

Habitats Regulations Assessment

Report of Information to Inform an Appropriate Assessment:

718736-3000-R-022 Tully Bog Special Area of Conservation

A5 Western Transport Corridor

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Produced for

TransportNI

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¹ The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995, as amended (the Habitats Regulations) indicate that the person or organisation applying for any consent, permission or other authorisation, known as the 'Project Proponent', is responsible for provision of information to support decisions by the 'Competent Authority' on the need for Appropriate Assessment and to allow the Appropriate Assessment to be undertaken. The 'Project Proponent' is taken to mean the project team, including as appropriate: Overseeing Organisation scheme or area staff; design consultants; contractors; Design Build Finance and Operate (DBFO) companies; and managing agents.

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1 Introduction

1.1.1 This document is a Habitats Regulation Assessment (HRA) which contains information to be submitted to the ‘Competent Authority’ in order to inform the statutory assessments required under the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended²), for the proposed A5 Western Transport Corridor (A5WTC) Scheme.

1.1.2 These regulations apply to European Natura 2000 sites³, namely Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). The Proposed Scheme would interact with the following sites, namely:

- River Foyle and Tributaries SAC
- River Finn (Republic of Ireland) SAC
- Owenkillew River SAC
- Tully Bog SAC
- Lough Swilly (including former Inch Lough and Levels) SPA
- Lough Foyle (Northern Ireland) SPA (and Ramsar site)
- Lough Foyle (Republic of Ireland) SPA (and Ramsar site)
- Lough Neagh and Lough Beg SPA (and Ramsar site)

1.1.3 This document (HRA – Tully Bog SAC) is one of four assessments, and specifically addresses Tully Bog SAC.

1.1.4 . A further three documents have been produced, namely:

- HRA Report – SAC Watercourses (River Foyle & Tributaries SAC; River Finn SAC and Owenkillew SAC);
- HRA Report - SPAs (for Lough Swilly SPA; Lough Foyle SPA; and Lough Neagh and Lough Beg SPA; and

² As amended by the Conservation (Natural Habitats, etc.) (Amendment) Regulations (Northern Ireland) 2012

³ Natura 2000 sites consist of Special Areas of Conservation (SACs) designated under European Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (the ‘Habitats Directive’) and Special Protection Areas (SPAs) designated under Directive 2009/147/EC, (the codified version of 79/409/EEC as amended) on the conservation of wild birds (the ‘Birds Directive.’)

- Ramsar Site Assessment Report⁴ (for Lough Foyle Ramsar Sites (NI and ROI); and Lough Neagh and Lough Beg Ramsar Site.

1.1.5 A first draft of this report was published for consultation in 2014 and responses were received at that time. The content of these responses have been taken into account in developing this second draft report.

1.1.6 The information in this second draft is published for consultation, and is being submitted to the Department of Agriculture, Environment, and Rural Affairs (DAERA) as statutory consultee for the designated sites in Northern Ireland. The general public are also invited to provide responses relating to the information and findings contained in the report⁵. The information and comments received in response to the consultations will then be considered by TransportNI and the Minister, when undertaking the Appropriate Assessments required in advance of a decision to proceed or not with the Scheme, in accordance with the requirements of the Directive and Regulations.

1.2 Background

1.2.1 The A5 Western Transport Corridor (A5WTC) is one of five key transport corridors making up the strategic road network across Northern Ireland. The Department for Infrastructure (DfI) TransportNI (TNI) is promoting the dualling of the A5WTC as part of its improvement programme. This project would significantly improve safety and journey times along this route and, in addition to improving the links between the urban centres in the west of the province, provide a strategic link with international gateways. At the border with the Republic of Ireland it will connect with the N2 route which the Irish Government also has longer term plans to upgrade. It passes through New Buildings, Strabane, Sion Mills, Newtownstewart, Omagh and Aughnacloy.

1.2.2 The proposed new A5WTC dual carriageway runs for some 85km between the existing A5 north of New Buildings and the existing A5 south of Aughnacloy. The proposal will ultimately link up with an allied proposal in the Republic of Ireland, however as that proposal has not progressed to any meaningful stage which allows assessment, the current documents provide comprehensive assessments of the foreseeable proposals designed to date.

⁴ Ramsar sites are not referred to under the Directives or their transposition into UK and ROI Regulations. However, Planning Policy Statement 2 (PPS2) in Northern Ireland applies the same level of consideration and protection to them as to Natura 2000 sites

⁵ The Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (to which the UK is a signatory) requires [at Article 3]:- ‘Each Party shall promote environmental education and environmental awareness among the public, especially on how to obtain access to information, to participate in decision-making and to obtain access to justice in environmental matters’.

1.2.3 It is anticipated the construction of the proposed scheme will be undertaken in three phases as follows, and shown on Sheets 1 to 24 (Appendix 1):

- construction of junctions 1-3 (New Buildings – Strabane North) and junctions 13-15 (Omagh South – A4,Ballygawley) between 2017 and 2019;
- construction of junctions 3-13 (Strabane North – Omagh South) between 2021 and 2023; and
- construction of junction 15 (A4,Ballygawley) to the A5 south of Aughnacloy between 2026 and 2028.

1.2.4 The currently proposed A5WTC Scheme substantially reflects a previous proposal which was promoted in 2010 and for which an Environmental Statement (A5WTC ES 2010) was prepared and published. The environmental studies reported in the A5WTC ES 2010 were informed by a draft Habitats Regulations Assessment (HRA) which recognised and screened⁶ the above European Designated Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) for likely significant effects. A judicial review of the scheme in 2013 found the ES to be robust, but upheld a challenge that the HRA reporting relating to the Habitats Regulations should have been taken to the next level, namely a Stage 2 assessment⁷.

⁶ The SACs and SPAs were subject to a screening exercise (Test of Likely Significance (ToLS)) to determine if the proposed scheme, with its proposed and committed mitigation measures, would be likely to have a significant effect on the integrity of any of the sites considered. The ToLS process is commonly referred to as Stage 1 of the Habitats Regulations Assessment (HRA) process. When completed, the ToLS concluded the impacts of the proposed scheme (subject to mitigation) would not be likely to have a significant effect upon the integrity of the implicated designated sites in the context of the Habitats or Birds Directives, a conclusion which was agreed with by Northern Ireland Environment Agency (NIEA), the statutory consultee relative to the designated sites in Northern Ireland and the National Parks and Wildlife Service (NPWS) the organisation charged with the implementation of the Habitats and Birds Directives in the ROI.

