

Department for Infrastructure  
The Roads (Northern Ireland) Order 1993  
The Local Government Act (Northern Ireland) 1972

**DEPARTMENTAL STATEMENT**

**on the proposed**

**A4 ENNISKILLEN SOUTHERN BYPASS SCHEME:**

**Environmental Impact Assessment Report**

**Notice of Intention to Make a Direction Order**

**Notice of Intention to Make a Vesting Order**

**The River Erne Bridge Order (Northern Ireland)**

**The River Sillees Bridge Order (Northern Ireland)**

**The River Erne (Diversion of Navigable Watercourse and  
Extinguishment of Public Rights of Navigation)**

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# 1. CONTENTS OF DECISION

## 1.1 Overview

- 1.1.1 The Department for Infrastructure (DfI) has decided to proceed to progress the proposed A4 Enniskillen Southern Bypass scheme, in readiness of funding becoming available. The scheme is as described in the Environmental Impact Assessment Report (EIAR), the draft Direction Order, the draft Vesting Order, the draft Notices of Bridge Orders (River Erne & River Sillees) and The Erne River (Diversion of Navigable Watercourse and Extinguishment of Public Rights of Navigation) Order published by the Department for Infrastructure during March 2018.
- 1.1.2 The A4 at Enniskillen forms part of the South Western Key Transport Corridor which provides a strategic link between the east of the province, the Fermanagh Lakelands and cross border regions. The purpose of the scheme is to provide a direct link between the A4 Dublin Road to the east of the town and the A4 Belcoo Road to the west via the A509 Derrylin Road, and onwards to Sligo.
- 1.1.3 The Proposed Scheme will include:
- Construction of 2.1km single carriageway with overtaking lanes provided at each end of the new road;
  - Construction of two roundabouts at the Dublin Road and Derrylin Road;
  - Construction of two new river bridges over the River Erne and River Sillees;
  - Provision of a 3.5m cycleway / footway along the full length of the Bypass and extending along the Dublin Road and Derrylin Road to connect into existing non-motorised user infrastructure; and
  - Enhancement of non-motorised user facilities to include the provision of a Puffin crossing on the Derrylin Road
- 1.1.4 The scheme requirements will be shown on the contract documents, specification and associated documents.
- 1.1.5 Section 2 sets out the considerations on which the decision to progress the scheme is based and Section 3 describes the measures that will be incorporated to mitigate the adverse effects of the scheme and the most significant impacts arising from the scheme.

## **2. BASIS OF DECISION**

### **2.1 Existing Situation**

- 2.1.1 Enniskillen town is located at the intersection of the A32 (from Omagh) and the A4 corridor (extending between Belcoo in the west to Belfast in the east via the M1 motorway). Currently, Enniskillen offers the only strategic east-west crossing between Upper and Lower Lough Erne and as such the town is a major confluence point for local and strategic road traffic.
- 2.1.2 From the Dublin Road at the Killyhevlin Hotel in the east to the A4 Sligo Road roundabout in the west, the A4 corridor passes through Enniskillen town (Dublin Road - Wellington Road - Henry Street - Sligo Road) for c. 5.3km. The A4 corridor through the town suffers from significant congestion, as the existing road network has insufficient capacity for current levels of local and strategic traffic converging at key junctions and river crossings within the town. This results in unreliable journey times for all traffic, driver frustration and a poor-quality town centre environment for road users and the community. In addition, along this route there are eight signalised junctions, three pedestrian crossings and several other priority junctions/uncontrolled pedestrian crossings, all of which contribute to significant congestion within the town.
- 2.1.3 Significant parts of the town become congested at certain times including Wellington Road and Gaol Square. The current 24-hour Annual Average Daily Traffic (AADT) flow on the A4 Dublin Road approaching the town is 15,328 with approximately 4.5% Heavy Goods Vehicles (HGVs).
- 2.1.4 It is also the case that congestion levels are predicted to increase as the level of car ownership increases. As such, the current situation in Enniskillen is expected to worsen over time and negative impacts on the local population and town centre environment will intensify. Without the proposed scheme it is estimated that the AADT flow on the Dublin Road will increase to approximately 17,972 (with 5.3% HGVs) by the year 2035.
- 2.1.5 The Department is therefore developing this road improvement scheme in Enniskillen to provide a new link for traffic between the A4 Dublin Road and the A4 Sligo Road. The proposed scheme aims to alleviate traffic congestion within the town and provide improved journey times for through traffic.

## **2.2 Policy Context**

2.2.1 The Department for Infrastructure is responsible for ensuring that the public road network is managed, maintained and developed. The Roads (Northern Ireland) Order 1993 defines the procedures to be followed when the Department proposes to build a new trunk road or carry out improvements to a road within the trunk road network.

2.2.2 The current programme to improve transportation links in Northern Ireland has evolved over the last twenty years or so. Key documents, strategies and announcements relating to the Enniskillen Bypass scheme are listed in the following paragraphs.

### The Regional Development Strategy (RDS)

2.2.3 The Regional Development Strategy (Building a Better Future) 2035 (RDS 2035) was published by the Department for Regional Development in March 2012 superseding the previous 2025 RDS.

2.2.4 The RDS is a long-term plan to deliver the spatial aspects of the Programme for Government, recognising the need for balanced sub-regional growth and importance of key settlements as centres for growth and investment. It recognises the need to maximise the potential of the Regional Strategic Transport Network (RSTN) to enhance accessibility to towns; to help build an integrated regional economy; facilitate tourist travel including improving connections to key tourism sites; and reduces where possible, traffic flows within towns.

2.2.5 The RDS 2035 contains a Spatial Framework and Strategic Planning Guidelines based on focusing development in gateways, hubs and clusters, and prioritising the improvement of the main transport corridors that form the regional transportation network.

2.2.6 Enniskillen is identified as a Key Gateway and a Main Hub on a Key Transport Corridor in the RDS (2035) and is part of the South West Corridor with strategic links to Sligo. The Enniskillen Southern Bypass is strongly aligned with the RDS aims to:

- Promote tourism;
- Support towns;
- Improve connectivity; and
- Strengthen links between the north and south, and east and west.

2.2.7 The scheme strongly aligns with the following policies:

- RG2: Deliver a balanced approach to transport infrastructure: improve connectivity, maximise the potential of the Regional Strategic Transport Network, and manage the movement of freight; and
- SFG11: Promote economic development opportunities at Hubs.

The Regional Strategic Transport Network Transport Plan (RSTN-TP)

2.2.8 The Regional Strategic Transport Network Transport Plan (RSTN-TP) was prepared within the framework established by the Regional Development Strategy (RDS) and the associated Regional Transportation Strategy (RTS).

2.2.9 A major theme of the RDS with regards to transportation is the development of the Regional Strategic Transport Network, (RSTN). The RSTN comprises the complete rail network, five Key Transport Corridors (KTCs), four Link Corridors, the Belfast Metropolitan Transport Corridors and the remainder of the trunk road network within Northern Ireland.

2.2.10 The RSTN-TP includes initiatives that look to improve several modes of transport including walking/cycling, public transport (both buses and rail) and others using the road network including, but not limited to private cars and freights.

2.2.11 The RSTN-TP sets out a programme which incorporates improvements for all modes of transport by:

- Developing a Regional Strategic Transport Network based on key transport corridors, to enhance accessibility to regional facilities and services;
- Extending travel choice for all sections of the community by enhancing public transport;
- Integrating land use and transportation; and
- Changing the regional travel culture and contribute to healthier lifestyles.

2.2.12 The proposals for Enniskillen Southern Bypass align with the policies outlined in the RSTN-TP in that the scheme reduces vehicular traffic within the town centre providing opportunities to promote a shift in alternative modes of transport other than vehicular travel. The scheme also includes new infrastructure for active travel with a new footway / cycleway that connects the bypass to the current infrastructure within the town centre.

### Investment Delivery Plan for Roads (IDP)

2.2.13 The Investment Delivery Plan (IDP) for Roads identifies the Department's DfI Roads capital investment priorities over a ten-year period, given the funding levels envisaged through the Investment Strategy for Northern Ireland 2008- 2018. This report includes the Enniskillen Southern Bypass project.

### Ensuring a Sustainable Transport Future

2.2.14 A New Approach to Regional Transportation (later referred to as the "New Approach") was published on 28 March 2012 and follows from the RTS. This document sets out three high level aims for transportation along with twelve supporting strategic objectives, covering the economy, society and the environment. The New Approach complements the RDS 2035 and aims to achieve the transportation vision. The document recognises the need to complete the work identified in the current Regional Strategic Transport Network Transport Plan and Strategic Roads Improvement Programme, while new programmes of work are developed for roads and railways.

2.2.15 The consistent vision of three strategies is, "to have a modern, sustainable, safe transportation system which benefits society, the economy and the environment and which actively contributes to social inclusion and everyone's quality of life". The A4 Enniskillen Southern Bypass scheme meets this vision by improving a strategically important route within the Regional Transport Network.

2.2.16 Specific references to the Enniskillen Southern Bypass are included within the following documents:

- Regional Development Strategy 2035
- Expanding the Strategic Road Improvement Programme 2015 – Consultation Document; and
- Investment Delivery Plan (IDP) for Roads (Annex 1).

## **2.3 Scheme Benefits and Objectives**

2.3.1 The A4 forms part of the South Western Key Transport Corridor (KTC) within the Regional Strategic Transport Network. The A4 South Western Key Transport Corridor provides a strategic link between the east of the Northern Ireland, the Fermanagh Lakelands and cross border regions. The A4 route acts as the key transport link for a number of communities along its corridor and is considered to have national, regional and local significance economically and socially.



2.3.2 To demonstrate how the scheme addresses current and future traffic issues and contributes to economic growth, a number of objectives have been set. They have been developed for the scheme and are selected to align with the strategic guidance and contribute towards the NI Executive's key transport and development objectives. The High-Level Transport Objectives of the scheme are:

- Improve economic efficiency of transport;
- Enhance the local economy;
- Reduce the direct and indirect impact of transport on the environment;
- Enhance road safety;
- Ensure an integrated transport infrastructure; and
- Improved access throughout the town and region.

2.3.3 In addition, there are a number of scheme specific objectives which also assist in meeting the strategic guidance. These are to:

- Provide a strategic link for traffic wishing to bypass Enniskillen Town Centre;
- Reduce town centre congestion and enhance the town centre environment;
- Improve journey times and reliability;
- Improve road safety for all road users;
- Provide a good return on investment; and
- Respect and maintain the environment in the area surrounding the bypass.

2.3.4 The Department has undertaken a comprehensive analysis of the options for the Proposed Scheme, including a full Environmental Impact Assessment, which has identified appropriate mitigation measures that would be implemented in the future construction contract by the appointed Contractor.

2.3.5 The Proposed Scheme has a Department approved Estimate Range of £25-£30 million. The economic assessment demonstrates that the Proposed Scheme provides a good economic return with a Benefit to Cost Ratio of 2.53 under the predicted traffic growth forecast over the 60 year economic life of the scheme.

2.3.6 The Department has considered the options available and concluded that implementation of the proposed scheme would greatly benefit both strategic and local road users by improving safety and journey time reliability.

## **2.4 Scheme Development History**

- 2.4.1 In April 2009, AECOM were commissioned by the Department for Regional Development (now DfI) to provide consultancy services in connection with the A4 Enniskillen Southern Bypass Scheme and the initial constraints and corridor study were reported in the Stage 1 Preliminary Options Report in 2010.
- 2.4.2 The Stage 1 Preliminary Options Report was formally approved by the then Roads Service Board on the 7<sup>th</sup> March 2011. However, the Gateway approval to proceed to the selection of the preferred route was received from the Board on the 17<sup>th</sup> June 2014. This is RSPPG E030 Gateway 0 Approval.
- 2.4.3 Following Gateway 0 Approval, a Design Manual of Roads and Bridges (DMRB) Stage 2 Scheme Assessment was carried out to identify a preferred scheme option. This Stage 2 assessment considered the likely environmental, engineering, economic and traffic advantages and disadvantages of potential route alignment options within that corridor. The initial proposals to extend the bypass from A509 Derrylin Road to the A4 Sligo Road did not offer value for money and this element was excluded from further consideration during the Stage 2 assessment process. Subsequently, the section of the A509 Derrylin Road from the Sligo Road roundabout to the new bypass roundabout was included within the scheme remit to upgrade the existing carriageway and also the provision of a combined cycleway / footway.
- 2.4.4 The emerging preferred alignment being considered during Stage 2 was presented at a non-statutory public consultation event on the 17<sup>th</sup> June 2015 at the Ardhowen Theatre, Enniskillen. The purpose of the event was to invite comments from the affected landowners, elected representatives and members of the general public on the alignment being considered. The findings from this consultation event were one of many factors taken into consideration during the assessment and identification of the preferred option.
- 2.4.5 The Stage 2 Preferred Option Report was approved by the then Transport NI Management Group on the 3<sup>rd</sup> June 2015 and subsequently Gateway approval was published on the 7<sup>th</sup> September 2015. This is RSPPG E030 Gateway 1 Approval.
- 2.4.6 AECOM had undertaken the assessment that led to identifying the Preferred Option as part of the Stage Scheme Assessment. Subsequently, ATKINS was commissioned by the Department in March 2016 to develop the preliminary proposals for the scheme and undertake the Stage 3 Scheme Assessment and the Environmental Impact Assessment.

- 2.4.7 As part of the DMRB Stage 3 Assessment process, the design of the scheme has been developed through several iterations influenced by differing factors including the two river crossings, environmental impact, economics, traffic, safety and accessibility/integration. The development work included completing a full Environmental Impact Assessment (EIA) examining the impacts of the scheme under a range of headings, detailing the factors that would be put in place to mitigate the impact of the proposed changes.
- 2.4.8 The Stage 2 Scheme Assessment Report concluded that the emerging preferred route favoured a Wide Single 2+1 (WS 2+1) alignment linking the A4 Dublin Road and the A509 Derrylin Road as it was preferred in terms of Engineering, Traffic and Economics. The WS 2+1 design is a carriageway with two lanes of travel in one direction to facilitate overtaking and a single lane in the opposite direction. It was also concluded that a 3m combined cycleway/footway be provided along the northern extent of the bypass and extended on both the A4 Dublin Road and A509 Derrylin Road to meet with existing Non-Motorised User (NMU) infrastructure.
- 2.4.9 During the Stage 3 Scheme Assessment process, a further non-statutory community consultation event was held in conjunction with the publication of the draft orders and EIAR during April 2018 at the Waterways Ireland offices, Enniskillen. As with the 2015 consultation event, the purpose was to offer further opportunities for the public to engage in the design process so that their issues/concerns could be considered by the Project Team and to keep stakeholders informed of the developing design rationale.

