

Blessington eGreenway

Appropriate Assessment (AA) Screening Report and
Natura Impact Statement (NIS)

Wicklow County Council

Project number: PR-447455



Blessington eGreenway: Appropriate Assessment Screening Report

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For: AECOM



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1 Introduction

Flynn Furney have been commissioned by AECOM to carry out a Stage 1 Appropriate Assessment (AA) Screening Report for the proposed construction of a Greenway at Blessington, Co. Wicklow (hereafter referred to as the 'Proposed Development'). This screening exercise aims to determine whether the proposed construction and operation of this route has the potential to have significant or indeterminate impacts on the conservation objectives and overall integrity of any Natura 2000 sites. This assessment is based upon desk study and fieldwork carried out by suitably qualified ecologists.

Designated sites within 15 km of the Proposed Development have been reviewed for potential impacts or pathways for impacts. This is followed by an ecological impact assessment of the project on the ecology of the area surrounding the route, including possible impacts on designated sites.

Sections 4 and 5 of the report comprise the AA Screening that specifically focuses on the potential for impacts on Natura 2000 sites and their conservation objectives.

This report has been completed to provide information regarding the ecological status of the proposed site of works. This report has been completed to provide the information necessary to allow the competent authority to conduct an Article 6[3] AA Screening of the Proposed Development. The legislation and methodology for which is detailed in the following sections below.

1.1 Proposed Works

The study area consists of a linear path around Poulaphouca Reservoir. The greater majority of the proposed eGreenway route will be located outside the Poulaphouca Reservoir Special Protection Area (SPA). However, a portion of the proposed development includes the widening and resurfacing of the existing Greenway and sections of lakeshore protection within the SPA. The proposed route includes a number of spurs and side trails linking the eGreenway to other trail networks, Blessington Town, Tulfarris, Valleymount, Ballyknockan and existing roads. Works

involved with this project include track clearance, tree removal, track widening, removal and stock piling of material and the laying of a new track surface.

A number of new small bridge/culvert crossings are proposed as part of this project. Work will include bank clearance, construction of bridge foundations and the installation of new bridge /culvert infrastructure.

Boardwalk sections, bank stabilisation works including the installation of rock armour, signage and other Greenway infrastructure will also be required.

Details of all works involved with this Proposed Development can be seen in Section 3.2. The proposed route is shown in Appendix C.

1.2 Site Description

The proposed walking route generally follows the shoreline of a portion of the Poulaphouca Reservoir commonly known as Blessington Lakes (See Figure 1 and Appendix C). The reservoir is located in the western foothills of the Wicklow Mountains and was created in 1944 by damming of the River Liffey for the purpose of generating electricity from hydropower. The reservoir covers an area of approximately 20 km². The reservoir receives water from two main sources, the River Liffey at the northern end, and the Kings River at the southern end. The exit is into the River Liffey gorge at the western end. Underlying the reservoir are sands and gravels deposited during the last glaciation.

The surrounding landscape is dominated by a mixture of improved and wet grassland interspersed by patches of woodland of both native and conifer plantation along with residential developments. The town of Blessington lies along the northern shore of the reservoir.

1.3 Statement of Authority

This Screening Assessment was written by Billy Flynn (BSc, MSc (Agr.), H.Dip, Dip Ind., MIBiol, MCIEEM, MIEEnvSc. CEnv.) an Ecologist and Chartered Environmental Scientist with over 20 years of experience in environmental science and engineering. He has worked on the survey, ecological design and construction supervision of many infrastructure projects including motorways, national roads and light rail. He has worked on numerous greenway projects in Cork, Longford, Mayo, Monaghan and Westmeath.

2 Legislative context

The methodology for this screening statement is clearly set out in a document prepared for the Environment DG of the European Commission entitled ‘Assessment of plans and projects significantly affecting Natura2000 sites: Methodological guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC’ (European Commission, 2019). This report and any contributory fieldwork were carried out in accordance with guidelines given by the Department of Environment, Heritage and Local Government (2009, amended 2010).

The process is outlined in Articles 6(3) and 6(4) of the Habitats Directive and is commonly referred to as ‘*Appropriate Assessments*’ (which in fact refers to Stage 2 in the sequence under the Habitats Directive Article 6 assessment). Article 6 of the Habitats Directive sets out provisions which govern the conservation and management of Natura 2000 sites. Article 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect Natura 2000 sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment.

“Any plan or project not directly connected with or necessary to the management of the (Natura2000) site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site’s conservation objectives. In light of the conclusions of the assessment of the implication 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.”

Article 6(4) of the same directive states:

“If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of the Natura

2000 site is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.”

It is the responsibility of the proponent of the plan or project to provide the relevant information (ecological surveys, research, analysis etc.) for submission to the ‘competent national authority’. Having satisfied itself that the information is complete and objective, the competent authority will use this information to screen the project, i.e. to determine if an AA is required and to carry out the AA, if one is deemed necessary. The competent authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned.

The AA process has four stages. Each stage determines whether a further stage in the process is required. If, for example, the conclusions at the end of Stage One are that there will be no significant impacts on the Natura 2000 site, there is no requirement to proceed further. The four stages are:

1. Screening to determine if an appropriate assessment is required
2. Appropriate assessment
3. Consideration of alternative solutions
4. Imperative reasons of overriding public interest/derogation

2.1 Stage 1. Screening for Appropriate Assessment

This is to determine if an AA is required. Screening is the technique applied to determine whether a particular plan would be likely to have significant effects on a Natura 2000 site and would thus warrant an AA. The key indicator that will determine if an AA is required is the determination of whether the development is likely to have “*significant environmental effects*” on a Natura 2000 site or not.

2.2 Stage 2. Appropriate Assessment

This step is required if the screening report indicates that the development is likely to have a significant impact on a Natura 2000 site. Stage 2 assesses the impact of a plan or project on the integrity of the Natura 2000 site, either alone or in combination with other plans or projects, with respect to the site's structure, function and conservation objectives. Where there are adverse impacts, an assessment of the potential mitigation of these impacts is also required.

2.3 Stage 3. Assessment of Alternative Solutions

If it is concluded that, subsequent to the implementation of measures, a plan or project will have an adverse impact on the integrity of a Natura 2000 site, it must be objectively concluded that no alternative solutions exist before the plan or project can proceed.

2.4 Stage 4. Imperative Reasons of Overriding Public Interest/Derogation

Where no alternative solutions exist and where adverse impacts remain but imperative reasons of overriding public interest (IROPI) exist for the implementation of a plan or project, an assessment of compensatory measures that will effectively offset the damage to the Natura 2000 site will be necessary.

Flynn Furney Environmental Consultants Ltd have been appointed to undertake the first stage of the above process: a screening exercise to determine whether the proposed development has the potential to have any significant or indeterminate impacts on the conservation objectives and overall integrity of any Natura 2000 sites. This assessment is based upon desk study and fieldwork carried out by suitably qualified ecologists. This document includes a detailed description of the development in Section 3.2. The sites within 15 km of the Proposed Development are then reviewed for potential impacts or pathways for impacts. Sections 4 and 5 of the report comprise the AA Screening that specifically focus on the potential for impacts on Natura 2000 sites and their conservation objectives.

2.5 The Source-Pathway-Receptor Approach

Consideration has been given to the **source-pathway-receptor** approach in this screening assessment. This is a standard tool in environmental assessment. The source-pathway-receptor concept in ecological impact assessment relates to the idea that for the risk of an impact to occur, a 'source' is needed, e.g. a construction site; then a 'receptor', in this case, sites designated for nature conservation; and finally, a 'pathway' between the source and the receptor, this could be a watercourse that links the development site to the designated site. Even though there might be a risk of an impact that does not mean that it might necessarily occur, and if it does occur, it may not be significant. Identification of a risk means that there is a possibility of ecological or environmental damage occurring, with the level and significance of the impact depending upon the nature and exposure to the risk and the characteristics of the receptor (in this instance, this is any Natura 2000 sites).

3 Description of the Project and Local Site Characteristics

3.1 Site location

The proposed Greenway generally follows the shoreline of a portion of Poulaphouca Reservoir for a total length of around 33 km (proposed new greenway). This includes linkages at several locations to allow the proposed greenway to join up with the existing Blessington Greenway, towns, villages and other local amenities. The greater majority of the proposed route is outside the Poulaphouca Reservoir SPA. A portion of the existing Blessington Greenway is within the SPA.

The trail passes through urban areas, woodlands, reservoir shoreline, amenity areas and laneways used by the Electricity Supply Board (ESB) and some leisure users of the reservoir. The ground conditions vary significantly within the area under survey. Surfaces include sealed roads, forest tracks as well as some unsealed informal trails. The route extends from Blessington in the north along existing roadways and linking in with the existing Blessington trail at The Avon. It follows the existing route to Russborough. The route crosses the existing Baltyboys Bridge and leaves the road here at the adjacent car park. This section of the route then follows the shoreline of the reservoir south to Valleymount Bridge. The route crosses the existing Valleymount Bridge and follows existing roads and the shoreline as far as the village of Ballyknockan. This route forms a loop which continues along the shoreline, the existing road and the laneways. The Greenway will then be routed along the shoreline up to the village of Lacken where there will be a link to the existing road along an existing laneway via a car park on ESB lands. The route then continues along the shoreline to the car park at Knockieran. An on-road link across Blessington Bridge will complete the link to Blessington via Kilbride Road. Additional to the above there is a loop of the Greenway at Tulfarris which will travel along existing road and laneway with a short section within the grounds of the resort here and adjacent lands.

Adjacent to the proposed route of the Greenway are the villages of Lacken, Valleymount and Ballyknockan.

The works involved with this project include clearance, track widening, removal and stock piling of material and the laying of a new track surface. A number of new bridges and culverts are also required as part of this Proposed Development. Work will include site clearance, tree-felling, construction of a boardwalk or other path, construction and the installation of new bridge or culvert infrastructure. Rock armour will be placed to arrest and prevent shoreline erosion and to allow a base for the construction of the eGreenway.

3.2 Description of the Proposed Development

The scheme is proposed to provide a predominately off-road shared use path for pedestrians and cyclists. The scheme will cover approximately 33km and involve the provision and upgrading of a greenway mostly through forest and woodlands adjacent to the shoreline of the Blessington Lake/Poulaphouca Reservoir SPA.

Traffic lights are proposed at three existing bridge crossings (Knockiernan Bridge, Baltyboys Bridge and Vallemount Bridge) to manage a new shuttle system for vehicular traffic. This will create space within the existing bridge cross section for the provision of a shared use path to accommodate users of the eGreenway.

The greenway surface construction is proposed to consist of a machine laid, bound pavement. A 20mm surface course is proposed to be laid on a 40 mm to 55 mm base course on 150mm Clause 804 subbase on a geotextile layer as required. Construction works will require shallow excavation (maximum depth of 200 mm - 300 mm), tree removal and replacement, placement of culverts, single span bridges over larger streams, fencing and minor landscaping.

The project involves the following (as shown in Figure 1):

1. Blessington – The Blessington section of the Proposed Development extends from the Wicklow County Council boundary at Russellstown to Blessington. The section comprises 9.2km in length. This section is proposed to consist of new greenway and the upgrade of existing sections along the route with a connection to Russborough House via an existing underpass of the N81. It is proposed to extend the capacity of the Russellstown car park with an additional 50 car spaces. Works to both the Russellstown Car Park and the Blessington eGreenway Hub and Car Park will provide electric vehicle charging points, bicycle parking,

bins, seating areas, drinking water stations and CCTV. There is 1 no. new watercourse crossing included in this section while several existing crossings are to be retained.

