
Natura Impact Statement

Proposed cycle path between Clonegal
and Kildavin, Co. Carlow

31/05/2022



NM Ecology Ltd - Consultant Ecologists

38 Maywood Avenue, Raheny, Dublin 5

Website: www.nmecology.com

Email: info@nmecology.com

Tel: 087-6839771

Executive Summary

This *Natura Impact Statement* has been prepared by NM Ecology Ltd on behalf of Carlow County Council (the applicant) regarding a planning application for a cycle path between Clonegal and Kildavin, Co. Carlow. The proposed development will involve the construction of a bridge over the Derry River, a surfaced cycle path across agricultural land, and the resurfacing of sections of existing roads / paths. The aim of this report is to identify and evaluate any potential impacts on Natura 2000 sites.

The Derry River is within the boundary of the *Slaney River Valley SAC*. In accordance with their obligations under the *European Communities (Birds and Natural Habitats) Regulations 2011* (SI 477/2011), the planning authority must assess whether the proposed development could have 'likely significant effects' on this or any other Natura 2000 sites. This document provides supporting information to assist the authority with an Appropriate Assessment, including: details of Natura 2000 sites within the potential zone of impact, an appraisal of *source-pathway-receptor* relationships, an assessment of potential direct, indirect and in-combination impacts, and a mitigation strategy.

The bridge will cross the Derry River in a single span, and no in-stream works are required, so there will be no direct impacts on the qualifying interests of the SAC. If a precautionary approach is adopted, it is possible that pollutants (suspended sediments, concrete / cement and hydrocarbons) generated during the construction of the proposed development could cause indirect impacts on aquatic habitats and fauna in the *Slaney River Valley SAC*. In response, a range of mitigation measures will be implemented during the construction phase in order to avoid or minimise the risk that any pollutants could reach the SAC. An Ecological Clerk of Works will assist the contractor with the implementation of the mitigation measures. On this basis, we conclude that the proposed development will not cause significant impacts on any Natura 2000 sites.

Table of Contents

1	Introduction	3
1.1	Background to Appropriate Assessment.....	3
1.2	Statement of authority.....	4
1.3	Methods	4
1.4	Environmental setting	5
2	Details of the proposed development	6
2.1	Description of the proposed development	6
2.2	Other nearby developments (potential in-combination effects).....	6
3	Description of Natura 2000 sites	6
3.1	Identification of Natura 2000 sites within the zone of influence.....	6
3.2	Conservation objectives	8
3.3	Potential pathways for direct and indirect impacts	8
3.4	Locations of Qualifying Interests.....	8
3.5	Conclusion of Stage 1: Screening Statement.....	9
4	Assessment of potential impacts.....	10
4.1	Direct impacts.....	10
4.2	Indirect impacts	10
4.3	Potential in-combination effects.....	11
5	Proposed mitigation measures.....	11
5.1	Overview of Pollution-prevention measures (construction phase)	11
5.2	Ecological Clerk of Works	12
5.3	General Site Management Measures.....	12
5.4	Management of Concrete and cement	13
5.5	Management of Suspended sediments.....	13
5.6	Management of Hydrocarbons and chemicals	14
6	Conclusion	14
	References	15

1 Introduction

1.1 Background to Appropriate Assessment

Approximately 10% of the land area of Ireland is included in the European Network of Natura 2000 sites, which includes Special Protection Areas (SPAs) to protect important areas for birds, and Special Areas of Conservation (SACs) to protect habitats and non-avian fauna. Legislative protection for these sites is provided by the *European Council Birds Directive* (79/409/EEC) and *E.C. Habitats Directive* (92/43/EEC, as amended), which are transposed into Irish law by the *European Communities (Birds and Natural Habitats) Regulations 2011* (SI 477/2011).