⁷ The challenge to the consent for the proposed scheme was made in the context that potential impacts upon the River Foyle and Tributaries SAC should have been subject to Stage 2 of the Habitats Regulations Assessment (Appropriate Assessment). This challenge was upheld. The finding was informed by concerns raised by Loughs Agency in responses to the 2010 ES and presented in verbal submissions to the public inquiries held in 2011 concerning the protection of Atlantic salmon (*Salmo salar*), and clarifications through case law relative to the interpretation of 'likelihood' in the context of screening for likely significant effects as referred to in the Habitats Directive and the Regulations.

- 1.2.5 Further studies have since been completed to address this need for a more robust habitats regulations assessment, and a new Environmental Statement (A5WTC ES 2016) was prepared and published based on this information.
- 1.2.6 The 2016 Environmental Statement (ES), along with the draft vesting orders and other statutory procedures, were subject to a Public Inquiry from October to December 2016. Accordingly, the production of the current suite of HRA Reports have been programmed to ensure they contain the most up to date information.

1.3 Preparation of the HRA

- 1.3.1 The primary author of this report is Stuart Ireland B.Sc. (Hons), MCIEEM, CEnv. He is expert in ecological matters and the full spectrum of environmental assessment techniques, methodologies and statutes. Academically, he holds a combined honours degree in Zoology with Marine Zoology from UCNW Bangor, and professionally, is a member of relevant Institutes requiring the highest standards of professional competence and integrity. He is a Chartered Environmentalist, and a full member of the Chartered Institute of Ecology and Environmental Management.
- 1.3.2 Stuart has practised for 17 years, during which time he has undertaken complex Ecological Impact assessments, Habitats Regulations Assessments for nationally important infrastructure schemes. He has been involved with the A5WTC proposal since its inception in 2008 and is familiar with both the proposal site and the full spectrum of environmental parameters which have influenced the design of the proposal.
- 1.3.3 Stuart has provided ecological advice services for major road schemes, including the Roscommon Way Extension scheme in Essex, ensuring that construction of a flood relief road through a SSSI was undertaken in a manner which preserved the ecological function of the site and its supported species. He has appeared as an Expert Witness on ecological matters and has significant experience in Habitat Regulations Assessments, including working with clients, contractors and Statutory Consultees to design schemes to ensure protection of Natura 2000 sites and their conservation objectives.

2 The HRA Process

2.1 Objectives

- 2.1.1 The overall aims of the Habitats and Birds Directives are to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives, and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the best examples of them. European and national legislation places a collective obligation on its member states and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation status.
- 2.1.2 The maintenance of habitats and species within Natura 2000 sites at favourable conservation status will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.
- 2.1.3 Favourable conservation status of a site is achieved when:
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
 - The conservation status of its typical species is favourable.
- 2.1.4 The favourable conservation status of a species is achieved when:
- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
 - The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
 - There is, and will probably continue to be, a sufficiently large habitat to maintain its Population's on a long-term basis.
- 2.1.5 The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. Accordingly, recognition of the importance of the identified designated sites within the Scheme study area and undertaking habitats assessment appraisals has been ongoing, and has occurred iteratively throughout the development of the A5WTC Scheme, and has significantly influenced the Scheme design.
- 2.1.6 In the first instance, the Scheme has aimed to avoid any negative impacts on European sites by identifying possible impacts early in the development of the Scheme, and has avoided sites as much as possible during the corridor and route options appraisal.
- 2.1.7 Following that, mitigation measures have been applied where necessary, with the aim of ensuring that no significant adverse impacts on the Sites remain.
- 2.1.8 The purpose of this HRA report is to provide information on the likely significant effects of the Scheme on the qualifying features of the respective designated sites, identify the mitigation

measures proposed, and to assess whether the mitigation measures will ensure that the favourable conservation status of the each of the Sites is maintained.

2.2 Approach to Habitat Regulations Assessment

2.2.1 The gathering and presentation of the information in this document has been informed by the guidance provided in 'Managing Natura 2000 Sites, the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2000 & 2001)', and 'Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC'. Further useful guidance is provided by Section 4, Part 1 of Volume 11 of the DMRB (HD44/09).

2.2.2 In accordance with the guidance, a staged approach is taken to the assessment of plans and projects under the Habitat Regulations:

Stage 1: Screening/Test of likely Significance

This is where it is established if an Appropriate Assessment is required and is referred to as 'screening'. Its purpose is to identify the likely impacts upon a Natura 2000 Site of a project or a plan, either alone or in combination with other plans or projects and considers whether these impacts are likely to be significant. It will include:

- A description of the project;
- Identification of relevant Natura 2000 sites potentially affected;
- Identification and description of individual and cumulative impacts likely to result from implementation of the project;
- Assessment of the significance of the impacts identified above on site integrity; and
- Exclusion of sites where it can be objectively concluded that there will be no significant effects.

Stage 2: Appropriate Assessment

This stage considers the potential impacts on the structure and function, as well as the conservation objectives of the Natura 2000 Sites that the Proposal may have either alone or in combination with other projects or plans. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts is presented. This stage will include:

- A description of the Natura 2000 sites that will be considered further in the AA;
- A description of significant impacts on the conservation feature of these sites likely to occur from the Plan;
- Mitigation Measures; and
- Conclusions.

Stage 3: Assessment of alternative solutions

This process examines alternative ways of achieving the objectives of the Proposal that avoid adverse impacts on the integrity of the Natura 2000 sites.

Stage 4: Imperative reasons of overriding public interest

This stage is the main reason of exemption from Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI), and where no alternative solutions exist, for allowing a plan or project which will have adverse effects on the integrity of a Natura 2000 site to proceed.