2. Baltyboys – The Baltyboys section of the Proposed Development extends from the Blessington section to the Vallemount section. This section comprises 5.3km in length. Works to the Vallemount West Car Park and Baltyboys car park will provide electric vehicle charging points, bike parking, bins, seating, drinking water stations and CCTV. Precast box culverts and gabion retaining walls will be required within this section to construct the Proposed Development. There are approximately 5 no. small watercourses/ditches crossings along this section.
3. Tulfarris – The Tulfarris section of the Proposed Development connects the Baltyboys section to Tulfarris via the R758. This section comprises 3.7km in length. This section is proposed to consist of new greenway and share the existing road to connect with the Tulfarris Hotel & Golf Resort. There are approximately 2 no. new small watercourse/ditch crossings along its length.
4. Vallemount – The Vallemount section of the Proposed Development extends from Baltyboys to Ballyknockan. This section comprises 5.2km in length commencing at the Vallemount carpark, which is located adjacent to Vallemount GAA Club. Works to the two carparks in Vallemount East and West will provide electric vehicle charging points, bicycle parking, bins, seating areas, drinking water stations, and CCTV. Precast box culverts and gabion retaining walls will be required within this section. There are approximately 3 no. small watercourses/ditches crossed by the Proposed Development in this section as well as a crossing of the Annacarney Stream.
5. Ballyknockan – The Ballyknockan section of the Proposed Development extends from Ballyknockan to Lacken. This section comprises 4.3km in length. Gabion retaining walls will be required within this section. Due to the high ground to the east there are a few small tributaries on this section with approximately 13 no. small watercourses/ditches requiring to be accommodated by the Proposed Development.
6. Lacken – The Lacken section of the Proposed Development extends from Lacken to Knockiernan Bridge. This section comprises 5.6km in length. The section involves new greenway construction. Precast box culverts, concrete underpasses, and gabion retaining walls will be required within this section. It is proposed to extend the capacity of the

Knockiernan car park with an additional 50 car spaces. Works to both Knockiernan and Lacken car park will provide electric vehicle charging points, bicycle parking, bins, seating areas, drinking water stations, and CCTV. The eastern side of the lake has many small tributaries which will require the Proposed Development to accommodate approximately 7 no. small watercourses/ditches

Table 3-1 Description of the Proposed Development

Development Detail	Description
Size, scale, area, land take	<p>The length of the Proposed Development can be split as follows:</p> <ul style="list-style-type: none"> • Full length of greenway: 33 km • Length of new greenway: 25 km. • Existing greenway to be upgraded: 4 km (additional parts of the existing greenway are being retained); and • Urban cycle scheme/traffic calming: 4 km. <p>The Proposed Development site covers an area of circa 16.64 ha, with an additional area of 3.34 ha for earthworks during construction phase. The new car parking areas involve an area of 1,690 m² while the refurbishment of existing car parking areas involves an area of 7,436 m².</p> <p>The Proposed Development also includes a widened shared use path incorporated onto the existing bridge locations along the Proposed Development route. This will occur within the existing footprint of the bridge. Each bridge design has a Toucan crossing setback approximately 30 m to link the Proposed Development route into the widened footpath across the bridges. The three bridge locations are:</p> <ul style="list-style-type: none"> • Knockieran Bridge; • Baltyboys Bridge; and • Valleymount Bridge. <p>The proposed works will generally consist of the clearance of a track corridor through areas of grassland, woodland, plantation forestry</p>

Development Detail	Description
	<p>and scrub. The construction of a number of bridges and culverts is required as well as the installation of fencing, blinds, and gates.</p> <p>On approach to and over the existing bridges the road surface will be milled, and new traffic islands, traffic lights and kerbs will be provided. The area will be resurfaced, and the parapet will be extended to the height required for cyclists.</p> <p>Some of the route will require elevated sections of boardwalk.</p> <p>The project will also include the installation of signage, distance markers and benches.</p> <p>It is assumed that some cut may be required to facilitate level tie ins with existing paths and car parks along the Proposed Development. In addition, there may be some cut required to maintain recommended sight distances and geometric alignment. It is anticipated that circa 36,191 m³ of ground will be excavated. All excavation works would be undertaken where possible with minimum disruption to the site and avoided completely where there is a risk of damage to existing tree roots. Excavated material would be used for the reinstatement of the edges of the new trail to reduce material importation as well as minimise the risk of the introduction of invasive species. It is not envisaged that there would be a need to remove large quantities of excavated material from within the Proposed Development site boundary. Total fill including rock armour is anticipated to be approximately 55,652 m³ for the Proposed Development.</p>
<p>Details of physical changes that will take place during the various stages of</p>	<p>Removal of organic material and soil</p> <p>New bound tar macadam surface</p> <p>Installation of rock armour</p> <p>Bridge / culvert installation</p> <p>Tree removal</p>

Development Detail	Description
implementing the proposal*	<p>Drainage works</p> <p>Signage</p> <p>Boundary fencing / gates / crossing point works</p> <p>Bank works and board walk construction.</p>
Description of resource requirements for the construction/operation of the proposal (construction material, human presence and wastes produced).	<p>Construction stage resource requirements will include crushed rock (Clause 804) and macadam. Bridge construction will involve in-situ concrete pouring.</p> <p>Clearance works will require small teams using forest harvesters, stump grinders and the like, as outlined in the Arboricultural survey and Assessment Report.</p> <p>Culvert, underpass and bridge construction will require larger teams working for a number of weeks.</p> <p>Overburden material may have to be stock piled and removed if suitable onsite reuse like landscaping cannot be found.</p> <p>At an operational stage the Greenway is likely to be busier during daylight hours but is not intended for night time use.</p>
Other	<p>This proposal will result in increased noise and human presence during both the construction and operational phases but as much of this trail is already in use for hiking, the operational impacts are likely to be minimal.</p>

4 Ecological Assessment

4.1 Desk Study

A desktop study was carried out as part of this screening process. This included a review of available literature on the site and its immediate environs. Sources of information included the National Parks and Wildlife Service (NPWS) databases on protected sites and species.

4.2 Designated Sites

Sites designated for the conservation of nature in Ireland include:

- Special Areas of Conservation (SACs);
- Special Protection Areas (SPAs);
- Natural Heritage Areas (NHAs); and
- proposed Natural Heritage Areas (pNHAs).

SPAs and SACs form the *Natura 2000* network of sites. It is these sites that are of relevance to the screening process for this AA.

SPAs and SACs are prime wildlife conservation areas in the country, considered to be important on a European as well as Irish level. SPAs and SACs are designated under EU Habitats Directive, transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended.

NHA is the basic designation for wildlife in Ireland. These are areas considered important for their habitats or species of plants and animals whose habitat needs protection. They first entered into European Law under the 1976 Wildlife Act, then were transposed into Irish law with the 1997 Natural Habitats Regulations (S.I. No. 94 of 1997), finally gaining full statutory backing in Ireland with the passing of the Wildlife (Amendment) Act 2000.

pNHA sites were published on a non-statutory basis in 1995 but have not since been statutorily proposed or designated. These sites are designated as being of significance for species and habitats. While not afforded the same protection as sites protected under the Habitats Directive, they are subject to protection through the following mechanisms:

- Agri-environmental farm planning schemes such as GLAS (Formally the Rural Environment Protection Scheme);
- Forest Service requirement for NPWS approval before they will pay afforestation grants on pNHA lands; and
- Recognition of the ecological value of pNHAs by Planning and Licencing Authorities.

The DoEHLG (2010) guidance states that European sites with the potential to be affected by a plan or project should be identified, taking into consideration the potential for direct, indirect and/or cumulative (in-combination) effects. It also states that the specific approach in each case is likely to differ depending on the scale and likely effects of the plan or project. However, it advises that the following sites should generally be included:

- all European sites within or immediately adjacent to the plan or project area;
- all European sites within the likely 'zone of impact' of the plan or project; and,
- adopting the precautionary principle, all European sites for which there is doubt as to whether or not such sites might be significantly affected.

The likely zone of impact (also referred to as the likely 'zone of influence') of a plan or project is the geographic extent over which significant ecological effects are likely to occur. The DoEHLG guidance document prescribes a 15 km distance threshold for European sites from the boundary of a plan area. In the case of projects, the guidance acknowledges that the zone of influence must be devised on a case by case basis with reference to the following criteria: the nature, size / scale and location of the project, sensitivity of ecological features under consideration and cumulative effects.

All designated sites within 15 km of the proposed works were considered during the desktop study stage of this screening assessment in order to assess the potential for significant effects upon their Qualifying Interests / Special Conservation Interests and Conservation Objectives. This stage of the process is used to determine whether any of the designated sites may be 'screened out'. That is, that they can be regarded as not being relevant to the process, having no potential to be significantly affected or impacted upon.

4.3 Stakeholder Consultation

To date consultations with the following Stakeholders has taken place. These are summarised in Table 4-1 below.

Table 4-1: Summary of Consultations

Stakeholder	Nature of Consultation	Outcome
National Parks and Wildlife Service	Initial Email consultation Telephone Communication with NPWS Ranger	<ul style="list-style-type: none"> Informed that Development Application Unit would deal with consultation on this project. Discussion on Special Conservation Interests and other protected species at reservoir.
ESB	Email consultation with ESB Fisheries Biologist Report reviewed by ESB	Fisheries Biologist did not foresee any problems or issues with regard to fisheries interests of ESB. ESB provided comment and suggested updates. These have been included in this report.
Wicklow County Council	Email and telephone consultation with Wicklow County Council Heritage Officer	Aspects of project (in particular with regard to timing and extents of clearance) discussed.
Inland Fisheries Ireland	Email and telephone consultation with Fisheries Environmental Officer	Fisheries Environmental Officer confirmed that IFI do not hold fisheries information on the

Stakeholder	Nature of Consultation	Outcome
		watercourses crossed by the proposed route. Completed environmental assessments and watercourse crossing structures to be submitted to IFI when available.
Birdwatch Ireland	Email consultation	iWeBS data received.
Irish Wildlife Trust	Email consultation	IWT to review information supplied and to revert.

4.4 Designated Sites Within 15 km of the Proposed Works

All designated sites within 15 km of the proposed works are shown in Figure 1 and detailed in Tables 4-2 to and 4-3.

