Newry Southern Relief Road

Habitats Regulations Assessment Report

Department for Infrastructure

Project number: 60736603

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Quality Information

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1. Executive Summary

A Habitats Regulations Assessment Report has been prepared for the Proposed Scheme. The document assessed the potential impacts of the Proposed Scheme on any European Sites. European Sites refer to any designated site either forming part of the of the EU Natura 2000 ecological network UK's protected network or the UK's national site network. These include SPAs, SACs and in Northern Ireland. Ramsar sites as internationally protected sites are also assessed alongside the others. The assessment was advised by a desk study and an in-depth series of field studies completed by suitably experienced AECOM Ecologists between 2019-2023. Of particular relevance to the HRA assessment, information was collected on habitats within and surrounding the Site, invasive species, marine mammals, marsh fritillary butterflies, and wintering birds.

The Proposed Scheme was identified to potentially result in several different types of impacts and subsequent effects to habitats and species. Potential impacts were thought to include those in relation to air pollution, primarily during operation but also relevant to the construction-phase. Noise, vibration, and visual disturbance during construction works including those associated with the bridge crossing, including piling and drilling. Pollution or sedimentation events, especially those which may impact the water environment (e.g. the Newry River or streams) during construction. Spread of invasive species during the construction phase and the loss of, or damage to, habitats outside of European sites but which support qualifying species, both during construction and operation.

Such impacts may result in injury (including acoustic injury), mortality, or disturbance (e.g. behavioural changes, or other disruptions) to faunal species which may occur within the river or close to the construction works areas. This includes qualifying interest species of European sites, such as birds and / or marine mammals. Disturbance of invasive species may also result in their spread both within and adjacent to the work area, and potentially further afield (e.g. downstream), which may cause impacts to Annex I Habitats beyond the confines of the work areas.

Given these potential impacts, eleven internationally designated sites occur within the potential ZoI of the Proposed Scheme where a source-pathway-receptor relationship was found. These sites comprise seven SAC, three SPA (one of which includes a proposed marine extension area), and one Ramsar site.

Following the assessment of the potential impacts of the Proposed Scheme on European sites identified in Section 4.1, Carlingford Shore SAC, Carlingford Lough SPA, Dundalk Bay SPA were screened out from further assessment. However, significant effects could not be ruled out for Murlough SAC, Rockabill to Dalkey SAC, North Channel SAC, Lambay Island SAC, North Anglesey Marine SAC and Codling Fault Zone SAC in relation to marine mammals that may be present outside of the SAC and in proximity to the proposed bridge construction.

The HRAr assessment proceeded to Stage 2 Appropriate Assessment where the impacts and effects to marine mammals of harbour seals, grey seals and harbour porpoise was assessed in greater detail and with mitigation in place. Specific mitigation measures were outlined including an Ecological Clerk of Works (ECoW) who will be appointed for the construction phase of the Proposed Scheme. They will raise awareness of ecological issues including disturbance to marine mammals. In addition, a Marine Mammal Observer (MMO) will be required where there are works in the water column. Soft start procedures will also be used to minimise impacts.

The Proposed Scheme was assessed alone and in combination with other plans and projects. Several major projects of note were discussed specifically including Narrow Water Bridge and Victoria Lock Greenway and a number of local planning applications.

Provided the mitigation outlined above is implemented, there will be negligible risk to these sites, and there will be no adverse impacts to the integrity of Murlough SAC, Rockabill to Dalkey SAC, North Channel SAC, Lambay Island SAC, North Anglesey Marine SAC and Codling Fault Zone SAC either alone or in-combination with other plans and projects.

2. Introduction

2.1 Background

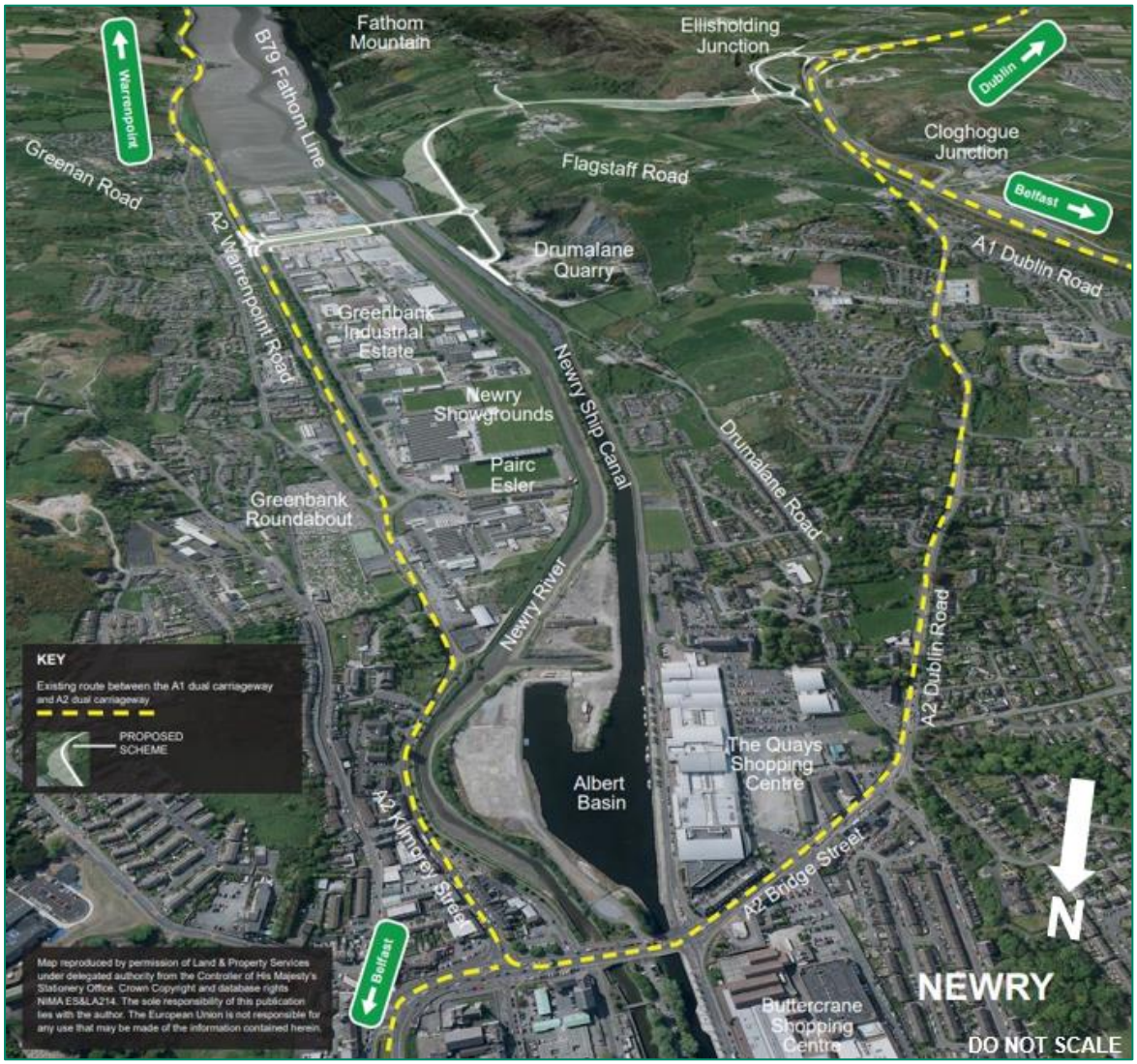
AECOM was commissioned by the Department for Infrastructure, hereafter referred to as 'the Department', to prepare a Habitats Regulations Assessment Report (HRAr) for the proposed Newry Southern Relief Road scheme (the Proposed Scheme).

The Proposed Scheme comprises a new strategic road link to the south of Newry, between the A1 Dublin Road dual carriageway and A2 Warrenpoint Road dual carriageway, providing an alternative route for strategic traffic that avoids Newry city centre.

The indicative alignment of the Proposed Scheme extends from a new roundabout constructed 350 m south of Greenbank Roundabout through the Greenbank Industrial Estate, over the Newry River and Newry Canal. The route then continues southerly toward a new roundabout at the Ellisholding Junction onto the A1 dual carriageway. The lands along the route corridor of the Proposed Scheme are herein referred to as the study area. The indicative alignment is presented in Figure 1. A description of the Proposed Scheme is presented in Section 4.2.

An Environment Impact Assessment Report (EIAR) has been prepared for the Proposed Scheme, for which extensive ecological survey and assessment has been carried out. This HRAr should be read in conjunction with the EIAR, and specifically the Volume I, Chapter 11: Biodiversity, however, relevant information pertaining to the assessment within this Report has been included for completeness.

Figure 1: The existing route (yellow dash line) and the Proposed Scheme route (white line).



2.2 Purpose of this Report

This HRAr has been prepared to inform the Department (acting as the competent authority) in their determination of whether the Proposed Scheme will have significant effects on any European sites.

The objective of this assessment is to identify any likely significant effects arising from the Proposed Scheme to European sites or their interest features, either in isolation or in-combination with other plans and projects. This determination is variously referred to as HRA Stage 1, Stage 1 Screening, or an HRA Screening. It is worth noting that mitigation measures specifically designed to protect European sites cannot be considered at Stage 1; this is explained further in Section 2.3.2.

If the Stage 1 Screening concludes significant effects on European sites are likely (or more specifically cannot be excluded on the basis of objective information), the Proposed Scheme will be assessed to determine if such impacts, when considered with any relevant mitigation, will impact the integrity of any European sites in light of the sites' conservation objectives. This determination is referred to as Stage 2 Appropriate Assessment.

2.3 Legislative Context

2.3.1 The Habitats Regulations

The UK is no longer part of the European Union. However, under the EU (Withdrawal) Act 2018, the requirements of the EU Habitats Directive (92/43/EEC) are fully implemented into domestic legislation. In effect, the NI statutory position currently remains the same.

The terms of The Conservation (Natural Habitats, etc.) (Amendment) (Northern Ireland) (EU Exit) Regulations 2019 outline how the previously 'European sites' are managed.

SACs and SPAs in the UK no longer form part of the EU Natura 2000 ecological network. The 2019 Regulations have created a national site network on land and at sea, including both the inshore and offshore marine areas in the UK. The national site network includes:

- Existing SACs and SPAs; and
- New SACs and SPAs designated under these Regulations

Any references to Natura 2000 in the 1995 Regulations and in guidance now refers to the new national site network.

Maintaining a coherent network of protected sites with overarching conservation objectives is still required in order to:

- Fulfil the commitment made by government to maintain environmental protections; and
- Continue to meet international legal obligations, such as the Bern Convention, the Oslo and Paris Conventions (OSPAR), Bonn and Ramsar Conventions, and Convention on Biological Diversity (CBD).

The terms of the Habitats Directive are transposed in Northern Ireland by the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) (the Habitats Regulations). Under Article 6(3) of the Habitats Directive, an Appropriate Assessment is required, where a plan or project is likely to have a significant effect upon a European site, either individually or in-combination with other projects. In the context of the Proposed Scheme, Article 6 of the Habitats Directive is transposed by Regulation 43(1) of the Habitats Regulations, and sets out the legal requirement for Appropriate Assessment in Northern Ireland:

43.—

1. A competent authority, before deciding to undertake, or give any consent, permission, or other authorisation for, a plan or project which:
    a. Is likely to have a significant effect on a European site in Northern Ireland (either alone or in combination with other plans or projects), and

b. Is not directly connected with or necessary to the management of the site, shall make an appropriate assessment of the implications for the site in view of that site's conservation objectives.

shall make an appropriate assessment of the implications for the site in view of that site's conservation objectives.

2. A person applying for any such consent, permission or other authorisation shall provide such information as the competent authority may reasonably require for the purposes of the assessment.

5. In the light of the conclusions of the assessment, and subject to regulation 44 [of the Habitats Regulations], the authority may shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site.

2.3.2 Mitigation for European Sites

The European Commission (EC; EC, 2021) states mitigation should not be considered during Screening for Appropriate Assessment (i.e. Stage 1 Screening).

On 12 April 2018, the Courts of Justice of the EU (CJEU) ruled in case C-323/17 (People over Wind v Coillte) that measures intended to avoid or reduce a proposed plan or project's harmful effects on a European site (i.e. mitigation measures) cannot be considered during the Screening for Appropriate Assessment stage, stating that "*in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site*"

Therefore, unless it can be shown that the proposed plan or project would not have a significant effect on the conservation objectives of the relevant European site in the absence of mitigation, it is necessary to carry out a Stage 2 Appropriate Assessment. Mitigation measures should be considered at this stage. This is contrary to the previous guidance, whereby inherent mitigation at the screening stage could be considered.

As such, to comply with the CJEU ruling, no specific mitigation for the protection of European sites is included in the Stage 1 Screening. Given that the CJEU ruling was made prior to the UK's exit from the European Union, at present the ruling still stands in this jurisdiction under the terms of the EU (Withdrawal) Act 2018 and so this process is followed.

However, it is worth noting that, according to EC guidance (EC, 2021), projects can be planned in such ways that avoids or minimises potential impacts from the outset. This can be done by using best available technologies and practices, or by applying pre-emptive measures. The guidance states that "*Such generic components of the project can be considered in the screening, contrary to the plan- or project-specific mitigation measures that must not be taken into account at this stage. These components should be clearly identified in the project description*" (EC, 2021).

As per DMRB guidance given in *LA 104 Environmental Assessment and Monitoring* (National Highways, 2020a) embedded mitigation described project design principles adopted to avoid or prevent adverse environmental effects, whilst essential mitigation describes measures required to reduce and if possible offset likely significant adverse environmental effects.

Therefore, based on EC guidance, embedded and standard good practice / required mitigation has been considered during Stage 1 Screening within this HRAr.

2.4 European Sites

In Northern Ireland, European sites refer to Special Areas of Conservation (SAC) and Special Protection Areas (SPA). Proposed sites (pSPA) and candidate sites (cSAC) are also included. Additionally, under Planning Policy Statement 2: Natural Heritage (PPS2), Ramsar sites are also included in the assessment as European sites and classed as such, as they are of international importance. Where the likelihood for transboundary effects is identified, European sites within the Republic of Ireland are also considered.

2.5 Quality Assurance

This project has been completed in line with AECOM's Integrated Management System (IMS). Our IMS places great emphasis on professionalism, technical excellence, its quality as well as covering all aspects of environmental and Health and Safety management. All staff members are committed to establishing and maintaining our accreditation to the relevant international standards namely BS EN ISO 9001:2008 and 14001:2015 and BS OHSAS 18001:2021. In addition, our IMS requires careful selection and monitoring of the performance of all sub consultants and contractors.

3. Methods

3.1 Sources of Guidance

This Report has been prepared broadly in accordance with the European Commission (EC) guidance documents *Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC* (EC, 2021), *Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: A Summary* (EC, 2022), and *Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC* (EC, 2018).

This Report has also been prepared with reference to DMRB guidance documents *LA 104 Environmental Assessment and Monitoring* (National Highways, 2020a), *LA 105 Air Quality* (National Highways, 2020b), and *LA 115 Habitats Regulations Assessment* (National Highways, 2020c). LA 115 sets out the requirements for assessment and reporting of the implications, from construction, operation, and maintenance, of highways and / or roads projects on European sites.

The method used also draws on guidance from other jurisdictions in the UK, e.g. Natural England guidance.

3.1.1 The Precautionary Principle

Under EC guidance, the Precautionary Principle, which is referenced in Article 191 of the Treaty on the Functioning of the European Union, is described as the "*absence of scientific evidence on the significant negative effect of an action cannot be used as justification for approval of this action. When applied to Article 6(3) procedure, the Precautionary Principle implies that the absence of a negative effect on European* [Natura 2000] *sites has to be demonstrated before a plan or project can be authorised. In other words, if there is a lack of certainty as to whether there will be any negative effects, then the plan or project cannot be approved*" (EC, 2021).

Reasoned application of the Precautionary Principle is fundamental to all stages of HRA. In Stage 1 Screening, significant effects would be presumed without evidence to the contrary, where there was evidence of possible effects on a European site from the Proposed Scheme, but uncertainty remained.

3.2 The Stages in Habitats Regulations Assessment

3.2.1 Overview of the Stages

Article 6(3) and (4) sets out a step-by-step procedure for assessing plans or projects that are likely to have impact on European sites. This involves three main sequential stages, as outlined in the EC guidance document (2021). Each stage of the procedure is influenced by the previous one. The order in which the stages are followed is therefore essential for applying Article 6(3) and (4) correctly. The following is a summary of these steps.

- **Stage 1 – Screening**: This stage consists of a pre-assessment stage (i.e. Screening) to ascertain whether the plan or project is directly connected with, or necessary to, the management of a European site, and if not, subsequently examines whether it is likely to have significant effects to the European site(s), either alone or in-combination with other projects, in view of the conservation objectives.
- **Stage 2 – Appropriate Assessment**: If likely significant effects cannot be excluded at Stage 1, an assessment is made of the impact of the plan or project (either alone or in-combination with other plans or projects) on the integrity of the European site(s) (in view of conservation objectives) and ascertaining whether it will affect the integrity of the European site. If relevant, mitigation measures specifically designed to protect the European site can be considered.
- **Stage 3 – Derogation from Article 6(3) under certain conditions:** The third stage of the procedure governed by Article 6(4) and is relevant where, despite a negative assessment, the developer considers that the plan or project should still be carried out for imperative reasons of overriding public interest (IROPI). This is only possible if there are no alternative solutions, the

IROPI are duly justified, and if suitable compensatory measures are adopted to ensure that the overall coherence of European site is protected.