The statutory changes to the trunk road network, in terms of designation of the roads, were also determined in the draft Direction Order, with the draft Vesting Order prepared to reflect and enable the necessary acquisition of lands.

## **2.5 Statutory Procedures**

- 2.5.1 The statutory procedures governing the construction and improvement of trunk roads are prescribed by The Roads (Northern Ireland) Order 1993 (“the 1993 Order”). These include the preparation of an Environmental Impact Assessment Report, a Direction Order describing the roads which are to become part of the trunk road network and a Vesting Order to acquire the land to facilitate construction of the road. The Roads (Amendment) (Northern Ireland) Order 2004 made provision for all or any of the above proceedings (so far as practicable) to be processed concurrently. There are also Bridge Orders prepared for the construction of new bridges over the River Erne and River Sillees. Due to the pier design for the River Erne Bridge, an additional Order is required and is titled The River Erne (Diversion of Navigable Watercourse and Extinguishment of Public Rights of Navigation).

2.5.2 The documents published for statutory public consultation on weeks commencing 26th March 2018 and 2nd April 2018 included:

Notice of Intention to Make a Direction Order

- The proposal to make The Trunk Road T6 (A4 Enniskillen Southern Bypass) Order (Northern Ireland) 2019 under Articles 14(1), and 68(1), (3) and (5) of The Roads (Northern Ireland) Order 1993.

Notice of Intention to Make a Vesting Order

- The proposal to make an order under Article 113 of The Roads (Northern Ireland) Order 1993 and Schedule 6 to the Local Government Act (Northern Ireland) 1972 for the purpose of acquiring compulsorily the lands for the construction of the A4 Enniskillen Southern Bypass Scheme.

Bridge Orders

- The proposal to make The River Erne Bridge Order (Northern Ireland) under Article 4 of The Roads (Northern Ireland) Order 1993.
- The proposal to make The River Sillees Bridge Order (Northern Ireland) under Article 4 of The Roads (Northern Ireland) Order 1993.
- The proposal to make The River Erne (Diversion of Navigable Watercourse and Extinguishment of Public Rights of Navigation) under Article 5 and Article 6 of The Roads (Northern Ireland) Order 1993.
- The Environmental Impact Assessment Report prepared by the Department for the proposal for the provision of the A4 Enniskillen Southern Bypass Scheme together with opinions expressed in relation to it under the provision of Articles 67A(3) and (9) of the Roads (Northern Ireland) Order 1993.

## 2.6 Environmental Impact Assessment

2.6.1 Environmental Impact Assessment (EIA) is the process of compiling, evaluating and presenting all the likely significant environmental effects of a proposed scheme. EC Directive 2011/92/EU, as amended by Directive 2014/52/EU, which deals with the assessment of the effects of certain public and private projects on the environment, were implemented in Northern Ireland pursuant to the powers conferred by section 2(2) of the European Communities Act 1972, such implementation to be found in Northern Ireland under the terms of the Roads (Northern Ireland) Order 1993 as amended by the Roads (Environmental Impact Assessment) Regulations (Northern Ireland) 2017 hereafter referred to as the EIA Regulations.

2.6.2 Under the EIA Regulations, there is a requirement for the Department to:

- a) *Determine whether any proposed project falls within Annex I or Annex II of the EIA Directive; and,*
- b) *To publish any EIA determination they make in respect of a roads project.*

2.6.3 Article 67 (4B) of the 1993 Roads Order directs that if the Department:

Considers that the project falls within Annex I; or is a relevant project falling within Annex II and determines that the project should be made subject to an environmental impact assessment and it must prepare an environmental impact assessment report.

2.6.4 The EIA Screening Determination undertaken by the Department confirmed that the project fell within Annex II, Part 10 (e) – Construction of roads, harbours and port installations, including fishing harbours (projects not included in Annex 1, to the Directive). Having regard to the relevant legislation and the criteria contained within Annex 3 to the Directive it was determined that the project should be accompanied by an EIA report.

2.6.5 An environmental scoping report was prepared to identify the key topics and impacts it was proposed to address in the EIAR and to assist with the scoping exercise being undertaken. This helped to ensure compliance of the EIAR with the requirements of Article 67 of the Roads (NI) Order 1993 (as amended by the Roads [EIA] Regulations [NI] 2017). The scoping report was circulated to consultees to facilitate effective and accurate scoping of the environmental information required within the EIAR. The Scoping Report was issued to each of the consultees and feedback was requested regarding environmental matters for inclusion in the EIAR for the proposed scheme.

2.6.6 The EIAR has been prepared in accordance with Article 67 (5) of the 1993 Roads Order including:

- a) a description of the project comprising information on the site, design, size and other relevant features of the project;*
- b) a description of the likely significant effects of the project on the environment;*
- c) a description of the features of the project and measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*
- d) a description of the reasonable alternatives studied by the Department which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;*
- e) a non-technical summary of the information referred to in sub-paragraphs (a) to (d); and*
  
- f) any additional information specified in Annex IV relevant to the specific characteristics of the particular project or type of project and to the environmental features likely to be affected.*

2.6.7 The EIAR details the findings of this EIA process and highlights the anticipated significant environmental issues identified for both the construction and operational phases of the Proposed Scheme. The EIAR presents the findings of an environmental assessment of the scheme and describes the measures proposed to mitigate impact on the natural and built environment.

2.6.8 The environmental assessment considers the impact in terms of Landscape and Visual; Soils, Geology and Contaminated Land; Water Environment; Biodiversity; Air Quality; Climate; Noise and Vibration; Traffic and Transport; Cultural Heritage; Population and Health; Land Use; Pedestrians, Cyclists, Equestrians & Community; Material Assets and Vehicle Travellers.

2.6.9 The Department considers that the EIAR, supported by the additional documentation published at consultation, has provided information which is reasonable and sufficient to allow the Department to reach a reasoned conclusion on the significant effects of the project on the environment, taking into account current knowledge and methods of assessment.

- 2.6.10 The Department is satisfied that the information contained in the EIA Report complies with the provisions of Part V of The Roads (Northern Ireland) Order 1993 as amended by The Roads (Environmental Impact Assessment) Regulations (Northern Ireland) 2017.
- 2.6.11 The data gathering and surveys carried out in support of the EIA, which were completed in 2016 and 2017, are considered to remain relevant and current. A further review survey was carried out during 2020 and confirmed that the mitigation measures identified within the EIA were still appropriate.
- 2.6.12 Having caused the examination of the environmental information which includes the EIA, the consultation responses to the EIA, the Department is satisfied that the likely significant environmental effects of the proposed scheme have been assessed.
- 2.6.13 Following the examination of all the environmental information, the Department has formed the reasoned conclusion, attached in Annex A, and concluded that the proposed scheme will not have any significant adverse impacts on the natural or human environment (including designated sites and protected species) that cannot be addressed by the measures set out in Annex A.

## **2.7 Habitats Regulations Assessment – Appropriate Assessment**

- 2.7.1 Following completion of a Stage 1 ‘Screening for Appropriate Assessment’, a Stage 2 ‘Assessment of Implications on European sites’ was completed. Both the Stage 1 and Stage 2 appraisals are set out in EIA Vol.2 Appendix 9.13 Habitats Regulations Assessment (HRA) report. This report was prepared by ATKINS on behalf of the Department in accordance with relevant European Commission guidance and DMRB Volume 11, Section 4, Part 1 (HD 44/09) Assessment of Implications (of Highways and/or Roads Projects) on European Sites (Including Appropriate Assessment) to assist the Department in fulfilling its duties in accordance with Regulation 43(1) of the Conservation (Natural Habitats, etc) Regulations (Northern Ireland) 1995 (as amended), (“the Habitats Regulations”) which transposes certain aspects of Northern Ireland Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) requires that a “competent authority”, before deciding to undertake, or give consent, permission or other authorisation for a plan or project which :

- a) is likely to have a significant effect on a Natura 2000 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 project in view of the site's conservation objectives in line with Article 6(3) of the Habitats Directive. Article 6(3) of Habitats Directive 92/43/EEC.

2.7.2 This HRA report was prepared on behalf of the Department to assess the effects of the A4 Enniskillen Bypass scheme and identified the following internationally designated sites of special environmental status within 10km of the proposed A4 Enniskillen Southern Bypass:

- Upper Lough Erne Special Area of Conservation (SAC), 3.8 km south;
- Upper Lough Erne Ramsar Site, 3.8 km south;
- Upper Lough Erne Special Protection Area (SPA), 7.6 km south
- Fardrum and Roosky Turloughs SAC, 8.5 km north-west;
- Fardrum and Roosky Turloughs Ramsar site, 8.5 km north-west; and
- Cladagh (Swanlinbar) River, 9.8 km south.

2.7.3 The Stage 1 assessment (screening) concluded that the scheme had potential to effect features on three of the sites as follows:

- Otter populations of the Upper Lough Erne Special Area of Conservation (SAC) due to disturbance during construction and habitat severance during operation;
- Wintering Whooper Swan populations of the Upper Lough Erne Special Protection Area (SPA); and
- Consideration was given to the Upper Lough Erne which is designated as Wetlands of International Importance (Ramsar sites) in regards to disturbance during construction and permanent loss of functional land.

A precautionary approach has been adopted to the Appropriate Assessment process, as required by EU law, and account has been taken of the view of the Court of Justice of the European Union, that where an Appropriate Assessment is required, consent for the scheme should only be granted if it is certain that the scheme would not, alone or in combination with other projects, have an adverse effect on the integrity of a European site.

2.7.4 In light of the Appropriate Assessment process undertaken and the information presented within the HRA report (published within this Departmental Statement), the EIAR, the updated Schedule of Environmental Commitments (Annex B), the Department (as the Competent Authority) is content that the construction and operation of the A4 Enniskillen Southern Bypass Scheme would not, by itself or in combination with other plans or projects, adversely affect the integrity of Upper Lough Erne SAC, Upper Lough Erne Ramsar site, Upper Lough Erne



SPA, Fardrum and Roosky Turloughs SAC, Fardrum and Roosky Turloughs Ramsar site, Cladagh (Swanlinbar) River or any other Natura 2000 site, or its ability to meet its conservation objectives, and no reasonable scientific doubt remains as to the absence of such effects.

## **2.8 Review of Habitats Regulation Assessment (July 2020)**

2.8.1 To ensure the conclusions and recommendations of the Habitats Regulation Assessment remain current, ecological monitoring surveys are being undertaken periodically. A technical note produced in July 2020 summarised the results of an otter survey, whooper swan desk study and literature review, in combination with an assessment undertaken in May and June 2020. It checked whether the results changed the findings of the of the 2018 Appropriate Assessment for the proposed Enniskillen Southern Bypass, ahead of the Habitats Regulations Assessment being presented to the Minister. It has identified the following:

- a) *There are no additional International Sites that need to be considered in the assessment;*
- b) *The updated otter activity survey identified continued otter activity along the River Erne and Sillees River, but no features were identified inside the recommended protection zone area for couches and holts (30 m) and natal holts and dens (150 m). It was concluded that the mitigation proposed in the 2018 Appropriate Assessment is still required and a pre-construction activity survey should be carried out. With these measures in place, the conclusions of the 2018 Appropriate Assessment of no adverse effect on the site integrity of Upper Lough Erne SAC as a result of the proposed Scheme with respect to otter is upheld;*
- c) *The 2018 Habitats Regulation Assessment determined that there would be no adverse effect on site integrity with respect to whooper swans from the Upper Lough Erne SPA and Ramsar site as a result of Scheme construction, due to the absence of functionally linked land within and adjacent to the Scheme i.e. winter grazing habitat outside the SPA and Ramsar boundary would not be lost and there would be no significant disturbance to whooper swans. The updated habitat assessment survey and desk study have shown that the site conditions have not changed and, therefore, the Appropriate Assessment conclusion of no adverse effect on site integrity remains the same;*
- d) *The updated in-combination assessment did not identify any additional plans or projects that may have an in-combination effect with the Proposed Scheme.*

2.8.2 Overall, it was concluded that the proposed Scheme will not adversely affect the site integrity of the Upper Lough Erne SAC, the Upper Lough Erne SPA or the Upper Lough Erne Ramsar site. Therefore, the conclusion of 'No AESI' (Adverse Effect on Site Integrity) is upheld. This conclusion remains dependent on the mitigation measures outlined for otter, as per the 2018 Habitats Regulation Assessment, being incorporated into the Construction Environmental Management Plan (CEMP).

## **2.9 Consultation and Publication of Notices**

In accordance with Schedules 5 and 8 to the 1993 Order and the Local Government Act (Northern Ireland) 1972, the Department placed the Notices relating to the EIAR, Intention to make a Direction Order, Intention to make a Vesting Order and Bridge Orders (River Erne & River Sillees) and The River Erne (Diversion of Navigable Watercourse and Extinguishment of Public Rights of Navigation) in the Belfast Gazette, Impartial Reporter and Fermanagh Herald during April 2018.

2.9.1 All of the documentation related to the scheme, including the EIAR, Notice of Intention to Make a Direction Order, Notice of Intention to Make a Vesting Order and Bridge Orders (River Erne & River Sillees) and The River Erne (Diversion of Navigable Watercourse and Extinguishment of Public Rights of Navigation) were also made available for inspection, at four locations, for the duration of the Statutory Consultation period that concluded on 18th May 2018 following an official announcement on 26th March 2018. The published documents were also available to view online on the Department's website at ([www.infrastructure-ni.gov.uk/articles/enniskillensouthernbypass-overview](http://www.infrastructure-ni.gov.uk/articles/enniskillensouthernbypass-overview)) and were circulated to the relevant statutory and non-statutory consultees seeking their comments on the proposals.

