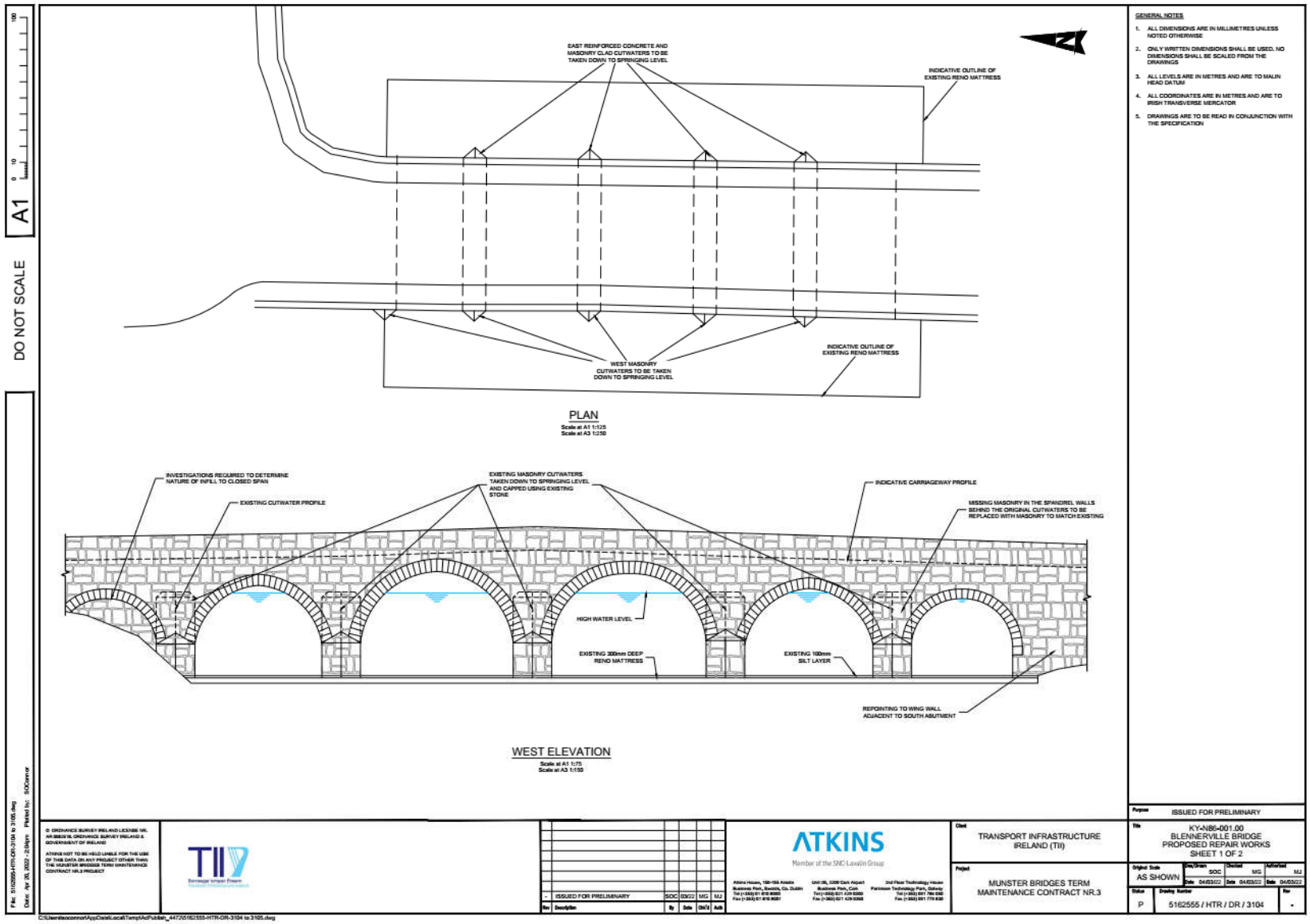


Figure 1.7 Proposed repair works (Sheet 1 of 2).

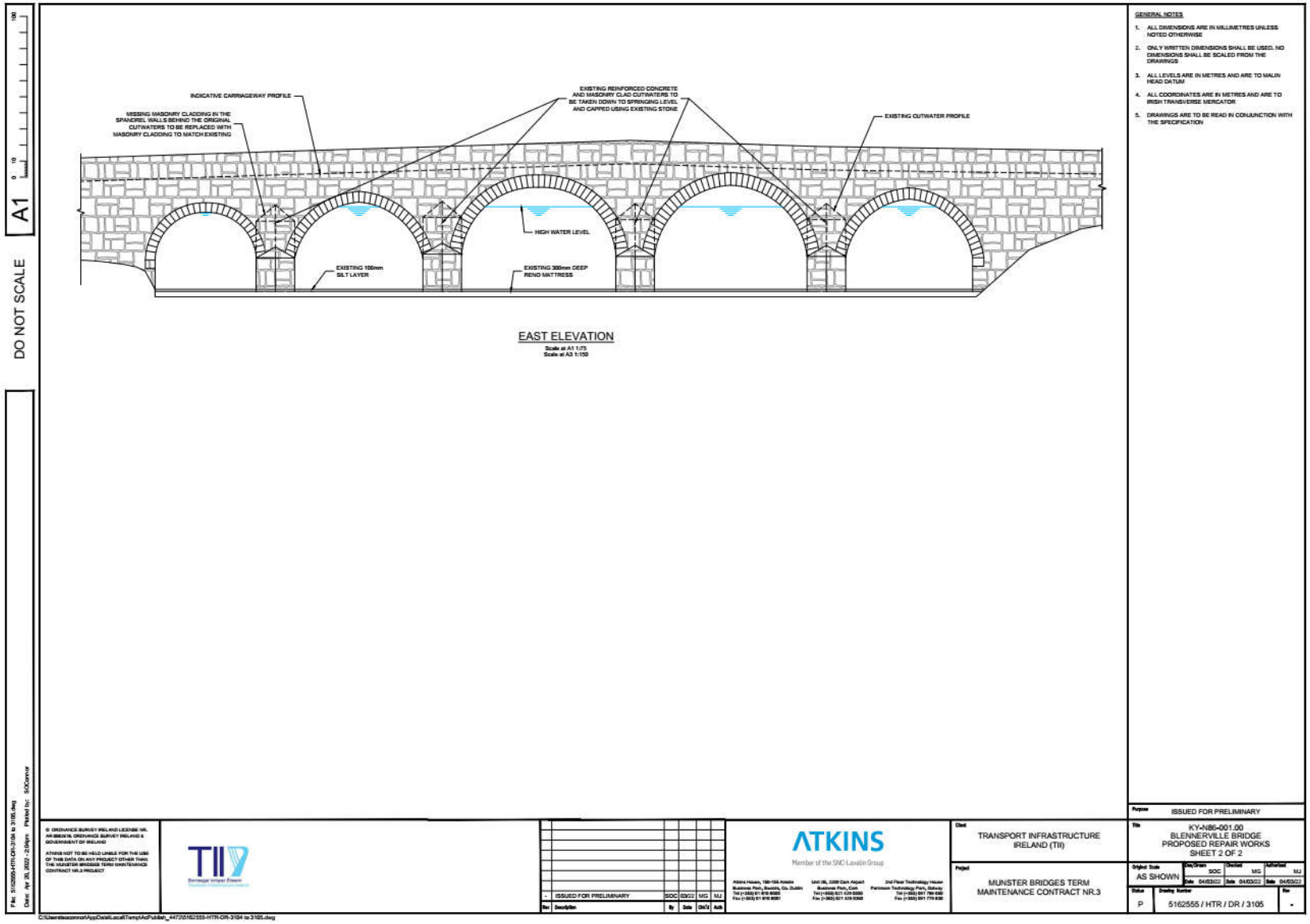


Figure 1.8 Proposed repair works (Sheet 2 of 2).

2. Scope of Study

The aim of this report is to provide supporting information to assist the competent authority to carry out an Appropriate Assessment with respect to the proposed project.

2.1. Legislative Context

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora, known as the 'Habitats Directive' provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 – 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservations of an EU-wide network of sites known as European sites. European sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC).

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans or projects that could potentially affect European sites. Article 6(3) establishes the requirement for Appropriate Assessment: -

> *"Any plan or project not directly connected with or necessary to the management of the site 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 and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

Article 6 (4) deals with the steps that should be taken when it is determined, as a result of Appropriate Assessment, that a plan or project will adversely affect a European site. Alternative solutions, imperative reasons of overriding public interest (IROPI) and compensatory measures need to be addressed in this case. Article 6(4) states: -

> *"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*
>
> *Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."*

2.2. Appropriate Assessment Process

Guidance on the AA process was produced by the European Commission (EC, 2001; 2018), which was subsequently used to develop guidance for Ireland by the Department of Environment, Heritage and Local Government in 2009 (DEHLG, 2009) and also by the National Parks and Wildlife Service in 2018[4] (NPWS 2018). These guidance documents set out a staged approach to complete the AA process and outlines the issues and tests at each stage. The stages outlined below are taken from the guidance document Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (DEHLG, 2009).

[4] https://www.npws.ie/development-consultations

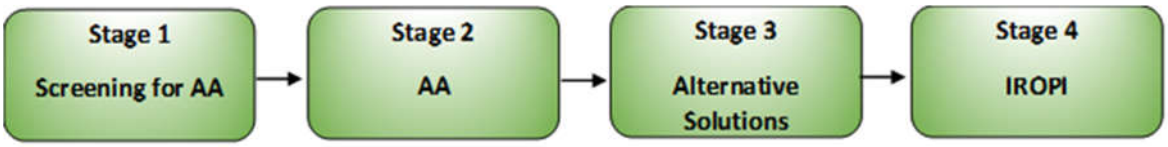


Figure 2.1 Appropriate Assessment Process (Source: DEHLG, 2009).

2.2.1. Screening for Appropriate Assessment

Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3): -

i. Whether a plan or project is directly connected to or necessary for the management of the site, and
ii. Whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European site in view of its conservation objectives.

If the effects are deemed to be significant, potentially significant, or uncertain, then the process must proceed to Appropriate Assessment.

2.2.2. Appropriate Assessment

Appropriate Assessment considers whether the plan or project, alone or in combination with other projects or plans, will have adverse effects on the integrity of a European site, and includes any necessary mitigation measures.

The competent authority can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site(s) concerned. If this cannot be determined, and where sufficient mitigation cannot be achieved, the alternative solutions need to be considered and the process proceeds to the consideration of alternative solutions.

2.2.3. Alternative Solutions

This examines any alternative solutions or options that could enable the plan or project to proceed without adverse effects on the integrity of a European site. The process must return to AA as alternatives will require assessment in order to proceed. Demonstrating that all reasonable alternatives have been considered and assessed, and that the least damaging option has been selected, it is necessary to examine whether there are imperative reasons of overriding interest (IROPI).

2.2.4. IROPI

This examines whether there are imperative reasons of overriding public interest for allowing a plan or project that will have adverse effects on the integrity of a European site to proceed in cases where it has been established that no less damaging alternative solution exists. Compensatory measures must be proposed and assessed, of which the Commission must be informed.

The AA process only progresses through each of the full process for certain plans and projects. For example, for a project not connected with the management of a European site and where no likely significant effects on a European site in view of its conservation objectives are identified, the process stops at Screening for AA. Throughout the process the precautionary principle must be applied, which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty (EC, 2001; 2018).

3. Methods

3.1. Legislation and Guidance Documents

This report was prepared with reference and due consideration to the following documents and due regard for relevant case law, including but not limited to: -

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna (Habitats Directive);
- European Commission (2018). Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC;
- European Commission (2021). Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC;
- European Commission (2007). Guidance document on Article 6(4) of the 'Habitats Directive' 92/49/EEC; clarification of the concepts of: Alternative solutions, Imperative reasons of overriding public interest, Compensatory Measures, Overall Coherence, Opinion of the Commission;
- Department of the Environment, Heritage and Local Government (2009). Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities; and,
- Office of Planning Regulation (2021). Appropriate Assessment Screening for Development Management. OPR Practice Note PN01;
- Planning and Development Act 2000 (as amended) and Planning and Development Regulations 2001 (as amended); and,
- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine CIEEM (2018);
- Scott Wilson and Levett-Therivel, (2006). Appropriate Assessment of Plans. Scott Wilson, Levett-Therivel Sustainability Consultants, Treweek Environmental Consultants and Land Use Consultants;
- Inland Fisheries Ireland (2020). Planning for Watercourses in the Urban Environment. A Guide to the Protection of Watercourses through the use of Buffer Zones, Sustainable Drainage Systems, Instream Rehabilitation, Climate / Flood Risk and Recreational Planning. A Guideline Developed by Inland Fisheries Ireland.

3.2. Desk Study

A desk study was carried out to collate information available on European sites in the vicinity of the proposed project. These areas were viewed using Google Earth, Google maps[5] and Bing maps[6] (last accessed on 22/04/2022).

The National Parks and Wildlife Service (NPWS) and National Biodiversity Data Centre (NBDC) online databases were reviewed concerning European sites and their features of interest in the vicinity of the proposed project. The Environmental Protection Agency (EPA) mapping[7] system was used to identify any hydrological connection between the proposed project and European sites.

[5] https://www.google.ie/maps

[6] http://www.bing.com/maps/

[7] https://gis.epa.ie/EPAMaps/

Locations and boundaries of all European sites within the potential zone of influence of the proposed project were identified and reviewed using the NPWS online map viewer. Boundary shapefiles were also downloaded from this site to facilitate the preparation of project graphics.

Desktop information on relevant European sites were reviewed on the NPWS website, including the site synopsis for each SAC/SPA, the conservation objectives, the site boundaries as shown on the NPWS online map viewer, the standard Natura 2000 Data Form for the SAC/SPA which details conditions and threats of the sites, and published information and unpublished reports on the relevant European sites.

Relevant planning information for the surrounding area was reviewed using the planning enquiry systems of Kerry County Council. Search criteria were implemented to determine whether such projects or plans that would not be relevant to this study. This information was used to determine potential cumulative impacts from other plans / projects with the proposed project.

3.2.1. Geographical Information System

Atkins developed a Geographic Information System (GIS) under the Munster Bridges Term Maintenance Contract No. 3, to store all ecological data relating to the Munster bridges and to facilitate easy interrogation of data both within the dataset and spatially. The GIS was used during the assessment of the proposed works at Blennerville Bridge using MapInfo V. 16. This included the examination of the locations and boundaries of European sites within 15km of all structures and determination of surface water connectivity between structures and European sites, using the EPA's river network data.

3.2.2. Statement of Authority

This report was prepared by Emma Nickelsen, Sherril Subrayan and Paul O'Donoghue, who also provided peer review support.

Emma Nickelson has a BSc (Hons) in Environmental Biology and an MSc in Marine Biology. Emma has worked in ecological and environmental consultancy since 2017, working on a wide range of projects including bridge works, road construction, local amenity development and renewable energy. A focus of Emma's work to date has been on conducting Appropriate Assessment screenings, ecological appraisals and supporting the preparation of Natura Impact Statements and Ecological Impact Statements. Emma assisted in the preparation of this report.

Sherril Subrayan has a BSc (Hons) in Environmental Science and an MSc in Ecological Assessment. Sherril is a chartered member of the Society for the Environment (CEnv) and a full member of the Institute of Environmental Science (MIEnvSc). Sherril has over 10 years' experience in ecological assessment, environmental impact assessment, environmental management, environmental audits and construction environmental management. Sherril assisted in the preparation of this report.

Paul O'Donoghue has a BSc (Zoology), MSc (Behavioural Ecology) and a PhD in avian ecology and genetics. Paul is a chartered member of the Society for the Environment (CEnv) and a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). Paul has over 18 years' experience in ecology; including extensive experience in the preparation of Habitat Directive Assessments / Natura Impact Statements (i.e. Appropriate Assessment under Article 6(3) of the EU Habitats Directive). Paul carried out the technical review of this report.

4. Existing Environment

4.1. Desktop Review

Blennerville Bridge is located at the mouth of the River Lee – where it joins the inner part of Tralee Bay (i.e. east of Derrymore Island). At Blennerville Bridge the river is tidal in character. Water quality in the transitional waters of the Lee Estuary (IE_SH_050_0100) is defined as *Intermediate* by the EPA (Transitional Water Quality 2018-2020; EPA Maps). It's Water Framework Status is defined as being *At Risk*.

Blennerville Bridge is located within 2 no. European sites: - Tralee Bay and Magharees Peninsula, West To Cloghane SAC (002070) and Tralee Bay Complex SPA (004188). It is also within Tralee Bay And Magharees Peninsula, West To Cloghane proposed Natural Heritage Area (002070), a site of national importance.

There are no records of plant species listed on the 3rd Schedule of the Natural Habitats Regulations (SI 477/2011) from the bridge or works area as defined in Section 1.1 of this report; e.g. Japanese knotweed *(Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) which are widespread in the freshwater catchment of the River Lee upstream of the works area. There are also no records of species such as Giant hogweed (*Heracleum mantegazzianum*) or Giant rhubarb (*Gunnera* sp.).

Upstream of the bridge there are large areas of possible Atlantic saltmarsh with affinities to the Annex II habitat - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]. As noted above, it is proposed to construct a settlement bund alongside the eastern public carpark (Figure 1.6). However, the area in which this is to be constructed is a strip of amenity grassland between the public carpark and the estuary. It does not include any areas of saltmarsh. Areas of saltmarsh to the east of the carpark are not to be disturbed.

The bridge is within an area of Estuary [1130] and Mudflats and sandflats not covered by seawater at low tide [1140] (NPWS, 2014a). The marine habitat characterising this area is *Sand to sandy mud with polychaetes and bivalves community complex* (see Map 8 of NPWS, 2014a).

White-clawed crayfish (*Austropotamobius pallipes*) is not recorded from the River Lee. However, due to its tidal nature the works area does not support freshwater species such as Freshwater pearl mussel (*Magaratifera margaritifera*).

Roche *et al*. (2018) reports the findings of *The Irish Bat Monitoring Programme 2015-2017*; this report includes as one of the survey locations - 1276 Blennerville Canal Blennerville Q8164713313 RoI Kerry – which is to the east of the bridge. Daunbeton's Bat (*Myotis daubentonii*) was recorded in multiple years from this site. There are no data from Blennerville Bridge. As part of the EIRSPAN project the bridge was surveyed in May 2020. It was described as follows: - "*Undersurface of all arches are sealed with cement and there are no crevices in the bridge walls. No potential for bats*".

NBDC hosts a large number of records of Otter (*Lutra lutra*) from along the canal that runs alongside the River Lee from Tralee to the estuary. This joins the estuary ca. 1.5km to the northwest of the works area. Otter have also been recorded from the estuary to the west of Blennerville Bridge (e.g. Q813131 in 2017; Source: Mammals of Ireland 2016-2025). An extensive set of photographs of the bridge and adjoining river banks are included in Section 1.2 of this report. As can be seen there are no suitable locations for a holt within the works area, which as outlined in Section 1.1 of the report are located on sections of within the tidal waters.

4.2. Consultation

Atkins engineers met with a representative of Inland Fisheries Ireland (IFI) on site in June 2022. As the area is tidal, IFIs main concern is free movement of fish and possible siltation issues. They noted that the movement if fish is alleviated as the proposed works will be staged as set out in Figure 1.5 (see Section 1.3), which will allow unrestricted movement under the rest of the bridge.

Regarding siltation. IFI noted that all actives on site must protect the receiving waters from excessive siltation. The Contractor must ensure that the pumped water is effectively settled to remove any silt before entering back into the river. Furthermore, visual checks the discharge throughout the day/works must be undertaken. If siltation is an issue, then they have requested that an alternative measure to be immediately put in place.

5. Screening for Appropriate Assessment

5.1. Likelihood of Significant Effects on European Sites

The available information on European sites was reviewed to establish whether or not the proposed development is likely to have a significant effect on the conservation objectives of the designated sites. The likelihood of impacts on the qualifying interests of the European sites identified in this report is based on information collated from the desk study, site plans and other available existing information.

The likelihood of impacts occurring are established in light of the type and scale of the proposed works, the location of the proposed works with respect to European sites and the features of interest and conservation objectives of the European sites.

This report is prepared following the Cause – Pathway – Effect model. The potential impacts are summarised into the following categories for screening purposes.

- Direct impacts can refer to habitat loss or fragmentation arising from land-take requirements for development or agricultural purposes. Direct impacts can be as a result of a change in land use or management, such as the removal of areas of annexed habitats growing at or close to the bridge, or through direct impacts in aquatic species for which the European site has been designated. In the case of bridge repairs this could also result in temporary habitat loss or modification.

- Indirect and secondary impacts do not have a straight-line route between cause and effect. It is potentially more challenging to ensure that all the possible indirect impacts of the project – in combination with other plans and projects - have been established. These can arise, for example, when a development alters the hydrology of a catchment area, which in turn affects the movement of groundwater to a site and the qualifying interests that rely on the maintenance of water levels. Deterioration in water quality can occur as an indirect consequence of development, which in turn changes the aquatic environment and reduces its capacity to support certain plants and animals. The introduction of invasive species can also be defined as an indirect impact. Disturbance to fauna can arise directly through the loss of habitat (e.g. displacement of qualifying interest species) or indirectly through noise, vibration and increased activity associated with construction and operation.

5.2. Connectivity of Proposed Project to the European Sites

The '*zone of influence'* (ZoI) for a project is the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2019). Historically a distance of 15km was recommended as a potential zone of influence; this distance was derived from UK guidance (Scott Wilson *et al.*, 2006). This distance is also quoted in the DEHLG's *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities* (DEHLG, 2009). However, in line with OPR (2021) European sites should be evaluated on a case-by-case basis with reference to the nature, size and location of the project, the sensitivities of the ecological receptors, and the potential for in-combination effects. In each case the Source-Pathway-Receptor framework should be used and not just an arbitrary distance such as 15 km.

