EIAR SCREENING ASSESSMENT

Glanmire to City Cycle Route (Phase 1)

Cork City Council

PROJECT NO. C1001

JUNE 2022

OCSC
O'CONNOR | SUTTON | CRONIN
Multidisciplinary
Consulting Engineers

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NOTICE

DOCUMENT CONTROL & HISTORY

OCSC Job No.:	Project Code	Originator	Zone Volume	Level	File Type	Role Type	Number	Status / Suitability Code	Revision
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P1	**FINAL**	**SD**	**EB**	**EB**	**28.06.2022**
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EIAR SCREENING ASSESSMENT

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1INTRODUCTION

1.1 Project Contractual Basis & Parties Involved

This report has been prepared by O'Connor Sutton Cronin & Associates Ltd. (OCSC) at the request of their Client, Cork City Council. The site for assessment comprises an area of road alongside the Glashaboy River between Glanmire village and the junction of the R639 and N8 roundabout (Figure 1.1). The client wishes to install a cycle track along this route, which would include the addition of street lighting, a public realm space and a boardwalk. The regulatory authority for the site is Cork City Council.

The purpose of this report is to determine whether the project requires the preparation of an Environmental Impact Assessment Report (EIAR). This report documents the screening completed to provide a summarised overview of the potential impacts on the receiving environment whilst taking cognisance of the relevant statutory requirements.

A Stage 1 Screening for Appropriate Assessment has also been prepared (OCSC, 2022). A Stage 1 Screening exercise assesses the likely significant effects of the development on Natura 2000 sites within the zone of influence of the proposed project. This project has been screened out at Stage 1; and, therefore, it has been determined that the project does not require the preparation of a Natura Impact Statement (NIS).

The report was completed by Sinéad Doran BSc, Environmental Consultant, reviewed; and approved by Eleanor Burke, BSc, MSc, DAS, MIEnvSc, CSci, Technical Principal, and the OCSC Environmental Division Manager.

1.2 Study Area

The study area comprises an area of road alongside the Glashaboy river between Glanmire village and the N8 roundabout, Co. Cork. It is approximately 1.4 km in length and is bounded by the R639 west and the Glashaboy River east. See Figure 1.1.

Figure 1.1: Study Area; site location indicated by the red line (Google Maps, 2022)

1.3 Surrounding Land Use

The immediate surrounding area is comprised of agricultural, recreational, commercial/retail and residential land uses. North of the study area is Glanmire village. Southern land comprises the Tivoli Docks, an Industrial Estate, and the River Lee. East is the Glashaboy River and agricultural land and immediately west of the site is Cork's Vienna Woods Hotel and Holiday Homes and further west is agricultural land and Cork City. Refer to Table 2.1 for a full list of adjacent land uses.

Table 1.1:Adjacent Land Uses

Boundary	Land Use
North	Glanmire Village and residential housing
South	The N8, the Tivoli Docks, the River Lee, Lota Park
East	Glashaboy River, Agricultural land, a petrol station residential housing and the M8
West	Hotel lodgings, agricultural land

Figure 1.2: Surrounding Land Use (Google Maps, 2022)

1.4 Project Description

This Environmental Impact Assessment Report (Screening) has been prepared for the proposed Glanmire to City Cycle Route (Phase 1). The purpose of the scheme is; to provide dedicated cycle tracks and improved pedestrian footpaths along the Glashaboy River from Glanmire Village to the Dunkettle/Tivoli Roundabout. The proposed cycle route will be the first phase in the provision of a continuous cycle route from Glanmire to the City Centre. This route will provide a safe and much-needed connection for cyclists wishing to travel from Glanmire to the recently constructed cycle facilities through the Dunkettle Interchange which in turn connects with the Carrigtwohill to Dunkettle Greenway, the Youghal to Midleton Greenway and the planned Dunkettle to City Centre Cycle Scheme.

The scheme will include design measures to transform the 1.4km stretch of road from an existing relatively high-speed regional road with no public lighting to a traffic-calmed street environment with lower traffic speeds, enhanced pedestrian and cycling facilities and public lighting. The scheme will extend from the Dunkettle/Tivoli Roundabout to the Church Hill Junction.

1.5 Project Objectives

The overall project objectives include:

- a description of the physical characteristics of the whole project;
- a description of the location of the project, with particular regard to the environmental sensitivity of geographical areas likely to be affected;
- description of the aspects of the environment likely to be significantly affected by the project; and
- A description of any likely significant effects, to the extent of the information available on such effects, of the project on the environment resulting from a) the expected residues and emissions and the production of waste, where relevant and b) the use of natural resources, in particular soil, land, water, and biodiversity.

1.6 Methodology and Approach

The methodology and approach used in the preparation of this report will follow:

- Guidelines on the Information to be contained in Environmental Impact Assessment Reports, Irish Environmental Protection Agency, May 2022.
- European Commission (2015) Environmental Impact Assessment – EIA, Over, Legal Context
- European Union EIA Directive (85/337/EEC) and its amendments in 1997, 2003 and 2009
- Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment;
- Planning and Development Act 2000 (as amended)
- Planning and Development Regulations 2001 (as amended);
- Directive 2014/52/EU;
- Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licensing Systems – Key Issues Consultation Paper (2017; DoHPCLG)
- Preparation of guidance documents for the implementation of EIA directive (Directive 2011/92/EU as amended by 2014/52/EU) – Annex I to the Final Report (COWI, Milieu; April 2017)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018)
- Environmental Impact Assessment – Guidance for Consent Authorities regarding Sub-threshold Development (2003; DoEHLG)

Using the above documents, it has been possible to carry out a desktop EIAR Screening using the best available guidance and operating within the applicable legislation. The methodology employed in this screening exercise updates previous guidance in line with the new Directive 2014/52/EU.