Table 4-2: Designated sites within 15 km of the Proposed Works

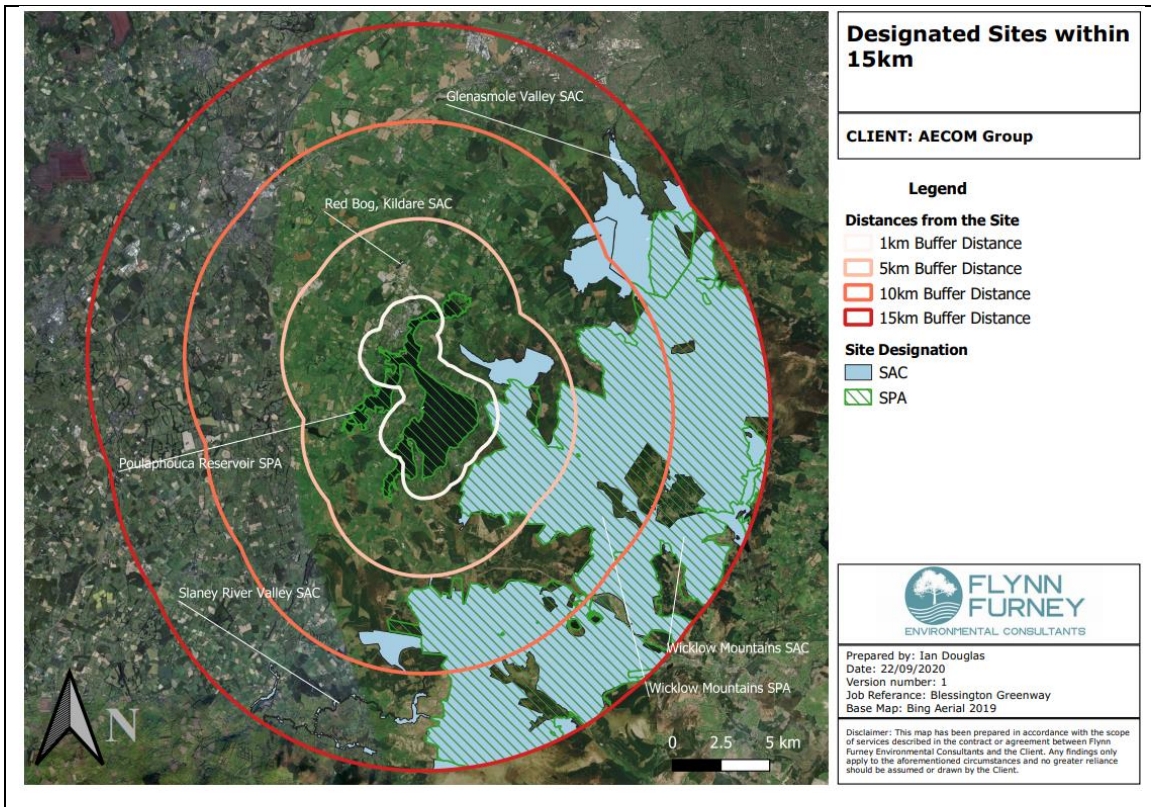
Site Code	Site Name	Designation	Distance from the Proposed Works
781	Slaney River Valley SAC	SAC	8.1 km
1209	Glenasmole Valley SAC	SAC	10.3 km
2122	Wicklow Mountains SAC	SAC	440 m
397	Red Bog, Kildare SAC	SAC	2.7 km
4040	Wicklow Mountains SPA	SPA	440 m
4063	Poulaphouca Reservoir SPA	SPA	<10 m
211	Slade Of Saggart And Crooksling Glen	pNHA	6.4 km
393	Liffey Valley Meander Belt	pNHA	2.7 km
731	Poulaphouca Reservoir	pNHA	<10 m
1209	Glenasmole Valley	pNHA	10.2 km
1212	Lugmore Glen	pNHA	10.8 km
1394	Kilteel Wood	pNHA	6.2 km
1395	Liffey At Osberstown	pNHA	14.5 km
1396	Liffey Bank Above Athgarvan	pNHA	14.2 km
1750	Ballinagee Wood	pNHA	5.4 km

Site Code	Site Name	Designation	Distance from the Proposed Works
1755	Glencree Valley	pNHA	13.8 km
1759	Newtown Marshes	pNHA	3.6 km
1772	Dunlavin Marshes	pNHA	11.1 km
2053	Hollywood Glen	pNHA	3.8 km
2104	Grand Canal	pNHA	10.6 km

A total of 6 sites designated as SAC or SPA were recorded within 15km of the Proposed Development. Of these only the Poulaphouca Reservoir SPA was considered to have any potential for impacts from the Proposed Development.

A further 14 sites designated as NHAs and pNHAs were also recorded within 15 km of the study area. Sites designated as NHAs and pNHAs are not considered as part of this assessment.

Figure 1: Natura 2000 Sites within 15 km of the Proposed eGreenway Route



No impacts to the conservation interests of any of the other sites listed in table 4-2 or sites outside the 15km buffer are considered likely due one or more of the following:

- Lack of connectivity between the Proposed Development and the designated area;
- Significant buffer between the proposed works area and the designated area;
- No impact or change to the management of the designated area or; and
- No change to chemical or physiological condition of the designated site as a result of the Proposed Development.

The conservation objectives of the Poulaphouca Reservoir SPA are shown in table 4-3 below

Table 4-3: Poulaphouca Reservoir SPA Conservation Objectives

SITE	CODE	DISTANCE TO DESIGNATED SITE	SCREENING CRITERIA
Poulaphouca Reservoir SPA	002162	Less than 10m in places/ within SPA in places	Potential pathways for impacts identified
HABITAT TYPES (*DENOTES A PRIORITY HABITAT)			Habitat (Natura
Not designated for any habitats			-
Annex II Species: Common name (<i>Latin Name</i>)			Species (Natura) Code No.
Greylag Goose (<i>Anser anser</i>)			A043
Lesser Black-backed Gull (<i>Larus fuscus</i>)			A183

4.5 Field Surveys

The field surveys were carried out between the 12th and 14th of August 2020 and again on 23rd October 2020. Baseline ecological conditions were assessed. The habitat types and their usage at the time of the surveys were readily identifiable due to the presence of certain species, evident throughout the year. Habitats were classified and dominant plant species noted according to the guidelines given by the JNCC (2010). Habitats were classified according to Fossitt (2000). The field surveys were also used to identify potential sources and pathway for pollutants, particularly suspended solids to reach the Poulaphouca Reservoir SPA.

4.6 Habitats Description

A number of distinct areas exist around the site. No rare, threatened or protected species of plants as per the Red Data Book (Curtis and McGough, 1988) or Red List (Wyse Jackson et al., 2016) were found. No species listed in the Flora Protection Order (2015) were found to occur within the study area.

The following habitats were recorded during the field surveys:

4.6.1 Reservoirs (FL7)

According to Fossitt (2000) this category incorporates open water bodies that are used for the storage and supply of water. These water bodies have water levels that fluctuate significantly and unnaturally as a result of abstraction, in addition to also containing modified dams, retaining walls or banks. The diversity of floral species within the waterbody itself was low. No fully aquatic plants like pond Lilly or pond weed were recorded. Reed fringes, vegetated sandy shorelines, and wet woodlands were recorded along the shoreline of the reservoir. These are dealt with as separate habitat types and are discussed in detail below.

4.6.2 Exposed Sand, Gravel and Till (ED1)

Fossitt (2000) states that this category includes natural or artificial exposures of unconsolidated coarse or mixed sediment. Sand and gravel are mostly made up of sediment particles that are less than 16 mm in diameter. Deposits of sand, gravel or till in this instance have become exposed through the natural forces of erosion and deposition along the reservoir shoreline that has come about as a result of unnatural fluctuations in the water level as a result of abstraction. To be classified as part of this habitat type vegetation cover should be less than 50%. Areas with cover greater than 50% are usually classified as Wet Grassland, Neutral Grassland, Scrub or (Emerging) Wet Willow Woodland. Species richness within areas of this habitat were significant partially where footfall was low or where exposed sands were seasonally waterlogged. Rushes included Jointed Rush (*Juncus articulatus*) and Hard Rush (*Juncus inflexus*). Sedges included Bottle Sedge (*Carex rostrata*) and Hairy Sedge (*Carex hirta*). The Herb component was significantly species rich in places and contained all or some of the following: Horsetail (*Equisetum fluviatile*), Common Marsh-bedstraw (*Galium palustre*), Water Mint (*Mentha aquatica*), Silverweed (*Potentilla anserina*), Sneezewort (*Achillea ptarmica*), Rosebay Willowherb (*Epilobium angustifolium*), Hawkweed (*Hieracium Spp*), Water Forget-me-not (*Myosotis scorpioides*), Silverweed (*Potentilla anserina*), Amphibious Bistort (*Polygonum amphibium*), Ragged-robin (*Lychnis flos-cuculi*), Purple loosestrife (*Lythrum salicaria*), Common Scurvygrass (*Cochlearia officinalis*), Marsh Violet (*Viola palustris*), Lesser Spearwort (*Ranunculus flammula*), Cudweed (*Logfia Spp*), forget-menots (*Myosotis spp.*), Hawkweed (*Hieracium Spp*), Selfheal (*Prunella vulgaris*), Common Bird's-foot Trefoil (*Lotus corniculatus*), thistles (*Cirsium arvense*, *C. vulgare*) and docks (*Rumex spp.*), Brooklime (*Veronica beccabunga*) and Yarrow (*Achillea millefolium*).

4.6.3 Conifer Plantation (WD4) and Mixed Conifer Woodland (WD3)

Fossitt (2000) describes this category as areas that support dense stands of planted conifers where the broadleaved component is less than 25% and the overriding interest is commercial timber production. The conifer plantations encountered were characterised by even-aged stands of trees that are usually planted in regular rows running adjacent to the reservoir. Plantations consisted mainly of Sitka Spruce (*Picea sitchensis*), Scots Pine (*Pinus sylvestris*) Lodgepole Pine (*Pinus contorta*), Norway Spruce (*Picea abies*) and Larches (*Larix spp.*). Species diversity was generally low and single species stands are common, However areas where Scots Pine (*Pinus sylvestris*) dominated or where pines had been significantly thinned out were recorded as supporting moderate to good level of understory scrubs and ground flora. These included Mixed Conifer Woodland as they appeared within the study areas were composed of mixed stands of the above species. Depending upon the density of planting these stands contained varying levels of shrub and understory plants. The scrub layer of this habitat type was generally composed of stands of willows (*Salix Spp.*), Alder (*Alnus glutinosa*), Sessile Oak (*Quercus petraea*), Downy Birch (*Betula pubescens*), Holly (*Ilex aquifolium*) Rowan (*Sorbus aucuparia*), Elder (*Sambucus nigra*), Ash (*Fraxinus excelsior*) and Hazel (*Corylus avellana*) and Beech (*Fagus sylvatica*).

The proportion of ground flora species was dependent upon the degree of light penetration and bramble growth. In many instances Bramble (*Rubus fruticosus agg.*) dominated the understory and smothered all other plants with the exception of those who could climb above the thicket like Ivy (*Hedera helix*), Honeysuckle (*Lonicera periclymenum*), Hedge Bindweed (*Calystegia sepium*), Cleavers (*Galium aparine*) and Bush Vetch (*Vicia sepium*).

4.6.4 Mixed broadleaved/conifer woodland WD2

This general category includes woodland areas with mixed stands of broadleaved trees and conifers, where both types have a minimum cover of 25%, and a maximum of 75%. Trees contained a mixture of both native or non-native species. In general non-natives were usually conifers including Sitka Spruce (*Picea sitchensis*), Lodgepole Pine (*Pinus contorta*), Norway Spruce (*Picea abies*) and Larches (*Larix spp.*) with the exception of Beech (*Fagus sylvatica*) and Sycamore (*Acer pseudoplatanus*). The native broadleaved component usually contained willows (*Salix Spp.*), Alder (*Alnus glutinosa*), Sessile Oak (*Quercus petraea*), Downy Birch (*Betula pubescens*), Holly (*Ilex*

aquifolium) Rowan (*Sorbus aucuparia*), Elder (*Sambucus nigra*), Ash (*Fraxinus excelsior*) and Hazel (*Corylus avellana*). Mixture of these species was usually determined by seed sources, light exposure and degree of wetness. Small and immature broadleaved trees and shrubs were common in this habitat types. Understory plants varied greatly across the site depending on topography and acidity of the soil. Under conifers and where conifers had recently stood the following herb species were common. Rosebay Willowherb (*Epilobium angustifolium*), Foxgloves (*Digitalis purpurea*) and ferns including Bracken (*Pteridium aquilinum*) and Hard Fern (*Blechnum spicant*). Climber, Honeysuckle (*Lonicera periclymenum*) and Ivy (*Hedera helix*) were common. In areas where broadleaved trees dominated the ground flora layer usually contained Cleavers (*Galium aparine*) and Bush Vetch (*Vicia sepium*), Meadow Vetchling (*Lathyrus pratensis*), Nettle (*Urtica dioica*), Wood Sorrel (*Oxalis acetosella*).