3.2.2 Stage 1 Screening

The first stage of an HRA examines the likelihood of a plan or project having significant effects upon a European site, either alone or in-combination with other plans or projects. The EC states that it supports a broad interpretation of the terms project and plan (EC, 2022), and these are defined as follows (with reference to EC (2021)):

- A project can involve construction works, installations and other interventions in the natural environment, including regular activities aimed at utilising natural resources.
- The term plan has also, for the purposes of Article 6(3), a potentially broad meaning, including land-use or spatial plans and sectoral plans (e.g. for transport, energy, waste management, water management, forest management, etc.).

In the context of this Report, the Proposed Scheme constitutes a project. The result of a Stage 1 Screening will identify whether the subsequent stage (i.e. Stage 2 Appropriate Assessment) is required.

The safeguards set out in Article 6(3) and (4) are triggered not by a certainty but by a likelihood of significant effects. Thus, in line with the Precautionary Principle (Section 3.1.1), it is unacceptable to fail to undertake an assessment on the basis that significant effects are not certain. This was confirmed by case law where "*in case of doubt as to the absence of significant effects such an assessment must be carried out*" (CJEU case C-127/02 – *Waddenzee*). The notion of what is 'significant' needs to be interpreted objectively, as significance will vary depending on factors such as magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned.

Natural England's guidance (Natural England, 2018) summarises Habitats Directive case law on the meaning of likely significant effect as follows:

- An effect is likely if it "*cannot be excluded on the basis of objective information".*
- An effect is significant if it "*is likely to undermine the conservation objectives".*
- In undertaking a screening assessment for likely significant effects "*it is not that significant effects are probable, a risk is sufficient*", but there must be credible evidence that there is "*a real, rather than a hypothetical, risk"*.

The significance of effects should be determined in relation to the specific features and environmental conditions of the European site concerned by the plan or project, taking particular account of the site's conservation objectives and ecological characteristics (EC, 2018). The nature of the likely interactions between the Proposed Scheme and the integrity of a European site will depend upon: the sensitivity of the European site's qualifying features to potential impacts arising from the project, the current conservation status of the European site and its selection features, and, any likely changes to key environmental indicators (e.g. water quality) that underpin the conservation status of European sites and their qualifying features, in-combination with other plans and projects.

The EC guidance (2021) outlines the stages involved in carrying a Stage 1 Screening of a project that has the potential to have likely significant effects on European sites. The method adopted for this Stage 1 Screening is informed by these guidelines and was conducted in the following stages:

- Determine whether the Proposed Scheme is connected with, or necessary for, the conservation management of European sites.
- With reference to the baseline environment, define and describe the project (Proposed Scheme) and identify the relevant elements of the Proposed Scheme and their likely impacts (specifying the stage, e.g. construction and operation).
- Identify and define any inherent design components (i.e. embedded mitigation), such as good practice or legal requirements, to minimise potential impacts of the Proposed Scheme.

- Identify the zone of influence (ZoI) of the Proposed Scheme and the European sites likely to be impacted by the Proposed Scheme (i.e. those which are potentially connected to the proposal by source-pathway-receptor links or lie in the ZoI of potential impacts).
- Identify other plans or projects that, in-combination with the Proposed Scheme, have the potential to affect European sites.
- Assess whether likely significant effects on the European site(s) can be ruled out, in view of the conservation objectives.

3.2.2.1 The Source-pathway-receptor model and Zones of Influence

The source-pathway-receptor conceptual model is a standard tool in environmental assessment. For an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means there is no likelihood for the effect to occur. An example of this model is provided below:

- Source(s), e.g. piling.
- Pathway(s) e.g. vibrations.
- Receptor(s) e.g. otter *Lutra lutra* holt at risk of collapse.

The model is focused solely on the qualifying features for which sites are designated or features which support the qualifying features.

A plan or project may have the potential to result in numerous impacts which could potentially affect the qualifying features of European sites. The analysis of these effects, using scientific knowledge and professional judgement, leads to the identification of a ZoI for each impact (i.e. the distance at which the impact of the Proposed Scheme could have potential effects, using professional judgement and published guidance).

The proximity of the Proposed Scheme to European sites, and importantly their qualifying features, can be of importance in identifying source-pathway-receptor models which could result in significant effects.

Habitats and plants are not mobile, and it can therefore be easier to determine whether habitats and plants are within the ZoI. In contrast, faunal species are mobile and so the distances they move beyond European sites (i.e. range) must be considered when determining if they occur within the ZoI. The range of faunal species varies considerably, from a maximum of several metres (e.g. in the case of whorl snails *Vertigo* spp.) to many kilometres (in the case of migratory wetland birds). Whilst habitats and plants are not mobile, these features can still be significantly affected at considerable distances from an effect source; for instance, where an instream habitat is located downstream from a pollution source.

3.2.2.2 Likely Significant Effects

For each of the European sites considered as part of this Screening assessment, the potential impacts of the Proposed Scheme are considered, with reference to the conservation objectives of each European site, to assess for likely significant effects.

When carrying out the Stage 1 Screening assessment, cognisance was given to the ruling of the CJEU in November 2018 in the case of Holohan and Others v An Bord Pleanála (C-461/17). The conclusions of the Court in that case now require that during Appropriate Assessment, consideration must be given to:

- Likely significant effects on the qualifying habitats and / or species of a European site, outside the boundary of the designated site, if these are relevant to the site meetings its conservation objectives.
- Effects on non-qualifying habitats and / or species on which the qualifying habitats and / or species depend, and which could result in likely significant effects on the qualifying features.

3.2.3 Stage 2 Appropriate Assessment

If the Stage 1 Screening reaches a conclusion of ‘likely significant effects’, or, that likely significant effects cannot be excluded, a Stage 2 Appropriate Assessment must then be carried out to determine

whether the plan or project, alone or in-combination with other plans or projects, will affect the integrity of the European site. The Stage 2 Appropriate Assessment assesses the likely effects on the European site in view of its conservation objectives and assesses whether adverse effects on the integrity of the site will or might occur.

The assessment is required for all the qualifying features (e.g. species, habitat) that are significantly present on the site (i.e. habitats and species with A, B or C, but not D, site assessment in the Standard Data Form for the site) in view of their conservation objectives. Essential (i.e. specific) mitigation measures can be considered at this stage (see Section 2.3.2).

EC guidance (EC, 2021) advises that the integrity of a European site relates to its conservation objectives, key natural features, and ecological structure and function, and also concerns the main ecological processes and factors that sustain the long-term presence of the species and habitats in that site. An adverse effect on the European site's integrity is likely to be one which prevents the site from making the same contribution to favourable conservation status for the relevant features as it did at the time of its designation.

For the basis of this Stage 2 Appropriate Assessment, the following "checklist" from the EC guidance (EC, 2021) was considered.

Does the Proposed Scheme have the potential to:

- Hamper or cause delays in progress towards achieving the European site's conservation objectives.
- Reduce the area, or quality, of protected habitat types or habitats of protected species present on the site.
- Reduce the population of the protected species significantly present on the site.
- Result in disturbance that could affect the population size or density or the balance between species.
- Cause the displacement of protected species significantly present on the site and thus reduce the distribution area of those species in the site.
- Result in a fragmentation of Annex I habitats or habitats of species.
- Result in a loss or reduction of key features, natural processes or resources that are essential for the maintenance or restoration of relevant habitats and species in the site (e.g. tree cover, tidal exposure, annual flooding, prey, food resources).
- Disrupt the factors that help maintain the favourable conditions of the site or that are needed to restore these to a favourable condition within the site.
- Interfere with the balance, distribution and density of species that are the indicators of the favourable conditions of the site.

3.3 Assessment In-combination

It is a requirement of the Habitats Regulations that the impacts and effects of any development are not considered in isolation but in-combination with other plans and projects that may also affect the European site(s) in question.

The relevant Local Development Plans (LDP) / Area Plans were consulted for information. The Northern Ireland Planning Portal was consulted for relevant planning applications and projects within at least 0.2 km (and extended to include applications adjacent to the Newry River / Canal) of the site which may act in-combination with the Proposed Scheme.

A search of the Northern Ireland Planning Portal within at least c. 0.2 km (and extended to include applications adjacent to the Newry River / Canal) of the Proposed Scheme was conducted

3.4 Ecological Baseline

This HRAr was informed by a desk study and field surveys carried out by suitably experienced AECOM Ecologists between 2019-2023.

A search was conducted for European sites that may be within the ZoI of the Proposed Scheme. The following data sources were used for the identification of European sites:

- Northern Ireland Environment Agency (NIEA) Natural Environment Map Viewer (NIEA, 2024).
- DAERA Northern Ireland Marine Map Viewer (DAERA, 2024).
- NPWS Designations Viewer (NPWS, 2024).
- DAERA and NPWS websites for published documents regarding site citations and conservation objectives.

In addition, the desk study searched for available information relevant to the study area from maps, current and historical aerial imagery, internet searches, relevant literature, and database searches.

Full ecological survey results are reported within the Biodiversity Chapter (Chapter 11) and associated technical appendices of the EIAR (Appendix 11.1-11.13), which includes details of surveyor experience. However, a summary of the field surveys and relevant ecological baseline of the study area is presented in Section 3 and referred to throughout this Report as required.

3.5 Statement of Authority

This Report was prepared by Jenny Hunter, reviewed by Seanin Maxwell, and verified by Dr Eleanor Ballard.

Jenny Hunter BSc (Hons) MSc MCIEEM MRSB (Principal Ecologist) has over ten years' professional experience of ecological consultancy. Jenny has extensive field experience of a variety of species and habitat survey techniques across Northern Ireland and the Republic of Ireland. Jenny is an excellent communicator with extensive experience of ecological assessment and reporting, including Habitats Regulations Assessments in Northern Ireland and Appropriate Assessment in the Republic of Ireland.

Seanin Maxwell BSc (Hons) MSc ACIEEM is a Consultant Ecologist with over four years' professional experience in ecological consultancy. Seanin has carried out a range of ecological surveys and assessments for clients in various sectors. Seanin has experience in completing Stage 1 Screening Assessments and Stage 2 Appropriate Assessment in Northern Ireland, and Screening for Appropriate Assessment and Natura Impact Statements in the Republic of Ireland.

Dr Eleanor Ballard BSc (Hons) CEnv MCIEEM (Technical Director and Practice Area Lead of Ecology) has over 20 years of post-doctoral experience in the delivery and execution of ecological projects, including project design and management. Eleanor has been involved with major infrastructure projects including the strategically important DBFO2 in Northern Ireland. Eleanor has excellent client interface, leadership, communication, and team-building skills along with a comprehensive working knowledge of current ecological best practice and legislation. These skills combine to give a proven track record in major project delivery. Eleanor has extensive experience in a consultative capacity working in Northern Ireland, the Republic of Ireland and Great Britain conducting a range of protected species surveys, habitat surveys in aquatic, marine and terrestrial environments, producing EcIA and Habitats Regulation Assessments.

3.6 Limitations

The information considered in this assessment is believed to have been correct at the time of writing. No limitations, gaps in information or uncertainty were identified in the preparation of this document that would impact the validity of the assessment's conclusions.

4. Baseline Environment and Project Description

4.1 Site Description and Ecological Baseline

A summary of the ecological baseline, including information which may be of relevance to European sites, is presented in the following Sections.

4.1.1 Habitats

The study area is located to the south of Newry, within the steep-sided Newry River valley. The Proposed Scheme crosses the Newry River. The river has a wet width of c. 60 m, though is weakly tidal within the study area, and at low tide the river is c. 15 m wide. At low tide, the river is flanked by mudflats and rock armour. Grass banks with saline tolerant species such as such as scurvygrass *Cochlearia* sp. are present adjacent to the mudflats. An amenity grassland bank used for recreation delimits the river's extent to the east while scrub with pockets of grassland delimits the river from Middlebank Greenway.

East of the Newry River within the study area is the Greenbank Industrial Estate and the A2 Warrenpoint Dual carriageway, with habitats typical of the urban environment. West of the Newry River is the Newry Canal, which also feeds into Carlingford Lough. The Canal has negligible flow, and the water levels appear to vary little.

West of the Newry Canal within the study area is B79 Fathom Line, west of which the land steeply rises. Clady Quarry is present at the northern extent of the of the study area, which comprises a mosaic of habitats including plantation woodland, scrub, bare, earth and standing water. South of Clady Quarry lies species-rich neutral grasslands and extensive woodland (some of which is Long-established Woodland and also forms part of Fathom Lower Woods and Grasslands Site of Local Nature Conservation Importance (SLNCI)). Semi-improved neutral grasslands also form fields adjacent to the railway line. Isolated broadleaved woodland parcels occur on the upper slopes of Fathom Mountain, with other habitats on the mountain including scrub, bracken, and poor semi-improved grassland. Further west, near the A1, habitats are agricultural in character, dominated by improved grassland fields with associated hedgerows.

4.1.2 Invasive Species

Three invasive species were identified within the study area: Japanese knotweed *Reynoutria japonica,* giant hogweed *Heracleum mantegazzianum*, and Spanish / hybrid bluebell *Hyacinthoides* × *massartiana.* Invasive species were primarily noted growing in areas where disturbance is high.

Eight stands of Japanese knotweed were identified across the study area, within the Greenbank Industrial Estate, Gerry Brown Park playing fields, Knox-Peebles Drain, Clady Quarry and along the roadside at Fathom Line. Fifteen stands of giant hogweed were identified, with plants found in the same broad locations as Japanese knotweed, as well as at Fathom Mountain. Spanish / hybrid bluebell was identified scattered in three locations throughout the woodland along Fathom Line.

Japanese knotweed and Spanish / hybrid bluebell are on Schedule 9 Part II of the Wildlife (Northern Ireland) Order 1985 (the Wildlife Order), whilst giant hogweed is listed under Part 2 on the Schedule of the Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 (the IAS Order).

4.1.3 Marine Mammals

No specific marine mammal surveys were carried out. However, a harbour seal was incidentally noted within the Newry River during the wintering bird survey on 14 February 2022. The seal was observed approximately 620 m south of the proposed bridge crossing. In addition, two seals were identified within the river during other wintering bird surveys in 2019, however, these were at such a distance (further south than the seal observed in 2022) that they could not be identified to species. No seal haul outs were incidentally noted during any survey. The closest seal haulouts are associated with Carlingford Lough, the closest of which is located c. 17 km from the Proposed Scheme (DAERA, 2024a).

Cetaceans such as harbour porpoise may also be present on occasion in proximity to the study area within the river, though none were incidentally noted during other surveys. Due to the lock present at the Newry Canal downstream of the study area, there is negligible potential for marine mammals to occur within the canal.

4.1.4 Marsh Fritillary

No marsh fritillary butterflies were identified during butterfly transect surveys carried out in 2023. However, devil's-bit scabious, the larval food plant of marsh fritillary butterfly, was identified in as a frequent component of the sward within a grassland field parcel adjacent to the railway line and close to Dublin Road.

This field was visited several times over the course of the spring / summer 2019, 2021, and 2023, when butterflies were active. During one visit in summer 2019, two individual adult butterflies were incidentally observed close to these fields, along the railway line. Both butterflies were not confirmed to species (due to distance from surveyor), however based on their markings, colour, and activity, it is considered possible that they were marsh fritillary.

Although NIEA survey specifications also recommend larval web surveys between late August and early October, by mid-August 2019, 2021, and 2023 the field was intensively grazed by cattle. The intensive grazing resulted in a short sward (c. 1-2 cm), which rendered the habitat unsuitable for larval webs. Anecdotal evidence from a neighbouring landowner indicates that these fields are regularly grazed by mid-summer.

Devil's-bit scabious was also found in Clady Quarry, but not in sufficient density and abundance to likely be used by marsh fritillary, and devil's-bit scabious was not noted elsewhere in the study area, though the species may be present further afield.

4.1.5 Wintering Birds

Wintering bird surveys were initially carried out in January and February 2019, and monthly between October 2019 and February 2020 and November 2020 and March 2021. High and low tide counts of wading and wetland birds were carried out, with the survey combining transect and vantage point methods. The transect was carried out along the Newry River, along the Greenbank Trail, and extended from the mudflats at the southern extent of the Greenbank Trail to just beyond the proposed bridge crossing.

A total of 23 species were noted during surveys, fourteen of which are qualifying interest features of European sites. Of these, three are qualifying interest features of Carlingford Ramsar and eleven are qualifying interest features of Dundalk Bay SPA. It is worth noting that lapwing and knot, both of which are qualifying interests of Dundalk Bay SPA, were both only recorded in very low numbers on one survey month each. Birds were generally noted foraging at the mudflats at low tide. No high-tide roost sites were identified along the route of the Proposed Scheme.

