Habitats Regulations Assessment

Report of Information to Inform an Appropriate Assessment:

River Foyle and Tributaries SAC

Strathroy Link Road

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Transport NI

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1 Introduction

1.1 Background

1.1.1 There has been a long-standing aspiration to provide a link road across the River Strule to the north of Omagh town centre, most recently within the Department's Sub-Regional Transport Plan 2015 (Technical Supplement for Omagh District Council). However, the need was documented at least as far back as the mid 1980s, as the need for a link road between the Strathroy/Gortin Road area and the Beltany Road/Derry Road area was included in the Omagh Area Plan 1987-2002. These two areas of Omagh are separated by the River Strule.

1.1.2 In recent years, the need for a link road has been given further impetus as a result of the Education Minister giving a commitment to fund the construction of the Lisanelly Shared Education Campus project in Omagh. The project makes provision for the construction of up to 6 schools within the grounds of the former Lisanelly military base adjacent to the B48 Gortin Road to the north of Omagh's town centre.

1.1.3 A Traffic Impact Assessment (TIA) commissioned by the Department of Education (DENI) recognised the need for significant development work to the local road network and in particular the need for the Strathroy Link Road to be in place prior to the opening of the new complex.

1.1.4 At the time of the TIA the lands identified for the link road were zoned for development. Planning permission for what was previously referred to as Opportunity Omagh, a large retail/mixed-use park on lands to the west of the river, had been granted, while the lands to the east of the river are zoned for housing and industry (planning applications have been submitted for various sites and uses to Planning Service).

1.1.5 To provide reassurance that a road scheme to facilitate the delivery of the Lisanelly Shared Education Campus by the Department of Education would meet with statutory approval, TransportNI applied and obtained planning permission for a new link road, bridge and other associated infrastructure and mitigating measures (Planning Ref. K/2011/0258/F), which was approved on the 20th June 2013.

1.1.6 An Environmental Statement was published in May 2012 by consultants Amey in support of the TNI planning application. As an integral part of the planning process this was made available to consultees. Comments were received from a number of the statutory bodies and as a result an Environmental Statement addendum was prepared and published in March 2013.

1.1.7 The Education Minister has given a commitment to fund the construction of the Strathroy Link Road in Omagh as part of the Lisanelly Shared Educational Campus. The Department for Regional Development (DRD) has a long standing commitment to the Strathroy link Road, which is included in the Sub-Regional Transport Plan 2015.

1.1.8 Now that the Lisanelly Shared Education Campus proposals are being advanced with the intention of having the new campus open and operational by 2020, DRD TransportNI have

appointed Mouchel to undertake the necessary work to ensure the delivery of appropriate highway proposals in accordance with relevant procedures and statutory approvals.

1.1.9 Strathroy Link Road will be a 7.3m wide carriageway. A 2.5m wide footpath will be provided on the northern side of the carriageway while a combined 4.0m wide footpath and cycleway will be provided on the southern side. To connect the Link Road to the network some improvement and tie-in works will be required on Derry Road and Strathroy Road.

1.1.10 The Scheme encompasses a new carriageway for approximately 900m from the Derry Road to the Strathroy Road including a three span bridge over the River Strule. The bridge will be a clear span over the River Strule with the piers situated on the banks of the river and a back span either side of the river. The piers supporting the spans will be located within the floodplain of the River Strule whilst the western abutment encroaches into the floodplain.

1.1.11 Flood conveyance enhancement works have been incorporated into the scheme to ensure no detrimental effects on the integrity of the floodplain. The eastern abutment is outside the floodplain. One small stream (Strathroy Road Drain) will be culverted under the link road and piped at the junction of the Link Road and Strathroy Road. In addition, the dry ditch known as the Conneywarren Drain will also be culverted. The link road will tie into the Derry Road via a new roundabout adjacent to the existing Derry Road/A5 Roundabout and into the Strathroy Road by a priority junction.

1.1.12 The Scheme has received full planning consent and is subject to provisions within an Environmental Statement (ES) published in May 2012 (Amey, 2012). The environmental studies undertaken and reported in the ES identified two Special Areas of Conservation (SACs); Tully Bog SAC and River Foyle and Tributaries SAC, both Natura 2000 sites).

1.1.13 The SACs form part of the collectively named Natura 2000[1] sites and were 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. The sites were screened to determine if the Scheme, with its proposed mitigation measures, would be likely to have a significant effect on their ecological integrity. It was concluded they would not be likely to have a significant effect on either Tully Bog SAC or River Foyle and Tributaries SAC in the context of the Habitats Directive.

1.1.14 The result of the screening process for Tully Bog SAC remains in place and no further assessment has been undertaken for this site. However, recent case law related to the Appropriate Assessment of SAC watercourses associated with the A5 WTC[2] has led to reconsideration of the screening process undertaken for the River Foyle and Tributaries SAC.

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[1] 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').

[2] The screening process for SAC watercourses associated with the A5 WTC was challenged and it was found that the River Foyle and Tributaries SAC should have been subject to an Appropriate Assessment. The judgement was informed by concerns

1.1.15 Examination of the original screening process completed in 2012 indicated that sufficient uncertainty remains, such that likely significant effects on the integrity of the SAC could not be ruled out at the screening stage. Thus the Scheme has been the subject of further studies and assessments to inform an Appropriate Assessment of the River Foyle and Tributaries SAC in order to determine whether the scheme will have a significant effect on the integrity of the SAC.

1.1.16 This document provides information to inform an appropriate assessment for the River Foyle and Tributaries SAC. Screening has concluded that it cannot be excluded on the basis of objective information that the current Scheme may have a significant effect by virtue of its proximity to and/or localised crossing of an associated watercourse (namely, the River Strule, which is a tributary of the River Foyle).

1.1.17 Although this scheme does not lie within the SAC boundary, species and habitats which are primary reasons for designation of the site, and in the case of salmonid and otter, which may utilise the site, may be present within the area of the scheme.

1.1.18 The information within this report will be formally presented to the relevant statutory consultees who have a regulatory concern in relation to the River Foyle and its Tributaries SAC. The information received in response to preliminary consultation with NIEA and Loughs Agency has been held and their feedback has been incorporated into this report. Copies of the correspondence with these organisations can be found in Appendix 8. Any further consultations will be considered by TransportNI and the Minister along with further information derived during the finalisation of the Scheme as the appropriate assessment is completed in advance of a decision to proceed or not in accordance with the requirements of the Directive and Regulations.

1.1.19 The gathering and presentation of the information 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 Section 4, Part 1 of Volume 11 of the DMRB (HD44/09).

1.2 Legislative background

1.2.1 Article 6(3) of the Habitats Directive, as abstracted below, places an obligation on competent authorities of member states charged with determining consent for projects and plans which are not directly connected with or necessary to the management of a Natura 2000 site to undertake an appropriate assessment if such projects or plans are likely to have a significant effect on the site.

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subject to appropriate assessment of its implications for the site in view

raised by Loughs Agency in responses to the A5WTC ES 2010 and presented in verbal submissions to the public inquiries held in 2011 concerning the protection of Atlantic salmon, 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.

of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public

1.2.2 The obligation, and those of the Habitats Directive more widely, have been transposed into Northern Ireland legislation by way of the Conservation (Natural Habitats, etc.) (Northern Ireland) Regulations 1995 as amended (The NI Regulations).

1.2.3 The SAC under consideration has been subject to a screening exercise for the Scheme based on the guidance provided in HD 44/09 and using the suggested template provided in Annex 4 of the guidance to record the findings of the process. It has been concluded:

- the Scheme is a project which is not connected with or necessary to the management of the SAC;
- given the clarification on interpretation though recent case law, the likelihood of the Scheme having a significant effect on the site cannot be excluded on the basis of objective information; and
- that an appropriate assessment should accordingly be undertaken.

1.2.4 Paragraph 4 as referred to in Article 6(3) makes provision for further consideration where an appropriate assessment cannot conclude a plan or project will not adversely affect the integrity of a designated site. This will be a matter for further consideration subject to the findings of the appropriate assessments for the SAC.

1.2.5 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.

2 Assessment methodology

2.1 Scope of the information to inform the appropriate assessments.

2.1.1 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 screening for the River Foyle and Tributaries SAC. Impacts identified which cannot be excluded following screening relate to:

- loss or deterioration in the extent and quality of habitats identified as a primary reason for selection of the SAC or as a qualifying feature within the SAC;
- disturbance or harm to Atlantic salmon and otter as species identified as a primary reason for designation of the SAC or as a qualifying feature within the SAC and the wider catchments supporting populations of the two species; and
- loss of habitat supporting Atlantic salmon and otter both within the SAC and the wider catchments supporting populations of the two species.

Habitats identified as a primary reason for selection of the SAC or as qualifying features within the SAC

2.1.2 The studies and assessments have involved a review of the data relevant to the proposed open span bridge structure over the River Strule, the culverting of the Strathroy Road Drain (a small watercourse adjacent to the River Strule), the culverting of the Conneywarren Drain, and drainage outfalls into the River Strule, Strathroy Road Drain and Conneywarren Drain, included in the Scheme design. Information derived from site surveys undertaken to inform the 2012 ES (Amey, 2012) and update surveys in 2014 were also used. The studies and assessments were undertaken to establish if the presence of the road-related features will involve the loss of relevant habitat.

Disturbance or harm to Atlantic salmon

Data Sources

2.1.3 The following data sources have been relied on:

- data provided in the 2012 ES; and
- data derived from site surveys undertaken in 2014 by the Mouchel assessment team on land within and adjacent to the Scheme, and where the Scheme crosses the River Strule and the Strathroy Road Drain. (Note: the Conneywarren drain has no flowing water on and adjacent to the site, and was scoped out of surveys.) Specific attention was paid to establish the presence, potential presence or absence of salmonid holding (resting), spawning or nursery habitat in the specific locations.

2.1.4 The site surveys were undertaken in May-August 2014 and were conducted in accordance with guidance issued by statutory authorities (e.g. Northern Ireland Environment Agency (NIEA); Department of Culture, Arts and Leisure (DCAL)) and agreed with Loughs Agency.

The River Strule and Strathroy Road Drain were surveyed 250m upstream and downstream from the proposed crossing points (bridge and culvert respectively), and all drainage outfalls into the watercourses were included within this distance. The following data was collected:

- flow velocity – this was taken where possible using an in-stream flow meter with impeller to provide a count or measured by timing a floating object over a known distance, velocity has then been calculated using the count, depth and width measurements – the flow velocity is critical to keep eggs/fry in a spawning/ nursery area well oxygenated;

- in-stream vegetation – presence and extent was estimated looking downstream to the left and right – in-stream vegetation can provide adequate cover in the nursery habitat as shelter from predators;

- the extent of mature scrubby bank cover where present – mature scrubby vegetation can provide cover for nursery areas as well as stability and cover in holding areas;

- the extent of overhanging bank cover where present – overhanging tree and scrub cover can enhance the food supply available for fry in nursery areas by way of insects dropping off branches into the water;

- water depth – the depth of the water is important for all three habitat classifications. Adequate depth in spawning areas ensures that redds[3] are covered by water at all times. Shallow water in the nursery area makes the fry less vulnerable to predation not only from larger fish but also rippling of the water surface makes them less easily seen by birds. Deeper water allows adult fish to rest where the minimum energy is required to stay on station;

- water width – this measurement has been used in combination with depth to calculate flow velocity;

- substrate type – this has been measured as a percentage of bedrock, boulder, cobble, gravel, fines, sand, silt and mud – a stable substrate in holding areas allows adult fish secure resting areas on a staged ascent/ descent of the river. A stony substrate provides good shelter from predators and creates more territory space allowing it to accommodate more fry in the nursery area. This stable environment also will invariably have more invertebrates living on the stones as a source of food for the fry. The presence and size of gravel is critical for the creation of a redd in salmonid spawning areas whilst the presence of large quantities of finer silt material with gravel can cause compaction of the gravel making redd construction more difficult and reduce oxygen supply to the eggs; and

[3] A redd is a spawning nest dug in gravels of the stream bed by fish, especially salmon.

- gravel depth – the depth of gravel and, thereby, the potential depth of a redd exerts a strong influence on spawning in relation to the size and type of fish able to lay eggs in an area.

Impact assessment

2.1.5 The data collected from the location-specific surveys has been reviewed and each location has been classified relative to its salmonid potential in accordance with the Annex 1 Habitat Classification detailed in the Fisheries Division guidance. Each location has been categorised relative to holding spawning or nursery habitat into one of four grades, grade 1 being optimal habitat and grade 4 indicating an absence of habitat or habitat which is failing. Only locations with classifications of 4 relative to all three holding, spawning or nursery habitat types have been excluded as not being of salmonid interest.

2.1.6 Consideration has been given to the fact that the three watercourses are within 50m of the proposed working area and, hence, where there is a risk of migration of sediments over ground, particularly during rainfall that could have an impact on water quality and/or marginal and aquatic habitats. The assessment has involved consideration of the risk, taking into account proposed mitigation measures which have been incorporated into a draft Construction Environment Management Plan (CEMP) and Silt Management Plan (SMP) that the contractors will be required to develop and adopt prior to construction.

2.1.7 Loughs Agency has indicated that a threshold during the construction phase of the Scheme comprising a maximum increase of 10mg/l in concentrations of in-stream sediment, measured as Total Suspended Solids (TSS), above background levels should be adhered to during construction for watercourses identified as having Atlantic salmon interest.

2.1.8 Consideration of the impacts associated with the future use of the Scheme have been focused on discharge of sediments from drainage outfalls which could result in the smothering of salmonid habitat, and harm to fish as they pass through the relevant section of watercourse. This is true where outfalls discharge directly into salmonid habitat and where discharge is into watercourses which are not salmonid habitat, but flow into salmonid habitat downstream.

2.1.9 In relation to discharge of sediments and other road related pollutants from the proposed road drainage networks during operation, analysis and calculations have been undertaken to establish if design parameters have agreed with that required by NIEA for operational discharge; namely whether this passes tests set by the Highways Agency Water Risk Assessment Tool (HAWRAT). Discharge has been assessed using the tool to determine whether water quality relative to sediments and other pollutants, such as metals and hydrocarbons, associated with road related run-off will prove acceptable in the context of the ecological status of the River Strule and Strathroy Road Drain using the HAWRAT. The HAWRAT is an assessment tool which is recommended in Volume 11 of the Design Manual for Roads and Bridges (DMRB) and which has been agreed with the statutory bodies responsible for water quality throughout the UK. The outcome from the application of the HAWRAT is that a discharge will either pass or fail in light of the predicted concentrations of sediments and other pollutants and the sensitivity for the receiving watercourse. Where the

evaluation indicates an outfall will fail, appropriate combinations of mitigation measures are identified and the evaluation re-run until the outfall achieves a pass.

2.1.10 Evaluation of discharge at outfalls has involved adoption of the standard TSS value of 116mg/l for untreated road runoff from the Highways Agency 'cold and wet' climatic region (which includes Northern Ireland)[4] and identification of appropriate combinations of mitigation measures for inclusion in the drainage design to achieve a minimum 57% sediment treatment required to achieve the threshold. The untreated TSS value has been taken from Phase 2 of the Improved Determination of Runoff from Highways Project (Crabtree et al, 2007).

2.1.11 The calculations relating to downstream concentrations have involved use of the local standard annual average rainfall value in combination with the impermeable area of each drainage network to establish an annual volume of water draining through each network to outfall. The standard TSS value of 116mg/l for untreated road runoff adopted for evaluation has been applied. The sediment loading has been compared to the receiving annual water flow volume and TSS data for the receiving watercourse. Where the calculation has indicated a concentration will exceed the in-stream threshold, appropriate combinations of mitigation measures have been identified and the calculation has been re-run until the outfall achieves a pass.

2.1.12 The identification of the specific mitigation measures proposed for each drainage outfall has involved the adoption of the most onerous combination of measures in light of the outcome of all three evaluations.

2.1.13 Where more than one outfall discharges into the same reach of a watercourse the combined impacts will be more significant. In these circumstances the outfalls were subject to an aggregate assessment in HAWRAT.

2.1.14 To aggregate the outfalls the drained areas were simply added together. The location on the watercourse used for the cumulative assessment was positioned downstream of the last outfall in the reach. For this purpose a reach is defined as a length of watercourse between two confluences, as the available dilution and stream velocity will naturally change at confluences and influence the assessment.