Thus, given the nature, scale and extent of the proposed project, the potential zone of influence will consider European sites with regard to the location of a European site, the QIs of the site and their potential mobility outside that European site, the Cause-Pathway-Effect model and potential environment effects of the proposed project.

There are seven Special Areas of Conservation (SACs) and six Special Protection Areas (SPAs) located within the potential ZoI of the proposed project, as outlined in Table 5.1 and Figure 5.1 below.

The bridge and proposed works site are located within the boundary of Tralee Bay and Magharees Peninsula, West to Cloghane SAC (002070) and Tralee Bay Complex SPA (004188); these sites are therefore considered in greater detail below.

The remaining Natura 2000 sites are screened out from further consideration as: -

- They have no physical overlap, nor hydrological link between the works;
- Works are too remote for there to be a risk or the sites share a very remote connection;
- The proposed works are not predicted to pose a significant risk to the qualifying interests of these Natura 2000 sites.

See Table 5.1 for details.

Table 5.1 SACs within potential ZoI of the proposed project.

Site	Distance and direction of site from proposed works	Features of Interest	Screening comment
Mount Brandon SAC (000375)	19.1km west of the proposed project.	• Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110] • Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130] • Northern Atlantic wet heaths with *Erica tetralix* [4010] • European dry heaths [4030] • Alpine and Boreal heaths [4060] • Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230] • Blanket bogs (* if active bog) [7130] • Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani) [8110] • Calcareous rocky slopes with chasmophytic vegetation [8210] • Siliceous rocky slopes with chasmophytic vegetation [8220] • *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029] • *Trichomanes speciosum* (Killarney Fern) [1421]	This site is not included in further assessment for the following reasons: - • No connectivity. • Designated for variety of terrestrial and freshwater habitats, one freshwater invertebrate and one terrestrial plant species. • No overlap – intervening distance of in excess of 19km between the proposed works site and SAC. • Location, scale and nature of works. • Marine habitats not suitable for freshwater pearl mussel or Killarney fern. • No plausible pathway for qualifying habitat or species effects.
Magharee Islands SAC (002261)	18.2km northwest of the proposed project	• Reefs [1170]	This site is not included in further assessment for the following reasons: - • No connectivity. • Location, scale and nature of works. • No plausible pathway for qualifying habitat.
Akeragh, Banna and Barrow Harbour SAC (000332)	7.8km north west of the proposed project.	• Annual vegetation of drift lines [1210]	This site is not included in further assessment for the following reasons: -

Site	Distance and direction of site from proposed works	Features of Interest	Screening comment
		• Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] • Mediterranean salt meadows (Juncetalia maritimi) [1410] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] • Humid dune slacks [2190] • European dry heaths [4030]	• No connectivity. • Location, scale and nature of works. • No plausible pathway for qualifying habitat.
Ballyseedy Wood SAC (002112)	4.4km to the east adjoining the River Lee	• Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	This site is not included in further assessment for the following reasons: - • Designated for one woodland habitat-type. • No overlap – intervening distance of approximately 4.4km between proposed works site and SAC. • Marine nature and location of proposed works with no woodland located at or close to the bridge. • No plausible pathway for qualifying habitat or species effects.
Slieve Mish Mountains SAC (002185)	2.1km to the south	• Northern Atlantic wet heaths with *Erica tetralix* [4010] • European dry heaths [4030] • Alpine and Boreal heaths [4060] • Blanket bogs (* if active bog) [7130] • Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani) [8110] • Calcareous rocky slopes with chasmophytic vegetation [8210]	This site is not included in further assessment for the following reasons: - • Designated for a range of terrestrial habitats and on terrestrial plant species. • No overlap – intervening distance of approximately 2.1km between proposed works site and SAC. • Marine nature and location of the proposed works. • SAC situated upslope / upcatchment.

Site	Distance and direction of site from proposed works	Features of Interest	Screening comment
		• Siliceous rocky slopes with chasmophytic vegetation [8220] • *Trichomanes speciosum* (Killarney Fern) [1421]	• Marine habitats not suitable for Killarney fern. • No plausible impact pathway for qualifying habitat or species effects.
Tralee Bay and Magharees Peninsula, West to Cloghane SAC (002070)	Within	• Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Coastal lagoons [1150] • Large shallow inlets and bays [1160] • Reefs [1170] • Annual vegetation of drift lines [1210] • Perennial vegetation of stony banks [1220] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] • Mediterranean salt meadows (Juncetalia maritimi) [1410] • Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] • Dunes with *Salix repens* ssp. *argentea* (Salicion arenariae) [2170] • Humid dune slacks [2190] • Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] • Alluvial forests with *Alnus glutinosa* and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] • *Lutra lutra* (Otter) [1355] • *Petalophyllum ralfsii* (Petalwort) [1395]	The proposed works are located within this SAC boundary – further assessed in Chapter 6.0 Appropriate Assessment.

Site	Distance and direction of site from proposed works	Features of Interest	Screening comment
Castlemaine Harbour SAC (000343)	9.9km to the south	• Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Perennial vegetation of stony banks [1220] • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] • Mediterranean salt meadows (Juncetalia maritimi) [1410] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] • Dunes with *Salix repens* ssp. *argentea* (Salicion arenariae) [2170] • Humid dune slacks [2190] • Alluvial forests with *Alnus glutinosa* and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] • *Petromyzon marinus* (Sea Lamprey) [1095] • *Lampetra fluviatilis* (River Lamprey) [1099] • *Salmo salar* (Salmon) [1106] • *Lutra lutra* (Otter) [1355] • *Petalophyllum ralfsii* (Petalwort) [1395]	This site is not included in further assessment for the following reasons: - • Designated for a variety of coastal and terrestrial habitats and freshwater species and one liverwort species. • Due to the separation buffer provided by the intervening Dingle Peninsula landmass, between the SAC and the proposed works, the SAC is outside of the zone of influence of the project. • Significant habitat or species impacts are not reasonably foreseeable.

Table 5.2 SPAs within potential ZoI of the proposed project.

Site	Distance and direction of site from proposed works	Features of Interest	Screening comment
Tralee Bay Complex SPA (004188)	Proposed project lies within this SPA.	• Whooper Swan (*Cygnus cygnus*) [A038] • Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] • Shelduck (*Tadorna tadorna*) [A048] • Wigeon (*Anas penelope*) [A050] • Teal (*Anas crecca*) [A052] • Mallard (*Anas platyrhynchos*) [A053] • Pintail (*Anas acuta*) [A054] • Scaup (*Aythya marila*) [A062] • Oystercatcher (*Haematopus ostralegus*) [A130] • Ringed Plover (*Charadrius hiaticula*) [A137] • Golden Plover (*Pluvialis apricaria*) [A140] • Grey Plover (*Pluvialis squatarola*) [A141] • Lapwing (*Vanellus vanellus*) [A142] • Sanderling (*Calidris alba*) [A144] • Dunlin (*Calidris alpina*) [A149] • Black-tailed Godwit (*Limosa limosa*) [A156] • Bar-tailed Godwit (*Limosa lapponica*) [A157] • Curlew (*Numenius arquata*) [A160] • Redshank (*Tringa totanus*) [A162] • Turnstone (*Arenaria interpres*) [A169] • Black-headed Gull (*Chroicocephalus ridibundus*) [A179] • Common Gull (*Larus canus*) [A182] • Wetland and Waterbirds [A999]	The proposed works are located within this SPA boundary – further assessed in Chapter 6.0 Appropriate Assessment.
Magharee Islands SPA (004125)	18.4km northwest	• Storm Petrel (*Hydrobates pelagicus*) [A014] • Shag (*Phalacrocorax aristotelis*) [A018] • Barnacle Goose (*Branta leucopsis*) [A045] • Common Gull (*Larus canus*) [A182]	This site is not included in further assessment for the following reasons: - • Designated for variety of seabird species which feed in coastal (Shag) and offshore waters (Storm petrel). Works will be

Site	Distance and direction of site from proposed works	Features of Interest	Screening comment
		• Common Tern (*Sterna hirundo*) [A193] • Arctic Tern (*Sterna paradisaea*) [A194] • Little Tern (*Sterna albifrons*) [A195]	undertaken at low tide over 18km from this SPA. Storm petrel fly offshore to feed and are not likely to occur at the bridge; while Shag might feed in the inner estuary during hight tide, this would be at a time when works will not be taking place on the bridge. • Barnacle goose is a winter visitor to Ireland. They occur on Magharee Islands in small numbers and not in the mudflats or saltmarsh close to Blennerville Bridge. • A number of tern species also nest on the Magharee Islands during the summer months. While they might feed in the inner estuary close to the bridge during high tide this would be at a time when works will not be taking place on the bridge. • Significant separation distance/dilution factor, provided by Tralee Bay between the SPA and the proposed works. • Significant habitat or species impacts are not reasonably foreseeable.
Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA (004161)	8.5km east	• Hen Harrier (*Circus cyaneus*) [A082]	The Stack's to Mullaghareirk Mountains SPA is an important breeding area for Hen Harrier. At its closest this is ca. 8.5km to the east. Arroyo *et al*. 2014 noted that breeding female Hen Harriers hunted mostly within 1 km from the nest and males mostly within 2 km. Post-breeding birds will move to the coast and may hunt over neighbouring areas of saltmarsh. Disturbance to nesting Hen Harrier within this SPA are not anticipated and it is not considered further.
Castlemaine Harbour SPA (004029)	11km south	• Red-throated Diver (*Gavia stellata*) [A001] • Cormorant (*Phalacrocorax carbo*) [A017] • Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] • Wigeon (*Anas penelope*) [A050]	This site is not included in further assessment for the following reasons: - • Designated for a variety of wader, wildfowl and coastal species. The site, however, is located ca. 11km to the south in a different river catchment.

Site	Distance and direction of site from proposed works	Features of Interest	Screening comment
		• Mallard (*Anas platyrhynchos*) [A053] • Pintail (*Anas acuta*) [A054] • Scaup (*Aythya marila*) [A062] • Common Scoter (*Melanitta nigra*) [A065] • Oystercatcher (*Haematopus ostralegus*) [A130] • Ringed Plover (*Charadrius hiaticula*) [A137] • Sanderling (*Calidris alba*) [A144] • Bar-tailed Godwit (*Limosa lapponica*) [A157] • Redshank (*Tringa totanus*) [A162] • Greenshank (*Tringa nebularia*) [A164] • Turnstone (*Arenaria interpres*) [A169] • Chough (*Pyrrhocorax pyrrhocorax*) [A346] • Wetland and Waterbirds [A999]	• Due to the separation buffer provided by the intervening Slieve Mish Mountains on the Dingle Peninsula and Blennerville Bridge movement of birds between this SPA and Tralee Bay are deemed unlikely. • Significant habitat or species impacts are not reasonably foreseeable.
Kerry Head SPA (004189)	17.5km north	• Fulmar (*Fulmarus glacialis*) [A009] • Chough (*Pyrrhocorax pyrrhocorax*) [A346]	This site is not included in further assessment for the following reasons: - • Designated for one seabird (Fulmar) and one coastal/upland species (Chough). • Fulmar fly out to sea to feed and would not normally occur in the inner estuary. • Chough favour areas of short coastal grassland. This does not occur at or close to the bridge at Blennerville. • Marine nature and size, scale and location of the proposed works. • Intervening distance in excess of 17.5km between the site and SPA. • Significant impacts not reasonably foreseeable.
Dingle Peninsula SPA (004153)	21km (south) & 28.7km (west)	• Fulmar (*Fulmarus glacialis*) [A009] • Peregrine (*Falco peregrinus*) [A103] • Chough (*Pyrrhocorax pyrrhocorax*) [A346]	This site is not included in further assessment for the following reasons: - • Designated for one seabird (Fulmar) and two coastal/upland species (Chough, Peregrine falcon).

Site	Distance and direction of site from proposed works	Features of Interest	Screening comment
			• Fulmar fly out to sea to feed and would not normally occur in the inner estuary. • Chough favour areas of short coastal grassland. This does not occur at or close to the bridge at Blennerville. • Peregrine falcon nest on coastal / upland cliffs or high buildings – no suitable nest sites occur at or close to the bridge at Blennerville. While Peregrine do hunt over coastal areas – the works are on a bridge which is already subject to significant noise / disturbance from traffic. The location and short duration of works would not negatively impact on the use of coastal habitats close to the bridge by Peregrine. • Marine nature and location of proposed works. • Intervening distance of approximately 21km (south) and 28.7km (west) between site and SPA. • Significant impacts not reasonably foreseeable.

5.3. Brief Description of Tralee Bay European Sites

5.3.1. Tralee Bay and Magharees Peninsula, West to Cloghane SAC

The location of Blennerville Bridge relative to Tralee Bay and Magharees Peninsula, West to Cloghane SAC is shown in Figure 5.1.

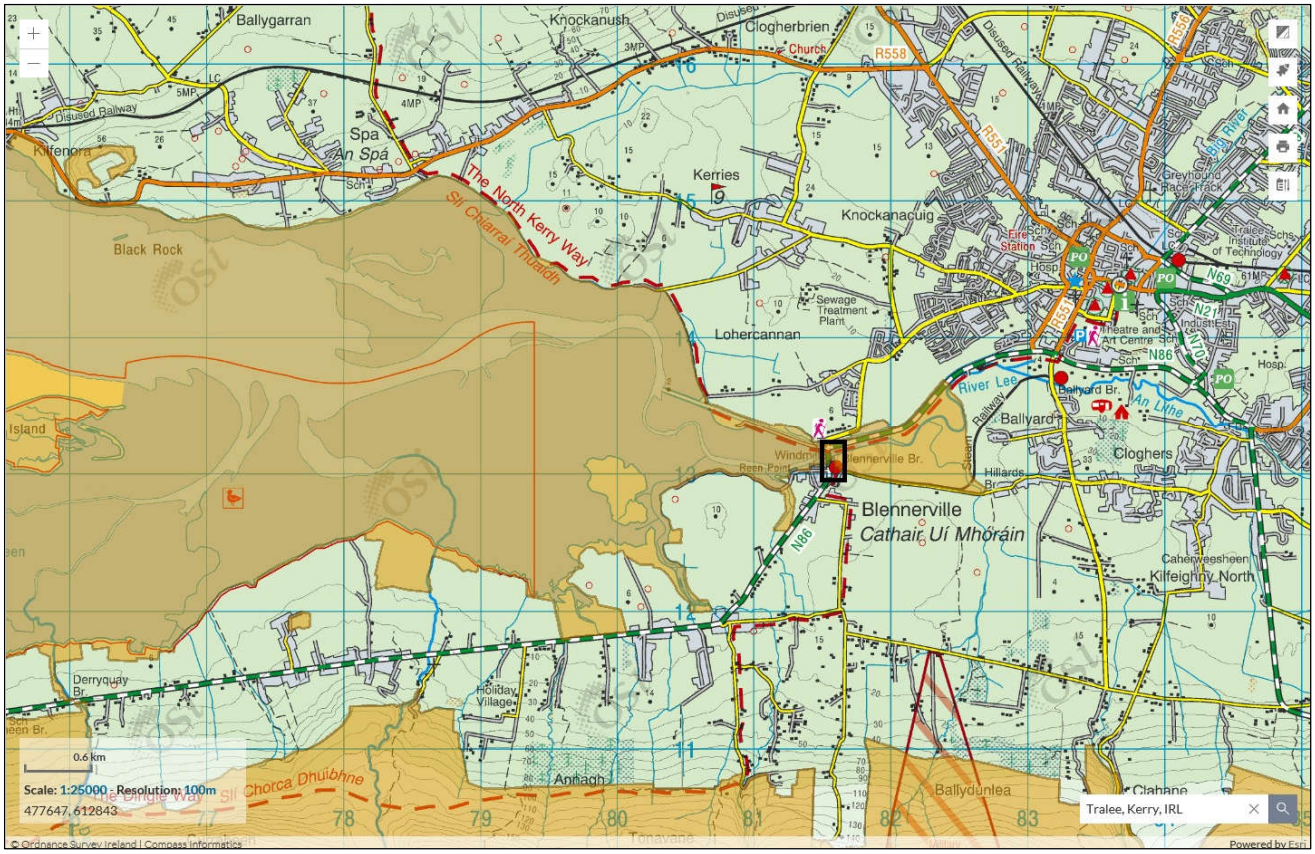


Figure 5.1 Blennerville Bridge (black rectangle) and boundaries of Tralee Bay and Magharees Peninsula, West to Cloghane SAC (brown) (Source: NBDC mapviewer).

The following description of the Tralee Bay and Magharees Peninsula, West to Cloghane SAC is taken from the NPWS site synopsis (NPWS, 2021). Elements relevant to Blennerville Bridge are presented below. The full site synopsis is included in Appendix A.

> *"This large site in Co. Kerry stretches from Tralee town westwards to Fenit Harbour and Cloghane, encompassing Tralee Bay, Brandon Bay and the Magharees Peninsula. It includes extensive mudflats at the eastern end, the beaches of Derrymore Island, the sand dunes and lagoons of the Magharees Peninsula, as well as the rocky headlands at its end. The site includes two Statutory Nature Reserves, Tralee Bay and Derrymore Island, and much of the estuarine part of the site has been designated a Special Protection Area (SPA) for birds and their habitats.*
>
> *Both the Tralee and Brandon (Owenmore) estuaries feature wide expanses of sheltered intertidal flats, often fringed with saltmarsh vegetation. Plant species are typically scarce on the flats, although there are some eelgrass (*Zostera *spp.) beds and patches of green algae (e.g.* Ulva *spp. and* Enteromorpha *spp.). The eelgrass beds at Derrymore Island include* Zostera noltii*, a species which has a limited distribution in Ireland. A variety of polychaetes (worms) and bivalve molluscs are also present in the intertidal sections.*

The majority of Tralee Bay is shallow and composed of sublittoral sediments. In the more sheltered areas of the bay, there is a variety of important sublittoral sediment communities in which a number of rare species occur. Seagrass beds in sandy substrates are characterized by oysters and the rare anemone Calliactis parasitica *which lives on shells inhabited by the hermit crab* Pagurus bernhardus. *The little known hydroid,* Laomedia angulata*, is also found on the fronds of the seagrass. The native oyster, Ostrea edulis, occurs in sediment communities throughout the bay.*

*In the transition zone between the intertidal flats and saltmarsh, specialised colonisers of mud predominate - swards of Common Cord-grass (*Spartina anglica*) are extensive on the leeward side of Derrymore Island, while swards of Glasswort (*Salicornia europaea *agg.) also occur in parts of the site.*

*Saltmarsh vegetation frequently fringes the mudflats, with the most extensive areas being found at Blennerville, Derrymore Island and Formoyle in Brandon Bay. The dominant type of saltmarsh present is Atlantic salt meadow. Characteristic species occurring include Common Saltmarsh-grass (*Puccinellia maritima*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea-milkwort (*Glaux maritima*), Sea Plantain (*Plantago maritima*), Red Fescue (*Festuca rubra*), Creeping Bent (Agrostis stolonifera), Saltmarsh Rush (*Juncus gerardi*), Long-bracted Sedge (*Carex extensa*), Lesser Seaspurrey (*Spergularia marina*) and Sea Arrowgrass (*Triglochin maritima*). Areas of Mediterranean salt meadows, characterised by clumps of Sea Rush (*Juncus maritimus*), occur occasionally.*

Other coastal habitats that occur within the site include shingle beaches, rocky shores and vegetated sea-cliffs. The site also contains fragments of terrestrial habitats such as deciduous woodland, scrub, heath, dry limestone grassland, wet grassland and freshwater marshes.

*At the seaward edge drift line vegetation is often present. The more stable areas of shingle support Sea Beet (*Beta vulgaris *subsp.* maritima*), Sea Mayweed (*Matricaria maritima*), Sea Campion (*Silene vulgaris *subsp.* maritima*), Curled Dock (*Rumex crispus*), oraches (*Atriplex *spp.), Sea Sandwort (*Honkenya peploides*) and Silverweed (*Potentilla anserina*).*

*Between the dunes where erosion has removed the sand down to the water table there are temporary ponds or dune slacks with many additional species. Marsh Pennywort (*Hydrocotyle vulgaris*), Silverweed, various sedges (*Carex panicea *and* C. nigra*) and, in places, Strawberry Clover, Adder's-tongue (*Ophioglossum vulgatum*), Knotted Pearlwort (*Sagina nodosa*) and the orchids* Dactylorhiza majalis *and* D. incarnata *all occur. Some parts of the dune slacks feature a vegetation community characterised by the presence of Creeping Willow (*Salix repens*).*

*The site supports populations of several rare plant species which have not been mentioned already. The bryophyte Petalwort (*Petalophyllum ralfsii*), which is listed on Annex II of the E.U. Habitats Directive, is known from the dune slacks on the Magharees Peninsula and Smooth Brome (*Bromus racemosus*), a Red Data Book grass, has been recorded from two wet meadows within the site. Several aquatic plants of interest grow in Lough Gill, the rarest being the Red Data Book stonewort* Chara canescens*. The Slender-leaved Pondweed (*Potamogeton filiformis*) occurs far to the south of its distribution elsewhere in Ireland and Britain, while there are also old records for Spiral Tasselweed (*Ruppia spiralis*). The marshes along the southern shore*

*in the past support a rich variety of vegetation including several species rare in Kerry such as Water Dock (*Rumex hydrolapathum*) and Greater Spearwort (*Ranunculus lingua*), as well as sedges (*Carex dioica, C. limosa *and* C. diandra*) on patches of peat. Despite local reclamation it is likely that most of these still survive.*

Otters regularly feed within this extensive site though it is not known if they breed.- Otter is listed on Annex II of the E.U. Habitats Directive.