2.9.2 In summary, 18 public responses were received during the consultation period with 15 no. offering letters of support, 2 no. were letters of concern/objection, and 1 no. response required more information following the announcement and publication of the documents. An additional 3 no. responses (letters of support) were received within one week after the consultation closing date.

2.9.3 All letters received were acknowledged on receipt and further detailed responses were issued as required. Several responses offering support to the scheme also contained queries and are detailed below:

- Request for noise barrier to be extended at Riverside Marina;
- Queries regarding proposed capacity of new roundabouts;
- Query regarding Sligo Road roundabout capacity;
- Query regarding necessity of access track from central section of bypass;
- Query expressing concerns over the adequacy of the noise assessment;
- Query regarding provision of scenic viewpoint;
- Query regarding provision at bridges for future infrastructure requirements;
- Consideration of additional roundabouts at the A4 Dublin Road / Lough Yoan junction & the A509 Derrylin Road / Cappog Road junction;
- Consideration of right turn facility on the Cappog Road / Old Rossorry Road junction on A509 Derrylin Road;
- Consideration of a designated slip road to the A4 Sligo Road from A509 Derrylin Road.
- Request for a pedestrian crossing facility on the A509 Derrylin Road

2.9.4 The 2 letters of objection to the proposals received by the Department raised the following concerns

- Location of the bypass in relation to Enniskillen;
- Project team knowledge;
- Route alignment;
- Journey time reductions;
- Impacts on an area of natural beauty
- Road traffic noise and pollution.

2.9.5 The 2 letters of objection were carefully considered by the Department's Divisional project team and further discussions and meetings were held with both parties over a three-month period. Ultimately, both parties retained their objections and following established procedures, the Department decided to proceed with the scheme without recourse to a public inquiry. The objecting parties were informed of this decision in January 2019.

### **3. MEASURES TO MITIGATE ADVERSE EFFECTS**

#### **3.1 Overview**

- 3.1.1 As part of the EIA and design process, a range of mitigation and enhancement measures have been identified to avoid, offset or reduce adverse impacts associated with the Proposed Scheme.
- 3.1.2 As defined throughout each of the technical chapters within the EIAR, there are instances where environmental impacts associated with the Proposed Scheme may be of such a magnitude as to warrant mitigation measures. These measures are considered necessary to minimise environmental impacts during the construction and operational phases of the Proposed Scheme.
- 3.1.3 For the construction phase an outline Construction Environmental Management Plan (oCEMP) has been prepared as part of the EIAR (Volume 2 Appendix 19.1). This document provides a framework from which the final CEMP will be developed to avoid, minimise or mitigate any construction effects on the environment. This oCEMP details the environmental monitoring and mitigation measures that are to be implemented during construction works (and pre-construction) to minimise the effects on receptors. The mitigation and control mechanisms contained within the oCEMP are informed by the assessments contained within the associated EIAR technical chapters.
- 3.1.4 EIAR Table 25.1 (as detailed in EIAR Chapter “Schedule of Environmental Commitments”) summarises a comprehensive range of mitigation measures identified within the EIAR technical chapter nos. 7-15. The Schedule of Environmental Commitments of the EIAR has been updated to include all environmental commitments and is appended at Annex B.
- 3.1.5 The following sections (3.2 - 3.20) provide a summary of the overall committed mitigation measures contained within the EIAR, though reference should be made to the EIAR for more detail and context.

#### **3.2 Air Quality (Chapter 7 of the EIAR)**

- 3.2.1 An air quality assessment was undertaken to determine the impacts of the proposed scheme development during both the construction and operational period. During construction, short term impacts such as dust generation were identified, however with appropriate mitigation measures in any impact becomes non-significant. These measures include road sweeping and storage procedures which will be recorded in the Construction Environmental Management Plan (CEMP).

3.2.2 The assessment indicated that there are no significant adverse effects with the proposed scheme when operational. Hence, no mitigation measures are likely to be necessary. There are, however, expected to be significant beneficial effects, particularly at receptors within Enniskillen where there is expected to be a decrease in nitrogen dioxide pollutant (NO<sub>2</sub>) concentrations.

### **3.3 Cultural Heritage (Chapter 8 of the EIAR)**

3.3.1 It is predicted that the setting of the remains of the railway bridge that once crossed the River Erne (IHR01009:006) will be significantly impacted upon following the implementation of the proposed mitigation measures. Whilst this structure is not intact or subject to statutory protection, its remains are substantial and screening mitigation in the form of tree planting will take time to establish in order to reduce the medium adverse impact predicted in the opening year. No significant residual effects remain post mitigation.

3.3.2 The proposed scheme is within an area considered to be of high archaeological potential due to the presence of the Sillees and Erne Rivers. This is illustrated by the density of recorded archaeological sites located within the wider area that represent all periods of history and illustrate how significant the River Erne and its associated bodies of water were to past populations. It was recommended that a programme of archaeological testing was carried out across the length of the proposed scheme. The archaeological work has been completed in 2019 and was carried out under licences through the Historic Environment Division.

3.3.3 An Archaeological Programme of Works or Written Scheme of Investigation (WSI) was agreed in consultation with Department for Communities : Historic Environmental Division (DfC:HED). This incorporated the results of a geophysical survey which had identified a number of areas of potential archaeological activity. The WSI detailed a proposed programme of trial trenching; strip areas, map and sample excavation; auger survey; and an underwater survey at River Erne.

3.3.4 A probable house structure was identified during the investigations and artefacts recovered identified features suggested a Late Bronze Age date for the structure. All archaeological features discovered were fully excavated and recorded. No further archaeological deposits were identified during the course of the evaluation. All areas of excavation were inspected by a DfC:HED archaeologist in advance of backfilling. It is therefore recommended that no further archaeological works are required for this development to proceed, however procedures for unknown heritage finds will still be included within the CEMP.

### **3.4 Ecology and Nature Conservation (Chapter 9 of the EIAR)**

- 3.4.1 A number of potential effects were identified during construction as a result of loss of habitat (woodland, hedgerows and riparian habitat along both the River Erne and Sillees River), water pollution (River Erne and Sillees River), disturbance of protected species (foraging badger; sheltering, foraging and commuting otter; roosting, foraging and commuting bats; foraging and commuting red squirrel; breeding birds; and foraging barn owl).
- 3.4.2 A range of avoidance and mitigation measures have been included in the design and construction programme (including the CEMP). These will avoid/mitigate all of the effects of construction such that none of the residual effects are considered significant, apart from effects on foraging and commuting bats.
- 3.4.3 The proposed scheme will result in the loss of important habitat features that are utilised by large numbers of bats, including some less common species, during commuting and foraging. There is generally a high cover of hedges and commuting and foraging habitat in the area so alternative habitat exists, along with the rivers at each end of the proposed scheme, that link habitats north and south of the scheme. However, habitats within the proposed scheme provide important linkages between roost sites in Enniskillen and foraging habitat to the south. Mitigation for loss of commuting and foraging habitat and to maintain connectivity has been provided within the design. However, it is considered that construction will have a moderate adverse residual effect on commuting and foraging bat assemblages that are significant in the context of County Fermanagh.
- 3.4.4 During operation, potential effects were identified as a result of severance of habitat for protected species (foraging badger, foraging and commuting otter, foraging red squirrel, foraging and commuting bats, foraging barn owl), and noise and visual disturbance (breeding birds).
- 3.4.5 A range of avoidance and mitigation measures have been included in the design. These will mitigate all of the effects of operation such that none of the residual effects are considered significant, apart from effects on foraging and commuting bats and on foraging barn owl.
- 3.4.6 Some species of bat will be deterred from foraging close to busy roads. Due to the large areas over which bats forage it is likely that any loss of, or displacement from, suitable foraging habitat in the vicinity of the proposed scheme will in itself amount to only a small proportion of the wider available resource. However, the impact of any such disturbance or displacement could be greatly increased if bats are hampered in moving between breeding and roosting sites and foraging habitat. Where the route of the proposed scheme severs, or is located in close proximity to, existing features known to be utilised regularly by foraging or commuting

bats, there is an increased risk that bats could be killed or injured as a result of collisions. However, the tree and hedgerow planting within the landscape design will reduce the risk of collision.

- 3.4.7 The residual risks of collision are considered to be minimal. Permanent loss of commuting and foraging routes will be replaced by hedgerow planting on both sides of the proposed scheme. The loss of this habitat is considered to be a small proportion of the overall available resource in the local area. Severance may result in permanent displacement of bats away from preferred foraging and commuting routes. However, foraging habitat is widely available in the local area. Commuting routes linking habitats to the north and south of the proposed scheme via the River Erne and the Sillees River will still be available. It is considered that the residual effect in the opening year is moderate adverse. Once the landscape planting has matured and bats have become habituated to using underpasses, the effects on the conservation status in terms of the abundance and distribution of commuting and foraging bats in a county context is not considered significant.
- 3.4.8 Severance during construction may result in permanent displacement of barn owls away from preferred foraging habitat, and a low risk of barn owl collision remains. It is considered that the residual effect in the opening year is slight adverse. Once the landscape planting has matured and barn owls have become habituated to the proposed scheme, the effect on the conservation status in terms of the abundance and distribution of barn owl in a national context is not considered significant.
- 3.4.9 A Habitat Regulations Assessment (HRA) was also undertaken for the A4 Enniskillen Southern Bypass. The HRA included a Stage 1 Screening HRA to test whether the proposed scheme, either alone or in combination with other plans and projects, was likely to have a significant effect on these International Sites. Where likely significant effects were identified, information was required for full Appropriate Assessment (Stage 2).
- 3.4.10 With due consideration given to the information provided above for the Appropriate Assessment, it is considered that the proposed scheme will not adversely affect the integrity of the Upper Lough Erne SAC, the Upper Lough Erne SPA, or the Upper Lough Erne Ramsar site. Therefore, a conclusion of 'No AESI' (Adverse Effect on Site Integrity) is given at Appropriate Assessment. This conclusion is dependent on the mitigation measures outlined in the HRA for otters being incorporated into the CEMP. If any of these measures, or a suitable alternative, are not included, the HRA assessment may change.
- 3.4.11 To ensure the conclusions and recommendations of the Habitats Regulation Assessment remain current, ecological monitoring surveys are still being undertaken periodically and the conclusion of 'No AESI' is upheld (July 2020).

### **3.5 Road Drainage and the Water Environment (Chapter 10 of the EIAR)**

- 3.5.1 The construction phase will require civil engineering works to take place on, and adjacent to the bypass site and will include the construction of two bridge crossings (River Sillees and River Erne). The boat turning pool downstream of the proposed River Sillees bridge is to be constructed by widening the existing channel, with the western bank being fixed and all widening taking place about the eastern bank. It is anticipated that the river will be widened by excavating out material to the depth of the existing channel and a new bank will be created by extending the scour protection from the River Sillees structure.
- 3.5.2 Water protection measures (e.g. settlement ponds) have been identified and these will be incorporated into the CEMP by the appointed contractor. These protection measures will ensure that no significant impacts will occur on the receiving water environment during the construction phase.
- 3.5.3 The assessments undertaken regarding the operation of the scheme (including Highways Agency Water Risk Assessment Tool (HAWRAT)) have demonstrated that no significant impacts are anticipated in terms of: routine run-off; accidental spillages; flood risk; amenity; or geomorphology. Water protection measures have been incorporated into the scheme design, i.e. Sustainable Drainage Systems (SuDS).

### **3.6 Landscape Effects (Chapter 11 of the EIAR)**

- 3.6.1 The landscape assessment found the potential for significant impact at two locations. The residual impacts of construction, post mitigation, on the landscape resource remain moderate adverse for a limited period of time. There are no anticipated significant impacts on the landscape resource during operation.
- 3.6.2 The residual impacts concerning visual amenity during operation are limited to residential receptors on the Dublin Road located in close proximity to the proposed Dublin Road roundabout and the Erne Bridge (including the new house currently under construction). At this location the effect of the proposed scheme on visual amenity is considered to be moderate adverse.
- 3.6.3 The assessment has identified likely significant impacts of the proposed scheme would be contained within a relatively small area around the site during construction, and limited to one residential property in close proximity to the proposed Erne Bridge beyond the construction period. Landscape and Visual mitigation measures are included within the CEMP.



### **3.7 Land Use (Chapter 12 of the EIAR)**

- 3.7.1 Seven main landholdings outside the existing highways network and verges are directly impacted by the proposed scheme. Direct liaison has been undertaken with each of these land owners. No significant impacts on land use have been identified during either the construction or operation of the scheme.
- 3.7.2 Agricultural and other commercial enterprises will remain viable due to a relatively low level of land loss during both the construction and operational phases. The provision of appropriate mitigation e.g. access to severed agricultural land via underpasses will minimise any impact magnitude.

### **3.8 Land Condition (Chapter 13 of the EIAR)**

- 3.8.1 The impact on geology and soils due to the proposed scheme will occur during the construction phase of works. No geologically designated areas will be impacted upon and overall impacts on geology and soils will be minor and considered not significant.
- 3.8.2 Ideally a scheme attempting to achieve a balance of cut and fill operations would be advantageous from a sustainability perspective. However, under the proposed scheme, a deficit of material is most likely which means that material will need to be imported to the site from elsewhere.
- 3.8.3 A Contaminated Land Preliminary Risk Assessment (PRA) has been undertaken and the area underlying the proposed scheme is considered to be low risk in terms of human health and controlled waters receptors during construction.

### **3.9 Noise and Vibration (Chapter 14 of the EIAR)**

- 3.9.1 Construction phase impacts have been assessed in accordance with BS 5228:2009+A1 Code of Practice for Noise and Vibration Control on Construction and Open Sites. The assessment has considered anticipated construction activities and has determined that there are significant impacts associated with the works but that construction impacts are by their nature short term and temporary and are controlled by the use of best practice construction techniques which are anticipated to reduce the impact of the works to acceptable levels. It is not anticipated that there will be any night-time construction works required as part of the scheme. Mitigation measures are contained within the CEMP.