4.6.5 Scrub (WS1)

This broad category includes areas that are dominated by at least 50% cover of shrubs, stunted trees or brambles. The canopy height is generally less than 5 m, or 4 m in the case of wetland areas. Scrub develops as a precursor to woodland or as a result of recent disturbance and is often found in inaccessible locations, or on abandoned or marginal farmland. Scrub was common throughout the study area and has developed in a number of different circumstances. Scrub dominated by bramble was most common. These areas have developed as a result of windblown trees in conifer plantations and in areas where light penetration into the understory was moderate to good. Scrub often formed an impenetrable thicket and often could not be surveyed in detail. Trees in the scrub usually consisted of Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*) and Gorse (*Ulex europaeus*). Climbers included Dog-rose (*Rosa canina*) or Bramble (*Rubus fruticosus* agg.) Ivy (*Hedera helix*), Honeysuckle (*Lonicera periclymenum*), Hedge Bindweed (*Calystegia sepium*), Cleavers (*Galium aparine*) and Bush Vetch (*Vicia sepium*). A herb layer and grasses were generally absent.

4.6.6 Hedgerows (WL1) and Treelines (WL2)

Hedgerows are linear strips of shrubs, often with occasional trees. Some hedgerows may be overgrown or fragmented if management has been neglected, but they should still be considered in this category unless they have changed beyond recognition. Most hedgerows recorded during

these surveys were outside the study area or forming the boundary of the study areas e.g. along roadways Species composition varies with factors such as age, management, soils and exposure. Hedgerows usually contained plants such as Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Gorse (*Ulex europaeus*), Holly (*Ilex aquifolium*), Dog-rose (*Rosa canina*) or Bramble (*Rubus fruticosus agg*), Ash (*Fraxinus excelsior*), Hazel (*Corylus avellana*), Beech (*Fagus sylvatica*), Elder (*Sambucus nigra*), elms (*Ulmus spp.*) and willows (*Salix spp.*). In many instances mature trees over 10 meters tall were found within hedgerows. Climbing plants such as Ivy (*Hedera helix*), Honeysuckle (*Lonicera periclymenum*), Hedge Bindweed (*Calystegia sepium*), Cleavers (*Galium aparine*) and Bush Vetch (*Vicia sepium*) were common. Many hedgerows particularly those in front of houses or that ran along roads contained non-native shrub species including Fuchsia (*Fuchsia magellanica*), Butterfly-bush (*Buddleja davidii*), Box (*Buxus sempervirens*), Snowberry (*Symphoricarpos albus*), Cotoneaster (*Cotoneaster spp.*), Leyland cypress (*leylandii spp*) and Cherry Laurel (*Prunus laurocerasus*).

Treelines were also common features in the same context as hedgerows discussed above. Treelines often also had the same characteristics as hedgerows but contained more mature trees. Treelines species included: Beech (*Fagus sylvatica*), Horse Chestnut (*Aesculus hippocastanum*), Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*) and Alder (*Alnus glutinosa*).

4.6.7 Mixed Broadleaved woodland (WD1)

Fossit describes this general category of woodlands as areas with 75-100% cover of broadleaved trees, and 0-25% cover of conifers. Mixed Broadleaved woodland is used in situations where woodland stands cannot be classified as semi-natural or are clearly planted and this may include woodlands planted hundreds of years before as is often the case in and around old estates. Beech (*Fagus sylvatica*) was a common inclusion in this habitat type along with willows (*Salix Spp.*), Alder (*Alnus glutinosa*), Sessile Oak (*Quercus petraea*), Downy Birch (*Betula pubescens*), Holly (*Ilex aquifolium*) Rowan (*Sorbus aucuparia*), Sycamore (*Acer pseudoplatanus*), Elder (*Sambucus nigra*), Ash (*Fraxinus excelsior*) and Hazel (*Corylus avellana*) in varying quantities. Some truly excellent areas of mixed woodland were recorded near the grounds of the Russborough House veteran Beech, Oak and Hazel recorded. The ground layer within this habitat type was variable and often

contained large numbers of sapling Ash (*Fraxinus excelsior*), Elder (*Sambucus nigra*) and Sycamore (*Acer pseudoplatanus*),

Bramble (*Rubus fruticosus* agg.) was dominant or abundant in most areas of Mixed Broadleaved woodland along with Wood Speedwell (*Veronica montana*), Ivy (*Hedera helix*), Herb-Robert (*Geranium robertianum*) Bush Vetch (*Vicia sepium*), Wood Sorrel (*Oxalis acetosella*) and Bracken (*Pteridium aquilinum*).

In wet areas where streams and ditches drained into the reservoir or where the ground level was closer to the water levels, wet woodland areas occurred. Many of these areas have been classified as Wet Willow Woodland (WN6) and these are discussed below. Areas of broadleaved woodland that were wet but did not fit into that category are described here.

Woodlands dominated by Willows (*Salix Spp.*), Alder (*Alnus glutinosa*) and Downy Birch (*Betula pubescens*) were found in depressions or forming a thin line along the edge of the lake. Alder and Willow usually dominated the canopy. Grasses included creeping bent (*Agrostis stolonifera*). Herbs included Water Mint (*Mentha aquatica*), forget-menots (*Myosotis* spp.), Meadowsweet (*Filipendula ulmaria*) and Rushes (*Juncus Spp*). Many of these areas graded into true Wet willow woodland or areas of wet grassland.

4.6.8 Wet willow-alder-ash woodland (WN6)

According to Fossitt (2000) this broad category includes woodlands of permanently waterlogged sites that are dominated by Willows (*Salix sp.*), Alder (*Alnus glutinosa*) or Ash (*Fraxinus excelsior*), or by various combinations of some or all of these trees. It includes woodlands of lakeshores, stagnant waters and fens, known as carr, in addition to woodlands of spring-fed or flushed sites. Woodlands of flushed or spring-fed sites are typically dominated by Alder or Ash and the ground flora is often 'grassy' in appearance with abundant remote sedge (*Carex remota*) and creeping bent (*Agrostis stolonifera*). Other common components of the field layer include bramble (*Rubus fruticosus* agg.), creeping buttercup (*Ranunculus repens*), meadowsweet (*Filipendula ulmaria*), marsh-bedstraw (*Galium palustre*), yellow pimpernel (*Lysimachia nemorum*) and lady-fern (*Athyrium filix-femina*).

These woodlands were usually found around where rivers and drainage ditches discharge into the reservoir or where the ground level was closer to the ground level of the river. These areas are near permanently flooded or have water very close to ground level for most of the year. Ground flora was quite typical of WN6 woodland with common components including reed canary grass, remote sedge, creeping buttercup, marsh bedstraw. Other species commonly occurring in this habitat included Water Mint (*Mentha aquatica*), Marsh Thistle (*Cirsium palustre*), Purple loosestrife (*Lythrum salicaria*), Wild Angelica (*Angelica sylvestris*) and Lady-fern (*Athyrium filix-femina*).

4.6.9 Depositing lowland rivers (FW2)

Rivers within and adjoining the study area were largely modified being canalised at some point. Aquatic vegetation was only occasional and typical species included fool's water cress (*Apium nodiflorum*), reed canary grass (*Phalaris arundinacea*) and unbranched bur-reed (*Sparganium emersum*) with water starwort (*Callitriche* sp.) and duckweed (*Lemna* sp.) occurring where the flow was particularly slow. Typically, rivers were flanked by short lines of willow trees (*Salix* sp.) or where the treelines were absent bordered by a grassy verge (GS2). Livestock had access at some points.

4.6.10 Reed and large sedge swamps (FS1)

This category includes species-poor stands of herbaceous vegetation that are dominated by reeds and other large grasses or large, tussock-forming sedges. Areas of this habitat type were common around inlets or deep recesses in the reservoir shoreline. Species stands were typically dominated by Reed canary-grass with common club-rush (*Schoenoplectus lacustris*) and water horsetail (*Equisetum fluviatile*) rare or occasional. Herb species commonly included fool's water-cress (*Apium nodiflorum*), water mint (*Mentha aquatica*), and wild angelica (*Angelica sylvestris*).

4.6.11 Drainage ditches (FW4)

This category includes linear water bodies or wet channels that are entirely artificial in origin, and some sections of natural watercourses that have been excavated or modified to enhance drainage and control the flow of water. To be included here, drainage ditches should either contain water (flowing or stagnant) or be wet enough to support wetland vegetation. Drainage ditches were

common throughout the site leading into the reservoir. These varied in sizes and significance. Smaller ditches contained a little Fool's Water-cress, Bramble (*Rubus fruticosus agg.*), Creeping Buttercup (*Ranunculus repens*), (*Apium nodiflorum*) and Lady-fern (*Athyrium filix-femina*).

4.6.12 Dry calcareous and neutral grassland GS1

This category is used for unimproved or semi-improved dry grassland that may be either calcareous or neutral, but not acid. These are associated with low intensity agriculture and typically occurs on free-draining mineral soils. Habitats recorded here were more neutral grassland than calcareous in nature. Grazing is a characteristic feature of this habitat types; In this instance grazing pressure was created by Deer. Here grazing was not observed on considered to be greatly impacting the habitat these areas were classified as dry meadows and grassy verges - GS2 (see below). Scatterings of Willow were found within many areas of GS1 owing to the limited grazing activity. Common grasses include bents (*Agrostis spp.*), Red Fescue (*Festuca rubra*), False Oat-grass (*Arrhenatherum elatius*), Cock's-foot (*Dactylis glomerata*) and Yorkshire-fog (*Holcus lanatus*). Herb layer contained Bush Vetch (*Vicia sepium*) and Meadow Vetchling (*Lathyrus pratensis*) Common Mouse-ear (*Cerastium fontanum*), Common Knapweed (*Centaurea nigra*), Common Ragwort (*Senecio jacobaea*), thistles (*Cirsium arvense*, *C. vulgare*) and docks (*Rumex spp.*) and Ribwort Plantain (*Plantago lanceolata*).

4.6.13 Dry meadow and grassy verges (GS2)

Dry meadow and grassy verges (GS2) primarily occurred on unmanaged land associated with roadside verges, paths and lands unmanaged for recreation or agriculture. These grasslands were typically overgrown, contained a high proportion of coarse grasses such as Cock's-foot (*Dactylis glomerata*), bents (*Agrostis spp.*), False Oat-grass (*Arrhenatherum elatius*) and Yorkshire-fog (*Holcus lanatus*).

The Herb layer contained mainly tall growing or climbing herbs including common hogweed (*Heracleum sphondylium*), hedge bindweed (*Calystegia sepium*), Bush Vetch (*Vicia sepium*) and Common Knapweed (*Centaurea nigra*).

4.6.14 Wet grassland (GS4)

Areas of wet grassland varied across the site. Significantly large areas of this habitat type were recorded throughout the area where the existing track passes through. These areas are likely at least seasonally waterlogged as the water level in the reservoir rises. They were generally dominated by the lack of grazing these areas were often dominated by courser grasses including Yorkshire Fog (*Holcus lanatus*), Creeping Bent (*Agrostis stolonifera*). The herb component was limited to Creeping Buttercup (*Ranunculus repens*), Marsh Thistle (*Cirsium palustre*), Silverweed (*Potentilla anserina*), Meadowsweet (*Filipendula ulmaria*). Cuckooflower (*Cardamine pratensis*), Water Mint (*Mentha aquatica*), Horsetails (*Equisetum spp.*), and Yellow Iris (*Iris pseudacorus*) were also recorded in some of these areas. Particularly where wet grassland graded into Marsh habitat.

Around the rest of the Reservoir shoreline smaller areas of wet grassland were common. These were usually as a result of the low laying sand banks deposited as a result of fluctuating water levels, around the mouth of rivers or in low laying or submerged areas. As grasses were generally less frequent in these areas the herb component was generally higher. Grass species usually consisted of Creeping Bent (*Agrostis stolonifera*) and Yorkshire-fog (*Holcus lanatus*) along with rushes (*Juncus spp.*), sedges (*Carex spp.*). The herb layers were highly variable and usually contained Water Mint (*Mentha aquatica*), Marsh Thistle (*Cirsium palustre*), Purple loosestrife (*Lythrum salicaria*), Wild Angelica (*Angelica sylvestris*) and Lady-fern (*Athyrium filix-femina*). Common Valerian (*Valeriana officinalis*), Ragged-robin (*Lychnis flos-cuculi*).