Tralee Bay, including Lough Gill, is an internationally important wetland for wintering waders and wildfowl."

5.3.1.1. Features of Interest

Tralee Bay and Magharees Peninsula, West to Cloghane SAC is designated for the habitats and species as listed below: -

- Estuaries [1130]
- Mudflats and sandflats not covered by seawater at low tide [1140]
- Coastal lagoons [1150]
- Large shallow inlets and bays [1160]
- Reefs [1170]
- Annual vegetation of drift lines [1210]
- Perennial vegetation of stony banks [1220]
- Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]
- Salicornia and other annuals colonising mud and sand [1310]
- Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]
- Mediterranean salt meadows (Juncetalia maritimi) [1410]
- Embryonic shifting dunes [2110]
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]
- Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]
- Dunes with *Salix repens* ssp. *argentea* (Salicion arenariae) [2170]
- Humid dune slacks [2190]
- Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0]
- *Lutra lutra* (Otter) [1355]
- *Petalophyllum ralfsii* (Petalwort) [1395]

5.3.1.2. Conservation objectives

The conservation objectives for the Tralee Bay and Magharees Peninsula, West to Cloghane SAC (002070) and the list of site specific attributes and targets defining the conservation objectives are published in NPWS (2014a). *Conservation Objectives: Tralee Bay and Magharees Peninsula, West to Cloghane SAC 002070. Version 1*. [https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002070.pdf].

The Habitats Directive defines when the conservation status of the listed habitats and species is considered as favourable. The definitions it uses for this are specific to the Directive. In summary, they require that the range and areas of the listed habitats, and the range and population of the listed species, should be at least maintained

at their status at the time of designation. Site-specific conservation objectives aim to define favourable conservation conditions for a particular habitat or species at that site.

Article (1) of the Habitats Directive (92/43/EEC) describes favourable conservation conditions for habitats and species as follows: -

Favourable conservation status of a habitat is achieved when: -

- It's natural range, and area it covers within that range, are stable or increasing, and
- The Specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when: -

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

5.3.1.3. Potential threats

The NPWS site synopsis identifies the following threats: -

> "*The dunes at this site face pressures from intensive farming practises and recreational use by visitors. The most threatening activities include fertilisation of the species-rich dune grasslands, over-grazing, and trampling of areas of dunes adjacent to tourist facilities (e.g. caravan parks). These activities may lead to severe erosion and eutrophication of the dune grasslands and dune slacks. Parts of the dune system are also vulnerable to invasion by Sea Buckthorn (*Hippophae rhamnoides*).*
>
> *Agricultural run-off from areas of fertilised dune grasslands in the vicinity of Lough Gill pose a continued threat to the nutrient status of the lagoon; algal blooms and fish kills have occurred in the past. Removal of sand has also occurred and poses a threat to the integrity of the system.*
>
> *Generally, the intertidal areas are relatively robust, although certain communities are vulnerable. For example,* Spartina *has spread widely, and may oust less vigorous colonisers of mud and may also reduce the area of mudflat available to feeding birds.*
>
> *Other activities, such as land reclamation and aquaculture, pose potential threats in terms of damage to habitats and potential disturbance to wintering birds.*
>
> *Domestic and industrial wastes are discharged into inner Tralee Bay, but water quality is generally satisfactory - except in the inner bay, reflecting the sewage load from Tralee Town. Further industrial development along the bay in the vicinity of Tralee Town and Fenit and water polluting operations are potential threats.*
>
> *This site is of considerable ecological and conservation significance for the excellent diversity of habitats it contains, many of which are listed on Annex I of the E.U. Habitats Directive. The occurrence of a species listed on Annex II of the E.U. Habitats Directive adds further importance to the site. The presence of a number of Red Data Book species, including the largest population of Natterjack Toads in Ireland, is also notable, as is the occurrence of several species listed on Annex I of the E.U. Birds Directive.*"

5.3.1.4. Screening Comments

Due to the size and geographic range of the SAC, not all qualifying interests of the SAC are within the ZoI of the proposed project. Given the location of Blennerville Bridge and the nature and scale of the proposed works, the qualifying interests of the SAC that are within the ZoI of the bridge works are summarised in Table 5.3.

Table 5.3 Screening of qualifying interests of Tralee Bay and Magharees Peninsula, West to Cloghane SAC.

Site	Comment	Screening In
Estuaries [1130]	The bridge is within the Estuary of the River Lee. Within the zone of influence (see Map 3, NPWS, 2014).	Yes
Mudflats and sandflats not covered by seawater at low tide [1140]	Mudflats and sandflats are located at Blennerville Bridge (see Map 3, NPWS, 2014).	Yes
Coastal lagoons [1150]	Not located at Blennerville Bridge. The nearest such habitat is Lough Gill on the Magharee Peninsula (see Map 5, NPWS, 2014).	No
Large shallow inlets and bays [1160]	The bridge is not located within this habitat (see Map 6, NPWS, 2014). At its nearest this is over 2km west of the bridge.	No
Reefs [1170]	There are no reef habitats at or close to the bridge (see Map 7, NPWS, 2014).	No
Annual vegetation of drift lines [1210]	Not present within the proposed works area (see photos in Section 1.2) (see Map 10 of NPWS, 2014).	No
Perennial vegetation of stony banks [1220]	Not present within the proposed works area (see photos in Section 1.2) (see Map 10 of NPWS, 2014).	No
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	Not present within the proposed works area (see photos in Section 1.2) (see Map 10 of NPWS, 2014).	No
Salicornia and other annuals colonising mud and sand [1310]	Not present within the proposed works area (see photos in Section 1.2).	No
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	Located along the upper estuary of the River Lee. At their closest they lie east of the proposed attenuation pond. There is no saltmarsh near the bridge works area (see Map 9 of NPWS, 2014).	No
Mediterranean salt meadows (*Juncetalia maritimi*) [1410]	Not present in the environs of Blennerville Bridge (see Map 9 of NPWS, 2014).	No
Embryonic shifting dunes [2110]	Not present within the proposed works area (see photos in Section 1.2) (see Map 10 of NPWS, 2014).	No
Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	Not present within the proposed works area (see photos in Section 1.2) (see Map 10 of NPWS, 2014).	No
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Not present within the proposed works area (see photos in Section 1.2) (see Map 10 of NPWS, 2014).	No

Site	Comment	Screening In
Dunes with *Salix repens* ssp. *argentea* (Salicion arenariae) [2170]	Not present within the proposed works area (see photos in Section 1.2) (see Map 10 of NPWS, 2014).	No
Humid dune slacks [2190]	Not present within the proposed works area (see photos in Section 1.2) (see Map 10 of NPWS, 2014).	No
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410]	Not present within the proposed works area (see photos in Section 1.2).	No
Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	Not present within the proposed works area (see photos in Section 1.2) (see Map 11 of NPWS, 2014).	No
Lutra lutra (Otter) [1355]	As noted above Otter have been recorded within the Tralee canal and to a lesser extent in the estuary (Source: NBDC)	Yes
Petalophyllum ralfsii (Petalwort) [1395]	Known populations are within dune slacks on the Magharees Peninsula (see Map 13 of NPWS, 2014). Does not occur at Blennerville Bridge, nor does suitable habitat.	No

In summary, only the following three qualifying interests are within the zone of influence and thus must be considered further with respect to the proposed works: -

- Estuaries [1130]
- Mudflats and sandflats not covered by seawater at low tide [1140] and
- *Lutra lutra* (Otter) [1355]

These are discussed further in Chapter 6.0 – Appropriate Assessment.

5.3.2. Tralee Bay Complex SPA

The location of Blennerville Bridge relative to Tralee Bay Complex SPA is shown in Figure 5.2.

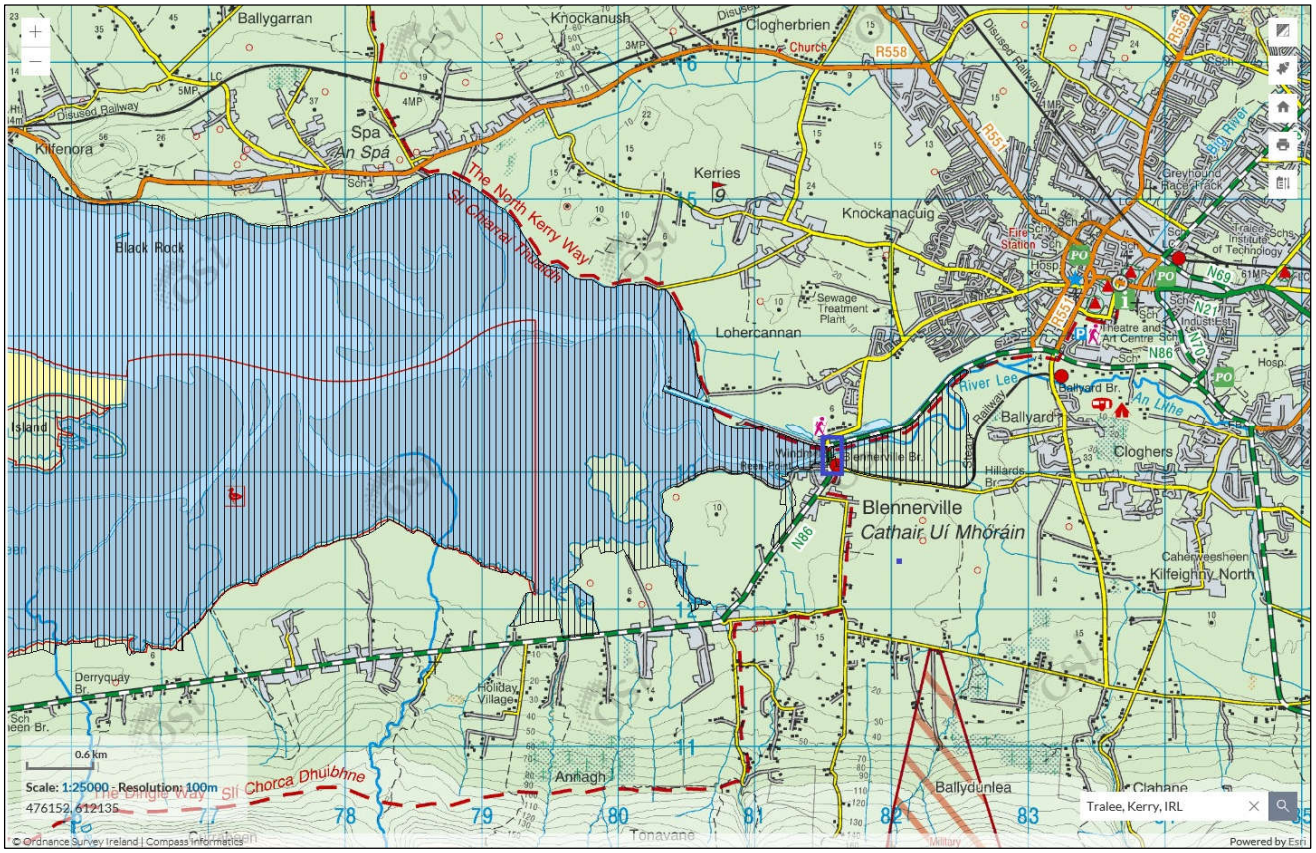


Figure 5.2 Blennerville Bridge (blue rectangle) and boundaries of Tralee Bay Complex SPA (brown) (Source: NBDC mapviewer).

The NPWS site synopsis (NPWS, 2015) is included in full in Appendix B. This summarises the SPA as follows:

> *"The Tralee Bay Complex SPA is located along the coast of north Co. Kerry between Ballyheige in the north, Tralee in the east and Stradbally in the west. The site includes the inner part of Tralee Bay, including Derrymore Island, the inlets of Barrow Harbour and Carrahane Strand, Akeragh Lough, Lough Gill, and much of the intertidal habitat from Scraggane Point at the northern end of the Magharees Peninsula around the coast to c. 2 km south of Ballyheige. Inner Tralee Bay is well sheltered by the Derrymore Island peninsula. The intertidal sediments vary from muddy sands on the upper shore to firm rippled sands on the lower, more exposed shore. The sediments have a diverse macro-invertebrate fauna, with such species as Cockle (*Cerastoderma edule*), Lugworm (*Arenicola marina*), Ragworm (*Hediste diversicolor*), Baltic Tellin (*Macorna balthica*) and Shrimp (*Crangon crangon*) occurring. The intertidal flats have extensive beds of Eelgrass (*Zostera *spp.*). The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Whooper Swan, Light-bellied Brent Goose, Shelduck, Wigeon, Teal, Mallard, Pintail, Scaup, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Lapwing, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone, Black-headed Gull and Common Gull. It is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds."*

5.3.2.1. Features of Interest

Tralee Bay Complex SPA is designated for the habitats and species as listed below: -

- Whooper Swan (*Cygnus cygnus*) [A038]
- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Shelduck (*Tadorna tadorna*) [A048]
- Wigeon (*Anas penelope*) [A050]
- Teal (*Anas crecca*) [A052]
- Mallard (*Anas platyrhynchos*) [A053]
- Pintail (*Anas acuta*) [A054]
- Scaup (*Aythya marila*) [A062]
- Oystercatcher (*Haematopus ostralegus*) [A130]
- Ringed Plover (*Charadrius hiaticula*) [A137]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Grey Plover (*Pluvialis squatarola*) [A141]
- Lapwing (*Vanellus vanellus*) [A142]
- Sanderling (*Calidris alba*) [A144]
- Dunlin (*Calidris alpina*) [A149]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Curlew (*Numenius arquata*) [A160]
- Redshank (*Tringa totanus*) [A162]
- Turnstone (*Arenaria interpres*) [A169]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Common Gull (*Larus canus*) [A182]
- Wetland and Waterbirds [A999]

5.3.2.2. Conservation Objectives

The Conservation Objectives for Tralee Bay Complex SPA (NPWS, 2014b; 2014c) are to maintain the favourable conservation condition of the bird species as Special Conservation Interests for this SPA; *Conservation Objectives: Tralee Bay Complex SPA 004188. Version 1.*

The favourable conservation status of a species is achieved when: -

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- The natural range of the species is neither being reduced not is likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

A representative conservation objective for of Tralee Bay Complex SPA, in this case Whooper Swan (NPWS, 2014c) are summarised below. Refer to NPWS, 2014c for other species.

Table 5.4 Example of Conservation Objectives - Tralee Bay Complex SPA: Whooper Swan.

A038 Whooper Swan (*Cygnus cygnus*)			
Objective 1: To maintain the favourable conservation condition of Whooper swan in Tralee Bay Complex SPA, which is defined by the following list of attributes and targets: -			
Attribute	Measure	Target	Notes
Population Trend	Percentage change	The long term population trend should be stable or increasing.	Waterbird population trends are presented in part four of conservation objectives supporting document
Distribution	Range, timing or intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by the Whooper swan other than that occurring from natural patterns of variation.	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part four of conservation objectives supporting document
A699 Wetlands			
Objective 2: To maintain the favourable conservation condition of the wetland habitat in Tralee Bay Complex SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. This is defined by the following attribute and target: -			
Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 3.657ha, other than that occurring from natural patterns of variation.	The wetland habitat area was estimated as 3,657ha using OSi data and relevant orthophotographs. For further information see part three of the

5.3.2.3. Conservation Status of Qualifying Interests

BirdWatch Ireland recently published a report on national trends based on the data gathered by the Irish Wetland Bird Survey (I-WeBS). One of the sites for which data was published is Tralee Bay (i.e. Tralee Bay, Lough Gill & Akeragh Lough[8]). Only species with sufficient data at Tralee Bay, Lough Gill & Akeragh Lough (site code 0K403) are presented.

Table 5.5 Site Trends for Tralee Bay species where sufficient data was available (1994/95 – 2019/20).

Species	Trends (%)			Long Term Trend
	Tralee Bay, Lough Gill & Akeragh Lough 5 Year	Tralee Bay, Lough Gill & Akeragh Lough 12 Year	Tralee Bay, Lough Gill & Akeragh Lough 23 Year	
Dunlin	-64.9	-57.1	-83.7	Large Decline
Lapwing	-23.3	-77.7	-81.7	Large Decline
Curlew	-58.9	-68.5	-74.9	Large Decline
Golden Plover	-41.2	-84.9	-73.4	Large Decline
Bar-tailed Godwit	-77	-67.6	-72.9	Large Decline
Grey Plover	7.7	-3.4	-70.2	Large Decline
Redshank	-61	-65.7	-57.2	Large Decline
Ringed Plover	-60.7	-39.4	-56.5	Large Decline
Turnstone	-48.6	-61	-54.8	Large Decline
Oystercatcher	-55.9	-67.1	-47.8	Moderate Decline
Black-tailed Godwit	-53.4	-64.5	-40.9	Moderate Decline
Sanderling	-35.7	-9.2	71.4	Stable or Increasing

5.3.2.4. Birds of Tralee Bay

Tralee Bay is counted as part of the Irish Wetland Bird Survey[9] co-ordinated by BirdWatch Ireland. Blennerville Bridge is located within Site: *Tralee Bay, Lough Gill & Akeragh Lough (0K403)*. The inner bay around the bridge is within subsite: *Blennerville (OK413)*. Blennerville Bridge lies approximately in the centre of this subsite.

[8] https://birdwatchireland.ie/app/uploads/2022/04/iwebs_trends_0K403_Tralee_Bay_Lough_Gill_Akeragh_Lough.html
[9] https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-wetland-bird-survey/

Figure 5.3 Blennerville Bridge IWeBS count sector.

Recent IWeBS count data was sourced from BirdWatch Ireland. The most recent count information available for Blennerville 0K413 is from 2018/19 and 2019/20. It should be noted, however, that IWeBS counts are undertaken around High Tide. As noted, it is necessary all works to Blennerville Bridge will be undertaken during periods of Low Tide.

Table 5.6 Recent annual IWeBS counts from Blennerville subsite (0K413) for qualifying interests of the SPA.

Species Name	Latin Name	1% National	1% International	2018/19	2019/20
Whooper Swan	*Cygnus cygnus*	n.a.			
Light-bellied Brent Goose	*Branta bernicla hrota*	350	400	**500**	283
Shelduck	*Tadorna tadorna*	100	2500		2
Wigeon	*Mareca penelope*	560	14000	105	65
Mallard	*Anas platyrhynchos*	280	53000	10	40
Teal	*Anas crecca*	360	5000	50	58
Pintail	*Anas acuta*	n.a.			
Scaup	*Aythya marila*	n.a.			
Oystercatcher	*Haematopus ostralegus*	610	8200	89	85
Ringed Plover	*Charadrius hiaticula*	n.a.			
Golden Plover	*Pluvialis apricaria*	920	9300	600	
Grey Plover	*Pluvialis squatarola*	n.a.			
Lapwing	*Vanellus vanellus*	850	72300	**3500**	740
Sanderling	*Calidris alba*	85	2000	60	**665**
Dunlin	*Calidris alpina*	460	13300	9	9
Black-tailed Godwit	*Limosa limosa*	200	1100	**300**	101
Bar-tailed Godwit	*Limosa lapponica*	n.a.			
Curlew	*Numenius arquata*	350	7600	75	60
Redshank	*Tringa totanus*	240	2400	21	18
Turnstone	*Arenaria interpres*	95	1400	70	9
Black-headed Gull	*Chroicocephalus ridibundus*			64	38
Common Gull	*Larus canus*			30	

As noted in Table 5.5, not all bird species for which Tralee Bay Complex SPA has been designated occur within the Blennerville subsite in the most recent available IWeBS counts; namely Whooper swan, Pintail, Scaup, Grey Plover and Bar-tailed Godwit. Species such as Grey Plover and Bar-tailed Godwit prefer intertidal habitat that are more sandy than muddy in character. The substrates that dominate the Blennerville subsite are muddy – favouring instead waders such as Black-tailed Godwit.

Monthly counts for 2018/19 and 2019/20 are presented in Table 5.6 and 5.7; these counts are spread between November and March in each year. There are no counts from the autumn / early winter when works at Blennerville Bridge are proposed.

Birds which were recorded in notable numbers within the Blennerville subsite were Light-bellied brent geese (*count of international importance*); Lapwing, Sanderling and Black-tailed Godwit (*counts of national importance*). IWeBS counts represent counts at or close to High Tide, and thus are likely to be dominated by roosting birds.

In addition to the qualifying interests, other species which were recorded in notable numbers include a count of 340 Knot (*C. canuta*) (recorded in Dec. 2018).

Table 5.7 Recent monthly IWeBS counts from Blennerville subsite (0K413) for qualifying interests of the SPA in 2018/19.

Species Name	1% National	1% International	Nov	Dec	Jan	Feb	Mar
Light-bellied Brent Goose	350	400		10	313	24	**500**
Wigeon	560	14000		67	40	105	15
Mallard	280	53000		10	4	4	2
Teal	360	5000		8	50	18	36
Oystercatcher	610	8200		89	25	30	10
Golden Plover	920	9300		600			
Lapwing	850	72300		**3500**	**1000**	300	
Sanderling	85	2000			60	50	
Dunlin	460	13300		9			2
Black-tailed Godwit	200	1100		**300**	**250**	5	
Curlew	350	7600		49	75	38	4
Redshank	240	2400		6	21		6
Turnstone	95	1400			70	23	10
Black-headed Gull				64	51	27	20
Common Gull							30

Table 5.8 Recent monthly IWeBS counts from Blennerville subsite (0K413) for qualifying interests of the SPA in 2019/20.