1.7 Scope of Works

To meet the project objectives, the following scope of works were completed:

- Present a discussion of the current site status and key environmental influences around the site;
- Undertake and present a historical site and area review, primarily referring to old Ordinance Survey Ireland maps but utilising other sources as appropriate and readily available;
- Present a discussion of the general soil and groundwater conditions within the topographical and area context; and
- Present an overview if any significant negative environmental impacts can arise from the proposed project.

1.8 Limitations

This Environmental Impact Assessment Screening Report has been prepared for the sole use of Cork City Council ("the Client"). No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by OCSC.

This assessment is based on a review of available historical information, environmental records, consultations, relevant guidance information, and reports from third parties. All information received has been taken in good faith as being true and representative.

This report has been prepared in line with best industry standards. The methodology adopted and the sources of information used by OCSC in providing its services are outlined in this Report. The assessment undertaken by OCSC and described was undertaken in June 2022 and is based on the information available during that period. The scope of this Report and the services are accordingly factually limited by these circumstances.

OCSC disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report which may come or be brought to OCSC's attention after the date of the Report.

The conclusions presented in this report represent OCSC's best professional judgement based on review of the relevant information available at the time of writing. The opinions and conclusions presented are valid only to the extent that the information provided was accurate and complete.

The findings of the EIA screening assessment prepared for the project has informed our professional opinion as to whether an EIAR is warranted for the proposed project, with due regard to all relevant statutory requirements and technical guidance. However, it is ultimately the responsibility of the relevant planning authority to make a determination as to whether an EIAR is required for a particular project, based on screening conducted by the planning authority.

2 EIA SCREENING PROCESS

2.1 Introduction

This section of the report discusses the legislative basis for screening used to decide if the proposed project requires the preparation of an Environmental Impact Assessment Report (EIAR). It also sets out the project in terms of planning context.

This project has been screened in accordance with Section 3.2 of the 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022), the Environmental Impact Directive (85/337/EEC) and all subsequent relevant amendments, and Planning and Development regulations (2001-2018), including S.I. No. 296 of 2018 - European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018, which came into operation on 1st September 2018.

2.2 EIA Applicable Legislation

The Environmental Impact Assessment (EIA) Directive 85/337/EEC has been in force across the European Union since 1985 and applies to a wide range of defined public and private projects which are defined in Annexes I (Mandatory EIA) and II (Screening-Discretion of Member States) of the directive. The EIA Directive of 1985 has been amended three times: 97/11/EC, 2003/35/EC, and 2009/31/EC. These amended directives have been coded and replaced by Directive 2011/92/EU of the European Parliament and Council on the assessment of the effects of certain public and private projects on the environment (and as amended by Directive 2014/52/EU). Directive 2014/52/EU has been transposed in 2018 in Irish law under the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (SI 296 of 2018).

2.3 Mandatory EIAR Review

Annex I of the European Communities (EIA) Directive lists the activities for which an EIA is required. The proposed project is not listed in Annex I; therefore, it is not mandatory for an EIA to be carried out.

The proposed walkway construction is also not on the list of road projects requiring an EIA as outlined in Section 50 of the Roads Act, 1993 (as amended) and in Article 8 of the Roads Regulations, 1994. Road projects requiring mandatory EIA is listed in Table 2.1.

Table 2.1: Road projects requiring mandatory EIA

Table 1.Table 1.Mandatory Threshold	Reference
Construction of a Motorway.	S. 50(1)(a) of the Roads Act, 1993, as substituted by S. 9(1)(d)(i) of the Roads Act, 2007
Construction of a Busway.	S. 50(1)(a) of the Roads Act, 1993, as substituted by S. 9(1)(d)(i) of the Roads Act, 2007
Construction of a Service Area.	S. 50(1)(a) of the Roads Act, 1993, as

	substituted by S. 9(1)(d)(i) of the Roads Act, 2007
Prescribed type of proposed road development: 1. The construction of a new road of four or more lanes, or the realignment or widening of an existing road so as to provide four or more lanes, where such new, realigned or widened road would be eight kilometres or more in length in a rural area, or 500 metres or more in length in an urban area. 2. The construction of a new bridge or tunnel which would be 100 metres or more in length.	Article 8 of the Roads Regulations, 1994 (Road development prescribed for the purposes of S. 50(1)(a) of the Roads Act, 1993

Where a project is listed on Annex II or is a development that is not exempted, the national authorities of the member state must decide whether an EIA is needed for a proposed project. This is done by the "screening procedure", which determines the effects of project on the basis of thresholds/criteria or a case-by-case examination. Annex III of the Directive outlines the specific criteria that must be considered when a sub-threshold project is being examined for Environmental Impact Assessment.

The screening procedure investigates whether the project has significant potential negative impact on the environment using different criteria including:

- Characterisation of the proposed development
- Location of proposed development
- Type and Characteristics of the potential impact

The relevant information to be provided Information for the Purposes of Screening Sub-threshold Development for Environmental Impact Assessment include:

1. A description of the proposed development, including in particular—

(a) A description of the physical characteristics of the whole proposed development and, where relevant, of demolition works and

(b) A description of the location of the proposed development, with particular regard to the environmental sensitivity of geographical areas likely to be affected.

2. A description of the aspects of the environment likely to be significantly affected by the proposed development.

3. A description of any likely significant effects, to the extent of the information available on such effects, of the proposed development on the environment resulting from—

(a) The expected residues and emissions and the production of waste, where relevant, and

(b) The use of natural resources, in particular soil, land, water, and biodiversity.