In areas where wet grassland graded into the ED1 exposed shoreline areas of high species diversity were recorded. Herb components including water horsetail (*Equisetum fluviatile*), Common Marsh-bedstraw (*Galium palustre*), Water Mint (*Mentha aquatica*), Silverweed (*Potentilla anserina*), Sneezewort (*Achillea ptarmica*), Rosebay Willowherb (*Epilobium angustifolium*), Hawkweed (*Hieracium Spp*) and Water Forget-me-not (*Myosotis scorpioides*) were found.

4.6.15 Marsh (GM1)

According to Fossitt (2000), marsh is found on level ground near river banks, lakeshores, and in other places where mineral or shallow peaty soils are waterlogged, and where the water table is close to ground level for most of the year. Marsh is comparatively species-rich and supports a high proportion of wetland species in addition to the typical dominants: rushes (*Juncus* spp.), sedges (*Carex* sp.) and Meadowsweet (*Filipendula ulmaria*). To be considered as marsh, the proportion of sedges and grasses should not exceed 50%. A number of small marshes were recorded interspersed with willows and wet grassland surrounding the current track.

4.6.16 Mammal Activity and Habitats

Populations of Badgers hold territories that include some portions of the Blessington eGreenway route. There are some setts within close proximity to the proposed route. These are the refuges of a protected species. Evidence of Otter activity was also recorded. However, no Otter holts occur within close proximity to the proposed route. It should be noted that it is likely that this species would hold several territories within the reservoir. Pine Marten is a protected species that has extended its range in Ireland in recent years. It was recorded by ecologists during surveys as were signs of activity of this species. Red Squirrel has similarly expanded its range in recent times and activity signs of this species were also recorded. None of these terrestrial mammals are qualifying interests of the designated site.

4.6.17 Breeding & Wintering Birds

All bird species seen and heard during surveys were recorded. The greater majority of the birds recorded were of least conservation concern on the latest version of Irish Birds of Conservation Concern (Gilbert et al, 2021) but 3 no. species were 'red list' species (Lapwing, Grey Wagtail and Meadow Pipit), being of highest conservation concern. The NPWS Conservation Ranger also reported regular sightings of Peregrine Falcon at Ballyknockan and a single sighting of an Osprey (with prey) in September 2020. Lesser Black-backed Gull (*Larus fuscus*), one of the Special Conservation Interests of the Special Protection Area has a wintering population in this SPA. Breeding of this species has not been recorded at this site (Birdwatch Ireland, 2021).

A desktop review and consultation with the NPWS ranger was also used to assess population numbers and site usage patterns for the sites other species of Special Conservation Interests; the

Greylag Goose. The Site is of national importance for the wintering population of Greylag Geese, which is one of the largest in the country (Lewis et al., 2019). The Site provides the main winter roost for these birds. This occurs at Threecastles, in the northern portion of the Reservoir, an area which is avoided by the proposed route (iWeBS, 2021). The area utilised as a roost site by Greylags is to the north of Blessington Bridge, the most northerly extent of the proposed development. The Greylag Geese spend a high proportion of time foraging in adjacent fields and agricultural areas surrounding the northern portion of the reservoir at Threecastles. No areas outside the SPA upon which the species are known to use for grazing are due to be impacted by the proposed development.

4.6.18 Bats

Surveys for sites suitable for bat roosts (e.g. buildings or large mature trees) were also carried out. No likely roost sites were recorded although much suitable foraging area for several bat species occurs over the area surveyed.

5 Article 6 (3) Screening Assessment

This screening assessment questionnaire (EC, 2001) is used to assess whether the Proposed Development has the potential to impact upon Natura 2000 sites. The consideration criteria of potential for impacts on Natura 2000 sites is detailed below.

Section 4.4 of this report excluded any direct impacts or pathways for impacts on all but one Natura 2000 site. Therefore, it was considered that no further assessment was necessary in relation to these sites. The potential for impacts on Poulaphouca Reservoir SPA required further screening.

5.1 Article 6(3) Assessment Criteria

5.1.1 Description of the individual elements of the project likely to give rise to impacts on the Natura 2000 site.

The proposed route clearance and construction works has the potential to pose risks to water quality through loss of soil, other organic materials or other potentially polluting materials used during construction and through the use of machinery on site. These are discussed in more detail in Table 5-1 (below).

5.1.2 Description of any Likely Direct, Indirect or Secondary Impacts of the Project on the Natura 2000 Site.

Any likely direct, indirect or secondary impacts of the Proposed Development, both alone and in combination with other plans or projects, on the SPA by virtue of the following criteria: size and scale, land take, distance from the Natura 2000 site or key feature thereof, resource requirements, emissions, excavation requirements, transportation requirements and duration of construction, operational and decommissioning phases of the works are detailed in the Table 5-1 below.

Table 5-1: Assessment of Likely Impacts

ASSESSMENT OF LIKELY IMPACTS		
	Construction Phase Impacts	Operational Phase Impacts
Size and scale	Poulaphouca Reservoir SPA is a very large site which includes all of the reservoir. The SPA also includes significant areas of terrestrial habitats that include woodlands, grassland and plantations. The total area of the SPA is around 20Km ² . Therefore, no significant impact on the SPA owing to size or scale of the proposed works exist.	Once constructed, the proposed Greenway will have no impacts as a result of size or scale.
Land-take	The entire route of 33km is in close proximity to the SPA but only a minor proportion is within the designated site. 1.19Km of existing Greenway within the SPA will be widened. Outside of this, 623m of rock armour will be installed for erosion protection within the SPA. No significant land take is therefore required. The greater majority of the proposed route of the Greenway is plantation, woodland, and scrub and no aquatic or related habitats are to be affected.	The operational phase of the Greenway will not involve any land-take from the SPA.
Distance from the Natura 2000 site or key features of the site;	A portion of the Greenway will be within the boundary of the SPA but the greater majority (c. 95%) is outside the designated site.	As left.

ASSESSMENT OF LIKELY IMPACTS		
Resource requirements (water abstraction etc.);	No materials for construction will be sourced from within the SPA. No water will be abstracted from the site during the construction or operational phases. Therefore, there will be no impact on the SPA as a result of resource requirements.	Once constructed, the proposed Greenway will not require any resources from the SPA.
Emissions (disposal to land, water or air);	No emissions are predicted as <i>likely</i> that will significantly impact upon the receiving site or the SPA. However, there is potential for possible emissions of materials during the construction phase of the project.	In operation, there will be no emissions from the Greenway.
Excavation requirements;	Excavations to create footings will be required as part of construction works on bridges. Minor excavation will be required for installation of rock armour. Excavations of topsoil and subsoil is required for track construction. The overall volume of extraction will be minimal.	In operation, there will no requirements for excavations within or outside the SPA.
Transportation requirements;	Access will be allowed to the site utilising existing roads and laneways.	No additional access will be required for Greenway operation.
Duration of construction, operation, decommissioning, etc.;	It is likely that the construction period will be approximately 18 months.	The operational phase of the Greenway will be indefinite.

ASSESSMENT OF LIKELY IMPACTS		
Timing of works	<p>Works shall be timed to minimise disturbance to native species. Track clearance in the woodland should take place outside of the breeding season for birds. If tree works are to be undertaken within the bird nesting season, March – September, the trees in question will be assessed for the presence of any nests by a competent ecologist before any works commence. If bird nests are present, works will cease and an ecologist consulted before works can recommence.</p> <p>No works near badger setts will be permitted within the breeding season for this species. Works shall be carried out in dry conditions and not during/immediately after floods. Works shall not be permitted after dusk or before dawn to avoid impact upon crepuscular species.</p>	<p>The Greenway will be in operation throughout the year. However, it is likely that the far greater majority of use will be during summer months.</p>
Cumulative or In-combination Impacts with other Projects and Plans	<p>A desktop planning application search, using publicly available data from MyPlan.ie's National Planning Application database and WCC planning application portal was undertaken.</p> <p>The majority of planning applications for the lands situated around the Proposed Development predominantly relate to</p>	<p>There are no projects or plans known at time of writing that would cause the operation of the Greenway to have cumulative or in combination impacts.</p>

ASSESSMENT OF LIKELY IMPACTS	
	<p>small-scale residential developments, amendments and extensions. A further (recent) application (Ref No. 211237) has been made for the amendment of design of a previously approved Solar PV Energy Development (Ref No. 17/908). However, as this previously approved development is at a significant remove from the proposed Greenway, no cumulative or in combination impacts may reasonably be considered likely.</p> <p>There are no other projects or plans known to the authors that would cumulatively or in combination with the proposed works have significant impacts on the Poulaphouca Reservoir SPA.</p>

5.1.3 Description of any Likely Changes to the Natura 2000 Sites

Any likely changes to the Natura 2000 site are described in the table below with reference to the following criteria: reduction of habitat area, disturbance to key species, habitat or species fragmentation, reduction in species density, changes in key indicators of conservation value and climate change.

Table 5-2: Likely Changes to the Natura 2000 Site

Likely Changes to the Natura 2000 Site		
	Construction Phase Impacts	Operational Phase Impacts
Reduction of habitat area	There will be no reduction in the SPA area. Almost all works will take place outside the Natura 2000 site. An exception to this is 1.19km of the existing Blessington Greenway that is to be improved and 623m of rock armour will be installed for erosion protection. Works will take place in a number of different habitat types including amenity grassland, scrub, hedgerows and mixed woodland. No habitats identified within the works area are those of significance for the two Special Conservation Interest species of the Special Protection Area.	The operational phase of the Greenway will not result in any reduction of habitat area.
Disturbance to key species	The key species of this Natura 2000 site are its Special Conservation Interests: Greylag Goose (<i>Anser anser</i>) and Lesser Black-backed Gull (<i>Larus fuscus</i>). While both of these species are recorded as wintering in this SPA, neither of these species breed at Poulaphuca. Both of these species roost on the reservoir but feed on agricultural lands to the north of the reservoir during daylight hours.	The operational phase of the Greenway will see an increase in visitor usage of the lands around Poulaphuca Reservoir. However, neither of the Special Conservation Interest species of the SPA breed at this site. No disturbance to breeding may therefore be predicted. The area proposed for development does not include feeding or foraging areas for either of these species. No disturbance or disruption impacts to feeding or foraging of these species is therefore predicted. The greatest

Likely Changes to the Natura 2000 Site		
	The areas proposed for work within the SPA are several kilometres to the southwest of the nearest recorded Greylag Goose roost sites. Therefore no disturbance impacts upon these species are predicted as arising from the construction phase of the Greenway.	use of the Greenway will be during summer months. Greylag Geese and wintering populations of Lesser Black-backed Gull will be absent from this site during these months. No disturbance or disruption impacts to these species during peak usage times of the Greenway are thus predicted.
Habitat or species fragmentation	Works will involve the creation of a new route through a variety of habitat areas bordering the SPA. This will not lead to any significant fragmentation of habitats. The plan will also include extensive landscaping with native species that will serve to link habitats.	The Greenway in operation will not result in any habitat or species fragmentation. Rather, on the completion of landscaping of the Greenway, stable and contiguous habitat areas such as treelines and verges will be a residual positive impact.
Reduction in species density	No reduction in species density is considered likely within Poulaphouca Reservoir SPA as a result of the proposed works. This is based upon the habitat types within which the Greenway is proposed and the predicted lack of impact on species therein.	The Greenway in operation will not result in any reduction in species density. As above, stable habitats that arise from the completed scheme will allow for species such as native breeding birds to expand their range.
Changes in key indicators of conservation value (water quality etc.);	Water quality is a relevant key indicator of conservation value with regard to the Poulaphouca Reservoir SPA. Short-term impacts to water quality may result from the proposed works as a result of ingress of materials from works area.	The Greenway in operation will not give rise to any negative impacts on key indicators of water quality.