Species Name	1% National	1% International	Nov	Dec	Jan	Feb	Mar
Light-bellied Brent Goose	350	400	10	93		202	283
Shelduck	100	2500				2	
Wigeon	560	14000	15	65			
Mallard	280	53000	40	18			2
Teal	360	5000	58	30		7	52
Oystercatcher	610	8200	85	6		2	34
Lapwing	850	72300	483	623		740	
Sanderling	85	2000	44			**665**	25
Dunlin	460	13300		9		0	0
Black-tailed Godwit	200	1100	4	101		4	2
Curlew	350	7600	51	60		18	2
Redshank	240	2400	2	9		1	18
Turnstone	95	1400				9	
Black-headed Gull			20	38		27	20

Population data for the qualifying interests of Tralee Bay Complex SPA are set out in Table 5.8, with site species trends shown in Table 5.9.

Table 5.9 Population data for qualifying interests from the SPA: Conservation Objectives Supporting Document (copy of Table 4.1 of NPWS, 2014c).

Site Special Conservation Interests (SCIs)	Baseline Period (1995/96 - 1999/00)*	Recent Site Data (2006/07 – 2010/11)
Whooper Swan	101 (n)	108
Light-bellied Brent Goose	1,412 (i)	3,484 (i)
Shelduck	220 (n)	62
Wigeon	1,634 (n)	957 (n)
Teal	623 (n)	285
Mallard	571 (n)	382 (n)
Pintail	54 (n)	1
Scaup	892 (n)	322 (n)
Oystercatcher	1,011 (n)	957 (n)
Ringed Plover	344 (n)	136 (n)
Golden Plover	6,393 (n)	3,795 (n)
Grey Plover	195 (n)	17
Lapwing	6,106 (n)	3,594 (n)
Sanderling	228 (n)	693 (n)
Dunlin	2,444 (n)	630 (n)
Black-tailed Godwit	139 (n)	584 (n)
Bar-tailed Godwit	608 (n)	402 (n)
Curlew	1,170 (n)	839 (n)
Redshank	635 (n)	509 (n)
Turnstone	229 (n)	300 (n)
Black-headed Gull	1,320 (n)	834
Common Gull	599 (n)	186

* all data are from I-WeBS with the exception of Whooper Swan (Robinson et al. 2004a) and Light-bellied Brent Goose (Robinson et al. 2004b).
(i) denotes numbers of international importance; (n) denotes numbers of all-Ireland importance.
note that thresholds differ for the baseline and recent time periods used; international thresholds are outlined in Wetlands International (2002) and Wetlands International (2012), while all-Ireland thresholds are presented within Crowe et al. (2008) and Crowe & Holt (2013) for the baseline and recent site data respectively.

Table 5.10 Site trends for qualifying interests of Tralee Bay Complex SPA (copy of Table 4.2 of NPWS, 2014c).

Special Conservation Interests	Site Population Trend[1] 14 Yr	Site Population Trend[2] 5 Yr	Population Change[3]
Whooper Swan	+ 9	- 11	
Light-bellied Brent Goose	+ 164	+ 29	
Shelduck	- 56	- 40	
Wigeon	- 32	- 22	
Teal	- 42	- 38	
Mallard	- 17	+ 5	
Pintail	- 77	- 28	
Scaup	- 77	+ 14	
Oystercatcher	+ 48	+ 5	
Ringed Plover	- 32	- 37	
Golden Plover	- 24	- 54	
Grey Plover	- 80	- 62	
Lapwing	- 60	- 54	
Sanderling	+ 170	+ 19	
Dunlin	- 59	+ 1	
Black-tailed Godwit	+ 110	+ 10	
Bar-tailed Godwit	- 17	- 15	
Curlew	- 23	- 18	
Redshank	+ 44	+ 32	
Turnstone	+ 31	+ 10	
Black-headed Gull			- 37
Common Gull			- 69

[1]Site population trend analysis: 14-year period = 1995/96–2009/10
[2]Site population trend analysis: 5 yr = 2004/05 – 2009/10.
[3]Site population change based on two five-year – means (1995/96 – 1999/00 and 2005/06 – 2009/10).

Tralee Bay Complex Special Protection Area (Site Code 4188). Conservation Objectives Supporting Document (Version 1.0) included details of Low Tide counts undertaken by BirdWatch Ireland on behalf of National Parks and Wildlife Service. These were undertaken in line with Guidance set out in Lewis and Tierney (2014)[10]; with results also summarised in Cummins and Crowe (2010). This differs from the IWeBS counts by looking at the spatial distribution of birds during low tide – the period within which it is proposed to undertake works. The data included in *Conservation Objectives Supporting Document* (NPWS, 2014c) is based on low tide counts in October and November, 2009 and in January and February 2010 (as well as a single high tide count in January 2010) (Cummins and Crowe, 2010). While the age of the data is noted, it is useful in understanding broad patterns of distribution of qualifying interest bird species within the SPA and Tralee Bay & environs as a whole.

Low tide count sectors are shown in Figure 5.4 (extracted from NPWS, 2014c). The IWeBS count sector includes subsite 0K301 (east / upstream of the bridge) and overlaps with the southern part of 0K484 (west / downstream of the bridge) – see Figure 5.4. 0K484 is dominated by intertidal and subtidal habitats; while 0K301 is dominated by supratidal habitats (predominantly saltmarsh, with some areas of intertidal and subtidal habitat along the corridor of the River Lee) (Source: – NBDC map viewer - habitat mapping layers).

[10] Low tide waterbird surveys: survey methods and guidance notes. *Irish Wildlife Manuals*, No. 80.

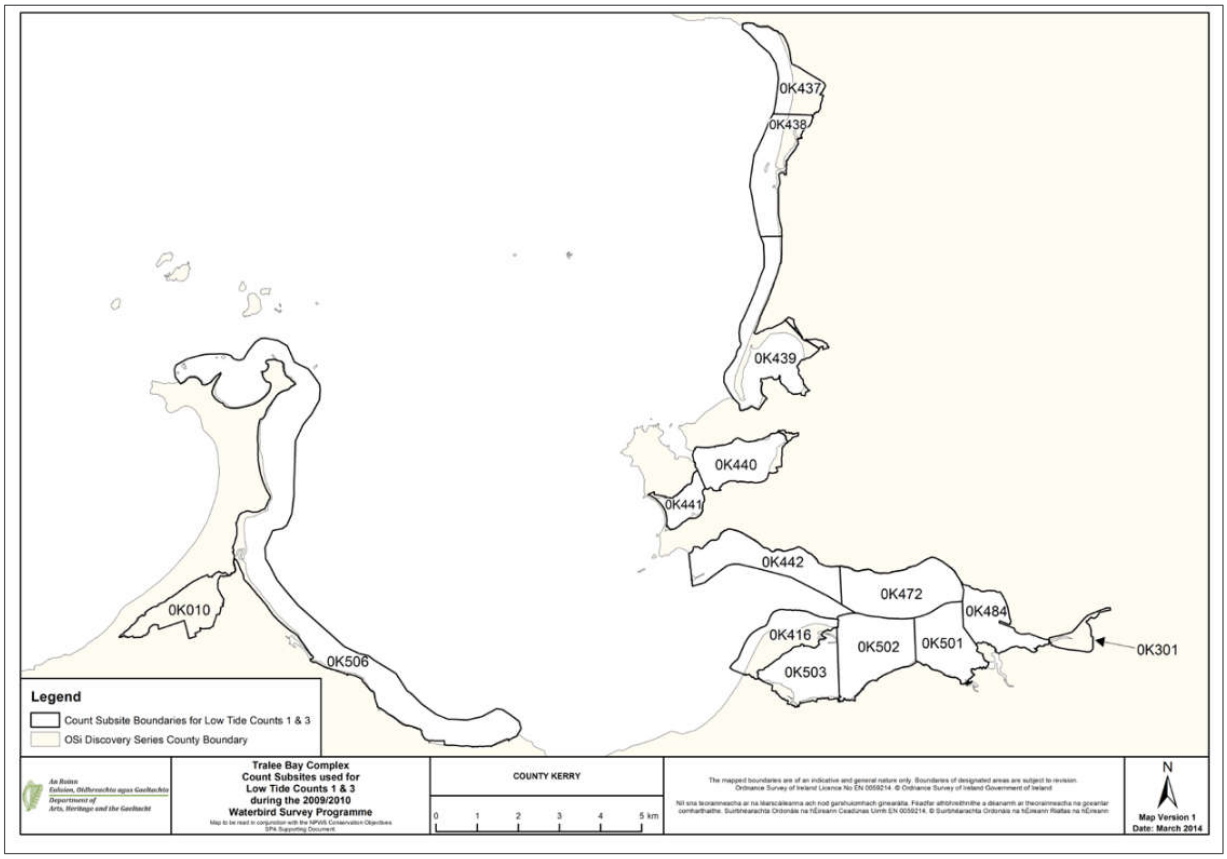


Figure 5.4 Blennerville Bridge NPWS low tide count sectors.

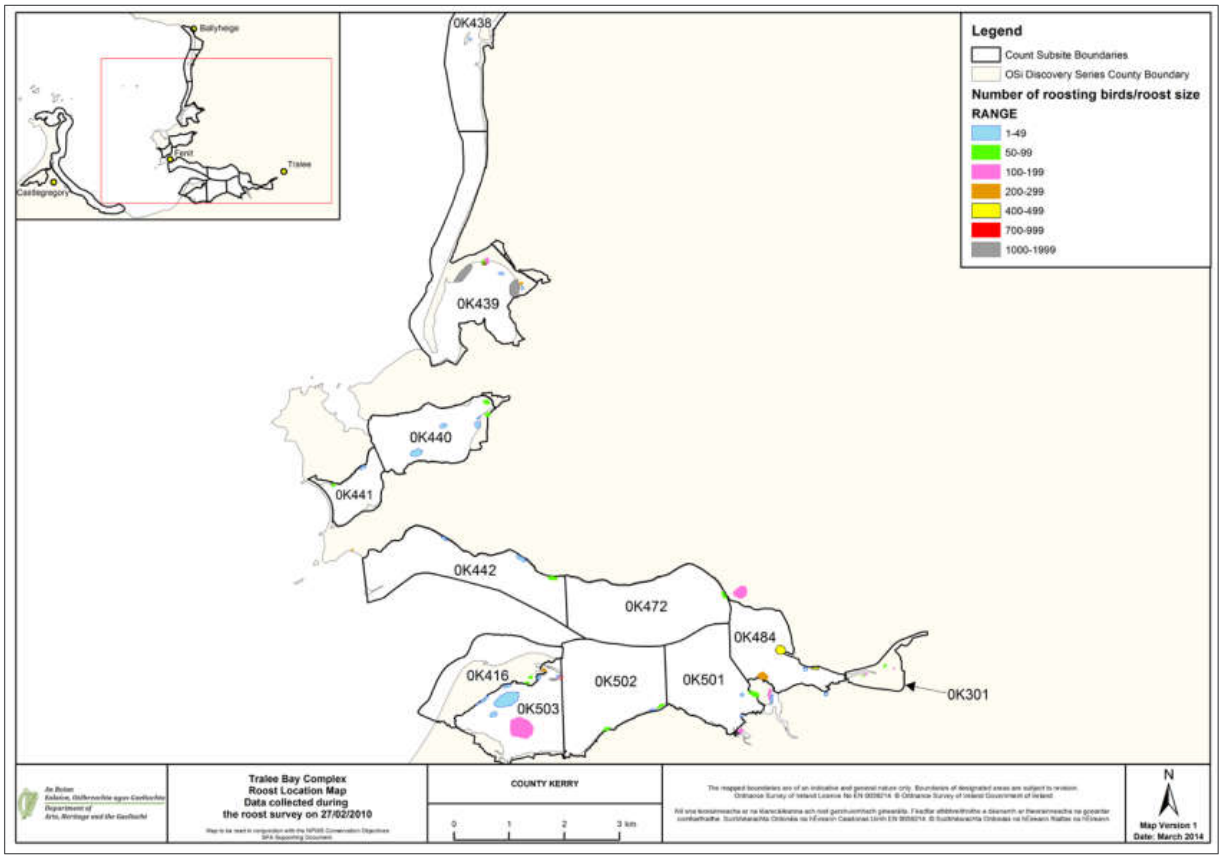


Figure 5.5 Roost sites (from NPWS, 2014c).

5.3.2.5. Screening Comments

The distribution of species across the Low Tide counts is summarised in dot density diagrams to illustrate the spatial distribution of birds on different counts. The relative importance of the area for the qualifying interests of Tralee Bay Complex SPA and the wider Tralee Bay is summarised in Table 5.11, below.

Table 5.11 Summary of the spatial distribution of qualifying interests of Tralee Bay Complex SPA.

Site	0K484 (west of bridge)	0K301 (east of bridge)	Screened In
Whooper Swan	Not recorded	Not recorded	No
Light-bellied Brent Goose	Large numbers were noted roosting in 0K484 in January 2010. Otherwise brent geese favoured other areas of the bay including the shoreline from Camp to the Magharees; Barrow Harbour; along the north shore of the inner bay and east of Derrymore outside of 0K484. These area are largely remote from the works on the bridge.	Not recorded	Yes
Shelduck	Present. Seems to favour the open flats east of Derrymore and in the northeast corner of the inner bay; with some birds also noted along the channel leading towards Blennerville Bridge.	Largely absent	Yes
Wigeon	Only recorded on one of the 4 LT counts (January 2010). Favours area between Derrymore and the western boundary of 0K484; Barrow Harbour.	Only recorded from saltmarsh east of the bridge on one of the 4 LT counts (January 2010).	Yes
Teal	Favoured areas include east of Derrymore, Barrow Harbour, as well as the along the channel leading towards Blennerville Bridge.	Large numbers occur through the saltmarsh in 0K301 east of Blennerville Bridge.	Yes
Mallard	While recorded from the channel leading towards Blennerville Bridge; seems to favour areas east of Derrymore (including the open flats west of 0K484), Barrow Harbour and northeast corner of the inner bay.	Recorded in 0K301 east of Blennerville Bridge, but not in notable numbers.	Yes
Pintail	Not recorded	Not recorded	No
Scaup	Not recorded	Not recorded	No
Oystercatcher	Present	Present	Yes
Ringed Plover	Present in 0K484 during only one of the counts – February 2010.	Not recorded	Yes – west of the bridge only
Golden Plover	Recorded roosting on open mudflat; Nov 2009 & Feb 2010	Not recorded	Yes – west of the bridge only
Grey Plover	Recorded in the open mudflats in the western parts of 0K484	Not recorded	Yes – west of the bridge only
Lapwing	Recorded roosting in 0K484	Recorded roosting in 0K301	Yes
Sanderling	Not recorded	Not recorded	No
Dunlin	Occurs in large numbers in the western parts of 0K484	Some evidence of occurrence on intertidal mudflats in inner 0K301	Yes

Site	0K484 (west of bridge)	0K301 (east of bridge)	Screened In
Black-tailed Godwit	Seems to favour areas of the harbour immediately west of Blennerville Bridge (i.e. 0K484; 0K502)	Some evidence of birds using the inner part of 0K301	Yes
Bar-tailed Godwit	Seems to favour areas of the harbour immediately west of Blennerville Bridge (i.e. 0K484; 0K502); as well as in the northeast corner of the inner bay.	Some evidence of small numbers of birds using the inner part of 0K301	Yes
Curlew	Widely distributed, but 0K484 does appear to be notable for Curlew in Tralee Bay SPA. Large numbers noted in the western part of 0K484 in Oct. 2009 count.	Some evidence of small numbers of birds using the inner part of 0K301.	Yes
Redshank	Widely distributed, but 0K484 does appear to be notable for Redshank in Tralee Bay SPA.	Some evidence of small numbers of birds using the inner part of 0K301.	Yes
Turnstone	Widely distributed throughout Tralee Bay SPA, including in 0K484.	Some evidence of small numbers of birds using the inner part of 0K301.	Yes
Black-headed Gull	Widely distributed throughout Tralee Bay SPA, including in 0K484.	Widely distributed throughout Tralee Bay SPA, including in 0K301.	Yes
Common Gull	Widely distributed throughout Tralee Bay SPA, including in 0K484, but seems to favour the shoreline east of Derrymore from Camp to the Magharees.	Widely distributed throughout Tralee Bay SPA, including in 0K484, but seems to favour the shoreline east of Derrymore from Camp to the Magharees.	Yes

Based on the distribution of species (across the counts) is summarised in dot density diagrams to summarise the spatial distribution of birds on different counts. The relative importance of the area for the qualifying interests of Tralee Bay Complex SPA and the wider Tralee Bay is summarised in Table 5.10. The Conservation Objectives: Supporting Document (NPWS, 2014c) also noted the location of key high tide roosts. These are shown in Figure 5.5 (extracted from NPWS, 2014c). As can be seen there are no notable high tide roosts immediately adjoining the bridge.

5.4. Concluding Statement

The proposed works are within Tralee Bay and Magharees Peninsula, West to Cloghane SAC and Tralee Bay Complex SPA.

This screening report for Appropriate Assessment is based on the best available scientific information. It is concluded potential impacts on Tralee Bay and Magharees Peninsula, West to Cloghane SAC and Tralee Bay Complex SPA cannot be fully discounted without the use of appropriately designed environmental protection / mitigation measures. Thus, it is recommended that the proposed project to proceed to Stage 2 of the Appropriate Assessment process.

6. Appropriate Assessment

This section of the report assesses the two relevant European sites in more detail and examines whether likely significant effects may arise. Where effects are identified that may affect the integrity of the European sites, avoidance and mitigation measures are proposed to offset these effects.

6.1. Identification of potential impacts

6.1.1. Tralee Bay SAC

The proposed works are described in full in Section 1.3 of the Report. As noted, works will be of short duration – ca. 7 weeks. Ideally works will occur during the summer months, during periods of lower river flow and drier weather conditions, but depending upon timing the works may extend further into the autumn when wintering birds begin to return to the site.

There will be no permanent loss of habitat within the works area. Instead works will be undertaken from a working platform, which will be established on the mudflat adjoining the pier where works are to be undertaken. There will be no excavation works.

The piers will be worked on in sequence (see Figure 1.5), so that works will occur on the western and eastern side of the bridge in sequence rather than at the same time. For further details of works locations see the accompanying design drawings (Figure 1.7 & 1.8). The mudflats around the pier are a resilient habitat that would quickly be restored to its condition prior to works due to movements of silts etc. over a number of tidal cycles. The area that would be temporarily disturbed represents a negligible area of habitat in comparison to the area of Estuaries and Mudflats designated within Tralee Bay (NPWS, 2013; 2014d).

The proposed site compound and surface water attenuation area lies outside the SAC and SPA boundaries.

The proposed traffic diversion routes also lies outside the SAC and SPA boundaries.

As noted in the consultation with Inland Fisheries Ireland (see Section 4.2) the key concern relates to water quality and the disposal of any waters from within the works area that might be heavily silted. This is returned to under Mitigation below.

The SAC is also designated for Otter. While no direct impact to a holting site is predicted, there is potential for the disturbance of Otter during proposed construction works. This is returned to under Mitigation below.

6.1.2. Tralee Bay Complex SPA

The works at Blennerville Bridge are also located within Tralee Bay Complex SPA. The wetland habitats of note around the bridge fall under Estuaries [1130] and Mudflats and sandflats not covered by seawater at low tide [1140]. These are discussed in Section 6.1.1 which considers potential impacts on Tralee Bay and Magharees Peninsula, West to Cloghane SAC. The potential for indirect impacts on water quality are also of note and proposed Mitigation measures are set out in full in Section 6.2, below.

As noted, works will take 7 weeks to complete – it is hoped to complete these works in late summer - autumn / early winter. Furthermore, each side of the bridge will be worked on in turn helping to reduce disturbance impacts on birds. Also, as works will occur around low tide, they

As noted, Tralee Bay Complex SPA is designated for a range of wintering wildfowl and waders. The habitats immediately adjoining the bridge are dominated by mudflats which are used by a range of wading birds as summarized in Table 5.11, as well as ducks such as Teal (*Anas crecca*) and Shelduck (*Tadorna tadorna*) etc. Large numbers of gulls also are often regularly found along the shoreline at Blennerville.

Species such as Whooper swan (*Cygnus cygnus*) are not recorded from this part of the harbour; while species such as Pintail (*Anas acuta*) favour saltmarsh areas or even areas dominated by *Spartina* where they can feed

on seeds of saltmarsh plants. Light-bellied brent geese (*Branta bernicla hrota*) do occur in this area. Mudflats adjoining the bridge support a range of wader species such as Redshank (*Tringa totanus*), Curlew (*Numenius arquata*), Black-tailed godwit (*Limosa limosa*), Dunlin (*Calidris alpina*) and Oystercatcher (*Haematopus ostralegus*) (see Table 5.11). However, all such species are largely winter visitors to Tralee Bay during the months of September/October to March/April; with different species occurring in peak numbers during different parts of the winter season. Generally, though it is October before numbers of waders and wildfowl build at coastal sites (Lewis *et al*., 2019). While some wintering bird species do occur during the summer months this is in much smaller numbers or during periods of passage. An exception would be Black-tailed Godwit which can occur on passage in sizeable numbers from as early as July. The proposed works are, however, of short duration during the late summer – early winter months in an area already prone to disturbance associated with traffic on the N86.

It is likely that there will be localised displacement of birds from the mudflats in the immediate environs of the bridge. However, this is at the head of the estuary with most intertidal mudflats located to the west in the inner estuary, as well as to the east of Derrymore Island. These areas are not likely to be disturbed by works and provide extensive areas of suitable habitat for the lower numbers of birds occurring in the SPA during the summer and months.