In accordance with Article 42 of the national regulations, planning authorities must consider the potential impacts of any development on the integrity of the Natura 2000 network. The first stage of this process is a simple screening exercise to determine whether the development could potentially affect any Natura 2000 sites. If there is a viable risk of impact (adopting a precautionary approach), the development should proceed to the second stage of the process, which is known as ‘Appropriate Assessment’ (AA). In Section 3.1 of *Appropriate Assessment of Plans and Projects in Ireland*, the second stage of the AA process is described as follows:

“This stage considers whether the plan or project, alone or in combination with other projects or plans, will have adverse effects on the integrity of a Natura 2000 site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. The proponent of the plan or project will be required to submit a Natura Impact Statement [...] to identify and characterise any possible implications for the site in view of the site’s conservation objectives, taking account of in-combination effects. This should provide information to enable the competent authority to carry out the appropriate assessment. If the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to Stage 4, or the plan or project should be abandoned. The Appropriate Assessment is carried out by the competent authority, and is supported by the Natura Impact Statement.”

This document is a Natura Impact Statement, which provides supporting information to assist competent authorities with stages 1 and 2 of the Appropriate Assessment process. It includes the following sections: a description of the project, details of Natura 2000 sites within the zone of impact, an appraisal of potential pathways for indirect effects, an assessment of potential impacts, mitigation measures, and a conclusion.

1.2 Statement of authority

This report was written by Nick Marchant, the principal ecologist of NM Ecology Ltd. He has an MSc in Ecosystem Conservation and Landscape Management from NUI Galway and a BSc in Environmental Science from Queens University Belfast. He is a member of the Chartered Institute of Ecology and Environmental Management, and operates in accordance with their code of professional conduct.

He has fifteen years of professional experience, including twelve years as an ecological consultant, one year as a local authority biodiversity officer, and two years managing an NGO in Indonesia. He provides ecological assessments for developments throughout Ireland and Northern Ireland, including wind farms, infrastructural projects (roads, water pipelines, greenways, etc.), and a range of residential and commercial developments.

1.3 Methods

This report has been prepared with reference to the following guidelines:

- *Appropriate Assessment of Plans and Projects in Ireland* (Department of the Environment, Heritage and Local Government, 2009)
- *OPR Practice Note PN01: Appropriate Assessment Screening for Development Management* (Office of the Planning Regulator 2021)
- *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4), E.C., 2002.*
- *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal* (CIEEM 2018)

Supporting data was collected from the following sources:

- Plans and specifications for the proposed development
- Qualifying interests / conservation objectives of Natura 2000 sites from www.npws.ie
- Bedrock, soil, subsoil, surface water and ground water maps from the Geological Survey of Ireland webmapping service, the National Biodiversity Data Centre, and the Environmental Protection Agency web viewer
- The *Carlow County Development Plan 2022 - 2028*, and details of permitted or proposed developments from the local authority's online planning records

Desktop data from internet resources was accessed between February and May 2022, and a site inspection was carried out on the 25th of February 2022. The primary focus of the site inspection was the section of the route that crosses the Derry River (which is part of the *Slaney River Valley* SAC). Searches for field signs of fauna (notably otter) were also carried out along both banks of the river for approx. 150 m upstream and downstream of the crossing point.

1.4 Environmental setting

Site location and surroundings

The route of the proposed cycle path (hereafter referred to as the Route) is between the villages of Clonegal and Kildavin in County Carlow. The northern-eastern section of the Route will be along existing roads (both paved and unpaved), and the south-western section will be across agricultural land, including a crossing of the Derry River.

The surrounding area comprises a mixture of grazing pastures, arable fields, coniferous forestry and a sediment quarry. Huntingdon Castle & Gardens (an accommodation provider and wedding venue) is located near Clonegal.

Geology and soils

The Site is underlain by schist, described as ‘dark grey semi-pelitic, psammitic schist’ on the GSI website. Subsoils are a mixture of gravels and alluvium, and soils are a mixture of loamy drift and alluvium. The bedrock and subsoil form a locally-important gravel aquifer.

Hydrology

The Route will cross the Derry River, which is part of the Slaney catchment. The Derry River is approx. 7 – 8 m wide at the proposed crossing point, and had a maximum depth of approx. 0.5 m at the time of survey. Both banks had some scattered trees and shrubs, but they did not form treelines or other related habitats. There is low-lying pastureland to the south of the river that may flood during periods of high flow. There is an arable field to the north of the river.