3.9.2 The operational assessment has determined that within the study area there are road links which will experience a decrease in noise and those which will experience an increase in noise due to the redistribution of traffic around the network. The most significant detrimental impact will be experienced by those properties closest to the proposed new bypass and in these locations proposed mitigation measures in the form of acoustic barriers have been proposed. With mitigation measures (1.8 metres high close boarded fencing) in place all receptors are less than the Significant Observed Adverse Effect Level in terms of noise.

3.9.3 No significant vibration impacts during construction or operation of the proposed scheme are anticipated.

### **3.10 Pedestrians, Cyclists, Equestrians and Community Effects (Chapter 15 of the EIAR)**

3.10.1 During construction it is acknowledged that the proposed scheme will impact on the local community and non-motorised users (NMU). Construction phase impacts will be short term and controlled by procedures included within the CEMP and liaison with the relevant bodies to ensure all measures are taken to limit disturbance during this phase. It is acknowledged that some of these construction effects may still be considered significant with control measures in place.

3.10.2 Operationally, it is considered that this scheme will have longer term significant residual benefits due to the improved pedestrian, cycling and equestrian traveller environment. In addition, once the scheme is fully functioning it should improve road safety for all users, reduce the congestion in the Enniskillen town centre improving linkages between the local population and community facilities. The scheme proposals include the provision of traffic calming measures on the A509 Derrylin Road aimed at reducing vehicle speeds that provide a safer environment for all NMUs. Proposals include a new signal controlled Puffin crossing on the A509 Derrylin Road close to the junction with Glenwood Gardens.

### **3.11 Vehicle Travellers (Chapter 16 of the EIAR)**

3.11.1 The scheme engineering and landscape design will alleviate the current issues that negatively impact views from the road and driver stress. The proposed scheme will provide a clearer journey for vehicle travellers and will encompass excellent views, good signage and higher speeds.

- 3.11.2 Following completion of the proposed scheme the view from the road will improve on the existing situation by offering tranquil views to the vehicle traveller. Driver stress is expected to be low and will remain low by the design year.
- 3.11.3 Following completion of the proposed scheme the average journey time is expected to decrease with the average vehicle speeds increasing.
- 3.11.4 Construction impacts will be managed through a Traffic Management Plan.

### **3.12 Climate (Chapter 17 of the EIAR)**

#### *Effects of the proposed scheme on Climate*

- 3.12.1 It is anticipated that following implementation of the mitigation measures, construction of the proposed scheme will still cause large quantities of emissions, and as such have a large significant negative impact at the scheme scales. This is to be expected due to the fact that the proposed scheme involves construction of an entire new road with a large 'sunk' carbon investment.
- 3.12.2 It is however noted that with the proposed scheme in operation, excluding the construction emissions, the Year of Opening is anticipated to provide a 4.72% reduction in emissions and a reduction of 4.06% by 2035 which is in line with UK carbon reduction targets. The impact of construction emissions has a payback period of 28.7 years. Therefore, in the long term the scheme will have a beneficial impact on climate.

#### *Vulnerability of the proposed scheme to climate change*

- 3.12.3 Northern Ireland's infrastructure has been vulnerable, in the past, to extreme warm and cold weather, and heavy rainfall. Projected climate trends in Northern Ireland suggest it is likely that the occurrence of heat waves (particularly in summer) and extreme precipitation (particularly in winter) will increase. It is likely that the proposed scheme is not vulnerable to the changes in average temperature or precipitation, rather the trends in extremes pose more of a risk.
- 3.12.4 This qualitative assessment identified that current design standards and best practice operational and maintenance regimes are expected to provide a degree of resilience to climate risks. Design, construction and operational climate change adaptation measures are however required to provide an appropriate degree of climate resilience to residual impacts over the life of the proposed scheme.

### **3.13 Vulnerability to a Major Accident or Disaster (Chapter 18 of the EIAR)**

- 3.13.1 There are not expected to be any significant adverse effects after mitigation, resulting from major accidents and disasters, as a result of the proposed scheme during either the construction or operational phases.
- 3.13.2 Mitigation of risks during construction to prevent significant accidents or disasters include good contractor management including adherence to all Health and Safety and CDM regulations. The CEMP will also be used to mitigate potential risks during construction.
- 3.13.3 Operationally measures have been included within the scheme design such as designing the scheme to high safety standards and applying future-proof design factors to accommodate changes in climate including increased flooding.

### **3.14 Disruption Due to Construction (Chapter 19 of the EIAR)**

- 3.14.1 The proposed scheme will be mainly constructed offline and will require the formation of embankments and cuttings. Two major bridge crossings and a boat turning pool will also be required.
- 3.14.2 Significant impacts are anticipated during the construction phase of the works including impacts relating to: noise and vibration; visual sensitivity; and ecological sensitivity.
- 3.14.3 The implementation of environmental control procedures within the CEMP will minimise disruption to the receiving environment and thus minimise the potential environmental effects of construction.
- 3.14.4 Most construction impacts will be temporary in nature. Permanent construction impacts on ecology and landscape have been mitigated in the scheme design through measures such as mitigation planting. Significance of construction are included within the various technical assessment summaries.

### **3.15 Materials and Waste (Chapter 20 of the EIAR)**

- 3.15.1 A Site Waste Management Plan will be required from the appointed contractor to deliver efficiencies including reducing excess waste, increasing the recycling potential of materials, and minimising the requirement for raw materials.

- 3.15.2 Where site materials are found to be unsuitable, resources could potentially be sought from the local area to avoid increased haulage distances. However, there is a possibility of significant quantities of “waste” excess materials requiring movement off site.
- 3.15.3 Potential effects from the proposed scheme from materials requirement and excess materials / waste will be refined during the detailed design stage. Potential effects may relate directly to material demand, the sourcing of materials, the generation of non-useable materials from the site clearance and demolition, the re-use of soils and materials on site, the pre-treatment of materials prior to re-use on site, the recycling of materials and wastes, and the re-use and / or disposal of materials off site.
- 3.15.4 The project is currently registered with Civil Engineering Environmental Quality Scheme (CEEQUAL) and the requirement for a “very good (or better)” award should ensure the design and construction of a sustainable scheme.

### **3.16 Material Assets (Chapter 21 of the EIAR)**

- 3.16.1 The proposed scheme will impact on material assets in the immediate locale. Impacts will be experienced for the most part during the construction stage. It is considered that any effects will not be significant and temporary in nature.
- 3.16.2 Operationally, it is anticipated that a major beneficial effect will be experienced (at the eastern section of the scheme) through the removal of electricity pylons and the burial of cables. Visually this will be beneficial, and it will also make additional space available e.g. within the plant hire centre and South West College grounds within the Killyhevlin Industrial Estate.

### **3.17 Human Health (Chapter 22 of the EIAR)**

- 3.17.1 The general impact on human health due to the proposed scheme is anticipated to be beneficial due to a number of factors including:
- Improvements in air quality;
  - Increased safety due to good road design and the removal of traffic from the congested town centre; and
  - Improvements in stress levels of drivers.

### **3.18 Impacts on Plans and Policies (Chapter 23 of the EIAR)**

3.18.1 The assessment has demonstrated that the proposed scheme is in line with the key policies and plans. The proposed scheme has been subject to the statutory process for road development in Northern Ireland and the relevant legislation underpinning this.

### **3.19 Interactions of the Foregoing and Cumulative Effects (Chapter 24 of the EIAR)**

3.19.1 Cumulative impacts result from multiple actions on receptors and resources and occur over time. They are generally additive or interactive in nature. Cumulative impacts can also be considered as impacts resulting from incremental changes caused by other past, present or reasonably foreseeable actions together with the project.

3.19.2 There are principally two types of cumulative impact in EIA, i.e.:

- Cumulative impacts from a single project whereby the impact arises from the combined action of a number of different environmental topic specific impacts upon a single receptor/resource i.e. Interaction of impacts; and
- Cumulative impacts from different projects (in combination with the project being assessed) whereby the impact may arise from the combined action of a number of different projects, in combination with the project being assessed, on a single receptor/resource. This can include multiple impacts of the same or similar type from a number of projects upon the same receptor/resource i.e. in combination impacts.

3.19.3 Each of the technical assessments have taken into account the likely significant interacting impacts between each assessment. This has been achieved through dialogue via the EIA Coordinator and the various technical leads. Although there are impact interactions across a wide variety of topics only the significant interactions have been considered. Minor adverse and minor beneficial impacts have also been identified. The term minor relates to effects that are locally significant and adverse impacts are restricted to: Cultural Heritage / Landscape; Ecology / Landscape and Land Use / Noise and Vibration. Beneficial impacts relate to: Air Quality / Land Use / Climate / Major Accidents and Disasters; and Landscape / Vehicle Travellers.

None of the development projects identified as being relevant in terms of its size, type and location is considered likely to lead to 'in combination' effects of a sensitive environmental receptor.

### **3.20 Schedule of Environmental Commitments (Chapter 25 of the EIAR)**

- 3.20.1 All necessary mitigation measures that have been identified within the EIAR to protect the environment, prior to, during construction, or during operation of the proposed scheme will be incorporated into the Method Statements and the Contractor's Environmental Management System (EMS) which will include the CEMP and the Site Waste Management Plan (SWMP). These documents, along with the contents of the EIAR will provide the necessary mechanism to ensure full compliance with the outlined environmental commitments.
- 3.20.2 The Schedule of Environmental Commitments in the EIAR therefore collates all the previously identified mitigation measures required as a result of the proposed scheme in order to provide a record of commitments that the Contractor will be obliged to adhere to through the contract period. It is however, recognised that there may be a need to revise or supplement the commitments by agreement between the successful Contractor, DfI Roads, statutory bodies and other interested parties.

## **4. ADDITIONAL COMMITMENTS**

### **4.1 NIE 33kV Overhead Diversions**

4.1.1 Extensive consultations have taken place with Statutory Consultee – Northern Ireland Electricity (NIE) to determine the preferred option regarding the existing 33kV overhead lines across the Dublin Road to mitigate the risks associated with constructing, operating and maintaining the River Erne Bridge beneath this hazard.

4.1.2 Consultations with NIE at early Stage 3 assessment identified several concerns as follows:

- The overhead cables serve a significant portion of Enniskillen town, meaning power outages would have a significant impact;
- Specified time periods for power outages would be insufficient for any significant construction works to take place;
- Clearance between the proposed bridge levels and cables would be insufficient for safe construction, operation and maintenance of the bridge.

4.1.3 Several options were developed to determine the preferred method for addressing the 33kV hazard. The preferred option includes diverting the overhead cables between the towers currently straddling the River Erne. Cables are to be diverted underneath the River Erne by directional drilling, before being diverted northwards along the A4 Dublin Road through underground ducts. A new termination tower is to be constructed in third party lands (within Castle Coole Estate) approximately 300m north-east of the existing tower with the existing tower being removed.

4.1.4 This option is the preferred choice as the significant risks associated with the overhead cables are removed within the scheme proposals for the River Erne crossing point and provides environmental landscaping benefits whilst minimising the impact on third party lands.

### **4.2 Complementary Town Centre Improvements**

4.2.1 Due to the reduction of traffic through the Enniskillen Town after the completion of the Enniskillen Southern Bypass scheme, it is recognised there is an opportunity to implement sustainable and active travel measures within the Enniskillen Town Centre.

4.2.2 In anticipation of this scheme being constructed, the Department will develop proposals for complementary improvements to enhance and reshape Enniskillen town centre building on these decongestion benefits – with a particular focus on promoting sustainable travel choices, connecting people and communities and creating a thriving and liveable space.



## **5. DEPARTMENTAL DECISION**

5.1.1 Having considered the EIA Report and all representations made, and having taken into account the Reasoned Conclusion on the significant effects of the project on the environment attached at Annex A and the Appropriate Assessment, the Department has decided that the proposed A4 Enniskillen Southern Bypass Scheme should be progressed and the necessary Orders made when appropriate. The decisions and Orders set out below will be subject to the requirement to carry out mitigation and other works referred to in Section 3 of this Report.

### 5.1.2 Environmental Impact Assessment Report

- The Department has decided to publish a Notice to Proceed with the scheme.

### 5.1.3 Direction Order

- The Department has decided to make the Direction Order for the scheme.

### 5.1.4 Vesting Order

- The Department has decided to make the Vesting Order for the scheme.

### 5.1.5 Bridge Orders

- The Department has decided to make The River Erne Bridge Order (Northern Ireland) for the scheme.
- The Department has decided to make The River Sillees Bridge Order (Northern Ireland) for the scheme.
- The Department has decided to make The River Erne (Diversion of Navigable Watercourse and Extinguishment of Public Rights of Navigation) Order for the scheme.

## **ANNEX A – REASONED CONCLUSION FOR THE PROJECT**

An environmental assessment shall provide clear, concise information to support the competent authority in reaching a reasoned conclusion on the likely effects of a project on the environment. Environmental Impact Assessments (EIAs) must be based on current knowledge and established methods of assessment in accordance with the EIA Directive.

The process has consisted of:

1. Screening, scoping and preparation of an EIA Report (EIAR);
2. Consultation and publication of the report and any other environmental information in accordance with the Roads (NI) Order;
3. Examination by the competent authority of the information contained within the EIA Report, and any supplementary information provided, and the results of any consultations;
4. The reasoned conclusion of the competent authority, taking into account the results of the examination referred to in point 3, and where appropriate, its own supplementary examination;
5. The integration of that reasoned conclusion into the decision as to whether to proceed with the project; and

This Annex provides the reasoned conclusion of the Department for Infrastructure (DfI) (the competent authority), taking into account the results of the examination of the information contained within the EIA Report and any supplementary information provided and the results of any consultations. DfI screened designated European and Ramsar sites for likely significant effects on site selection features and carried out Appropriate Assessment for those features and sites for which likely significant effects were identified. This is reported in EIAR Appendix 9.13 Habitats Regulation Assessment.