2.2.3 This HRA report addresses Stage 1 and Stage 2 of the HRA Process.

Note: For the purposes of this assessment, the term 'likely' is applied within the proper meaning of the term as defined in the corpus of EU environmental law. In that sense, a 'likely' significant effect is deemed herein to be not one which is more likely than not to occur, but rather one with a genuine possibility of occurrence, no matter how small that likelihood may be. That being so, the precautionary principle required in HRA is integrated into the very heart of the assessment methodology and the assessment is thus as robust as possible.

The definition for 'integrity' adopted in this report is that provided in ODPM Circular 06/2005 and Defra Circular 01/2005 - *Biodiversity and Geological conservation – Statutory obligations and their impact within the planning system*, which defines integrity in the context of designated sites as:

The coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified

3 Stage 1 – Screening

3.1.1 As discussed above, the first stage of an HRA assessment is to consider whether a project could cause ‘likely significant effect’ on the qualifying features of the Natura 2000 site(s), alone or in-combination with other plans/projects. In line with EU Guidance, and the Design Manual for Roads & Bridges (DMRB) method of assessment screening matrices have been completed for each of the potentially affected Natura 2000 sites. Table 2.1 provides this information.

Table 3.1 (Stage 1) Screening Matrix for Tully Bog SAC

Project Name:	A5 WTC	
Natura 2000 Site under Consideration:	Tully Bog SAC	
Date:	Author (Name/Organisation):	Verified (Name/Organisation):
5th August 2014	S.Ireland, Mouchel	P.Reid, Mouchel
Description of Project <p>The proposed 85km A5 Western Transport Corridor (A5 WTC) scheme forms part of a strategically important transport route between Londonderry/Derry in Northern Ireland (NI) and to Dublin in the Republic of Ireland (ROI). The proposed scheme involves replacement of the existing A5 from a point north of New Buildings Londonderry in the north to a point south of Aughnacloy in the south with a dual carriageway along an alignment off-line from the existing road. In NI the existing road passes through New Buildings, Strabane, Sion Mills, Newtownstewart, Omagh and Aughnacloy. The proposed scheme will be close to the designated site in a number of other locations. It is anticipated the proposed scheme will be built in three phases. It is anticipated that each phase will take some 2 to 3 years to construct.</p> <p><i>Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the European Site by virtue of:</i></p>		
Size and scale (road type and probable traffic volume)	The project involves the construction of an 85 km long dual carriageway, with associated drainage and local road improvements. Traffic volumes are anticipated to be a maximum of 10000 AADT in the vicinity of Tully Bog (to the nearest 100) within 15 years of the road opening. This may impact on air quality and thus on features of the SAC.	
Land-take	No works are proposed to take place within the SAC.	
Distance from the European Site or key features of the site (from edge of the project assessment corridor)	The main carriageway is 205m from the SAC boundary, with slip roads 125m from the boundary.	
Resource requirements (from the European Site or from areas in proximity to the site, where of relevance to consideration of impacts)	None	

Emissions (e.g. polluted surface water runoff – both soluble and insoluble pollutants, atmospheric pollution)	<ol style="list-style-type: none"> 1. Nitrogen Deposition – the scheme could lead to higher levels of Nitrogen being deposited from traffic emissions. 2. Construction Dust – as standard construction mitigation measures are very successful at controlling dust, it is unlikely that construction dust would impact on the site.
Excavation requirements (e.g. impacts of local hydrogeology)	Although part of the route will be in cutting nearby, no drainage features associated with the bog will be affected. Emerging research indicates that raised bogs may be groundwater dependant, thus alteration in local hydrology could impact on the site.
Transportation requirements	Construction related traffic and operational use of the scheme may result in potential depositional impacts upon bog features comprising qualifying features of the SAC.
Duration of construction, operation, etc	It is anticipated that construction of phases 2 will last for approximately three years. Phases 1 and 3 are located outside of the zone of influence for Tully Bog such that their construction will have no implications for the SAC.
Other	None
Description of avoidance and/or mitigation measures Describe any assumed (plainly established and uncontroversial) mitigation measures, including information on:	
Nature of proposals	Best practice working procedures will be implemented during construction such as damping down of dust which will reduce airborne matter from contaminating the site during construction. PPGs will be followed during construction to avoid adverse impacts on local water quality.
Location	All works within 500m of the SAC
Evidence for effectiveness	Legally required and widely accepted best practice
Mechanism for delivery (legal conditions, restrictions or other legally enforceable obligations)	Legal conditions of national legislation & best practice guidance through NIEA PPGs. Contractual obligations placed on the contractor by TNI and monitored by TNI's appointed Environmental Representatives.
Characteristics of European Site(s) A brief description of the European Site should be produced, including information on:	
Name of European Site and its EU code	Tully Bog SAC UK0030326
Location and distance of the European Site from the proposed works	Tully Bog SAC is located at NI OS Grid Reference H419754 and its boundary is 205m from the proposed carriageway and 125m from the slip roads for a junction.
European Site size	The SAC covers 35.99Ha

Key features of the European Site including the primary reasons for selection and any other qualifying interests	The site consists of a raised bog displaying typical bog vegetation surrounded by former cuttings supporting birch woodland. Its primary reason for selection is the 'active raised bog' habitat. No other reasons or qualifying features are given.
Vulnerability of the European Site – any information available from the standard data forms on potential effect pathways	The major threats to the site are drying of the surface through excessive drainage and increased nutrient levels through airborne pollutants. Either of these have the potential to damage the quality of the bog vegetation.
European Site conservation objectives – where these are readily available	<ol style="list-style-type: none"> 1. Maintain the extent of intact lowland raised bog and actively regenerating raised bog vegetation. 2. Maintain and enhance the quality of the lowland raised bog community types including the presence of notable species. 3. Seek to expand the extent of actively regenerating raised bog vegetation into degraded (non-active) areas of cutover bog. 4. Maintain the diversity and quality of other habitats associated with the active raised bog, e.g. acid grassland, fen and swamp, especially where these exhibit natural transition to the raised bog. 5. Maintain the hydrology of the raised bog peat mass. 6. Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for lowland raised bog rehabilitation.

Assessment Criteria

Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the European Site.

Degradation of Annex 1 habitat through airborne pollutants

Airborne pollutants in the form of particulate matter and nitrogen compounds could lead to deterioration of the raised bog habitat. Therefore the potential impacts of airborne pollutants cannot be ruled out without further investigation.