The species recorded are considered generally common within the habitat types in the area surveyed. The results of the wintering bird surveys during the 2019, 2019/20, and 2020/21 wintering seasons are presented in Table 4.1 and Table 4.2. Peak counts of qualifying interest species across all survey months are presented in Table 4.3.

Table 4.1: Monthly maximum counts of wading and wetland birds during 2019 and 2019/20 surveys.

Species	Monthly Maximum Counts							Qualifying Interest of European Site
	Jan 2019	Feb 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	
Black-headed gull	163	36	169	663	93	93	177	Dundalk Bay SPA
Black-tailed godwit	7	9	6	0	16	16	7	Dundalk Bay SPA
Common gull	0	0	0	0	2	2	0	Dundalk Bay SPA
Curlew	0	0	3	20	15	15	14	Dundalk Bay SPA
Dunlin	0	0	0	0	0	0	76	Carlingford Ramsar

Species	Monthly Maximum Counts							Qualifying Interest of European Site
	Jan 2019	Feb 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	
Herring gull	0	0	0	0	0	0	2	Dundalk Bay SPA
Knot	2	0	0	0	0	0	0	Dundalk Bay SPA
Lapwing	0	1	0	0	0	0	0	Dundalk Bay SPA
Mallard	10	8	24	13	5	4	10	Dundalk Bay SPA
Oystercatcher	0	2	0	1	1	1	1	Carlingford Ramsar
Redshank	14	56	97	123	70	67	118	Carlingford Ramsar
Shelduck	45	28	9	67	58	51	106	Dundalk Bay SPA
Teal	225	309	246	254	311	256	198	Dundalk Bay SPA
Total	**466**	**449**	**551**	**1141**	**571**	**573**	**709**	

Table 4.2: Monthly maximum counts of wading and wetland birds during 2021/22 surveys.

Species	Monthly Maximum Counts					Qualifying Interest of European Site
	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	
Bar-tailed godwit	3	1	2	0	0	Dundalk Bay SPA
Black-headed gull	284	109	186	238	15	Dundalk Bay SPA
Black-tailed godwit	82	35	33	40	70	Dundalk Bay SPA
Curlew	15	8	5	1	1	Dundalk Bay SPA
Dunlin	100	144	0	30	0	Carlingford Ramsar
Herring gull	0	0	0	19	2	Dundalk Bay SPA
Mallard	33	22	19	30	13	Dundalk Bay SPA
Oystercatcher	2	4	2	1	0	Carlingford Ramsar
Redshank	50	37	42	24	29	Carlingford Ramsar
Shelduck	40	68	42	48	85	Dundalk Bay SPA
Teal	464	330	319	155	340	Dundalk Bay SPA
Total	**1,073**	**758**	**650**	**586**	**555**	

Table 4.3: Maximum count of wading and wetland birds across all survey months.

Species	Max. Count	Survey Month	Qualifying Interest of European Site
Bar-tailed godwit	3	November 2020	Dundalk Bay SPA
Black-headed gull	663	November 2019	Dundalk Bay SPA
Black-tailed godwit	82	November 2020	Dundalk Bay SPA
Curlew	20	November 2019	Dundalk Bay SPA
Dunlin	144	December 2020	Carlingford Ramsar
Herring gull	19	February 2021	Dundalk Bay SPA
Knot	2	January 2019	Dundalk Bay SPA
Lapwing	1	February 2019	Dundalk Bay SPA
Mallard	33	November 2020	Dundalk Bay SPA
Oystercatcher	4	December 2020	Carlingford Ramsar

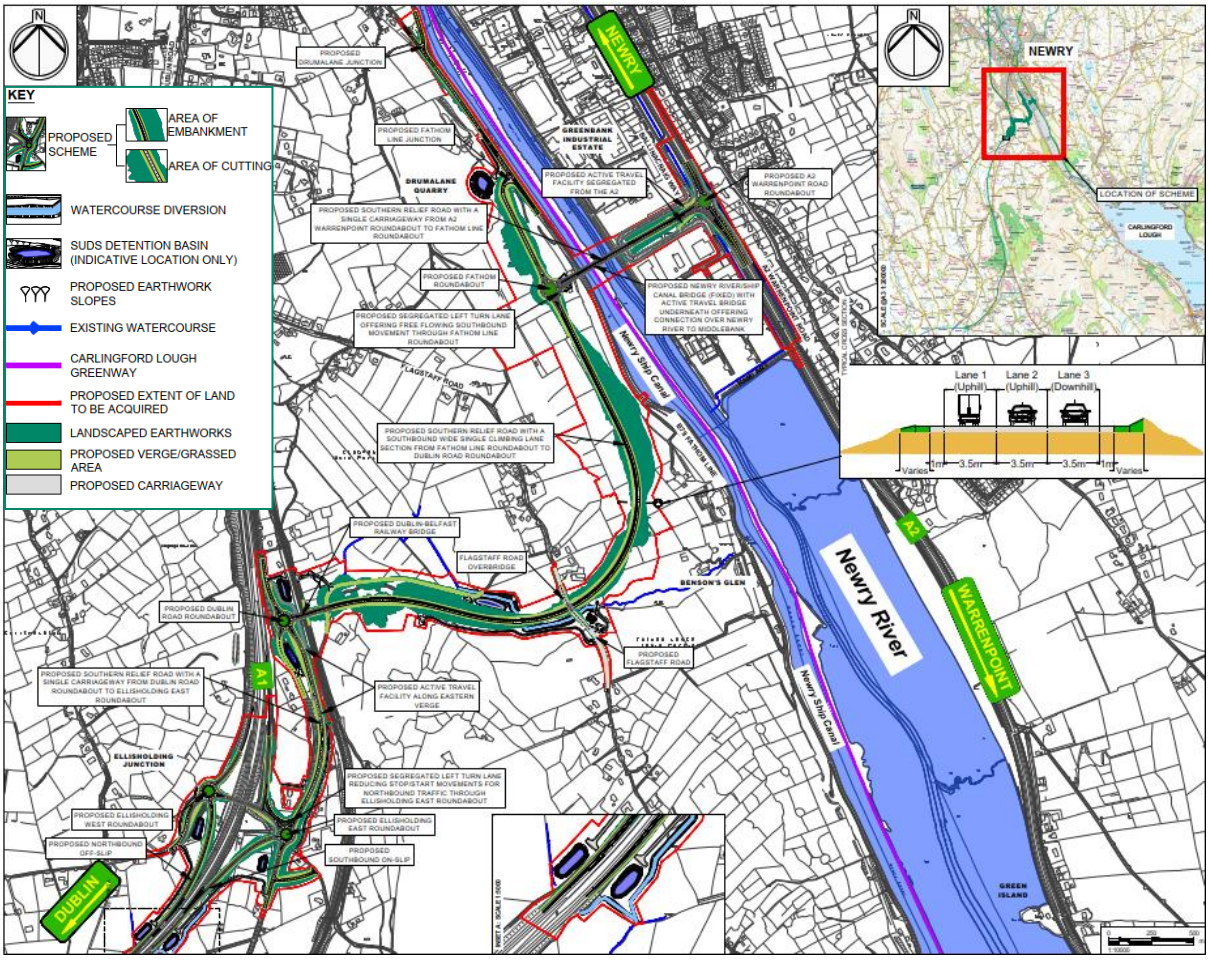
Species	Max. Count	Survey Month	Qualifying Interest of European Site
Redshank	123	February 2020	Carlingford Ramsar
Shelduck	106	February 2020	Dundalk Bay SPA
Teal	464	November 2020	Dundalk Bay SPA

4.2 The Proposed Scheme

4.2.1 Overview of the Proposed Scheme

The Proposed Scheme is a project with a clearly defined physical footprint, during both construction and operation. The Proposed Scheme provides approximately 4km of single carriageway between the A2 Warrenpoint Road and the A1 / N1 Belfast to Dublin Corridor, as indicated in the indicative scheme overview presented in Figure 2. The Proposed Scheme layout is presented in Appendix A.

Figure 2: Overview of the Proposed Scheme.



The key design elements of the Proposed Scheme comprise:

- An at-grade roundabout on the A2 Warrenpoint Road, in the vicinity of the Greenbank Industrial Estate.
- A single carriageway strategic link road through Gerry Brown Park, crossing the Newry River and Ship Canal on a fixed bridge structure, to a new at-grade roundabout, west of B79 Fathom Line.
- A pedestrian / cyclist bridge connecting the Carlingford Lough Greenway (along the Middlebank) to the Greenbank Trail (along the flood rampart adjacent to Greenbank Industrial Estate).
- A single carriageway link between the new at-grade Fathom Roundabout and the B79 Fathom Line.

- A wide-single carriageway strategic link road between the new Fathom Roundabout and a new at-grade roundabout on the Dublin Road, immediately west of the Belfast-Dublin Railway, that crosses the northern edge of Benson's Glen.
- A single carriageway link road between the new Dublin Road Roundabout and old Dublin Road (also known as Brogies Road).
- A single carriageway upgrade of the Dublin Road, providing a strategic link between the new Dublin Road Roundabout and A1 Ellisholding Junction.
- An enhanced A1 Ellisholding Junction providing connections to and from the A1 for both northbound and southbound traffic.

4.2.2 Construction Details for the Newry River Bridge Crossing

A long span structure is required from the proposed at-grade roundabout on the A2 Warrenpoint Road to the at-grade Fathom Roundabout. The bridge will form the largest engineering element of the Proposed Scheme spanning Ballinacraig Way, Newry River, the Middlebank, the Newry Ship Canal, and the B79 Fathom Line.

The proposed bridge will be 16.1 m wide, span 192.9 m, and will include five piers. Each pier will include two vertical columns, with a total width of 3 m, with 5 m between each set of vertical columns. The bridge will be 21.4 m at its tallest point and 15.6 m at its lowest point, relative to sea level.

Prior to commencing construction of the permanent elements of the bridge structure within and spanning above Middlebank, temporary works will need be carried out to establish an access route for construction plant from Fathom Line, over the Newry Ship Canal and across to the canal embankment at Middlebank. The construction plant required will likely comprise piling rigs, concrete mixers, cranes, general site vehicles and haulage vehicles to transport materials, such as earthwork import and export, scaffolding and structural formwork.

Two rows of contiguous sheet piles will be driven across the width of the Newry Canal, from the Fathom Line to the Middlebank at the northern and southern extents of the proposed working area, which are approximately 100 m apart. The sheet piles at these locations will include an interlocking combi wall cofferdam, which may require sealing concrete to create a watertight void. The cofferdams will be dewatered by a hydraulic pump and, depending on the results of the ground investigation, may require temporary supports, such as soil anchors, to prevent overturning and collapse in soft soils until the granular infill material is placed.

Depending on the integrity of the canal base and Middlebank, a geotextile layer may be laid on top of the existing canal lining and canal embankment to provide additional strength. However, the working assumption is that these will need to be excavated within the 100 m extent of the sheet piles and replaced with structural fill material to provide sufficient bearing capacity.

Two pre-cast concrete box culverts will be installed along the 100 m length of canal to maintain the hydrology of the canal during construction. Imported fill material will then be placed around the box culverts, with a minimum of 600 mm above, to provide a sound access road capable of supporting the heavy plant required over the construction period. The construction period for the bridge crossing is estimated to last 18 months.

4.2.3 Embedded and Related Project Mitigation

As discussed in Section 2.3.2, EC (2021) guidance indicates that projects can be planned in such ways that avoids or minimises potential impacts from the outset. These are not specific measures to protect European sites. The embedded and related project mitigation for the Proposed Scheme comprises standard measures (often required to fulfil legal obligations and in reference to DMRB guidance) which are typical of such projects. These comprise:

- Construction Method Statement for proposed bridge crossing.
- Construction Traffic Management Plan.
- Detailed drainage design, including implementation of sustainable drainage systems (SUDS).

- First Iteration Environment Management Plan (FIEMP) and Second Iteration EMP (SIEMP) (once approved).
- Invasive species biosecurity and management.

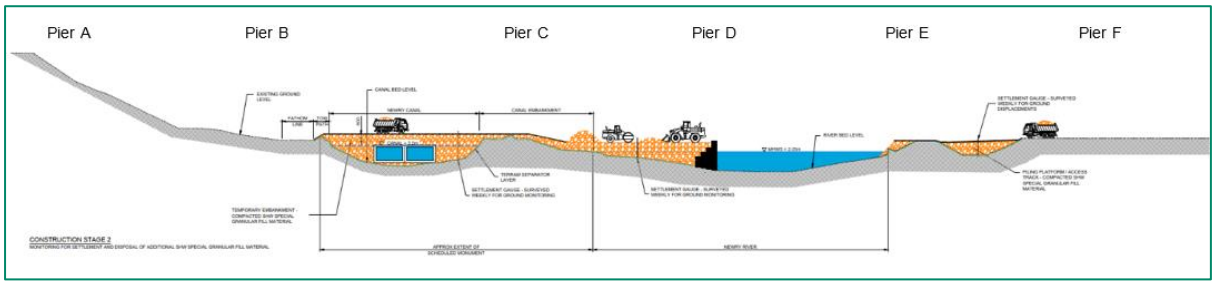
These measures are summarised in the following subsections.

4.2.3.1 Construction Method Statement for Bridge Crossing

A Construction Method Statement for the proposed bridge crossing has been prepared. This is summarised in this Section, however for full details, refer to Section 4.6.3 in Chapter 4 of the EIAR.

To allow for construction of Pier D, the access track will need to extend into the Newry River and, to limit the risk of flooding on the access track, the finished ground level will maintain a 300 mm freeboard above its Highest Astronomical Tide (HAT) O.D. within the Newry River extents. A series of gabion baskets will retain the temporary access platform within the river extents, these will prevent the access track from intruding into the main river channel and minimise loss of material and river cross-sectional area, as shown in Figure 3. Access to Pier E will be via the A2 Warrenpoint Road and the Greenbank.

Figure 3: Infilling of Middlebank area using temporary access across Newry Canal.



Due to the nature of the ground conditions around the Middlebank, Newry Canal, and the Newry River bed, settlement gauges will be installed in a series of locations across the temporary construction platform. These will monitor ground movements over the construction period and notify the contractor of potential areas of ground movement / instability or insufficient bearing capacity.

Once the Middlebank access and platform area have been sufficiently built up, contiguous steel sheet piles will be driven around the foundation locations of Pier B, Pier C, Pier D and Pier E. Sheet piles will be installed with an offset from the foundation boundary by a sheet piling rig, as shown in Figures 4 and 5. As Pier C and Pier D are within the Newry River extent at HAT, the sheet piles at these locations will include an interlocking combi wall cofferdam, which may require sealing concrete to create watertight void. The cofferdams will be dewatered by a hydraulic pump and, depending on the results of the ground investigation, may require secondary supports such as soil anchors to prevent overturning and collapse in soft soils.

Figure 4: Installing cofferdam from Middlebank at Newry River.

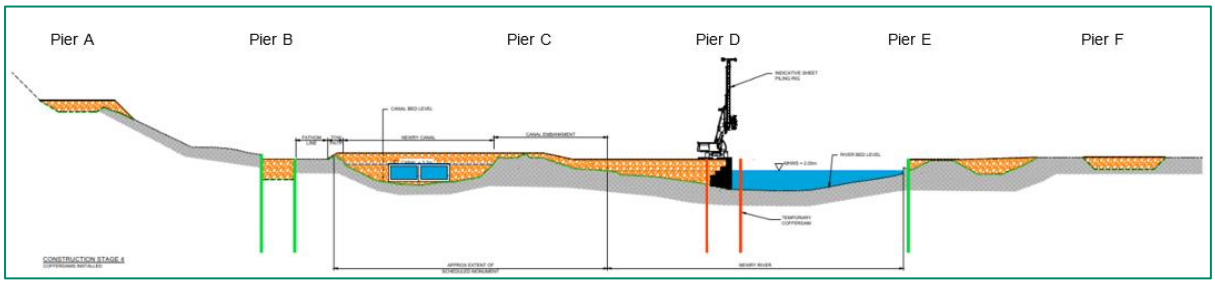
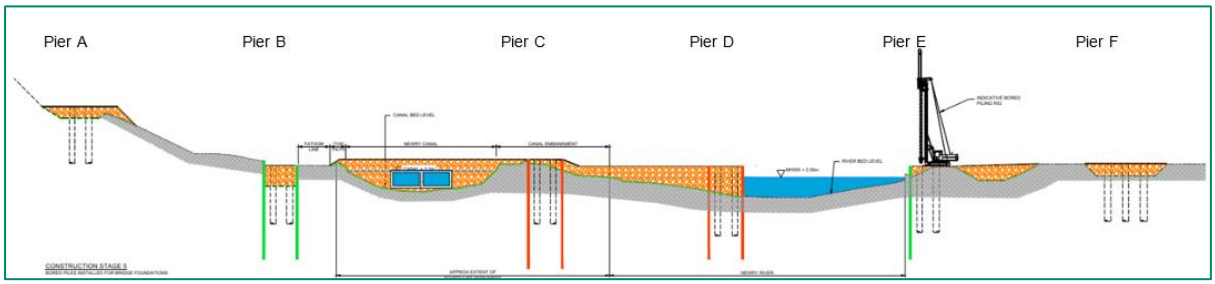
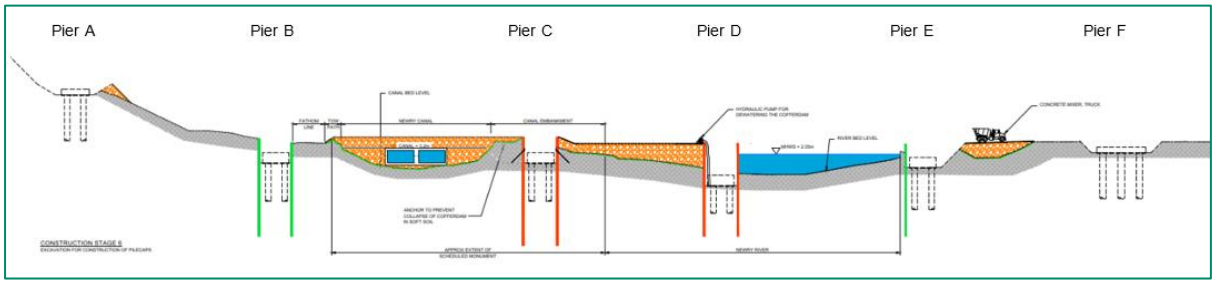


Figure 5: Installing cofferdam from Greenbank at Newry River.