2.1.15 Watercourse reaches can vary greatly in length. Therefore, for the assessment of the impacts of soluble pollutants, only outfalls within 1km of each other along the length of a watercourse were aggregated for cumulative assessment. When assessing the combined impact of sediment bound pollutants, outfalls within 100m of one another were assessed. Beyond 100m,

[4] As per the WRc report 'Improved Determination of Pollutants in Highway Runoff Phase 2. WRc Report UC7309.

the road runoff sediment is likely to be sufficiently diluted with natural sediments so as not to have an adverse impact[5].

Disturbance or harm to otter

Data sources

2.1.16 The following data sources have been relied on:

- data provided in the 2012 ES; and
- data derived from site surveys undertaken in 2014 by the Mouchel assessment team.

2.1.17 The surveys were undertaken in May-August 2014 (survey report attached in Appendix 5). The surveys involved recording of evidence along both banks of the River Strule and Strathroy Road Drain following procedures detailed in the Otter Surveys – NIEA Specific Requirements (NIEA, 2013). In common with the methods described above (2.1.4), surveys were conducted 250m upstream and downstream from the Scheme on both watercourses. Searches were undertaken for potential otter holts, runs leading away from the water and otter spraints, with particular note being taken of large collections of spraints which could indicate a more sensitive otter site near-by. Transects were also walked where practical, parallel to the waterways, to detect any potential otter runs leading to den sites. Any potential runs were followed and searched for evidence of use by otter in the form of footprints and spraints.

Impact assessment

2.1.18 The data derived from the data sources described above has been reviewed to establish where the Scheme would be in close proximity to watercourses and it has been established they are used by the species.

2.1.19 The locations have then been evaluated to determine the nature of the potential impacts on the species including loss of marginal and aquatic habitat, resting places and holts and fragmentation of corridors used by the species leading to potential mortality, injury or loss of access to shelter and resting places as a result of the construction and future use of the Scheme.

2.1.20 Where the assessment has indicated such impacts would be likely to occur, consideration has then been given to appropriate mitigation measures to safeguard the availability of habitat and passage along corridor used by the species.

[5] In accordance with DMRB Volume 11 Section 3 Part 10 HD45/09 Annex I.

2.2 Determination of adverse impact relative to integrity

2.2.1 Once potential impacts have been identified, they are considered in relation to the potential to have a negative effect on the integrity of the Natura 2000 sites. The assessment determines whether there is likely to 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 was classified.

2.2.2 The DMRB guidance (HD 44/09) provides a suitable checklist to identify interactions and potential effects on the integrity of the site. Completed checklists are provided in Appendix 7.

3 Description of the proposed scheme

3.1 Alignment, river crossing and relationship to the SAC

3.1.1 The Scheme comprises a link road with a length of approximately 900m linking the B48 (and nearby A5) to Strathroy Road at a location on the north-west outskirts of Omagh, County Tyrone. Some improvement works are also required to the Derry Road and Strathroy Road to cater for the link and improve Non-Motorised User facilities. The alignment of the Scheme and its position within the surrounding landscape are shown in Appendix 1, Figure 1.

3.1.2 The link road will be a single carriageway running on embankment for most of its length, and cross the River Strule on a three-span bridge, with a clear span of the river. A roundabout junction will tie the road into the B48 at its western end, and a standard T-junction will tie it into Strathroy Road at its eastern end. In addition to the River Strule the proposed scheme will cross Strathroy Road Drain twice where it will be culverted under the link road in one location and piped at the junction of the Link Road and Strathroy Road.

3.1.3 The scheme is ~17km south of the River Foyle and Tributaries SAC, this closest point being where the River Strule and River Owenkillew meet at Newtownstewart. The River Strule is crossed by the Scheme and flows northwards towards this confluence, and this forms a pathway by which impacts from the Scheme could affect the River Foyle and Tributaries SAC.

3.1.4 Bridge piers, which are set back from the bank and not within the Strule, will be protected by rock armour which will be dug into the ground around them. There is the potential that the banks of the River Strule will change shape over the life span of the structure, particularly on the western edge where the bank is currently reasonably steep. For this reason the foundations of the bridge piers will be designed to accommodate a variety of future conditions including the possibility of the river edge reaching the line of the piers. For protection of the piers from flood impact, scour protection, in the immediate vicinity of the piers and back from the edge of the bank is proposed in the form of rock amour.

3.1.5 It is proposed that the Strathroy Road Drain Culvert will be constructed online, with appropriate measures to stop pollutants (including sediment) from the works entering the main river.

3.2 Sediment control during construction

3.2.1 To comply with Loughs Agency's requirement for a maximum increase of 10mg/l of Total Suspended Solids within watercourses during construction, a draft CEMP and SMP have been prepared which will form a minimum standard which contractors will be required to adhere to.

3.3 Design of road drainage system

3.3.1 Works for the most part will not alter any of the watercourses but drainage outfalls will be constructed to allow run-off from the carriageway to flow into the River Strule, Strathroy Road Drain and Conneywarren Drain during operation. This will lead to minor alterations to the bank of each watercourse during construction in order to install the drainage apparatus (e.g. installation of headwalls, wingwalls, pipe, etc). During operation, these outfalls will carry runoff from the carriageway into the watercourses.

3.3.2 The drainage strategy for the Scheme provides for discharge of road related run-off to existing watercourses. It includes Sustainable Drainage System (SuDS) features focused on the interception and reduction in concentrations of sediments and other potentially harmful substances which are either suspended or in soluble form within road related run-off prior to discharge. Measures comprise a series of retention ponds to attenuate run-off. Discharges will be subject to Rivers Agency Consent prior to commencement of construction.

3.3.3 The proposals have been based on the following design parameters:

- adoption of the 1 year, 5 minute duration, return period storm event with an additional 20% allowance for climate change;
- adoption of a 25mg/l TSS concentration in-stream threshold downstream of the outfalls during operation of the road, in accordance with the recommended threshold in the Water Framework Directive relative to the passage of fish. It has been assumed for the purposes of the proposed scheme that all watercourses receiving road related run-off are of value to fish; and
- adoption of the Q90[6] flow rate for receiving watercourses for the purposes of calculating TSS concentrations in receiving watercourses following treatment as agreed with Loughs Agency.

3.3.4 Four outfalls will discharge run-off from the road; two into the River Strule, one into the Strathroy Road Drain and one into the Conneywarren Drain. Modelling of TSS input into each watercourse has shown that runoff at the end of the drainage system (so called end of pipe concentration) passes the HAWRAT and is under the 116mg/l threshold set by this test. More specifically, final end of pipe TSS concentration is modelled to be 46mg/l for all outfalls, significantly lower than the threshold set by the HAWRAT.

3.3.5 “In river” concentrations outside the mixing zone (where effluent is diluted by river water) are expected to be significantly lower again than the end of pipe concentrations. For the Strathroy Road Drain and Conneywarren Drain, downstream concentrations are modelled to be 11mg/l and 12mg/l respectively. For the River Strule, downstream concentrations are expected to be 8mg/l.

3.4 Noise and vibration during construction and operation

3.4.1 Piling will be undertaken adjacent to the River Strule, but not within it. This will be a source of vibration that may affect the River Strule and ecological resources within it.

[6] The Q90 flow rate is the rate which is exceeded 90% of the time in a watercourse, and is calculated using computer modelling of the watercourse’s catchment.

3.5 Carriageway lighting

3.5.1 The carriageway will be lit, but light will be focussed on the carriageway itself and only negligible spill (~0.3 lux at the edge of the bridge) will fall on watercourses. It is proposed to provide full cut off flat lanterns as mitigation for potential light spill. Cowls will be positioned at the back of the lanterns to further control light spill and lighting columns will be positioned on the back spans of the structure so that no direct light will fall onto the river.

4 River Foyle and Tributaries SAC (SAC UK0030320)

4.1 Overview

4.1.1 The location, extent and relationship of the River Foyle and Tributaries SAC to the proposed scheme is indicated in Appendix 1, Figure 2. Details relating to the habitats and species identified as the primary reason for selection as a Natura 2000 site and qualifying habitats and species are described below along with comments relative to condition and threats and ecosystem factors. The information has been obtained from the Natura 2000 data forms obtained from the Joint Nature Conservancy Committee (JNCC) website (www.jncc.gov.uk) and the National Parks and Wildlife Service (NPWS) website (www.npws.ie). The Natura 2000 data form is enclosed in Appendix 6.

4.2 Primary Reasons for Selection

4.2.1 Habitats: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation.

4.2.2 Species: Atlantic salmon *Salmo salar* - The river has the largest population of Atlantic salmon in Northern Ireland, with c. 15% of the estimated spawning numbers. The majority of individuals returning are grilse (single wintering salmon), with a smaller number of spring salmon (multi-wintering salmon). Research has shown the presence of genetically distinct salmon in individual sub-catchments.

4.3 Qualifying Features, but not a Primary Reason for Site Selection:

4.3.1 Otter *Lutra lutra* – otters use the River Strule to forage and commute.

4.4 Current Conditions and Threats

4.4.1 The deterioration of water quality is both a local and widespread issue. Point-source pollution from urban centres and farms are an issue in localised areas with diffuse run-off of fertiliser from commercial conifer plantations in the upper catchment and intensive farming practices in the lower catchment providing a more widespread problem.

4.4.2 Poor water quality, as a result of the above and increased sedimentation can be significant influences on populations of Atlantic salmon and otter, as well as altering the biological composition of the river ecosystem.

5 Potential impacts and mitigation

5.1 Overview

5.1.1 Potential impacts associated with the construction and operation of the Scheme and its associated traffic which have been identified comprise:

- loss of primary or qualifying habitat within the SAC as a result of release of sediments or other pollutants, such as oils and petrochemicals, into the River Strule upstream of the SAC during construction;

- loss of primary or qualifying habitat within the SAC as a result of the release of sediments or other pollutants, associated with road related run-off at drainage outfalls into the River Strule, upstream of the SAC once the Scheme is open to use;

5.1.2 There will be no direct removal of primary and qualifying features due to construction and operation of the Scheme. The Scheme is outside of the Foyle and Tributaries SAC boundary, and no *Ranunculion fluitantis* and *Callitricho-Batrachion* habitat was recorded within the River Strule in the area where the bridge will be constructed, or within 250m of the Scheme (the limits of field survey work).

5.2 Potential impacts on primary and qualifying features

Release of sediments or other pollutants during construction

5.2.1 There is the potential for loss of primary or qualifying habitats within the Foyle and Tributaries SAC as a result of the release of sediments or other pollutants into the River Strule during construction, which is upstream of the SAC. Sediments/pollutants would be carried by the River Strule to the SAC and may cause adverse effects on *Ranunculion fluitantis* and *Callitricho-Batrachion* habitat where deposition occurs.

5.2.2 Construction activity will occur in the vicinity of watercourses where the clear span bridge crosses the River Strule, where culverts are to be installed on the Conneywarren Drain and Strathroy Road Drain, where drainage outfalls are proposed on all three watercourses and within the River Strule floodplain where the Strathroy Link Road is situated. All works are outside the River Foyle and Tributaries SAC, the boundary of which is ~17km away to the north-west.

5.2.3 Mitigation measures are focused on the avoidance and control of sediments and other construction related pollutants, and will be formalised in the contracts for the implementation of the project by way of a contract specific Construction Environment Management Plan (CEMP) and Silt Management Plan (SMP) which the contractors will be required to prepare and adhere to, and which will include as a minimum management roles and responsibilities, protocols, construction works method statements and mitigation measures. Outline documents are included as drafts in Appendices 3 and 4. The contractor will use these documents as a framework for the minimum requirements of their CEMP and SMP, which will include more detailed construction method statements for different aspects of the scheme.

5.2.4 Specific measures within the CEMP and SMP that will avoid damaging runoff entering watercourses include:

- Storage of materials, chemicals and fuel in bunded compounds on hard standing outside the limits of the floodplain;
- Waste from dewatering operations and other tasks that produce dirty water will be carefully disposed of without the dirty water entering local watercourses;
- Emergency procedures to tackle and control potentially polluting situations before watercourses are affected; and
- An environmental clerk of works will monitor adherence to procedures.

5.2.5 Construction of headwalls of outfalls will require a small amount of work to be undertaken in the wetted margin of the river. However, with measures put in place as outlined in the CEMP and SMP to control this, release of only negligible amounts of sediment over a short period of time would occur, and would not lead to significant adverse effects on the qualifying features of the SAC.

5.2.6 In addition, the installation of rock armour to protect bridge piers is required as described in 3.1.4. These works will not affect the river banks, but measures and requirements detailed in the draft CEMP would be adhered to in order to minimise potential sediment release into watercourses to negligible levels. In the same way, measures will be put in place to prevent spillage of adverse chemical compounds into the river. Contractors would also be required to ensure imported rock does not contain invasive species of plant.

5.2.7 To ensure that in stream vegetation habitat loss is minimised pre-planted coir rolls of suitable native emergent and marginal vegetation would be inserted into the rock armour during construction.

Release of sediments or other pollutants associated with road related run-off

5.2.8 There is potential for loss of primary or qualifying habitats within the SAC as a result of the release of sediments or other pollutants associated with discharge of road related run-off into the River Strule, upstream of the River Foyle and Tributaries SAC, once the Scheme is open to use.

5.2.9 Sediment discharge into the Conneywarren Drain and Strathroy Road Drain, drainage channels that do not support Atlantic salmon, will not exceed the 50mg/l threshold set by the Water Framework Directive as acceptable to prevent significant adverse effects. “In river” TSS concentrations have been modelled as 11 mg/l and 12 mg/l for outfalls in both streams respectively which is well below the threshold for significant negative effects. This concentration will be further reduced downstream before eventual discharge into the River Strule.

5.2.10 For the River Strule, which supports a nursery area for Atlantic salmon in the vicinity of the proposed runoff outfall, a threshold of 10mg/l as uplift from current baseline levels for significant adverse effects has been adopted to protect this, as well as to maintain fish passage. The TSS concentration for the outfall has been modelled as 8mg/l, below the threshold for significant adverse effects on the nursery area (discussed in more detail below).

5.2.11 The results of calculations for discharges to the SAC and their associated catchments relative to the 50mg/l threshold at the point of discharge and 10 mg/l uplift for in-stream concentrations relative to the nursery area/passage of fish are detailed in Appendix 2. The schedule indicates that discharges from all outfalls will meet the guideline parameters for the Water Framework Directive, Freshwater Fish Directive, and those agreed with NIEA and Loughs Agency. The outfalls have also been subject to a HAWRAT assessment and it has demonstrated that all outfalls pass the required standards, and that the discharges will accordingly be acceptable relative to the ecological sensitivity of the watercourses.

5.3 Atlantic salmon

5.3.1 The introduction of the Scheme into the existing mosaic of terrestrial and aquatic habitats within the River Foyle Catchment has the potential to affect Atlantic salmon as a primary reason for selection of the Foyle and Tributaries SAC where they are present within the SAC and in watercourses within the wider catchments.

5.3.2 Outfall of sediments and pollutants could significantly affect Atlantic salmon. However the measures for control of runoff outlined in section 5.2 for construction and operation of the Scheme will avoid significant negative effects on this species by reducing the impact of sediments to negligible levels, and preventing pollution. These measures will protect the nursery area and maintain the ability of fish to pass through the area.

5.3.3 Therefore, potential impacts associated with the construction and future presence of the Scheme and its associated traffic which have been identified comprise:

- adverse impacts on Atlantic salmon due to vibration from piling and construction activities, and from operation of the road; and
- adverse impacts on Atlantic salmon and Eurasian otter due to light spill from road lighting.

Construction related noise, vibration and lighting

Noise and vibration

5.3.4 Atlantic salmon are capable of detecting the pressure and particle motion components of sound; levels of anthropogenic noise and vibration may exceed the hearing threshold of Atlantic salmon (Hawkins and Johnstone, 1978). This is due to their physiological makeup and the particle composition of water and soil, which facilitate propagation further than in air (Popper, 2008). The resulting potential impacts can be hearing impairment (Nedwell et al., 2005) or death, either directly from the noise generation or indirectly as a result of hearing impairment. Construction activities associated with the Scheme likely to pose such a risk are piling, particularly near watercourses.