4. The compilation of the information in paragraphs 1 to 3 shall take into account, where relevant, the criteria set out in Schedule 7".

3 CHARACTERISTICS OF PROPOSED DEVELOPMENT

Schedule 7 of SI 296 of 2018 requires that the characteristics of proposed development are identified. In particular, it references the following sections:

3.1 Size and Design

The study area comprises a 1.4km stretch of road from an existing relatively high-speed regional road in Glanmire, Cork. The works have been designed to provide dedicated cycle tracks and improved pedestrian footpaths along the Glashaboy River from Glanmire Village to the Dunkettle/Tivoli Roundabout.

3.2 Cumulation with other Existing Developments/Development the Subject of a Consent

A review of Cork City planning records for the area was undertaken. The review covered projects which are in receipt of a grant of planning within the last 7 years. None of these are to the scale and nature of this application and generally relate to construction of or amendments to individual properties.

The proposed development is short term by its very nature and improves the pedestrian and cycle traffic. Based on a review of planning applications, it is considered unlikely that any of the committed developments in the immediate vicinity will result in a significant potential for cumulative environmental impacts (including potential cumulative traffic impacts, surface water quality, etc) with the proposed development during either the construction or operational phases.

The adopted Cork City Development Plan 2022-2028 will replace the current Cork City Development Plan 2015-2021. The draft Cork City Development Plan 2022-2028 identifies the area of 'landscape preservation area'. The proposed Glanmire to City Cycle Route (Phase 1) is consistent with the planning and development objectives and policies of Cork City Council's Development Plan 2022-2028.

3.3 The nature of any associated Demolition Works

The existing Dunlea Car Sales buildings will be demolished as part of the works.

3.4 The use of Natural Resources, in particular Land, Soil, Water and Biodiversity

There will be no long-term use of any natural resource as this project is of short-term duration.

3.5 Production of Waste

Any waste generated during the construction will firstly be reused on-site where possible, e.g., topsoil generated will be reused to provide landscaping and excavated material will be reused for backfill where this material meets acceptable construction criteria. However, if offsite disposal is required for any material, it will be managed in accordance with all relevant waste management legislation. There will be no generation of the waste following the completion of the works.

3.6 Pollution and Nuisances

There is the potential that there will be a temporary increase in noise during the proposed works. However, they will not exceed levels typical of construction works and are short-term in nature. There will be a slight increase in traffic disturbance during the construction activities, i.e. bringing supplies to the site and removal of material if required. However, this disturbance will be short-term in duration. Some dust will likely be generated during the works; however, this nuisance will be managed in line with best practice including through the application of a well thought out and thorough Construction Environmental Management Plan There will be no pollution or nuisance after operations, i.e., following the completion of works.

Surface water pollution via runoff, including pollution by silt or hydrocarbons, will be managed in accordance with best practices. The risk of surface water pollution during the construction stage is considered to be moderate due to the proximity of the site to the adjacent river. However, through the application of a well thought out and thorough Construction Environmental Management Plan for this project, the potential for excessive suspended solids getting into the existing surface water infrastructure would become very unlikely.

Drainage will be constructed in accordance with best practice and standard design parameters. The risk of drainage pollution from the addition of the walkway in the waterways is deemed to be low due to the proximity of the site to the Glashaboy River. However, the appointed contractor will be required to prepare a site-specific Construction Environmental Management Plan (CEMP) which will clearly detail all necessary environmental control measures.

3.7 The Risk of Major Accidents or Disasters including those caused by Climate Change

There is minimal risk of major accidents or disasters including those caused by climate change given the small-scale and temporary nature of the construction works. Any risks that are present are associated with typical construction activities including working with machinery. However, the appointed contractor will be required to prepare a site-specific CEMP clearly detailing all necessary environmental control measures.

There will be no risks following construction above that which would be expected for pedestrian, cycle, and vehicle traffic.

3.8 Risks to Human Health – e.g., Water Contamination/Air Pollution

Risks to surface water during the operations phase will be minimised via construction in line with best practice. In addition, contractors will be required to implement construction methods in line with best practices regarding fuel and chemical storage and use on the site and any other items that may pose a risk to water.

There are no reported groundwater source protection zones (SPZs) within a 2km radius of the proposed site.

Based on the GSI database (refer to section 4.15) there are twenty-five boreholes located within a 2km radius of the site boundary and were installed for agricultural & domestic use, public supply and other uses. Given the short-term nature of the works and the works being conducted in accordance with best practice guidance, it is not anticipated that the works will pose a risk to groundwater quality during either the construction or operations phase of the works. In addition, air pollution will be limited to typical construction nuisance such as dust. The same best practice guidelines will be applied to noise nuisance. Overall, the risk to human health is low.

4 LOCATION OF THE PROPOSED DEVELOPMENT

4.1 Information Sources

An understanding of the site setting and history was gained by undertaking a review of the following primary sources including:

- A review of available extracts of historical Ordnance Survey of Ireland (OSI) maps;
- National Monuments Service (NMS) viewer;
- A review of information held by the Environmental Protection Agency (EPA) EnVision online Mapping;
- Aerial images available of the site (OSI and Google);
- The Geological Survey of Ireland (GSI) and GeoHive online mapping tools; and
- The National Parks and Wildlife Service online map tool.

4.2 Abundance, Availability, Quality, and Regenerative Capacity of Natural Resources

Limited natural resources will be required to complete the work. It is proposed that material generated during the works is reused on site. The relevant natural resources have been looked at in more detail in the following sections.