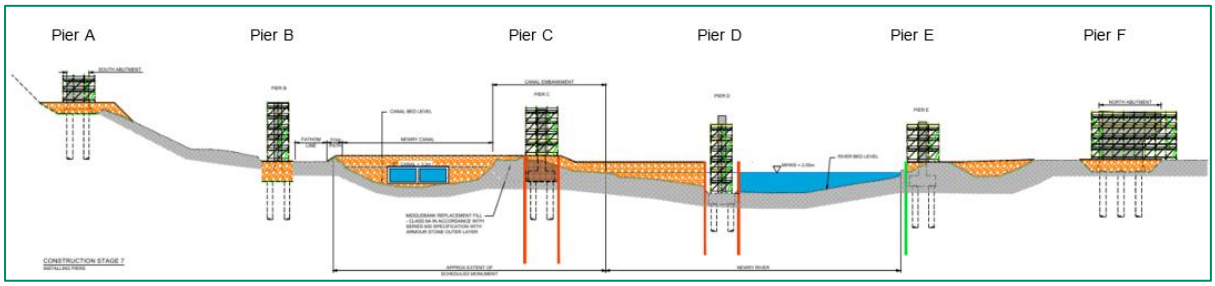
The existing ground within the sheet piled boundaries will then be excavated and replaced with compacted structural fill to create a stable platform for the piling rig. Once the pile foundations have been bored at each bridge pier location, the area within the sheet pile perimeter will be excavated to allow reinforcement fixing and concrete pours for the piles, pile cap and the pier, as shown in Figure 6.

Figure 6: Constructing piles and pile cap at de-watered pier locations.



The area will be reinstated to a similar profile as currently, to ensure the existing Greenway width is maintained, as shown in Figure 7. Within the Middlebank, including around Pier C, special replacement fill will be outlined in the Series 600 specification to match the existing make-up of the area and encourage the return of the existing natural environment.

Figure 7: Reinstate ground prior to constructing piers and abutments then removing temporary sheet piles.

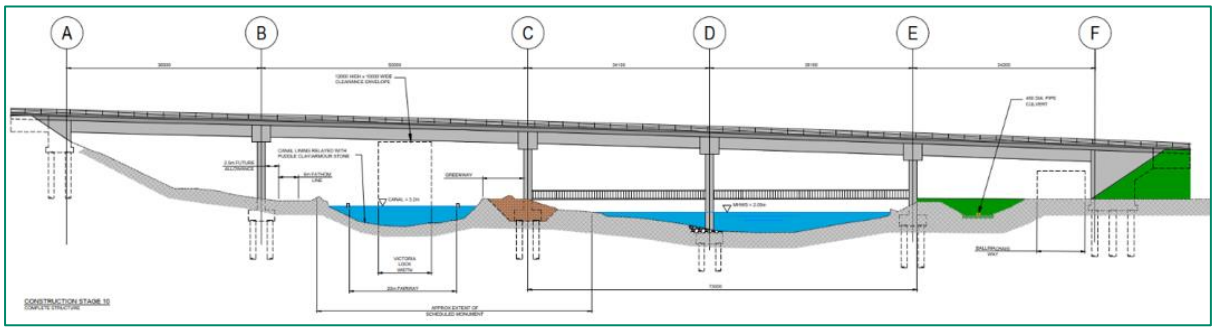


When the below surface construction works are complete, the piers and abutments can be built up to soffit level. Mobile crawler cranes will then be required to lift in the steel footbridge sections and position the long-span precast concrete beams on the respective pier crossheads. When the superstructure piers, diaphragm and deck has been successfully installed, the sheet piles at Pier D will be cut to the low water level. The structural fill material between the Pier C location and the gabion baskets will be removed, together with the gabion baskets along the Newry River.

The box culvert sections at either end of the 100 m working area will be resealed and the intermediate sections dewatered to enable their removal under dry conditions in due course. The imported structural fill material around the box culverts will be removed to form the original shape and width of the canal, with an impermeable membrane and natural lining laid to promote the regeneration of vegetation. The fendering system will be installed to the canal bed prior to the pre-cast concrete box culvert sections being removed and the canal base being lined in a similar manner to the re-formed canal side slope.

The sheet piles and capped box culvert sections across the canal, at the extents of the temporary crossing, will then be removed to rewater the canal to its original level, also floating the fendering system to define the 20 m fairway. The bund between the Fathom Line and the Newry Canal will then be reinstated over the 100 m working area impacted by the temporary access using general earthwork fill material, then topsoiled and seeded.

Figure 8: Completed bridge works with reinstated canal cross section.



4.2.3.2 Construction Traffic Management

Appropriate access routes to site compounds for personnel, plant, and material will be evaluated and designated by the Principal Contractor, in consultation with the Department and Newry, Mourne and Down District Council, to ensure that movements are restricted to appropriate routes to minimise local disruption.

Earthworks material will be retained and re-used within the Proposed Scheme boundary where practical, however, there is likely to be quantities of contaminated material that will need to be transported off site to licensed waste management facilities.

Other construction traffic will consist of vehicles delivering the products required for the construction of the Proposed Scheme, including concrete, bitumen, aggregates, pipes, and steel. Some deliveries will arrive as abnormal loads, such as large construction plant.

Traffic management will be provided throughout the construction phase to minimise the need for traffic to divert onto alternative routes, minimise impacts on the local community and minimise delays and disruption to existing traffic.

A Construction Traffic Management Plan (CTMP) will be prepared and implemented by the Principal Contractor. The CTMP will define measures to be used by the to reduce the impacts from construction traffic.

4.2.3.3 Road Drainage Design

The outline drainage design for the Proposed Scheme has been developed to include for:

- Removal of surface water from the carriageway as quickly as possible to provide safety and minimum nuisance to the travelling public.
- Provision of effective sub-surface drainage to maximise longevity of the pavement and its associated earthworks.
- Minimisation of the impact of the run-off on the receiving environment in terms of flood risk and water quality.

A combined network of filter drains, gullies, surface water channels and carrier drains are proposed for the Proposed Scheme to collect surface run-off. The run-off will then be discharged into sub-surface longitudinal carrier pipes, which will convey flow towards SUDS detention basins prior to discharge into nearby watercourses. It is proposed that SUDS detention basins and swales will be utilised upstream of all proposed mainline carriageway road drainage outfalls to reduce the impact of the Proposed Scheme drainage waters on the receiving watercourses. Nine locations for detention basins have been identified:

- Pond 1 – west of L12, A1N1 Northbound Diverge.
- Pond 2 – east of L10 A1N1 Southbound Merge.

- Pond 3 – west of L08, B113 old Dublin Road South Realignment.
- Pond 4 – south of Ellisholding West Roundabout.
- Pond 5 – south of Dublin Road Roundabout.
- Pond 6 – north of Dublin Road Roundabout.
- Pond 7 – north of L05 at approximate Ch 1+700.
- Pond 8 – east of L17, Flagstaff Road Realignment and south of L05 at approximate Ch 1+425.
- Pond 9 – west of J01, Fathom Line Junction.

In addition, to satisfy the DMRB and Department for Infrastructure – Rivers requirements, the following embedded mitigation measures have been included in the Proposed Scheme design:

- Connectivity of flood waters will be maintained where areas of floodplain are separated by the Proposed Scheme.
- Any loss of floodplain will be mitigated by providing additional compensatory floodplain at a similar level to that lost if suitable land is available.
- There will be no net increase in fences, trees and planting within the floodplain to prevent any restriction of flood flows.
- Proposed road infrastructure (e.g. drainage channels and public utilities) within, or adjacent to, floodplain will have a clearance of 600 mm above 1% annual exceedance probability (AEP) fluvial flood level or 0.5% AEP coastal flood level, whatever is greater, which will offer protection against a future rise in floodwater due to climate change.
- The design of surfaces (such as river paths or walkways) within the floodplain will take account of the fact that they are constructed within a floodplain and will be subject to flooding during extreme flood flows. The construction of such paths will not cause any increase in ground levels.
- The soffit level of any new / replacement bridges must be set above the 1% AEP fluvial flood level or 0.5% AEP coastal flood level, whatever is greater, plus a minimum of 600 mm freeboard. The structure should be designed to avoid an increase in upstream water levels in times of high flows and provide a free flow of water at all times. Where new / replacement bridges span over watercourses, intermittent piers should be kept to the minimum number and size. They should not be located within any watercourse channel so as not to present an obstruction to flow if practicable.
- Any structure constructed within or near the watercourse channel shall be approved by the Rivers Agency, in accordance with Schedule 6 of the Drainage (Northern Ireland) Order 1973.
- Proposed storm water discharge from the proposed road will be captured prior to release into the river network and discharge rates controlled.
- Where discharge is likely to increase, a suitable flood attenuation system will be adopted.
- Where storm water is discharged to the river, pipes will be fitted with a head wall and flap valve, if deemed necessary.

4.2.3.4 First Iteration Environment Management Plan

An FIEMP has been prepared for the Proposed Scheme, see Volume II, Appendix 20.1 of the EIAR. The FIEMP will be finalised by the appointed contractor to form a Second Iteration Environmental Management Plan (SIEMP) which, when approved, will be implemented during the construction phase of the Proposed Scheme, once all the specific details of the construction working methods are known. A SIEMP is typically a standard project document, generally requested by statutory consultees, and is not considered as specific mitigation to protect European sites.

The FIEMP and SIEMP identifies the perceived risks to the sensitive environmental receptors, potential pollution pathways, and the protection measures to be employed which will negate the risks arising from the impacts of construction-related works and activities. The final SIEMP will ensure that full mitigation measures are developed and incorporated into the construction phase of proposed works.

The SIEMP will provide a framework to enable the appointed contractor to comply with all relevant legislation in relation to the control of hazardous substances and pollutants during the construction works and to protect and safeguard the site, the works, and the general environment against pollution and sedimentation. The SIEMP will provide protocol for the event of a pollution incident, ensuring the Contractor will, at all times, work within and comply with all relevant environmental regulations and GPP.

The appointed contractor will protect the work sites and the general environment including the watercourses and waterbodies, against pollution and sedimentation during the construction phase of the Proposed Development. The Contractor will comply with all relevant legislation in relation to the control of hazardous substances and pollutants during the works.

The appointed contractor will, at all times, work within and comply with all relevant environmental regulations and pollution prevention guidelines. The use of oils, chemicals and other potential pollutants onsite requires significant care and attention. All construction works will be carried out by employing accepted good work practices during construction, and environmental management measures.

4.2.3.5 Invasive Species Biosecurity and Management

The appointed contractor will have legal obligations under the IAS Order and the Wildlife Order to ensure that the construction works for the Proposed Scheme do not result in the spread of an invasive species.

With respect to giant hogweed, the IAS Order states that "*any persons who intentionally keeps, breeds, transports (or from Northern Ireland to or from any place within Great Britain, or within Northern Ireland, except where such transportation is of species to facilities in the context of eradication), places on the market, uses or exchanges, permits to reproduce, grows or cultivates, or releases into the environment an invasive alien species commits an offence*". Allowing giant hogweed to grow and reproduce within the site, including as a result of site works, would be an offence under the IAS Order.

With respect to Japanese knotweed and Spanish / hybrid bluebell the Wildlife Order states that "*if any person plants or otherwise causes to grow in the wild, plants which are included in Part II of Schedule 9, he shall be guilty of an offence*". The Wildlife Order also states that persons must take all reasonable steps and must exercise due diligence to avoid committing an offence.

Due to these legal obligations, prevention of spread i.e. biosecurity will be required with measures incorporated into either the SIEMP, or a Method Statement and / or Invasive Species Management Plan (ISMP) for the construction works. Any specific measures implemented are not considered as specific mitigation to protect European sites.

4.3 Identification of Potential Impacts and Effects

The Proposed Scheme has potential to result in several different types of impacts and subsequent effects to habitats and species. As the Proposed Scheme is considered permanent, decommissioning is not expected or discussed further. The potential impacts of the Proposed Scheme comprise:

- Impacts relation to air pollution, primarily during operation but also relevant to the construction-phase.
- Noise, vibration, and visual disturbance during construction works specifically associated with the bridge crossing, including piling and drilling.
- Noise, vibration, and visual disturbance during general construction works.
- Pollution or sedimentation events, especially those which may impact the water environment (e.g. the Newry River or streams) during construction.
- Spread of invasive species during the construction phase.
- Loss of, or damage to, habitats outside of European sites but which support qualifying species, both during construction and operation.

Such impacts may result in injury (including acoustic injury), mortality, or disturbance (e.g. behavioural changes, or other disruptions) to faunal species which may occur within the river or close to the

construction works areas. This includes qualifying interest species of European sites, such as birds and / or marine mammals. Disturbance of invasive species may also result in their spread both within and adjacent to the work area, and potentially further afield (e.g. downstream), which may cause impacts to Annex I Habitats beyond the confines of the work areas.

5. Consultation

Consultation has been held with a variety of stakeholders, including various government departments and agencies, public bodies, and non-governmental organisations (NGO). This has comprised stakeholders both within Northern Ireland and the Republic of Ireland. Full details of the consultation process are provided in Chapter 6 of the EIAR. Consultation responses relevant to this HRAr are summarised in Table 5.1. Full details of all consultation responses received in relation to biodiversity / ecology generally are presented in the Chapter 11 of the EIAR.

Table 5.1: Summary of relevant consultation responses.

Stakeholder / Date Received	Response Summary
DAERA Council for Nature Conservation and the Countryside (CNCC) Date received: 25/09/2023	• CNCC concur with the northern route being the preferred approach on the grounds of least disturbance to inter-tidal and peri-marine areas. • There is a proposal to develop a 'greenway' structure along the western bank of the Newry Canal (Carlingford Lough Greenway) which may conflict / interact with the northern branch of the Proposed Scheme. • All environmental developments associated with NI government expenditure need to observe and enhance the NI Biodiversity Duty. All built interventions into the natural environment (especially on designated sites) have to show positive biodiversity gain by actual mitigation over losses.
DAERA Marine and Fisheries Division Date received: 27/09/2023	• Consideration must be given as to how appropriate pollution mitigation will reduce risks to commercial fisheries and aquaculture interests associated within Carlingford Lough, a Shellfish Water Protected Area. • The Proposed Scheme is hydrologically connected to Carlingford Marine pSPA, Carlingford Lough MCZ and Carlingford Lough ASSI which could potentially be impacted. • The Proposed Scheme has the potential to have an adverse impact on marine mammals (harbour seal, grey seal, and cetaceans) through disturbance and pollution. Impacts to Murlough SAC and The North Channel SAC should be considered in the HRA. • There is potential for pollution impacts on Annex I habitats. • There is potential for pollution impacts on Priority Species recorded within 5 km of the Proposed Scheme: Atlantic salmon, herring *Clupea harengus*, European eel *Anguilla anguilla*, Atlantic cod *Gadus morhua*, whiting *Merlangus merangus*, European plaice *Pleuronectes platessa*, common sole *Solea solea*, mackerel *Scomber scrombrus.* • Consideration must be given to the risks of introduction and spreading of marine invasive-non-native species. • Consideration must be given as to how mitigation will be employed to reduce the risk of pollution. Standing advice for development that may have effect on the water environment (including groundwater and fisheries) must be adhered to. • Litter pollution prevention should be a consideration during all stages of the development's lifecycle.
DAERA Natural Environment Division Date received: 27/09/2023	• There is potential for protected / Priority Species and habitats to be impacted, particularly hedgerows and woodlands. Referred to standing advice for protected / Priority Species and Habitats. • A Biodiversity Checklist and Preliminary Ecological Assessment are recommended along with any further ecological surveys identified as being required. • There is potential for impacts to designated sites and an HRA should be undertaken. • NPWS should be consulted in order to assess the potential for transboundary effects in RoI within their HRA. • There is potential for impacts to Carlingford Lough ASSI. The Proposed Scheme could also have negative air quality impacts on several other designated sites. • Details of the proposed works that are within / adjacent / hydrologically connected to any designated sites should be provided, and any proposed mitigation measures.