### **Effects of the Proposed Development on the Environment**

This section summarises the outcome of assessment for each EIA topic, having regard to the examination of environmental information contained above, to the EIAR and to the submissions from statutory and non-statutory consultees. It is considered that the main significant direct and indirect effects of the proposed development on the environment are as follows.

**Air Quality** – During construction short term impacts, such as dust generation may arise however these impacts are not significant. The conclusion regarding the effect of the proposed scheme during operation is that there would be no significant adverse effect on local air quality therefore no mitigation measures are necessary during operation. There is expected to be a major beneficial effect due to decreases in pollutant concentrations at properties within Enniskillen within 200m of roads affected by changes in traffic as a result of the proposed scheme.

**Cultural Heritage** - The majority of the archaeological Investigations required had been undertaken at March 2018 and no archaeological features of note were identified at that time. Heritage features such as the railway bridge, Lisgoole Abbey demesne, a ruined post-medieval structure and a derelict vernacular cottage will suffer minor adverse impacts on their setting due to the proposed scheme.

Heritage features within the receiving environment that will be indirectly impacted will be appropriately screened from the development in order to help maintain their current landscape setting where possible. It is predicted that the setting of the remains of the railway bridge that once crossed the River Erne will be significantly impacted as it is substantial. Screening mitigation will take time to establish in order to reduce the medium adverse impact predicted in the opening year to negligible by Year 15. No significant residual effects remain post mitigation.

**Ecology and Nature Conservation (Biodiversity)** - Moderate adverse impacts may occur during construction for woodland; species-rich hedges and hedge network; otter resting sites; bat roosts; bat commuting and foraging habitat; and barn owls. Following mitigation the residual impacts are predicted to be not significant for all of these features other than bats.

The proposed scheme could result in temporary adverse effects on the conservation status of bats in terms of the abundance and distribution of commuting and foraging bat assemblages. This will arise from loss of two small non-breeding, transient bat roost sites as well as temporary disturbance to bats roosting in adjacent structures during construction. In addition, there will be the loss of habitat features that provide important linkages between roost sites in Enniskillen and foraging habitat to the south and are utilised by large numbers of bats, including some less common species, during commuting and foraging. Mitigation for loss of commuting and foraging habitat and to maintain connectivity has been provided within the design. The predicted residual impact on bats is moderate adverse in the opening year decreasing to neutral by year 15, when new planting has become established.

With the mitigation incorporated in the design stage, no significant adverse impacts are predicted for any sites or features during the operational phase.

The effects of the proposed scheme on designated European and Ramsar sites was assessed in the EIA Appendix 9.13 Habitats Assessment Stage 1 Screening and Stage 2 Appropriate Assessment. The Stage 2 Appropriate Assessment determined that the Scheme would have no effect on the integrity of any international site provided specified mitigation was implemented for the otter.

**Road Drainage and the Water Environment** – In the absence of mitigation there is potential for significant adverse effects on surface water and the amenity and economic value of the Rivers Erne and Sillies. A Construction Environmental Management Plan (CEMP) will be put in place by the appointed contractor to ensure that any potential impacts on the water environment during construction are properly controlled. An outline CEMP is located in Appendix 19.1 in Volume 2 of the EIAR. The outline CEMP includes an Incident Response Plan, to be completed by the appointed contractor, maintained up to date through the duration of the construction contract and displayed prominently in all site offices. The purpose of this Plan is to provide guidance relating to appropriate action to take in the event of a pollution incident. This Plan will also provide an overview of how pollution can be prevented.

Method statements will be developed by the appointed contractor and agreed with Waterways Ireland to ensure minimal disruption to river users and also to ensure use of Riverside Marina is facilitated during construction. The boat turning facility is to be provided in advance of any bridge works on the River Sillies. The impact of these control measures reduces the significance of any effect to neutral.

The impact on surface water and the amenity and economic value of the Rivers Erne and Sillies during operation is considered to be negligible. Even though it is considered that there will be no adverse ecological impacts on the receiving water bodies, water protection measures in the form of SuDS ponds have been incorporated into the scheme design. In operation, without incorporating mitigation at the design stage, the scheme would lead to severance from the existing boat turning head due to new bridge across the River Sillies. A new boat turning head will be created on the downstream side of bridge to avoid this. Bridge construction over the Rivers Erne and Sillies and creation of the boat turning head will require works in and adjacent to the river channels which could cause scour/erosion. To mitigate this, a fluvial geomorphologist is to be involved at detailed design stage and oversee any construction activities involving channel works.

**Landscape Effects** – Due to the scale and nature of the works there will be a significant impact during construction on the landscape of Enniskillen and Sillies Landscape Character Areas (LCA), Lisgoole Abbey Historic Park Garden and Demense (HPGD) and Local Landscape Policy Areas (LLPA) 5, 6, 7 and 8. There will also be a significant impact on the visual resource at all the viewpoints assessed, other than Viewpoint 2.

The residual impacts on the landscape resource during operation are reduced but remain moderate adverse for LLPA5, LLPA7 and LLPA8 at Winter Year 1. Residual impacts on the landscape resource will not be significant for any location by Year 15. The residual impacts on the visual resource during operation are reduced but remain moderate to substantial adverse at Winter Year 1 for Viewpoints 4, 5 and 7, declining to moderate or slight-moderate adverse by Year 15. These are residential receptors on the Dublin Road, close to the proposed Dublin Road roundabout and the Erne Bridge. The Riverside Marina will also be impacted, by the Sillees Bridge, roundabout and street lighting.

In a meeting, following two submissions in response to the 2018 consultation, the occupiers of a house in the Derrychara area raised issues of visual impact of the scheme and road lighting and headlight glare from their house. Following an explanation of the scheme layout, it was acknowledged that the impact was not as significant as the respondents had imagined. No further actions were identified as necessary as a result of this meeting and no other submissions raised concerns about visual impacts.

**Land Use** - No residual significant impacts have been identified in terms of land use. Agricultural and other commercial enterprises will remain viable due a relatively low level of land loss during both the construction and operational phases. The provision of appropriate mitigation, such as access to severed agricultural land via underpasses, will minimize any impact. There will be a moderate adverse impact on holdings L5, 6 and 7 during operation due to encroachment; this will be addressed by compensation rather than mitigation.

**Land Condition: Geology, Soils and Contaminated Land** - The impact on geology and soils due to the proposed scheme will occur during the construction phase of works. No geologically designated areas will be impacted upon and overall impacts on geology and soils will be minor.

A Contaminated Land PRA has been undertaken and the area underlying the proposed scheme is considered to be low risk during construction. Operationally the scheme has been designed so that it is safe in terms of human users and drainage has been designed so that any run-off issues or accidental spillages will be treated/contained so that any impact upon controlled waters is limited.

**Noise and Vibration** - Assessment of the construction phase impacts has determined that there are significant impacts associated with the works with potential impacts at Killyhevlin Chalets LT1 and Erne Shore ST3 and predicted impacts above Significant Observed Adverse Effect Level (SOAEL) predicted for 3 Weirsbridge Court, ST1, and Marine, ST4. The construction activities would be transitory in nature and therefore, where impacts are predicted at any individual receptor, they would be short-term and temporary and can be controlled and reduced through the use of generic control measures that will be documented within the Construction Environment Management Plan (CEMP).

Operationally with mitigation measures (noise barriers) installed, the majority of receptors will experience negligible or no change in noise. Within the study area there are road links which will experience a decrease in noise and those which will experience an increase in noise due to the redistribution of traffic around the network. The majority of receptors with increases in noise are below the threshold for the consideration of mitigation. The most significant detrimental impact will be experienced by those properties closest to the proposed new bypass and in these locations, mitigation measures in the form of acoustic barriers have been proposed. With mitigation measures in place all receptors are less than the SOAEL in terms of noise and no properties are likely to meet the requirements of the Noise Insulation Regulations. No significant vibration impacts during construction or operation of the proposed scheme are anticipated.

**Pedestrians, Cyclists, Equestrians and Community Effects** - During construction the proposed scheme will cause a temporary impact on the local community, with moderate or moderate-major adverse impacts on non-motorised users (NMU), vehicle travellers, navigation on the Rivers Erne and Sillies and community facilities. A number of mitigation measures are to be incorporated in the CEMP to minimise these impacts.

Operationally it is considered that this scheme, in the absence of mitigation, would have moderate to large adverse impacts on NMU, vehicle travellers, navigation on the Rivers Erne and Sillies and community facilities. However, through mitigation incorporated in the design, the scheme will have longer term residual benefits due to the improved pedestrian, cycling and equestrian traveller provision. The scheme should also improve linkages between the local population and community facilities. Once the scheme is fully functioning it should improve journey times, improve road safety for all users and reduce the congestion in the Enniskillen town centre.

**Vehicle Travellers** - Following completion of the proposed scheme: the view from the road will improve on the existing situation by offering expansive tranquil views to the vehicle traveller; driver stress is expected to be low and will remain low by the design year; the average journey time is expected to decrease as overtaking opportunities and speed limits increase; overall the proposed scheme will have a large beneficial effect for vehicle travellers.

**Climate - Effects on Climate:** Following implementation of the mitigation measures, construction of the proposed scheme will still cause large quantities of emissions, and as such have a large significant negative impact at the scheme scale. This is due to the fact that the proposed scheme involves construction of an entire new road with a large 'sunk' carbon investment. It is however noted that the 2020 Do-Something scenario results in a -4.72% reduction in emissions, (-4.06% at 2035) which is in line with UK carbon reduction targets. The construction impact has a payback period of 28.7 years. Long term therefore the proposed scheme will have a beneficial impact on climate.

**Vulnerability to Climate Change** - Infrastructure within Northern Ireland has been vulnerable, in the past, to extreme warm and cold weather, and heavy rainfall. Projected climate trends in NI suggest it is likely that the occurrence of heat waves and extreme precipitation will increase. It is likely that the proposed scheme is not vulnerable to the changes in average temperature or precipitation; rather the trends in extremes pose more of a risk. The qualitative assessment identified that current design standards and best practice operational and maintenance regimes are expected to provide a degree of resilience to climate risks. Further design, construction and operational climate change adaptation measures are however required to provide an appropriate degree of climate resilience to reduce residual impacts over the life of the proposed scheme.

**Vulnerability to a Major Accident or Disaster** – There is potential for moderate adverse impacts due to transport accidents during construction which will be mitigated through compliance with Construction (Design and Management) (CDM) 2015 Regulations. There could also be potential for transport accidents during operation however this will be mitigated through design. Therefore there are not expected to be any significant adverse effects after mitigation, resulting from major accidents and disasters, as a result of the proposed scheme during either the construction or operational phases.

**Disruption Due to Construction** - This includes the effects on people and on the natural environment which can occur between the start of pre-construction works and the end of the contract maintenance period. This overlaps some of the other topics as construction may cause impacts on land use, property, road users, ecology, watercourses and archaeology investigations or through noise and visual impacts. With the incorporation of mitigation this will remain significant for property, road users, ecology, or through noise and visual impacts. The proposed scheme will be mainly constructed offline and the implementation of the Construction Environmental Management Plan (CEMP) will minimise disruption to the receiving environment and thus minimise the potential effects of construction. All construction impacts will be temporary in nature.

**Materials and Waste** - Material resources are required for construction of the new pavement, signage, foundations, underpasses, structures and drainage. Potential effects of waste may relate the generation of non-useable materials from the site clearance and demolition, the re-use of soils and materials on site, the pre-treatment of materials prior to re-use on site, and the recycling of materials. The Preliminary Risk Assessment (PRA) suggests the absence of a significant contamination beneath the proposed scheme and classifies the route as 'low risk'. A deficit of material is likely which means that material will need to be imported to the site from elsewhere. From initial estimations there will be a balance deficit in the order of 30,000 m<sup>3</sup>.

The project is currently registered with CEEQUAL and the requirement for an excellent award should ensure the design and construction of a sustainable scheme. Potential effects from the proposed scheme from materials requirement and excess materials/waste should be considered in more detail during the detailed design stage. The detailed design and Site Waste Management Plan (SWMP) will be required to deliver efficiencies including reducing excess waste, increasing the recycling potential of materials, and minimising the requirement for raw materials.

**Material Assets** - In the context of this proposed scheme material assets are taken to refer to utility infrastructure, electricity, gas, water (including private installations), telecommunications, aviation safety, rights of way, and minerals. During construction the scheme could have a major adverse impact on the electricity, water and telecommunications networks. It is considered that any effects will be temporary in nature and, with mitigation, will not be significant. Operationally there will be no adverse impacts and a significant beneficial effect will be experienced through the removal of pylons and the burial of cables. These measures will also make additional space available within the Killyhevlin Industrial Estate.

**Human Health** – Human health has been considered within the following chapters: Air Quality (EIA Chapter 7); Road Drainage and the Water Environment (EIA Chapter 10); Noise and Vibration (EIA Chapter 14); Land Condition: Geology, Soils and Contaminated Land (EIA Chapter 13); Pedestrians, Cyclists, Equestrians and Community Effects (EIA Chapter 15); and Vehicle Travellers.

The general impact on human health due to the proposed scheme is anticipated to be beneficial due to a number of factors including: improvements in air quality; increased safety due to good road design and the removal of traffic from the congested town centre; and improvements in stress levels of drivers. Construction impacts will be short term and can be controlled by measures that are documented within the Construction Environmental Management Plan.

**Impact on Plans and Policies** - The assessment has demonstrated that the proposed scheme is in line with the key policies and plans relevant to the scheme, and EIA topics. The proposed scheme will be subject to the statutory process for road development in Northern Ireland and the relevant legislation underpinning this.

**Interactions of the Foregoing and Cumulative Effects** - Each of the technical assessments have taken into account the likely significant interacting impacts between topics. No interactions were identified that would lead, in combination, to significant adverse effects. Minor adverse impacts have been identified for interactions between: cultural heritage and landscape; ecology and landscape and land use and noise and vibration. None of the other development proposals identified as being relevant in terms of size, type and location are considered likely to lead to significant 'in-combination' effects on a sensitive environmental receptor.



