
Screening for Appropriate Assessment
River Poddle Flood Alleviation Scheme
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NM Ecology Ltd - Consultant Ecologists
276 Harold's Grange Road, Dublin 16
Website: www.nmecology.com
Email: info@nmecology.com
Tel: 087-6839771

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 (hereafter referred to as ‘European sites’), which includes Special Protection Areas (SPAs) to protect important areas for birds, and Special Areas of Conservation (SACs) to protect a range of habitats and species. 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 jointly transposed into Irish law by the *European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477/2011, as amended)*.

Regulation 42 (1) states that: “*Screening for Appropriate Assessment of a plan or project for which an application for consent is received [...] shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on [a European site].*” To ensure compliance with this regulation, planning authorities must screen all planning applications for potential impacts on European sites. Supporting information may be requested from the applicant to assist with this process.

This document provides background information to assist the local authority with a *Screening for Appropriate Assessment* exercise for the proposed development. It includes an outline of the proposed works, details of the environmental setting of the site, an appraisal of future development proposals in the area (potential for ‘in-combination effects’), a map and list of European sites within the potential zone of impact, and an assessment of potential impacts.

1.2 Previous Appropriate Assessments of related developments

A Natura Impact Statement was prepared by RPS Group Ireland in 2016 for the ‘*Camac and Poddle Prioritised Works*’ project, which informed the design of the River Poddle Flood Alleviation Scheme. The NIS for that project proceeded to Stage 2: Appropriate Assessment, but following a review of potential impacts, it was concluded that there was no risk of likely significant impacts. The following conclusion is provided at the end of the RPS report:

“The likely impacts to the integrity of the Natura 2000 network that could arise from implementation of any of the options identified in relation to the Poddle and Camac catchments have been examined. The implementation of the options will not have any significant adverse effects upon the integrity of any Natura 2000 site. There are no direct impacts on Natura 2000 sites associated with the options.”

Any impacts associated with the options would be mainly limited to construction works as well as one-off or intermittent maintenance activities, such as water quality impacts e.g. sedimentation. The distance of the works from downstream Natura 2000 sites is significant and likely to ensure that if there are emissions arising during the works phase or maintenance activities, they will not reach the Natura 2000 sites and will not impact on the sites' qualifying interests. Any changes to hydrological and morphological regimes will be limited to the catchment and will not affect Natura 2000 sites in downstream marine water bodies."

1.3 Statement of authority

All surveying and reporting was carried out by Nick Marchant MCIEEM MSc, a qualified and experienced consultant. He has twelve years of professional experience, including nine years as an ecological consultant, one year as a local authority biodiversity officer, and two years managing an NGO in Indonesia. He provides Appropriate Assessments and other ecological services for developments throughout Ireland and Northern Ireland, particularly for renewable energy developments, infrastructural projects (roads, water mains, etc), and residential developments.

He holds 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.

1.4 Methods

These following guidelines were considered as part of this assessment:

- *Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities* (Department of the Environment, Heritage and Local Government, 2009)
- *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4)*, (European Commission, 2002).
- *Guidelines for Ecological Impact Assessment in the UK and Ireland* (Chartered Institute of Ecology and Environmental Management, Version 1.1 – Updated September 2019)

A desk-based study was carried out using data from the following sources:

- Plans and specifications for the proposed development
 - Qualifying interests / conservation objectives of European sites from www.npws.ie
 - Bedrock, soil, subsoil, surface water and ground water maps from the Geological Survey of Ireland webmapping service (www.gsi.ie/mapping.htm), the National Biodiversity Data Centre (<http://maps.biodiversityireland.ie/>), and the Environmental Protection Agency web viewer (<http://gis.epa.ie/Envision/>)
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- The South Dublin County Development Plan 2016 - 2022 and Dublin City Development Plan 2016 - 2022, and details of permitted or proposed developments from the local authorities' online planning records
- A Winter Habitat Study of Tymon and Bancroft Parks (Roughan & O'Donovan Consulting Engineers, 2018)
- Appropriate Assessments of the Eastern CFRAM Study (RPS Group Ireland, 2016) and of the Camac and Poddle Prioritised Works (RPS Group Ireland, 2014)

All desktop and field data was collected between September 2018 and September 2019. The results of field surveys are presented in full in **EIAR, Volume 2, Part II, Chapter 7**, but are not reproduced here unless they are relevant to the Appropriate Assessment process.