Likely Changes to the Natura 2000 Site		
Climate change	No effects to the site as a result of or in combination with enhanced climate change are predicted as a result of the proposed development.	The Greenway in operation will not give rise to any negative impacts on the site as a result of, or in combination with enhanced climate change.

5.1.4 Likelihood of Interference with the key relationships that define the structure and function of the Natura 2000 Site as a whole:

It is considered that there will be no short-term, long-term or residual impacts from the proposed works upon the key relationships that define the Natura 2000 site. Appropriate measures will be put in place during the works phase to prevent water pollution. A Construction Environmental Management Plan (CEMP) has been drawn up and will be implemented in order to adhere to best practice construction methods and prevent any impacts on water quality.

5.1.5 Indicators of Significance as a Result of the Identification of Effects

Indicators of significance as a result of the identification of effects as set out below in terms of loss, fragmentation, disruption, disturbance and changes to the key elements of site.

Table 5-3: Indicators of significance

Indicators of Significance		
	Construction Phase Impacts	Operational Phase Impacts
Loss	<p>There will be no loss of habitat within the SPA as a result of the construction phase of the proposed works.</p> <p>It is not anticipated that the loss of any species of conservation interest will occur as a result of the proposed works due to injury or mortality if control and prevention measures are put in place.</p>	<p>There will be no loss of habitat within the SPA as a result of the operational phase of the proposed works.</p> <p>No loss is predicted of any species of conservation interest as a result of the operational phase of the proposed works.</p>
Fragmentation	No habitat fragmentation to the SPA is predicted. No habitats of high ecological significance will be impacted upon as part of the construction phase of the proposed works.	No habitat fragmentation to the SPA is predicted as a result of the operational phase of the Greenway.
Disruption	No disruption impacts to the SPA or its Special Conservation Interests is predicted from the construction works.	No disruption impacts to the SPA or its Special Conservation Interests is predicted as a result of the operational phase of the Greenway.
Disturbance	The potential risk of disturbance to the Special Conservation Interest (SCI) species from the construction phase is not considered likely. The SCI species do not breed at	The potential risk of disturbance impacts upon the Special Conservation Interest (SCI) species from the operational phase of the Greenway is not considered likely. Both of

Indicators of Significance		
	<p>Poulaphouca Reservoir. Construction works during daylight hours will not be within areas used for foraging or feeding. These are not within the zone of influence of the proposed works. SCI species roosting on the reservoir at night will not be subject to any disturbance impacts as construction activities will be restricted to daylight hours.</p>	<p>these species overwinter at the reservoir and will not be present during peak usage months of the Greenway which will be summer months (ILC, 2018). Overwintering birds will be feeding/foraging on agricultural lands during winter daylight hours and will not be subject to any disturbance impacts from daytime users of the Greenway during these months. Overwintering birds roosting on the reservoir will not be subject to disturbance as the Greenway will not be in operation outside daylight hours.</p>
<p>Change to key elements of the site (e.g. water quality etc.)</p>	<p>Potential for short-term impacts upon the minor watercourses that outfall to the reservoir (and SPA) may occur. If best practice construction and silt management practises are upheld for the duration of works, these should not be significant. No change to key elements of site are predicted.</p>	<p>The operational phase of the project is not considered likely to give rise to any key elements of the site as there will be no emissions arising and none of the intended Greenway operations (e.g. walking, cycling) will give rise to any significant impacts.</p>

Description of any Likely Significant Impacts or Indeterminate Impacts of the Project on the Natura 2000 Site

Based on a consideration of the likely impacts arising from the proposed works and a review of their significance in terms of the conservation interests of Poulaphouca Reservoir SPA, no significant impacts have been identified as *likely* on the Natura 2000 site as a result of the Proposed Development. However, short-term impacts on water quality arising from the construction phase of this development cannot be definitively ruled out. These are discussed further in the screening statement in the following section.

5.2 Findings of Article 6(3) Screening Assessment

Name of project or plan: Blessington eGreenway

Name and location of Natura 2000 Site: Proposed works are to take place at Blessington, County Wicklow. Some of the works will be in the immediate proximity of the Poulaphouca Reservoir SPA (Site Code 004063).

Description of project or plan: It is proposed to develop a Greenway at Blessington. The aim of the scheme is to provide a predominately off-road shared use path for pedestrians and cyclists. The scheme will cover approximately 33km and involve the provision and upgrading of a greenway mostly through forest and woodlands adjacent to the shoreline of the Blessington Lake/Poulaphouca Reservoir SPA.

Traffic lights are proposed at three existing bridge crossings (Knockiernan Bridge, Baltyboys Bridge and Vallemount Bridge) to manage a new shuttle system for vehicular traffic. This will create space within the existing bridge cross section for the provision of a shared use path to accommodate users of the eGreenway.

The greenway surface construction is proposed to consist of a machine laid, bound pavement. A 20mm surface course is proposed to be laid on a 40 mm to 55 mm base course on 150mm Clause 804 subbase on a geotextile layer as required. Construction works will require shallow excavation (maximum depth of 200 mm - 300 mm), tree removal and replacement, placement of culverts, single span bridges over larger streams, fencing and minor landscaping.

Is the project or plan directly connected with or necessary to the management of the site?: The project is not directly connected with or necessary to the management of any Natura 2000 sites.

Are there other projects or plans that together with the project or plan being assessed could affect the site (provide details)?

A desktop planning application search, using publicly available data (e.g.) from MyPlan.ie's National Planning Application database and WCC planning application portal was undertaken.

The majority of planning applications for the lands situated around the Proposed Development, predominantly relate to small scale residential developments, amendments and extensions. There are no other projects or plans known to the author that would, in-combination with the proposed works have significant impacts on the Poulaphouca Reservoir SPA.

5.2.1 Assessment of Significance of Effects

Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site:

The proposed project will not significantly affect the Natura 2000 Site. However, short-term impacts to water quality are possible as a result of the proposed works.

Explain why these effects are not considered significant:

- No Special Conservation Interests of the Natura 2000 Site will be affected.
- Scale and duration of works are limited.
- The project is small in scale relative to the size of the SPA.

Direct impacts upon the Natura 2000 Site:

- No direct impacts upon the Natura 2000 site are predicted.

Indirect impacts upon the Natura 2000 Site:

- Temporary impacts on water quality of the SPA are predicted as *possible* as a result of works carried out over minor watercourses out-falling to the reservoir.

Consultation with Agencies

At time of writing, consultation has been carried out with the following organisations:

Statutory Organisations	Non-governmental Organisations
National Parks and Wildlife Service	Birdwatch Ireland
Inland Fisheries Ireland	Irish Wildlife Trust
Wicklow County Council	Bat Conservation Ireland
ESB Fisheries Office	Botanical Society for the British Isles

5.3 Data Collected to Carry Out the Assessment

The following sources of data were employed:

- Environmental Protection Agency Database;
- NBDC database (www.biodiversity.ie);
- NPWS protected species database and online mapping;
- Historical OSI Maps;
- Birdwatch Ireland Wetland Birds (iWeBS) Database;
- NPWS Site Synopsis and Conservation Objectives Poulaphouca Reservoir SPA; and
- Wicklow County Council Planning Database.

Level of assessment completed:

- Desk Study
- Site visits and surveys in August and October 2020
- JNCC Phase 1 Habitat Assessment
- Fossitt Level III Habitat Recording

5.4 Overall Conclusions

In conclusion, impacts to the Poulaphouca Reservoir SPA as a result of the Proposed Development construction cannot be definitively ruled out. A possible risk of temporary pollution to the reservoir exists during the construction phase of the proposed development. It is therefore concluded that a full Appropriate Assessment is required.

A Natura Impact Statement (NIS) has therefore been prepared for Wicklow County Council.



Blessington eGreenway: Natura Impact Statement

By: Flynn, Furney Environmental Consultants

For: AECOM



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1 Introduction

Flynn Furney Environmental Consultants have been commissioned to prepare this Stage 2 Appropriate Assessment (AA) (Natura Impact Statement (NIS)). This is required to determine whether the Proposed Development around a portion of the shoreline of the Poulaphouca Reservoir Co. Wicklow would adversely affect the integrity of the Natura 2000 site i.e. Poulaphouca Reservoir (SPA). A proportion of the Proposed Development is within this designated site.

The AA Screening involved the identification of potential impacts to the Special Conservation Interest species and the conservation objectives of this Natura 2000 site. Negative impacts on the integrity of good conservation status as a result of the Proposed Development would require the implementation of avoidance or mitigation measures to avoid progression to Stages 3 and 4 of the AA process.

Flynn Furney Environmental Consultants prepared a Screening for Appropriate Assessment for the Proposed Development. The findings of this screening assessment could not definitively rule out impacts to the following species for which the Poulaphouca Reservoir SPA has received its designation, namely:

- Greylag Goose *Anser anser* [Natura Code A043]
- Lesser Black-backed Gull *Larus fuscus* [Natura Code A183]

Therefore, this project is subject to an AA in accordance with Article 6(3) of the EU Habitats Directive (Directive 92/43/EEC) on the Conservation of Natural Habitats and of Wild Fauna and Flora; the Planning and Development Act 2000 (as amended); and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011).

This is stage 2 of the Appropriate Assessment process. Stage 2 assesses the potential impacts of a plan or project on the integrity of the Natura 2000 site, either alone or in combination with other plans or projects, with respect to the site's structure, function and conservation objectives.

Where there are adverse impacts, an assessment of the potential mitigation of these impacts is also required.

This stage involves the identification of potentially adversely affected sites or species and their location in relation to the Natura 2000 site. It involves the identification of the habitats and species within the site, and an assessment of the significance of impacts on their conservation status. Negative impacts on the integrity of these sites will require the implementation of avoidance or mitigation measures to avoid progression to Stages 3 and 4 of the AA process.

1.1 Statement of Authority

This Natura Impact Statement was written by Billy Flynn (BSc, MSc (Agr.), H.Dip, Dip Ind., MIBiol, MCIEEM, MIEnvSc. CEnv.) an Ecologist and Chartered Environmental Scientist with over 20 years of experience in environmental science and engineering. He has worked on the survey, ecological design and construction supervision of many infrastructure projects including motorways, national roads and light rail. He has worked on numerous greenway projects in Cork, Longford, Mayo, Monaghan and Westmeath.

2 Legislative Context and Overall Assessment Methodology

The processes are set out under Articles 6(3) and 6(4) of the Habitats Directive and are commonly referred to as 'Appropriate Assessments' (which in fact refers to Stage 2 in the sequence under the Habitats Directive Article 6).

Article 6 of the Habitats Directive sets out provisions, which govern the conservation and management of Natura 2000 sites. Article 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect Natura 2000 sites (Annex 1.1). Article 6(3) establishes the requirement for AA:

“Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subjected to appropriate assessment of its implications for the site in view of the site’s conservation objectives. In light of the conclusions of the assessment of the implication 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”

Where it is likely that a significant impact or impacts will occur to a European site, an AA is required. In carrying out the Screening (Stage 1) Assessment, no account is taken of mitigation measures. The Proposed Development has been screened and the potential for it to negatively impact the Poulaphouca Reservoir SPA could not be screened out. The client, in this instance Wicklow County Council, is therefore responsible for the completion of an NIS in relation to the development. This report has been prepared to inform this process.