The SPA Conservation Objectives Supporting Document (NPWS, 2014c) includes information on roost locations – the immediate environs of the bridge are not noted as an important roosts site; the nearest roosts are small roosts within the saltmarsh to the east during the winter months.

It is not anticipated that the proposed works will negatively impact upon the qualifying interests of Tralee Bay Complex SPA at a population level.

6.2. Mitigation Measures

This section describes the mitigation measures required to ensure there are no residual effects on the integrity of the European site.

6.2.1. General Measures

1. Cumnor's Ecological Clerk of Works will monitor the performance of mitigation measures and issue reports on said performance after each site visit.

2. All site staff will be informed of best practice methodologies to be employed on site via the dissemination of a tool-box talk. This shall include the requirement for protection of aquatic habitats, the sensitivity of the SAC / SPA.

3. A Temporary Traffic Management zone will be created within the road corridor. This shall be used for parking and deliveries of materials. This is set out in Section 1.3.1.

4. Measures for working safely near water are set out in Section 1.3.2.

5. No invasive species were recorded in the vicinity of the works area.

6. Works will be carried out during day-time hours, except in the event of an emergency.

7. Any chemical, fuel and oil stores will be located on an impervious base within a secured bund with a storage capacity 110% of the stored volume.

8. Biodegradable oils and fuels will only be used.

9. Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will only be carried out on an impermeable surface in the assigned site compound (in carpark at southeast corner of bridge) and in an area well away from any watercourse or drainage (at least 20m).

10. Emergency spill kits will be available on site and staff will be trained in their use. A reporting system will be established on site to record accidents and/or spillages on site and the resultant action taken to remedy the incident.

11. Operators will check all equipment, machinery and vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages should be reported immediately and addressed.

12. Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed. All items of plant will be checked prior to use before each shift for signs of wear/damage.

13. No liquid cement is to be used on site.

6.2.2. Specific Measures to protect water quality

14. Methods for construction of the sand bag cofferdams are as set out in Section 1.3.3.2. These are to be made using Double sealed 1T sandbags. These will be craned into place from the bridge. No machinery is allowed on the shore. Cumnor's Ecological Clerk of Works will monitor site setup.

15. Water which builds up inside the coffer dam on each tidal cycle is to be pumped to a settlement area on the shore before water is allowed to be discharged back to the estuary. The construction of the settlement area is to be overseen by Cumnor's Ecological Clerk of Works. It must be shown to be properly constructed and fit for purpose prior to commencement of works.

16. Works will be carried out within the allowable period at low tide. There will be no works during high tide.

17. Works to start once water has receded past the level that is to be worked upon.

18. Sheeting to be applied to the face of new masonry construction each tidal cycle to prevent washout of fresh mortar. This is to be in place prior to the water reaching this level. Only approved mortar – in this case NHL5 is to be used.

6.2.3. Biosecurity protocols

Biosecurity protocols shall be implemented during the proposed project to prevent the introduction of invasive species, in particular those listed on the Third schedule to the 2011 Regulations, to site and the further spread of diseases. The following measures will be adopted:

1. All equipment intended to be used at the site shall be: -

    i. power steam washed at a suitably high temperature or at least 65 degrees, or

    ii. disinfected with an approved disinfectant, e.g. Virkon or an iodine-based product. It is important that the manufacturer's instructions are followed and if required, the correct contact times are allowed for during the disinfection process. Items that are difficult to soak should be sprayed or wiped down with disinfectant.

2. During the duration of the proposed project, if equipment is removed off-site to be used elsewhere, the said equipment shall be cleaned and disinfected prior to being brought back to the works area of the proposed project.

3. Appropriate facilities shall be used for the containment, collection and disposal of material and/or water resulting from washing facilities of vehicles, equipment and personnel.

4. Importation of materials shall comply with Regulation 49 of the EC (Birds and Natural Habitats) Regulations 2011.

6.2.4. Ecological Clerk of Works

An Ecological Clerk of Works will be appointed by TII to supervise proposed works. All site staff will be informed of work methods to be employed on site, as well as the sensitivity of the Tralee Bay and Magharees Peninsula, West to Cloghane SAC and Tralee Bay Complex SPA via the dissemination of a tool-box talk. This shall include the requirement for supervision of the construction of surface water attenuation features and the protection of water quality.

6.3. Residual Impacts

6.3.1. Tralee Bay SAC

6.3.1.1. Habitats

Table 6.1 and 6.2 summarises the potential for impacts to Estuaries and Mudflats assuming the implementation of Mitigation measures, which have been integrated into the design of how works will be undertaken.

Table 6.1 Attributes of 1130 Estuaries and comments on potential for impact (from NPWS, 2014a).

1130	Estuaries		
To maintain the favourable conservation condition of Estuaries in Tralee Bay and Magharees Peninsula, West to Cloghane SAC, which is defined by the following list of attributes and targets:			
Attribute	Measure	Target	Comment
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. (See Map 3 of NPWS, 2014a).	There will be no permanent loss of habitat. The proposed working platform is to be erected on large 1t sealed sand bags and is temporary in nature. There will be no permanent loss of benthic habitat at these locations. The proposed works are of short duration (ca. 7 weeks).
Community extent	Occurrence	Maintain the extent of the *Zostera*-dominated community complex and the *Mytilus*-dominated community, subject to natural processes. (See Map 8 of NPWS, 2014a).	*Zostera* beds are not located at or close to the works area at Blennerville Bridge. There will be no direct impact to the *Zostera*-dominated community complex. *Mytilus* beds are not located at or close to the works area at Blennerville Bridge. There will be no direct impact to the *Mytilus edulis* dominated community.
Community structure: *Zostera* density	Shoots / m^2	Conserve the high quality of the *Zostera*-dominated community complex, subject to natural processes	As noted, there will be no impact on the *Zostera*-dominated community complex and thus no reduction in number of shoots / m^2.
Community structure: *Mytilus edulis* density	Individuals / m^2	Conserve the high quality of the *Mytilus edulis* dominated community, subject to natural processes	As noted, there will be no impact on the *Mytilus edulis* dominated community and thus no reduction in *Mytilus edulis* density or number of individuals / m^2.
Community distribution	Hectares	Conserve the following community types in a natural condition: Sand to sandy mud with polychaetes and bivalves community complex; Mixed sediment with crustaceans, bivalves and polychaetes community complex; Intertidal reef community complex. (See Map 8 of NPWS, 2014a).	The works area lies within a part of the harbour dominated by *Sand to sandy mud with polychaetes and bivalves community complex*. The other listed communities do not occur at this location. However, as noted, the proposed works are of short duration (7 weeks) and will not result in permanent loss of habitat. The proposed working platform is to be erected on large 1t sealed sand bags, which will be placed on the mudflat,and are temporary in nature. There will be no permanent loss of benthic habitat.

Table 6.2 Attributes of 1140 Mudflats and sandflats not covered by seawater at low tide and comments on potential for impact (from NPWS, 2014a).

1140	1140 Mudflats and sandflats not covered by seawater at low tide		
To maintain the favourable conservation condition of 1140 Mudflats and sandflats in Tralee Bay and Magharees Peninsula, West to Cloghane SAC, which is defined by the following list of attributes and targets:			
Attribute	Measure	Target	Comment
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. (See Map 4 of NPWS, 2014a).	The proposed works are of short duration. The proposed working platform is to be erected on large 1t sealed sand bags and is temporary in nature. There will be no permanent loss of benthic habitat.
Community extent	Occurrence	Maintain the extent of Mytilus-dominated community and the *Zostera*-dominated and *Sabellaria*-dominated community complexes, subject to natural processes. (See Map 8 of NPWS, 2014a).	*Zostera* beds are not located at or close to the works area at Blennerville Bridge. There will be no direct impact to the *Zostera*-dominated community complex. *Sabellaria*-dominated community complexes are not located at or close to the works area at Blennerville Bridge. There will be no direct impact to the *Sabellaria*-dominated community complexes.
Community structure: *Zostera* density	Shoots / m^2	Conserve the high quality of the *Zostera*-dominated community complex, subject to natural processes	As noted, there will be no impact on the *Zostera*-dominated community complex and thus no reduction in number of shoots / m^2.
Community structure: *Mytilus edulis* density	Individuals / m^2	Conserve the high quality of the *Mytilus edulis* dominated community, subject to natural processes	As noted, there will be no impact on the *Mytilus edulis* dominated community and thus no reduction in *Mytilus edulis* density or number of individuals / m^2.
Community structure: Sabellaria density	Individuals / m^2	Conserve the high quality of the *Sabellaria* dominated community complex, subject to natural processes	As noted, there will be no impact on the *Sabellaria* dominated community complex and thus no reduction in *Sabellaria* density or number of individuals / m^2.
Community distribution	Hectares	Conserve the following community types in a natural condition: Sand to sandy mud with polychaetes and bivalves community complex; Sand with *Nephtys cirrosa* community complex; Ostrea edulis-dominated community. (See Map 8 of NPWS, 2014a).	The works area lies within a part of the harbour dominated by Sand to sandy mud with polychaetes and bivalves community complex. The other listed communities do not occur at this location. However, as noted, the proposed works are of short duration. The proposed working platform is to be erected on large 1t sealed sand bags and is temporary in nature. There will be no permanent loss of benthic habitat.

It is not anticipated that the proposed works will negatively impact upon the qualifying habitats of Tralee Bay and Magharees Peninsula, West to Cloghane SAC.

6.3.1.2. Species

Table 6.3 summarises the potential for impacts to Otter assuming the implementation of Mitigation measures, which have been integrated into the design of how works will be undertaken.

Table 6.3 Attributes of Otter (*Lutra lutra*) and comments on potential for impact (from NPWS, 2014a).

1355	Otter (*Lutra lutra*)		
To restore the favourable conservation condition of Otter in Tralee Bay and Magharees Peninsula, West to Cloghane SAC, which is defined by the following list of attributes and targets:			
Attribute	Measure	Target	Comment
Distribution Percentage positive survey sites	Distribution Percentage positive survey sites	No significant decline	The works will take 7 weeks to complete. Works will only take place at low tide. There will be no impedance of movements of Otter in the adjoining canal. As can be seen in photographs the bridge includes 5 arches; as well as a separate arch to the south. The photos illustrate the environs of the bridge and neighbouring riverbanks – no otter holts are present close to the bridge. It is highly probable that otter are holting in the wider environs, such as on the canal. Works are to a bridge which is a national primary road (N86) which is already subject to heavy use / disturbance and adjoins public areas in Blennerville. The works have been designed in such a way as to limit works to around the piers. Works will take place separately on each side of the bridge. Displacement of Otter is likely for the short period around low tide when works are to be undertaken. However, no such impedance will occur at high tide or on the ebb / flow tide. Apart from localised disturbance, no negative decline in otter numbers or occurrence is anticipated. It is noted that Otter can regularly be seen in the canal by walkers on the adjoining footpath, so some acclimatisation to human presence by Otter in the local area is noted. Measures to protect water quality are set out under Mitigation below.
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 82.3ha above high water mark (HWM); 50.4ha along river banks/around lakes and ponds	Photographs of the bridge and environs are shown in Section 1.2. A small area of amenity grassland adjoining the small carpark to the southeast of the bridge is proposed as the location of the settlement pond. This will be reinstated following completion of works.
Extent of marine habitat	Hectares	No significant decline. Area mapped and calculated as 702.2ha	The proposed works are of short duration. The proposed working platform is to be erected on large 1t sealed sand bags and is temporary in nature. There will be no permanent loss of marine habitat.

Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 19.5km	Blennerville Bridge is at the tidal end of the River Lee. Works represent repair to the bridge structure. There will be no loss of freshwater (river) habitat.
Extent of freshwater (lake/lagoon) habitat	Hectares	No significant decline. Area mapped and calculated as 53.8ha	The nearest lagoon / lake to the works area is Lough Gill on the Magharees Peninsula. Works represent repair to the bridge structure. There will be no loss of freshwater (lake/lagoon) habitat.
Couching sites and holts	Number	No significant decline	Photographs of the bridge and environs are shown in Section 1.2. Other than the areas proposed for repair, the stone work on the bridge is in good condition and does not include openings within which otter might holt. The site photos illustrate the environs of the bridge and neighbouring riverbanks – no otter holts are present close to the bridge. It is highly probable that otter are holting in the wider environs, such as on the canal. The proposed settlement pond is an area of amenity grassland adjoining a public carpark. The carpark is also to be used as a site compound.
Fish biomass available	Kilograms	No significant decline	There will be no impact on the freshwater stretches of the River Lee. There will be no loss of marine habitat used by fish that are preyed upon by otter. The works area is very small in comparison to available fish habitat and works are of short duration. All works will be at low tide. At no time will movement of fish be impeded. Measures to protect water quality are set out under Mitigation below.
Barriers to connectivity	Number	No significant increase. For guidance (see Map 12)	Blennerville Bridge (KY-N86-001.00) is a five span masonry and concrete arch structure carrying the N86 national secondary road over the River Lee in the village of Blennerville, Co. Kerry. The works have been designed in such a way as to limit works to around the piers. Works will take place separately on each side of the bridge. Displacement of Otter is likely for the short period around low tide when works are to be undertaken. However, no such impedance will occur at high tide or on the ebb / flow tide. Apart from localised disturbance, no negative decline in otter numbers or occurrence is anticipated. It is noted that Otter can regularly be seen in the canal by walkers on the adjoining footpath, so some acclimatisation to human presence by Otter in the local area is noted.

			Although otters can breed at any time of year most seem do so in spring or early summer; works as noted are proposed for late summer to early winter and so will not overlap with the key period for breeding. By late summer young Otter will be mobile and can accompany the female on foraging trips. During high tide when Otter can freely move through the bridge, the proposed works will not force otter up onto the N86. Thus there should be no risk of road mortality.

It is not anticipated that the proposed works will negatively impact upon the qualifying species of Tralee Bay and Magharees Peninsula, West to Cloghane SAC.

6.3.2. Tralee Bay Complex SPA

The potential residual impacts to birds using the SPA is limited to potential localised disturbance to birds close to the bridge around low tide over a period of 7 week. Note, however, that works will take place on the different sides of the bridge at different times further reducing the potential for disturbance.

It is not anticipated that the proposed works will negatively impact upon the qualifying interests of Tralee Bay Complex SPA at a population level.

6.4. Potential In-Combination Impacts

6.4.1. Plans

The proposed development is located on the edge of Blennerville, to the west of Tralee, Co. Kerry along the N86. The Kerry County Development Plan, 2015-2021 sets out policies and objectives for the development of the County during the period of the Plan. The Plan seeks to secure the sustainable development and improvement of the economic, environmental, cultural and social assets of Kerry County. The Plan has outlined objectives for biodiversity within the county. These include: -

- Providing protection to all designated sites, national and European, and to maintain or develop linkages between these,
- Providing protection to protected plants and animals in accordance with legal requirements, and
- Retain areas of local biodiversity value, ecological corridors and habitats which contribute to the county ecological network, to protect them from inappropriate development.

A Strategic Environmental Assessment (SEA; Part), Natura Impact Report (NIR; Part 2) and Strategic Flood Risk Assessment (Part 3) was prepared for the Kerry County Development Plan, which assessed the CDP and its potential to adversely affect the environment as a whole and the integrity of Natura 2000 sites. The NIR can be read at: -

http://docstore.kerrycoco.ie/KCCWebsite/planning/devplans/Vol4EnvironmentalReports.pdf

This sets out in full the approach to the Appropriate Assessment, how aspects of the Plan were considered and how the Plan will be implemented and delivered while protecting European sites; thus, ensuring that potential impacts were avoided, reduced or offset. Thus, the finding of the assessments was that the Plan will not adversely affect the general biodiversity and the integrity of Natura 2000 sites due to the incorporation of mitigation measures into the Plan as a result of the assessment processes.

A new draft Plan, 2022-2028 is currently under consideration. The Natura Impact Report is included in Volume 5, Part 2 –

https://consult.kerrycoco.ie/en/consultation/draft-kerry-county-development-plan-2022-2028/chapter/2-natura-impact-report

Blennerville is also covered by the Tralee Municipal District Local Area Plan 2018-2024. A Habitats Directive Assessment can be viewed at - http://docstore.kerrycoco.ie/KCCWebsite/planning/var/var5/hda.pdf. It concluded that "*The land use plans, as adopted, in combination with other plans or projects, are not likely to adversely affect the integrity of a European site*".

6.4.2. Projects

Projects that have been proposed and/or granted planning permission in the vicinity of the proposed works area project within the last 5 years were reviewed through the Kerry County Council Planning Enquiry System and the National Planning Application Map Viewer (MyPlan.ie).

To the southwest Application No. 20579 was for the "*Construction of a standalone steel canopy structure*". Application No. 20767 is located in Blennerville to the south of the bridge and involves demolition and replacement of an existing structure. All other applications are older the 5 years.

The proposed developments will not result in negative impacts on any of the features of interest for which the Tralee Bay and Magharees Peninsula, West to Cloghane SAC or Tralee Bay Complex SPA have been designated.

6.4.3. Conclusion of Cumulative Assessment

In the review of the projects and plans that was undertaken, no works that could potentially result in additional or in-combination impacts was identified. Neither was any potential for different (new) impacts resulting from the combination of the various projects and plans in association with the proposed works at Blennerville Bridge identified.

7. Conclusions

This NIS has provided an assessment of all potential direct or indirect adverse effects which have the potential to cause likely significant impacts on European sites.

Where the potential for any likely significant effects on any European Site has been identified then, as is apposite when conducting a Stage Two Appropriate Assessment, consideration has been given to the mitigation measures which have been identified and which will be implemented in order to avoid potential water pollution events, in particular. The measures ensure that the proposed repair works will not adversely affect the integrity of any European sites. In conclusion, in circumstances where the mitigation measures identified in this NIS are implemented, there is no reasonable scientific doubt remaining as to the absence of adverse effects on the constitutive characteristics of Tralee Bay and Magharees Peninsula, West to Cloghane SAC or Tralee Bay Complex SPA.

Therefore, it can be objectively concluded that the proposed bridge repairs, whether individually or in combination with other plans or projects, will not adversely affect the integrity of any European site.

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Additional Information

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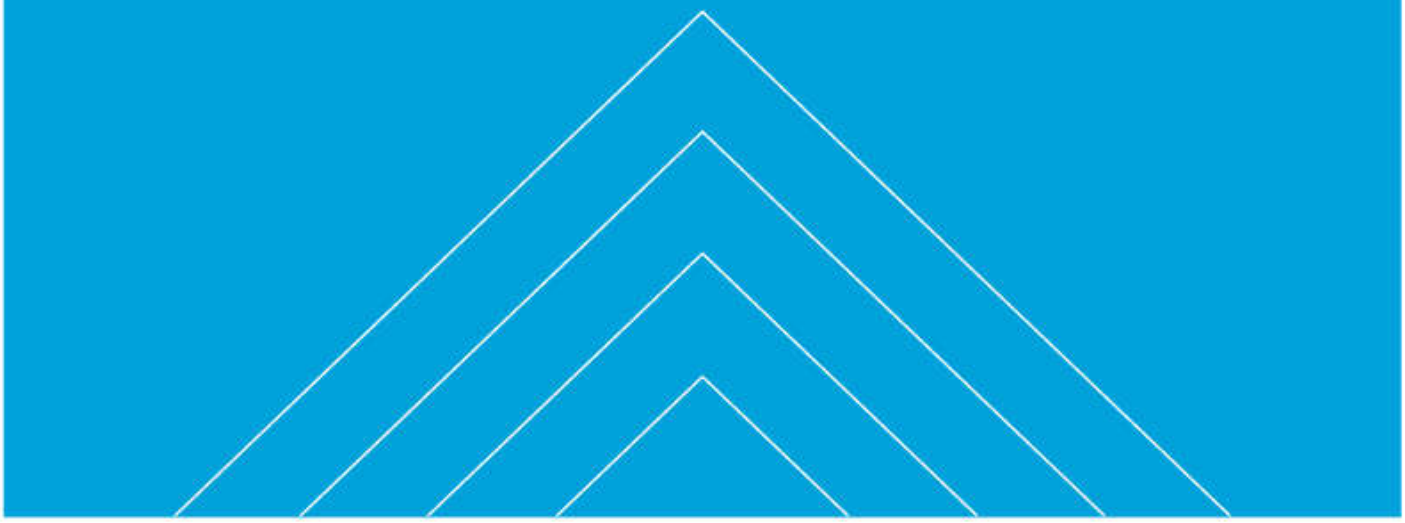
Appendices



Appendix A. Site Synopses

SITE SYNOPSIS

Site Name: Tralee Bay and Magharees Peninsula, West to Cloghane SAC

Site Code: 002070

This large site in Co. Kerry stretches from Tralee town westwards to Fenit Harbour and Cloghane, encompassing Tralee Bay, Brandon Bay and the Magharees Peninsula. It includes extensive mudflats at the eastern end, the beaches of Derrymore Island, the sand dunes and lagoons of the Magharees Peninsula, as well as the rocky headlands at its end. The site includes two Statutory Nature Reserves, Tralee Bay and Derrymore Island, and much of the estuarine part of the site has been designated a Special Protection Area (SPA) for birds and their habitats.

The site is mostly underlain by limestone, but significant parts of this are covered with glacial drift or windblown sand. The main exposures occur at Fenit port, Oyster Hall, Blennerville and at Rough Point and Fahamore, but there are some other low outcrops on the beaches west to Castlegregory. Elsewhere the sandstones and slates of the Dingle Beds appear.