Stakeholder / Date Received	Response Summary
	• An outline CEMP should be provided.
Loughs Agency Date received: 03/10/2023	• Prefer that bridge construction would not require any disturbance to the river channel and bed i.e. support platforms being constructed beyond the riverbank and levees. • To prevent pollution of surface water a number of measures are proposed including: – Preparation of a CEMP. – Storm water should not be discharged to nearby watercourses unless first passed through pollution interception and flow attenuation measures. – Silt traps and settlement ponds must be utilised. – Facilities must be in place to buffer / treat foul discharges. Yard surface waters should not directly enter watercourses. – Adequate containment must be provided for all chemical and oil storage. Bunds should be in accordance with the appropriate British Standards. – Cement / concrete must be kept out of all drains and watercourses. • The Proposed Scheme has the potential to impact on fisheries habitat. An HRA is required to ensure site integrity is not compromised. • No in-stream works should be carried out without the consent of the Loughs Agency to ensue fisheries protection during sensitive periods. • To allow for free fish passage and habitat connectivity, there must be sufficient measures to ensure there is no detrimental alteration of river flow and no barriers to fish migration. • Consideration should be given to the inclusion of SUDS within the Proposed Scheme.
Louth County Council Date received: 25/09/2023	Consideration should be given to the Conservation objectives of Carlingford Shore SAC, Carlingford Lough SPA, and Carlingford Lough pNHA.
Newry, Mourne and Down District Council (Biodiversity Officer) Date received: 25/09/2023	• Carlingford Lough SPA and its mobile species must not be disturbed. The hydrological link to Carlingford Lough SPA and ASSI must be considered. • Increased traffic may potentially increase nitrogen deposition which is a defined pressure and threat in the SAC Management Plan Slieve Gullion SAC. • Contractors should adhere to Pollution Prevention Guidelines (PPG5) and all relevant legislation. • Fathom lower woods supports red squirrels, pine martens and bats. Habitat fragmentation, noise pollution, and increased microplastics from rubber tyres has potential to disturb and impact habitats and species. • Provision of tunnels for wildlife crossing over the road should be considered. • The bridge over the Newry River and canal has the potential to impact species behaviour e.g. collision risk of mute swans when landing.

6. Stage 1 Screening

6.1 Identification of Relevant European Sites

European sites are considered relevant where there may be a source-pathway-receptor relationship which may give rise to likely significant effects on the site or its qualifying features. The Proposed Scheme is a project with a clearly defined physical footprint, during both construction and operation, and therefore the European sites identified as relevant are based on factors such as proximity, hydrogeological connectivity, and the potential connection to the site due to mobile qualifying feature species that may be associated with the habitats within the potential ZoI of the Proposed Scheme.

As per the Screening process set out in DMRB LA 115, European sites within 2 km of the Proposed Scheme were searched for (as were SAC up to 30 km away where bats are a qualifying feature). In addition, based on NIEA / NED guidance provided in numerous consultation responses for planning applications, European sites hydrologically connected up to 50 km from the Proposed Scheme are included where harbour seal *Phoca vitulina* is a qualifying feature, and up to c.100 km where grey seal *Halichoerus grypus* and cetaceans are qualifying features. These distances are considered the maximum range at which these species may occur outside their SAC boundaries These distances were also stipulated with the NED consultation response for the Proposed Scheme (Table 5.1). Otherwise, arbitrary distances were not used, and presence of potential ecological connections was identified (e.g. terrestrial, hydrological).

Based on these criteria, there are eleven internationally designated sites within the potential ZoI of the Proposed Scheme. These sites comprise seven SAC, three SPA (one of which includes a proposed marine extension area), and one Ramsar site. None of these sites fall within the footprint of the Proposed Scheme, or within the 200 m distance of the affected road network (relevant for related air quality impacts), as advised in National Highways (2020b) and Institute of Air Quality Management (IAQM) (2020), or within 2 km of the Proposed Scheme (National Highways, 2020c).

These sites are all hydrologically connected to the study area, downstream via the Newry River (and Newry Canal). In addition, qualifying bird species of the SPA and Ramsar site identified may occur in proximity to the Proposed Scheme. Six of the SAC identified are included within the potential ZoI due to the potential for mobile qualifying marine mammals (i.e. harbour seal and harbour porpoise) to occur in proximity to the Proposed Scheme. The closest seal haulouts mapped on DAERA's Marine Map Viewer (DAERA, 2024) are associated with Carlingford Lough, the closest of which is located c. 17 km from the Proposed Scheme.

These sites, their qualifying features, high-level conservation objectives are detailed in Table 6.1 and their locations are displayed in Figure 9.

The potential impacts and effects identified which may occur due to the Proposed Scheme, are further discussed in Section 4.3, and the validity of source-pathway-receptor relationships are examined to determine the likelihood of significant effects occurring to European sites.

No significant effects to any other European site are likely due to a lack of viable source-pathway-receptor relationship.

Table 6.1: European sites potentially relevant to the Proposed Scheme.

Site Name(s), Code(s), Area	Qualifying Interests	Conservation Objectives	Proximity to Proposed Scheme*	ZoI Rationale
Carlingford Shore SAC (IE0002306)	Carlingford Shore SAC is located in the Republic of Ireland and comprises the entire southern shoreline of Carlingford Lough. The SAC is designated for Annex I habitats: • Annual vegetation of drift lines • Perennial vegetation of stony banks.	To maintain the favourable conservation condition of annual vegetation of drift lines in Carlingford Shore SAC. To maintain the favourable conservation condition of perennial vegetation of stony banks in Carlingford Shore SAC.	5 km (hydrologically) south.	Hydrological connection.
Carlingford Lough SPA (UK9020161) (including Carlingford marine extension area)	Located in Northern Ireland, and straddling the border of the Republic of Ireland, Carlingford Lough is an SPA comprising a narrow sea lough surrounded by mountains. There is also a proposed marine extension of the SPA to include the marine area adjoining the existing SPA and a further area off the southeast County Down coast. The SPA is designated for: • Internationally breeding populations of Sandwich tern. • Nationally important breeding populations of common tern. • Internationally important populations of overwintering light-bellied brent goose.	To maintain each feature in favourable condition.	12.9 km (as the crow flies) and 13.4 km (hydrologically) southeast.	Hydrological connection. Potential for mobile species to occur close to Proposed Scheme.
Carlingford Lough Ramsar (UK12004)	This Ramsar site boundary coincides entirely with Carlingford Lough SPA and is designated for: • Internationally important numbers of overwintering light-bellied brent geese. • Internationally important populations of sandwich terns. • Nationally important breeding populations of common terns. • Nationally important numbers of oystercatcher *Haematopus ostralegus*, ringed plover *Charadrius hiaticula*, grey plover *Pluvialis squatarola*, dunlin *Calidris alpin*a, and redshank *Tringa totanus*.	NA	12.9 km (as the crow flies) and 13.4 km (hydrologically) southeast.	Hydrological connection. Potential for mobile species to occur close to Proposed Scheme.
Carlingford Lough SPA (IE0004078)	This SPA forms an extended cross-border site with Carlingford Lough SPA in Northern Ireland and is designated for: • Internationally important numbers of overwintering light-bellied brent geese. • Wetlands.	To maintain the favourable conservation condition of light-bellied brent goose in Carlingford Lough SPA. To maintain the favourable conservation condition of the wetland habitat in Carlingford Lough SPA as a resource for the	15.3 km (as the crow flies) and 15.5 (hydrologically) km southeast.	Hydrological connection. Potential for mobile species to occur close to Proposed Scheme.

Site Name(s), Code(s), Area	Qualifying Interests	Conservation Objectives	Proximity to Proposed Scheme*	ZoI Rationale
		regularly occurring migratory waterbirds that utilise it.		
Dundalk Bay SPA (IE004026)	Dundalk Bay SPA is located in the Republic of Ireland and is designated for supporting the following species of wintering wetland and waterbird species: • Great crested grebe *Podiceps cristatus*. • Greylag goose *Anser anser*. • Light-bellied brent goose. • Shelduck *Tadorna tadorna*. • Teal *Anas cracca*. • Mallard *Anas platyrhynchos*. • Pintail *Anas acuta*. • Common scoter *Melanitta nigra*. • Red-breasted merganser *Mergus serrator*. • Oystercatcher. • Ringed plover. • Golden plover *Pluvialis apricaria*. • Grey plover. • Lapwing *Vanellus vanellus.* • Knot *Calidris canutus*. • Dunlin. • Black-tailed godwit *Limosa limosa*. • Bar-tailed godwit *Limosa lapponi*ca. • Curlew *Numenius arqu*ata. • Redshank. • Black-headed gull *Chroicocephalus ridibundus*. • Common gull *Larus canus*. • Herring gull *Larus argentatus*. • Wetlands and waterbirds.	To maintain the favourable conservation condition of each feature.	15.5 km (as the crow flies) south.	Hydrological connection. Potential for mobile species to occur close to Proposed Scheme.
Murlough SAC (UK0016612)	Murlough SAC is located within Northern Ireland and is designated for: • Annex I habitats: – Atlantic decalcified fixed dunes (Calluno-Ulicetea). – Atlantic salt meadows (GlaucoPuccinellietalia maritimae).	To maintain (or restore where appropriate) each feature to favourable condition.	41.4 km (hydrologically) east.	Hydrological connection. Potential for mobile species to occur

Site Name(s), Code(s), Area	Qualifying Interests	Conservation Objectives	Proximity to Proposed Scheme*	ZoI Rationale
	– Dunes with *Salix repens* ssp. *argentea* (Salicion arenariae). – Embryonic shifting dunes. – Fixed dunes with herbaceous vegetation (grey dunes). – Mudflats and sandflats not covered by seawater at low tide. – Sandbanks which are slightly covered by sea water all the time. – Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes). • Marsh fritillary. • Harbour seal *Phoca vitulina*.			close to Proposed Scheme.
Rockabill to Dalkey SAC (IE003000)	Rockabill to Dalkey SAC is located on the east coast of the Republic of Ireland and is designated for: • Annex I habitat reefs. • Harbour porpoise *Phocoena phocoena*.	To maintain the favourable conservation condition of reefs in Rockabill to Dalkey SAC. To maintain the favourable conservation condition of harbour porpoise in Rockabill to Dalkey SAC.	67.7 km (hydrologically) south.	Hydrological connection. Potential for mobile marine mammals to occur close to Proposed Scheme.
North Channel SAC (UK0030399)	The North Channel SAC is located along the eastern coast of Northern Ireland and has been identified as an important winter area for harbour porpoise. The SAC is designated for harbour porpoise.	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining favourable conservation status for harbour porpoise in UK waters.	70.1 km (hydrologically) east.	Hydrological connection. Potential for mobile species to occur close to Proposed Scheme.
Lambay Island SAC (IE000204)	This SAC is located around the island of Lambay Island, northeast of Dublin and incorporates the entire island and its immediate surrounding waters. It is designated for its: • Annex I habitat reefs. • Vegetated sea cliffs of the Atlantic and Baltic coasts • Harbour porpoise Phocoena phocoena. • Grey Seal Halichoerus grypus • Harbour seal Phoca vitulina	To maintain or restore the favourable conservation status of habitats and species of community interest.	79 km (hydrologically) south.	Hydrological connection. Potential for mobile marine mammals to occur close to Proposed Scheme.
North Anglesey Marine SAC (UK0030398)	Located in Wales, the North Anglesey Marine SAC extends from the northern coast of the Isle of Anglesey (Wales) into the Irish Sea and has been identified as an area of importance for harbour porpoise, especially in the summer. The SAC is designated for harbour porpoise.	To ensure that the integrity of the site is maintained and that it makes the best possible contribution to maintaining favourable	87.5 km (hydrologically) southeast.	Hydrological connection. Potential for mobile species to occur

Site Name(s), Code(s), Area	Qualifying Interests	Conservation Objectives	Proximity to Proposed Scheme*	ZoI Rationale
		conservation status for harbour porpoise in UK waters.		close to Proposed Scheme.
Codling Fault Zone SAC (IE003015)	Codling Fault Zone is a Special Area of Conservation located around 24 km east of Howth Head, Co. Dublin within the Irish Sea. The length of the site is approximately 7 km and 5 km wide at the greatest extent. The water depth at the site ranges from about 80 to 100 m. The site is a Special Area of Conservation (SAC) selected for: • Annex I Submarine structures made by leaking gases • Harbour porpoise *Phocoena phocoena*.	To maintain or restore the favourable conservation status of habitats and species of community interest.	101 km (hydrologically) southeast.	Hydrological connection. Potential for mobile marine mammals to occur close to Proposed Scheme.

*Sources: NIEA (2024 To maintain (or restore where appropriate), NPWS (2013a-c), NPWS (2011), Enlander (2015), DAERA (2015), DAERA (2017a, b), McKeown (2015), JNCC (2019a, b). *Closest point to Proposed Scheme alignment.*

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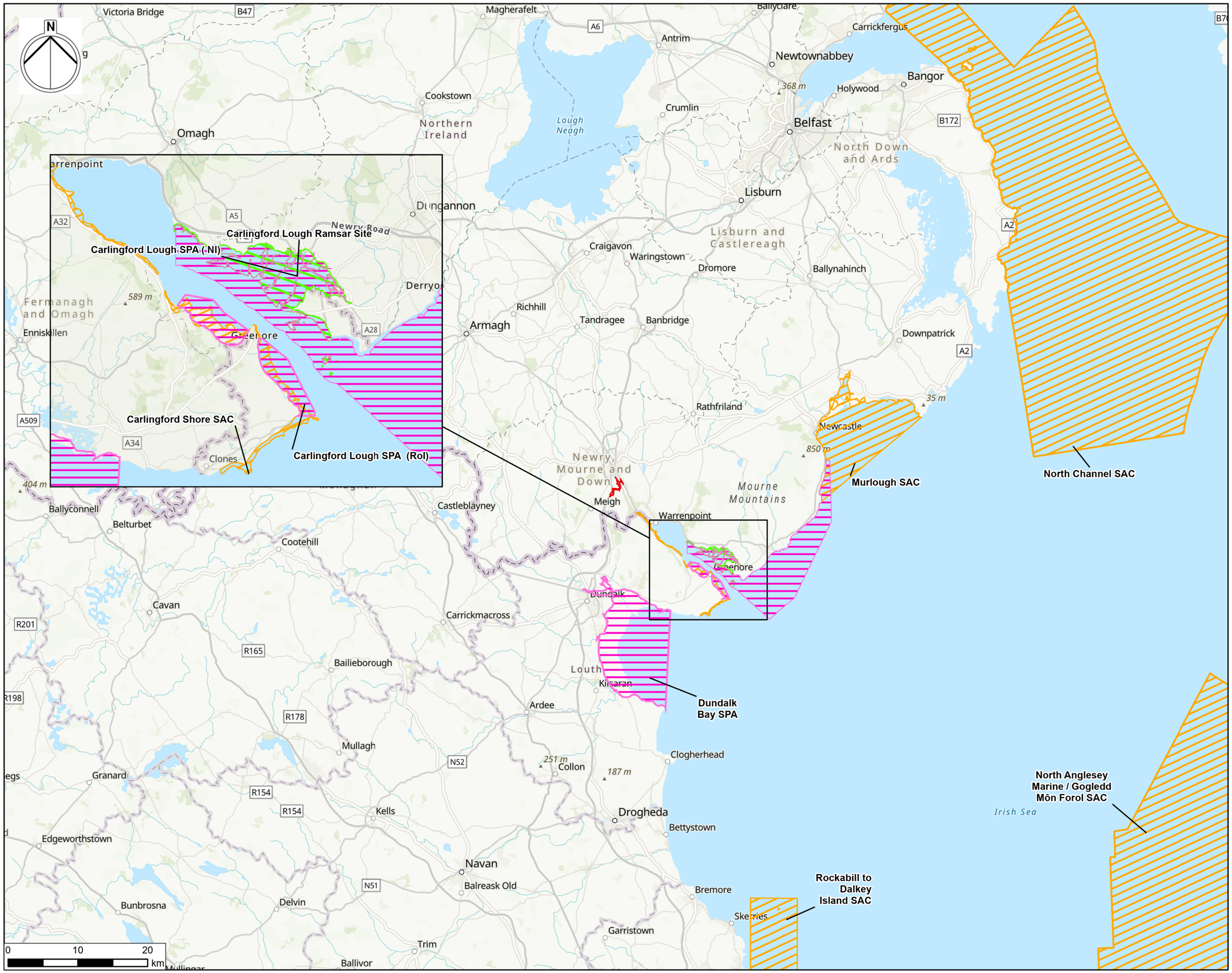

Project Title

Newry Southern Relief Road

Project Title

Department for Infrastructure
An Roinn Bonneagair
Department for Infrastructure
www.infrastructure-ni.gov.uk
Co-funded by the European Union
BELFAST REGION CITY DEAL

KEY

- Proposed Vesting Boundary
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- RAMSAR Sites

First Issue				
Revision Details				

Suitability

SUITABLE FOR INFORMATION

Drawing Title

EUROPEAN SITES WITHIN THE ZOI OF THE PROPOSED SCHEME

Designed	Drawn	Checked	Approved	Date
AR	AR	JB	JH	20/11/2024

Internal Project No. 60472927	Suitability
Scale @ 1:500,000	Location/Zone/Mileage Scheme Wide Generic Information

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Drawing Number	Rev
Figure 9	P01

6.2 Overview of European Sites

6.2.1 Carlingford Lough SPA and Carlingford Shore SAC

Carlingford Lough is a glacial fjord or sea inlet that forms part of the border between Northern Ireland and the Republic of Ireland. On its northern shore is County Down, the Mourne Mountains, and the town of Warrenpoint; on its southern shore is County Louth, the Cooley Mountains, and the village of Carlingford.