## **Designated European and Ramsar sites and Appropriate Assessment**

The Department screened designated European and Ramsar sites for likely significant effects on site selection features and carried out Appropriate Assessment for those features and sites for which likely significant effects were identified. This is reported in EIAR Appendix 9.13 Habitats Assessment Stage 1 Screening and Stage 2 Appropriate Assessment. Likely significant effects were identified on the following qualifying features, relating to three International Sites, as summarised below:

- Otter populations of the Upper Lough Erne SAC due to disturbance during construction and operation; and
- Wintering whooper swan populations of the Upper Lough Erne SPA and Ramsar site due to disturbance during construction and permanent loss of functional land.

The Department completed an Appropriate Assessment in relation to the potential effects of the proposed scheme on these features and sites. This considered the nature, scale and location of the proposed development, the site's conservation objectives, proposed mitigation, representations of Northern Ireland Environment Agency and SES's report. The Appropriate Assessment determined that there would be no adverse effects on whooper swan as a feature of Upper Lough Erne SPA and Ramsar site. Avoidance and mitigation measures were identified to avoid significant adverse effects on the conservation objectives for otter as a feature of Upper Lough Erne SAC. ECN01 of the EIAR refers in general to mitigation for otter and ECN10 and ECN11 reflect some of the mitigation measures in the appropriate assessment however they are not fully represented in the Schedule of Environmental Commitments originally published with the EIAR. This can be rectified in preparing the Register of Environmental Actions and Commitments (REAC).

In completing the appropriate assessment, the Department has concluded that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on European sites.

## **Environmental Management and Monitoring**

All necessary mitigation measures that have been identified within the EIAR to protect the environment, prior to or during construction, or during operation of the proposed scheme should be incorporated into the Register of Environmental Actions and Commitments (REAC), Method Statements and the Contractor's Environmental Management System (EMS) which will include the Construction Environment Management Plan (CEMP) and a number of supporting documents including a Site Waste Management Plan (SWMP), Soil Handling and Management Strategy (SHMS), and a Habitat Management Plan. These documents, along with the contents of the EIAR will provide the necessary mechanism to ensure full compliance with the outlined environmental commitments.

Mitigation measures for Chapters 7-15 have been summarised in EIAR Chapter 25 Table 25-1. The Schedule of Environmental Commitments has been reviewed and updated to include mitigation measures in Chapters 16-22 and any further mitigation agreed during the consultation period following publication of the EIAR. The updated Schedule of Environmental Commitments is included at Annex B.

Mitigation, monitoring and maintenance is to be delivered through a number of plans and method statements. The Habitat Management Plan, Appendix 9.12, for example refers to the following: Habitat Protection Plan; Ecology Site Plans; Species Protection Plans; Ecological Management Plan; and Ecology Hedgerow Plan.

To ensure the CEMP and method statements are kept up-to-date and relevant to the scheme's construction process, ongoing feedback and environmental monitoring will take place. The Contractor will be required to employ a suitably experienced and qualified Construction Environmental Management Plan Co-ordinator (CEMPC) to undertake the co-ordination of the monitoring of the works' impacts and the implementation of all Contractor's proposals, in respect of all environmental requirements and liaising with all relevant statutory and non- statutory bodies. This will be supervised by the responsible CEMPC to include monitoring for any legislative requirement, objectives and targets.

There is reference to the need for monitoring in some of the EIA topics. For example:

- Air quality: 7.67. If necessary monitoring parameters and a programme will be established;
- Ecology and Nature Conservation (Biodiversity): 9.158. All mitigation will be accompanied by an appropriate management, maintenance and monitoring plan;
- Noise and Vibration: NV07 - Establishment of agreed criteria and monitoring whilst undertaking significantly noisy or vibration-causing operations near to sensitive locations to ensure compliance and to identify any problems;
- Human Health: Excavated material would be monitored in high risk areas to determine if contamination is present.

The final CEMP, or supporting documents, should specify these and additional monitoring required to ensure the effectiveness of mitigation. The Ecological Clerk of Works (ECoW), to be appointed to advise on ecological mitigation, will also be responsible for ensuring that all mitigation will be accompanied by an appropriate management, maintenance and monitoring plan. The EIAR establishes baseline information which helps highlight potential construction effects, and should be referred to throughout environmental monitoring.

## **CONCLUSION**

The Department considers that the EIAR, supported by the additional documentation published at consultation and the mitigation proposed, that the Department has provided information which is reasonable and sufficient to allow the Department to reach a reasoned conclusion on the significant effects of the project on the environment, taking into account current knowledge and methods of assessment.

Having examined all the environmental information, the Department is satisfied that it has been demonstrated that the proposed scheme will not have any significant adverse impacts on the natural or human environment (including designated sites and protected species) that cannot be addressed by the mitigation.

Having regard for the Roads (Environmental Impact Assessment) Regulations (Northern Ireland) 2017 and the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended), the proposed Enniskillen Southern Bypass is considered acceptable, provided that the following measures are carried out in full by the Department or any agent acting on its behalf:

### **Overall**

1. The proposed scheme shall be carried out and completed in accordance with the plans and particulars, including the EIA Report and other associated documentation, published by the Department on its portal on the 28th March 2018, except as may otherwise be required in order to comply with the measures set out below. The proposed scheme will be subject to the statutory process for road development in NI and the relevant legislation underpinning this.
2. The mitigation measures and associated monitoring shall be carried out in full, except as may otherwise be required in order to comply with other conditions. These mitigation and monitoring measures are outlined in the plans and particulars relating to the scheme including: Chapters 7- 22 and Chapter 25, Schedule of Environmental Commitments, of the EIAR; those in other associated documentation published by the Department on its portal on the 28th March 2018; and those in Appendix 9.13 Habitats Assessment Stage 1 Screening and Stage 2 Appropriate Assessment and any subsequent up date of that report. The additional mitigation measures arising from the NIEA Natural Environment Division (NED) response letter dated the 3rd May 2018 must be adhered to.

### Detailed Design

3. Detailed design must incorporate the mitigation measures set out in EIAR Chapter 17 17.79-17.83 and Table 17-19 to reduce the effect on climate. Detailed design must incorporate the mitigation measures set out in EIAR Chapter 17 Table 17-22 and 17.155-17.156 to reduce the vulnerability of the proposed scheme to climate change.
4. Potential effects from materials requirement and excess materials/waste should be considered further during the detailed design stage.
5. Detailed design should fully address the additional measures raised by Natural Environment Division in the DAERA consultation response letter dated 3rd May 2018, as summarised below:
  - a) Provision of further information on lighting in respect of bats to include specification that lighting directed towards the watercourse should not exceed 1 lux.
  - b) Demonstration of additional hedgerow planting.
  - c) Liaison with DAERA on details of mitigation for bats, badgers, otters and species-rich hedgerow.

### Prior to Award of Contract

6. A Register of Environmental Actions and Commitments (REAC), to be part of the CEMP, should be prepared before tendering to include all mitigation measures in the EIAR; fully incorporate the mitigation for otter identified in Appendix 9.13 Habitats Assessment Stage 1 Screening and Stage 2 Appropriate Assessment; to include further details raised in DAERA's consultation response of 3<sup>rd</sup> May 2018. The REAC will provide a summary of the actions and responsibilities required to achieve a mitigation objective, as well as any monitoring required in order to confirm that mitigation measures are working effectively.
7. It is recommended that the REAC includes a schedule of all the plans and method statements that are, or may be, required. This should indicate when they will be prepared; who will be responsible for preparation and implementation; and how they relate to other plans where this is applicable.

8. It is recommended that the REAC includes a list of personnel to ensure that all the key roles, including Construction Environmental Management Plan Co-ordinator (CEMPC) and Ecological Clerk of Works (ECoW), are specified and that the supporting roles identified in the EIAR, such as fluvial geomorphologist and soil scientist, are also specified. These may be cross referenced as appropriate to specific mitigation or supporting plans which they will be required to oversee.

### Preconstruction and Construction

9. Prior to the commencement of development, the Department, or any agent acting on its behalf, shall prepare and agree in consultation with the relevant statutory authorities, a Construction Environmental Management Plan (CEMP), including demonstration of proposals to adhere to best practice and protocols. The CEMP, in light of the detailed design phase, must include all mitigation and avoidance measures as identified in measure 2 above. The CEMP shall include specific proposals as to how the measures outlined in the CEMP will be measured and monitored for effectiveness. The CEMP should incorporate, or be accompanied by, all sub-plans indicated in the EIAR including the Site Waste Management Plan (SWMP) and Construction Method Statements.
10. The Contractor shall employ a suitably experienced and qualified CEMPC to undertake the co-ordination of the implementation of all Contractor's proposals and the monitoring of the works' impacts, in respect of all environmental requirements, and in liaison with relevant statutory and non-statutory bodies. A suitably qualified person with relevant experience should be appointed as ECoW. The ECoW's responsibilities will include (but not be limited to) all aspects set out in section 6.1.5 of the Outline CEMP.
11. Prior to construction, targeted preconstruction surveys for protected species, to be agreed with NIEA, must be carried out and, if necessary mitigation updated in light of the findings.
12. Prior to commencement of the scheme, final details of measures to protect fisheries and water quality of the river systems, to include a programme of water quality monitoring, shall be outlined and placed on file with DAERA Inland Fisheries and NIEA Water Management Unit. All works must adhere to DAERA's Standing Advice on Pollution Prevention and Discharges, available at: [www.daera-ni.gov.uk/water-environment-standingadvice](http://www.daera-ni.gov.uk/water-environment-standingadvice)

13. Note that Pollution Prevention Guidelines PPGs have been partly superseded by Guidance for Pollution Prevention (GPPs) available at [www.netregs.org.uk](http://www.netregs.org.uk). Therefore, where a PPG has been referred to that has been replaced, the relevant GPP should now be cited.
14. The CEMP must include an Incident Response Plan, to be completed by the appointed contractor and agreed with DAERA Water Management Unit. This must be maintained up to date through the duration of the construction contract and displayed prominently in all site offices. The purpose of this Plan is to provide guidance relating to appropriate action to take in the event of a pollution incident. This Plan will also provide an overview of how pollution can be prevented.
15. Given that there will be in-channel works implementation of a 'clean in, clean out' procedure must be detailed in the CEMP to minimise the risk of spread of invasive species to or from the Rivers Sillees and Erne.
16. A project-specific Traffic Management Plan (TMP) shall be prepared and initiated prior to works commencing onsite. The TMP will be agreed with the Department and Fermanagh and Omagh District Council.
17. If during the scheme's construction, new contamination or risks are encountered which have not previously been identified, works should cease in the affected area and the contamination shall be fully investigated in accordance with the Model Procedures for the Management of Land Contamination (CLR11). In the event of unacceptable risks being identified, a remediation strategy shall be agreed with NIEA Land & Groundwater Team in writing, and subsequently implemented and verified to its satisfaction.

### Post construction

18. It will be important to ensure that mitigation that either requires maintenance post construction or requires implementation post construction is managed. There should be ongoing monitoring/management by the Department of planting for landscape and species/habitats restoration. This shall be addressed through preparation of a Handover Environmental Management Plan (HEMP) or an equivalent.

## **ANNEX B – UPDATED SCHEDULE OF ENVIRONMENTAL COMMITMENTS**

All necessary mitigation measures that have been identified within the EIAR to protect the environment, prior to, or during construction, or during operation of the proposed scheme will be incorporated into the Method Statements and the Contractor's Environmental Management System (EMS) which will include the Construction Environment Management Plan (CEMP) and the Site Waste Management Plan (SWMP). These documents, along with the contents of the EIAR will provide the necessary mechanism to ensure full compliance with the outlined environmental commitments.

Specifically, within this Departmental Statement the legal and other environmental requirements are defined, and other responsibilities established in order to ensure:

- Their implementation;
- The adoption of monitoring procedures to check their implementation; and
- The identification of any specific consultation requirements to make certain that these mitigation measures are implemented and adhered to properly.

Tables 1-1 and 1-2 therefore collates all the previously identified mitigation measures required as a result of the proposed scheme in order to provide a record of commitments that the Contractor will be obliged to adhere to through the contract period. It is however, recognised that there may be a need to revise or supplement the commitments by agreement between the successful Contractor, the Department, statutory bodies and other interested parties.

Table 21.1 of the EIAR has been updated (Table 1-1 of this document) to reflect additional mitigations identified in Chapters 16-22 of the EIAR and Table 1-2 of this document shows further mitigation accepted by the Department during the consultation period following publication of the EIAR.

**Table 1-1 Schedule of Environmental Commitments**

<b>Mitigation Ref No.</b>	<b>Mitigation</b>	<b>Potential Timing of Mitigation</b>
<b>Air Quality (Chapter 7)</b>		
AQ01	Regular water-spraying and sweeping of unpaved and paved roads to minimise dust and remove mud and debris.	For the duration of the construction works
AQ02	Using wheel washes, shaker bars or rotating bristles for vehicles leaving the site where appropriate to minimise the amount of mud and debris deposited on the roads.	For the duration of the construction works
AQ03	Sheeting vehicles carrying dusty materials to prevent materials being blown from the vehicles whilst travelling.	For the duration of the construction works
AQ04	Enforcing speed limits for vehicles on unmade surfaces to minimise dust entrainment and dispersion.	For the duration of the construction works
AQ05	Ensuring any temporary site roads are no wider than necessary to minimise their surface area.	For the duration of the construction works
AQ06	Damping down of surfaces prior to their being worked.	Prior and for the duration of the construction works
AQ07	Storing dusty materials away from site boundaries and in appropriate containment (e.g. sheeting, sacks, barrels etc.).	For the duration of the construction works
<b>Cultural Heritage (Chapter 8)</b> (note most of the archaeological investigation activities have been completed as of March 2018)		
CH01	Archaeological testing carried out under licence and with full consultation with the HED, Dept. for Communities.	Prior to the construction works
CH02	Underwater archaeological assessment carried out under licence and with full consultation with the HED, Dept. for Communities.	Prior to the construction works
CH03	Auger survey carried out under licence and with full consultation with the HED, Dept. for Communities.	Prior to the construction works
CH04	Full measured survey and written and photographic record prior to removal.	Prior to the construction works
CH05	Path of the former railway: Written and photographic record.	Prior to the construction works
CH06	Townland boundary between Gortadrehid Little & Big (hedge & ditch): Written and photographic record.	Prior to the construction works
CH07	Railway Bridge across the Erne: IHR 01009:006:00: Explore the potential for additional vegetation screening between Proposed Development and the receptor.	Prior to the construction works
CH08	Lisgoole Abbey demesne (F-018): Additional vegetation screening between Proposed Development and the receptor.	Prior to the construction works
CH09	Ruined post medieval structure (Field 6): Additional vegetation screening between Proposed Development and the receptor.	Prior to the construction works
CH10	Derelict vernacular cottage (Field 13): Additional vegetation screening between Proposed Development and the receptor.	Prior to the construction works
<b>Ecology and Nature Conservation (Biodiversity) (Chapter 9)</b>		
ECN01	Full Appropriate Assessment (AA) has been carried out for these six international sites, as documented in the HRA provided in Appendix 9.11. The AA includes a full impact assessment and mitigation measures. Avoidance and mitigation measures described in the HRA.	Prior to the works commencing and throughout construction and operation.
ECN02	CEMP includes requirements for the implementation of appropriate pollution control measures including controlling the spread of invasive species.	Prior to the works commencing and throughout construction.