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

[1130] Estuaries
[1140] Tidal Mudflats and Sandflats
[1150] Coastal Lagoons*
[1160] Large Shallow Inlets and Bays
[1170] Reefs
[1210] Annual Vegetation of Drift Lines
[1220] Perennial Vegetation of Stony Banks
[1230] Vegetated Sea Cliffs
[1310] *Salicornia* Mud
[1330] Atlantic Salt Meadows
[1410] Mediterranean Salt Meadows
[2110] Embryonic Shifting Dunes
[2120] Marram Dunes (White Dunes)
[2130] Fixed Dunes (Grey Dunes)*
[2170] Dunes with Creeping Willow
[2190] Humid Dune Slacks
[6410] *Molinia* Meadows
[91E0] Alluvial Forests*

[1355] Otter (*Lutra lutra*)
[1395] Petalwort (*Petalophyllum ralfsii*)

Both the Tralee and Brandon (Owenmore) estuaries feature wide expanses of sheltered intertidal flats, often fringed with saltmarsh vegetation. Plant species are typically scarce on the flats, although there are some eelgrass (*Zostera* spp.) beds and patches of green algae (e.g. *Ulva* spp. and *Enteromorpha* spp.). The eelgrass beds at Derrymore Island include *Zostera noltii*, a species which has a limited distribution in Ireland. A variety of polychaetes (worms) and bivalve molluscs are also present in the intertidal sections.

The majority of Tralee Bay is shallow and composed of sublittoral sediments. In the more sheltered areas of the bay, there is a variety of important sublittoral sediment communities in which a number of rare species occur. Seagrass beds in sandy substrates are characterized by oysters and the rare anemone *Calliactis parasitica* which lives on shells inhabited by the hermit crab *Pagurus bernhardus*. The little known hydroid, *Laomedia angulata*, is also found on the fronds of the seagrass. The native oyster, *Ostrea edulis,* occurs in sediment communities throughout the bay. Maerl beds, composed of the free-living coralline algae *Lithothamnion corallioides* and *Phymatolithon calcareum*, and characterized by anemones (*Anthopleura balli*) and oysters, occur in the middle of the bay. The rare anemone *Halcampa chrysanthellum* has been recorded here.

The intertidal reefs of Tralee Bay and the Magharees peninsula range from being exposed to sheltered from wave action, and the communities present are good examples of the communities typically found on these types of shores. The barnacle/limpet community with the lichen *Lichina pygmaea* is an uncommon community and is found in the upper-mid shore at Rough Point. The low shore at Rough Point, which is moderately exposed to wave action, and the shore at Coosanea, which is sheltered from wave action, are both very species-rich. Rocky outcrops on the shore half way round the bay near Camp are known to support a community of the uncommon honeycomb worm *Sabellaria alveolata*. The sublittoral reefs support communities characterised by a variety of red foliose algae, as well as the brown algae *Dictyota dichotoma,* and are typical of communities that are subjected to sand scour as indicated by the presence of the red algae *Furcellaria lumbricalis* and *Polyides rotundus*.

In the transition zone between the intertidal flats and saltmarsh, specialised colonisers of mud predominate - swards of Common Cord-grass (*Spartina anglica*) are extensive on the leeward side of Derrymore Island, while swards of Glasswort (*Salicornia europaea* agg.) also occur in parts of the site.

Saltmarsh vegetation frequently fringes the mudflats, with the most extensive areas being found at Blennerville, Derrymore Island and Formoyle in Brandon Bay. The dominant type of saltmarsh present is Atlantic salt meadow. Characteristic species occurring include Common Saltmarsh-grass (*Puccinellia maritima*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea-milkwort (*Glaux maritima*), Sea Plantain

(*Plantago maritima*), Red Fescue (*Festuca rubra*), Creeping Bent (*Agrostis stolonifera*), Saltmarsh Rush (*Juncus gerardi*), Long-bracted Sedge (*Carex extensa*), Lesser Sea-spurrey (*Spergularia marina*) and Sea Arrowgrass (*Triglochin maritima*). Areas of Mediterranean salt meadows, characterised by clumps of Sea Rush (*Juncus maritimus*), occur occasionally.

Sandy beaches backed by strips of embryonic dunes and 'white' dunes are common along the southern shore of the site. The vegetation of these fore dune habitats is dominated by Sand Couch (*Elymus junceiformis*) and Marram (*Ammophila arenaria*). However, the main dune area on this southern shore occurs on the Magherees Peninsula - a tombolo which joins a number of the Magharees Islands with the mainland. Here there are extensive areas of fixed 'grey' dunes, which feature a number of damp hollows or dune slacks. The fixed dunes are species-rich, with characteristic species such as White Clover (*Trifolium repens*), Lesser Hawkbit (*Leontodon taraxacoides*), Common Centaury (*Centaurium erythraea*), Lady's Bedstraw (*Galium verum*) and grasses (e.g. *Festuca rubra, Poa trivialis* and *Avenula pubescens*).

Relatively scarce plants found on the dunes include the following: Fringed Rock-cress (*Arabis brownii*), Fragrant Orchid (*Gymnadenia conopsea*), Squinancywort (*Asperula cynanchica*), Autumn Lady's-tresses (*Spiranthes spiralis*) and Dodder (*Cuscuta epithymum*). Dune slack species include Strawberry Clover (*Trifolium fragiferum*), Chaffweed (*Anagallis minima*) and the fungus *Inocybe halophila*.

Lough Gill, a natural sedimentary lagoon, is located at the base of the Magherees Peninsula. The lagoon is only slightly brackish and therefore contains freshwater species along with lagoon specialists. Submerged flora present includes Beaked Tasselweed (*Ruppia maritima*) and Horned Pondweed (*Zannichellia palustris*), while species fringing the lagoon include Common Reed (*Phragmites australis*), Sea Club-rush (*Scirpus maritimus*) and Grey Club-rush (*S. lacustris* subsp. *tabernaemontani*).

Good examples of vegetated sea cliffs composed of boulder clay occur to the west of Derrymore Island.

Other coastal habitats that occur within the site include shingle beaches and rocky shores. The site also contains fragments of terrestrial habitats such as deciduous woodland, scrub, heath, dry limestone grassland, wet grassland and freshwater marshes.

There is some good limestone flora on the hill at Oyster Hall, with Burnet Rose (*Rosa pimpinellifolia*), Southern Polypody (*Polypodium australe*) and Hairy Rock-cress (*Arabis hirsuta*) occurring. There is an old record for the Red Data Book species, Sea-kale (*Crambe maritima*). At Fahamore and Rough Point it is the intertidal communities that are particularly rich, benefiting from a multitude of microhabitats in the eroded limestone. Red algae are frequent, including the agar seaweeds *Gelidium* and *Pterocladia*.

A small area of *Molinia* meadow is found in the site, with species such as Purple Moor-grass (*Molinia caerulea*), Devil's-bit Scabious (*Succisa pratensis*), Sharp-flowered

Rush (*Juncus acutiflorus*) being common, and species such as Greater Tussock-sedge (*Carex paniculata*), Tormentil (*Potentilla erecta*), Marsh Cinquefoil (*Potentilla palustris*), Wild Angelica (*Angelica sylvestris*) and Common Valerian (*Valeriana officinalis*) also frequent.

Beach features dominate the northern coast of the Dingle Peninsula with an excellent series of shingle ridges forming Derrymore Island and the tombolo which links former Magheree Islands (Rough Point, etc.) to the mainland. Here there is a large area of well developed sand dunes with an exceptionally rich flora and great topographic variation. The flora includes Fringed Rock-cress, Squinancywort, Dodder, Autumn Lady's-tresses and Chaffweed - all plants with a restricted distribution in the west of Ireland. These occur in a vegetation with abundant Red Fescue, scattered Marram, and herbs such as Lady's Bedstraw, Wild Thyme (*Thymus praecox*), Common Bird's-foot-trefoil (*Lotus corniculatus*) and Kidney Vetch (*Anthyllis vulneraria*). Yellow-rattle (*Rhinanthus minor*), eyebrights (*Euphrasia* spp.), Pyramidal Orchid (*Anacamptis pyramidalis*) and Heath Spotted-orchid (*Dactylorhiza maculata*) are four sensitive species which also occur here.

At the seaward edge drift line vegetation is often present. The more stable areas of shingle support Sea Beet (*Beta vulgaris* subsp. *maritima*), Sea Mayweed (*Matricaria maritima*), Sea Campion (*Silene vulgaris* subsp. *maritima*), Curled Dock (*Rumex crispus*), oraches (*Atriplex* spp.), Sea Sandwort (*Honkenya peploides*) and Silverweed (*Potentilla anserina*).

Between the dunes where erosion has removed the sand down to the water table there are temporary ponds or dune slacks with many additional species. Marsh Pennywort (*Hydrocotyle vulgaris*), Silverweed, various sedges (*Carex panicea* and *C. nigra*) and, in places, Strawberry Clover, Adder's-tongue (*Ophioglossum vulgatum*), Knotted Pearlwort (*Sagina nodosa*) and the orchids *Dactylorhiza majalis* and *D. incarnata* all occur. Some parts of the dune slacks feature a vegetation community characterised by the presence of Creeping Willow (*Salix repens*).

Woodland is rare on the Dingle Peninsula so the three stands included in this site are locally important. A deserted river valley at Killelton, the steep valley of the Finglas River at Camp and the west-facing slopes of Drom Hill opposite Cloghane all have features of significant interest. The last site has many species of lower plant (liverworts and lichens) that form distinctive elements of the westernmost natural woods in Ireland. At Garrahies Wood, adjacent to the Finglas River, there is an example of wet woodland on base-rich soils subject to flooding. The woodland type falls into the ash-alder alluvial forest category. The most common tree species are Alder (*Alnus glutinosa*), Downy Birch (*Betula pubescens*) and willows (*Salix* spp.). Bluebell (*Hyacinthoides non-scripta*), grasses and Bramble (*Rubus fruticosus* agg.) are the most common species in the ground layer.

The dune complex on the Magharees Peninsula supports the largest Irish breeding population of Natterjack Toads. Indeed, the population may be the largest breeding population in Britain and Ireland. The Natterjack Toad is listed as vulnerable in the

Red Data Book and is protected under both European and national legislation. The toads require shallow warm water to spawn in and sandy habitats for over-wintering. Their tadpoles are vulnerable to predation in permanent lakes but despite this they have some success in Lough Gill which is a shallow lake with flat shores of sand, wet grassland or marsh. Natterjack Toads also breed within the site at Fermoyle, to the west. Also recorded from Fermoyle is the rare whorl snail *Vertigo angustior*, a species listed on Annex II of the E.U. Habitats Directive. Two species of hover fly - *Platycheris perpilladus* and *Sphaerophoria loewi* - have their only Irish records from the Magharees Peninsula dune system and a water beetle, *Cercyon sternalis,* was first recorded in Ireland in 1997 in Lough Gill.

The site supports populations of several rare plant species which have not been mentioned already. The bryophyte Petalwort (*Petalophyllum ralfsii*), which is listed on Annex II of the E.U. Habitats Directive, is known from the dune slacks on the Magharees Peninsula and Smooth Brome (*Bromus racemosus*), a Red Data Book grass, has been recorded from two wet meadows within the site. Several aquatic plants of interest grow in Lough Gill, the rarest being the Red Data Book stonewort *Chara canescens*. The Slender-leaved Pondweed (*Potamogeton filiformis*) occurs far to the south of its distribution elsewhere in Ireland and Britain, while there are also old records for Spiral Tasselweed (*Ruppia spiralis*). The marshes along the southern shore in the past support a rich variety of vegetation including several species rare in Kerry such as Water Dock (*Rumex hydrolapathum*) and Greater Spearwort (*Ranunculus lingua*), as well as sedges (*Carex dioica, C. limosa* and *C. diandra*) on patches of peat. Despite local reclamation it is likely that most of these still survive.

Otters regularly feed within this extensive site though it is not known if they breed. Otter is listed on Annex II of the E.U. Habitats Directive.

Tralee Bay, including Lough Gill, is an internationally important wetland for wintering waders and wildfowl. Species present which are listed on Annex I of the E.U. Birds Directive include Whooper Swans (24, mid-1980s), Golden Plover (3,053, 1994-95) and Bar-tailed Godwit (903, 1995-96). The dunes also provide an important feeding ground for Chough, a resident Annex I species.

Other wintering waders and wildfowl present include: Pale-bellied Brent Goose (944, mid-1980s), Shelduck (218, 1995-96), Gadwall (14, 1994-95), Teal (860, 1994-95), Pintail (56, 1995-96), Shoveler (144, mid-1980s), Scaup (1560, 1994-95), Scoter (620, 1994-95), Red-breasted Merganser (46, 1994-95), Ringed Plover (332, 1994-95), Grey Plover (674, 1995-96), Lapwing (5700, 1994-95), Knot (320, 1994-95), Sanderling (270, 1994-95), Purple Sandpiper (103, mid-1980s), Dunlin (4122, 1995-96), Black-tailed Godwit (508, 1994-95), Curlew (826, 1994-95), Redshank (352, 1995-96), Greenshank (21, 1994-95) and Turnstone (477, mid-1980s). Most of these species are present in nationally important numbers.

The dunes at this site face pressures from intensive farming practises and recreational use by visitors. The most threatening activities include fertilisation of the species-rich dune grasslands, over-grazing, and trampling of areas of dunes adjacent

to tourist facilities (e.g. caravan parks). These activities may lead to severe erosion and eutrophication of the dune grasslands and dune slacks. Parts of the dune system are also vulnerable to invasion by Sea Buckthorn (*Hippophae rhamnoides*).

Agricultural run-off from areas of fertilised dune grasslands in the vicinity of Lough Gill pose a continued threat to the nutrient status of the lagoon; algal blooms and fish kills have occurred in the past. Removal of sand has also occurred and poses a threat to the integrity of the system.

Generally, the intertidal areas are relatively robust, although certain communities are vulnerable. For example, *Spartina* has spread widely, and may oust less vigorous colonisers of mud and may also reduce the area of mudflat available to feeding birds. Other activities, such as land reclamation and aquaculture, pose potential threats in terms of damage to habitats and potential disturbance to wintering birds.

Domestic and industrial wastes are discharged into inner Tralee Bay, but water quality is generally satisfactory - except in the inner bay, reflecting the sewage load from Tralee Town. Further industrial development along the bay in the vicinity of Tralee Town and Fenit and water polluting operations are potential threats.

This site is of considerable ecological and conservation significance for the excellent diversity of habitats it contains, many of which are listed on Annex I of the E.U. Habitats Directive. The occurrence of a species listed on Annex II of the E.U. Habitats Directive adds further importance to the site. The presence of a number of Red Data Book species, including the largest population of Natterjack Toads in Ireland, is also notable, as is the occurrence of several species listed on Annex I of the E.U. Birds Directive.

SITE SYNOPSIS

SITE NAME: TRALEE BAY COMPLEX SPA

SITE CODE: 004188

The Tralee Bay Complex SPA is located along the coast of north Co. Kerry between Ballyheige in the north, Tralee in the east and Stradbally in the west. The site includes the inner part of Tralee Bay, including Derrymore Island, the inlets of Barrow Harbour and Carrahane Strand, Akeragh Lough, Lough Gill, and much of the intertidal habitat from Scraggane Point at the northern end of the Magharees Peninsula around the coast to *c*. 2 km south of Ballyheige. Inner Tralee Bay is well sheltered by the Derrymore Island peninsula. The intertidal sediments vary from muddy sands on the upper shore to firm rippled sands on the lower, more exposed shore. The sediments have a diverse macro-invertebrate fauna, with such species as Cockle (*Cerastoderma edule*), Lugworm (*Arenicola marina*), Ragworm (*Hediste diversicolor*), Baltic Tellin (*Macorna balthica*) and Shrimp (*Crangon crangon*) occurring. The intertidal flats have extensive beds of Eelgrass (*Zostera* spp.).

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Whooper Swan, Light-bellied Brent Goose, Shelduck, Wigeon, Teal, Mallard, Pintail, Scaup, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Lapwing, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone, Black-headed Gull and Common Gull. It is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Tralee Bay Complex SPA is an internationally important wetland for wintering waders and wildfowl. It supports an internationally important population of Light-bellied Brent Goose (1,412) and nationally important populations of a further 21 species, i.e. Whooper Swan (101), Shelduck (220), Wigeon (1,634), Teal (623), Mallard (571), Pintail (54), Scaup (892), Oystercatcher (1,011), Ringed Plover (344), Golden Plover (6,393), Grey Plover (195), Lapwing (6,106), Sanderling (228), Dunlin (2,444), Black-tailed Godwit (139), Bar-tailed Godwit (608), Curlew (1,170), Redshank (635), Turnstone (229), Black-headed Gull (1,320) and Common Gull (599) – all figures are five year mean peak counts for the period 1995/96 to 1999/2000, except the gulls which are four year mean peak counts for the period 1996/97 to 1999/2000.

Tralee Bay Complex SPA is of high ornithological importance as it annually supports over 20,000 wintering waterbirds, including an international important population of Light-bellied Brent Goose and nationally important populations of 21 other species. It is of note that three of the species that regularly occur, Whooper Swan, Golden Plover and Bar-tailed Godwit, are listed on Annex I of the E.U. Birds Directive. Tralee Bay is a Ramsar Convention site and parts of the Tralee Bay Complex SPA are designated as Nature Reserves. Lough Gill is a Wildfowl Sanctuary.

20.1.2015

Appendix B. Site Specific conservation objectives of note at Blennerville Bridge

Risk Assessment Method Statement (RAMS)

1. Project / Site Name:	RAMS 29 – Blennerville Bridge	**Job No:**	
Date RAMS Issued:	11/4/22	**RAMS No:**	29
Expiry Date (Max 6 Months)	6 months	**Revision No:**	01

Contractor / Sub-Contractor:	Cumnor Construction	
RAMS prepared by:	[redacted]	
Speciality:	Engineer	
Scope of works:	Repointing, Masonry Repair	
Expected Duration of works:	7 weeks	
Expected Start Date of Works:	T.B.C	
Start time / Finish Time:	08.00	17.00
Restricted times on site:	17.00 – 08.00	

2. Declaration by RAMS Author:	**Name:**	**Signature:**	**Date of Visit:**
I have visited the site to assess the workplace hazards & risks and the site-specific requirements / controls required. **(If Applicable)**			
Cumnor representative who attended the site assessment visit. **(If Applicable)**			

Authorised & Vetted by?	**Name:**	**Signature:**	**Date:**

Cumnor Site Management will evaluate and accept/reject the above RAMS using the Preliminary Health and Safety Plan where applicable and the Site Specific Health and Safety Plan (SSHSP) in accordance with the Safety Health & Welfare at Work Act 2005 and the Safety, Health and Welfare (Construction) Regulations 2013.

The Risk Assessment Method Statement (RAMS) Log and the master (Hard) copy of the approved RAMS, signed by all relevant operatives should be maintained in a prominent place on site within the Construction H&S Plan / Mobile H&S Plan, and must remain on site for the duration of the works. It is the responsibility of the Sub-contractor to ensure all operatives involved with the specific works, have the RAMS communicated to them and that they confirm through their signature that they understand and comply with the RAMS.

3. Site Rules and Safety Notes:

Risk Assessment Method Statement (RAMS)

1. All operatives will be Site Inducted on their first day on site and have a minimum of a valid Safe Pass card, as standard.
2. All works to be carried out within the agreed site boundary
3. All operatives will be required to wear the minimum P.P.E as follows: -

- hard hats, hi-vis vests, safety boots, masks when working within close proximity
- hearing protection, gloves, goggles/safety glasses and dust masks to be worn, if required

4. Permission maybe required to bring site vehicles / plant / materials onto site.
5. If required, all personnel will seek permission to enter any area where another trade may be operating.
6. Working hours to be strictly within specified site hours.
7. All plant operators to have relative and valid CSCS cards
8. All persons on site to follow the instructions of site management
9. If an operative feel work conditions are unsafe, then they are to **PAUSE** the job / stop works immediately and inform Site Management
10. Any site works areas to be set up will include safety barriers and signage around material storage zones.
11. Welfare facilities will be provided on site.
12. Main access route to site will be from ……. Access / egress points are to be kept closed at all times and locked out of site hours. Keys will remain with Site foreman at all times
13. There will be site parking available. See plan below.
14. The site speed limit will be 15 kph and signage will be in place showing this on site
15. All deliveries/collections to site are to take place as per Cumnor Construction Ltd.'s Traffic Management Plan.
16. All vehicles are to abide by Cumnor Constructions Traffic Management Plan.
17. **Under no circumstances are delivery trucks or vans are to be left unattended at any time.**
18. Documentation and items to be kept on site at all times include; Medium first aid Box, fire extinguisher, Construction H&S Plan and Method Statements signed and dated by all involved in the works, Site Sign in / out Register
19. Ecological COW to visit site at set up, during the works and at demobilisation at a minimum.

The above is a non-exhaustive list and is subject to change as conditions dictate

Assembly point to be agreed upon by site foreman prior to works commencing and all on site informed. Signage to be put in place to avoid confusion in the case of an emergency.

On approval, this RAMS shall be explained to all operatives and signed by all working parties prior to the works commencing.