Degradation of Annex 1 habitat through changes to hydrological regime

Alteration to local hydrology through excavations or surcharging could reduce the availability of water to the site, leading to a degradation of the raised bog habitat. Therefore, the potential impacts of hydrological change cannot be ruled out without further investigation.

Initial Assessment

The key characteristics of the site and the details of the European Site should be considered in identifying potential impacts.

Describe any likely changes to the site arising as a result of:

Reduction of habitat area	No direct loss of qualifying habitat anticipated. However, impacts from airborne pollutants or local hydrology could result in a reduction in habitat area if unmitigated.
Disturbance to key species	N/A
Habitat or species fragmentation	There will not be any fragmentation of habitats within the SAC.

Reduction in species density	Density of species associated with a healthy raised bog surface may be reduced if airborne pollutant deposition is shown to be increased beyond levels anticipated without the proposed scheme. Alteration in local hydrology could reduce species density within the bog plant community.
Changes in key indicators of conservation value (water quality, etc)	Air quality changes could lead to changes in the key indicator species of the bog. Hydrological changes could lead to changes in the key indicator species of the bog.
Climate change	The scheme has the potential to contribute to the problem of climate change by increasing the carrying capacity of the current road network. Changes in rainfall patterns due to climate change could have direct impacts on the integrity of the site.
<i>Describe any likely impacts on the European Site as a whole in terms of:</i>	
Interference with the key relationships that define the structure of the site	None.
Interference with key relationships that define the function of the site	None.
<i>Indicate the significance as a result of the identification of impacts set out above in terms of:</i>	
Reduction of habitat area	There could be significant effects subject to mitigation.
Disturbance to key species	N/A
Habitat or species fragmentation	No significant effect predicted.
Loss	None
Fragmentation	None
Disruption	None
Disturbance	None
Change to key elements of the site (e.g. water quality, hydrological regime etc)	There could be significant effects subject to mitigation.
<i>Describe from the above those elements of the project, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.</i>	
An assessment of the potential effects on air quality including climate change would necessitate detailed studies of anticipated traffic flow during and after construction. However air quality modelling has identified that increases of NO _x and deposits of particulate matter are not anticipated on Tully Bog with increases only expected within the immediate vicinity of the proposed works (Mouchel 2010).	
<i>Outcome of screening stage (delete as appropriate).</i>	Significant Effect Possible on Qualifying Habitats. Assessment progressed to Stage 2.

<i>Are the appropriate statutory environmental bodies in agreement with this conclusion? (Delete and attach appropriate communication).</i>	YES
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3.2 Scope of the information to inform the appropriate assessments.

3.2.1 The scope for the studies and assessments which form the focus of the information provided in this report has been established in light of the findings of the screenings for the designated site. Likely impacts identified relate to:

- degradation of the qualifying habitat as a result of airborne pollutants; and
- degradation of the qualifying habitat as a result of changes to the hydrological regime.

Degradation of the qualifying habitat by airborne pollutants

Data Sources

3.2.2 The following data sources have been relied on:

- data provided in the 2010 and 2016 ES;
- data derived from site surveys undertaken in 2014 by the Mouchel assessment team;
- data derived from the Air Pollution Information System (APIS)⁸; and
- data derived from air quality modelling undertaken in 2015.

Impact assessment

3.2.3 The data derived from the data sources has been reviewed to establish the potential for airborne pollutants to enter the SAC. Potential pollutants which may have a deleterious effect on the SAC are oxides of nitrogen and nitrogen deposition.

3.2.4 The information has then been evaluated to determine the nature of the potential impacts on the habitat as a result of the construction and future use of the proposed scheme. Assessments are made against the EU air quality limit of values for vegetation, $30 \mu\text{g m}^{-3}$, and the United Nations Economic Commission for Europe (UNECE) critical load for raised bog of $5\text{--}10 \text{ kg N ha}^{-1} \text{ y}^{-1}$

⁸ www.apis.ac.uk

- 3.2.5 Where the assessment has indicated such impacts would be likely to occur, consideration has then been given to appropriate mitigation measures subject to the findings relating to effects on integrity of the site.

Degradation of the qualifying habitat through changes to the hydrological regime.

Data Sources

- 3.2.6 The following data sources have been relied on:

- data provided in the A5WTC ES 2010;
- data derived from site surveys undertaken in 2014 by the Mouchel assessment team;
- data derived from hydrology and drainage assessments undertaken in 2014.

Impact assessment

- 3.2.7 The data derived from the data sources has been reviewed to establish the potential for alterations to the hydrological regime of the SAC as a result of the construction and location of the proposed scheme.
- 3.2.8 The information has then been evaluated to determine the nature of the potential impacts on the habitat as a result of the construction and future use of the proposed scheme.
- 3.2.9 Where the assessment has indicated such impacts would be likely to occur, consideration has then been given to appropriate mitigation measures subject to the findings relating to effects on integrity of the site.

3.3 Determination of adverse impact relative to integrity

- 3.3.1 The identified impacts have been considered to enable the potential that they would be likely to have a negative effect on the integrity of the Natura 2000 site to be evaluated. This has involved consideration of:
- whether there will be a reduction in the coherence of the ecological structure or function of the site, taking into account the whole area of the site, and supporting habitats which are integral to the structure and function of the site, and
 - whether any such reduction would reduce the ability of the site to sustain the qualifying habitat and/or the levels of populations of the species for which it has been classified.
- 3.3.2 The DMRB guidance (HD 44/09) provides a suitable checklist to identify interactions and potential effects on the integrity of a site. The completed checklist for Tully Bog SAC is provided in Appendix 4.