2.1 Description of the Proposed Development

It is proposed to develop and operate a Greenway at Blessington. The aim of the scheme is to provide a predominately off-road shared use path for pedestrians and cyclists. The scheme will

cover approximately 33km and involve the provision and upgrading of a greenway mostly through forest and woodlands adjacent to a portion of the shoreline of the Blessington Lake/Poulaphouca Reservoir. The greater majority of the route (c. 95%) will be outside the boundary of the Special Protection Area. The works within the SPA are confined to the enhancement of the existing Blessington Greenway and the installation of 623m of rock armour.

Traffic lights are proposed at three existing bridge crossings (Knockiernan Bridge, Baltyboys Bridge and Vallemount Bridge) to manage a new shuttle system for vehicular traffic. This will create space within the existing bridge cross section for the provision of a shared use path to accommodate users of the eGreenway.

The greenway surface construction is proposed to consist of a machine laid, bound pavement. A 20mm surface course is proposed to be laid on a 40 mm to 55 mm base course on 150mm Clause 804 subbase on a geotextile layer as required. Construction works will require shallow excavation (maximum depth of 200 mm - 300 mm), tree removal and replacement, placement of culverts, single span bridges over larger streams, fencing and minor landscaping.

Works methodologies for the installation of rock armour upon which the Greenway is to be constructed in places and for the single span bridge proposed at Annacarney are given in Appendix B.

3 Ecological Assessment

3.1 Qualifying Features and Sensitivities

The Special Conservation Interests for the Poulaphouca Reservoir SPA are given in Table 3-1 below.

Table 3-1: Special Conservation Interests Annex II

Bird Code	Common Name	Name
A043	Greylag Goose	<i>Anser anser</i>
A183	Lesser Black-backed Gull	<i>Larus fuscus</i>

3.2 Conservation objectives

The conservation objectives for the Poulaphouca Reservoir SPA (NPWS, 2020) are as follows:

‘To maintain or restore the favourable conservation condition of the bird species listed [above] as Special Conservation Interests for this SPA.’

The Habitats Directive (EU, 1992) describes how favourable conservation status of a species can be described as being achieved when: *“population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.”* Favourable conservation status of a habitat can be described as being achieved when: *“its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable”*.

4 Impacts Assessment and Schedule of Mitigation

Table 4-1 below examines the Annex II (Birds Directive) species for which the SPA has been given its designation. It considers whether impacts to any of these habitats or species are likely due to the proposed works.

4.1 Description of Possible impacts

A description of potential impacts associated with this Proposed Development are given in Table 4-1. The nature of impacts are discussed below.

4.1.1 Direct Impact

No direct impacts to any Special Conservation Interest or habitat thereof is considered likely as arising from the proposed development.

4.1.2 Indirect Impacts

Potential indirect impacts on the species listed as Special Conservation Interests relate to possible impacts on water quality. The ingress of suspended solids and/or organic material into surface waters can impact upon water quality and on water-dependent species.

Potential short-term and long-term impacts of polluting materials such as fuels, oils and lubricants and hydraulic fluids, can result in substantial fish-kills. Accidental spillages or leaks of oil and other polluting liquids can also have severe and immediate impacts on fisheries. Their persistence within aquatic environments can reduce water quality and ecological value within a system for a number of years. While these impacts are unlikely, mitigation measures must be drawn up for same.

4.1.3 Cumulative and In-combination Impacts

A desktop planning application search, using publicly available data from MyPlan.ie's National Planning Application database and WCC planning application portal was undertaken.

The majority of planning applications for the lands situated around the Proposed Development, predominantly relate to small scale residential developments, amendments and extensions. A more substantial planning application has recently been made (November 2021). However, this

is outside the zone of influence for impacts of the Greenway project on the SCI species. This is therefore not considered further in this assessment. There are no other projects or plans known to the author that would, in-combination with the proposed works have significant impacts on the Poulaphouca Reservoir SPA.

Table 4-1: Potential impacts* to Special Conservation Interests arising from the proposed works

*impact definitions and assessments follows CIEEM (2018)

Special Conservation Interest Annex II Species	Potential Impact	Significance/ Duration of Impact	Likelihood of Impact	Mitigation Required
Greylag Goose <i>Anser anser</i>	<ul style="list-style-type: none"> Potential changes to surface water quality (e.g. siltation, pollution, turbidity) arising from construction works over or near watercourses 	Moderate Adverse/ Short-term	Unlikely	Yes
Lesser Black-backed Gull <i>Larus fuscus</i>	<ul style="list-style-type: none"> Potential changes to surface water quality (e.g. siltation, pollution and turbidity) arising from construction works over or near watercourses 	Moderate Adverse/ Short-term	Unlikely	Yes

4.2 Mitigation

Review of the elements of the proposed works indicates that there was a risk of impacts to the Special Conservation Interests of the Poulaphouca Reservoir if appropriate mitigation measures are not undertaken. Mitigation measures are designed to ensure compliance with the Habitats Directive Article 6 requirements. These are given in Table 4-2 below.

Table 4-2: Proposed Impact Mitigation Measures

Special Conservation Interest	Potential Impact	Proposed Mitigation Measures
<p>Greylag Goose <i>Anser anser</i></p> <p>Lesser Black-backed Gull <i>Larus fuscus</i></p>	<ul style="list-style-type: none"> ▪ Potential changes to surface water quality (e.g. siltation, pollution and turbidity) arising from construction works near watercourses 	<p>1. Works to be carried out as per Construction Environmental Management Plan</p> <ul style="list-style-type: none"> - An outline Construction Environmental Management Plan (CEMP) has been drawn up to address water quality impacts arising from the proposed works (provided as an appendix to this report). - On appointment, the successful contractor will engage an environmental scientist/ecologist to assist with the completion of the site-specific CEMP. - The full CEMP will be reviewed by Wicklow County Council and/or its agents. - The CEMP is to be deemed adequate for and sufficient to guide the completion of the project while ensuring no significant environmental impacts. This is to be deemed so prior to the commencement of any works. <p>2. Works are to comply with best practice guidance</p> <ul style="list-style-type: none"> - All works crossing watercourses, including culvert and bridge construction are to be carried out as per guidelines given by TII (2005) and by Inland Fisheries Ireland (2016). - Good site practices as described by CIRIA (2006) are to be followed for all site works.

Special Conservation Interest	Potential Impact	Proposed Mitigation Measures
		<p>3. Specific works requirements</p> <ul style="list-style-type: none"> - Area of works is to be limited, working areas around watercourses are to be strictly delineated. - Designated storage areas for soils and any other stockpiles are to be created away from all watercourses and the reservoir shoreline. - Silt fencing shall be maintained adjacent to any areas where silt may run off from site/area of works. - Prior to commencement of works in any water-sensitive area, a Toolbox Talk for all site staff shall be held. All site staff shall be aware of the significance of this working area. - A member of site staff shall be given responsibility for overseeing good works practices. - Works shall not take place during or immediately following periods of heavy rainfall. - Capacity to remove materials from a working area in the event of flooding shall be maintained. - Fuel and lubricants shall be stored in designated areas away from watercourses and the shoreline. - Spill-kits including booms and soak-pads are to be maintained on site.

4.3 Residual Impacts Post Mitigation

With the correct implementation of mitigation measures as described in 4.2, it is considered that no significant residual impacts or effects may be predicted as arising from the proposed project. No significant cumulative residual effects are predicted.

5 Conclusion

The Proposed Development will extend from Blessington in County Wicklow around the shoreline of a portion of Poulaphouca Reservoir. A Greenway is a cycleway that caters for both pedestrians and cyclists in a recreational environment (TII, 2017).

The proposed Greenway follows a portion of the shoreline of the Poulaphouca Reservoir which is an SPA. This SPA has been designated for the conservation of Greylag Goose (*Anser anser*) and Lesser Black-backed Gull (*Larus fuscus*).

In the absence of mitigation, potential indirect impacts on these species were identified relating to possible impacts on water quality. Potential short-term impacts of polluting materials such as fuels, oils and lubricants and hydraulic fluids were identified. While these impacts are unlikely, mitigation measures must be drawn up for same.

No other projects or plans are known at time of writing that may, in combination with the above potential impacts have the potential for cumulative impacts at this Natura 2000 site.

Impacts of potentially *moderate adverse* significance on the Special Conservation Interests of Poulaphouca Reservoir SPA have been predicted as *unlikely* arising from the Proposed Development. As these impacts may be described as significant effects, mitigation measures are required to address these. These are described in the above section 4.

It is objectively concluded, in light of the above objective scientific information, that, when the above mitigation measures are correctly implemented, the project, individually or in combination with other plans and projects, will not have an adverse effect on the integrity of the Poulaphouca Reservoir SPA, in view of its conservation objectives and in view of best scientific knowledge.

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Appendix A: Mitigation Measures [Appropriate Assessment] Matrix*

*after: methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

List measures to be introduced	Explain how the measures will avoid the adverse effects on the integrity of the site	Explain how the measures will reduce the adverse effects on the integrity of the site	Provide evidence of how they will be implemented and by whom.
A full Construction Environmental Management Plan (CEMP) is to be completed for project. An outline CEMP has been drawn up for the planning stage of this project.	The CEMP will set out method statements and works activities that will preclude damaging activity.	The CEMP will take cognisance of and include all works areas with particular regard to ecologically sensitive site areas.	Will be drawn up by contractors' design engineers in conjunction with ecologist/environmental scientist and will be submitted to bodies listed above for approval. Client's ecologist/environmental scientist and/or other representatives will give approval for these as well as providing supervision for their implementation.
Works crossing watercourses are to be carried out as per best practice guidance (TII, 2005 and IFI, 2016)	Best practice guidance will ensure correct methodologies and preclude damaging works practices.	Best practice guidance will ensure correct methodologies and minimise risk of adverse effects.	Works crossing watercourses will follow specific Risk Assessments and Method statements (RAMS) and be carried out under supervision of onsite ecologist / environmental scientist.
Good site practices as per CIRIA (2006) guidance are to be maintained	Adherence to guidance ensure best practice onsite.	Adherence to guidance will ensure best practice onsite.	Project engineer and onsite ecology team to ensure adherence to guidance. CIRIA checklists may be employed.

List measures to be introduced	Explain how the measures will avoid the adverse effects on the integrity of the site	Explain how the measures will reduce the adverse effects on the integrity of the site	Provide evidence of how they will be implemented and by whom.
Areas of works to be limited	Will prevent works in sensitive locations.	Will ensure sensitive sites protected.	Cordons to be set up in sensitive areas and site engineer and foremen to maintain these.
Designated storage areas are to be located away from watercourses.	Will prevent solids/fines polluting watercourses and reservoir.	Will prevent solids/fines polluting watercourses and/or reservoir.	Will be implemented by site foreman and onsite ecologist to ensure these will be maintained.
Silt fencing to be maintained at appropriate locations.	Will prevent solids/fines polluting watercourses and/or reservoir.	Will prevent solids/fines polluting watercourses and/or reservoir.	Will be implemented by site foreman and onsite ecologist to ensure these will be maintained.
Toolbox Talks on environmental issues are to be held prior to works.	Will inform site staff on sensitivity of site and importance of best practice. This will assist in avoiding adverse effects.	Will inform site staff on sensitivity of site and importance of best practice. This will assist in avoiding adverse effects.	To be organised by site engineer, given by onsite ecology team (ECoW or other) and attended by operatives.
Member of site staff is to be appointed to oversee good work practices	Will ensure best practice onsite. This will assist in avoiding adverse effects.	Will ensure best practice onsite. This will assist in avoiding adverse effects.	Nominated member of site staff is to be appointed by site engineer. Checklists of works activities will be provided.
Works shall not take place in wet conditions	This will assist in soils and watercourse protection by avoiding risk of unnecessary siltation or otherwise runoff.	This will assist in soils and watercourse protection by avoiding risk of unnecessary siltation or otherwise runoff.	This is to be implemented by site engineer and onsite ecologist is to ensure its implementation.