4. Methodology:

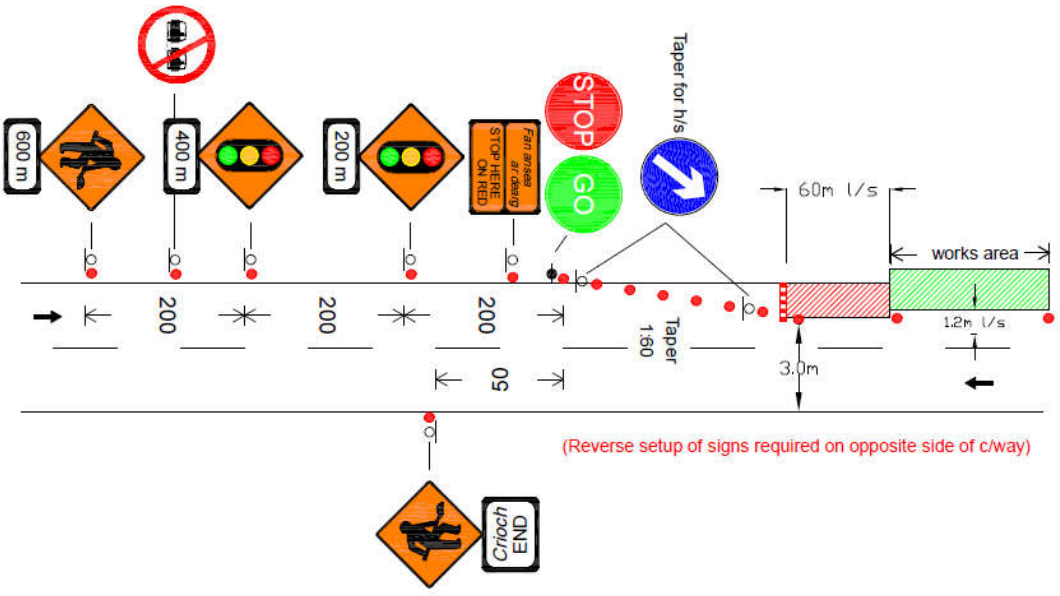
(Outline how the work will take place from arrival on site, to completion of works, step by step in detail to ensure no ambiguity).

(Safety Rules / key Safety Points to be adhered to from Section 3.)

Traffic Management

1. Diversion will be needed for setting up the 1T sand bags
2. Diversion as per sketch below with appropriate signage
3. 

4. Traffic management will be set up as set out below for all other works.



5. Site vehicles will park within the temporary traffic management set up.
6. All materials will be store within the traffic management set up.

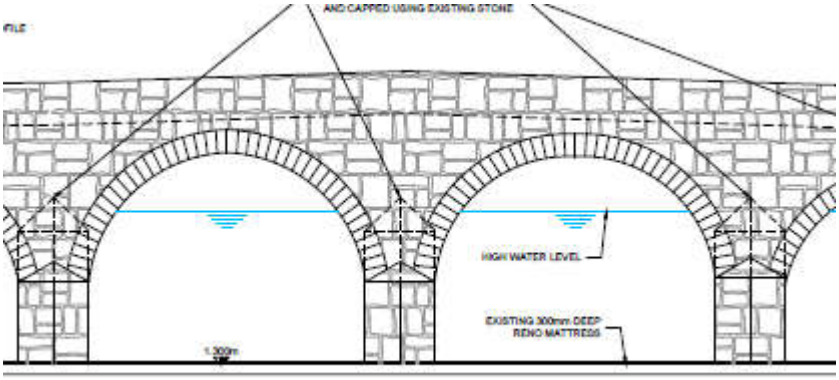
Water Safety

1. Drag line to be set up at across the arch at the opposite side of the bridge to that being worked upon
2. All operatives to wear inflatable life vests
3. Life buoy ring to be set up in accessible location adjacent to each cutwater that is being worked upon.

Covid 19 policies & procedures:

- Cumnor Construction ltd has introduced a detailed Covid-19 policy which will become part of everyday action to inhibit the spread of Covid-19 throughout our community or communities which we are involved with.
- Prior to attending site, all operatives are required to complete a screening questionnaire' & 'CIF-C19 online induction' and issue digitally to site management for review. Those failing the questionnaire will not be permitted on site.
- Each site will have a C19 Compliance Officer appointed to ensure social distancing guidelines, rules and policies are always maintained
- Each site has been issued a revised Site Attendance Register which includes Covd-19 Screening Assessment questions to be carried out by the 'Designated Person' 'C19 Compliance Officer.
- Wash hands using soap and warm water following the 20 second rule and drying sufficiently using disposable paper towels.
- If a worker feels unwell and has any of the following, notify your site supervisor immediately: Cough, Elevated Temperature, shortness of breath, runny nose.
- Exclusion zones including signage are to be put in place around any close contact working areas to ensure other operatives are not able to enter the area, while always maintaining social distancing for all others on site, illuminating Compliance by other site members.
- Additional PPE such as Dust masks, safety glasses, white suits and gloves are mandatory for close contact working and must be worn at all times.
- All tools used are to be cleaned and disinfected after use, and at any other times where tools may be shared between personnel on site. If possible, tools are not to be shared on site, but must be cleaned at the end of each day and prior to commencing work the following days
- Hand sanitizer will be provided to all workers on site.

Sequence of works:

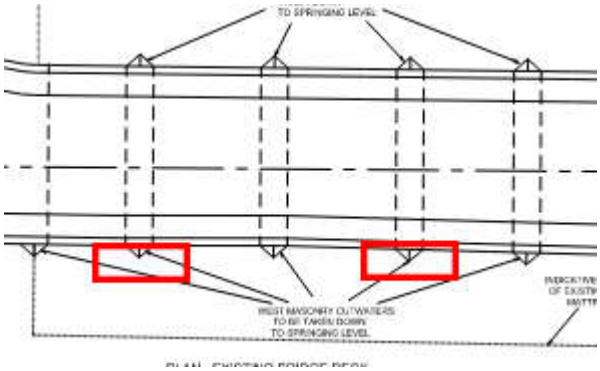


General

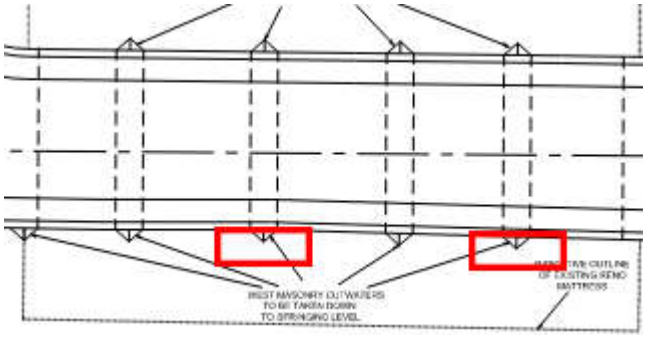
- Set up TTMP as per plan. The road will be reduced to one lane over the area of works.
- Safety barriers to be placed around the works area.
- Vikron spray will be used on any PPE and tools used that will enter the watercourse.
- Compound to be set up in carpark to the SE of the bridge
- NHL5 Mortar to be mixed in bunded area in site compound
- Stone for rebuilding to be kept on the bridge adjacent to the cutwater
- No liquid cement will be poured for these works
- Cumnor's Ecological COW will monitor the performance of mitigation measures and issue reports on said performance after each site visit
- The works are expected to take 5 weeks.
- Works will be carried out within the allowable period at low tide
- Works to start once water has receded past the level that is to be worked upon
- Sheeting to be applied to the face of new masonry construction each tidal cycle to prevent washout of fresh mortar. This is to be in place prior to the water reaching this level.

1T sandbag Cofferdam Construction (to be set up at each cutwater location)

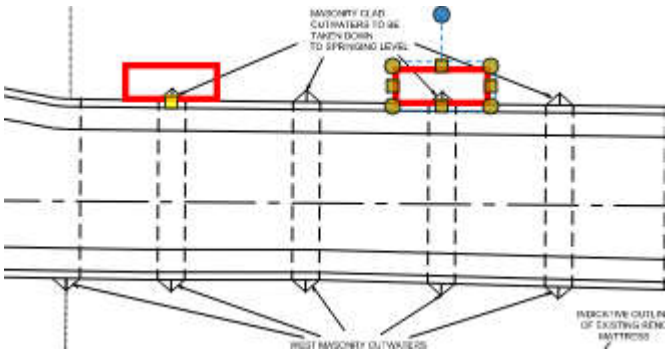
- The road will have to be closed and a diversion route put in place
- Works to take place a low tide
- Swivel Teleporter to set up on road adjacent to cutwater
- GO's to access watercourse from walkway to the NW of the bridge
- Double sealed 1T sandbags to be transported to site in flat bed truck
- Banksman to load 1T sandbag to teleporter and direct driver to set down location
- GO's to push 1 T sandbags into place.
- Subsequent sandbags to be laid adjacent to one another until horseshoe shape is achieved
- The piers will be worked on in the following sequence



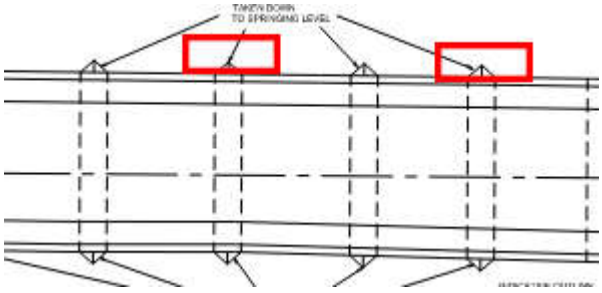
Stage 1



Stage 2



Stage 3



Stage 4

Masonry Works (West side of Bridge)

- All works to be carried out at low tide
- 4ft scaffold to be erected at each side of the cutwater to access the top of the cutwater
- Scaffold will be founded on the reno mattress and the 1 T sand bags.
- Scaffold to be designed and TWDC signed off before erection
- All scaffold materials to be steam cleaned prior to being put in the water
- Scaffold to be lowered from the bridge and erected in the area of works
- At low tide the sandbag coffer dam will be pumped out with a 4 inch pump pumping to settlement bund to the SE side of the bridge. This area will be bunded off with sandbags allowing the pumped water to filter through the ground.

- Existing cutwater masonry to be taken down by hand to springing point of bridge
- Stone to be stored for reuse
- Geotextile screen to be set up under area of repointing/ stone rebuilding. This is to be removed and disposed of at the end of each work shift before the tide comes back in. Geotextile screen is to prevent contaminants entering the watercourse, with loose materials to be removed with it.
- Screen to be folded in on top of itself and placed in high strength bag.
- Bag to be lifted out of works area using teleporter
- New screen to be erected at the start of the following shift
- Cutwater spandrel stone to be broken back to allow for masonry repair
- Spandrel wall to be repaired to planar surface
- New cutwater capping to be built with using reclaimed masonry to shape as detailed in drawings
- Loose and cracked pointing shall be raked out to sound material and the joint cleaned.
- All repointing shall be undertaken with lime mortar in accordance with the contents of CCSPW- 02400 and CC-SCD-02407
- Missing or deteriorated pointing to be carefully raked out by hand to a depth of twice the joint thickness and the joint dampened down.
- All repointing is to be done using NHL 5, manufacturer's instructions to be followed.
- Mortar for new and repointing existing masonry work shall be NHL5 lime mortar Mix Reference (a) in accordance with Table 24/4 of Transport Infrastructure Ireland Publication CC-SPW-02400.

- If the masonry structure to be repaired is dry, dampen it down before the mortar is
- If it rains after the mortar is applied, cover the masonry structure to protect it.
- All joints to be tamped with stiff brush once mortar is stiff

Masonry Works (East side of Bridge)

- All works to be carried out at low tide
- 4ft scaffold to be erected at each side of the cutwater to access the top of the cutwater
- Scaffold to be designed and TWDC signed off before erection
- All scaffold materials to be steam cleaned prior to being put in the water
- Scaffold to be lowered from the bridge and erected in the area of works
- At low tide the sandbag coffer dam will be pumped out with a 4 inch pump pumping to settlement bund to the SE side of the bridge. This area will be bunded off with sandbags allowing the pumped water to filter through the ground.

- Existing cutwater masonry to be taken down by hand to springing point of bridge
- Stone to be stored for reuse
- Existing cutwater masonry cladding to be taken down by hand to springing point of bridge
- Stone to be stored for reuse
- Concrete cutwater to be cut with concrete saw in 100mm sections and broken out electric kango hammers to allow for masonry cladding
- Spandrel wall to be repaired to planar surface
- New cutwater capping to be built with using reclaimed masonry to shape as detailed in drawings
- New cutwater cladding to be at built at springing point level

Removal of 1T sandbag Cofferdam Construction (to be set up at each cutwater location)

- The road will have to be closed and a diversion route put in place
- Works to take place a low tide
- Swivel Teleporter to set up on road adjacent to cutwater
- GO's to access watercourse from walkway to the NW of the bridge
- Double sealed 1T sandbags to be lifted from riverbed and placed in flatbed truck
- Banksman to load 1T sandbag to teleporter and direct driver to set down location
- All sandbags to be removed in this manner
- The tide will fill in any mud that has been displaced from the mudflat

Risk Assessment Method Statement

Assessment Date:	25/3/22	Assessed By:	[redacted]	Assessment Review Period:	21/3/22

Severity of Consequence (S)

1	Insignificant/minor first aid, no time off, no loss
2	Lost time, recoverable, (strain, sprain, laceration, dermatitis)
3	Temporary disability, recoverable (minor fracture, asthma, deafness, concussion)
4	Permanent disability, survivable (major fractures, amputation, head injuries, eye injuries, poisoning)
5	Causing death to one or more people (fatal injuries, occupational cancer, fatal disease/fire)

Likelihood (L)

1	Improbable
2	Low
3	Medium
4	High
5	Almost certain

Risk Level (R)

Low	1 - 4
Moderate	5 - 9
Considerable	10 - 14
High	15 – 19
Critical	20-25

Evaluation Matrix

Severity of Consequence						
	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
		Likelihood				

Notes on completing the Risk Assessment below:

- **A number of Hazards have been identified on the above mentioned site. Please confirm which may be applicable to your specific works on site. Each hazard is to be completed by entering Y/N in the end column and initial that you have read and understood. If specific relevant hazards have not been noted, the Contractor / Sub-Contractor is obliged to ensure those hazards, including a detailed risk assessment are included in the blank sections below. Additional space has been left if additional controls are required.**

- **If issues arise on site causing unforeseen and additional risks to those completing the works, that job or task will need to be PAUSED until such time that the Risk has been assessed and additional control measures are put in place and documented below reducing the risk associated with said works**

Ref:	Individual Activity Description	Hazards Identified	Persons / Groups at Risk	Risk level Before Controls			Risk Control Measures (Add as required)	Risk level Remaining After Controls			Applicable to job / task Y / N (Initial)
				S	L	R		S	L	R	
1.	• Use of Abrasive Wheels	• Eye / bodily injuries • Injury to other person • Nosie induced hearing loss • Damage to materials / services	• All Operators • Members of the Public	3	3	9	• Ensure guards and safety devices are working & in place • Certified operatives only to change abrasive wheels / discs • Safety goggles / glasses (correct EN rating – min BS2092) and suitable ear protection to be worn at all times • Work area to be free of debris and obstructions & item to be cut is securely positioned • Check operations will not affect others in the immediate area either by flying debris or excessive noise • Ensure protection of adjacent materials and services are in place (water, Gas, ESB). • •	1	3	3	Y
2.	• Access, egress to site and work areas	• Trip hazards, slipping causing a limb injury	• All Operators • Members of the Public	4	2	8	• All access ways into site to be kept clear at all times • Site housekeeping to be enforced to ensure the site is safe and organised • All cables to be hung or moved out of access paths • •	4	2	2	Y

3.	• Locating of materials containing Asbestos (lambas-demco) on site during works	• Non identification of contamination • Airborne contamination • Infection by fibres • Eyes, skin, inhalation or ingestion • Unauthorised disposal	• All operators	2	3	**6**	• Only certified & approved contractors to carry out asbestos removal • Access permitted only to said contractors and area of works cordoned off • Site specific method statement required for any asbestos removal • Material to be disposed by a licensed carrier and disposed to a licenced tip • Full PPE to include O2 full masks / respirators, white suits, taped rubber gloves and rubber boots • Sheets to remain whole where possible • All materials to be double wrapped in 1200 gauge polythene, ends taped and put on pallets • •	2	1	**2**	N
4.	• Use of a Banksman on Site	• Incompetence • Trapped hands / feet • Incorrect use of lifting gear • Overloading • Little or no Communication • Injury to persons in public spaces • Damage to adjacent buildings / materials	• All Operators • Members of the public	4	2	**8**	• Use only authorised nominated and certified persons to sling loads & bank plant • Understanding of hand signals is required • Hands and feet are clear of load before any signal is given • Only approved and certified lifting gear may be used • Banksman must wear an orange, named hi vis top • Radio communication must be used where visibility is restricted • Strong gloves and steel toe capped boots are a must • • •	2	2	**4**	Y

5.	• Using Cement and / or concrete on site	• Severe skin burns • Falls of materials into excavations • Manual handling	• All operators involved in the operation	2	2	**4**	• A MSDS (Material Safety Data Sheet) sheet must be available for materials used • Appropriate PPE to be worn, including glasses for splashing, PVC gloves and wellingtons • Washing facilities and first aid station to be provided for operatives • Restrict time exposed to concrete • Barriers / stop blocks to all excavations • Suitable discharge area for concrete lorries • Safe system of work in place documented and signed by all involved in the works • •	1	2	**2**	Y
6.	• Entering confined spaces on site	• Gas explosion • Oxygen enrichment • Oxygen deficiency • Gas poisoning	• All operators involved in the works	2	4	**8**	• Only trained and certified operators must enter a confined space • Permit to enter must be completed prior to any works commencing & Safe system of work in place documented and signed by all involved in the works • Internal atmosphere must be checked for oxygen deficiency or enrichment, gases etc • Gas monitor must be calibrated and kept with operator at all times, inside confined space • At least 2 operators present at all times, with one operator to remain on top / outside • Safety harness / lifting lines must be checked regularly and documented •	2	1	**2**	N

7.	• Any Demolition works on site	• Sudden collapse of structure • Hazardous substances • Public adjacent to works areas	• All operators involved in the works • Public adjacent to works areas	2	4	**8**	• All glass, projecting parts & loose objects will be removed first • All service to be made redundant / safe • No other work will be carried out within the area of demolition • Demolition will start at the top of the roof and work downwards • Continuous monitoring of the structure will be carried out to ensure stability of the structure • Dust suppression to be used, if conditions dictate • Shoring and bracing will be erected as required to prevent collapse • All openings to be protected • PPE to be worn at all times • Safe system of work in place documented and signed by all involved in the works • •	2	2	**4**	Y
8.	• Dust on Site	• Visibility impairment for drivers causing collision • Personal injury • Silicosis • Dust explosion	• Injury to operators on site • Injury to members of the public	4	2	**8**	• Use equipment that produces minimal dust • Use water to dampen when cutting • Restricted hours on site • Seal off areas to prevent the spread of dust • Issue PPE - dust masks, safety respirators • •	2	1	**2**	Y

9.	• Use of Electrics on Site	• Electrocution • Damage to cables • Overload causing a fire	• All operators • Members of the public that me be in close proximity of the site	2	4	**8**	• All temporary routes for cabling must be set out beforehand and duct where possible • All portable equipment must be P.A.T tested as per the General Application Regs 2007, part 3: Electricity – Reg 81 (as required) and certs kept on file • All electrical appliances / tools must be visually checked by a competent person before each use • Trailing cables must be tied overhead where possible and not interfere with access routes • All electrical cabinets / boxes must be locked • C02 temporary fire points must be strategically setup around site / buildings • All electrical tools must be a maximum of 110volts • Safe system of work in place documented and signed by all involved in the works • •	2	2	**4**	N
10.	• Excavations	• Asphyxiation and crushing causing serious harm or death • Damage to adjacent buildings / properties	• Operators involved in the works	3	4	**12**	• Excavation where the depth could cause a collapse then the trench is to protected with shoring system • Edge protection to be in place next to all excavations • All required signage to be in place • Excavations to be inspected on a weekly basis by competent person recorded in the AF3 • For deep excavations, two points of access and egress must be used • Single man work is not permitted • Materials are not to be stored adjacent to excavations • If excavations are deemed unsafe no work is to be done in them until they are made safe • Safe system of work in place documented and signed by all involved in the works • •	2	2	**4**	Y

11.	• Fires	• Bodily injury • Spread of fire • Property damage • Potential death	• All operators • Member of public in close proximity of the site	2	4	**8**	• No burning of materials anywhere on or around site permitted • All gas bottles must be securely tied and have a Fire point (extinguisher) close at hand • Any explosives are to be protected by close board sheeting • Strategic fire points to be setup around site & through buildings • Temporary fire escape layout plan & evacuation plan to be setup • •	2	2	**4**	Y
12.	• Working on public Footpath	• Potential injury to member of the public • Increased risk of Slips, trips & falls as a result of works being completed	• All operators • Members of the public	4	2	**8**	• All areas to be barriered off with pedestrian barriers with min. 1.2m lateral width provided • Full interlocking barriers where pedestrians to be placed adjacent live traffic • All excavations must be fully protected and covered at the end of each day • Temporary ramps required where any change of level for pedestrians • Pedestrian (WK80/81) to be used for any directional instructions required • •	2	1	**2**	Y
13.	• Use of Ladders on Site	• Operative falling from height • Materials/ Tools falling from height	• All operators	3	3	**9**	• Ladders must be tagged and recorded in GA3 weekly • Ladders must be secured (tied at top) and securely footed • Must extend 1m above stepping off point on scaffolds • Ladders to be used for short term use with 3 points of contact to be on ladder always • Restrict height for ladders and ensure access to pass underneath is stopped • Any defected ladders must never be used • Ladders setup at 1 in 4 (75 deg. angle) • Safe system of work in place documented and signed by all involved in the works • •	2	2	**4**	Y