In Northern Ireland, Carlingford Lough SPA lies between Killowen Point and Soldiers Point on the northern shores of the lough and the landward boundary is entirely coincident with that of the Carlingford Lough Ramsar site. The terrestrial section of the SPA includes all lands and intertidal areas and the offshore islands of Green Island and Blockhouse and their associated islets. The marine section (including Carlingford marine extension area) of the site includes areas of open water within the lough itself and in the area of the lough mouth seawards to the limits of territorial waters in addition to coastal waters northwards to the Bloody Bridge area on the Mournes Coast. The landward boundary for this area is the low water mark. In the Republic of Ireland, Carlingford Lough SPA comprises parts of the south side of Carlingford Lough in Co. Louth, between Carlingford Harbour and Ballagan Point.

Carlingford Lough SPA hosts extensive wetland habitat and is of international importance for its light-bellied brent goose population. The SPA in Northern Ireland is also of international importance for breeding Sandwich tern, and national importance for breeding common tern. The SPA (and Ramsar) is also notable for hosting a range of other waterfowl species. The Proposed Scheme is located approximately 13-15 km from the SPA / Ramsar boundary.

Carlingford Shore SAC, also in the Republic of Ireland, comprises the entire southern shoreline of Carlingford Lough and continues round the tip of the Cooley Peninsula to just west of Cooley Point. The SAC is flanked by Carlingford Mountain to the southwest. The principal conservation interests of the SAC are the Annex I habitats that lie in the perennial vegetation of shingle banks and the annual vegetation of drift lines, however, the SAC also has intertidal sand and mudflats, patches of saltmarsh, some areas of dry grassland, and an area of mixed deciduous woodland. The Proposed Scheme is located approximately 5 km from the SAC boundary.

6.2.2 Dundalk Bay SPA

Dundalk Bay, located in the Republic of Ireland, is a large open shallow sea bay with extensive saltmarshes and intertidal sand / mudflats, extending c. 16 km from Castletown River on the Cooley Peninsula, in the north, to Annagassan / Salterstown in the south. Dundalk Bay SPA is one of the most important wintering waterfowl sites in Ireland, regularly supporting more than 20,000 waterbirds. Four species occur in numbers of international importance and a further 19 species in numbers of national importance. The Proposed Scheme is located >15 km from the SPA boundary (as the crow flies).

6.2.3 Murlough SAC

Murlough SAC adjoins Dundrum Bay and includes the shallow waters of the Bay itself of importance as the largest area of shallow sub-littoral sandbanks in Northern Ireland. The intertidal sands and muds are also extensive, the beach area at Ballykinler is important as a haul-out for common seal. The Proposed Scheme is located >40 km from the SAC boundary (hydrologically).

6.2.4 Rockabill to Dalkey SAC

Rockabill to Dalkey SAC, located in the Republic of Ireland, includes a range of inshore and coastal waters in the western Irish Sea. These include sandy and muddy seabed, reefs, sandbanks, and islands. The SAC extends southwards, in a strip approximately 7 km wide and 40 km in length, from Rockabill, running adjacent to Howth Head, and crosses Dublin Bay to Frazer Bank in south Co. Dublin. The site encompasses Dalkey, Muglins and Rockabill islands. The area selected for designation represents a key habitat for the Annex II species harbour porpoise within the Irish Sea. Population survey data show that porpoise occurrence within the site boundary meets suitable reference values for other designated sites in Ireland. The species occurs year-round within the site

and comparatively high group sizes have been recorded. The Proposed Scheme is located >67 km from the SAC boundary (hydrologically).

6.2.5 North Channel SAC

The North Channel SAC is located along the eastern coast of Northern Ireland and has been identified as an important winter area for harbour porpoise. It is estimated that it supports around 1.2% of the UK Celtic and Irish Seas Management Unit population. Although small compared to most of the harbour porpoise SAC, this site, with an area of 1,604 km^2, supports areas where large groups of up to 100 harbour porpoises have been sighted and are considered to be the best porpoise watching locations in Northern Ireland. Habitats within the site consist mainly of coarse or sandy sediments, with patches of rock and mud. Water depths reach a maximum of 150 m along the eastern boundary, but much of the site lies between 10 m and 40 m. The Proposed Scheme is located >70 km from the SAC boundary (hydrologically).

6.2.6 Lambay Island SAC

This SAC is located around the island of Lambay Island, northeast of Dublin and incorporates the entire island and its immediate surrounding waters. Lambay Island is a large (250 ha) inhabited island lying 4 km off Portrane on the north Co. Dublin coast. It is privately owned and is accessible by boat from Rogerstown Quay. The island rises to 127 m and is surrounded by steep cliffs on the north, east and south slopes. These cliffs contain good diversity in height, slope and aspect. Lambay Island is flanked by extensive areas of reef habitat which support a range of algae and marine invertebrates. Lambay supports the principal breeding colony of grey seal on the east coast of Ireland, numbering 196-252 seals, across all ages. It also contains regionally significant numbers of common seal, of which up to 47 individuals have been counted at the site. Grey seals and common seals occur year-round and the island's intertidal shorelines, coves and caves are used by resting and moulting seals.

6.2.7 North Anglesey Marine SAC

Stretching from the northern coast of the Isle of Anglesey into the Irish Sea, the North Anglesey Marine SAC has been identified as an area of importance for harbour porpoise in the summer months. The site is estimated to support 2.4% of the UK Celtic and Irish Seas Management Unit population. Situated off the northwest corner of Wales, this site extends from the Anglesey coast into the offshore waters between Ireland and the Isle of Man. Covering an area of 3,249 km^2, this site spans water depths which range from the mean low water level down to 100 m along the western boundary, though much of the site is 50 m or shallower. The site covers a mix of habitats, including areas of rock, coarse and sandy sediments, and mud. The Proposed Scheme is located >85 km from the SAC boundary (hydrologically).

6.2.8 Codling Fault Zone SAC

Structures made by leaking gases in the marine environment form bubbling reefs. These support a range of rare, specialised organisms adapted for life in this area and different from the surrounding sea. In turn they also support associated predator species such as harbour porpoise.

6.3 Potential Impacts and Likely Significant Effects

The Proposed Scheme is not connected with, or necessary for, the conservation management of any European sites. The Proposed Scheme is also not located within 2 km of any European site, nor within 30 km of any SAC where bats are a qualifying feature.

However, the Proposed Scheme is hydrologically linked to a number of European sites, the closest of which is Carlingford Shore SAC (c. 5 km downstream). Carlingford Lough SPA (including the marine extension area) in both Northern Ireland and the Republic of Ireland are both >13 km downstream.

The Newry River and the waterbodies offering hydrological connection provide habitat for marine mammals and waders and waterfowl. These species may all occur in proximity to the study area outside the boundaries of the European site(s) for which they are a qualifying feature.

The potential impacts identified in Section 4.3 will be discussed in further detail within the following Sections, with reference to the likelihood of significant effects arising to the European sites and their qualifying interests as identified in Section 6.1.

However, this hydrological connection as a viable impact transfer to other European sites located further afield, through the open sea is unlikely. This is especially so when the potential impacts it would be conveying would be very localised to the Newry River and Canal, as there are no works required within the water column itself after the construction of a cofferdam to allow construction of the proposed bridge to proceed.

6.3.1 Air Quality

Both construction and operation of the Proposed Scheme will result in increases of air pollution and changes to air quality. The potential ZoI for European sites in relation to air quality is 200 m, based on guidance from IAQM and National Highways (2020b) which recommends this distance: "*a quantitative air quality assessment is required if European sites are within 200 m of affected roads*" (IAQM, 2020). There are no European sites within 200 m of the Proposed Scheme in relation to air quality impacts, therefore no direct impacts or effects as a result of air pollution is likely to occur during either construction or operation.

The Newry River is tidal within the study area, therefore where any deposition to intertidal habitat in these upper reaches may occur, it would be washed away with the tide. Whilst this may contribute to changes in water quality, when considering the context of the wider lough and marine environment, this is not considered to be pose any significant effects.

No significant effects to any European sites related to air pollution are considered likely.

6.3.2 Noise, Vibration, and Visual Disturbance

Noise, vibration, and visual sources could potentially cause temporary disturbance, injury, or potentially mortality to mobile faunal qualifying interest species, should they be present in proximity to the works area (i.e. outside the European sites). This potentially comprises marine mammals and birds. These are discussed in the following Sections.

6.3.2.1 Marine Mammals

Harbour seal, and both harbour seal and grey seal are qualifying interests of Murlough SAC and Lambay Island SAC respectively. Harbour porpoises are qualifying interest species of Rockabill to Dalkey SAC, North Channel SAC, Lambay Island SAC, North Anglesey Marine SAC and Codling Fault Zone SAC. There is some potential for these species to be present within the Newry River in proximity to the construction of the proposed bridge, indeed harbour seals were noted c. 0.6 km downstream of the Proposed Scheme during surveys.

Construction of one pier (two columns) is required within the Newry River channel. Temporary works will need be carried out to establish an access route for construction plant from Fathom Line, over the Newry Ship Canal and across to the canal embankment at Middlebank to facilitate this, and there the river will require partial infilling. There are no known seal haulouts within the ZoI which would be disturbed as a result of construction (e.g. noise).

During the construction of the bridge crossing, marine mammals which may be present within the river may suffer impacts and effects, such as injury or displacement related to noise, vibration, and visual disturbance from human presence, particularly during instream piling works. Harbour porpoises are sensitive to noise pollution and may be displaced at distances up to 12 km from piling (Benhemma-Le Gall *et al.*, 2021). Based on the potential for marine mammals associated with European sites to occur in proximity to the proposed bridge construction area, there is potential for impacts to occur and significant effects cannot be ruled out.

No impacts to the Newry River as a result of the operational phase of the Proposed Scheme are predicted to occur, therefore, no impacts to seals or porpoise are predicted. Traffic noise associated with the bridge crossing is unlikely to elicit behavioural changes or disturbance impacts to marine mammals that may occur in the Newry River. No significant effects to marine mammals during the operation phase are considered likely to occur.

6.3.2.2 Birds

Due to the distance of the Proposed Scheme from any SPA, the following considered potential impacts and effects to birds which may occur outside of their European site boundary.

Construction of the bridge is a possible temporary source of disturbance to wintering wetland birds through vibration, noise, artificial lighting, and human presence. However, it is worth noting that birds in this area may be habituated to a degree of disturbance, as the Middlebank Greenway and the eastern bank of the Newry River are used by walkers (including with dogs), whilst the Warrenpoint Road is present parallel to the river mudflats.

Different species of bird have different tolerances to disturbance, e.g. redshank and shelduck are highly sensitive, and dunlin is typically tolerant (Cutts *et al.*, 2013). Shelduck are potentially sensitive to disturbance up to 500 m of the point of disturbance (Cutts *et al.*, 2013), which is one of the largest disturbance distances for wetland birds. Therefore, 500 m up and downstream of this area is predicted as the maximum likely disturbance area, however other species are sensitive at lower distances, and this is therefore precautionary. Predicted noise levels during bridge construction area will likely comprise “regular” construction noise, typically considered 50-70 dB (Cutts et al., 2009).

Disturbance may cause birds to change behaviours (e.g. heads up, alarm calls, flight response), distracting them from roosting or foraging. Typically, single sudden sounds are more likely to cause behavioural changes than continuous construction noise. Noise associated with piling exceeding 70 dB can elicit behavioural changes in waterbirds including movement within or outwith the area, which may constitute a Moderate-High effect (Cutts *et al.*, 2009). However, piling is not likely to be continuously required, therefore noise impacts to birds are likely to be those associated with regular construction noise, generally eliciting low effects. In addition, the proposed bridge and Middlebank contractor’s compound are located c. 500 m from where the Newry River channel opens up to larger areas of mudflats (indeed where bird activity during survey was generally highest), therefore there is ample suitable foraging and roosting habitat in the wider area for birds which may be displaced during construction.

No construction or operational impacts are predicted for breeding tern (associated with Carlingford Lough Ramsar and Carlingford Marine SPA) which breed at known locations at Green Island and Greencastle at the mouth of Carlingford Lough, approximately 20 km away (Enlander, 2015). Terns which may forage close to the Proposed Scheme may avoid the area during construction due to noise disturbance, however, this is unlikely to cause any effects to their breeding success due to an abundance of foraging habitat in the wider lough.

The potential for impacts related noise, visual, and vibration disturbance is considered unlikely to pose a significant effect to birds for either construction or operation.

6.3.3 Pollution and Sedimentation

Pollution or sedimentation events, especially those which can impact the water environment (e.g. the Newry River and / or Canal, or streams) can cause habitat damage, can be conveyed to other habitats via hydrological connections, and can cause injury or mortality faunal species that depend on such habitats. The magnitude of such effects is dependent on the scale of pollution or sedimentation impacts.

During construction there is an increased risk of pollution events due to construction traffic and plant movement, such as accidental spillages, and other sediments, and runoff associated with construction activities. This may be particularly significant during the construction of the proposed bridge, which will take place within a temporary working area within the Newry River / Canal. Negative effects to water quality in the Newry River and Canal as a result of construction-based pollution or sedimentation may potentially occur during the construction of the proposed bridge crossing. Such pollutants may ultimately impact European sites associated with Carlingford Lough (c. 5-15 km downstream), potentially causing negative effects to habitats and species that use them. In addition, pollution effects associated with the Newry River and / or Canal may impact qualifying interest species which may occur in the vicinity of the construction, outwith the boundaries of the European sites.

However, the SIEMP, as described in Section 4.2.3.4, when implemented during construction works, will ensure that pollution or sedimentation events that may impact watercourses, or any other habitats, will be unlikely to occur. Therefore, impacts to habitats that qualifying interest faunal species may use are unlikely to occur, and no significant effects are likely. There is similarly no likelihood of impacts to any Annex I habitats associated with Carlingford Shore SAC hydrologically connected downstream to the study area, as pollution of sedimentation impacts are unlikely to occur, and in any case, there is no viable pathway for impacts during construction.

Negative impacts to water quality as a result of surface water discharge (with pollutants or contaminants, such as de-icer / screen wash) may potentially results in effects to the Newry River where the Proposed Scheme crosses the Newry River at the proposed bridge crossing. Such pollutants may ultimately impact European sites (e.g. affecting habitats and species that depend on them) associated with Carlingford Lough (5-15 km downstream). However, when considering the embedded mitigation associated with the road drainage design, surface water runoff will enter detention basins or swales for treatment prior to discharge into nearby watercourses.

No significant effects to any European sites related to pollution and sedimentation are considered likely.

6.3.4 Loss of and Damage to Habitats

There is no likelihood of loss of any Annex I habitat, either terrestrial, freshwater, or marine, within the European sites identified. Although hydrologically connected, Carlingford Shore SAC and Murlough SAC are remote from the Proposed Scheme at 5 and >40 km respectively, and there is no viable impact transfer pathway.

The presence of several invasive species within the wider study area may result in the spread of invasive species offsite. There are several stands of giant hogweed and Japanese knotweed in proximity to Greenbank Industrial Estate, and plant movement / general construction works could result in movement of plants / seeds / propagules to other areas within the study area. This could be deleterious if movement to the working areas at the Newry River and / or Canal, as the watercourses could act as a vector for spread to terrestrial habitats within European sites downstream associated with Carlingford Lough (i.e. Carlingford Shore SAC, and Carlingford Lough SPA and Ramsar), for example Annex I habitat in the SAC, and habitats such as salt marshes within the SPA. Such potential impacts are only likely to occur during the construction phase, and are not considered likely to occur during operation.

However, the appointed contractor will have legal obligations regarding the spread of invasive species, notwithstanding that appropriate biosecurity measures and management of invasive species will be carried out during construction. Due to these legal obligations, prevention of spread will be required with measures incorporated into either the SIEMP, or a Method Statement and / or ISMP for the construction works. Note that this is not considered specific mitigation to protect European sites.