4.3 The Absorption Capacity of the Natural Environment

In the description of the site, the absorption capacity of the natural environment has been screened in accordance with Regulations paying particular attention to:

(i) wetlands, riparian areas, river mouths;
(ii) coastal zones and the marine environment;
(iii) mountain and forest areas;
(iv) nature reserves and parks;
(v) areas classified or protected under legislation, including Natura 2000 areas designated pursuant to the Habitats Directive and the Birds Directive;
(vi) areas in which there has already been a failure to meet the environmental quality standards laid down in legislation of the European Union and relevant to the project, or in which it is considered that there is such a failure;
(vii) densely populated areas; and
(viii) landscapes and sites of historical, cultural, or archaeological significance.

4.4 Surrounding Land Use

The terrestrial environment is characterized not only by its physical land cover, but also from a human/social perspective by its land use which is distinguished by its designated or identifiable purpose (EPA, 2008).

The immediate surrounding area is comprised of agricultural, recreational, commercial/retail and residential land uses. Refer to Section 1 for a full list of adjacent land uses.

4.5 Site Development

A review of the OSI historical maps dataset has found that the study area has been structurally unoccupied since the 1830s. The following section outlines the historically mapped features in the immediate environs of the study area.

The 6" inch (1837-1842) shows the area of Glanmire village north of the site with a church, a castle, a school and a lodge all labelled. Immediately west is; an area of woodland that runs the length of the site, agricultural land and farm yard. East of the site is the River Glashaboy and the Parliamentary Boundary and additional woodlands and agricultural lands. Northeast of the site there is a flour mill and Glanmire dispensary. South of the site is the River Lee as shown in Figure 4.1.

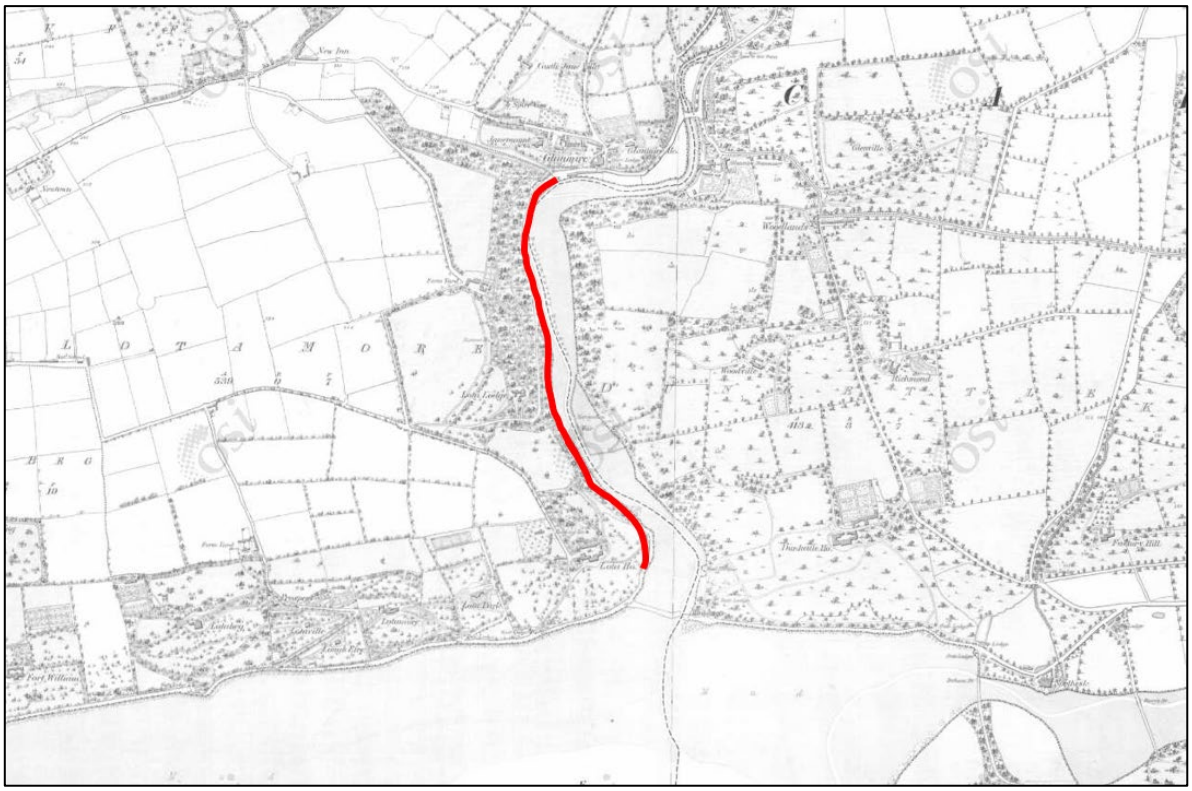

Figure 4.1: 1837-1842 6-inch OS Map; site location shown by red line (Source: OSI, 2022)

The 25-Inch Map (1888-1913) now shows the study area and immediately surrounding area as unchanged from the 1837-1842 map. See Figure 4.2.