5.3.5 The proposals do not require piling within watercourses, although the establishment of pier foundations at the proposed River Strule crossing will involve piling close to the top of the bankside slopes of the watercourse. In order to avoid potentially significant noise and vibration related effects of Atlantic salmon, piling works during sensitive periods for this species should be avoided. A working window of May to September has been agreed with Loughs Agency for the River Strule crossing; this is outside of the critical salmonid migration period. In addition, contractors will use Continuous Flight Auger (CFA) piles for the abutment walls, and therefore all piles will be rotary bored piles which do not produce significant vibration.

5.3.6 Mitigation to be incorporated in the construction procedure will include a soft-start methodology. The soft-start methodology will involve a gradual increase in force and intensity of drilling, and hence, noise and vibration, over a 30 minute period to allow Atlantic salmon to move outside of the area of influence. The soft-start methodology would be required each time the machinery is started following a 30 minute rest period. Once the piling is in full operation, associated noise and vibration from the machinery will keep fish outside of the area of influence.

Lighting

5.3.7 Artificial lighting at night has the potential to disrupt and disorientate fish, increase exposure to predation, alter light-sensitive endocrine systems and disrupt crepuscular and nocturnal mating, signalling and dispersal (Rich and Longcore, 2006). With regards to Atlantic salmon, the main impacts resulting from artificial lighting are disruption to migration behaviour (Thorpe et al., 1988; Nemeth and Anderson, 1992) and increased mortality rates due to increased efficiency of predators (Tabor et al., 2004; Kemp and Williams, 2009).

5.3.8 Night working in the vicinity of watercourses identified as being of salmonid interest will not generally be allowed. However, circumstances may arise which require emergency works outside of daylight hours, in these cases lighting will be positioned/cowled to minimise light spill onto the watercourse and the duration will be kept to a minimum. These approaches will be contractual commitments placed on contractors by TransportNI.

5.3.9 The clear-span bridge over the River Strule will require lighting as part of design requirements. However, lighting will be positioned/cowled to minimise light spill (see 3.4.1) onto the watercourse and impacts will be negligible.

5.4 Otter

5.4.1 Potential impacts associated with the construction and future presence of the proposed scheme and its associated traffic which have been identified comprise:

- disturbance and harm as a result of construction;
- fragmentation associated with obstruction of existing access along watercourses resulting in potential mortality or harm where otters seek to cross carriageways; and
- deterioration in water quality resulting in harm to the species and consequent impacts on supporting habitat.

Disturbance and harm during construction

5.4.2 Sources of potential impact during construction include:

- disturbance as a result of night time working which could result in the species being discouraged from using their natural range with consequential impact on the health of the animals through increased stress and reduced feeding efficiency and separation of breeding males and females which could lead to a reduction in the density and distribution of the species;
- disturbance to movement along watercourses where work is being undertaken along or close to watercourses; and
- open excavations with steep sides in close proximity to watercourses may trap otter and result in death of individuals.

5.4.3 Night time working will not be permitted adjacent to the River Strule which is where otters have been recorded and where works could disturb passage of these animals.

5.4.4 Other mitigation measures which have been identified in light of the identified impacts and which will be included as part of the environmental commitments in the scheme CEMP include:

- location of compounds and storage of materials away from watercourses;
- fencing off of riparian habitat that is to be retained with clear marking to prevent inadvertent access;
- exclusion of otters from the work areas at the River Strule;
- fencing or covering of excavations in excess of 2m depth over; and
- provision of a suitable ramp within all uncovered excavations during non-working hours.

5.4.5 In common with Atlantic salmon, sediments and other construction related pollutants can result in harm to otter and supporting habitat. The mitigation measures proposed to control sediment and other potentially polluting materials, such as fuels, oils and cement, will serve to avoid such impacts or limit them such that the effect will be negligible relative to the species and its supporting habitat.

Habitat Fragmentation

5.4.6 The fragmentation of habitats is a common threat to otter, but of greater concern where associated with roads (Harris et al., 1995; Kruuk, 1995). Death of otter as a result of road death is thought to be the predominant cause of non-natural mortality in the species (Green, 1991; O'Sullivan and FitzGerald, 1995; Philcox et al., 1999; Chanin, 2006), with the number of deaths as a result of road traffic accidents thought to be increasing (Körbel, 1994; Green & Green, 1997).

5.4.7 The River Strule crossing, as a clear span bridge, will maintain a route for otter passage during operation. The Conneywarren Drain and the Strathroy Road Drain are shallow and culverts will be too small to support otter ledges. Both culverts will, under normal flow conditions, permit otter passage.

5.5 In-combination effects

5.5.1 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. The following two proposed development projects, which are either being considered or are awaiting approval in accordance with the relevant development consent regime for the form of development proposed, have been taken into account in the context of this requirement for the Strathroy Link Road:

- The A5 Western Transport Corridor (A5WTC).
- Lisanelly Shared Educational Campus.

5.5.2 The A5WTC is an 85km major new road scheme providing a fast transport link in western Northern Ireland. It will link Londonderry/Derry, Strabane, Omagh and other towns in County Tyrone with the A4 and the border with the Republic of Ireland. The A5WTC has been subject to a detailed environmental impact assessment and all watercourses are subject to the same requirements and runoff thresholds as the Strathroy Link Road scheme (it has also been developed in consultation with national agencies such as NIEA and Loughs Agency). Thus in-combination effects will be non-significant as total suspended solid run-off for both operational schemes will be below threshold levels (the schemes will not be built at the same time, and therefore construction related runoff will not act in-combination). Measures to protect Atlantic salmon and otter are also part of the A5WTC scheme and there will be no significant adverse effects on these features of the SAC.

5.5.3 The Lisanelly Shared Educational Campus is a new school development to the east of the proposed Strathroy Link Road scheme. Review of the Environmental Statement[7] prepared in support of the planning application for this project indicates that, with the implementation of a Construction Methodology Statement detailing the steps involved to ensure accidental silt/pollutant loadings do not occur within the River Strule, there would be no adverse impact on the River Foyle & Tributaries SAC and spawning Salmon. It is therefore concluded that there will be no in-combination effects with the Strathroy Link Road.

5.5.4 River Agency, responding to the need to replace flood protection infrastructure in the Omagh area, proposes to replace the Hunters Crescent Floodwall on the west bank of the Strule, upstream of the proposed link road. This scheme will be constructed entirely on the bank of the Strule with no in-stream work, and any piling undertaken outside of sensitive periods of migrating salmon. No adverse impacts on the qualifying features of the River Foyle and

[7] Lisanelly Shared Education Campus, Omagh (2013). Environmental Statement.

Tributaries SAC are predicted as a result of this scheme, and therefore there will be no in-combination effects with the Strathroy Link Road.

5.5.5 Should any further relevant sites be identified as a result of consultation responses to this report, or become the subject of approved development consent prior to completion of the appropriate assessments for the Strathroy Link Road scheme, they will be subject to evaluation. Further information will then be made available to Transport NI for consideration in advance of determination relative to the project.

6 Conclusions

6.1.1 In light of:

- The avoidance of significant in-stream works due to piling being placed on river banks;
- Restriction of the working season to outside that which salmon are using the area;
- Provision of a Construction Environmental Management Plan, Silt Management Plan, and Environmental Clerk of works;
- Drainage design which meets the requirements of the HAWRAT tests and that will not have significant adverse effects on the River Strule, its habitats, and habitats downstream; and
- Lighting design that reduces spill to minimal levels;

it has been concluded there is no likelihood of the proposed scheme having a significant adverse effect on any of the features for which the River Foyle and Tributaries SAC has been designated and consequently that the integrity of the River Foyle and Tributaries SAC will not be affected.

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8 Appendices

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Version	Amendment	Drawing Date	Review Date	Approved Date
A	First Issue	18/12/14 PJ	18/12/14 LD	18/12/14 AB

Client: Transport NI

Project: Strathroy Link Road

Drawing Title: Report to Inform an Appropriate Assessment
Appendix 1 - Figure 1

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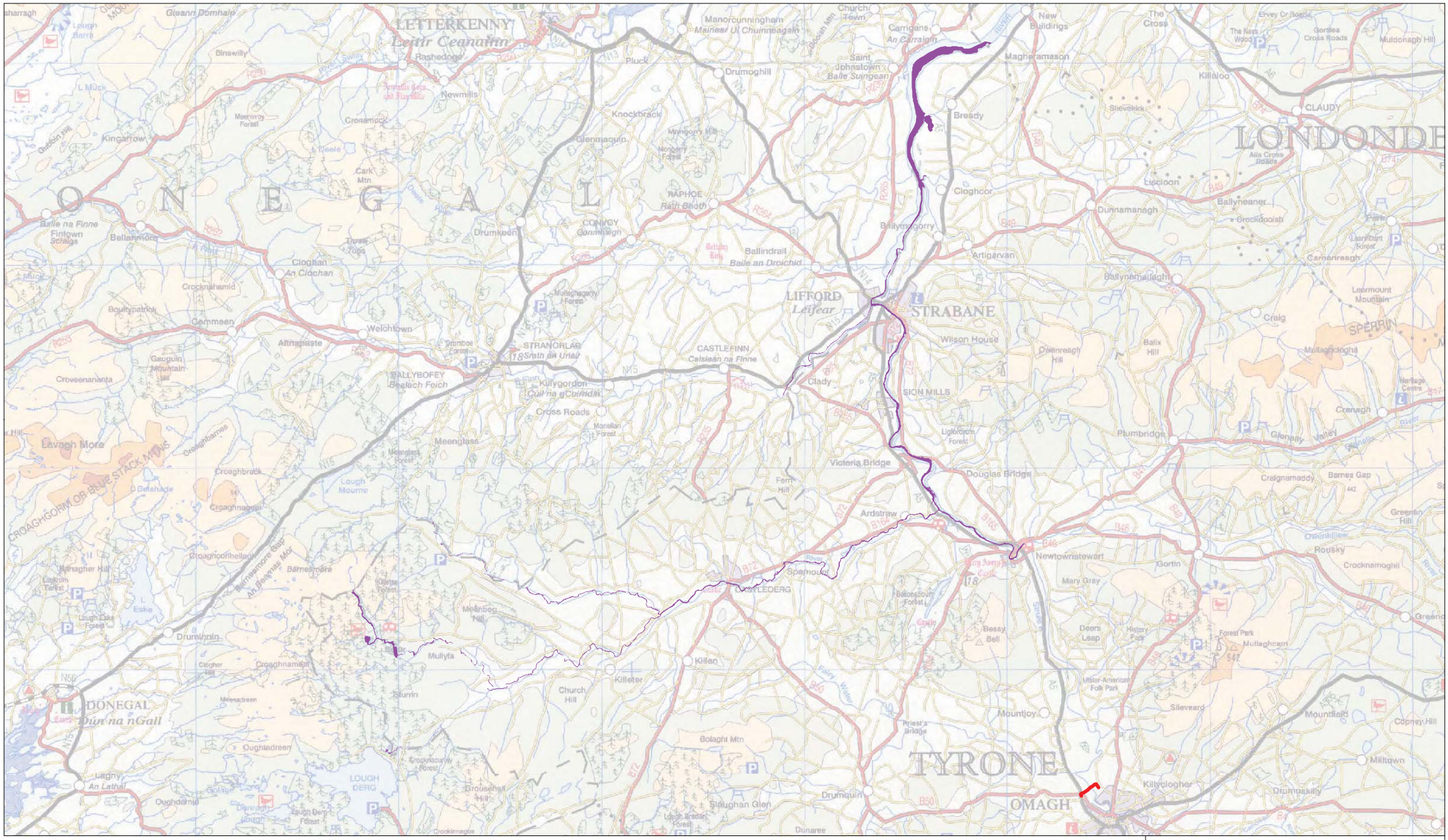
Office: Blackfriars

Tel: 020 7822 2497

Scale (at A3 size): 1:4,000

Purpose of Issue: Information

Drawing Number:



Legend

River Foyle and Tributaries SAC

Strathroy Link Road Scheme Route

Version	Amendment	Drawing Date	Review Date	Approved Date
A	First Issue	18/12/14 PJ	18/12/14 LD	18/12/14 AB

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Project: Strathroy Link Road

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Appendix 1 - Figure 2

Scale (at A3 size): 1:173,379

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Appendix 2 – Outfall Information

Outfall ID	Receiving Watercourse	Background Total Suspended Solids (TSS) mg/l	Potential Treatment Option	Total Treatment Efficiency %	≤50mg/l TSS at end of pipe Y/N	≤25mg/l TSS annual mean in stream Y/N
SLR OF 01	Conneywarren Drain	11	Wet/retention pond	60	Y	Y
SLR OF 02	River Strule	8	Wet/retention pond	60	Y	Y
SLR OF 03	Strathroy Road Drain	11	Wet/retention pond	60	Y	Y

Appendix 3 – Draft Construction Environmental Management Plan

Strathroy Link Road

Outline Construction Environmental Management Plan (CEMP)

17 November 2014

Produced for

Prepared by

Document Control Sheet

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Report Title	Outline Construction Environmental Management Plan
Document Ref	1059811-3000-R-003
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Record of Issue

Issue	Status	Author	Date	Check	Date	Authorised	Date
1	Draft	P. Joyce	17/11/14	R. McEvan	17/11/14	V. Kangley	17/11/14
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Organisation	Contact	Copies
Transport NI		
Northern Ireland Environment Agency		
Development Application Unit		
Loughs Agency		
Department of Culture, Arts & Leisure – Inland Fisheries		
Rivers Agency		

Contents

Glossary of Terms and Abbreviations

CEMP	Construction Environmental Management Plan
CEEQUAL	The Civil Engineering Environmental Assessment and Awards Scheme
COSHH	The Control of Substances Hazardous to Health Regulations
DRD	The Department for Regional Development
ECoW	Ecological Clerk of Works
EM	Environmental Manager
ES	Environmental Statement
HSEQ	Health, Safety, Environment and Quality Management
MER	Management Environmental Representative
NIEA	Northern Ireland Environment Agency
PMP	Project Management Plan
SWMP	Site Waste Management Plan

1 Introduction

1.1 Project Summary

TransportNI is proposing to provide a link road across the River Strule to the north of Omagh town centre. The proposals involve the construction of 1 kilometre (km) of new single urban all-purpose road from Derry Road to Strathroy Road. The road will have a minimum carriageway width of 7.3m. A new structure of length approximately 90m will be required to bridge the River Strule with three piers located outwith the river channel. Two additional watercourse crossings will require the construction of new piped or box culverts to carry the streams under the new road.

1.2 Purpose of this Document

The scheme contractor is required to develop and implement a Construction Environmental Management Plan (CEMP) to help ensure that construction activities are planned and managed in accordance with the environmental requirements identified within the Environmental Statement (ES).

It is anticipated that the contractors will use this document as a framework for their CEMP, which will include more detailed construction method statements for different aspects of the scheme. Further details specific to the works being undertaken will be developed by the contractor into their CEMP as the scheme progresses.

1.3 Scope of the Construction Environmental Management Plan (CEMP)

This document provides a summary of the generic principles applicable to scheme and provides guidance on an approach to ensure that the requirements of the Environmental Statement are incorporated in the CEMP and within method statements prepared by the contractor.

The CEMP will document the contractors' plans to ensure compliance with their legal and contractual obligations as well as implement best practice in construction environmental management.

The CEMP will be applicable to all works associated with the Strathroy Link Road including those carried out by sub-contractors.

1.4 Structure of the CEMP

The structure of this guidance document reflects that anticipated for the contractors' CEMP. The contents can be summarised as follows:

- Chapter 1 - Introduction
- Chapter 2 – Competency, Training and Awareness
- Chapter 3 - Consultation and Communication
- Chapter 4 - Environmental Impacts and Mitigation
- Chapter 5 - Pollution Control and Contingency Plan

- Chapter 6 - Environmental Performance Management
- Annex 1 – Construction Procedures

1.5 Roles and Responsibilities

The contractor is responsible to ensure that all members of the project team, including sub-contractors, comply with the procedures set out in the CEMP. The contractor will ensure that all persons working on site are provided with sufficient training, supervision and instruction to fulfill this requirement.

The contractor will ensure that all persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

The principal environmental responsibilities for key staff can be identified as follows:

1.5.1 Site Manager

The Site Manager's environmental management responsibilities include but are not limited to:

- preparation and implementation of the CEMP;
- close liaison with the Environmental Manager to ensure adequate resources are made available for implementation of the CEMP;
- ensuring that the risk assessments for control of substances hazardous to health regulations (COSHH), noise and environmental risk are prepared and effectively monitored, reviewed and communicated on site;
- managing the preparation and implementation of method statements;
- ensuring that the Environmental Manager reviews all method statements and that relevant environmental protocols are incorporated and appended;
- ensuring all personnel affected by a method statement are briefed and fully understand its content - monitor operatives for compliance, including sub-contract operatives;
- implementation of environmental management activities required by the CEMP and works method statements; and
- ensuring that all inspections are carried out as prescribed in the CEMP.