List measures to be introduced	Explain how the measures will avoid the adverse effects on the integrity of the site	Explain how the measures will reduce the adverse effects on the integrity of the site	Provide evidence of how they will be implemented and by whom.
The capacity to remove materials from site areas in event of poor conditions is to be maintained.	Will prevent watercourse pollution from site/works area runoff in poor weather conditions.	Will prevent watercourse pollution from site/works area runoff in poor weather conditions.	Will be implemented by foreman and monitored by onsite ecologist. Onsite ecology team are to review weather forecasts on at least a weekly basis and liaise with site management on scheduling of suitable works appropriate to the prevailing conditions and degree of site sensitivity.
Fuels and lubricants are to be stored in designated areas away from watercourses and the shoreline.	This will avoid adverse effects by preventing polluting materials from entering watercourses and reservoir.	This will avoid adverse effects by preventing polluting materials from entering watercourses and reservoir.	Will be implemented by site foreman and monitored by onsite ecologist. A weekly 'walk-through' of site will be carried out to ensure materials correctly stored.
Spill response materials to be retained on site near watercourses.	This will assist in limiting impacts on water quality in the event of a spillage	This will protect the reservoir as well as watercourses.	Maintenance of spill response materials will be overseen by site foreman and checked by onsite ecologist on weekly check of site measures.

Appendix B: Proposed Construction Methodologies

Rock Armour:

The installation of rock armour is the preferred technique for the erosion control and stabilisation of the lake banks. This will facilitate the construction of the Greenway. Rock armour consists of fitting into place heavy, irregular shaped rock, without mortar.

The methodology outlined below is the current construction methodology for the stabilisation and implementation of erosion control. This approach may require localised variation during the detailed design and construction of the project depending on the best working practices and preferred construction techniques of the selected contractor at locations following detailed design.

Construction sequence:

Preparatory works:

- The bank is to be pre-shaped so that the final rock armour slope will be no steeper than 1H:1V and no shallower than 3H:1V.
- The existing vegetation is to be left in place since it plays an important stabilising role.
- A trench that is at least as deep as the height of the largest rock armour stone is to be created in the bank toe.

Filter Installation:

- A filtering layer is to be placed on top of the exposed slope to prevent particles movement under the rock armour.
- If geotextile is used, it should be followed by a 100 mm thick layer of clean 20 mm crushed stone. The geotextile will be keyed at the top of the rock armour edge and extended into the toe trench.
- If geotextile is not used, a 150 mm layer of crushed stone ranging from 20 mm to 100 mm must be placed.

Rock Armour Installation:

- The rock armour stone is to be installed immediately after pre-shaping the embankment (if required) and the installation of the filter layer. Unnecessary delays on placing the rock armour may result in additional erosion or localised instability due to the saturation of the exposed unreinforced bank.
- The rock shall be transported and placed by methods that avoid segregation; end dumping, dumping into chutes, moving or placing by dragline buckets, or spreading by bulldozers are generally not acceptable construction practices.
- An anchoring row of large rocks is to be placed first into the trench at the toe of the bank. Rock armour stones should then be individually placed or very carefully dumped so that smaller stones fill the voids between larger ones.
- The rock armour layer should be at least twice as thick as the average rock diameter.
- Rocks shall be placed by bucket load to the required thickness, providing a reasonably well-graded mass with the minimum of voids. Large stones are placed along the toe or distributed evenly throughout the mass. Clusters of small or large stones should be avoided.

- Stones are placed from the base of the slope to the top in one operation.
- For high banks, it may be most suitable for two excavators to complete the work, one at the base of the bank and one at the top.
- Care is required in placing rock to avoid disturbing the filter layer(s) or damaging the geotextile if present.
- Care should be taken to prevent cracking or breaking of armour stone by crushing under machine tracks.

Habitat reinstatement:

- Native trees and / or shrubs should be planted above the rock armour.
- Disturbed soil above the rock armour should be immediately stabilised by reinstating the vegetative layer.

Annacarney Bridge

The Annacarney bridge is proposed to be a single span structure formed of a steel Vierendeel truss. The truss is to span the Annacarney stream and be supported on full height reinforced in-situ concrete abutments to the east and west of the stream. Off-site construction will be maximised for the steel truss structure. The structural members will be fabricated in a controlled factory environment to ensure high precision and efficiency. This reduces material waste and limits the environmental impacts from the harmful emissions created in production. The truss superstructure will be assembled off-site to avoid the impacts of construction in inclement weather conditions and to ensure high quality welds and connections to minimise maintenance requirements over the service life of the bridge. This will limit construction time over the stream, construction traffic moving to and from the site and the risks associated with working at height and near live watercourses. In-situ reinforced concrete abutments are proposed for the substructure. The abutments will retain suitable backfill material up to the finished deck level.

Prior to construction commencing, temporary fencing will be erected a suitable set-back from the crest of the river embankments. This will create an exclusion zone, protecting the riverbanks during construction and maintaining a safe passage for wildlife.

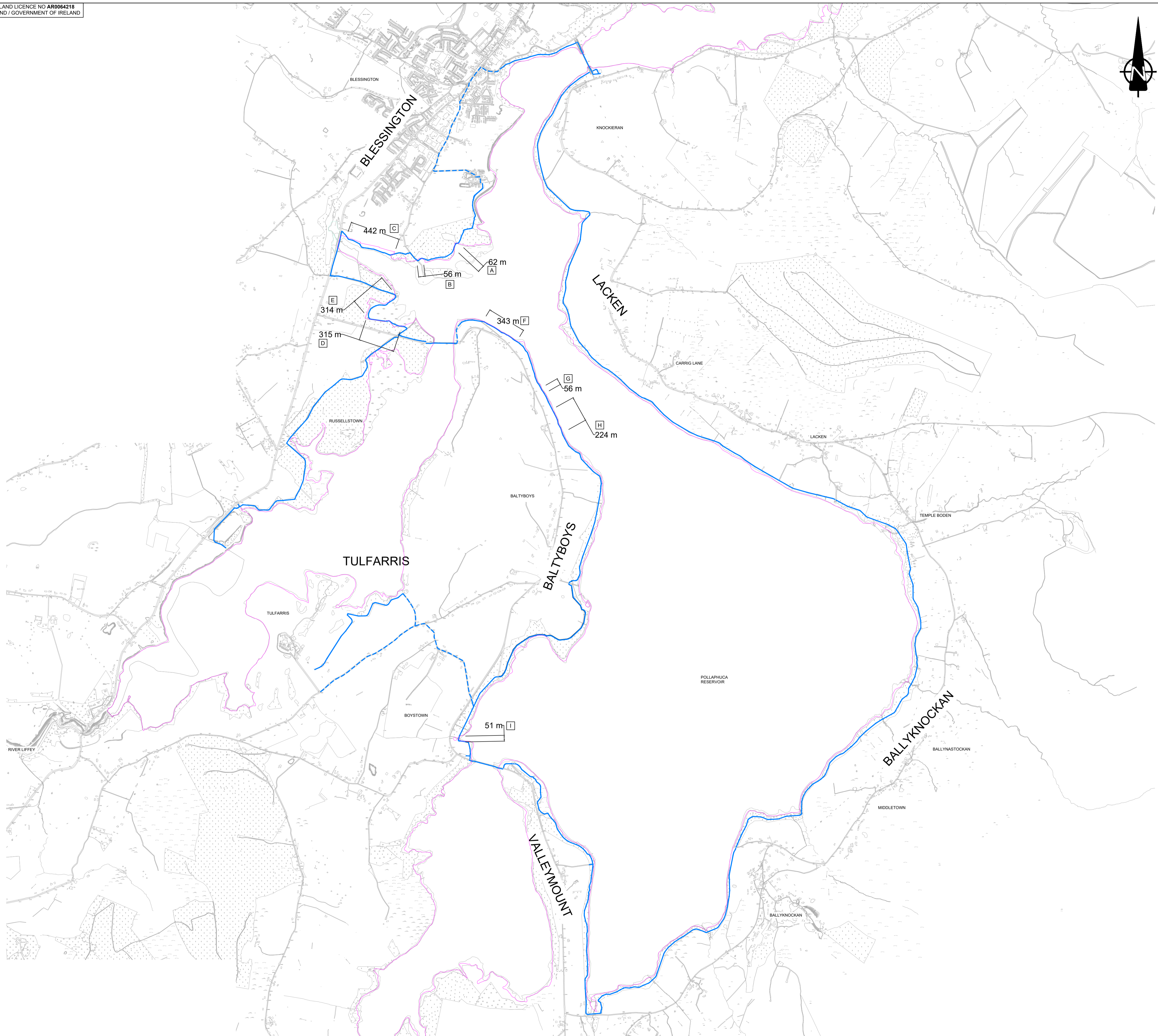
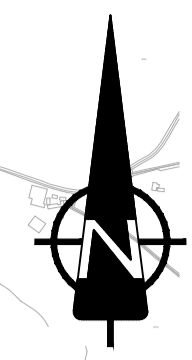
The Annacarney stream is bounded on both sides by cuttings with the west cutting being particularly steep. During construction the existing cutting slope will be visually inspected for signs of movement such as tension cracks. Inclinometers and survey points will be installed during the works to allow for the continuous monitoring for slope movements. Works being performed near the slope shall be suspended in inclement weather and a visual inspection carried out prior to works recommencing. The amount of surcharge placed near the slope will be minimised. Surcharge due to construction plant, material stockpiles or equipment shall be set-back as far as reasonably possible from the crest of the slope.

The foundation type will be finalised at detailed design stage but will be one of either shallow pads or piled foundations. The proximity of the foundations to the cut slopes will govern the allowable bearing capacity for shallow foundations following a detailed ground investigation. A piled foundation may be preferred to limit differential settlements, excavation dimensions and minimise the surcharge transferred to the cut slopes over the service life of the bridge. Sufficient space will be required within the lands made available boundary to ensure that delivery of the structural elements, including the preassembled truss, is facilitated. In addition, areas should be identified for piling platforms (should they be

required) and crane lifting platforms within the lands made available. These locations may require local excavation and replacement with structural fill to support the piling rig or crane.

Temporary storage of all structural elements including the steel truss should be kept within this boundary to protect the habitats of local flora and fauna. When the foundation work is complete, the abutments can be built-up to bridge soffit level and the bridge superstructure can be lifted into place with a mobile crane. To transport the truss structure to site it is anticipated an Abnormal Load Permit will need to be granted from An Garda Síochána. Under the Road Traffic (Specialise Vehicle Permits) Regulations 2010, S.I. 461 of 2010 a permit must be granted for the transport of any load which exceeds 16.5m in length, 2.9m in width or exceeds 44 tonnes in weight.

Appendix C: Proposed Blessington eGreenway Route and Poulaphouca Reservoir SPA



- NOTES**
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERING DRAWINGS. ANY DISCREPANCIES, ERRORS OR OMISSIONS TO BE BROUGHT TO THE ATTENTION OF THE EMPLOYER.
 2. ALL DIMENSIONS TO BE CHECKED BY THE CONTRACTOR ON SITE PRIOR TO COMMENCEMENT OF WORKS.
 3. EMPLOYER'S REPRESENTATIVE TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF WORKS ON SITE.
 4. DIMENSIONS OF ALL BOUNDARIES AND ADJOINING ROADS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS.
 5. DO NOT SCALE. ALL MEASUREMENTS AND COORDINATES TO BE CHECKED ON SITE.

KEY:

GREENWAY ROUTE	
POULAPHOUCA SPA	

ISSUE/REVISION

NO.	DATE	DESCRIPTION
A	DEC 2021	ISSUED FOR PLANNING
I/R	DATE	DESCRIPTION

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