14.	• Lifting Equipment	• Dangers to operatives on site • Fall of materials	• All operators • Public in close proximity of site	4	2	**8**	• All lifting equipment must be certified (GA1) and copies of certs kept onsite • Only certified operators to use lifting plant, e.g. cranes, MEWP's etc • Lifting equipment to be checked and recorded in GA2 weekly • Any damaged or worn slings / chains must not be used and disposed of • Temporary barriers must be placed around lifting / sluing areas • Safe system of work in place documented and signed by all involved in the works • •	1	4	**4**	Y
15.	• Lone Person working on site	• Personal injury to operative and / or illness	• Lone Worker	4	2	**8**	• Where possible, do not use a lone worker setup • Operators must have mobile communication and check in to their supervisor at agreed times • Lone workers must be on a site or location where others are in the vicinity • •	2	2	**4**	Y
16.	• Manual Handling of materials on site	• Injury to back • Lower limb injury • Arm & Hand injuries	• All operators	4	2	**8**	• All operatives are trained in manual handling. • Use of mechanical aids to lift items where possible, e.g. cable block / teleporter/ Hi-ab • Use of two employees to lift awkward or heavy items • Frequent stretching of the back is encouraged to all employees who are constantly bending. • •	4	1	**4**	Y

17.	• Use of MEWP's (Mobile elevated work platforms) on site	• Risk of overturning or collapsing of plant • Operatives falling from basket • Crushing of operatives • Falling of materials while MEWP is raised position	• All operators involved in the works • Members of the public that maybe in close proximity of where works are occurring	3	3	**9**	• Operators must be CSCS or equivalent certified to use MEWP's • Operators must carry out daily routine checks of plant and record checks weekly (GA2) • Ground conditions must be firm & level before any movement is carried out • Operators must be tied off at correct fixing points with harness / lanyards with said equipment checked weekly • PPE must include chin straps for helmets • Platforms must not be loaded beyond their S.W.L (safe working load) • Where possible, platforms must be lowered before any movement permitted • Areas of works with MEWPS's must be adequately barriered off • •	1	3	**3**	Y
18.	• Use of Mobile Towers on site	• Materials and tools falling from height • Operatives falling from height • Collapse of erected tower	• All operators involved in the works • Members of the public that maybe in close proximity of where works are occurring	3	3	**9**	• Operators must be CSCS or equivalent certified to erect & dismantle mobile towers • Full PPE to include chin strapped helmets must be worn • The wheels must be locked when in use and towers not moved when operatives or materials are on the platform • Guard rails must be in place at all times • Do not overload platforms • Towers must be tagged and recorded in the GA3 book, weekly • •	2	2	**4**	N

19.	• Noise	• Damage to hearing • Affecting members of the public	• All operators • Members of the public in close proximity to the ongoing works	4	2	**8**	• PPE must be worn when there is a noise level is above 80dBA • Earplugs to be worn at low level noises • Ear muffs to be worn when operators are using tool/plant that have a high noise level • Operators are not to be exposed to excessively loud noises for extended periods • If possible use other plant and tools that do not have a loud noise level • •	2	2	**4**	Y
20.	• Operating Plant on Site (Dumpers & Rollers)	• Dangers to other operatives on site • Overturning of plant • Overloading • Injury to driver and others including death	• All operators • Members of the public in close proximity to the ongoing works	2	4	**8**	• Operators must be CSCS certified and trained to use plant • Safety signage and wheel wash measures must be in place for crossing public roads • No unauthorised passengers permitted on plant, e.g. single seat on a dumper only • All plant must have flashing beacons and audible sirens • All plant must have flashing beacons and R.O.P's (roll over protection) bars in place • • Care to be taken when reversing and a banksman used where possible • Unattended vehicles must have their engines switched off, gear in neutral and keys out • Extra care to be taken where sloping surfaces are being driven • Do not overload machinery to their stated capacity • Safe system of work in place documented and signed by all involved in the works • •	1	4	**4**	N

21.	• Operating Plant on Site (Excavator)	• Dangers to other operatives on site • Overturning of excavator • Overhead Services • Underground Services • Injury to driver and others including death	• Operator • Operatives on site • Members of the public	4	4	**12**	• Area to be excavated to be CAT scanned for services by ticketed operator. Drawing and plans to be checked also. Dial before you dig to be consulted. • Operators must be CSCS certified and trained to use plant • Safety signage to be in place • No unauthorised passengers permitted on plant. • All plant must have flashing beacons and audible sirens • Care to be taken when reversing and sluing • Unattended excavator must have the engine switched off and keys out • Extra care to be taken where sloping surfaces are being driven • Do not overload machinery to their stated capacity • All other operatives to remain outside the exclusion zone. • Operator must track on the designated access route as required • Spotter to be in place at all times • Safe system of work in place documented and signed by all involved in the works • •	1	4	**4**	Y
22.	• Operating Tools on site	• Cuts / Lacerations • Long term deafness • Nerve injuries	• All operators using tools on site	4	2	**8**	• Wear appropriate PPE to include ear defenders and safety glasses / goggles • Only 110volt (max) permitted on site • Erect sound barriers as required • Restrict length of time for use, e.g. mainly vibrating / oscillating tools (check tool specs) • Do not leave tools running • •	2	1	**2**	Y

23.	• Striking overhead cables	• Injury / Death from contact by plant	• All operators	2	2	**4**	• If vehicles cross under overhead cables then goal post system to be put in place • All operators to be shown location of overhead cables during site induction • Safety signage to erected by overhead cables • All overhead cables to be insulated by ESB if near operator works area • •	1	4	**4**	Y
24.	• Refuelling plant on site	• Fire / environmental pollution	• All operators involved in the refuelling task	2	2	**4**	• All fuels to be kept in correct containers and clearly labelled & identified • No refuelling to take place in the vicinity of ignition points • Engines must be switched off before any refuelling takes place • Fuel tanks must be double skinned and bunded with lockable valves • Spillage kits must be in close proximity of all tanks and within waste lorries • Storage areas of fuels must have appropriate fire extinguishers • Any spillages must be reported immediately to the Site Supervisor / Safety Manager • •	1	2	**2**	Y

25.	• Erected Scaffolds on Site	• Falling from the scaffold causing injury or death	• All operators working at height on the scaffold	3	4	**12**	• Scaffold to have design cert (is required) • Scaffold to have hand over cert issued by basic or advanced CSCS ticketed erector. To be kept on site • Scaffold to be checked on a weekly basis and GA3 to be completed by person who has CSCS card or scaffolders inspection ticket • Platforms must not be overloaded • Scaffold to be tagged at each ladder point with an inserted safe to use tags and safe to use signs displayed on the scaffold on it • Toe boards to be in place to prevent materials falling from overhead on operators below • SLW to be displayed on scaffold loading bays. • Up and over gates to be used on the scaffold loading bays • Any alteration needed to be mad • •	2	2	**4**	Y
26.	• Setting out of Traffic Management	• Injury to operator on site by moving vehicles • Injury to members of the public that may be in close proximity of works	• All operators • Members of the public	2	4	**8**	• Install traffic management as per plan issued • Ensure signage and cones are as per approved plan • Operators with CSCS cards to setup traffic management system and inspect on a weekly basis or as required • Safe system of work in place documented and signed by all involved in the works • •	1	3	**3**	Y

27.	• Preventing unauthorised access to area of works	• Injury to unauthorised person on site • Damage to plant / equipment and materials	• All operators on site • Unauthorised person on site	2	3	**6**	• All site visitors are inducted prior to being in work areas • Operators to notify site management of any unauthorised access to site immediately • Site gates to be closed at all times and locked and checked at close of business • All required signage in place notifying public of works in the area	2	2	**4**	Y
28.	• Location of Underground Services on site	• Hitting underground services causing damage to property • Striking electrical cable causing electrocution resulting in serious injury or death	• All operators involved in the works	3	4	**12**	• CAT scan to be used before any excavation work begins • Operators to be LUGS certified • Check existing all existing plans for services • If required dig trial holes & mark out locations of services. Ring dial before you dig before works begin • Safe system of work in place documented and signed by all involved in the works • •	1	4	**4**	Y

29.	• Vibration	• Numbness & tingling of fingers / hands • Nerve & muscle damage to fingers / hands • White finger (VWF) • Arm vibration (AV)	• All operators involved in the works	2	2	**4**	• Allow only competent persons to use tools • Refer to individual vibration / exposure limits • Wear full PPE to include anti-vibration gloves as required • Reduce length of times using tool • Use tools with low vibration • Safe system of work in place documented and signed by all involved in the works • •	1	2	**2**	Y
30.	• Welding works on site	• Burns to operators completing works • Fires starting as a result of the works • Fumes from works affecting operators and public	• All operators involved in the works • Members of the public	4	2	**8**	• Full PPE to be worn when welding – specialised gloves, full face protection • No skin to be exposed when welding • Gas detector to be near all welding to detect any build-up of dangerous gases • Permit to be issued to welder by site management • Area around welder to be segregated off during works due to tight space • No combustible materials to be kept near or in welding works area • Safe system of work in place documented and signed by all involved in the works • •	2	2	**4**	N
31.	• Working in bad weather conditions	• Operators being injured as a result of the bad weather	• All operators	3	3	**9**	• When there are poor weather conditions all work to stop immediately, foreman to make call if carrying out work is unsafe • •	3	1	**3**	Y

32.	• Working over water	• Drowning • Upper body injuries • Death of fish life	• All operators	3	4	**12**	• PPE to include life vests, flotation devices and drag lines as conditions dictate or where no edge protection in place • AF4 to be completed weekly • Temporary decks with heavy gauge polythene and catch nets to be used where working under bridges • All plant and tools to be placed in water course to be steam cleaned prior to use • Safe system of work in place documented and signed by all involved in the works • •	2	3	**6**	Y
33.	• Vermin and bird droppings	• Contact with droppings may cause illness and irritations to operative	• All operators involved in works	3	3	**9**	• Suitable PPE to be worn at all times. including full disposable overalls. Gloves to be disposed of after each use – do not re-use gloves / dust masks / disposable suits. • Hands to be washed before eating food, or touching your face as bird droppings may contain **'Salmonella'** (a bacterial infection causing severe diarrhea). • All breaks are to be taken away from the areas contaminated by bird droppings to avoid cross contamination. • Dampen down the bird droppings with water to prevent the creation of dust from the droppings. • Excessive bird droppings can cause a build-up of insects, which can transmit diseases and other infections, so the use of insect repellent is required if this is the case. • Operatives who have pre-existing respiratory conditions are to wear suitable dust masks such as the 3m 6000 series as required. • Operatives with weakened immune systems should not directly do tasks involving bird droppings. • all works involved with areas containing excessive bird droppings are to be supervised sufficiently ensuring controls are in place at all times. •	2	2	**4**	Y

34.	• Working adjacent to a 'live' building	• Verbal abuse • Physical Abuse • Injury to Public/Staff	• All operatives • Other Contractors	2	4	**8**	• Delineate site boundary with safety warning notices • Delineate works with adequate dust sheets/screens • If a member of the public is found on the site, politely point out the dangers and ask them to leave by the safest possible route. If person refuses to leave, contact Foreman who will contact the Gardai if person is endangering themselves or others, or are threatening site security. • •	2	2	**4**	N
35.	• Working adjacent to RF Antennas, microwave aerials	• Non ionising radiation causing cancer, internal organ failure and burns to skin	• All operators involved in the works	5	3	**15**	• No Access to be permitted to within a 4m zone around antennas • No access to location of transmitters unless granted a work permit from site management • Antennas to be powered down and confirmation given prior to issue of permit to work • All operatives to have RF monitor attached to their person • •	2	3	**6**	N
36.	• Working on / adjacent to fragile roofs and roofing materials	• Fall from height and falling materials causing serious injury or death	• All operators • Other contractors	3	4	**12**	• Delineate works areas with boundary fences/barrier. • Safe working platforms, edge protection as per 'Code of Practice for Safety in Roof work' to be provide for all works at height • Fall Arrest systems to be in place when working on roof and to be fully compliant with **EN 795:2012 regulations.** • All works at height are to be planned so as to ensure no works are being carried out beneath the works area. • •	2	3	**6**	N

37.	• Working at Height	• Fall of materials and operatives	• Operators on site • Public in close proximity	4	4	**16**	• Existing fall / edge protection to be certified within 12 months, or after alterations before works take place. • Existing fall / edge protection to be checked prior to commencement of works each day to ensure safety of all • Tool box talk on 'Working at Height ' to be issued prior to commencement on site • Edge protection is not to be interfered with unless you are certified to do so • All materials are to be stored correctly upon the roof to ensure materials cannot be blown off the roof in strong winds • Operatives to be mindful of the weather each day before proceeding • Edge protection to be signed off weekly using the GA3 form within the site H&S Plan • •	1	4	**4**	Y
38.	•	•	•				•					
39.	•	•	•				•					

5. Emergency Contact Details:

Site First Aider

Name:
Tel:

Location of First Aid

A First Aid box will always be located in a Cumnor Site Vehicle

Local Hospital (A&E)

Name: Kerry University Hospital
Address: Co. Kerry
Tel: 066 7184000

Local Garda Station

Name: Killarney Garda Station
Address: Killarney, Co. Kerry
Tel: 064 6671160

Local Fire Brigade Station

Name: Killarney Fire Brigade
Address: Killarney, Co. Kerry
Tel: 999 / 112

Other useful numbers

ESB	1850 928960 (Dial before you dig)
ESB (Emergency)	1850 372 999
GAS	1850 427747 (Dial before you dig)
GAS (Emergency)	1850 205050
Eircom	1901 (Dial before you dig)

6. Training Required – *Specific to this Site*

1. **Safe Pass (Mandatory)**
2. **Manual Handling (Mandatory)**

Please State any Special Training requirements below required by Operatives specific to this RAMS i.e. Confined Spaces, Height Rescue, First Aid etc.

1.
2.
3.

Additional Supervision & Duties (incl. Appointed Persons, Temporary Works Coordinator, Authorised Person etc)			
Name	**Role/Responsibility**	**Contact No:**	**Company**

7. P.P.E. (Personal Protective Equipment)
(Specific to this site and relating to the information contained in this RAMS)

P.P.E (Personal Protective Equipment) - Specific to this Site

 Safety Boots To include Ankle support EN ISO 20345:2011 CE S3 SRC Wellingtons EN ISO 20345:2011 S5 SRA	 Hard Hats EN397 EN50365	 Safety Gloves EN 388 levels 4-1-2-1 or 2-1-2-1 Safety Gloves (grey type for vegetation removal) EN 388:2003	 Hearing Protection (for all drilling works, demolition and cutting works) Surefit Ear defenders (for noisy work) EN 352-3:2002 Earplugs (disposable) EN 253-2:2002	 Eye Protection (for all drilling works, demolition and cutting works) Goggles (cutting works) EN 166:2001 Glasses (standard for light cutting) EN 166:1995	**Other:** Hi-Vis vest / jacket - double banded EN ISO 20471 3m Dust mask EN 14387:2004

8. Material Delivery, Storage and Distribution

(Outline safe arrangements for traffic management, delivery, offloading and secure storage – if applicable). Include a step by step sequence on how you will perform the task (Include sketch, drawings & photographs if required.)

1. All material will be delivered to site via the..... abiding by the approved Traffic Management Plan on site
2.
3.
4.
5.

9. Anticipated Waste Control and Disposal Arrangements (If Applicable)
Cumnor must be notified of waste leaving site

1.

2.

3.

4.

5.

Number of Person's Anticipated on site:				
Will any of your workforce be non-English speaking or reading:	**Yes**		**No**	

How will the contents of this RAMS be communicated to your non-English speaking workforce:

10. Permits Required – Type

High Risk Activities	Work Permit Required

11. Hazardous Substances

Please identify any hazardous substances you will be using or potentially encountering on site

Circle applicable

							
Toxic	Explosive	Asbestos	Corrosive	Hazardous to the environment	Flammable	Pressurised Gas	Other
YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO

Please list any applicable substance below and attach relevant Safety Data sheets:

1.
2.
3.
4.
5.

Please identify details of emergency response to; Spill, Escape and combustion

1.
2.
3.
4.
5.

12. Temporary / Permanent Works Design Certs

Any Required please list below (If Applicable)

13. Work Specific Emergency & Rescue Procedures

Please outline Emergency Rescue Procedures to include details of equipment required and where it can be located

1.
2.
3.
4.
5.

Briefed to: (by signing below I confirm that I have been briefed and understand the Risk Assessment Method Statement for this Job / Task).

No.	Name (Print)	Signature	Date	Company Name
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Witnessed by (Supervisor): I confirm that all personnel who are involved in the task covered by this set of RAMS, have had these RAMS explained to them. Any future operatives to be assigned to this task will also receive communication of these RAMS.

Name:		**Signature:**	
Title:		**Date:**	

Conservation Objectives for : Tralee Bay and Magharees Peninsula, West to Cloghane SAC [002070]

1130 Estuaries

To maintain the favourable conservation condition of Estuaries in Tralee Bay and Magharees Peninsula, West to Cloghane SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated as 306ha using OSi data and the defined Transitional Water Body area under the Water Framework Directive
Community extent	Hectares	Maintain the extent of the *Zostera*-dominated community complex and the *Mytilus*-dominated community, subject to natural processes. See map 8	Estimated by the EPA during a 2012 intertidal survey and intertidal surveys undertaken in 2007 (ASU, 2007), 2009 (RPS, 2013) and 2011 (MERL, 2011) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: *Zostera* density	Shoots/m²	Conserve the high quality of the *Zostera*-dominated community complex, subject to natural processes	Estimated by the EPA during a 2012 intertidal survey and intertidal surveys undertaken in 2007 (ASU, 2007), 2009 (RPS, 2013) and 2011 (MERL, 2011) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: *Mytilus edulis* density	Individuals/m²	Conserve the high quality of the *Mytilus edulis*-dominated community, subject to natural processes	Estimated during intertidal surveys undertaken in 2007 (ASU, 2007), 2009 (RPS, 2013) and 2010 (MERL, 2011) and an intertidal walkover in 2013. See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: Sand to sandy mud with polychaetes and bivalves community complex; Mixed sediment with crustaceans, bivalves and polychaetes community complex; Intertidal reef community complex. See map 8	Based on intertidal surveys undertaken in 2007 (ASU, 2007), 2009 (RPS, 2013) and 2011 (MERL, 2011); a subtidal survey undertaken in 2009 (ERM, 2010) and and an intertidal walkover in 2013. See marine habitats supporting document for further details

Conservation Objectives for : Tralee Bay and Magharees Peninsula, West to Cloghane SAC [002070]

1140 Mudflats and sandflats not covered by seawater at low tide

To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Tralee Bay and Magharees Peninsula, West to Cloghane SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 4	Habitat area was estimated using OSi data as 1,685ha
Community extent	Hectares	Maintain the extent of *Mytilus*-dominated community and the *Zostera*-dominated and *Sabellaria*-dominated community complexes, subject to natural processes. See map 8	Estimated by the EPA during a 2012 intertidal survey and intertidal surveys undertaken in 2007 (ASU, 2007) and 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: *Zostera* density	Shoots/m²	Conserve the high quality of the *Zostera*-dominated community complex, subject to natural processes	Estimated by the EPA during a 2012 intertidal survey and intertidal surveys undertaken in 2007 (ASU, 2007) and 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: *Mytilus edulis* density	Individuals/m²	Conserve the high quality of the *Mytilus*-dominated community, subject to natural processes	Estimated during intertidal surveys undertaken in 2007 (ASU, 2007) and 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community structure: *Sabellaria* density	Individuals/m²	Conserve the high quality of the *Sabellaria*-dominated community complex, subject to natural processes	Estimated during an intertidal survey undertaken in 2009 (RPS, 2013) and an intertidal walkover in 2013. See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: Sand to sandy mud with polychaetes and bivalves community complex; Sand with *Nephtys cirrosa* community complex; *Ostrea edulis*-dominated community. See map 8	Based on intertidal surveys undertaken in 2007 (ASU, 2007) and 2009 (RPS, 2013), survey of the oysters beds in 2012 (Marine Institute, unpublished data) and an intertidal walkover in 2013. See marine supporting document for further details

Conservation Objectives for : Tralee Bay and Magharees Peninsula, West to Cloghane SAC [002070]

1355 Otter *Lutra lutra*

To restore the favourable conservation condition of Otter in Tralee Bay and Magharees Peninsula, West to Cloghane SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution	Percentage positive survey sites	No significant decline	Measure based on standard otter survey technique. FCS target, based on 1980/81 survey findings, is 88% in SACs. Current range estimated at 75% (Bailey and Rochford, 2006). Current range in south-west is estimated at 74.5% (Bailey and Rochford, 2006)
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 82.3ha above high water mark (HWM); 50.4ha along river banks/around lakes and ponds	No field survey. Areas mapped to include 10m terrestrial buffer along shoreline (above HWM and along river banks) identified as critical for otters (NPWS, 2007)
Extent of marine habitat	Hectares	No significant decline. Area mapped and calculated as 702.2ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (HWM) (NPWS, 2007; Kruuk, 2006)
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 19.5km	No field survey. River length calculated on the basis that otters will utilise freshwater habitats from estuary to headwaters (Chapman and Chapman, 1982)
Extent of freshwater (lake/lagoon) habitat	Hectares	No significant decline. Area mapped and calculated as 53.8ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (NPWS, 2007)
Couching sites and holts	Number	No significant decline	Otters need lying up areas throughout their territory where they are secure from disturbance (Kruuk, 2006; Kruuk and Moorhouse, 1991)
Fish biomass available	Kilograms	No significant decline	Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater (Bailey and Rochford, 2006) and wrasse and rockling in coastal waters (Kingston et al., 1999)
Barriers to connectivity	Number	No significant increase. For guidance, see map 12	Otters will regularly commute across stretches of open water up to 500m e.g. between the mainland and an island; between two islands; across an estuary (De Jongh and O'Neill, 2010). It is important that such commuting routes are not obstructed

Appendix C. Method Statement

WS Atkins Ireland Limited
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