Approximately 100 m downstream of the proposed crossing point, the Derry River merges with the main channel of the River Slaney. The River Slaney then flows south and east, and reaches the coast approx. 50 km downstream in Wexford Harbour. The final 20 km of river (downstream of Enniscorthy) is estuarine.

Under the Water Framework Directive status assessments 2013 – 2018 the Derry River was of Moderate status. The freshwater section of the River Slaney ranges from Moderate to Good status, and the lower sections of the estuarine section are of Bad status.

Habitats

The north-eastern section of the Route follows an existing single-lane gravel track, lined by hedgerows and/or treelines on both sides. The track ends on the western side of the quarry, and the Route crosses an arable field up to the bank of the Derry River. On the southern bank of the river the Route will cross a pasture (classified as improved agricultural grassland), and along a grassy track up a hill through broadleaved woodland.

Invasive plant species

Patches of Japanese Knotweed *Fallopia japonica* are present on both sides of the road / track to the north of the quarry. Both are mature infestations that have been in place for many years. They extend down steep slopes towards some lakes (to the north) and the quarry (to the south). The existing track in this area is wide enough to accommodate the cycle path without disturbing the adjacent vegetation, so the Japanese Knotweed will not be disturbed.

2 Details of the proposed development

2.1 Description of the proposed development

The proposed development will be a surface-dressed stone path of up to 3 m width, which will be suitable both for cyclists and pedestrians. Soft landscaping and fencing will be provided on each side of the path. At the river crossing, a light bridge of timber or metal will be created. It will be supported on three piled abutments, forming two spans: one over the Derry River, and a second span over low-lying land to the south of the river.

There will be no surface water drainage system; all rainwater will soak to ground through the stone path. There will be no artificial lighting along the Route.

2.2 Other nearby developments (potential in-combination effects)

The Route is located in a rural setting in County Carlow, which is not zoned under any current Development Plan. Local Area Plans were formerly developed for Clonegal and Kildavin, but both expired many years ago.

Live and recently-approved planning applications in the vicinity of the Site were reviewed on the online planning records of Carlow County Council, but no developments likely to cause in-combination effects were found.

3 Description of Natura 2000 sites

3.1 Identification of Natura 2000 sites within the zone of influence

The Route will pass through the *Slaney River Valley* SAC at the crossing of the Derry River. Potential indirect impacts on other SACs were considered within a zone of influence of 2km, but none were found. A map of Natura 2000 sites is provided in Figure 1, and details of relevant sites are provided in Table 1.