Once implemented, these standard measures in relation to invasive species will ensure that there is no spread offsite, including in proximity to the Newry River and Canal. Spread of invasive species is therefore not considered likely to occur, and therefore is ruled out a potential impact of the Proposed Scheme and screened out from this assessment. No significant effects relating to damage to habitats caused by invasive species are likely.

6.4 Stage 1 Screening Conclusion

The need for a Stage 2 Appropriate Assessment can only be excluded on the basis of objective scientific information, and in light of the conservation objectives of relevant European sites, that the Proposed Scheme, either individually or in-combination with other plans or projects, will not have likely significant effects on any European site.

Following the assessment of the potential impacts of the Proposed Scheme on European sites identified in Section 4.1, significant effects cannot be ruled out for Murlough SAC, Rockabill to Dalkey SAC, North Channel SAC, Lambay Island SAC, North Anglesey Marine SAC and Codling Fault Zone SAC in relation to marine mammals that may be present outside of the SAC and in proximity to the proposed bridge construction. These European sites will be discussed further in Section 7, where specific mitigation will be considered and assessed.

All other European sites have been screened out from further assessment based on a finding of no likely significant effects. The Stage 1 Screening has been summarised in Table 6.2.

Table 6.2: Summary of potential impacts and effects to European sites.

European Site(s) and Qualifying Interest	Potential Impacts and Effects	Stage 1 Screening Outcome
Carlingford Shore SAC (IE0002306) • Annual vegetation of drift lines • Perennial vegetation of stony banks	**Construction** • No significant impacts or effects predicted to Annex I habitats. **Operation** • No significant impacts or effects predicted to Annex I habitats.	No likely significant effects. Screened out from further assessment.
Carlingford Lough SPA (UK9020161) (including Carlingford marine extension area) / Ramsar (UK12004) • Breeding common and Sandwich tern • Wintering light-bellied brent geese	**Construction** • Terns may be disturbed from foraging due to construction activities and avoid the area in the river / canal during the summer, however will not be significantly impacted. • Potential for disturbance of foraging brent geese in Newry River mudflats. Note that geese have not been recorded during wintering bird surveys and are unlikely to rely on study area for foraging and will not be significantly impacted. **Operation** • No significant impacts or effects predicted for breeding terns. • Potential for disturbance of foraging brent geese in Newry River mudflats, however geese have not been recorded previously and are unlikely to rely on study area for foraging and will not be significantly impacted.	No likely significant effects. Screened out from further assessment.
Dundalk Bay SPA (IE004026) • Various wintering wetland and waterbirds • Wetlands	**Construction** • Potential for disturbance of foraging birds in Newry River mudflats. Species sensitive to disturbance have been recorded, but are considered unlikely to form part of the Dundalk Bay SPA populations due to extensive distance from the SPA to the study area, and will not be significantly impacted. • No impacts or effects predicted to wetland habitats. **Operation** • Potential for disturbance of foraging birds in Newry River mudflats. Species sensitive to disturbance have been recorded but are considered unlikely to form part of the Dundalk Bay SPA populations due to extensive distance from the SPA to the study area, and will not be significantly impacted. • No significant impacts or effects predicted to wetland habitats.	No likely significant effects. Screened out from further assessment.
Murlough SAC (UK0016612) • Various coastal Annex I habitats • Marsh fritillary • Harbour seal	**Construction** • No impacts or effects predicted to Annex I habitats or marsh fritillary butterflies. • Potential for disturbance, displacement, or injury to harbour seal. **Operation** • No significant impacts or effects predicted to Annex I habitats, butterflies, or seals.	**Screened in** for further assessment due to likelihood for significant effects to harbour seal from construction phase impacts.
Rockabill to Dalkey SAC (IE003000) • Reefs • Harbour porpoise	**Construction** • No impacts or effects predicted to Annex I habitat. • Potential for disturbance, displacement, or injury to harbour porpoise. **Operation** • No significant impacts or effects predicted to Annex I habitat or harbour porpoise.	**Screened in** for further assessment due to likelihood for significant effects to harbour porpoise from construction phase impacts.

European Site(s) and Qualifying Interest	Potential Impacts and Effects	Stage 1 Screening Outcome
North Channel SAC (UK0030399) • Harbour porpoise	**Construction** • Potential for disturbance, displacement, or injury to harbour porpoise. **Operation** • No significant impacts or effects predicted to harbour porpoise.	**Screened in** for further assessment due to likelihood for significant effects to harbour porpoise from construction phase impacts.
Lambay Island SAC (IE000204) • Harbour porpoise • Harbour seal • Grey seal	**Construction** • Potential for disturbance, displacement, or injury to harbour porpoise. **Operation** • No significant impacts or effects predicted to harbour porpoise, harbour seal or grey seal.	**Screened in** for further assessment due to likelihood for significant effects to harbour porpoise, harbour seal, and grey seal from construction phase impacts.
North Anglesey Marine SAC (UK0030398) • Harbour porpoise	**Construction** • Potential for disturbance, displacement, or injury to harbour porpoise. **Operation** • No significant impacts or effects predicted to harbour porpoise.	**Screened in** for further assessment due to likelihood for significant effects to harbour porpoise from construction phase impacts.
Codling Fault Zone SAC (IE003015) • Harbour porpoise	**Construction** • Potential for disturbance, displacement, or injury to harbour porpoise. **Operation** • No significant impacts or effects predicted to harbour porpoise.	**Screened in** for further assessment due to likelihood for significant effects to harbour porpoise from construction phase impacts.

7. Stage 2 Statement to Inform Appropriate Assessment

7.1 Overview of Likely Significant Effects

Appropriate Assessment considers the impact of a project (either alone or in-combination with other projects or plans) on the integrity of a European site with respect to the conservation objectives of the site and to its structure and function.

The “integrity of a site” relates to the site’s conservation objectives, its key natural features, ecological structure and function. It also concerns the main ecological processes and factors that sustain the long-term presence of the species and habitats in a European site (EC, 2022). The integrity of the site can be defined as the coherent sum of the site’s ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats, and / or populations of species for which the site is designated (EC, 2018).

The Stage 1 Screening, presented in Section 5, concluded that Appropriate Assessment of the implications of the Proposed Scheme on the following European sites is required in view of their conservation objectives, and in-combination with any other relevant plans or projects:

- Murlough SAC – in relation to harbour seal that may be present outside of the SAC and in proximity to the proposed bridge construction.
- Rockabill to Dalkey SAC – in relation to harbour porpoise that may be present outside of the SAC and in proximity to the proposed bridge construction.
- North Channel SAC – in relation to harbour porpoise that may be present outside of the SAC and in proximity to the proposed bridge construction.
- Lambay Island SAC – in relation to harbour porpoise, harbour seal and grey seal that may be present outside of the SAC and in proximity to the proposed bridge construction.
- North Anglesey Marine SAC – in relation to harbour porpoise that may be present outside of the SAC and in proximity to the proposed bridge construction.
- Codling Fault Zone SAC – in relation to harbour porpoise that may be present outside of the SAC and in proximity to the proposed bridge construction.

7.2 Impacts and Effects to Marine Mammals

Marine mammals (seals and harbour porpoise) associated with European sites (Murlough SAC, Rockabill to Dalkey SAC, North Channel SAC, Lambay Island SAC, North Anglesey Marine SAC and Codling Fault Zone SAC) may occur in proximity to the proposed bridge crossing and suffer impacts from construction works, particularly during the temporary works which will be carried out to establish an access route for construction plant from Fathom Line to the canal embankment at Middlebank and piling works. Marine mammals are at most risk during high tide, and for the duration of the construction works in this area, estimated to occur for 18 months.

7.3 Specific Mitigation Measures

As part of the essential mitigation for the Proposed Scheme (i.e. not specific mitigation related to this HRAr), an Ecological Clerk of Works (ECoW) will be appointed for the construction phase of the Proposed Scheme. The role of the ECoW will be to oversee and advise both contractors and site operators during times of major work within particularly sensitive habitats or particularly sensitive ecological windows.

The ECoW will ensure that all site personnel are made aware of the presence of marine mammals onsite and how construction can be adapted to minimise impacts. This may be included as part of toolbox talks at site induction. In relation to the safeguarding of marine mammals during the construction of the proposed bridge.

In addition, an appropriately experienced marine mammal observer (MMO) will be commissioned during works within the river, with timings for presence to be advised based on types of construction works required and tidal windows. MMO is a specific certification, therefore this may not necessarily be an appropriate role for the ECoW. The MMO will be required to be present where there are works

within the water column. This will include the piling and creation of the cofferdam to facilitate the bridge construction, and all works related to the decommissioning of the temporary works area, when the river and canal are reinstated.

During these works, and particularly where piling is required, soft-start procedures will be used to ensure incremental increase in pile power over a set time period until full operational power is achieved to minimise impacts to marine mammals that may be in the water column.

No other specific mitigation for marine mammals is proposed.

7.4 In-combination Effects

In-combination effects can result from individually significant but collectively significant actions taking place over a period of time or concentrated in a location (CIEEM, 2018). To inform the potential for in-combination effects, a search of local plans and planning applications was carried out for the area surrounding the Proposed Scheme.

7.4.1 Local Development Plans

Newry Mourne and Down District Council has not yet published its LDP. Once published, a Local Policies Plan will be prepared which will be consistent with the LDP Plan Strategy and will contain the Council's detailed land use policies and proposals regarding the future development of the district.

The existing development plans that apply to the lands within the study area is the Banbridge / Newry and Mourne Area Plan (BNMAP) 2015. No specific proposals were identified within the BNMAP that relate to or are specifically within the study area. There are no areas of land zoning within the study area of significance to ecology, though there are several areas of land zoned for housing around the Drumalane Road / Fathom Line junction. Construction of new residential areas has the potential to give rise to cumulative impacts to biodiversity.

7.4.2 Narrow Water Bridge

The Narrow Water Bridge (NBW) is a new bridge connecting the A2 near Warrenpoint, Co. Down to the R173 near Omeath, Co. Louth at Narrow Water. As the NWB will extend across the Newry River, it has been included within this HRAr for in-combination effects.

The NWB project received permission in October 2012 from Louth County Council (Republic of Ireland) and the (then) Department for the Environment (Northern Ireland). An Environmental Impact Assessment was undertaken for NWB in 2012, and whilst this information is dated, the development as assessed has not changed. The development was suspended by Louth County Council in July 2013 due to escalating costs. However, in February 2024, the Irish Government announced funding for a number of cross-border projects, including the NWB. Construction works have commenced as of May 2024.

A Natura Impact Statement / HRA was prepared in 2012 by ROD, with a recent technical appraisal published in November 2023 (ROD, 2023). This concluded that "*there will be no adverse effects on the Carlingford Shore SAC, the Carlingford Lough SPA (ROI) or the Carlingford Lough SPA (NI), or any other European site as a result of the proposed development*".

On this basis, no in-combination effects with the NWB are predicted.

7.4.3 Victoria Lock Greenway

The Victoria Lock Greenway comprises the construction of an additional 1.51 km of greenway from County Bridge to Victoria Lock to complete the Northern Ireland section of the Carlingford Lough Greenway. The proposed greenway generally runs along the coast of Carlingford Lough and consists of a 4 m wide timber boardwalk (1,025 m in length), a 3 m wide unbound gravel greenway (375 m), and a 3 m wide bound asphalt greenway (110 m).

The greenway project received permission in June 2023 and is currently under construction, and is estimated to be completed in late 2024. The greenway is beyond the ZoI for all ecological factors, however, given its proximity to the Newry River and Canal, consideration has been given to potential

impacts and effects on the water environment and aquatic and marine ecology and is therefore herein assessed for cumulative effects.

An HRAr was prepared for the greenway in April 2023 and comprised a Stage 1 Screening and Stage 2 Appropriate Assessment (RPS, 2023). The Stage 1 Screening identified likelihood for significant effects to seals associated with Murlough SAC as a result of underwater noise and disturbance. Based on proposed mitigation measures (e.g. soft-starts), a conclusion of no adverse effects on the integrity of the European sites was reached.

On this basis, no in-combination effects with the Victoria Lock Greenway are predicted.

7.4.4 Planning Applications

A search of the Northern Ireland Planning Portal within at least c. 0.2 km (and extended to include applications adjacent to the Newry River / Canal) of the Proposed Scheme was conducted and resulted in a return of eleven planning applications of potential relevance in terms of potential for cumulative impacts to biodiversity. Details of these applications are presented in Table 7.1.

In-combination effects arising from these developments are generally considered unlikely to occur, either due to size and scale of the developments, or due to the timings of construction works required. For example, several of the applications identified appear to have already been completed or have already commenced in construction. Therefore, there is no potential for these developments to result in in-combination impacts with the Proposed Scheme, which does not yet have a construction commencement date or timetable.

Table 7.1: Results of planning application search.

Planning Reference	Address	Proposal	Status	Distance to Study Area	Potential for In-combination Impacts
LA07/2019/1093/F	Paintz 8A Loughway Business Park	Alterations of existing first floor store to provide first floor offices and staff facilities in connection with established painting and decorating business.	Granted 1 October 2019	150 m from study area within Greenbank Industrial Estate.	None. Minor alterations and primarily internal.
LA07/2018/1612/F	Lands at Loughway Business Park	Erection of 1 no. storage and distribution warehouse with associated office.	Granted 11 March 2020	80 m from study area within Greenbank Industrial Estate.	No in-combination impacts likely. Planning conditions in relation to protection of Carlingford Lough included. No other ecological issues identified.
LA07/2019/0355/F	41 Fathom Line Newry	Erection of a new workshop building (for repairs and storage of HGVs) and the erection of a new commercial building (for repairs to and storage of HGVs) and the retention of an extension to the curtilage of a business.	Granted 11 May 2020	100 m east of study area in the Fathom Woods area.	No in-combination impacts likely. Aerial imagery indicates development has been built and in use.
LA07/2018/1714/F	Lands and building approximately 66 m southwest of 4 Upper Fathom Road (Fathom Cross)	Proposed erection of replacement rural detached dwelling houses and single storey detached domestic garage, new landscaping, and associated site works.	Granted 21 July 2020	Within study area, Old Dublin Road area.	As of September 2023, development had not yet commenced for this application (noted during a bat activity survey). In addition, the buildings were assessed during surveys for the Proposed Scheme. There is potential for cumulative effects to: • Bats, through loss of a building of Moderate roosting suitability. • Birds, through loss of further nesting habitat for swallows. No in-combination impacts likely.
LA07/2019/0266/RM	Directly northeast of 9 Ellisholding Road	Farm dwelling and garage with retention of existing agricultural building.	Granted 24 February 2023	Adjacent to study area, Ellisholding area.	Aerial imagery (dated July 2023) indicates development is under construction and potentially near completion. Potentially for cumulative effects is low based on differing timescales of development and Proposed Scheme, and minor nature of development. No in-combination impacts likely.

Planning Reference	Address	Proposal	Status	Distance to Study Area	Potential for In-combination Impacts
LA07/2018/0589/F	Drumalane Road	52 no. social housing units	Granted 27 August 2019	190 m north of the study area, though >700 m from the main footprint.	Aerial imagery (dated July 2023) indicates development has been partially built and in use, with the remaining area under construction. Cumulative effects are not likely based on differing timescales of development and Proposed Scheme. No in-combination impacts likely.
LA07/2019/0142/F	Adjacent to 85 Drumalane Road	Erection of 10 no. dwellings (8 no. semi-detached, 2 no. detached) with associated site, landscaping, and access works.	Granted 25 October 2021	360 m north of the study area, though >1.2 km from the main footprint.	Aerial imagery indicates development has not commenced. No specific ecological issues identified during review of planning documents, but potential for cumulative effects to terrestrial birds and mammals through loss of habitats construction disturbance, and potentially new artificial lighting. Not likely to be significant due to scale and nature of development. No in-combination impacts likely.
LA07/2023/2698/F	36 Flagstaff Road Fathom Lower (Main Portion)	Proposed holiday accommodation consisting of 3 no. glamping pods with associated car parking, access, and landscaping.	Granted 6 August 2024	Adjacent to study area, within Fathom Woods area.	No specific ecological issues identified during review of planning documents, but potential for cumulative effects to terrestrial birds and mammals through loss of habitats, construction disturbance, and potentially new artificial lighting. Not likely to be significant due to scale and nature of development. No in-combination impacts likely.
LA07/2022/0026/F	Lands approximately 30 m north of no.47 Flagstaff Road Fathom Lower Newry BT35 8NR	Proposed erection of a rural infill detached dwelling, detached garage, landscaping, and associated site works.	Granted 20 April 2022	Adjacent to study area, close to Benson's Glen.	No specific ecological issues identified during review of planning documents but potential for cumulative effects to terrestrial birds and mammals through loss of habitats, disturbance, and potentially new artificial lighting. Not likely to be significant due to scale and nature of development. No in-combination impacts likely.
LA07/2021/1934/F	80 m southeast of 93 Drumalane Road	Erection of 2 no dwellings.	Granted 1 June 2022	Adjacent to study area at Drumalane Road / Albert Basin.	No specific ecological issues identified during review of planning documents but potential for cumulative effects to terrestrial birds and mammals through loss of habitats, disturbance, and potentially new artificial lighting, and spread of

Planning Reference	Address	Proposal	Status	Distance to Study Area	Potential for In-combination Impacts
					invasive species. Not likely to be significant due to scale and nature of development. No in-combination impacts likely.
LA07/2023/2956/O	Between 34 and 36 Flagstaff Road Newry	Proposed 2 no. infill dwellings	Granted 15 November 2024	150 m from study area, close to Benson's Glen	No site plan or layout information, or ecological information, identified during a review of planning documents. Potential for cumulative effects to birds and mammals through loss of habitats construction disturbance, and potentially new artificial lighting. Not likely to be significant due to scale and nature of development. No in-combination impacts likely.
LA07/2024/0631/F	Adjacent and south of No 151 Dublin Road, Newry BT35 8NE	Erection of agricultural shed for housing sheep.	Application lodged 26 April 2024.	Adjacent to study area, off old Dublin Road.	No ecological information identified during a review of planning documents. Potential for cumulative effects to birds and mammals through loss of habitats construction disturbance. Not likely to be significant due to scale and nature of development. No in-combination impacts likely.
LA07/2024/1294/F	Lands adjacent to and approximately 55 m northwest of no.5 Upper Fathom Road, Fathom Lower (Main Portion), Newry BT35 8NY	Proposed erection of 1 no. rural infill detached dwelling house, detached garage, rural entrance pillars and gate, additional landscaping and associated site works,	Application lodged 11 October2024.	Adjacent to study area, old Dublin Road area.	No ecological information identified during a review of planning documents. Potential for cumulative effects to birds and mammals through loss of habitats construction disturbance. Not likely to be significant due to scale and nature of development. No in-combination impacts likely.