2 Description of the Project

2.1 Environmental setting

The River Poddle is a highly-modified urban watercourse that arises in Cookstown / Tallaght and flows in a north-easterly direction through Dublin city to meet the River Liffey at Wellington Quay. The proposed working area covers a section of the watercourse between Tymon North in Tallaght and Saint Teresa's Gardens in Merchant's Quay, Dublin.

The underlying bedrock is dark limestone and shale of the Calp formation, which is a locally-important aquifer (moderately productive in local zones). Subsoils are limestone till and localised pockets of limestone gravels, while soils are gravels and alluvium along the original course, with made ground and brown earths along re-aligned sections.

Description of the River Poddle

The river was part of the original settlement of Dublin city in the 9th century, forming the Dubh Linn (dark lake) after which it is named. However, as the city expanded the river was extensively modified, including culverting under roads and residential areas, and realignment along property boundaries. The most significant change was the enclosure of the lower section of the river under Dublin city centre, comprising approx. 2 – 2.5 km of culvert between Harold's Cross and Wellington Quay. Five other sections of the river have been culverted under residential developments, each of between 100 and 500 m length. The most extensive re-alignments are at the source of the river in Tallaght, where it has been aligned along boundaries in an industrial estate, and in Tymon Park, where it has been widened to form a series of ponds and lakes.

The extensive modification of the river has significantly reduced its ecological value. It is understood that the river has no populations of salmonids or any other species of fisheries interest (*pers. comm.* Inland Fisheries Ireland Environmental Officer), and that the culvert in

the lower section of the river is impassable to migratory species (*e.g.* Atlantic salmon or sea trout).

Water Quality

The River Poddle is not monitored under the Water Framework Directive Status Assessments. However, considering the extensive hydro-morphological changes to the river, it is likely that it would have a classification of 'poor' or 'bad' status under the WFD monitoring scheme.

Some water quality data obtained from South Dublin County Council is presented in the Planning Report for the Integrated Constructed Wetland (Vesi Environmental Ltd, 2019) that is contained in Volume 4 of the EIAR. The levels of both nitrates and phosphorous exceeded the limits for "Good" water status as defined in the Surface Water Regulation (S.I. 272/2009, as amended). Some water quality monitoring was carried out by the EPA at the Priory Road in Kimmage on one occasion in 2007, and a Q-value of 3 was recorded, which is indicative of poor water quality. In summary, water quality in the River Poddle is currently considered to be relatively poor, due to elevated levels of nutrients, and to extensive modification of the watercourse.

Further downstream, the transitional / estuarine waters of the River Liffey are of moderate status, and coastal waters in Dublin Bay are of good status (Water Framework Directive Status Assessments 2010-2015).

2.2 Description of the proposed development

The proposed development consists of flood alleviation works along and adjacent to the River Poddle on sites totalling 12 ha along with associated ancillary and temporary works. The proposed works extend from the upper reaches of the River Poddle at Tymon North in Tallaght to Saint Teresa's Gardens in Merchant's Quay, Dublin. A detailed description of the proposed works is contained in **EIAR, Volume 2, Part I, Chapter 5** and illustrated in **EIAR, Volume 3**.

2.3 Other nearby developments (potential in-combination effects)

The proposed working area is in an urban / suburban setting in the south-west of Dublin City. It passes through several zones of the South Dublin County Development Plan 2016 – 2022 and the Dublin City Development Plan 2016 - 2022, including areas zoned for industrial, residential and recreational uses. The catchment is fully urbanised, and given the demand for housing in Dublin, the main pressures are from intensification of urban development through infill or redevelopment of sites.

Live and recently approved planning applications in the vicinity of the River Poddle were reviewed on the online planning registers of South Dublin County Council (SDCC) and Dublin City Council (DCC). The following applications were considered to be relevant to the proposed development:

- A Part VIII Application was made in 2016 for the construction of a new library beside Castletymon Road (planning reference SD168/0003) adjacent to the River Poddle. An Appropriate Assessment screening report was included in the documentation, and it was concluded that there was no risk of likely significant impacts on any European sites. Construction of this project commenced in January 2019 and is expected to be completed in January 2020, prior to the commencement of the proposed development;
- Permission was granted in 2019 for a single storey temporary prefab classroom adjacent to the southeast boundary of the site and associated site works (SD19A/0289). These works will be relatively small in scale, and are likely to be completed prior to the commencement of the proposed development;
- A large residential development has been under construction for several years in the grounds of Mount Argus church on Kimmage Road Lower, and may continue in 2020. It is in close proximity to the River Poddle;
- There is a current planning application for demolition of an office building and development of a 12 no. units apartment building at a site located at Unit 1, KCR Estate in Ravensdale Park (3193/19);
- There is a site on the Vacant Sites Register of Dublin City Council in close proximity to the River Poddle located at the side of Riverpark House, in Poddle Park, Kimmage (VS-0751). Being on the Vacant Sites Register, this site is likely to be brought forward for residential development. There are no sites in proximity to the River Poddle on the Vacant Site Register of South Dublin County Council; and
- An application for 7 no. houses was submitted at the Terenure Badminton Club on Whitehall Rd. in 2018 (planning reference SD18A/0360) but was 'deemed withdrawn' by SDCC following the expiration of a request for further information.

These developments are outside the proposed working areas of the River Poddle Flood Alleviation Scheme, but if multiple sites were constructed concurrently, it is possible that they could lead to cumulative impacts on water quality in the River Poddle, and thus on downstream European sites. All other planning applications in the surrounding area were for small-scale works such as residential extensions. There is no risk that any of these minor developments would cause in-combination impacts with the proposed development.

3 Description of European sites

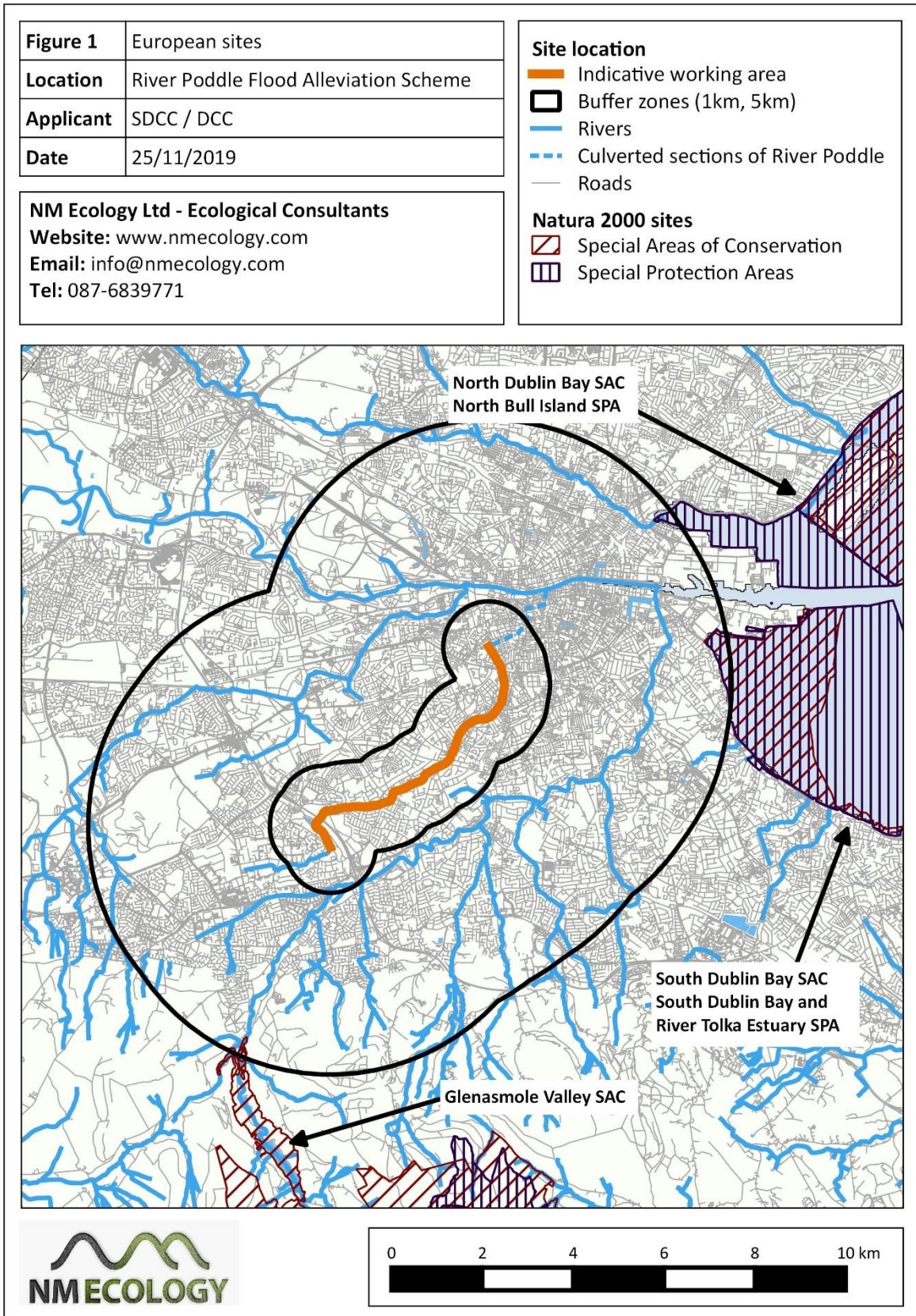
3.1 European sites within the zone of influence