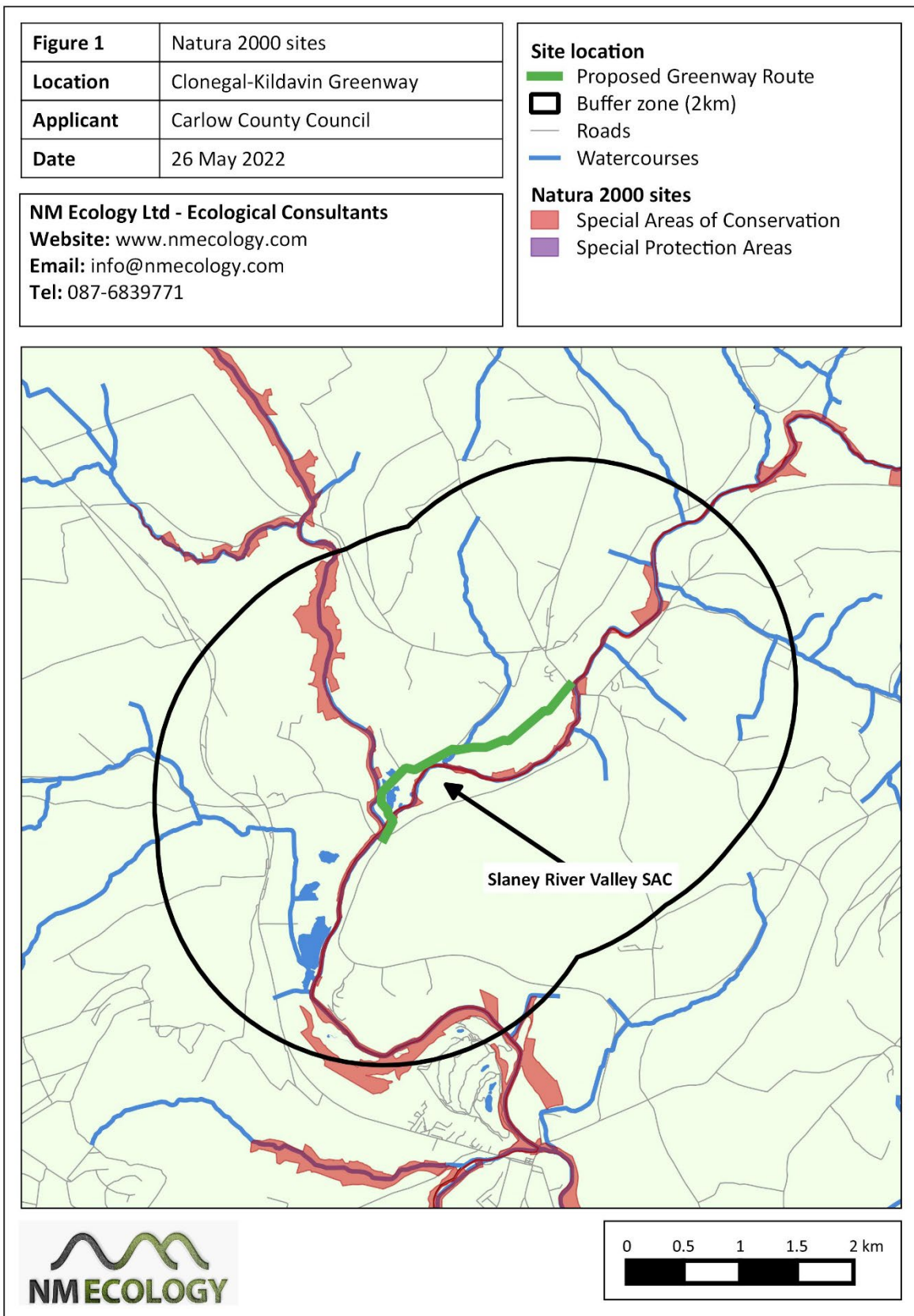


Table 1: Natura 2000 sites shown in Figure 1

Site name	Distance	Qualifying Interests
Slaney River Valley SAC (site code 781)	Within	<p>Annex I habitats: Estuaries, Mudflats and sandflats not covered by seawater at low tide, Atlantic salt meadows, Mediterranean salt meadows, Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation, Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles, Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i></p> <p>Annex II species: Freshwater Pearl Mussel, Sea Lamprey, Brook Lamprey, River Lamprey, Twaite Shad, Salmon, Otter, Harbour Seal</p>

3.2 Conservation objectives

The standard conservation objective for all SACs and SPAs in Ireland is “to maintain or restore the favourable conservation condition of the qualifying interests for which the SAC / SPA has been selected”. In addition, the Department of Housing, Local Government and Heritage has produced detailed conservation objectives for the Natura 2000 sites listed in Table 1. They can be viewed on the website of the National Parks and Wildlife Service (<http://www.npws.ie/protected-sites>), but are not reproduced here in the interests of brevity.

3.3 Potential pathways for direct and indirect impacts

Indirect impacts can occur if there is a viable pathway between the source (the Site) and the receptor (the habitats and species for which a Natura 2000 site has been designated). The most common pathway for impacts is surface water, e.g. if a pollutant is washed into a river and carried downstream into a Natura 2000 site. Other potential pathways are groundwater, air (e.g. airborne dust or sound waves), or land (e.g. flow of liquids, vibration). The zone of effect for hydrological impacts can be several kilometres, but for air and land it is rarely more than one hundred metres.

The Route crosses the *Slaney River Valley* SAC, so there is a risk of direct impacts. During the construction of the proposed development, there is a risk that pollutants could be carried into the watercourse by a range of pathways: surface water, groundwater, over land or via air.

3.4 Locations of Qualifying Interests

As noted in Table 1, the SAC has been designated for the protection of 7 Annex I habitats and 8 Annex II species. However, it is a very large SAC, and some of the qualifying interests are restricted to certain areas, e.g. coastal areas. In this section we discuss the habitats that are present, or likely to be present, in the vicinity of the Route.