1.5.2 Environmental Manager (EM)

The responsibilities of Environmental Manager include but are not limited to:

- maintaining environmental records;
- providing guidance for the site team in dealing with environmental matters, including legal and statutory requirements affecting the works;
- reviewing environmental management content of method statements;
- reporting environmental performance to the Site Manager; and

- liaison with statutory and non statutory bodies and third parties with an environmental interest in the scheme.

1.5.3 Engineering Staff

The contractors' engineers environmental management responsibilities include but are not limited to:

- reporting any operations and conditions that deviate from the CEMP to the Site Manager;
- taking an active part in site safety and environmental meetings; and
- ensuring awareness of the contents of method statements, plans, supervisors' meetings or any other meetings that concern the environmental management of the site.

1.5.4 Ecological Clerk of Works (ECoW) (part of the Client's supervisory site staff)

The ECoW will be on site when required to monitor work to ensure that no wildlife comes to harm and also to provide advice to site workers regarding best practices. ECoW duties include, but are not limited to:

- monitoring site works;
- provision of status reports and updates;
- provision of advice to and liaison with workers on site;
- identifying environmental risks and developing environmental controls;
- delivery of environmental training for site personnel and sub-contractors; and
- liaison with the Site Manager.

2 Competency, Training and Awareness

2.1 Site Induction and Awareness Raising

All personnel involved in the Scheme (i.e. all people working on the site including contractors and sub-contractors) will receive environmental awareness training and this will include:

- a site induction;
- familiarisation with the requirements of CEMP;
- environmental emergency response training;
- familiarisation with environmental aspects and impacts associated with their activities;
- familiarisation with environmental site controls and the consequences of departure from these; and
- targeted environmental training for specific personnel, e.g. plant operators training in noise control and dust minimisation.

Environmental awareness training will be enhanced through completing briefings and 'toolbox talks' prior to specific activities commencing.

2.2 Training Records

A project specific training plan that identifies the competency requirements for all personnel allocated with environmental responsibilities will be produced by the Contractor.

Training will be provided by the Contractor to ensure that all persons working on site have a practical understanding of environmental issues and management requirements prior to commencing activities.

A register of completed training is to be kept by the Environmental Manager and this will detail who received the training, when, the trainer name and the training content.

The Site Manager will ensure that environmental emergency plans are drawn up and the Environmental Manager will conduct regular checks to ensure that the plan is effective by means of emergency drills.

3 Consultation and Communication

3.1 Statutory and Non-Statutory Bodies

During the construction works, communication will be required with external parties such as, statutory authorities, interest groups and the public. Communication may take the form of scheduled meetings, site visits and written correspondence.

3.2 Public

The Site Manager shall ensure that the public is kept informed of operations that may have an effect upon them. This may involve notices in local newspapers, letter drops and meetings to keep local residents up to date with progress with the scheme and any new operations that are to be carried out. The Site Manager will provide details of contacts within the project team for the public to contact should any issues arise.

3.3 Statutory Consents, Licences and Permits

The provisions for controlling, pumping and discharging water will be agreed with the Northern Ireland Environment Agency (NIEA) and Loughs Agency. The Contractor will ensure that any licences required are in place prior to works commencing.

3.4 Environmental Alerts

Legislative changes or proposed improvements to manage processes on site that have a bearing on the commitments given in the Environmental Statement or other consultations will be communicated by the Site Manager to the Project Manager.

3.5 Meetings and Records

Environmental issues relevant to the project will be discussed during weekly Site Progress Meetings attended by the Site Manager and Environment Manager. Environmental performance will also be discussed at regular health, safety, environment and quality (HSEQ) meetings. This will include dissemination and discussion of the findings of audits, environmental reports and other inspections where appropriate.

Outcomes from meetings will be discussed with the Project Manager as prescribed in the contract documents.

4 Environmental Impacts and Mitigation

A schedule of environmental commitments has been produced which details deliverables including measures identified for the prevention of pollution or damage to the environment during the construction phase. Environmental commitments have also been incorporated by the design team into archaeological, ecological, landscape and other relevant designs and specifications.

5 Pollution Control and Contingency Plan

5.1 Site Establishment

Any temporary site compounds would be established at locations to be confirmed by the contractor and would be located outwith the Q100 flood plain.

The site compounds would be used for the site offices, storage of equipment, materials, fuel and parking. Site messing and welfare facilities would only be located at the site compound during construction works. All offices, canteens and cabins would be serviced by lighting and electricity provided by a suitable supply. Any generators would be silenced, housed within a waterproof enclosure and incorporate a fuel bund.

The site compound would be sited on a hardstanding which would be maintained for the duration of the construction period. If necessary a temporary vehicle wheel wash facility would be installed at site entrances for the duration of the construction works. Provision must be made by the contractor to ensure that no polluting discharge from the site compound, wheel wash, haul roads and disturbed areas enter any watercourse.

5.2 Surface Water Run-off, Groundwater and Silt

All operations on site will be carried out in a manner to minimise the production and discharge of silty waters. In particular, where any dewatering has to be carried out an assessment will be made as to the method of disposal of the waters and agreed with the Site Manager.

The management of surface water run-off will be defined within the operation specific method statement and risk assessment. This will ensure that the right solution is implemented for each works activity.

5.3 Fuel, Oil and Chemical Spillage

All fuel, oil and chemical deliveries will be supervised by a responsible person who will be trained to deal with any spillage to prevent a pollution problem occurring.

Storage tank levels will be checked before delivery to prevent overfilling and to ensure that the product is delivered to the correct tank.

The storage of materials in the main compound and work sites will be controlled in such a manner to ensure that materials are not damaged prior to use either through vehicle or people movements or through exposure to the elements.

All fuel, oil and chemicals will be stored on an impervious base within a bunded area and secured. The bund shall have a capacity of 110% of the volume of the products stored within it. All tanks and containers will be kept in a secure compound and be protected from vandalism, and will be clearly marked with their contents. Stores shall be located at least 10m from any watercourse and outwith the Q100 flood plain.

All mobile plant will be refuelled in a designated area on an impermeable surface and away from drains. In case of any spillages there will be a spill response kit available at

each refuelling point and within each machine working within the highway corridor. Where it is impractical to refuel within a bunded area, a drip tray will be available to catch any spills caused by over fuelling.

5.4 Concrete/Mortar Washout

There will be a designated area for the washout of concrete wagons, shoots and mortar bins at each work site. This will be either a lined skip or a pit lined with an impervious membrane to prevent the escape of the alkaline and silty waters entering groundwater or surface water. These pits will be located in areas of low groundwater sensitivity. Excess concrete remaining in the delivery wagon at the end of a pour will be returned to a designated collection area. Once each worksite has been completed any solid concrete in the washout area will be broken out and used either as suitable fill or disposed of to a licensed waste facility.

5.5 Material Storage

Stockpiles should be positioned as far away from watercourses as possible and suitable measures implemented to prevent run off and dispersion if left for any length of time. Any powders should be stored in sealed bags or silos prior to use. All deliveries of dry powder should be undertaken in a manner to minimise dust emissions.

5.6 Emergency Procedures

A Site Environmental Emergency Plan will be prepared prior to construction and communicated to all members of the project team including sub-contractors and Emergency Services.

The plan will detail the following controls:

- site drainage controls;
- fuel handling procedures;
- incident notification procedures;
- pollution control equipment requirements;
- procedures for the control of dust and mud;
- measures to protect watercourses and wildlife from chemical spills or sediment laden run off; and
- contact details of the ECoW, the Loughs Agency and NIEA to ensure that relevant bodies are informed of all incidents that may impact upon water quality and aquatic fauna.

Responsible staff will be trained in emergency procedures to form an Emergency Team, so that these procedures can be implemented swiftly and effectively. Periodic testing of emergency procedures will be undertaken by the Site Manager. The Environmental Manager will observe the test and to report on results. Any corrective actions are taken forward for review and approval.

Should an emergency incident occur, the Environmental Manager will be notified immediately. The emergency response will be co-ordinated by the Site Manager. Protective measures, mitigation, clean up and remediation actions will be identified from the evaluation and shall be put into place, having regard for the sensitivities of the environment. A record of the emergency incident will be kept to show the nature of the corrective action undertaken.

The Project Manager will be notified of any emergency incidents.

6 Environmental Performance Management

6.1 Environmental Risk Register

The Environmental Manager will prepare and maintain an Environmental Risk Register having regard for legal requirements, project environmental commitments the potential for aspects of works to cause significant environmental impact.

The Environmental Manager will record responsibilities assigned for actions required for mitigation and control of the environmental risks in the Environmental Risk Register.

The Environmental Risk Register will be subject to regular review by the Environmental Manager together with the Site Manager, and made available to the Project Manager.

6.2 Consents and Exemptions

The Scheme will require consents and exemptions from various regulatory bodies in advance of construction activities. Copies of legal consents, permits, assents and licences of exemptions obtained will be held in the site environmental file by the Environmental Manager.

6.3 Method Statements and Risk Assessments

Specific environmental risks will be assessed during preparation of method statements. Actions and environmental constraints associated with specific construction operations will be included in method statements, field control sheets and activity plans where appropriate. Generic environmental requirements will be included in all method statements.

6.4 Inspections

Routine inspections to check that pollution control measures are in place will be undertaken by the Environmental Manager, who will produce weekly inspection reports.

Daily inspections will be made by the contractor during each shift and any environmental problems or risks that are identified will be actioned as soon as is reasonably practicable. Any issues arising from the daily inspections will be notified to the Environmental Manager.

6.5 Auditing

A Project HSEQ internal audit schedule will be prepared. This will include: audits of the implementation of the CEMP and audits of sub-contractor and supplier environmental performance by the Environmental Manager.

6.6 CEMP Review Programme

The CEMP is a live document that will be updated by the Contractor and reviewed by the Environmental Manager on a monthly basis.

6.7 Notices of Non-Conformance

In instances where the requirements of the CEMP are not upheld a Non-Conformance and Corrective Action Notice will be produced. The Notice will be generated during the inspections conducted by the Site Manager, Environmental Manager or external third-party audits. The Site Manager will be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcoming.

6.8 Key Performance Indicators and Objectives

The Contractor will set Environmental Objectives in order to continuously improve environmental performance on the site. The Contractor will set objectives based on each significant environmental impact and they will be reviewed, and revised if necessary, on a monthly basis. Procedures, monitoring requirements and key performance indicators will be measured against achievable targets.

6.9 Complaints Handling

The response to any complaints will be managed by the Site Manager, who will inform the Environmental Manager of any environmental complaints.

A Complaints Register will be maintained to detail the name and contact details of the complainant, date and time of the complaint, nature of complaint, action taken to resolve issues, and date of complaint handover.

The Environmental Manager will ensure that all environmental complaints and concerns will be responded to in 24 hours.

Annex 1: Construction Procedures

The Contractors and their sub-contractors shall employ the Construction Procedures listed below as a practical means to effect environmental mitigation while working on the project.

It should be noted that the Construction Procedures are set out below are draft versions for guidance purposes. The Contractor shall develop these further as an integral part of their operational procedures for issue as Controlled Documents.

Annex 1.1 Site Clearance

Procedure for Site Clearance	**CP01**	
	Rev: A	**Date: Nov 2014**
Purpose	To minimise the impacts of site clearance works on ecological habitats and wildlife in the area.	
Responsibility for control	Environmental Manager	
Procedures	Before any work is undertaken the proximity to water bodies and ecologically sensitive features shall be assessed. Whole trees shall be removed by trained operators using plant and equipment specifically designed for the purpose. All woody vegetation shall be removed outside of the bird breeding season (March-August inclusive). Where this is not possible woody vegetation shall be checked prior to removal for active birds' nests. If any are found works in that location shall cease until the nest can be confirmed as no longer active. Removal of vegetation within 20m of a watercourse shall be carried out under the supervision of the Ecological Clerk of Works. If active birds' nests, animal holes of sufficient size to be used by badger or otter, or bats, lizards or newts are found during vegetation clearance then works in that location shall cease and ecologist advice sought. Removal of trees highlighted as potential bat roosts shall be undertaken using a 'soft felling' method. A licence from NIEA may be required if a roost is confirmed as present. Construction activities that are likely to damage or disturb an active badger sett shall be carried out under a licence from NIEA. Closure of badger setts can only be undertaken between July and November Removal of invasive species highlighted within the ES, update surveys or by site contractors shall be carried out under specific invasive species clearance methodology.	
Environmental Controls	Any necessary ecological licenses shall be in place prior site clearance start.	
Plant & Equipment	Excavator mounted and purpose built tracked mulchers Excavator harvesters	

Procedure for Site Clearance	**CP01**	
	Rev: A	**Date: Nov 2014**
	Hand strimmers Chainsaws Tree climbing equipment	
Monitoring	The Ecological Clerk of Works shall supervise vegetation removal in ecologically sensitive areas, all sites within 20m of watercourses, all sites subject to a licence from NIEA, all vegetation cleared during bird breeding season and be on call during all vegetation clearance works.	
Emergency, preparedness and response	If active birds nests, animal holes of sufficient size to be used by badger, otter or bats are found during vegetation clearance the works in that location shall cease and the Ecological Clerk of Works shall be contacted.	

Annex 1.2 Soil Strip

Procedure for Soil Strip	**CP02**	
	Rev: A	**Date: Nov 2014**
Purpose	To minimise the impacts on ecological habitats and wildlife in the area during soil stripping. To enable the re-use of topsoil and the re-establishment of vegetation after work is complete. To enable the re-use of topsoil and the re-establishment of vegetation after work is complete.	
Responsibility for control	Environmental Manager	
Procedures	Before any work is undertaken an environmental assessment will be completed taking into consideration proximity of the works to water bodies and ecologically sensitive features. Prior to any topsoil being stripped, the topsoil shall be assessed for suitability for re-use on agricultural land, cut and fill slopes, planted landscape mitigation areas or on any areas of ecological interest. Topsoil strip will be maintained to the minimum required to carry out the Works thereby minimising the area of unearthed alluvium. Method statements shall be prepared to identify the locations where the topsoil shall be stripped from, temporarily stockpiled and spread. Removal of top soil within 20m of a watercourse shall be carried out under the supervision of the Ecological Clerk of Works. Measures as identified in the Silt Management Plan shall be included in the Method Statement and implemented prior to operations commencing. Topsoil stripped from the area of excavations and the footprint of structural fill embankments shall be stockpiled in locations convenient for re-use once cut and fill slopes and landscape mitigation areas are ready for top soiling. Topsoil deemed suitable for re-use for agricultural regeneration or for shrub planting and other landscape mitigation shall be placed in stockpiles in accordance with the Specification for Highway Works. . Stockpiles shall be allowed to vegetate to prevent erosion or weathering and shall be located away from drainage ditches. Finished worked slopes that are to be spread with topsoil shall be prepared as the earthworks progress and topsoil shall be spread as early as is practicable.	
Environmental Controls	Measures contained in the Silt Management Plan shall be implemented.	
Plant & Equipment	Plant and Equipment will be determined by the Contractor but will typically include: Excavators Bulldozers Dumptrucks	
Monitoring	Daily haulage record sheets used in productivity analysis shall provide a second reference to identify which topsoil is stripped from where and where it was placed.	

Procedure for Soil Strip	**CP02**	
	Rev: A	**Date: Nov 2014**
Emergency, preparedness and response	If animal holes of sufficient size to be used by badger or otter are found during vegetation clearance the works in that location shall cease and the Ecological Clerk of Works shall be contacted. If items of potential archaeological value are uncovered then works in that location shall cease and the Archaeologist shall be contacted.	