The proposed development site is not located within or adjacent to any European sites. Potential indirect impacts on distant sites were considered within a zone of influence of 5km, and downstream along associated watercourses. The relative locations of European sites are shown in Figure 1, and details of each site are provided in Table 1.

Table 1: European sites of relevance to the proposed development site

Site Name	Distance ¹	Qualifying Interests
Glenasmole Valley SAC (1209)	4.5 km south	Annex I habitats: semi-natural dry grasslands and scrubland facies on calcareous substrates, <i>Molinia</i> meadows, petrifying springs with tufa formation (Cratoneurion) Annex II species: none
South Dublin Bay and River Tolka Estuary SPA (site code 4024)	10 km *	Habitats: coastal wetlands Special conservation interests: light-bellied brent goose, oystercatcher, ringed plover, grey plover, knot, sanderling, dunlin, bar-tailed godwit, redshank, black-headed gull, arctic tern, roseate tern, and common tern
South Dublin Bay SAC (210)	10 km *	Annex I habitats: inter-tidal mudflats / sandflats (including patches of <i>Salicornia</i> and other annuals), annual vegetation of drift lines, embryonic shifting dunes Annex II species: none
North Dublin Bay SAC (206)	10 km *	Annex I habitats: inter-tidal mudflats / sandflats (including patches of <i>Salicornia</i> and other annuals), <i>Spartina</i> swards, salt marshes, annual vegetation of drift lines, embryonic shifting dunes, white dunes, grey dunes, dune slacks Annex II species: petalwort <i>Petalophyllum ralfsii</i>
North Bull Island SPA (4006)	10 km *	Habitats: coastal wetlands Special conservation interests: wintering populations of light-bellied brent goose, shelduck, teal, pintail, shoveler, oystercatcher, golden plover, knot, sanderling, dunlin, black-tailed godwit, bar-tailed godwit, curlew, redshank, turnstone, black-headed gull

¹ Where there are hydrological connections to European sites, distances are measured along the length of connecting waterways, rather than to the nearest point. This is indicated with an asterisk.



3.2 Identification of potential impact pathways

Indirect impacts on designated sites can occur if there is a viable pathway between the source (the proposed development site) and the receptor (the habitats and species for which a site has been designated). The most common pathway for impacts is surface water, for example if a pollutant is washed into a river and carried downstream into a designated site in coastal areas. Other potential pathways are groundwater, air (*e.g.* sound waves or airborne dust), 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 magnitude of impacts (*e.g.* the concentration of pollutants) usually decreases as the distance between source and receptor increases. An appraisal of potential pathways between the proposed development and the designated sites listed in Table 1 is provided below.

The Glenasmole Valley SAC is located in a separate river catchment (the River Dodder), so surface water is not a potential pathway for indirect impacts. It is located several kilometres from the proposed development, and is at a higher elevation, so groundwater would not provide a viable pathway. The distances involved are also too great for impacts via air or land pathways. Therefore, all potential pathways to this SAC can be screened out.

There is a distant hydrological connection to four European sites in Dublin Bay via the River Poddle and River Liffey. The connection is considered to be rather tenuous, because the nearest European site – the *South Dublin Bay and River Tolka Estuary* SPA – is more than 10 km downstream of the proposed development site. Nonetheless, it does provide a potential hydrological pathway for impacts, and will be discussed further in Section 4 of this report. All other potential pathways can be screened out, because the distances involved are too great for impacts via groundwater, air or land pathways.