Mitigation Ref No.	Mitigation	Potential Timing of Mitigation
ECN03	<p>Creation of a total of 1.3 ha of woodland. This comprises:            0.7 ha of semi-natural woodland along verges using an appropriate species mix to reflect the composition of existing woodlands and topsoil translocated from appropriate areas of woodland, particularly the area noted as “long-established”;            0.6 ha of broad-leaved scattered trees, with soil and species-mix as above.            Retained vegetation will be fully identified and protected.</p>	Throughout the construction works.
ECN04	<p>Creation of 1.5km hedges along verges. Where possible, species-rich hedges will be translocated to new locations. The species mix will reflect the composition of the existing species-rich hedges.            New hedge creation is concentrated to the western and eastern end of the proposed scheme in line with the existing character of the area and to maximise opportunities to improve habitat connectivity.            Groups of standard trees will be planted along the length of both sides of the proposed scheme (a total of around 4km of verge planting).            Retained vegetation will be fully identified and protected.</p>	Throughout the construction works.
ECN05	<p>River Erne and Sillees River: CEMP includes requirements for the implementation of appropriate pollution control measures.</p>	Throughout the construction works
ECN06	<p>Design of in-channel pier structures to minimise footprint permanent works in-channel. Orientate crossing perpendicular to river to reduce extent of watercourse crossed.            Working methods associated with the proposed bridge crossing point to minimise footprint within the channel, margins and floodplain. Reinstate land to pre-construction condition outside of the footprint of the crossing.            CEMP includes measures to protect fishery e.g. fish removal protocols from coffer dam areas and control of fine sediment ingress.</p>	Through the design stage, throughout construction and operation.
ECN07	<p>Sillees River: Design of turning head to avoid hard engineering solution through, for example, creation of marginal terraced bio-engineered solution that incorporates native wetland planting (or use of translocated native plants) to offset loss of existing wetland vegetation.</p>	Throughout design stage and construction.
ECN08	<p>Avoidance of sensitive spawning period for coarse fish species (e.g. spawning season) and avoidance of direct lighting of the watercourse at night.            Limit duration of in-channel works and adoption of vibration piling over percussive piling where practical.</p>	Throughout construction works
ECN09	<p>Badger: No night-time working (i.e. from 30 mins before sunset to 30 mins after sunset) within 25m of badger setts.            Excavations to be covered overnight.            Any temporarily exposed open pipe system to be capped to prevent badgers gaining access.            Maintain access across construction site.</p>	Throughout the construction period
ECN10	<p>Otter resting sites: A licence will be required to allow disturbance.</p>	Prior and throughout the construction period
ECN11	<p>Otter commuting and foraging: No night-time working (i.e. from 30 mins before sunset to 30 mins after sunset) within 50m of the river bank and excavations to be covered overnight.            No night-time lighting within 50m of the river bank.            Ensure continuity of habitat along river bank during construction.</p>	Prior and throughout the construction period

<b>Mitigation Ref No.</b>	<b>Mitigation</b>	<b>Potential Timing of Mitigation</b>
ECN12	Red Squirrel: Provision of replacement foraging and commuting habitat – hedges and woodlands.	Prior and throughout the construction period
ECN13	Bat Roosts: A licence will be required to allow felling of trees or demolition of structures that support bat roosts. A licence will be required to allow disturbance to bats roosting in trees and structures within 30m of the proposed scheme. Measures will include roost exclusion, provision of replacement habitat, soft felling and demolition, provision of on-site advice during felling and demolition.	Prior and throughout the construction period
ECN14	Bat commuting and foraging habitat: Provision of replacement foraging habitat – hedges, woodland, scattered tree planting. No night-time working (i.e. from 30 mins before sunset to 30 mins after sunset) within 50m of significant commuting routes.	Prior and throughout the construction period
ECN15	Breeding Birds: Undertake site clearance outside of breeding bird season.	Throughout the construction period
ECN16	Barn Owls: No night-time working (i.e. from 30 mins before sunset to 30 mins after sunset) within 50m of likely crossing blackspots. Although this will not mitigate effects on barn owls hunting during the day, it will provide an undisturbed opportunity to hunt from dusk onwards.	Throughout the construction period
ECN17	Enhancement of bankside and in-channel habitat in the vicinity of the crossing location.	Throughout design, construction and operation.
ECN18	Implementation of best practice guidelines for surface water drainage systems and any new discharges to the watercourse e.g. SuDS.	Throughout operation
ECN19	Avoidance of concrete bridge apron and design of in-channel piers and bank protection to minimise flow disruption and sediment impacts.	Throughout design, construction and operation.
ECN20	Design of in-channel piers and bank protection to minimise flow disruption and sediment impacts.	Throughout design, construction and operation.
ECN21	Provision of underpasses and badger fencing at known crossing points, where local topography allows and where the road is on embankment, including at the River Erne and Sillees River and at regular intervals – approximately every 500m. Indicative locations are provided on Figure 11-10.	Throughout design, construction and operation.
ECN22	Ensure habitat continuity along the river banks during normal flow and during flood events, if necessary by the provision of an additional ledge or culvert above the level of the design year flood level. Provision of otter fencing in association with ledges at watercourse crossings. Provision of badger tunnels (see above) and underpasses will provide additional access which will allow for any changes in otter activity that occur as a result of the proposed scheme.	Throughout design, construction and operation.
ECN23	Red Squirrel: Replacement foraging habitat has been included in the landscape design.	Throughout design, construction and operation.
ECN24	Commuting and Foraging Bats: Replacement foraging habitat has been included in the landscape design. Replacement habitat comprising hedges and woodland have been included in the design to allow east-west commuting.	Throughout construction and operation.

Mitigation Ref No.	Mitigation	Potential Timing of Mitigation
	<p>Provision of bat boxes to the south of the scheme.</p> <p>The bridges over the River Erne and the Sillees River and the central, eastern and western underpasses will allow access for bats under the proposed scheme. Appropriate planting will be used to guide bats to these structures.</p> <p>The landscape design incorporates features such as hedges and standard tree planting to deter bats from flying low across the carriageway.</p>	
ECN25	Breeding Birds: Hedgerow and woodland planting will minimise visual disturbance.	Throughout construction and operation.
ECN26	<p>Barn Owl: Tree and hedge planting screens across crossing blackspots that discourage barn owls from swooping low across the carriageway or flying along woodland edges along the road verge.</p> <p>Provide two barn owl nest boxes in appropriate locations around 1.5km from the proposed scheme to encourage roosting and nesting away from the scheme.</p>	Throughout design, construction and operation.
<b>Road Drainage and the Water Environment (Chapter 10)</b>		
RD01	Water protection measures (including erosion and sediment management) during construction are contained within the Construction Environmental Management (CEMP) Plan (Appendix 19.1). This is a 'living document' and contains details of environmental protection measures to and procedures to be employed during the construction of the scheme. The CEMP will be updated by the appointed contractor when specific details of scheme are known e.g. compound/storage locations.	Throughout design and construction.
RD02	Method statements will be developed by the appointed contractor and agreed with Waterways Ireland to ensure minimal disruption to river users.	Throughout design and construction.
RD03	Water protection measures (including erosion and sediment management) during construction are contained within the Construction Environmental Management (CEMP) Plan (Appendix 19.1).	Throughout design and construction.
RD04	Method statements to be developed by appointed contractor to ensure use of Riverside Marina is facilitated during construction. Boat turning facility to be provided in advance of any bridge works on the River Sillees.	Throughout construction.
RD05	Water protection measures (including erosion and sediment management) during construction are contained within the CEMP (Appendix 19.1).	Throughout design, construction and operation.
RD06	SuDS ponds have been incorporated into the design.	Throughout design, construction and operation.
RD07	Shut off valves should be considered as part of the detailed design.	Throughout design, construction and operation.
RD08	<p>New drainage systems will ensure that all surface water from the new road surfacing is conveyed to the River Erne and River Sillees with discharge rates being agreed with Rivers Agency. Pre-earthworks drainage will ensure that existing flows off the undulating landscape are collected and conveyed to the watercourse. This nullifies the risk of ponding or other pluvial flooding which appears to currently occur in localised areas.</p> <p>Drainage system will be designed with oversized pipes that will accommodate climate change.</p>	Throughout design, construction and operation.

<b>Mitigation Ref No.</b>	<b>Mitigation</b>	<b>Potential Timing of Mitigation</b>
RD09	Bridge to be designed to accommodate existing boat traffic.	Throughout design, construction and operation.
RD10	New boat turning head to be created on downstream side of bridge.	Throughout design and construction.
RD11	A fluvial geomorphologist should be involved at detail design stage and oversee any construction activities involving channel works.	Throughout design and construction.
<b>Landscape Effects (Chapter 11)</b>		
LE01	A CEMP will be produced; An Environmental Co-Ordinator and Environmental Clerk of Works; The contractor will provide a Community Liaison Officer; Adequate training in the form of toolbox talks will be provided; Temporary construction compounds will not be sited on prime agricultural land, woodland or forest.	Throughout construction works.
LE02	The construction period will be kept to the minimum practicable time and areas cleared close to work commencement and seeded or planted up as soon as possible after work sections are complete.	Throughout construction works.
LE03	Plant and storage areas will be appropriately sited to minimise landscape and visual impact utilising existing screening or afforded temporary screening.	Throughout construction works.
LE04	Construction sites will be kept tidy and free from litter/debris.	Throughout construction works.
LE05	Working during darkness will be avoided where possible and, where necessary directed lighting used to minimise light pollution.	Throughout construction works.
LE06	Uncontaminated topsoil to be reused will be stored in uncompacted mounds of no higher than 2m. Stripped topsoil shall be used in areas of the same habitat type. Subsoil in planting areas shall be ripped to 450mm before topsoil and planting is added. Proposed planting areas in arable or pasture land should be ripped to 600mm before planting.	Throughout construction works.
LE07	All existing trees and shrubs not affected by the construction shall be fenced off in accordance with BC5837.	Throughout construction works.
LE09	Use of receding colour on Erne Bridge structure and associated retaining wall.	Throughout construction works.
LE10	Earthwork profiles shaped to reflect the rolling character of the landscape.	Throughout construction works.
LE11	Use of extra heavy standard specimen trees near Sillees Bridge and the Erne Bridge to provide immediate visual screening.	Throughout construction works.
LE12	All drainage elements will be naturalistic and sensitively designed to integrate with the landscape setting.	Throughout construction works.
LE14A	Lisgoole Abbey HPGD: Verge grassland along northbound verge.	Throughout construction works.
LE14B	New/reprofiled slopes to be re-vegetated with new woodland/wildflower grassland as appropriate to retain/enhance key views and landscape character.	Throughout construction works.
LE15	Existing trees and vegetation replaced where lost.	Throughout construction works.
LE16	New woodland will be laid out in a random arrangement to soften the extent of earthworks, stepping in and out of nominal footprint to create a naturalistic appearance.	Throughout construction works.