4 Description of the proposed scheme

4.1 Alignment and relationship with Tully Bog

- 4.1.1 The proposed scheme comprises an 85km dual carriageway running between the existing A5 north of New Buildings and the existing A5 south of Aughnacloy. Its location and relationship to Tully Bog is shown in Figure 1 in Appendix 1.
- 4.1.2 The section of the proposed scheme which is of relevance to Tully Bog SAC is that between Lisnagirr Road and the Fairy Water. In this location the principal components of the proposed scheme comprise the dual carriageway and junction 11, a full grade-separated junction which caters for access onto and exit from the strategic road north of Omagh. The proposed dual carriageway is located approximately 230 - 600m east of the designated site. North bound on and off slip roads, a western roundabout forming part of a central dumbbell arrangement at the junction and a link road between the roundabout and Drumlegagh Road South are located between the dual carriageway and the eastern boundary of the designated site. The junction of the link road and Drumlegagh Road is approximately 120m east of the designated site. There will also be a working corridor extending approximately 25m beyond the road footprint.
- 4.1.3 In the vicinity of the SAC the road will be elevated on a shallow embankment for approximately 400m and pass through a shallow cutting for a further 200m. A larger embankment will be required for the side road/interchange at junction 11 approximately 200m from the site. The route passes through a deeper cutting approximately 450m to the north-east of the SAC.
- 4.1.4 The key design aspects of the proposed scheme comprise the carriageway and associated earthworks, junctions, side roads, structures, drainage, lighting, landscape proposals, compensatory flood storage, deposition areas and environmental mitigation measures. The proposed scheme design has been completed with reference to the DMRB, including Volume 10 of that publication for the protection nature conservation and biodiversity features.
- 4.1.5 Table 4.1 provides traffic flows in the vicinity of Tully Bog SAC for the base year and opening year. The Average Annual Daily Traffic (AADT) and the number of HGVs within that total are provided.

Table 4.1 Traffic flows passing Tully Bog SAC for base year and opening year

Existing A5 Adjacent to Tully Bog Base Year		
	AADT	HGVs
North Bound	6070	783
South Bound	5989	731
Existing A5 Adjacent to Tully Bog Opening Year		
	AADT	HGVs
North Bound (North of J11)	3203	211
South Bound (North of J11)	3211	193
North Bound (South of J11)	4571	357
South Bound (South of J11)	5317	436
Through J11 Opening Year		
	AADT	HGVs
North Bound	5074	685
South Bound	4694	573
J11 Slip Roads Opening Year		
	AADT	HGVs
North Bound Offslip	1385	118
North Bound Onslip	2291	222
South Bound Offslip	2782	225
South Bound Onslip	1361	90
Drumlegagh Road South within 500m of J11 Opening Year		
	AADT	HGVs
Base Year East Bound	612	97
Base Year West Bound	461	38
Opening Year East Bound	655	107
Opening Year West Bound	532	41

5 Tully Bog SAC

5.1 Introduction

- 5.1.1 The designated site, is located within an area of agricultural land, between two local roads, Drumlegagh Road South and Todds Road some 180m north of the Fairy Water in the river's former flood plain and approximately 400m west of the current A5 at NI OS Grid Reference H419754
- 5.1.2 The Natura 2000 data form obtained from the Joint Nature Conservancy Committee (JNCC) website is provided in Appendix 3. The data form notes the site covers an area of 35.99 ha and is designated for active raised bog and degraded raised bog still capable of natural regeneration. Both are priority habitats under Annex 1 of the Directive. The information has been obtained from the Natura 2000 data form obtained from the Joint Nature Conservancy Committee (JNCC) website (www.jncc.gov.uk). The Natura 2000 data form is enclosed in Appendix 3.
- 5.1.3 The SAC is an area of lowland raised bog comprising a large central area of intact raised bog with a peripheral area of birch woodland on former peat cuttings. A drumlin in the centre of the bog is covered with Scot's pine *Pinus sylvestris* and birch *Betula* sp. woodland. Some of the peripheral cut over bog is permanently waterlogged. There are several large pools in the west of the site.
- 5.1.4 The designated site has been subject to a detailed survey following National Vegetation Classification (NVC) (Rodwell 1991) methodology and separate bryophyte surveys, all surveys were undertaken between April and August 2014. The results of the NVC surveys are illustrated in Figures 3.
- 5.1.5 The surveys recorded the presence of raised bog, birch woodland and marshy grassland communities. The communities found were assessed for their similarity to known NVC communities which can, in turn, be used as an indication of their conservation status.

5.2 NVC Survey Results for the Raised Bog Habitat

- 5.2.1 Tully Bog possesses sections within the bog surface which exhibit slightly different floristic characteristics with the southern section of the bog appearing drier and having less extensive *Sphagnum* coverage than the central and uncut northern sections. The highest similarity co-efficient for the central and northern section is for M18a *Erica tetralix-Sphagnum papillosum* raised and blanket mire-*Sphagnum magellanicum-Andromeda polifolia* sub-community. *Sphagnum* species are constants throughout this area including *S. papillosum*, *S. tenellum* and *S. capillifolium*. The citation for the SAC states that the notable *Sphagnum* species *S. fuscum* and *S. imbricatum* (now separated into two taxa-*S. affine* and *S. austinii*) are known to occur on the bog. Four hummocks of *S. fuscum* were found near the centre of the bog during an earlier bryophyte survey but *S. affine* or *S. austinii* were not found to be present. This is a minor change from the 2009 survey which found M18 *Erica tetralix-Sphagnum papillosum* raised and blanket mire to be the closest match to the survey data. This difference is likely to be due to quadrat location differences between the surveys.

- 5.2.2 The drier southern section of the bog is closest to M19a *Calluna vulgaris-Eriophorum vaginatum* blanket mire-*Erica tetralix* sub-community. This sub-community develops a greater abundance of Sphagnum species than other M19 communities and shows a number of floristic features transitional to M18 mires, with *S. capillifolium* being quite commonly accompanied by *S. papillosum* and sometimes by *S. tenellum* as is the case at Tully Bog. Overall though the Sphagnum coverage is not so rich or dense as in M18 mires

5.3 NVC Survey Results for the Birch Woodland Habitat

- 5.3.1 The lagg surrounding the bog has been cut for peat. The oldest cuttings at the outer edge of the area are dominated by downy birch woodland, with smaller amounts of Scots pine *Pinus sylvestris*. A small area of birch woodland has also developed to the south of the central area of the bog. The woodland is referable to the W4 *Betula pubescens-Molinia caerulea* woodland-community. This is a minor change from the 2009 NVC survey which classified the woodland as W4a *Betula pubescens-Molinia caerulea* woodland- *Dryopteris dilatata-Rubus fruticosus* sub-community. This difference is likely to be explained by the sampling quadrat locations during the two surveys differing.