Annex 1.3 Earthworks and Drainage

Procedure for Earthworks and Drainage	**CP03**	
	Rev: A	**Date: Nov 2014**
Purpose	To minimise the impacts of earthworks on ecological habitats and wildlife in the area. To avoid pollution to watercourses. To minimise nuisance to the local community due to deterioration of air quality and the creation of dust, noise and vibration. Minimise the surplus materials arising from earthworks.	
Responsibility for control	Environmental Manager	
Procedures	Bunting poles shall be erected around overhead services. Before any work is undertaken an environmental assessment will be completed taking into consideration proximity of the works to water bodies and ecologically sensitive features. Method statements shall be prepared for all drainage and earthwork operations and will include any control measures identified as part of the environmental assessment. Measures as identified in the Silt Management Plan shall be included in the Method Statement and implemented prior to operations commencing. Discharge licenses shall be in place before commencement of any works and appropriate treatment provided prior to discharge to watercourses. Advance pre-earthworks, temporary drainage and dewatering shall be undertaken as required to prevent ingress of water to the earthworks and discharge away from the earthworks. No water shall be allowed to pond on the formation layer. When unsuitable material is encountered this shall be removed in accordance with the Site Waste Management Plan. Method statements shall be prepared setting out procedures to monitor and control dust, noise, vibration and deposition on roads. Haul roads shall be constructed to enable access to the works and movement of the earthworks throughout the site. Temporary stockpiles of excavated earth shall be constructed within the lands made available. Stockpiles shall be shaped to ensure rainfall does not degrade the stored material. Drains shall be installed along the toe of embankments in fill areas. Embankments shall be constructed and graded to allow water to shed off the completed earthworks. Embankments shall be sealed at the end of each working shift to avoid ingress of water. The earthworks material shall be placed and compacted in layers to prevent water ingress and degradation of the material.	
Environmental Controls	Measures contained in the Silt Management Plan shall be implemented.	
Plant &	Plant and Equipment will be determined by the Contractor but will typically	

Procedure for Earthworks and Drainage	**CP03**	
	Rev: A	**Date: Nov 2014**
Equipment	include: Primary excavators Bulldozers Graders Articulated dumptrucks Compaction plant including various rollers Soil stabilisation plant	
Monitoring	Daily physical inspection of the site including; watercourses, haul roads, mechanical state of all plants, shall be undertaken to detect any signs of contamination or disturbance. A program to monitor watercourses, air quality, dust, noise and vibration shall be in place during the construction phase.	
Emergency, preparedness and response	If animal holes of sufficient size to be used by badger or otter are found during vegetation clearance the works in that location shall cease and the Ecological Clerk of Works shall be contacted. If items of potential archaeological value are uncovered then works in that location shall cease and the Archaeologist shall be contacted. An emergency plan shall be prepared to ensure that any unforeseen release of silty water or other polluted effluents are brought quickly under control and remediated in consultation with the NIEA and Loughs Agency.	

Annex 1.4 Bridge Construction

Procedure for bridge construction across the River Strule	**CP04**	
	Rev: A	**Date: Nov 2014**
Purpose	To minimise the impacts on ecological habitats and wildlife in the area during bridge construction. To minimise noise nuisance. To prevent environmental pollution incidents.	
Responsibility for control	Environmental Manager	
Procedures	Before any work is undertaken an environmental assessment will be completed taking into consideration proximity of the works to water bodies and ecologically sensitive features. Method statements shall be prepared for all stages of the structure's operations and will include any control measures identified as part of the environmental assessment. Measures as identified in the Silt Management Plan shall be included in the Method Statement and implemented prior to operations commencing. Installation of rip-rap to protect bridge piers will be required. Placement of rock around the piers at existing ground level will be confined to outside of the river banks. The River Strule shall be protected by temporary fencing to maintain all plant, equipment and personnel free zone. Working platforms made up of geotextiles and inert aggregate shall be prepared. The working platform shall be located near pier bases and will support the plant and equipment required to construct the bridge. As the working platform will be established in a floodplain all plant and equipment will be moved to higher ground in times of inclement weather. Piling works during sensitive periods for Atlantic salmon shall be avoided. A working window of May to September has been agreed with Loughs Agency for the River Strule crossing; this is outside of the critical salmonid migration period. Continuous Flight Auger (CFA) piles will be used for the abutment walls, and therefore all piles will be rotary bored piles which do not produce significant vibration. A soft start methodology shall be adopted for piling activities. Base and pier construction shall follow. All excavated material will be taken away and either reused if deemed suitable or disposed of in accordance with the Site Waste Management Plan. Concreting operations for the bored piles, base and pier construction shall be closely monitored by the Site Manager and the Environmental Manager. All surplus concrete shall be taken away and disposed of in designated areas that have been identified in Section 5.4 Concrete/Mortar Washout of the CEMP. Construction of the deck will include a composite pre-cast beam and in-situ concrete. Craneage required to lift the pre-cast beams into place will utilise the previously constructed working platforms. Once the beams are in place safety nets will be attached to the underside of the beams to prevent / catch materials from falling into the river. Prior to concreting the deck, the formwork will be adequately sealed to prevent concrete escaping.	

Procedure for bridge construction across the River Strule	**CP04**	
	Rev: A	**Date: Nov 2014**
	The Site Manager and Environment Manager shall monitor the works as they are progressed paying particular attention to the concreting works and associated activities.	
Environmental Controls	Measures contained in the Silt Management Plan shall be implemented. A 15 M.P.H. speed limit shall be imposed on the haul road across the floodplains and watercourses. Method statements shall be prepared for the control of noise and vibration. Equipment shall be selected to minimise noise and where appropriate with built in noise attenuation. Some construction materials will be subject to a COSHH assessment.	
Plant & Equipment	Plant and Equipment will be determined by the Contractor but will typically include: Crawler or all terrain mobile crane. Vibrating hammer/extractor. Jack hammering. Crane pitching. Vibrating internal poker Concrete pumps. Vibrating rolling screed. Mechanical scabblers. Blacktop pavers and rollers.	
Monitoring	Drainage treatment areas used to accept dewatering and drainage water shall be subject to regular maintenance and monitoring.	
Emergency, preparedness and response	An emergency plan shall be prepared to ensure that any unforeseen release of silty water or other polluted effluents are brought under control and remediated in consultation with the NIEA and Loughs Agency.	

Annex 1.5 Culvert Construction

Procedure for bridge construction across the River Strule	**CP05**	
	Rev: A	**Date: Nov 2014**
Purpose	To minimise the impacts on ecological habitats and wildlife in the area during culvert construction. To prevent environmental pollution incidents.	
Responsibility for control	Environmental Manager	
Procedures	One box culvert and one pipe culvert is required where the road crosses the Strathroy Road Drain. The pipe crossing (300mm diameter) at the eastern end of the route adjacent to Strathroy Road (ch 900) will be constructed on line – this is an extension of an existing 300mm pipe culvert at this location. The culvert crossing (size approx. 2.1m x 2.7m) of the Strathroy Road Drain further west (ch 685) will be constructed on-line of the existing watercourse with the watercourse temporarily diverted from the line of the existing drain. Before any work is undertaken an environmental assessment will be completed taking into consideration proximity of the works to water bodies and ecologically sensitive features. Method statements shall be prepared for all stages of the structure's operations and will include any control measures identified as part of the environmental assessment. Measures as identified in the Silt Management Plan shall be included in the Method Statement and implemented prior to operations commencing. All statutory licences required for installation of the culvert and working within an existing watercourse / drain will be applied for, approved and granted prior to any excavation taking place. Culvert construction shall consist of diverting of the existing water via temporary pipe or over-pumping, excavation of the trench to formation, prepared and blinded with concrete to provide a base for the culvert boxes. Culvert boxes are pre-fabricated, delivered to site and lifted into position and sealed. Headwall foundations will be excavated with the construction of the base and walls cast in-situ. Once fully cured and backfilled the watercourse for the Strathroy Road Drain will be diverted into the new structure.	
Environmental Controls	Measures contained in the Silt Management Plan shall be implemented. A 15 M.P.H. speed limit shall be imposed on the haul road across the floodplains and watercourses. Method statements shall be prepared for the control of noise and vibration. Equipment shall be selected to minimise noise and where appropriate with built in noise attenuation. Some construction materials will be subject to a COSHH assessment.	
Plant & Equipment	Plant and Equipment will be determined by the Contractor but will typically include: Excavators 7t dumpers Compaction plant Vibrating internal poker Small tracked cranes	

Procedure for bridge construction across the River Strule	**CP05**	
	Rev: A	**Date: Nov 2014**
Monitoring	Drainage treatment areas used to accept dewatering and drainage water shall be subject to regular maintenance and monitoring.	
Emergency, preparedness and response	An emergency plan shall be prepared to ensure that any unforeseen release of silty water or other polluted effluents are brought under control and remediated in consultation with the NIEA and Loughs Agency.	

Annex 1.4 Permanent River Strule Drainage Outfalls

Procedure for bridge construction across the River Strule	**CP06**	
	Rev: A	**Date: Nov 2014**
Purpose	To minimise the impacts on ecological habitats and wildlife in the area during bridge construction. To minimise noise nuisance. To prevent environmental pollution incidents.	
Responsibility for control	Environmental Manager	
Procedures	Four road drainage outfalls shall be constructed; two on the banks of the Strule, one into Strathroy Road Drain and one into Conneywarren Drain. Prior to outfall construction on the River Strule, a pre-construction aquatic survey of the river shall be completed by an aquatic ecologist. This would include at least 500m both upstream and downstream of all construction work. There will be consultation with the Loughs Agency and NIEA with regard to the timing of works. All statutory licences required for installation of the outfall and working within or adjacent to an existing watercourse will be applied for, approved and granted prior to any excavation taking place Outfall construction may include the creation of a temporary dry working area, through the use of sandbags for example, adjacent to the river bank in which to work behind. If necessary, a fish rescue using electrofishing gear will be carried out within this area to ensure that no fish are present within the immediate area of the works. The remaining width of the channel would be passable to fish at all times during these installation works. Temporary structures forming dry areas, such as sandbags, would be removed during periods of high flow conditions to minimise any impact downstream from sediment deposition or increased water turbidity. On completion of bankside works, the river banks shall be re-established in line with the surrounding and previously existing banks. Once all bank works are complete, the habitat assessment of the River Strule would be repeated by an aquatic ecologist to ensure that the baseline conditions have not been impacted upon. Any issues would be raised and rectified by the contractor at this time.	
Environmental Controls	Measures contained in the Silt Management Plan shall be implemented. Method statements shall be prepared for the control of noise and vibration. Equipment shall be selected to minimise noise and where appropriate with built in noise attenuation. Some construction materials will be subject to a COSHH assessment.	
Plant & Equipment	Plant and Equipment will be determined by the Contractor but will typically include: Mini-excavators 7t dumpers Plate Compactors	
Monitoring	Any drainage treatment areas used to accept dewatering and drainage water	

Procedure for bridge construction across the River Strule	**CP06**	
	Rev: A	**Date: Nov 2014**
	shall be subject to regular maintenance and monitoring.	
Emergency, preparedness and response	An emergency plan shall be prepared to ensure that any unforeseen release of silty water or other polluted effluents are brought under control and remediated in consultation with the NIEA and Loughs Agency.	

Appendix 4 – Draft Silt Management Plan

Strathroy Link Road

Outline Silt Management Plan

17 November 2014

Produced for

transportni

Prepared by

mouchel
building great relationships

Document Control Sheet

Project Title	Strathroy Link Road
Report Title	Outline Silt Management Plan
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Northern Ireland Environment Agency	Neil McAllister	1e (Issue 2)

Contents

1 Introduction

1.1.1 Transport Northern Ireland (TNI) is proposing to provide a link road to connect Derry Road to Strathroy Road to the north of Omagh town centre. The scheme includes a crossing of the River Strule, new culverts and drainage outfalls.

1.1.2 In accordance with the special requirements of *NIEA Part B - Supplementary Guidelines for Water Pollution Prevention from Civil Engineering Contracts*, this plan sets out site controls for management of sediment generated from pumping operations, construction of the new culverts and drainage outfalls and precipitation run off during earthwork operations.

1.1.3 All relevant construction activities for temporary and permanent works will follow relevant environmental legislation in consultation with Northern Ireland Environment Agency (NIEA) and where required, Rivers Agency and Loughs Agency. The main objective of the Silt Management Plan is to ensure that all drainage of temporary works is carried out in adherence with current regulations and to provide guidance on how to prevent water pollution. The Silt Management Plan compliments the Construction Environment Management Plan (CEMP), an outline of which has been prepared as a separate document to be further developed by the contractor.

1.1.4 Various agencies are responsible for control of distinct elements of the works:

- Rivers Agency – proposals do not cause flooding upstream of the works.
- NIEA – discharge of precipitation water, extraction and ecological licenses.
- Loughs Agency – fish within the Foyle Catchment, which includes the River Strule.

1.1.5 The construction phase of all projects is a period within which there is a significant potential for pollution, in particular silt pollution to local watercourses due to unearthed alluvium. The objective of this plan is to provide guidance on the relevant statutory provisions, including any consents required, in respect of the water environment, to protect both physical habitat and morphology and to avoid unacceptable adverse impacts including changes to flow volume, water levels and water quality due to construction.

1.1.6 This plan aims to address the requirements of the Rivers Agency, NIEA and Loughs Agency and detail TNI's strategy for dealing with these key environmental risks.

1.1.7 A Discharge License will be required from NIEA to enable the works to commence. This licence will be granted for each phase of the works and the works will then be monitored on a month by month basis by the NIEA. Each month contractors will be required to issue a monthly return to the NIEA which will be the projected discharges for the following month. These will be linked to the construction programmes. These plans will be reviewed every three months and updated if required.

1.1.8 An Ecologist will be present on site during particularly sensitive phases of the works to supervise the contractor and monitor compliance with licences and the CEMP.

1.1.9 Where construction activities near watercourses are essential, steps have been undertaken to identify sufficient mitigation measures for the protection of the watercourses against pollution. The Silt Management Plan also includes details for pollution prevention measures and construction methodologies to be incorporated during the construction phase of the project.

1.1.10 Caution is required to prevent pollution and/or environmental damage, particularly when the following activities are undertaken:

- Construction of the bridges over watercourses.
- Construction of permanent road drainage outfalls.
- Construction of culverts.
- Any temporary watercourse diversions.
- Discharges into a surface water drainage system.
- Operating plant or machinery in, or in the vicinity of water.
- Discharges of surface water run-off.
- Laying of pipeline or cable.

2 Silt Mitigation

2.1 Scheme Overview

2.1.1 The proposed Strathroy Link Road would be a 1 kilometre (km) of new single urban all-purpose road from Derry Road to Strathroy Road. The road will have a minimum carriageway width of 9.3m and this includes 1m hard strip on both sides of the carriageway throughout. A new structure of length approximately 100m will be required to bridge the River Strule with four piers located outwith the river channel.

2.1.2 The works consist of two additional watercourse crossings of the Strathroy Road Drain which require the construction of new piped or box culverts to carry the drain under the new mainline.

2.2 Sensitive Areas

2.2.1 The River Strule is considered to be sensitive with respect to potential impacts from pollution which may result from inadequate drainage control.

2.2.2 The River Strule forms the upper section of the main spine of the River Foyle Catchment, and has a catchment area of 1340km^2. The Strule is formed by the confluence of the Camowen and Drumragh rivers in the centre of Omagh. The Strule then flows northwards for approximately 21km before merging with the River Derg to form the Mourne. The Strule is crossed by the link road route.

2.2.3 The Strule's catchment upstream of the scheme corridor is predominantly rural; however, the immediate upstream area encompasses the urban areas of Omagh and smaller villages to the south. Upstream of the crossing location, the river catchment covers approximately 610 km^2.

2.2.4 The River Strule is not within any protected area, but flows downstream into the River Mourne and then to a confluence with the River Foyle approximately 35km to the north, which is designated as the River Foyle and Tributaries Special Area of Conservation (SAC). Its qualifying features are Atlantic salmon *Salmo salar*, otter *Lutra* and Ranunculion fluitantis and Callitricho-Batrachion vegetation. It is included in this report as qualifying features of and SAC are protected when they leave the SAC boundary, and thus salmon and otter mainly resident in the River Foyle, use the Strule as well.