The Derry River and Slaney River are ‘Water courses of plain to montane levels’, so they are present in the vicinity of the site. The Site Synopsis for the SAC shows the locations of notable ‘Old sessile oak woods’ and ‘Alluvial forests’, but there are none in the Clonegal / Kildavin area. All other Annex I habitats – Estuaries, Mudflats / sandflats, Atlantic salt meadows and Mediterranean salt meadows – are restricted to coastal and estuarine areas, at least 30 km downstream of the Route.

Harbour Seals are found only in coastal areas around Wexford Harbour, at least 30 km downstream of the Route. The largest population of Freshwater Pearl Mussels is found in the Derreen sub-catchment (which is upstream of Clonegal / Kildavin), but they are also present in other parts of the river, potentially including the Derry River. All other species – lamprey, shad, salmon and otter – are expected to occur throughout the catchment, including in the vicinity of the Route. It is certainly possible that all could occur in the Derry River at the proposed crossing point.

3.5 Conclusion of Stage 1: Screening Statement

In Section 3.2.5 of *Appropriate Assessment of Plans and Projects in Ireland* (NPWS 2010), it is stated that the first stage of the AA process can have three possible conclusions:

1. AA is not required

Screening, followed by consultation and agreement with the NPWS, establishes that the plan or project is directly connected with or necessary to the nature conservation management of the site

2. No potential for significant effects / AA is not required

Screening establishes that there is no potential for significant effects and the project or plan can proceed as proposed.

3. Significant effects are certain, likely or uncertain

The plan or project must either proceed to Stage 2 (AA), or be rejected.

Having considered the particulars of the proposed development, we conclude that this application meets the third conclusion. Part of the Route is within the boundary of the SAC, and could have direct impacts on one Annex I habitat (the watercourse) and several Annex II species. There is also a risk of indirect impacts on water quality in the river during the construction of the bridge and other sections of work nearby. Therefore, the assessment proceeds to Stage 2 of the Appropriate Assessment process. Potential impacts are considered in further detail in Section 4, and mitigation measures are outlined in Section 5.

4 Assessment of potential impacts

4.1 Direct impacts

The Route will cross the *Slaney River Valley* SAC on a new bridge. The bridge has been designed by DBFL Consulting Engineers, and drawings are provided elsewhere in the planning application. The total length of the bridge will be 27.5 m, supported by three abutments installed on piles. The northern span of the bridge (i.e. from the north to central abutment) will be 15 m, and will cross the Derry River in a single section. The southern span will be 10 m, and will cross some low-lying land to the south of the river.

The bridge will cross the Derry River in a single span, and no in-stream works will be required, so there will be no direct impacts on the Annex I habitat 'Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation'. No significant areas of 'Old sessile oak woods' or 'Alluvial forests' were observed in the vicinity of the crossing point; the bankside vegetation in the area consists only of scattered / discontinuous trees and shrubs. Therefore, there is no risk of direct impacts on any of the qualifying interests of the SAC.

Similarly, there will be no direct impacts on any of the Annex II fish or mollusc species: Freshwater Pearl Mussel, Sea Lamprey, Brook Lamprey, River Lamprey, Twaiter Shad or Salmon. No field signs of otters (e.g. holts, spraints, prints) were observed within 150 m upstream or downstream of the crossing point. Therefore, there is no risk of direct impacts on any of the species for which the SAC was designated.

On this basis, we conclude that the proposed development poses no risk of direct impacts on the qualifying interests of the SAC.

4.2 Indirect impacts

Potential changes in water quality (construction phase)

The construction of the proposed development will involve a range of activities, including piling, excavations, creation of embankments, pouring concrete, and surfacing. These activities have potential to generate pollutants, including:

- Concrete and cement, which are composed of highly-alkaline, corrosive fine sediments that are harmful for aquatic fauna
- Suspended silt or other sediments, which can reduce water quality, harm aquatic fauna, and/or alter the flow of watercourses
- Hydrocarbons (oil, petrol, diesel, etc), solvents and other chemicals, which can be toxic to aquatic fauna

A hypothetical impact assessment of potential pollution incidents is difficult, because any potential impacts would vary depending on the type of pollutant, its quantity, the rate at which it would be released, and the time of year. Minor pollution incidents would be diluted by the Derry River, reducing their concentration to negligible levels before they could affect any of the qualifying interests of the SAC. However, a large-scale pollution event (e.g. a large spill of liquid concrete, or a prolonged release of suspended sediments) could potentially cause a significant effect on the SAC.