5.4 NVC Survey Results for the Marshy Grassland Habitat

- 5.4.1 This vegetation type is not mapped in Figure 3 due to the small size of the sample area and the difficulty of matching the results to an NVC community. The MATCH program gives M27c *Filipendula ulmaria-Angelica sylvestris-Juncus effusus-Holcus lanatus* sub-community as the most appropriate community type but the only M27 constant species *Filipendula ulmaria* was absent from all quadrat samples.

5.5 Hydrology of the Bog

- 5.5.1 As with the majority of active raised bogs, the depth of the peat isolates the bog from the influence of groundwater; the raised dome of peat, which lies >70 mAOD (metres above Ordnance Datum), is therefore irrigated solely by precipitation (Lindsay 1995). There are two main water discharge points from the bog, one at the north western edge, the other at the south eastern tip of the site (Figure 4 Appendix 1). However discharge from the site is likely to be quite low due to the absorption effect of the woodland buffer that forms the perimeter of the bog. The discharge point at the northwest of the site flows in a north westerly direction (channel width <1 metre) before converging with Tully Drain 2 (channel width <1 metre). Tully Drain 2 then flows in a southerly direction, beneath Todds Road, which runs along the western edge of the bog via a culvert, and on into the Fairy Water approximately 350 metres further south. Upstream of Tully Bog, Tully Drain 2 also receives waters from a significant area of agricultural farmland.
- 5.5.2 The second main discharge point, at the south eastern tip of the site, drains water from two channels which converge and flow south via an unnamed drainage ditch, beneath Todds Road and into the Fairy Water approximately 180 metres south of the peat bog.
- 5.5.3 In general, the site slopes towards the eastern edge of the bog, consequently, the centre of the bog drains in an easterly direction via a network of drainage channels, all eventually flowing into

Tully Drain 1. Tully Drain 1 flows parallel to the eastern edge of the site in a south east direction before flowing beneath the existing A5 and into the Strule River to the north of Straughroy.

- 5.5.4 There is a significant area of water storage at the north western corner of the site where a pond has developed.

5.6 Surrounding Geology

- 5.6.1 In the wider context of the former flood-plain of the Fairy Water the geology consists of a combination of alluvium, glaciofluvial sands and gravels within the Mourne and Strule Valleys. Localised areas of glacial tills of low permeability and areas of peat are found between Mountjoy and Omagh. The site is located on peat with areas of clay and alluvial deposits to the east under the proposed scheme footprint (Mouchel 2010a).

5.7 Surrounding Land Use

- 5.7.1 The surrounding land use is mostly agricultural categorised as improved grassland or arable habitats in the Phase 1 surveys. Tully Bog is isolated from other expanses of bog by these land uses. One small area of birch woodland and modified bog is located just over 500m to the north east, with another 1.3km to the north. Several other small areas of modified bog are located approximately 450m to the south of the SAC, but these are separated from the site by the Fairy Water. The closest areas of extensive bog habitat are those within the Fairy Water Bogs SAC approximately 8km to the west. The only other semi-natural habitats in the vicinity of the site are the woodlands of Mountjoy Forest approximately 1km to the east and isolated patches of woodland along the banks of the Fairy Water. The aerial photography for the surrounding land is displayed on Figures 4 in Appendix 1 to this report.

5.8 Vulnerability

- 5.8.1 The Natura 2000 data form states:

Tully Bog represents one of the best lowland raised bogs in Co. Tyrone. The area is not managed for agricultural purposes. Potentially the site could be damaged by peat-cutting, drainage, fires or scrub invasion. The site is currently monitored as part of a wider monitoring programme of all designated sites. If damaging practices or deterioration in site quality are recorded, they will be addressed by management agreements with the owners.

5.9 Conservation Objectives

5.9.1 The conservation objective for the site taken from the NIEA SAC Conservation Objective Form is:

‘To maintain the active raised bog in favourable condition.’

5.9.2 NIEA have set a number of Component Objectives which seek to attain the conservation objective for the active raised bog. These are described in Table 5.1.

Table 5.1 Component Objectives taken from the NIEA Conservation Objective Form

Component Objectives taken from the NIEA Conservation Objective Form	
Feature	Component Objective
Active raised bog	Maintain the extent of intact lowland raised bog and actively regenerating raised bog vegetation.
	Maintain and enhance the quality of the lowland raised bog community types including the presence of notable species.
	Seek to expand the extent of actively regenerating raised bog vegetation into degraded (non-active) areas of cutover bog.
	Maintain the diversity and quality of other habitats associated with the active raised bog, e.g. acid grassland, fen and swamp, especially where these exhibit natural transition to the raised bog.
	Maintain the hydrology of the raised bog peat mass.
	Seek nature conservation management over suitable areas immediately outside the SAC where there may be potential for lowland raised bog rehabilitation.

5.9.3 NIEA state that the first condition assessment of the site was carried out in November 2002. Their provisional evaluation of the results suggests that the active raised bog is in unfavourable condition. The condition assessment undertaken by NIEA in 2008 suggests that the active raised bog is in unfavourable: declining condition due to an increase in signs of drying out.