2.3 Environmental Obligations during Construction

2.3.1 The surface water management plan and pollution prevention measure installed as part of the Strathroy Link Road will be constructed using best practice and in conformance with the requirements of NIEA and other relevant governing bodies. The key legislation and guidance which will be adhered to are as follows:

- Water Framework Directive (Directive 2000/60/EC)
- Water (Northern Ireland) Order 1999
- Water abstraction and impoundment regulations (licensing) Northern Ireland 2006

- Groundwater regulations (Northern Ireland) 1998 (as amended)
- Control of pollution (oil storage) regulations (Northern Ireland) 2010
- Drainage (Northern Ireland) Order 1973 (as amended)
- Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009
- Pollution Prevention Guidance Notes (PPGs):
    - PPG01 General guide to the prevention of water pollution
    - PPG02 Above ground oil storage tanks
    - PPG05 Works in near or liable to affect watercourses
    - PPG06 Working at construction and demolition sites
    - PPG07 Refueling Facilities
    - PPG11 Preventing pollution at industrial sites
    - PPG18 Control of spillages and firefighting run-off
    - PPG20 Dewatering underground ducts and chambers
    - PPG21 Pollution Incident Response Planning
    - PPG23 Maintenance of Structures over Water
    - PPG26 Pollution Prevention Storage and Handling of Drums & Intermediate Bulk Containers
- CIRIA Report C502 Environmental Good Practice on Site
- CIRIA 521 - Sustainable Urban Drainage Systems; Design Manual for Scotland and Northern Ireland
- CIRIA Report C532 Control of Water Pollution from Construction Sites
- CIRIA Report C648 Control of Pollution from Linear Construction Project. Technical Guidance
- CIRIA Handbook C650 Environmental good practice on site
- CIRIA Handbook C651 Environmental good practice on site checklist
- CIRIA Report C697 - The SUDS Manual

2.4 Silt Management

2.4.1 Contamination by silt from site run off into adjacent watercourses is a key risk if not properly controlled throughout the construction of the scheme.

2.4.2 Site discharge licences will be required from NIEA prior to works commencing. Any application for such consent must clearly state how site run off with be managed, treated and returned to the water course.

2.4.3 Site run off is made up of two components and are the direct results of heavy rain.

2.4.4 The first component is run off from adjoining land that is not affected by the works. Run off from adjoining land would be intercepted by the early construction of Pre-earthwork drained ditches (PED). This will be one of the first earthwork operations. Where the new road is in a cutting then the PED would be located at the top of the cut any water entering this ditch would be run off from adjoining land thus would not need treating.

2.4.5 The second component is run off across the works once the topsoil strip has been completed, this could be any of the following:

- Run off across topsoil strip.
- Run off down embankment cuttings.
- Run off down embankments being constructed.

2.5 General Construction Policies

2.5.1 The Silt Management Plan has been developed to minimise and mitigate for the effects of pollution to all local watercourses. However, this does not remove environmental responsibilities from the contractor / sub-contractors. All site personnel should be made aware of their environmental responsibilities through the production of a Construction Environmental Method Statement (CEMP) and an environmental induction.

2.5.2 In accordance with BS6031: 1981 Code of Practice for Earth Works, land disturbance will be kept to a minimum and disturbed areas will be stabilised as soon as possible. Soil handling will be undertaken with reference to best practice guidelines.

2.5.3 In general the following will be adhered to in terms of the general earthworks:

- All roads will be kept free from dust and mud deposits.
- Areas of extraction and deposition will be carried out according to BS6031:1981 Code of Practice for Earth Works. Risk assessments will be undertaken and risks evaluated to ensure all surface water will be appropriately treated prior to entering a discharge point.
- Any clean surface water not directly linked to a watercourse will be dealt with in the appropriate manner and field drainage introduced to the nearest stream before work begins.
- Any required permanent Sustainable Drainage System (SuDS) for the new road will be constructed first and will be used during the construction period to deal with any surface water and act as sedimentation control.
- Ditches will be dug out where required to channel any surface water from haul roads into these attenuation ponds. These will be to minimal gradient and if required straw bales or clean stone will be installed to act as weirs and provide filtration.
- Cut-off drains will be installed around the working areas to intercept uncontaminated surface runoff and divert it around and away from the works; surface water runoff may also be diverted around the excavations using heavy timbers or similar laid on the surface of the ground.

2.6 Installation Programme

2.6.1 At all times silt management features should be constructed prior to, or at the same time as the construction of the works. Before runoff is allowed to flow through the ditches, or across embankments scrutiny must be given by the contractor that the ditches, ponds slopes and embankments are fully stabilised and will not be affected by erosion. This will prevent the clogging of other parts of the system by the silt that is generated.

2.7 Working in the Vicinity of Water / Buffer Zones

2.7.1 The following recommendations apply to the general construction activities either with the watercourses or in the vicinity of watercourses:

- Where practicable construction near streams should be avoided in wet weather.
- Keep cement and raw concrete out of watercourses.
- Plan so that roadside drains do not discharge directly into watercourses, but rather through a vegetated buffer area of adequate width.
- Runoff from excavations will NOT be pumped directly to watercourses.
- Should there be any incidents of pollution to the watercourses NIEA should be notified immediately. Immediate steps will be undertaken to resolve the cause of the pollution and where feasible mitigate against the impact of pollution, following the advice set out in PPG21.

2.7.2 In stream works will be carried out during the months of May to September inclusive.

2.7.3 Construction works will adhere to ’Guidelines for Fisheries Protection during Development Works (Foyle and Carlingford areas)’ as published by the Loughs Agency in May 2011.

2.8 Temporary Haul Roads

2.8.1 It is proposed that as the scheme progresses, the finished permanent road will act as the temporary haul road during the construction phase.

- Construction activities will be scheduled to minimise the area and period of time that soil will be exposed, particularly during winter periods.
- Cut-off drains will be installed around the working areas to intercept uncontaminated surface runoff and divert it around and away from the works.
- Stockpiling of materials will be minimized and essential stockpiles will be located as far away as possible from watercourses.
- Drains and culverts will be kept clear of debris and silt traps will be maintained appropriately. Spoil will not be stored within buffer areas.
- Erosion of embankments will be avoided and, where possible, a vegetation cover will be maintained.
- Roads, drains and silt traps will be inspected for damage after intense storms and also before and after any intensive use.
- Site roads and approaches to river crossings will be regularly brushed or scraped and kept free from dust and mud deposits. Rubble slumps will be introduced prior to road crossings.

2.9 Sustainable Drainage System

2.9.1 Where possible, any permanent SuDS locations will be used during the temporary construction phase to collect silt. At completion of the construction phase SuDS ponds will be fully reinstated to final design requirements.

2.9.2 Site run off will be intercepted by PED and the ditches will feed into any temporary ponds. Straw bales will be placed along the length of the ditch to help early removal of silt.

2.9.3 The strategy is to collect the silt contaminated run off at temporary pond locations, allow the silt to settle and gravity feed the pond water back into the watercourse. The outlet will be set at a higher level in relation to the inlet so that the pond fills up and allows the silt to settle.

2.9.4 Construction waste materials such as generated silts will be disposed of in such a manner that it does not add risk of additional silt load in the construction run-off.

2.9.5 Settlement ponds will be inspected for damage after intense storms in particular at the entry point and around the forebay area.

2.9.6 In most instances the works will only be affected by normal rain showers and thus operations would stop. Following heavier rainfall events the trace will be allowed to dry before recommencing earthworks operations.

2.10 Exposed Ground and stockpiles

2.10.1 As part of the surface water management plan for the site the following measures have been incorporated for spoil management areas.

- The amount of exposed ground and soil stockpiles will be kept to a minimum.
- Stockpile which will be in place for an extended period of time will be allowed to re-vegetate naturally.
- Short term stock piles will be sealed.
- Cut-off trenches will be installed uphill of spoil management areas to divert flows away from potential sources of silt pollution.
- Silt fences made from a suitable geotextile material will be used alongside all exposed ground where there is a pollution risk. Areas on a steep gradient will be managed to make sure erosion does not take place and small ditches will be considered around the perimeter.

2.11 Excavations

2.11.1 Every effort will be made to prevent water from entering excavations. Cut off ditches will be used to prevent entry of surface water. Clean runoff within the cut off trenches will be discharged back into the natural drainage system.

2.12 Over Pumping

2.12.1 Over pumping will be avoided for construction of culverts within this scheme wherever possible.

2.12.2 Where over pumping is essential, no direct discharge to the existing watercourse will be permitted. Water from the over pumping operation will pass through a stilling pond and a settlement pond before being discharged to the receiving watercourse.

2.12.3 Any over pumping that may be required for other works such as below ground excavations will be strictly controlled by the on-site Environmental Manager using a 'permit to pump' system and regular monitoring of compliance with control measures.

2.12.4 All pumping operations will ensure that the pumps are sited a minimum of 15m away from the water course, drip trays or lined bunds are used to avoid accidental spillage. Spill kits will be located at the pump locations.

2.12.5 All over pumping would be undertaken using the one of the methods outlined below:

- Water pumped into a silt tank will allow any silt to settle before being gravity fed back into the watercourse downstream of the works back into an approved discharge location.
- Water pumped into the PED which incorporate mitigation measures such as check dams and silt traps which would make its way to a settlement lagoon allowing sediment to settle before water is discharged back into an approved discharge location.

2.12.6 If heavy rain was encountered which could result in flood upstream of the works then over pumping and construction operations will be stopped and the works will be allowed to re-fill with water.

2.13 Sampling

2.13.1 A programme of water monitoring will be carried out during the construction phase. The extent and frequency of the monitoring will be proportionate to the level of activity, and will be determined by the main contractor in consultation with NIEA. Such monitoring will be required in order to:

- Demonstrate that the mitigation measures and surface water management plan is performing as designed.
- Provide reassurance that the in-place mitigation measures are not having a significant impact upon the environment.
- Indicate whether further investigation is required and, where any risks are unacceptable, the need for additional mitigation measures to prevent or reduce any impacts on the water environment.

2.13.2 Water monitoring will commence prior to the start of work activities to establish the baseline conditions at each work site.

2.13.3 The surface water-monitoring programme will be site-specific and tailored to provide a meaningful and pragmatic indication of the state of the water environment. Given the nature of the development, it is considered that the surface water monitoring programme will comprise:

- An initial site walkover to establish baseline conditions of watercourses, including whether they are presently polluted from silt deposition or any other waterborne pollutants.
- Regular visual inspections of surface water management features, such as culverts and receiving watercourses, in order to establish whether there is increased erosion or deposition and sediment.
- Regular visual inspections of watercourses during construction and decommissioning stages, particularly during periods of high rainfall, in order to establish that levels of suspended solids have not been increased by site activities.
- Periodic and ad-hoc sampling of surface waters and any private water supplies in order to complement the programme of visual inspection.
- Additional monitoring required as a condition of discharge consents, abstraction licences or other environmental regulation.

2.13.4 All subsequent monitoring results will be compared with the baseline data-set to identify any adverse impacts of the development on the surface water environment and to identify the requirement for any appropriate remedial measures. The impacts of the development will be deemed acceptable if there is no significant net adverse deviation from the baseline monitoring results.

Appendix 5 – Otter Survey Report and River Habitat Survey Report

Strathroy Link Road:

River Habitat Survey & Otter Survey

7th July 2014

Produced for
Transport Northern Ireland

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1 Introduction

1.1 Background

Mouchel was contracted by Transport Northern Ireland (TNI) to progress the Vesting Order, and design for the proposed construction of a link road and roundabout, between Derry Road roundabout and Strathroy Road on the outskirts of Omagh, Co. Tyrone. The scheme involves the construction of approx 0.9km offline carriageway to connect the B48 Derry road and the U1526 Strathroy Road, and includes a new crossing of the River Strule.

This report details the findings of two ecological surveys, a river habitat survey and an otter survey, the results of which will be used to inform the selection of a preferred scheme alignment and the detailed design and construction phases of the project.

1.2 Site location

The new road and roundabout is proposed to be constructed on agricultural land to the south of Watson Park and north of Hunter Crescent/Meelmore Drive, Strathroy, Omagh. The Derry Road/Beltany Road roundabout and Strathroy Road will be connected via a single bridge crossing of the River Stule.

1.3 Study rationale and objectives

1.3.1 River Habitat Survey

The River Strule is an important habitat for Northern Ireland Priority Species such as stream water crowfoot and salmonid fish. The Strule is an important spawning and nursery ground for the salmon population of the River Foyle and Tributaries Special Area of Conservation (SAC). The River Habitat Survey (RHS) will provide additional baseline information for the stretch of the river affected by the scheme to inform future consideration of priority species such as stream water crowfoot and salmonid fish. The River Habitat Survey aims to characterise and assess the physical structure of freshwater streams and rivers.

The RHS has not covered the Strathroy Road Drain or the Conneywarren Drain. These minor drainage channels are shallow, with relatively low flow rate and overgrown with terrestrial vegetation, and thus not easily characterised by the RHS methodology. A qualitative assessment has of the character if these watercourses has been included instead

1.3.2 Otter

Otters in Northern Ireland (NI) are afforded protection through European and national statute, and planning guidance. They are a qualifying feature of the River Foyle and Tributaries SAC to which the River Strule connects (although the site itself is outside the SAC boundary). Otters are also listed as a priority species under the Northern Ireland Biodiversity Strategy and associated Plans, are a UK priority species (and thus are a material consideration in decisions by competent authorities such as local planning committees), and are listed as a Northern Ireland Species of Conservation Concern (SOCC).

The aim of the otter survey is to determine presence or absence of otter activity within the survey area of the River Strule, and whether otter are using the survey area for breeding.

2 Methods

2.1 Overview

The RHS field method followed the methodology from the Field Survey Guidance Manual (2003), and is a systematic collection of data associated with the physical structure of watercourses. Data collection is based on a standard 500 metre (m) length of river channel.

The NIEA provides guidelines for otter surveys prior to developments (NIEA, 2013[1]), specifically that surveys should be undertaken by an experienced otter surveyor and that surveys should determine whether otters have established holts (active or inactive) and if they are used for breeding and/or if otters forage within the development area. The guidelines do not provide any specific guidance on survey methodology.

As in the standard RHS Manual (2003) the banks, left and right, are determined by facing downstream and are referenced such for both the otter and RHS assessment.

2.2 Survey methodology

2.2.1 River Habitat Survey

The following measurements were taken as part of the RHS:

A. Field survey details
B. Predominant valley form
C. Number of riffles, pools and point bars
D. Artificial features
E. Physical attributes
F. Banktop land-use and vegetation structure
G. Channel vegetation types
H. Land-use within 50m of banktop
I. Bank profiles
J. Extent of trees and associated features
K. Extent of channel and bank features
L. Channel dimensions
M. Features of special interest
N. Choked channel
O. Notable nuisance plant species
P. Overall characteristics

[1] Otter Surveys NIEA Specific Requirements January 2013

The measurements for sections E to G were taken in the form of ten spot-checks. These consisted of 10 survey points 50m apart with a 1-10m survey plot across the river depending on the type of measurement.

The remainder of the measurements were taken either as part of the 500m sweep-up which aims to identify any features observed within the 500m survey area but not falling within the ten spot-check locations, or a single survey point at one location on a straight or uniform section of the river to measure more detailed physical attributes of the river.

2.2.2 Qualitative Assessment – Strathroy Road Drain

Surveyors also visited the Strathroy Road Drain to determine its character broadly. This minor watercourse carries runoff from the nearby Strathroy Road and surrounding fields to an outfall into the River Strule to the north of the proposed link road scheme. It was not subject to RHS as it is a minor watercourse with relatively low flows and not best characterised by this method. Surveyors have used photographic evidence and a walkover to determine the nature of habitat within this watercourse.

2.2.3 Otter

The measurements taken for the otter survey comprised a search of both banks for otter signs within the scheme footprint and within 250m of the road vesting line up and downstream of both the River Strule and Strathroy Road Drain. The following otter field signs were searched for:

- Actual (known to be used by otter) otter resting places i.e. otter holts & couches;
- Potential (may be used by otter) otter resting places;
- Runs leading away from the water;
- Otter spraints (number of spraints not dry, dry intact or dry fragmented); and,
- Otter footprints (and size, over 50mm adult).

2.3 Evaluation of habitat

2.3.1 River Habitat Survey

The measurements of the RHS were analysed to produce two numerical scores:

Habitat Modification Score (HMS) is an indication of how natural or artificially modified the river habitat is. HMS classes are defined as shown in Table 2.1 below.

Table 2.1 - Habitat Modification Score (HMS) and class description.

HMS Score	HMS Class	HMS description
0-2	**1**	**pristine and semi-natural**
3-8	**2**	**predominately unmodified**
9-20	**3**	**obviously modified**
21-44	**4**	**significantly modified**
>45	**5**	**severely modified**

Habitat Quality Assessment (HQA) is determined by the occurrence and diversity of habitat features of known value for wildlife. In contrast to HMS (described above), higher HQA scores represent more diverse sites.