In accordance with the precautionary principle, we conclude that there is a risk that a pollution incident during the construction of the proposed development could reach the *Slaney River Valley* SAC in sufficient quantities to have a significant impact on its qualifying interests. Mitigation measures will be required to avoid or minimise this risk.

Potential changes in water quality (operational phase)

The bridge will be a light structure without a dedicated surface-water drainage system, so rainwater will run over the sides into the river. As the route will be used by bicycles and pedestrians, it is not expected that there will be any pollutants on the bridge that could be washed into the river, so there is no risk of impacts on the qualifying interests of the SAC. The remainder of the route will be constructed of surfaced-dressed crushed rock. Rainwater will percolate to ground alongside to the cycle path. As above, this poses no risk of pollution to the SAC.

The proposed development will not generate any foul water.

Consequently, it is concluded that surface water discharges during the operation of the development will not cause significant impacts on the SAC.

4.3 Potential in-combination effects

No other developments were identified in the surrounding area that could give rise to in-combination effects.

5 Proposed mitigation measures

5.1 Overview of Pollution-prevention measures (construction phase)

The following mitigation measures have been designed to avoid or minimise any negative impacts the Derry River (and thus the *Slaney River Valley* SAC) by preventing fine sediments, concrete / cement, hydrocarbons or any other pollutants from entering the river. All are standard pollution control measures that are regularly used on construction sites in Ireland, and confidence in their success is high. They have been developed with reference to the following guidelines:

- *Guidelines on protection of fisheries during construction works in and adjacent to waters* (Inland Fisheries Ireland, 2016)
- *Pollution prevention guidelines: PPG5 - works and maintenance in or near water* (UK Environment Alliance, 2007)

5.2 Ecological Clerk of Works

The contractor will engage an Ecological Clerk of Works (ECoW) to assist with the implementation of the following mitigation strategy. The ECoW will liaise with the contractor to ensure that the mitigation strategy is represented in the contractor's Construction Management Plan and method statements. The ECoW will attend the site prior to the construction of the bridge, to provide a toolbox talk to the contractor's employees regarding the sensitivity of the river, and to review the set up of the construction site. The ECoW will also visit the site during the bridge installation works to ensure that measures are being implemented effectively.

For the avoidance of doubt, it is important to state that the primary responsibility for the protection of the SAC lies with the contractor. The ECoW will assist with the understanding of the mitigation strategy, and will advise on its successful implementation. However, the ECoW will not be continuously present on site, so they cannot be responsible for failures in the implementation of the mitigation strategy. Liability for any pollution incidents will be assigned to the foreman and their construction company.

5.3 General Site Management Measures

The contractor will need to develop a temporary working compound for employee welfare facilities and the storage of materials. The location of the compound will be determined by the contractor at the pre-construction stage based on their requirements and the availability of land. However, in order to avoid impacts on the Derry River, we stipulate that the contractor's compound will not be located within 50 m of the river bank.

The bridge will cross the Derry River in a single span, and no in-stream works will be required. However, the abutments will be constructed within a few metres of the river bank. In order to prevent any pollutants being washed over land into the river, silt fences will be installed between the abutments and the river bank on both sides of the river. The silt fences will be at least 10m in length, and will curve away from the river bank to ensure that overland flow of water is captured and cannot flow around the sides. The base of the fence will be buried underground, and it will be held in an upright position using a temporary fence or wooden supports.