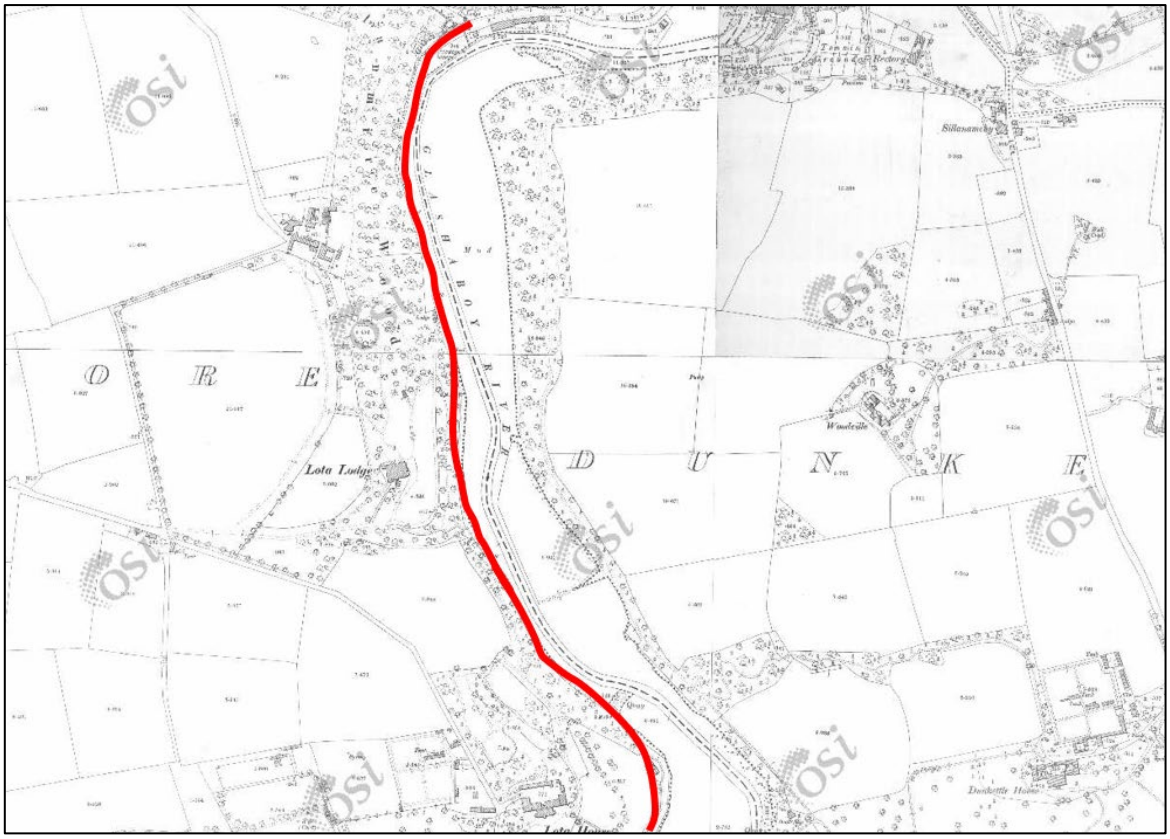

Figure 4.2: 1888-1913 25 inch OSI Map; site location shown by red line (Source: OSI, 2022)

The 6-inch Cassini Map (1830s to 1930s) shows the train tracks running perpendicular to the site, Dunkettle Station is located just southeast of the site. A quay has been labelled east of the site. Lota Housecan be seen southwest of the site in Figure 4.3 with the Lota lodge to the west.. See Figure 4.3.

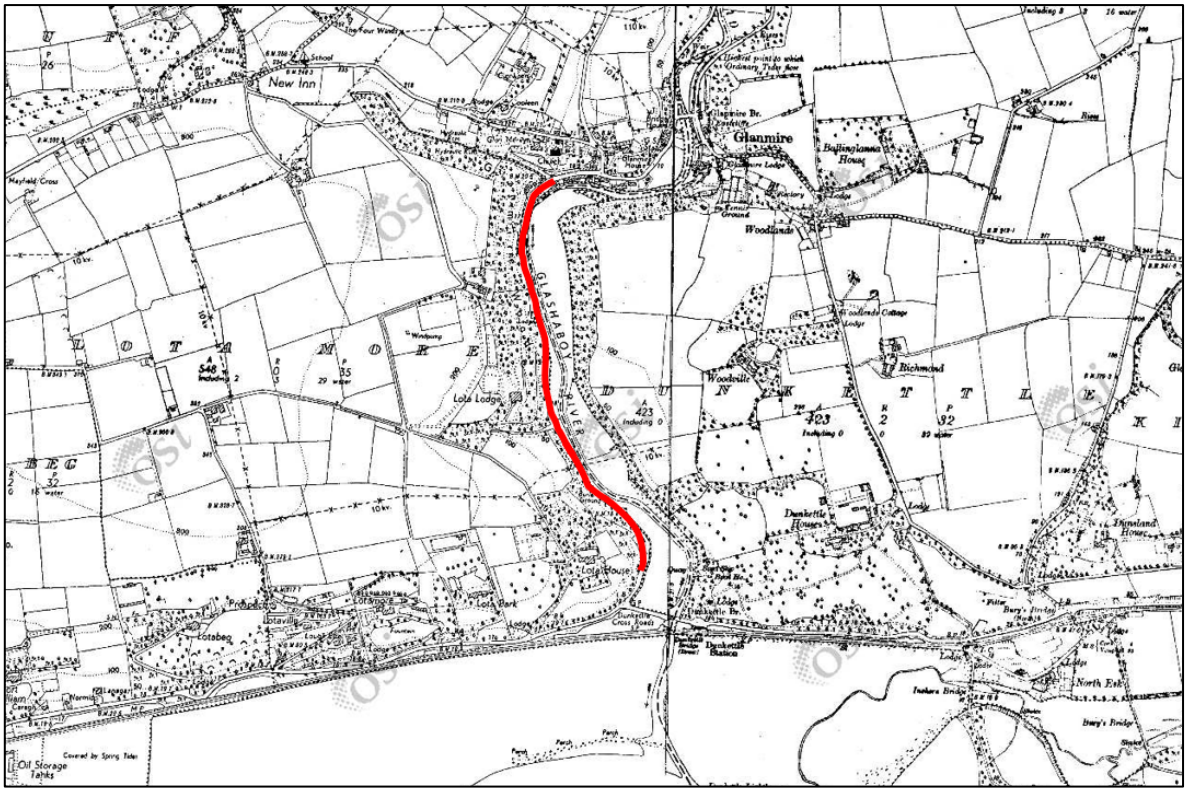

Figure 4.3: 6 Inch Cassini Map; site location shown by red line (Source: OSI, 2022)