2.4 Limitations to the study

Not all areas of the banks of the River Strule were accessible. This is mostly due to the eroding steep cliff with some fringing reed beds to much of the left bank of the river. This is associated with the average water depth being too deep to safely access the entire length of the river from within the channel. The channel was only entered at two locations at spot check 5 and spot check 9. This limited both of the surveys in that not all the left bank was visible to either determine habitat composition or to search for evidence of otter.

It is not a significant limitation as the habitat composition was broadly similar over the whole length of the survey area and no features that otters could use as holts/ couches could be observed from the opposite bank or further upstream / downstream, although it is possible that additional evidence such as otter spraints and footprints may not have been visible.

3 Results and Assessment

3.1 Survey Results

3.1.1 River Habitat Survey

The spot check locations are shown in Appendix 2 and the RHS data sheet in Appendix 3.

Habitat Modification Score (HMS) calculated from the RHS data was 360, this equates to a HMS class 5 severely modified. Significant bank modifications included the artificial berm to the left and right bank, two outfalls to the right bank and poaching to the left bank.

The Habitat Quality Assessment (HQA) calculated from the RHS data was 44. The surrounding habitat from the banktop is generally of little wildlife value being mostly improved pasture; however to the channel there was both diversity of flow and substrate with 4 riffles noted within the survey area. While some of the channel substrate was not visible the most abundant substrate recorded was gravel and pebble with gravel as the predominant substrate. Cobbles and boulders were also present and the habitat is likely more suitable as a nursery habitat for salmonid fish species. A pool, known as Cappagh, has previously been noted[2] as a suitable holding area for adult migrating salmonid fish just downstream of the survey area. The vegetated side bars and exposed boulders also may provide opportunities for otter to rest, and or feed. The steep cliff faces may provide opportunities for bird species such as the sand martin to nest[2].

3.1.2 Strathroy Road Drain

This is a small watercourse overgrown on both sides with terrestrial vegetation and supporting only a few cm depth of water at the time of survey (although it would carry a greater discharge in winter). There was no emergent or marginal aquatic vegetation (only terrestrial in and overgrowth), and the bed of the channel was filled with silt and mud. It is of negligible ecological value.

3.1.3 Conneywarren Drain

This is also a small watercourse, smaller than the Strathroy Road Drain, and again overgrown on both sides with terrestrial vegetation (particularly bramble covering) and supporting only a few cm depth of water at the time of survey (although it would carry a greater discharge in winter). There was no emergent or marginal aquatic vegetation (only terrestrial in and overgrowth), and the bed of the channel was filled with silt and mud. It is of negligible ecological value.

[2] Amey, May 2012, Strathroy Link Road, Omagh: Environmental Statement

3.1.4 Otter

Otter footprints were recorded in two separate locations along the left bank of the river close to RHS spot check number 5 and 9, as shown in Appendix 2. No other evidence of otter was recorded including an absence of otter holts or couches within the survey area. It is likely that otters use the survey area presently only as a commuting and foraging route. In addition, no evidence of otter (field signs or holts) was found on or surrounding the Strathroy Road Drain which does not support this species.

4 Discussion

4.1 Description of baseline ecology and constraints

4.1.1 River Habitat Survey

The details of the RHS may in general be used as a baseline for habitat quality and modification. More specifically the survey identified the general absence of aquatic macrophytes within the channel. Although the River Strule in its lower reaches forms part of the River Foyle and Tributaries SAC, the Annex I habitat that is a primary reason for SAC selection (watercourses of plain to montane levels with *Ranunculion fluitantis* and *Calliotricho-Batrachion* vegetation) does not appear to be present in the survey area.

The River Strule within the survey area is classed as a salmonid river with suitable nursery habitat noted with a holding pool downstream of the survey area. Limited gravel substrate suitable for spawning exists. As the new road bridge will span the river with no piers in the river channel, the risk of disturbance is reduced and limited to small scale works around the road drainage outfall locations, sediment runoff from construction works and operational runoff from the new road. Construction works would be completed in accordance with the Loughs Agency guidance[3]. A Construction Environmental Management Plan (CEMP) and method statements would be completed by the contractor prior to any construction works, detailing the methods by which road drainage outfalls would be constructed and how run-off would be controlled from working areas during construction. All relevant Pollution Prevention Guidelines (PPGs) would be adhered to. The operational runoff from the road would be mitigated through the use of Sustainable Urban Drainage (SUDs) to prevent pollution of any salmonid habitat.

4.1.2 Strathroy Road Drain/Conneywarren Drain

These watercourses have negligible ecological value due to low flows, high silt content and lack of emergent/marginal aquatic vegetation.

4.1.3 Otter

The presence of otter activity within the survey area was confirmed however there was an absence of holts or couches within the survey area. It is likely that otters use the survey area presently only as a commuting and foraging route.

The works could cause increased disturbance to the otter population, temporarily from construction activities and permanently from the presence of a busy road. However, otters will habituate readily to human activity and noise and road construction will not prevent otters from using the watercourse for commuting, foraging and resting up.

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[3] Loughs Agency (2011). Guidelines for Fisheries Protection during Development Works (Foyle and Carlingford areas). Environmental Guidelines Series – No.1.

The proposed scheme could lead to an increase in the numbers of otters killed or injured as safe routes used by otters are unavailable or heavily disturbed, forcing otters to use more hazardous routes. The following general measures should be implemented during construction to reduce the level of disturbance to otters:

- Compounds and storage of materials should be located away from watercourses;
- Riparian habitat that is to be retained should be fenced off and clearly marked to prevent contractors accessing these areas;
- Otters should be excluded from the works areas near watercourses by fencing or excavations covered at night to prevent them coming to harm. A means of safe passage along water courses should be maintained. The temporary installation of underpasses under construction areas may therefore be required; and
- Night work should not be undertaken next to watercourses, as this is when otters are most active.

Otter Fencing

In order to discourage otters from crossing the road carriageway adjacent to the River Strule and Strathroy Road Drain otter resistant fencing should be used to guide the animals towards safe crossing points. The fencing should extend from the bridge/culvert structure for at least 100m both sides of the road and watercourse. The type of fencing installed should prevent otters from digging underneath it or being able to climb over it, and can serve the double purpose of preventing mortality of badgers.

The Conneywarren is too small and disturbed to support otters and does not require such fencing. As the scheme is relatively short, the Strule provides a significant crossing point, and the Strathroy Road Drain culvert is also present, no further crossing points for otters are proposed.

Specifications for the fence should follow standards set out in the Design Manual for Roads and Bridges. There should be no gaps in the fencing which may allow otters or other mammals access to the road, this includes on gates. Where the fence abuts bridge rails, gate posts or a different type of fence, there should be no gaps greater than 50mm. The fencing should use 50mm mesh and the design shown in Figure 4.1 is recommended[4].

[4] Highways Agency. (2008). Design Manual for Roads and Bridges (DMRB). http://www.standardsforhighways.co.uk/dmrb/index.htm.

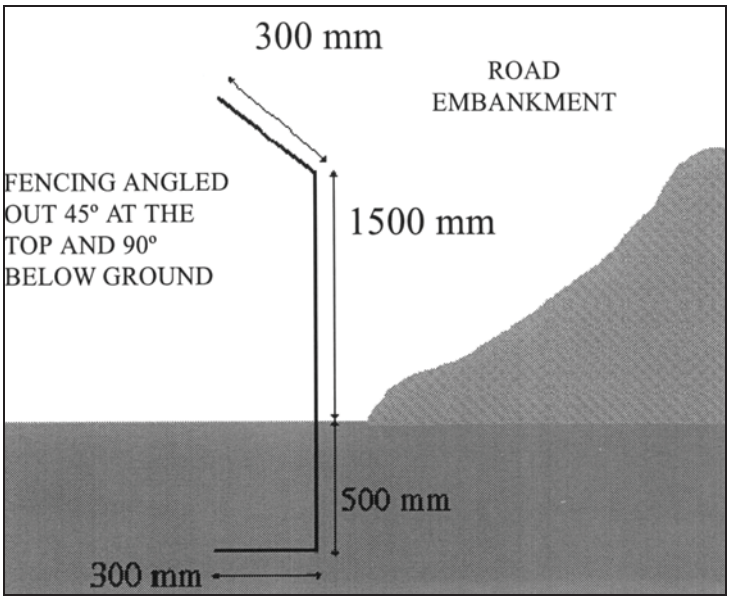

Figure 4.1 - Otter proof fencing design (DMRB, 2001).

We have used our reasonable endeavours to provide information that is correct and accurate and have discussed above the reasonable conclusions that can be reached on the basis of the information available. We would recommend that in order to obtain more secure results, the additional work outlined above should be commissioned.

Appendix 1: Legislative and Policy Context

Section 48 of the Fisheries Act (Northern Ireland) 1966.

Section 48 of the Fisheries Act (Northern Ireland) 1966 as amended makes it an offence to remove material from a river bed without prior approval from the Department of Culture Arts and Leisure. The removal of watercourse substrate can degrade fisheries habitat, cause mortalities to the spawn and fry of salmonids (Atlantic salmon and brown trout) and disturb the natural behaviour of adult fish with resulting negative impacts.

A section 48 permit authorises the holder to carry out activities which would normally be illegal (i.e. the removal of river bed substrate) with operations restricted by such conditions as the Department considers appropriate.

Section 46 of the Foyle Fisheries Act (Northern Ireland) 1952 and Section 47 of the Foyle Fisheries Act 1952.

Sections 46 of the Foyle Fisheries Act (Northern Ireland) 1952 and 47 of the Foyle Fisheries Act 1952 permits the removal of river bed material from the freshwater portion of any river in the Loughs Agency's area. Loughs Agency, Foyle, Carlingford and Irish Lights Commission (FCILC) may, by permit in writing, and subject to any conditions specified in the permit, authorise any named person to do such things as may be specified in the permit.

A Section 46/47 permit authorises the holder to carry out activities which may otherwise be illegal.

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

Otters are fully protected in NI through inclusion within the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended). Under this legislation they are given the status of a European Protected Species (EPS). The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) make it an offence to deliberately:

- Capture, injure or kill an otter;
- Disturb an otter while it is occupying a structure or place which it uses for shelter or protection;
- Disturb an otter in such a way as to be likely to:
    I. Affect the local distribution or abundance of otter;
    II. Impair its ability to survive, breed or reproduce, or rear or care for its young; or
    III. Impair its ability to hibernate or migrate;

- Obstruct access to a breeding site or resting place of such an animal; or
- Damage or destroy a breeding site or resting place of such an animal.

It may be possible to apply for a licence from Northern Ireland Environment Agency (NEIA) to allow activities that would otherwise be an offence under these Regulations, providing that (a) there is no satisfactory alternative, and (b) that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range. In addition, it is an offence to breach a licence condition.

The otter is also listed on Appendix II of the Bern Convention on the Conservation of Wildlife and Natural Habitats. In addition otters are included on Annex II and IV to Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive"). Annex II species should be considered with respect to Part II of the Conservation (Natural Habitats, &c.) Regulations (Northern Ireland) 1995 (as amended). While this does not confer any direct legal protection, locations supporting significant populations of otter can be designated as Special Areas of Conservation (SAC). Annex IV species are those in need of strict protection.

Policy Framework and Guidance Notes

The following policies and guidance documents aim to help conserve and protect the otter within NI and the study area:

- Planning Policy Statement (PPS) 2 - Planning and Nature Conservation;
- ENV1.1 in The Regional Development Strategy for Northern Ireland 2025: Shaping Our Future, Chapter 12, Caring for the Environment;
- Northern Ireland Biodiversity Strategy and associated Plans;
- UK Priority Species Plans (formerly Biodiversity Action Plans (BAPs);
- Roads Service Biodiversity Implementation Plan; and
- Omagh Local BAP.

Appendix 2: River Habitat Survey Data

RIVER HABITAT SURVEY FORM

A FIELD SURVEY DETAILS

Site Number		Is site part of river or artificial channel?	River
Site Reference	Strathroy Link Road	Adverse conditions affecting survey?	No
Spot Check 1 Grid Ref	243894 374291	If yes, state....	
Spot Check 6 Grid Ref	244083 374095	Is bed of river visible?	barely
End of Site Grid Ref:	54.611759,-7.315822	Is health and safety form attached?	No
Reach Reference		Number of photographs taken?	3
River Name	River Strule	Photo references	up/down-stream, site
Date & Time	28/05/2014	Location of survey in relation to river...	left bank and channel
Surveyor Name	JW & DW		
Accredited Surveyor Code			

B PREDOMINANT VALLEY FORM (wihtin horizon limit)

Valley form	Asymmetrical valley
Distinct flat valley bottom?	No
Natural terraces?	No

C NUMBER OF RIFFLES, POOLS AND POINT BARS (enter total numbers)

Riffle(s)	4	Unvegetated point bar(s)	0
Pool(s)	0	Vegetated point bar(s)	0

D ARTIFICIAL FEATURES (indicate total number of occurences of each category wihtin 500m site)

	Major	Int	Minor		Major	Int	Minor
Weirs/sluices				Outfalls/intakes		2	
Culverts				Fords			
Bridges				Deflectors/groynes/croys			
Other - State							

Is channel obviously realigned	No
Is channel obviously over-deepened?	No
Is water impounded by weir/dam?	No

E PHYSICAL ATTRIBUTES (to be assessed across channel within 1m wide transect)

Spot check 1 is at which end? Downstream

	1	2	3	4	5	6	7	8	9	10	End
Left Bank											
Material	EA	NV	EA	EA	EA	EA	EA	EA	EA	EA	
Bank modification(s)	BM	BM	BM	BM	BM	BM	NO	BM	BM (PC)	NK	
Marginal & bank feature(s)	NO	NV	EC	EC	EC	EC	EC	EC	NO	VS	
Channel											
Channel substrate	NV	NV	(G)P	NV	GP	GP	NV	SA	(G)P	CO	BO
Flow-type	UP	UP	UW	SM	CF	UP	SM	RP	RP	UW	
Channel modification(s)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	
Channel feature(s)	NO	NO	NO	NO	TR	NO	NO	TR	NO	NO	
# sub-channels	-	-	-	-	-	-	-	-	-	-	
Right Bank											
Material	EA	EA	EA	EA	EA	EA	EA	EA	EA	CO	
Bank modification(s)	BM	BM	BM	NK	NK	NO	NO	NO	NO	NO	
Marginal & bank feature(s)	NO	NO	EC	EC	EC	EC	VS	EC	EC	EC	

F BANKTOP LAND-USE AND VEGETATION STRUCTURE (to be assessed over a 10m wide transect)

	1	2	3	4	5	6	7	8	9	10
Land-use within 5m of left banktop	IG	IG	IG	IG	IG	IG	IG	IG	IG	TH
Left banktop (structure within 1m)	S	U	U	S	U	U	S	U	U	U
Left bank-face (structure)	S	NV	B	U	U	U	U	U	U	U
Right bank-face (structure)	U	S	U	U	U	U	U	U	U	B
Right banktop (structure within 1m)	U	U	U	S	S	U	U	S	S	S
Land-use within 5m of right banktop	IG	IG	IG	IG	IG	IG	IG	IG	IG	BL

G CHANNEL VEGETATION TYPES (to be assessed over a 10m wide transect)

	1	2	3	4	5	6	7	8	9	10	
None or Not Visible	NV	NV	NV			NV	NV				
Liverworts/mosses/lichens					P			P	P		
Emergent broad-leaved herbs											
Emergent reeds/sedges/rushes etc.				P	P			P			
Floating-leaved (rooted)											
Free-floating											
Amphibious											
Submerged broad-leaved											
Submerged linear-leaved											
Submerged fine-leaved								P			
Filamentous algae					P				E	P	

H LAND-USE WITHIN 50M OF BANKTOP

	Left	Right		Left	Right
Broadleaved/mixed semi-nat woodland		P	Wetland (e.g. bog,marsh, fen)		
Coniferous semi-natural woodland			Moorland/heath		
Broadleaved/mixed plantation woodland			Rough/unimproved grassland/pasture		
Coniferous plantation woodland			Improved/semi-improved grassland	E	E
Scrub & shrubs			Tall herb/rank vegetation	P	P
Orchard			Rock, scree or sand dunes		
Natural open water			Suburban/urban development	P	
Artificial open water			Tilled land		
Not visible			Irrigated land		
			Parkland or gardens		