6 Potential impacts and mitigation

6.1 Degradation of the qualifying habitats by airborne pollutants

Nitrogen deposition

- 6.1.1 Tully Bog has been identified as being potentially sensitive to nitrogen deposition (nitrogen saturation of sphagnum) which could have an effect on the species composition of the bog habitat.
- 6.1.2 Nitrogen is an element which is used in plant growth, and in excessive quantities promotes increase in vascular plant growth, altered growth and species composition of bryophytes; and increased nitrogen in peat and peat water which can alter the habitat composition of a bog. This can lead to the habitat altering in a manner which reduces the biodiversity value of the site.
- 6.1.3 To determine the potential for the scheme to have a significant impact on the qualifying habitats, two scenarios were investigated for the scheme Opening Year: the Do Minimum (DM) scenario, which assumes the scheme has not progressed but that the existing road network has been subject to general maintenance, and that traffic has grown in line with national predictions; and the Do Something (DS) scenario which assumes the scheme has been completed, and that traffic growth and patterns are in line with the national predictions and the traffic modelling undertaken for the scheme.
- 6.1.4 The current levels of Nitrogen deposition for Tully Bog are taken from APIS. These are mapped on a 5 km x 5km basis with the area covered by each 5 km grid square noted. The data currently available on the system are for 2013-2015.
- 6.1.5 The APIS site states levels at Tully Bog for 2013-2015 as $4.9 \mu\text{g NO}_x \text{ (as NO}_2\text{) m}^{-3}$ and $20.44 \text{ kg N ha}^{-1} \text{ y}^{-1}$. Therefore current levels are below the EU air quality limit of values for vegetation, $30 \mu\text{g NO}_x \text{ m}^{-3}$, but above the United Nations Economic Commission for Europe (UNECE) critical load for raised bog of $5\text{-}10 \text{ kg N ha}^{-1} \text{ y}^{-1}$.
- 6.1.6 Predicted annual mean NO_x concentrations were compared to the national and European air quality limit values for vegetation for the DM and DS scenarios.
- 6.1.7 Nitrogen deposition rates at each site were predicted for both scenarios. These were compared with the critical loads for nitrogen set by the UNECE for the habitat type forming the focus of the designation, raised bog.
- 6.1.8 The predicted minimum and maximum annual mean NO_x concentrations at Tully Bog in the DM and DS scenarios for the opening year and the minimum and maximum changes concentrations when comparing the two scenarios are detailed in Table 6.1. The tables and figures demonstrate that annual mean NO_x concentrations would be substantially below the EU Limit Value in both scenarios.

Table 6.1 Range of Annual Mean NO_x Concentration ($\mu\text{g m}^{-3}$) at Tully Bog for DM and DS

Annual Mean NO _x Concentration $\mu\text{g m}^{-3}$						
Road Phase (Year)	DM Value		DS Value		Change (DS-DM)	
	Min	Max	Min	Max	Min	Max
2 (2023)	3.4	7.8	3.7	7.8	+0.3	+0.0
3 (2028)	3.0	6.4	3.2	6.9	+0.2	+0.5

6.1.9 The predicted minimum and maximum nitrogen deposition rates for the Tully Bog in the DM and DS scenarios for the opening year and the minimum and maximum changes in rates when comparing the two scenarios are detailed in Table 6.2.

Table 6.2 Range of Annual Mean N-deposition Rate ($\text{kg N ha}^{-1} \text{ yr}^{-1}$) at Tully Bog for DM and DS

N-Deposition Rate ($\text{kg N ha}^{-1} \text{ yr}^{-1}$)						
Road Phase	DM Value		DS Value		Change (DS-DM)	
	Min	Max	Min	Max	Min	Max
2 (2023)	21.29	22.47	21.47	21.50	+0.18	-0.97
3 (2028)	19.38	20.20	19.53	20.40	+0.15	+0.20

6.1.10 The tables and figures demonstrate that nitrogen deposition critical loads are exceeded currently, and would continue to be exceeded with and without the Proposed Scheme.

6.1.11 Without the A5WTC scheme, N-deposition rates are predicted to be $22.47 \text{ kg N ha}^{-1} \text{ yr}^{-1}$ in 2023 and $20.20 \text{ kg N ha}^{-1} \text{ yr}^{-1}$ in 2028. This represents an N-deposition rate of 225 to 449% of the UNECE Critical Load for bog habitats in 2023 and 202 to 404% of the UNECE Critical Load for bog habitats in 2028.

6.1.12 With the A5WTC scheme, N-deposition rates are predicted to be $21.50 \text{ kg N ha}^{-1} \text{ yr}^{-1}$ in 2023 and $20.40 \text{ kg N ha}^{-1} \text{ yr}^{-1}$ in 2028. This represents an N-deposition rate of 215 to 430% of the UNECE Critical Load for bog habitats in 2023 and 204 to 408% of the UNECE Critical Load for bog habitats in 2028.

6.1.13 Thus the A5WTC could be seen as potentially contributing between 2 and 4% additional N-deposition in comparison to the UNECE Critical Load.

6.1.14 A small proportion of the SAC would experience these slightly elevated levels, and detailed field surveys demonstrate a lack of competitive species, such as purple moor grass, on the bog surface that would take advantage of the increased nitrogen levels to supplant the existing

vegetation. The floral assemblage present would be therefore not expected to alter as a result of the change in nutrient input.

Construction Dust

6.1.15 Sources of dust during construction include:

- use of haul routes;
- transportation and storage of materials;
- materials handling, storage, stockpiling, spillage and disposal;
- excavations and earthworks;
- drilling and grouting works; and
- processing, cutting, crushing and grinding activities.

6.1.16 Receptors at high risk will be those located within 200m of the proposed working areas. The highest risk relates to receptors located within 50m of the proposed working areas and which are downwind of the predominant south-westerly winds associated with the area.

6.1.17 The contractors will be required to incorporate detailed dust control and management procedures within their Construction Environmental Management Plans (CEMPs). The plan will include the identification of a nominated Environmental Site Manager notification procedures where potentially significant dust generating activities are required, method statements for the control of dust in such locations and complaint receipt and management procedures to ensure issues, should they be raised by the public. Dust monitors will be established in areas of high risk.

6.1.18 Specific measures that will be adopted will include:

- roads and accesses will be kept clean;
- grout or cement-based materials will be mixed using a process suitable for the prevention of dust emissions;
- fine material will not be stockpiled to an excessive height in order to prevent exposure to wind and/or dust nuisance;
- dust generating activities (e.g. cutting, grinding and sawing) will be minimised and weather conditions considered prior to conducting potentially dust emitting activities;
- plant will be located away from site boundaries close to residential areas;
- water will be used as a dust suppressant where applicable;
- drop heights from excavators to crushing plant will be kept to a minimum;

- distances from crushing plant to stockpiles will be kept to the minimum practicable to control dust generation associated with the fall of materials;
- skips will be securely covered;
- soiling, seeding, planting or sealing of completed earthworks will be completed as soon as reasonably practicable following completion of earthworks;
- dust suppression and the maintenance of the surface of haul routes will be appropriate to avoid dust as far as practicable, taking into account the intended level of trafficking;
- appropriate speed limits on haul roads will be imposed and enforced for safety reasons and for the purposes of suppressing dust emissions;
- material will not be burnt on site; and
- engines will be switched off when not in operation.