In summary, potential *source-pathway-receptor* links were identified between the proposed development and four European sites:

- South Dublin Bay and River Tolka Estuary SPA
- South Dublin Bay SAC
- North Bull Island SPA
- North Dublin Bay SAC

4 Assessment of Potential Impacts

4.1 Direct impacts

The proposed development site is not located within or adjacent to any European sites, so there is no risk of habitat loss, fragmentation or any other direct impacts.

4.2 Indirect impacts

Potential changes in water quality (construction phase)

The proposed development will involve: the construction of earth embankments and concrete walls, the creation of a flood storage pond with a flow control structure, the creation of an integrated constructed wetland, the re-alignment of a small section of river, and a range of associated works. These activities have potential to generate pollutants, including:

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

If any of these pollutants reached the River Poddle, they could be carried downstream into the River Liffey, and subsequently to the SACs and SPAs in Dublin Bay. A hypothetical impact assessment of potential pollution incidents is difficult, as any potential impacts would vary depending on: the type of pollutant, the quantity of material entering the river, the rate at which it would occur, the time of year, and/or any potential 'in-combination' effects from other proposed developments along the River Poddle.

It is important to note that there is a considerable distance between the proposed development site and the nearest downstream European site (the *South Dublin Bay and River Tolka Estuary* SPA). When measured along intervening watercourse, there is approx. 10 km of intervening watercourse at the nearest point of the proposed development (at Teresa's Gardens in Merchant Quay) and approx. 15 km at the farthest point (Tymon North).

Considering the dilution effect of the intervening rivers and coastal waters, it is highly unlikely that any pollutants generated by the proposed development could reach the European sites in high-enough concentrations to affect the qualifying interests of any site. However, adopting a precautionary approach (which is implicit in the EU Habitats Directive and confirmed by European Court judgments), it is possible in a worst-case scenario that a large-scale pollution event (*e.g.* an accidental spill of hydrocarbons) could cause adverse effects on the conservation status of the qualifying interests of these European sites.

Potential changes in water quality (operational phase)

When construction is complete, no further pollutants will be generated. The new structures are designed to be resistant to erosion, so building materials and sediment will not be carried into the river, even during flood events. Therefore, the operation of the development would not cause any significant adverse impacts on water quality in any European sites.

4.3 Potential in-combination effects

Two moderate to large-scale developments were identified along the River Poddle that could potentially cause in-combination impacts: the ongoing construction of a residential development at Mount Argus, and a live application for a residential development at Unit 1, KCR Estate in Ravensdale Park. Neither development is within or adjacent to the proposed working areas for the River Poddle Flood Alleviation Scheme. The development at Mount Argus involved some re-alignment and culverting of the River Poddle, but all in-stream works are now complete. The development at KCR Estate is located more than 50 m from the River Poddle, and (if approved) would not have any effect on the watercourse.

Two of the other developments listed in Section 2.3 - the library at Castletymon and a prefabricated classroom at Scoil Aonghusa Senior National School - will be complete by the time the proposed development commences. No other live or recently-approved planning applications were identified in the vicinity of the proposed development.

Therefore, as none of these developments are within or adjacent to the proposed working areas, and none will involve further modification of the watercourse, there is not considered to be a risk of in-combination effects with these other plans or projects.

5 Screening Statement

Article 42 (7) of the *European Communities (Birds and Natural Habitats) Regulations 2011* states that: *“The public authority shall determine that an Appropriate Assessment of a plan or project is not required [...] if it can be excluded on the basis of objective scientific information following screening under this Regulation, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site.”*

To assist with this process, we have provided supporting information including: a description of the proposed development; an outline of its environmental setting; details of European sites within the potential zone of impact; and an assessment of potential impacts. We have identified four European sites that have a distant hydrological connection with the proposed development site: South Dublin Bay and River Tolka Estuary SPA, South Dublin Bay SAC, North Bull Island SPA and North Dublin Bay SAC. In a worst-case scenario, it is possible that a large-scale pollution event (*e.g.* an accidental spill of hydrocarbons) could cause adverse effects on the conservation status of the qualifying interests of these European sites.

Therefore, the risk of significant impacts on European sites cannot be ruled out at Stage 1 of the Appropriate Assessment process, and it should proceed to Stage 2. A Natura Impact Statement will be submitted as part of the planning process, which will include mitigation measures for the avoidance or management of potential pollution incidents.

References

Chartered Institute of Ecology and Environmental Management, 2019. *Guidelines for Ecological Impact Assessment in the U.K and Ireland: Terrestrial, Freshwater, Coastal and Marine*. 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.