I BANK PROFILES

Natural/unmodified	L	R	Artificial/modified	L	R
Vertical/undercut	E	E	Resectioned (reprofiled)		
Vertical with toe	P	P	Reinforced - whole		
Steep (>45º)	P		Reinforced - top only		
Gentle			Reinforced - toe only		P
Composite			Artificial two-stage	E	
Natural berm			Poached bank	P	
			Embanked		
			Set-back embankment		

J EXTENT OF TREES AND ASSOCIATED FEATURES

Trees	L	R	Associated features	None	Present	Extensive
None			Shading of channel		Y	
Isolated/scattered	Y	Y	Overhanging boughs		Y	
Regularly spaced, single			Exposed bankside roots		Y	
Occasional clumps			Underwater tree roots	Y		
Semi-continuous			Fallen trees	Y		
Continuous			Large woody debris	Y		

K EXTENT OF CHANNEL AND BANK FEATURES

	None	Present	Extensive		None	Present	Extensive
Free fall flow	Y			Exposed bedrock	Y		
Chute flow	Y			Exposed boulders		Y	
Broken standing waves	Y			Vegetated bedrock/boulders		Y	
Unbroken standing waves		Y		Unvegetated mid-channel bar(s)	Y		
Rippled flow			Y	Vegetated mid-channel bar(s)	Y		
Upwelling		Y		Mature island(s)	Y		
Smooth flow		Y		Unvegetated side bar(s)	Y		
No perceptible flow	Y			Vegetated side bar(s)		Y	
No flow (dry)	Y			Unvegetated point bar(s)	Y		
Marginal deadwater	Y			Vegetated point bar(s)	Y		
Eroding cliff(s)			Y	Unvegetated silt deposit(s)		Y	
Stable cliff(s)		Y		Discrete unvegetated sand deposit(s)	Y		
				Discrete unvegetated gravel deposit(s)	Y		

L CHANNEL DIMENSIONS

Left Bank		Channel		Right Bank	
Banktop height	2.8	Bankfull width	34.5	Banktop height	1.9
Is banktop heigt also bankfull height?	N	Water width	28	Is banktop heigt also bankfull height?	Y
Embanked height		Water depth	0.6	Embanked height	

If trashline lower than banktop.... height above water 1.9 width from bank to bank 28

Bed material: Unconsolidated

Location of measurement: Riffle , Spot check 9

M FEATURES OF SPECIAL INTEREST

None		Very large boulders (>1m)		Backwater(s)		Marsh(es)	
Braided channels		Debris dams		Floodplain boulders		Flush(es)	
Side channel(s)		Leafy debris	P	Water meadow(s)		Natural open water	
Natural waterfall(s) >5m high		Fringing reed-bank(s)	E	Fen(s)		Others	
Natural waterfall(s) <5m high		Quaking bank(s)		Bog(s)			
Natural cascades		Sink hole(s)		Wet woodland(s)			

N CHOKED CHANNEL

Is 33% or more of the channel choked with vegetation? N

O NOTABLE NUISANCE PLANT SPECIES

	Bankface	Banktop
None		P
Giant Hogweed		
Japanese knotweed		
Himalayan balsam	E	
Other...		

P OVERALL CHARACTERISTICS

Observed heron and damselflies on banks and fish surfacing from water. Debris present in channel likely washed downstream from Omagh including shopping trolley and sewage/waste. River suitable for salmonids although spawning potential limited. Low otter holt potential. Little or no macrophytes

Q ALDERS

Alders present?	Y
Diseased alders?	N

HABITAT QUALITY ASSESSMENT (HQA) SCORING SYSTEM

HQA Score	44

A. HQA FLOW TYPE SUB-SCORE — Total 9

HABITAT MODIFICATION SCORE

HMS Score	410

CULVERTS SUB-SCORE 0

BANKS AND BED REINFORCEMENT SUB-SCORE 100

Appendix 6 – Designated Site Natura 2000 Standard Data Forms

NATURA 2000

STANDARD DATA FORM

FOR SPECIAL PROTECTION AREAS (SPA)
FOR SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF COMMUNITY IMPORTANCE (SCI)
AND
FOR SPECIAL AREAS OF CONSERVATION (SAC)

1. Site identification:

1.1 Type B

1.2 Site code UK0030320

1.3 Compilation date 200407

1.4 Update 200603

1.5 Relationship with other Natura 2000 sites

1.6 Respondent(s) International Designations, JNCC, Peterborough

1.7 Site name **River Foyle and Tributaries**

1.8 Site indication and designation classification dates

date site proposed as eligible as SCI	200407
date confirmed as SCI	200412
date site classified as SPA	
date site designated as SAC	200505

2. Site location:

2.1 Site centre location

longitude	**latitude**
07 27 06 W	54 44 10 N

2.2 Site area (ha) 770.12

2.3 Site length (km) 120

2.5 Administrative region

NUTS code	Region name	% cover
UKB	Northern Ireland	100.00%

2.6 Biogeographic region

Alpine	Atlantic	Boreal	Continental	Macaronesia	Mediterranean
	X				

3. Ecological information:

3.1 Annex I habitats

Habitat types present on the site and the site assessment for them:

Annex I habitat	% cover	Representativity	Relative surface	Conservation status	Global assessment
Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	16.44	B	C	B	**B**

3.2 Annex II species

	Population				Site assessment			
	Resident	Migratory						
Species name		Breed	Winter	Stage	Population	Conservation	Isolation	Global
Margaritifera margaritifera	Present	-	-	-	D			
Petromyzon marinus	Present	-	-	-	D			
Lampetra planeri	Present	-	-	-	D			
Lampetra fluviatilis	Present	-	-	-	D			
Salmo salar	1001-10,000	-	-	-	B	B	C	**B**
Lutra lutra	Present	-	-	-	C	B	C	**C**

4. Site description

4.1 General site character

Habitat classes	% cover
Marine areas. Sea inlets	
Tidal rivers. Estuaries. Mud flats. Sand flats. Lagoons (including saltwork basins)	38.2
Salt marshes. Salt pastures. Salt steppes	
Coastal sand dunes. Sand beaches. Machair	
Shingle. Sea cliffs. Islets	
Inland water bodies (standing water, running water)	31.6
Bogs. Marshes. Water fringed vegetation. Fens	7.3
Heath. Scrub. Maquis and garrigue. Phygrana	7.9
Dry grassland. Steppes	
Humid grassland. Mesophile grassland	4.5
Alpine and sub-alpine grassland	
Improved grassland	3.0
Other arable land	
Broad-leaved deciduous woodland	5.8
Coniferous woodland	0.9
Evergreen woodland	
Mixed woodland	
Non-forest areas cultivated with woody plants (including orchards, groves, vineyards, dehesas)	
Inland rocks. Screes. Sands. Permanent snow and ice	
Other land (including towns, villages, roads, waste places, mines, industrial sites)	0.8
Total habitat cover	**100%**

4.1 Other site characteristics

Soil & geology:

Acidic, Alluvium, Limestone, Metamorphic, Peat, Sandstone, Slate/shale

Geomorphology & landscape:

Lowland, Valley

4.2 Quality and importance

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

- for which this is considered to be one of the best areas in the United Kingdom.

Salmo salar

- for which this is considered to be one of the best areas in the United Kingdom.

Lutra lutra

- for which the area is considered to support a significant presence.

4.3 Vulnerability

As with other freshwater systems, deterioration of water quality is both a local and widespread issue, the former due to point-source pollution from urban centres and farms, the latter from diffuse run-off of fertiliser from commercial conifer plantations in the upper catchment and intensively farmed land in the lower catchment.
Poor water quality and increased sedimentation can be significant influences on populations of *Salmo salar* and *Lutra lutra*, as well as altering the biological composition of the river ecosystem.
Conservation Objectives for the site have recently been prepared.
Implementation of the Water Framework Directive will require action to improve water quality.
Negotiations with other relevant government organisations have been initiated to address these issues.

5. Site protection status and relation with CORINE biotopes:

5.1 Designation types at national and regional level

Code	% cover
UK04 (SSSI/ASSI)	100.0

Appendix 7 – Site Integrity Checklists

Table A7.1 River Foyle & Tributaries SAC Integrity of Site Checklist

Conservation Objectives	
Does the project have potential to:	
Cause delays in progress towards achieving the conservation objectives of the site?	~~Yes~~/No
Interrupt progress towards achieving the conservation objectives of the site?	~~Yes~~/No
Disrupt those factors which help maintain the favourable conditions of the site?	~~Yes~~/No
Interfere with the balance, distribution and density of key species that are indicators of favourable conditions of the site?	~~Yes~~/No

Other Indicators	
Does the project have potential to:	
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystems?	~~Yes~~/No
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?	~~Yes~~/No
Interfere with predicted or expected natural changes to the site (such as water dynamics of chemical composition)?	~~Yes~~/No
Reduce the area of key habitats?	~~Yes~~/No
Reduce the population of key species?	~~Yes~~/No
Change the balance between key species?	~~Yes~~/No
Reduce the diversity of the site?	~~Yes~~/No
Result in disturbance that could affect population size or density of the balance between key species?	~~Yes~~/No
Result in fragmentation?	~~Yes~~/No
Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc)?	~~Yes~~/No

Appendix 8 – Preliminary consultations

From: Declan Lawlor [mailto:Declan.Lawlor@loughs-agency.org]
Sent: 17 November 2015 09:26
To: Virginia Kangley
Cc: Stuart Ireland; Patrick Boylan
Subject: RE: 2015-10-15 VK-DL Strathroy Link Road - Report to Inform an Appropriate Assessment

Hi Virginia

Many thanks for your email.

The Loughs Agency has considered the information contained in the Report to Inform an Appropriate Assessment for Strathroy Link Road and would agree that the current scheme design is unlikely to have any significant effects on the site integrity of the River Foyle SAC. This is mainly due to the fact that there are no in-stream works planned as part of the project.

I would however like to take the opportunity to advise you that it is an offence under section 41 of the Foyle Fisheries Act (1952) to cause pollution which is detrimental to fisheries interests.

If you have any further queries, please do get in touch.

Best regards

Declan

Dr Declan Lawlor, CEnv
Environmental Officer

Loughs Agency
(Foyle, Carlingford and Irish Lights Commission)
22 Victoria Road
Derry~Londonderry
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Northern Ireland Environment Agency
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Virginia Kangley
Mouchel Consulting
Shorefield House
30 Kinnegar Drive
Holywood
Co. Down
BT18 9JQ

Direct Tel No: 028 9056 9813

Our Ref: DEC 229/3

21 October 2015

Dear Ms Kangley

RIVER FOYLE & TRIBUTARIES AREA OF SPECIAL SCIENTIFIC INTEREST (ASSI) & SPECIAL AREA OF CONSERVATION (SAC)
- **Strathroy Link Road Report**

I refer to your correspondence received in this office on the 13 October 2015 notifying the Department of works within/adjacent to the above ASSI.

The Strathroy Link is proposed to cross the Strule River. The watercourse, while not part of a designated site, is hydrologically connected with the River Foyle and Tributaries SAC/ASSI. The development has previously been assessed by the Department under planning consultation K/2011/0258/F. As part of the process a Habitats Regulations Assessment (HRA) was completed and conditions resulting from this were included in the decision notice issued on 20 June 2013.

With regard to the additional information provided in the revised document titled Report of Information to Inform an Appropriate Assessment: River Foyle and Tributaries SAC Strathroy Link Road (report control date 10/06/15), NIEA NED Conservation Designations and Protection (CDP) would raise the following.

NED CDP acknowledges the revised procedure for bridge construction across the River Strule with regard to the protection of bridge piers. The document references the use of rip-rap and rock armouring to protect the abutments should the banks of the River Strule change shape over the life span of the structure. NED CDP would like to again remind Mouchel/Transport NI that confirmation should be sought from DOE Planning in relation to this forming part of the original design scope. When referring to documentation submitted as part of the planning process, it not apparent that the use of rock-armouring was included in the original design. In the event that this constitutes an amendment to the design then an amendment to the existing planning approval may be required, however this remains the responsibility of the planning authority.

NED CDP acknowledges that structural works to consolidate river bank edges will not be undertaken however, the document references hard engineering will be used to protect bridge piers. The long term impacts of the use of hard engineering should the river banks recede needs to be considered. NED CDP acknowledges the modified nature of the affected stretch of river (as detailed in the River Habitat and Otter Survey dated 7 July 2014) and that some form of pier protection would be favourable for the structural integrity of the bridge. However, the effect that rock armouring would have on the river hydrology and salmonid habitats needs to be considered. This option should only be implemented into the works design when an assessment of all known potential effects as a result of the project design (at present or which have the potential to occur in the future) can conclude no significant impacts.

NED CDP notes the revised document states that the Strathroy Road Drain is shallow and culverts will be too small to support otter ledges but will, under normal flow conditions, permit otter passage. Condition 10 of the Planning Decision Notice dated 20 June 2013 reads 'As stated in 9.6.4 in the Environmental Statement (May 2012) a box culvert with a mammal ledge shall be used where the route crosses the stream at Strathroy Road.' Transport NI should ensure that the project is in line with the conservation objectives for the SAC otter feature which includes maintaining and if possible increasing population numbers and distribution. NED CDP acknowledges that the River Habitat and Otter Survey dated 7 July 2014 found no evidence of otter on or surrounding the road drain. However, it was considered likely that otters use the survey area presently as a commuting and foraging route. Provision should be made to ensure that the culvert does not create a barrier to the species, particularly outside normal flow conditions should it expand its current range.

It is advised that Transport NI complies fully with the conditions applied to the existing approval previously referenced. In this event the HRA connected with this is considered legally compliant. The Department has no further comment to make in this regard.

If you require any further information please contact Lee Jones on the above direct number.

Yours sincerely

James Warnock
Authorised Officer

From: Greer, Gareth (DARD) [mailto:Gareth.Greer@dardni.gov.uk]
Sent: 27 October 2015 14:16
To: Virginia Kangley
Subject: RE: 2015-10-13 VK-GG Strathroy Link Road - Report to Inform the Appropriate Assessment

Hi Virginia,
Thanks for this. I have no further comments to make on this report. Can you let me know if the equivalent report for Hunter Crescent flood wall replacement has been distributed to Loughs Agency and NIEA for comment?
Regards,
Gareth

Dr. Gareth Greer
Conservation Officer (Western Region),
Rivers Agency,
Hydebank,
4 Hospital Road,
Belfast.
BT8 8JP

From: Virginia Kangley [mailto:Virginia.Kangley@mouchel.com]
Sent: 13 October 2015 10:32
To: Greer, Gareth (DARD)
Cc: Stuart Ireland
Subject: 2015-10-13 VK-GG Strathroy Link Road - Report to Inform the Appropriate Assessment

Dear Gareth,

Further to previous correspondence please see attached the Report to Inform the Appropriate Assessment which contains slight amendments following the previous consultation exercise.

If you have any queries in relation to this please do not hesitate to contact me.

Kind Regards,

Virginia Kangley BEng (Hons) CEng MIEI
Project Manager, Mouchel Consulting

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Please consider the environment before printing this e-mail

From: Hayes, Jim [mailto:Jim.Hayes@dcalni.gov.uk]
Sent: 15 January 2015 10:59
To: Rachel McEvan
Subject: RE: Strathroy Link Road

Rachel

Given that the scheme is in the catchment of Lough Foyle and consequently wholly within the Loughs Agency area of jurisdiction I'm satisfied that DCAL comment re the scheme and sight of the report is not required in this case.

Regards,

Jim

Jim Hayes
Fisheries Operations and Technical Support
Inland Fisheries Group
DCAL

From: Rachel McEvan [mailto:Rachel.McEvan@mouchel.com]
Sent: 15 January 2015 10:34
To: Hayes, Jim
Cc: Virginia Kangley
Subject: Strathroy Link Road

Dear Jim,

I'm contacting you in relation to a new road scheme on the outskirts of Omagh that Mouchel is progressing on behalf of Transport Northern Ireland. We have prepared a Report to Inform an Appropriate Assessment for the scheme because of its potential interaction with the River Foyle and Tributaries SAC and issued this report to the Loughs Agency and NIEA.

Would you (or anyone else in DCAL) wish to be provided with a copy of the report and/or have any comment to make on it? I'm happy to discuss further if you wish – please contact me on the numbers below.

Regards,
Rachel

Rachel McEvan
Principal Environmental Consultant, Environmental Assessment & Planning

Mouchel, Lanark Court, Ellismuir Way, Tannochside Park, Uddingston, Glasgow, G71 5PW

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