6.2 Degradation of the qualifying habitat through changes in hydrology

- 6.2.1 The hydrological regime of Tully Bog SAC and of raised bogs in general as ombrotrophic mires, consists of input primarily through precipitation with output through streams around their periphery.
- 6.2.2 In its natural state a bog is 95% to 98% water. Drainage removes water and increases the dry matter content of the peat. This causes shrinkage of the peat causing the bog to sink. Studies undertaken by the Republic of Ireland National Parks and Wildlife Service at Clara Bog, Co. Offaly have shown that the bog has subsided by as much as 5 to 6m depth alongside a main drain and the effects of subsidence are in evidence at a distance of 500m from the drain itself. Cracking of the peat is commonly associated with subsidence. Subsidence of the peat and cracking increases the slope of the bog surface and this increases the discharge of water.
- 6.2.3 Drainage removes water from the peat lowering the water table. Studies at Wedholme Flow in the UK by English Nature (Labaz & Butcher, 2004) showed that each drain inserted, had the effect of lowering the water table over the entire site from 10cm to 30cm or more. This destroys the acrotelm, the upper layer of the bog which contains the living Sphagnum mosses, the peat forming community. As a result the bog loses its peat forming capacity. The vegetation changes from a Sphagnum dominated community to a vegetation type dominated by dry bog species such as heathers, and sometimes colonisation by birch trees follows. Once peat is exposed to air by drainage, it begins to break down. Oxygen in the air makes it possible for bacteria to digest the peat. Carbon is released during decomposition. Drying of the peat and decomposition changes it structurally, making it difficult to re-wet and therefore unsuitable for re colonisation with Sphagnum mosses.
- 6.2.4 Drainage also causes bog pools to dry up with the result that the associated plant and animal communities also disappear. The dry conditions in the bog caused by drainage also make it more susceptible to fire damage. Another detrimental effect to the bog is caused by the practice

of mechanically spreading turf to dry on the bog surface. This damages the vegetation which may die due to the shading effect and damage caused by compaction which affects the bog as a whole.

- 6.2.5 Construction of a road scheme could alter the hydrology of a nearby raised bog if they cause an increase in drainage from the bog surface.
- 6.2.6 The bog occupies the lowest point in the local terrain. The nearest proposed works are the tie-ins to Todds Rd and Drumlegagh Rd. They do not involve any work to the west side of Drumlegagh Rd. The main line works involve a range of low height embankments and cuttings. The cuttings will not extend below the level of the bog, so would not be expected to depress the local groundwater level.
- 6.2.7 There are areas of soft ground between Junction 11 and Drumlegagh Rd which will need to be removed and replaced with sound material during the construction of the earthworks. However, that excavation is not expected to be more than 2m deep and therefore not significantly below the level of the Tully Bog. Given the distance and temporary nature of those works, the impact upon the groundwater regime is expected to be negligible.
- 6.2.8 The embankments will result in a surcharging of the ground around junction 11, which will result in a minor reduction in the permeability of the clay soils in that area. That may locally result in a minor increase in the groundwater level up-gradient of that location. However, the nature of the local soils is such that the significant permeability thereof is not reduced by the construction of the embankments as such soils are largely incompressible.
- 6.2.9 The construction of the proposed scheme is not expected to affect the hydrological regime either by decreasing the input or increasing the output of water. No drainage features of the bog will be affected as a result of the proposed scheme.
- 6.2.10 Therefore, the proposed scheme is unlikely to have a significant effect on the integrity of the site.

6.3 In-combination Effects

- 6.3.1 The Habitats Directive, NI Regulations and ROI Regulations require consideration to be given to potentially combined effects of a development project and other projects on Natura 2000 sites. Several proposed development projects lying within 1km of Tully Bog SAC, which have either been approved in outline or fully approved in accordance with the relevant development consent regime for the form of development proposed, have been considered to date in the context of this requirement for the currently proposed A5WTC (see Figure 2, Appendix 1).
- 6.3.2 However, between 2009 and 2016 the planning permissions granted are for small individual dwellings or alterations to dwellings, with the exception of a floodlighting permission for an existing playing field and is unlikely to impact on the conservation objectives of the site.
- 6.3.3 No other road schemes are proposed which would alter traffic patterns such that any increase in emissions would be recorded within the SAC.

7 Summary

- 7.1.1 Tully Bog SAC has been identified as a Natura 2000 site with a relationship to the proposed A5WTC which requires that it should be considered in the context of the EC Habitats Directive, as transposed by the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 as amended by the Conservation (Natural Habitats, etc.) (Amendment) Regulations (Northern Ireland) 2012 in Northern Ireland and the European Communities (Natural Habitats) Regulations 1997 (as amended) in the Republic of Ireland
- 7.1.2 The SAC has been subject to a process of screening based on the guidance provided in HD 44/09 of Volume 11 of the Design Manual for Roads and Bridges. It has been concluded:
- the proposed scheme is a project which is not connected with or necessary to the management of the SAC;
 - the likelihood of the proposed scheme having a significant effect on the sites cannot be excluded on the basis of objective information; and
 - that Stage 2 Appropriate Assessments should be undertaken.
- 7.1.3 This document provides information to inform an appropriate assessment for the SAC. The information is being made available to statutory consultees and for wider public consultation. The information in this report and information received in response to the consultations will be considered by TNI and the Minister as appropriate assessments are completed in advance of a decision to proceed or not in accordance with the requirements of the Directive and Regulations.
- 7.1.4 In conclusion:
- The A5WTC has been designed to avoid features related to Natura 2000 site as far as possible;
 - There is a high level of knowledge of the qualifying features (habitats and species) in the study area;
 - Best practice mitigation has been included in the scheme design; and
 - Based on the best scientific knowledge available, there will not be a significant effect on the conservation objectives of the SAC.
- 7.1.5 The information provided in this report indicates the proposed scheme will not have an impact on the integrity of the designated site either independently or in combination with other projects. A final view, however, cannot be concluded until further evaluation is undertaken in light of responses to this consultation.

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