<b>Mitigation Ref No.</b>	<b>Mitigation</b>	<b>Potential Timing of Mitigation</b>
LE17	All drainage elements will be planted to integrate with the local landscape setting to include wet woodland mix.	Throughout construction works.
LE18	Proposed amenity shrubs at bus lay-by.	Construction
LE20	Tree planting at the edge of the access track leading to the Dublin Road to tie into existing woodland and help to screen badger and otter fencing.	Throughout construction works.
LE21	LLPA3: Verge grassland to replace that lost.	Throughout construction works.
LE22	LLPA10: Species rich hedgerow and scattered trees to replace lost vegetation.	Throughout construction works.
LE24	Feathered trees along the Dublin Road verge to replace loss due to road improvements.	Throughout construction
<b>Land Use (Chapter 12)</b>		
LU01	The quality and quantity of soil on site will be maintained by implementing appropriate techniques for stripping, stockpiling and reinstatement. Disturbed soils will be reinstated to their original quality. Procedure to be detailed in CEMP.	Throughout construction
LU02	Provision of temporary access.	Throughout construction
LU03	Dust abatement procedures in place.	Throughout construction
LU04	Relocating caravans in site.	Prior to construction
LU05	Provision of temporary alternatives.	During construction
LU06	L2: Provision of access to severed land. Replacement of affected farm infrastructure (drains, water supply, fencing).	Agreed prior to construction
LU07	L3: Provision of access to severed land. Replacement of affected farm infrastructure (drains, water supply, fencing).	Agreed prior to construction
LU08	L4: Provision of access to severed land. Replacement of affected farm infrastructure (drains, water supply, fencing).	Agreed prior to construction
<b>Land Condition: Geology, Soils and Contaminated Land (Chapter 13)</b>		
GS01	Risk management measures will include appropriate personal protective equipment (PPE) and adherence by contractor to Health and Safety legislation.	Throughout construction
GS02	If contamination is encountered the Principal Contractor will then assess the materials encountered and carry out additional risk assessments based upon the quantities and properties of the substance, implement measures to mitigate against these hazards and prepare additional methods of work that will be implemented until the hazard has been passed. Construction measures will be controlled utilising procedures contained within the CEMP.	Throughout construction
<b>Noise and Vibration (Chapter 14)</b>		
NV01	All vehicles and mechanical plant used for the purpose of the works should be fitted with effective exhaust silencers and should be maintained in good and efficient working order.	Throughout construction
NV02	All compressors and generators should be "sound reduced" models fitted with properly lined and sealed acoustic covers which should be kept closed whenever the machines are in use, and all ancillary pneumatic percussive tools should be fitted with mufflers or suppressers of the type recommended by the manufacturers and should be kept in a good state of repair.	Throughout construction

Mitigation Ref No.	Mitigation	Potential Timing of Mitigation
NV03	Machines in intermittent use should be shut down in the intervening periods between work or where this is impracticable, throttled down to a minimum.	Throughout construction
NV04	The worksite areas and static machines should be sited as far as is practicable from inhabited buildings;	Throughout construction
NV05	Where practicable, plant with directional noise characteristics should be positioned so as to minimise noise at adjacent properties.	Throughout construction
NV06	Where reasonably practicable, vibratory equipment should be located as far from sensitive premises as possible.	Throughout construction
NV07	Establishment of agreed criteria and monitoring whilst undertaking significantly noisy or vibration-causing operations near to sensitive locations to ensure compliance and to identify any problems.	Throughout construction
NV08	Programming works such that the requirement for working outside of normal working hours is minimised.	Throughout construction
NV09	Ensuring that all staff and operatives are briefed on the requirement to minimise nuisance from site activities, via toolbox talks etc.	Throughout construction
NV10	Use of temporary noise screens or partial enclosures around particularly noisy activities in close proximity to dwellings.	Throughout construction
NV11	Regular plant maintenance.	Throughout construction
NV12	Where activities occur in close proximity to receptors (less than 20m), it is recommended that the use of fixed and mobile noise barriers should be used in addition to the control measures. These barriers should typically have a minimum height of 2.4m, and be constructed of a material which has a surface density of not less than 10kg/m <sup>2</sup> e.g. plywood faced, timber framed boundary hoarding or other hoarding providing equivalent security and noise attenuation.	Throughout construction
NV13	An important element of the pro-active approach to limiting the likely significant effects of such works is to ensure that the public, residents and nearby businesses are kept fully informed over the scale and nature of the works, when they are to take place, and who to contact if they are disturbed.	Throughout construction
NV14	Delivery routes used by trucks and lorries should avoid residential areas as far as possible. Where possible, vibration generating machinery should be situated away from the noise-sensitive receivers. These measures would help minimise noise as well as vibration impacts on nearby receptors.	Throughout construction
NV15	It is likely that vibration levels would be perceptible at receptors adjacent the works but not at levels likely to cause complaint. Notwithstanding this, as with the good working practices for noise, the local receptors should be kept informed of the progress of the works likely to cause vibration. Information should include when and where the activities will be taking place, how long they are expected to last and who to contact if they are disturbed.	Throughout construction
NV16	To mitigate noise levels at the properties most affected by the new bypass road, it is proposed to install a noise barrier at the roundabout on the Dublin Road. This barrier is shown in Figure 14-6.	Throughout construction
NV17	A noise barrier is also proposed adjacent to the marina and caravan park in order to minimise any adverse impact from the proposed road. This barrier is shown in Figure 14-7.	Throughout construction

Mitigation Ref No.	Mitigation	Potential Timing of Mitigation
<b>Pedestrians, Cyclists, Equestrians and Community Effects (Chapter 15)</b>		
PCEC01	Liaison to take place with responsible bodies (e.g. DfI Cycling Unit, Sustrans, FODC) to agree procedures incorporated into CEMP e.g. temporary diversions, signage etc.	Prior and throughout construction
PCEC02	Traffic Management Plan (TMP) and CEMP to be utilised during construction.	During construction
PCEC03	Liaison to take place with Waterways Ireland to agree procedures incorporated into CEMP e.g. working hours and signage. Waterways Ireland to issue "marine notice" during construction works.	Prior and throughout construction
PCEC04	Liaison to take place with facilities managers and FODC prior to any works so that working procedures can be agreed for CEMP e.g. working hours and signage.	Prior and throughout construction
PCEC05	Design to include: Ensure continuity and convenience of existing routes and provide contiguous links between proposed and existing where possible; Ensure continuation of safe conditions on the A4 Dublin Road and A509 Derrylin Road, particularly where higher speed motorised traffic joining or leaving the bypass may cause risk to or intimidate NMUs; Provide safe crossing points where need is identified to allow NMUs to cross the live carriageway; and Provide an NMU route in parallel with the scheme that will serve the needs of the anticipated user groups and volumes of NMUs whilst being attractive and comfortable.	Throughout design, construction and operation.
PCEC06	An alternative turning area will be provided by the proposed scheme slightly downstream than the existing. The River Erne Bridge will be designed in accordance with requirements identified by Waterways Ireland.	During construction
<b>Vehicle Travellers (Chapter 16)</b>		
N/A	No mitigation suggested within assessment as scheme assessed as "Major Beneficial" on Vehicle Travellers.	N/A
<b>Climate (Chapter 17)</b>		
C01	Wildfire management techniques such as those undertaken in Mourne Mountains	Operation
C02	If there is an increased need for maintenance/renewals work, the operation of the proposed scheme could consider: <ul style="list-style-type: none"> <li>• More regular maintenance and preventative action.</li> <li>• More night-time maintenance/renewals work to reduce impact to road users.</li> <li>• Monitoring and evaluation of assets to inform operation and maintenance planning.</li> </ul>	Operation
C03	Improved water efficiency in construction would reduce the volumes abstracted leaving more water in the rivers. The appointed contractor should prepare and implement a Dust Management Plan for the duration of construction works to reduce the amount of sediment delivered to rivers.	Prior and throughout construction
C04	More night-time construction to avoid undue heat stress for construction workers (if required).	During construction and operation
C04	Consideration of climate resilient planting species. Appropriately stake new plantings with regard to prevailing climatic conditions.	Throughout design, construction and operation.

Mitigation Ref No.	Mitigation	Potential Timing of Mitigation
C05	Improving maintenance (e.g. SuDS ponds) to offset the likely increase in flooding events from the changes in climate and resulting increases in rainfall.	During construction and operation
C06	Variable Message Signs (for weather warnings) and wind breaks to future proof scheme due to a changing climate	Operation
<b>Vulnerability to a Major Accident or Disaster (Chapter 18)</b>		
VU01	Management via CDM: Construction methods includes risk assessments, monitoring and mitigation if required	Prior and throughout construction and maintenance
VU02	Implementation of a construction workforce travel plan	Prior and throughout construction and maintenance
VU03	Geometric constraints on construction routes have been identified and mitigation measures will be implemented including localised widening and junction improvements, etc.	Prior and throughout construction
VU04	Infrastructure should be designed to accommodate 1 in 100 (1%) annual probability flood plus climate change and remain safe during a 1:1000 (0.1%) annual probability flood	Detail Design
VU05	Disaster / Accident Warnings as appropriate along route.	Operation
<b>Disruption Due to Construction (Chapter 19)</b>		
N/A	Mitigation included within Outline CEMP (included as Appendix 19.1 of Final EIA Report)	N/A
<b>Materials and Waste (Chapter 20)</b>		
MW01	The project is registered for a CEEQUAL Whole Project with Interim Award. CEEQUAL is the evidence-based sustainability assessment, rating and awards scheme for civil engineering, infrastructure, landscaping and public realm projects. It promotes the achievement of high environmental and social performance.	Design and Construction
MW02	A Site Waste Management Plan (SWMP) will be a requirement for the proposed scheme. Through preparation of a SWMP the Contractor will be required to implement where possible cost-effective methods of good practice waste minimisation during the detailed design of the project and thereafter during construction.	Design and Construction
<b>Material Assets (Chapter 21)</b>		
MA01	All utility services discovered on the site will be treated as 'live' until proven otherwise. The coordination of switchovers and temporary disruptions for new connections to utility infrastructure will be undertaken in accordance with the standard procedures of the relevant statutory authorities	Design and Construction
<b>Human Health (Chapter 22)</b>		
N/A	The general impact on human health due to the proposed scheme is anticipated to be beneficial due to a number of factors including: <ul style="list-style-type: none"> <li>• Improvements in air quality;</li> <li>• Increased safety due to good road design and the removal of traffic from the congested town centre;</li> <li>• Improvements in stress levels of drivers.</li> </ul> Construction impacts will be short term and can be controlled by measures that are documented within the CEMP.	N/A
<b>Impact on Plans and Policies (Chapter 23)</b>		
N/A	The proposed scheme is fully in accordance with relevant legislation, plans and policies. The proposed scheme is subject to	N/A



Mitigation Ref No.	Mitigation	Potential Timing of Mitigation
	the statutory process for road development in NI and the relevant legislation underpinning this.	
<b>Interactions of the Foregoing and Cumulative Effects (Chapter 24)</b>		
N/A	Each of the technical assessments within the EIAR have taken into account the likely significant interacting impacts between each assessment. This has been achieved through dialogue via the EIA Co-ordinator and the various technical specialists e.g. the ecological assessment has taken into account the findings of the air quality and water assessors. Although there are impact interactions across a wide variety of topics only the significant interactions have been considered. Mitigation is documented within the relevant technical assessments.	N/A

**Table 1-2 Schedule of Further Environmental Mitigation (FEM) - Post 2018 Consultation**

Mitigation Ref. No.	Mitigation	Potential Timing of Mitigation
<b>Comments made by DAERA – Natural Environment Division – Natural Heritage Section</b>		
FEM01	DAERA was satisfied that there is adequate information on whooper swan in the EIAR Appendix 9.13 Habitats Assessment Stage 1 Screening and Stage 2 Appropriate Assessment and that further information on measures in respect of bats, badgers and otters will be provided at detailed design stage.	Design
FEM02	It was agreed the requirements for licences regarding works affecting bats, badgers and otters is already included in the EIAR and the outline CEMP and to ensure these will be included within Employers Requirements.	Throughout design, construction and operation. Design and Construction
FEM03	It was agreed to provide further information on lighting in respect of bats at detailed design stage to include specification that lighting directed towards the watercourse should not exceed 1 lux.	Design and Operation
FEM04	It was agreed to demonstrate additional hedgerow planting to meet WANE Act duty within the scheme corridor to provide better bat mitigation.	Design
FEM05	It was agreed to liaise with DAERA at detailed design stage to ensure adequate mitigation for bats, badgers, otters and species rich hedgerow is included.	Design
FEM06	It was agreed that potential kingfisher breeding sites in areas affected by construction, are to be surveyed outside breeding bird season and appropriate mitigation undertaken if required.	Design and Construction
<b>Comments made by DAERA – Natural Environment Division – Land &amp; Groundwater</b>		
FEM07	In relation to implementing measures in the event of encountering contamination, it has been addressed in general via mitigation ref. GS02. However, it is recommended that conditions are written in the context of a planning application and are attached to the awarded contract.	Throughout design and construction.
FEM08	If during the development works, new contamination or risks are encountered which have not previously been identified, works should cease and the Department’s Project Manager shall be notified immediately. This new contamination shall be fully investigated in accordance with the Model Procedures for the Management of Land Contamination as per mitigation ref.CLR11.	Throughout construction
FEM09	In the event of unacceptable risks being identified, a remediation strategy shall be agreed with DAERA Land & Groundwater Team and the Department’s Project Manager in writing, and subsequently implemented and verified to their satisfaction.	Throughout construction

Mitigation Ref. No.	Mitigation	Potential Timing of Mitigation
<b>Comments made by DAERA – Resource Efficiency Division – Water Management</b>		
FEM10	It was recommended inclusion of conditions prior to award of contract to ensure protection of the aquatic environment. These are to be provided in an outline CEMP and an operational CEMP is to be prepared in line with mitigation ref. RD01; the preparation of Method statements is addressed in mitigation refs RD02 & RD04.	Throughout procurement and construction
FEM11	It was agreed that the appointment Construction Environmental Management Plan Co-ordinator is noted in the outline CEMP. It is for the Department to decide whether to specify that the contractor establishes an Environmental Liaison Group.	Throughout procurement and construction
FEM12	The documentation pre-contract should highlight need to consult/communicate with DAERA Water Management Unit on these matters, leaving sufficient time for response.	Design
<b>Comments made by DAERA Sea Fisheries Inspectorate</b>		
FEM13	The Department was advised on responsibilities under Article 47 of the Fisheries Act (NI) 1966. Works to be carried out in line with the Pollution Prevention Guidelines (PPG) and to be included in outline CEMP. (Note that PPGs have been partly superseded by Guidance for Pollution Prevention (GPPs) available at <a href="http://www.netregs.org.uk">www.netregs.org.uk</a> .)	Throughout construction
<b>Comments made by the Butterfly Conversation (NI)</b>		
FEM14	It was agreed to encourage the creation of a grassland habitat for wildlife including butterflies and this will be incorporated within the landscaping detailed design stage.	Throughout design and construction
<b>Comments made by Jones’ Memorial School, Enniskillen</b>		
FEM15	Concerns were raised regarding additional traffic using the Derrylin Road and facilities for school pedestrian traffic. It has been agreed to provide traffic calming measures along the A509 Derrylin Road which includes implementing a new signal controlled Puffin crossing.	Throughout design and construction
<b>Comments made by the Killyhevlin Hotel, Enniskillen</b>		
FEM16	Concerns were raised about the adequacy of the noise assessment within the EIAR. It has been agreed that the Department will install further acoustic barriers along the Dublin Road, Erne Bridge parapets and small section of Bypass to further reduce the noise levels as stated in the EIAR.	Throughout design and construction