The aerial photograph from 1995 (Figure 4.4) shows no changes to the site conditions. East and west of the site, the image shows the construction of a large number of residential developments. Further east the M8 road can be seen. South of the site the preliminary development of the Tivoli Docks and Industrial Estate can be observed. The Dunkettle Roundabout has been built since the last 6 Inch Cassini Map (1830s to 1930s). See Figure 4.4.

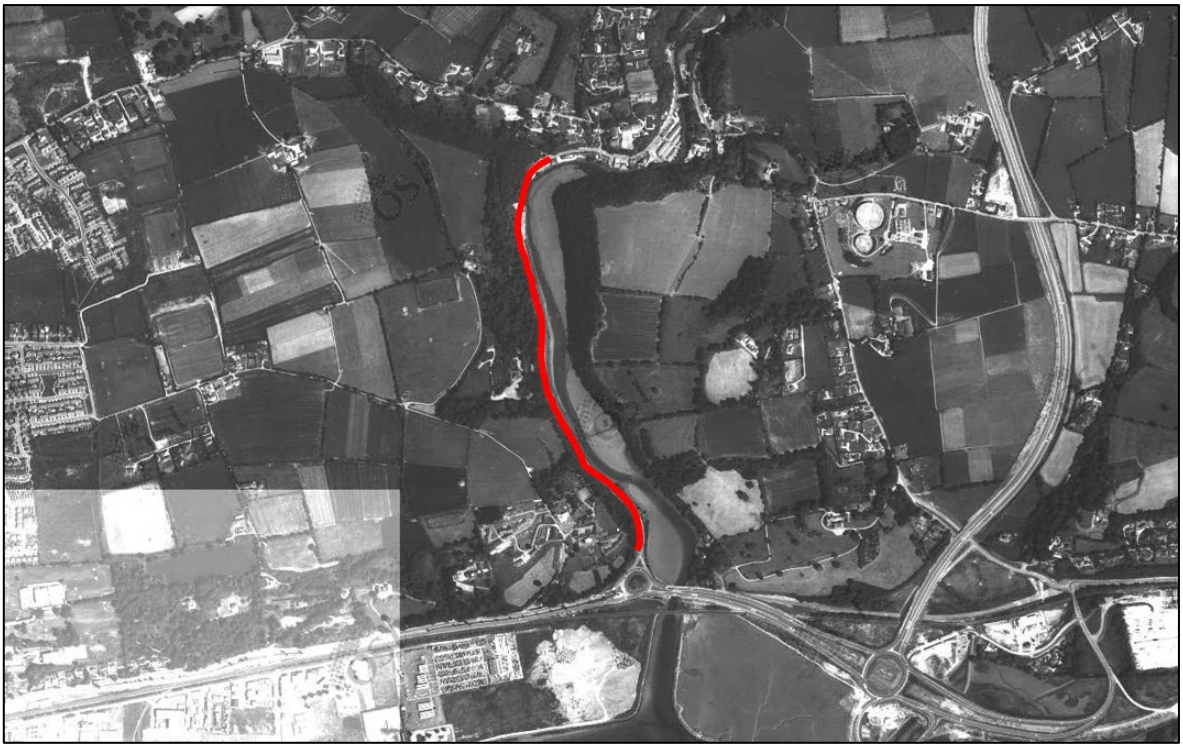

Figure 4.4: Aerial photograph for 1995; site location shown by red line (Source: GeoHive, 2022)

The 2000 aerial photo (Figure 4.5) shows no significant changes to the site except the expansion of the Tivoli Docks and Industrial Estate.