Source: Northern Ireland Planning Portal (Accessed December 2023).

7.5 Stage 2 Appropriate Assessment Conclusion

Following the Stage 1 Screening assessment of the potential impacts of the Proposed Scheme on European sites, significant effects were not ruled out for Murlough SAC, Rockabill to Dalkey SAC, North Channel SAC, Lambay Island SAC, North Anglesey Marine SAC and Codling Fault Zone SAC in relation to marine mammals that may be present outside of the SAC and in proximity to the proposed bridge construction. No operational impacts or effects were considered likely to occur.

Mitigation, comprising the commission of an MMO during works within the Newry River, when implemented will ensure impacts to marine mammals are avoided.

Provided this mitigation is implemented, there will be negligible risk to these sites, and there will be no adverse impacts to the integrity of Murlough SAC, Rockabill to Dalkey SAC, North Channel SAC, Lambay Island SAC, North Anglesey Marine SAC and Codling Fault Zone SAC either alone or in-combination with other plans and projects.

8. References

Benhemma-Le Gall, A., Graham, I.M., Merchant, N.D., and Thompson P.M. (2021). Broad-scale responses of harbour porpoises to pile-driving and vessel activities during offshore windfarm construction. *Frontiers in Marine Science*, 8, DOI: 10.3389/fmars.2021.665724.

Bibby C., Burgess, N., Hill, D., and Mustoe, S. (2000). *Bird Census Techniques*. 2nd edition. Academic Press.

CIEEM (2021). *Advice on Ecological Assessment of Air Quality Impacts*. Chartered Institute of Ecology and Environmental Management. Winchester, UK.

CIEEM (2022). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*, version 1.2 updated April 2022. Chartered Institute of Ecology and Environmental Management, Winchester.

Cocchiglia, L., Purcell, P.J. and Kelly-Quinn, M.K. (2012). A critical review of the effects of motorway river-crossing construction on the aquatic environment. *Freshwater Reviews*, 5, pp. 141-168.

Cutts, N., A. Phelps, and D. Burdon. (2009). *Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance, Report to Humber INCA*. ZBB710-F-2009. Institute of Estuarine and Coastal Studies University of Hull.

Cutts, N., Hemingway, K. and Spencer, J. (2013). *Waterbird disturbance mitigation toolkit*. Institute of Estuarine and Coastal Studies, University of Hull.

DAERA (2016). *The Biodiversity Duty – Guidance for Public Bodies*. DAERA, Belfast.

DAERA (2017). *Carlingford Lough Ramsar Citation and Map* (online). Available at: https://www.daera-ni.gov.uk/publications/carlingford-lough-ramsar (Accessed 13 November 2023).

DAERA (2023). *Standing Advice: Wild Birds* (online). Available at: https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ccl%20planning%20-%20daera%20standing%20advice%20-%20wild%20birds%20-%20review%20august%202023%20-%20final.pdf (Accessed 21 November 2023).

DAERA (2024). Marine Map Viewer. Available at: https://gis.daera-ni.gov.uk/arcgis/apps/webappviewer/index.html?id=e44a8e27333241bfa2faf4a387fd99d7 (Accessed 28 February 2024).

National Highways (2020a). *LA 104 Environmental Assessment and Monitoring. Sustainability and Environment. Design Manual for Roads and Bridges*. Available at: https://www.standardsforhighways.co.uk/tses/attachments/0f6e0b6a-d08e-4673-8691-cab564d4a60a?inline=true (Accessed 28 February 2024).

National Highways (2020b). *LA 105 Air Quality. Sustainability and Environment*. Design Manual for Roads and Bridges. Available at: https://www.standardsforhighways.co.uk/tses/attachments/9317652b-4cb8-4aaf-be57-b96d324c8965?inline=true

National Highways (2020c). *LA 115 Habitats Regulations Assessment. Sustainability and Environment. Design Manual for Roads and Bridges*. Available at: https://www.standardsforhighways.co.uk/tses/attachments/e2fdab58-d293-4af7-b737-b55e08e045ae?inline=true (Accessed 28 February 2024).

DOE (2013). *Planning Policy Statement 2 Natural Heritage*. DOE, Belfast.

DOE (2015). *Valuing Nature: A Biodiversity Strategy for Northern Ireland to 2020*. DOE, Northern Ireland.

Dominoni, D., Quetting, M., and Partecke, J. (2013). Artificial light at night advances avian reproductive physiology. *Proc R Soc B* 280: 20123017. http://dx.doi.org/10.1098/rspb.2012.3017.

Enlander, I. (2015). *Carlingford Lough Special Protection Area (SPA) Conservation Objectives* (online). Available at: https://www.daera-ni.gov.uk/sites/default/files/consultations/doe/carlingford-lough-spa-draft-conservation-objectives-2015-including-marine-area.pdf (Accessed 13 November 2023).

European Commission (2013). *Interpretation manual of European Union Habitats, version EUR 28* (online). Available at: https://eunis.eea.europa.eu/references/2435 (Accessed 12 February 2024).

European Commission (2022). *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: A Summary* (online). Available at https://op.europa.eu/en/publication-detail/-/publication/a3a639e3-b943-11ec-b6f4-01aa75ed71a1/language-en/format-PDF/source-256755860 (Accessed 12 February 2024).

European Commission (2018). *Managing Natura 2000 sites. The Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (online). Available at https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/Provisions_Art_6_nov_2018_en.pdf (Accessed 12 February 2024).

European Commission (2021). *Commission Notice Assessment of Plans and Projects Significantly Affecting European sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (online). Available at: https://ec.europa.eu/environment/nature/natura2000/management/pdf/methodological-guidance_2021-10/EN.pdf (Accessed 12 February 2024).

Holman, C., Barrowcliffe, R., Birkenshaw, D., Dalton, H., Gray, G., Harker, G., Laxen, D., Marner, B., Marsh, D., Prismall, F., Pullen, J., Stoaling, M., Storey, C. and Vining, L. (2016). *Guidance on the assessment of dust from demolition and construction*. Version 1.1. Institute of Air Quality Management, London.

IAQM (2014). *Guidance on the Assessment of Dust from Demolition and Construction. Version 1.1, February 2014* (online). Available at: https://iaqm.co.uk/text/guidance/construction-dust-2014.pdf (Accessed 10 November 2023).

IAQM (2020). *A guide to the assessment of air quality impacts on designated nature conservation sites. Version 1.1, May 2020* (online). Available at: https://iaqm.co.uk/text/guidance/air-quality-impacts-on-nature-sites-2020.pdf (Accessed 10 November 2023).

JNCC (2019a). *Harbour Porpoise (Phocoena phocoena) Special Area of Conservation: North Channel* (online). Available at: https://data.jncc.gov.uk/data/be0492aa-f1d6-4197-be22-e9a695227bdb/NorthChannel-conservation-advice.pdf (Accessed 13 November 2023).

JNCC (2019b). *Harbour Porpoise (Phocoena phocoena) Special Area of Conservation: North Anglesey Marine/ Gogledd Môn Forol* (online). Available at: https://data.jncc.gov.uk/data/f4c19257-2341-46b3-8e29-49665cd8f3d2/NorthAnglesey-Conservation-Advice.pdf (Accessed 13 November 2023).

Joint Nature Conservation Committee (2019). Fourth Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Peterborough: JNCC. Available from: https://jncc.gov.uk/jncc-assets/Art17/S1355-WA-Habitats-Directive-Art17-2019.pdf

McKeown, R. (2015). *Murlough SAC Conservation Objectives* (online). Available at: https://www.daera-ni.gov.uk/sites/default/files/publications/doe/Murlough%20SAC%20Conservation%20Objectives%202018%20%28002%29.pdf (Accessed 13 November 2023).

Natural England (2016). *Natural England Standard: Habitats Regulations Assessment (HRA) Standard* (online). Available at: https://publications.naturalengland.org.uk/publication/8740045 (Accessed 12 February 2023).

Natural England (2018). *Natural England's Approach to Advising Competent Authorities on the Assessment of Road Traffic Emissions under the Habitats Regulations*. Natural England.

Newry, Mourne and Down District Council (2024). Local Development Plan (online). Available at: https://www.newrymournedown.org/local-development-plan (Accessed 17 June 2024).

NIEA (2024). NIEA Natural Environment Map Viewer Beta Version. Available at: https://gis.daera-ni.gov.uk/arcgis/apps/webappviewer/index.html?id=e44a8e27333241bfa2faf4a387fd99d7 (Accessed 13 November 2023).

Northern Ireland Planning Portal (2023) *Northern Ireland Planning Portal* (online). Available at: https://planningregister.planningsystemni.gov.uk/simple-search (Accessed 18 December 2023).

NPWS (2011). Conservation Objectives: Dundalk Bay SAC 000455 and Dundalk Bay SPA 004026. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013a). Conservation Objectives: Carlingford Shore SAC 002306. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013b). Conservation Objectives: Carlingford Lough SPA 004078. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013c) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2013d) Conservation Objectives: Lambay Island SAC 000204. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2023) Conservation Objectives: Codling Fault Zone SAC 003015. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

NPWS (2024). *NPWS Designations Viewer* (online). Available at: https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=8f7060450de3485fa1c1085536d477ba (Accessed 28 February 2024).

Richardson, W.J., Greene Jr., C.R., Malme, C.I. and Thompson, D.H. (1995). *Marine Mammals and Noise*. New York: Academic Press. 576 pp.

ROD (2023). *Technical Appraisal of the Narrow Water Bridge Natura Impact Statement / Habitats Regulations Assessment* (online). Available at: https://www.daera-ni.gov.uk/sites/default/files/consultations/daera/4.%20Technical%20appraisal%20of%20HRA%202023.PDF (Accessed 8 August 2024).

RPS (2023). *Shadow Habitats Regulations Assessment, Carlingford Lough Greenway* (online). Available at: https://www.daera-ni.gov.uk/sites/default/files/consultations/daera/Habitats%20Regulation%20Assessment%20-%20Carlingford%20Greenway%20Section%203_0.PDF (Accessed 8 August 2024).

Southall, B.L., Bowles, A.E., Ellison, W.T., Finneran, J.J., Gentry, R.L., Greene Jr., C.R., Kastak, D., Ketten, D.R., Miller, J.H., Nachtigall, P.E., Richardson, W.J., Thomas, J.A. and Tyack, P.L. (2007). Marine mammal noise exposure criteria: Initial scientific recommendations. *Aquatic Mammals*. 33(4), 411-521.

Southall, B.L., Finneran, J.J., Reichmuth, C., Nachtigall, E.P., Kettem, R.D., Bowles, E.A., Ellison, T.W., Nowacek, P.D, and Tyack, L.P. (2019). Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects. *Aquatic Mammals*, 45(2), 125-232.

The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended).

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

The European Communities Habitats Directive 92/43/EEC.

Appendix A Proposed Scheme Layout

N

PROPOSED DRUMALANE JUNCTION

A2 DUBLIN ROAD

PROPOSED FATHOM LINE JUNCTION

NEWRY

GREENBANK INDUSTRIAL ESTATE

BALLINACRAIG WAY

PROPOSED ACTIVE TRAVEL FACILITY SEGREGATED FROM THE A2

PROPOSED A2 WARRENPOINT ROAD ROUNDABOUT

BELFAST

DRUMALANE QUARRY

PROPOSED SOUTHERN RELIEF ROAD WITH A SINGLE CARRIAGEWAY FROM A2 WARRENPOINT ROUNDABOUT TO FATHOM LINE ROUNDABOUT

PROPOSED FATHOM ROUNDABOUT

PROPOSED NEWRY RIVER/SHIP CANAL BRIDGE (FIXED) WITH ACTIVE TRAVEL BRIDGE UNDERNEATH OFFERING CONNECTION OVER NEWRY RIVER TO MIDDLEBANK

A2 WARRENPOINT ROAD

CLOGHOGUE JUNCTION

PROPOSED SEGREGATED LEFT TURN LANE OFFERING FREE FLOWING SOUTHBOUND MOVEMENT THROUGH FATHOM LINE ROUNDABOUT

Newry Ship Canal

RAMPART

FLAGSTAFF ROAD

DUBLIN-BELFAST RAILWAY

PROPOSED SOUTHERN RELIEF ROAD WITH A SOUTHBOUND WIDE SINGLE CLIMBING LANE SECTION FROM FATHOM LINE ROUNDABOUT TO DUBLIN ROAD ROUNDABOUT

B79 FATHOM LINE

PROPOSED DUBLIN-BELFAST RAILWAY BRIDGE

FLAGSTAFF ROAD OVERBRIDGE

BENSON'S GLEN

PROPOSED DUBLIN ROAD ROUNDABOUT

PROPOSED FLAGSTAFF ROAD

A1

PROPOSED SOUTHERN RELIEF ROAD WITH A SINGLE CARRIAGEWAY FROM DUBLIN ROAD ROUNDABOUT TO ELLISHOLDING EAST ROUNDABOUT

PROPOSED ACTIVE TRAVEL FACILITY ALONG EASTERN VERGE

ELLISHOLDING JUNCTION

PROPOSED SEGREGATED LEFT TURN LANE REDUCING STOP/START MOVEMENTS FOR NORTHBOUND TRAFFIC THROUGH ELLISHOLDING EAST ROUNDABOUT

PROPOSED ELLISHOLDING WEST ROUNDABOUT

PROPOSED ELLISHOLDING EAST ROUNDABOUT

PROPOSED NORTHBOUND OFF-SLIP

PROPOSED SOUTHBOUND ON-SLIP

DUBLIN

INSET A: SCALE 1:5000

Newry River

Newry Ship Canal

A2

WARRENPOINT

GREEN ISLAND

0 250 500 m

1:10000

N

NEWRY

LOCATION OF SCHEME

CARLINGFORD LOUGH

SCALE @A3 1:200000

TYPICAL CROSS SECTION

Lane 1 (Uphill)	Lane 2 (Uphill)	Lane 3 (Downhill)	
Varies	1m 3.5m	3.5m	3.5m 1m Varies

Project Title

Newry Southern Relief Road

Department for Infrastructure
An Roinn Bonneagair
Department for Infrastructure
www.infrastructure-ni.gov.uk

Co-funded by the European Union

BELFAST REGION CITY DEAL

KEY

- PROPOSED SCHEME
- AREA OF EMBANKMENT
- AREA OF CUTTING
- WATERCOURSE DIVERSION
- SUDS DETENTION BASIN (INDICATIVE LOCATION ONLY)
- PROPOSED EARTHWORK SLOPES
- EXISTING WATERCOURSE
- CARLINGFORD LOUGH GREENWAY
- PROPOSED EXTENT OF LAND TO BE ACQUIRED
- LANDSCAPED EARTHWORKS
- PROPOSED VERGE/GRASSED AREA
- PROPOSED CARRIAGEWAY

Revision Details	By / Approv	Date	Rev
FIRST ISSUE	EP / GC	25/08/23	P01
FOR ISSUE	EP / AM	08/10/24	P02
FOR ISSUE	EP / JMB	22/11/24	P03
FOR ISSUE	EP / JMB	03/12/24	P04

Suitability

SUITABLE FOR INFORMATION

Drawing Title

Proposed Scheme Overview

Designed	Drawn	Checked	Approved	Date
---	EP	JMB	JMB	03/12/24

Internal Project No.	Suitability
60472927	
Scale @ A3	Location/Zone/Mileage
1:10000	Scheme wide generic information

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Drawing Number	Rev
Appendix A	P04