5.4 Management of Concrete and cement

These products are highly toxic to fauna, particularly fish and other aquatic / marine species. On-site pouring and/or mixing of concrete or cement will be required during the construction of the bridge abutments, so the following measures will be implemented to prevent any cement-based materials reaching the watercourse:

- Concrete pouring / mixing will only take place in dry weather conditions. It will be suspended if high-intensity local rainfall events are forecast (e.g. >10 mm/hr, >25 mm in a 24 hour period or high winds)
- If any on-site mixing of concrete is required, it will be carried out at least 50m away from the river. If any cement-based products will be stored on-site, they will be kept in a sheltered area at least 50m away from the river, and will be covered (e.g. with a thick plastic membrane) to prevent spread by wind
- Ready-mix lorries and larger plant will not be cleaned on-site; they will be taken to an appropriate off-site facility with capacity to capture and treat contaminated wash waters
- If any on-site cleaning of tools or concrete-batching plant is required, it will take place at least 50m away from the river. Wash waters will be discharged to an on-site soakaway area.

5.5 Management of Suspended sediments

The term 'suspended sediments' refers to any silt, mud or other fine sediment that becomes dissolved in water. Water can be contaminated by suspended sediments (SS) from open earthworks and excavations (either from rainfall or groundwater seepage), from rainfall on soil/sediment stockpiles, or from the tyres / tracks of construction vehicles. In order to retain all contaminated waters within the boundary of the Site, the following measures will be implemented:

- Excavation works will be suspended if high intensity local rainfall events are forecast (e.g. >10 mm/hr, >25 mm in a 24 hour period, or high winds).
- If any excavations need to be dewatered, the SS-contaminated water will be collected and pumped into a settlement tank / pond (or similar feature), left undisturbed until sediments have settled, and then discharged via a buffered outflow to a soakaway that is at least 50m away from the river
- Stockpiles of mud, sand or other fine sediments will be stored at least 50m away from the river. Stockpiles will be levelled and compacted, and will be covered with thick plastic membranes in order to limit wind/rainwater erosion
- Dust suppression and road cleaning measures will be implemented, as outlined in Section 8 of the IFI guidelines.

5.6 Management of Hydrocarbons and chemicals

Hydrocarbons (oil, petrol, diesel, etc) and solvents are toxic to fauna. These chemicals can enter surface water or groundwater if they are accidentally spilled (e.g. during re-fuelling of machinery), or from leaking containers. In order to retain such materials within the boundaries of the Site, the following measures will be applied throughout the construction works:

- Any fuel, oil or chemical containers will be kept at least 50m away from the river. These pollutants are hazardous and must be stored in a designated bunded area that has sufficient capacity to retain any spills
- All machinery should be protected from vandalism and unauthorised interference, and will be turned off and securely locked overnight
- If any on-site re-fuelling is required, it will take place at least 50m away from the river. Immobile plant will be refuelled over drip-trays
- While in operation, diesel pumps, generators or other similar equipment will be placed on drip trays to catch any leaks
- Spill kits will be kept on-site. If any spills occur, work will cease immediately and measures will be taken to intercept hydrocarbons or chemicals before they can reach the river.

6 Conclusion

The proposed mitigation measures have been selected to prevent pollutants reaching the Derry River in sufficient quantities to cause indirect impacts on habitats or species in the *Slaney River Valley* SAC. The site foreman will be responsible and liable for the implementation and monitoring of the proposed mitigation measures, assisted by an Ecological Clerk of Works.

These measures will reduce the likelihood and magnitude of pollution events to negligible levels, thus preventing a significant negative impact on the qualifying interests (aquatic fauna and habitats) of the *Slaney River Valley* SAC, or any other Natura 2000 sites. As a result, we conclude that the proposed development will not cause significant negative impacts on the integrity of any Natura 2000 sites.

References

Chartered Institute of Ecology and Environmental Management, 2018. *Guidelines for Ecological Impact Assessment in the U.K and Ireland: Terrestrial, Freshwater and Coastal* (2nd Edition). C.I.E.E.M., Hampshire, England.

Department of the Environment, Heritage and Local Government, 2009. *Appropriate Assessment of Plans and Projects in Ireland*. National Parks and Wildlife Service, DAHG, Dublin, Ireland.

European Commission. 2002. *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. Office for Official Publications of the European Communities, Luxembourg.

Office of the Planning Regulator 2021. *Practice Note PN01: Appropriate Assessment Screening for Development Management*. Available online at opr.ie