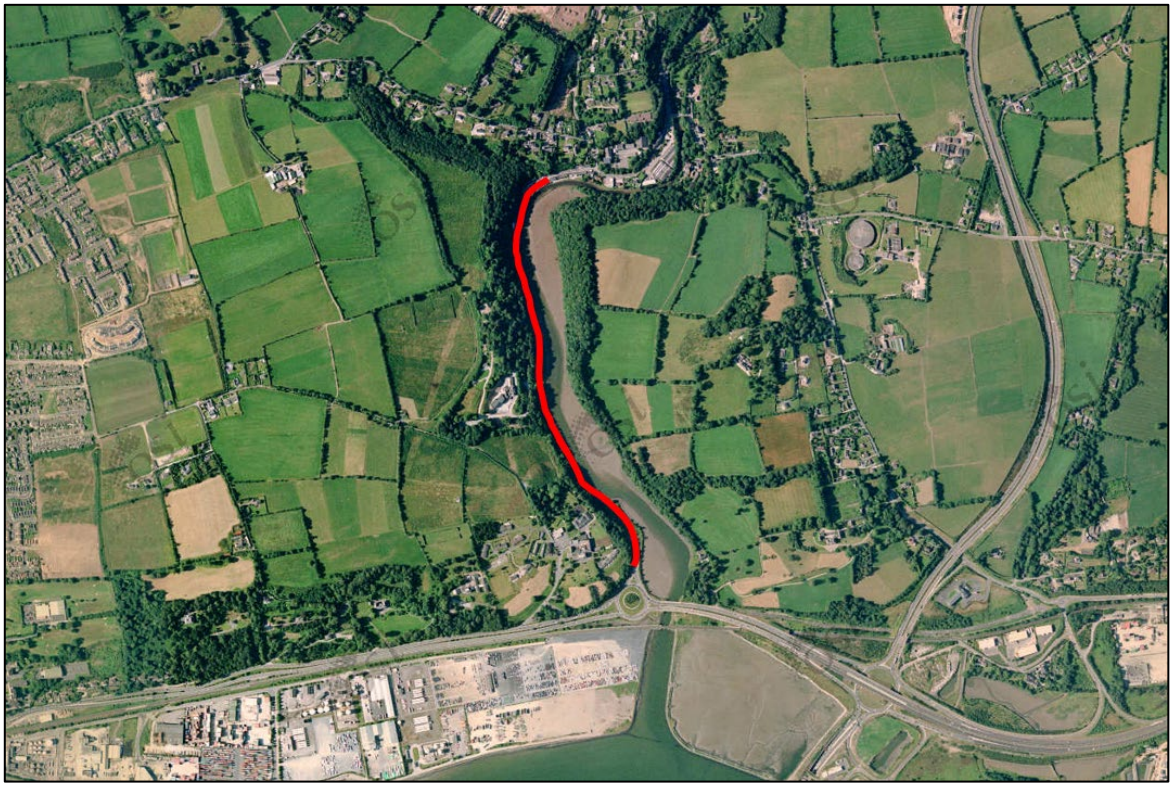

Figure 4.5: Aerial photograph for 2000; site location shown by red line (Source: GeoHive, 2022).

The 2005 aerial photo (Figure 4.6) shows no significant changes to the site area since the 2000 aerial photo was taken. East and west of the site there has been an increase in residential construction in addition to development at the docklands.

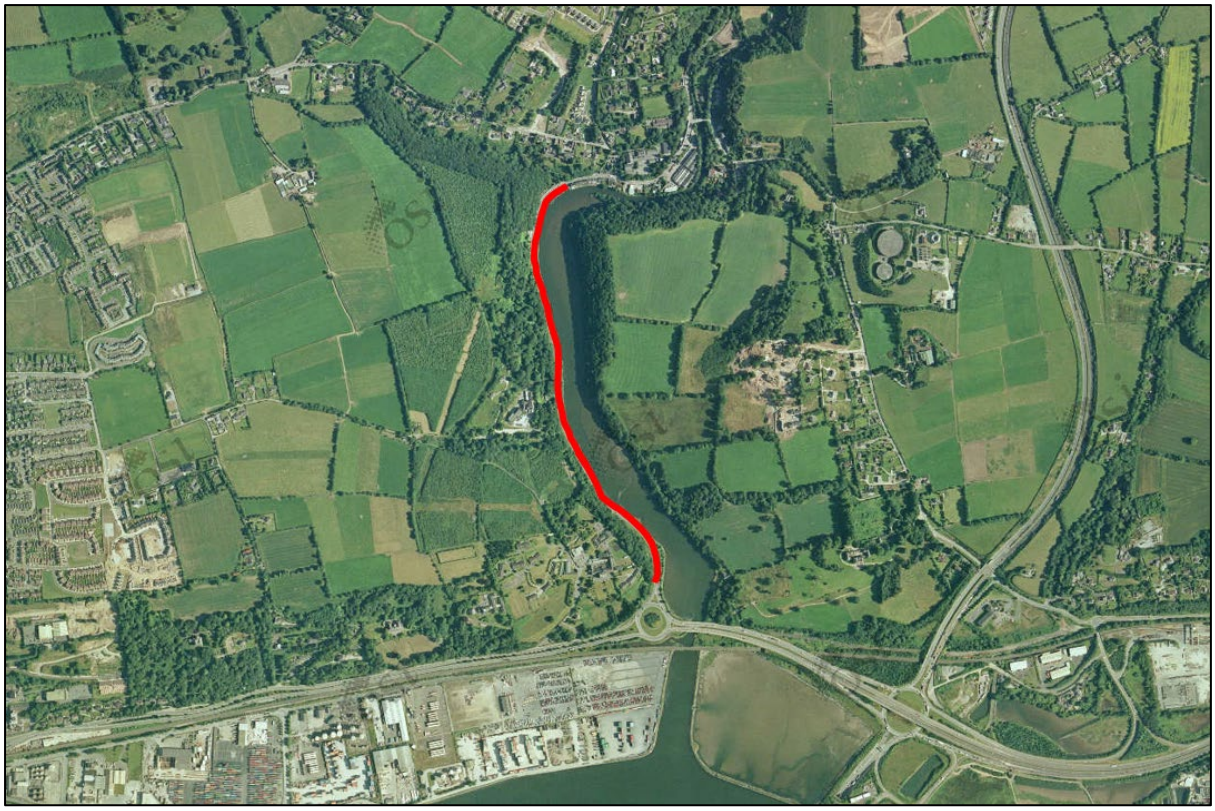

Figure 4.6: Aerial photograph for 2005; site location shown by red line (Source: GeoHive, 2022).

The 2011-2013 aerial photo (Figure 4.7) shows no significant changes to the site since the 2005 aerial photo was taken. Northeast of the site there has been the development of a residential area.

Figure 4.7: Aerial photograph 2011-2013; site location shown by red line (Source: GeoHive, 2022)

The 2013-2018 aerial photo (Figure 4.8) shows no significant changes to the site since the 2011-2013 aerial photo was taken. The image indicates the expansion of Glanmire Village to the north of the site. Further industrial development has occurred at the docklands since the 2011-2013 image.

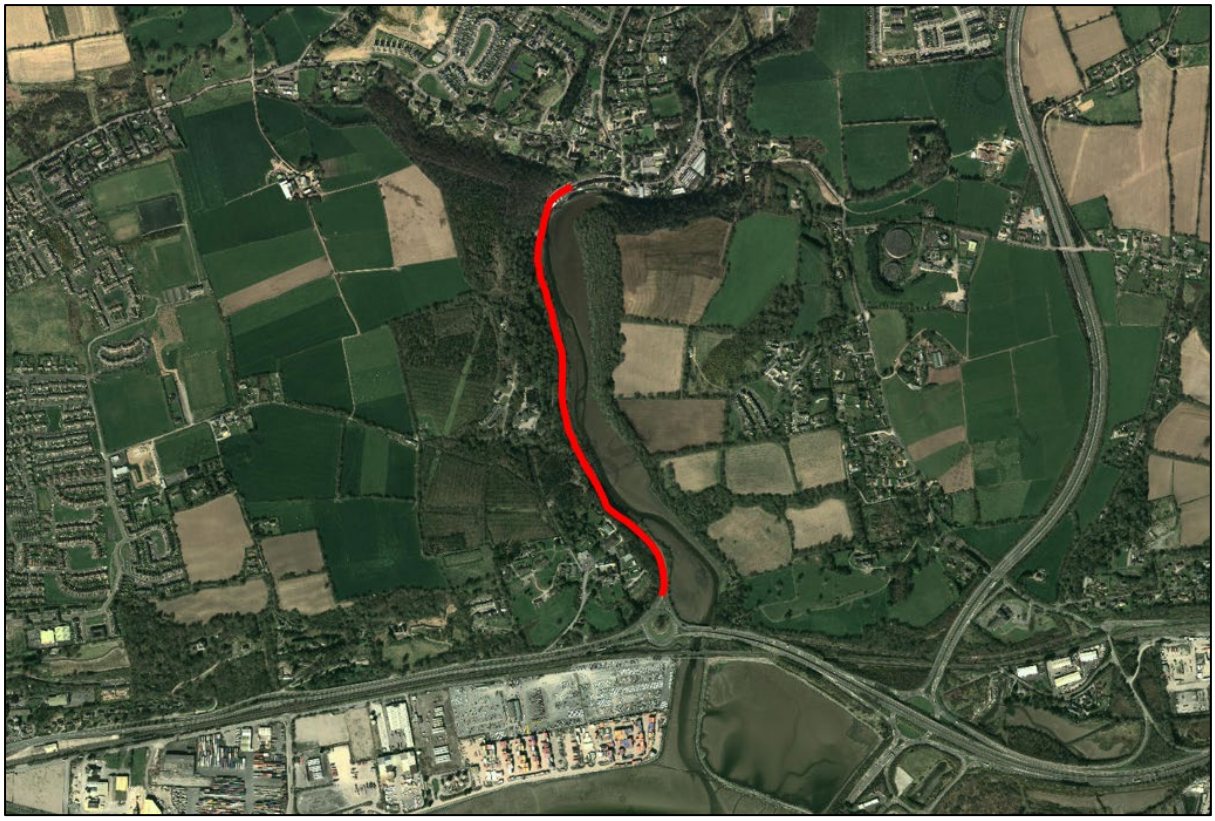

Figure 4.8: The aerial photograph from 2013-2018 showed no significant changes from 2011-2013.

4.6 Site Physical Setting

Information regarding the site topography, hydrology, geology, hydrogeology, and ecology of the area has been obtained from records held by the Geological Survey of Ireland (GSI), Environmental Protection Agency (EPA) Envision online mapping tool, Ordnance Survey of Ireland (OSI), GeoHive, Water Framework Directive Maps, and National Parks and Wildlife Service (NPWS) databases.

4.7 Biodiversity

The Glashaboy River (IE_SW_060_0800) is located immediately adjacent and parallel to the proposed Glanmire to City Cycle Route (Phase 1) . The Glashaboy River flows from north to south where it enters the River Lee (IE_SW_060_0750), both are part of the Cork Harbour SPA.

An Appropriate Assessment (AA) Screening Report has been prepared by OCSC which concluded that the proposed project in the absence of mitigation is unlikely to give rise to adverse effects on the designated European sites. Therefore, a Natura Impact Statement (NIS) was not required.

There is one SPA within 15km of the proposed scheme, Cork Harbour SPA which is located immediately adjacent to the site and includes the Glashaboy River. See Figure 4.9.

There are two SACs within the 15km of the proposed scheme: Great Island Channel SAC (3.7km east) and Blackwater River (Cork/Waterford) SAC (12.8km north). There is no physical connectivity, in the form of hedgerows, treelines, or woodlands, from the area of the proposed works and either the of SACs. There is an indirect hydrological link between the site and Great Island Channel SAC via the Glashaboy River as this river flows into the to Cork Harbour, which is connected to the Great Island Channel SAC. However, given the relatively small-scale and short-term nature of the works, as well as the distance between the site and this SAC, there are no anticipated impacts on this or the other SAC from the proposed developments.

There are no Natural Heritage Areas (NHA) within 15km of the study area.

There are twenty-one proposed Natural Heritage Areas (pNHA) within 15km of the site. The nearest is the Dunkettle Shore pNHA (Site Code 001082), located immediately east of the study area. There is no physical connectivity, in the form of hedgerows, treelines, or woodlands, from the area of the proposed works to this pNHA. Douglas River Estuary pNHA (001046), Great Island Channel (Site Code 001058), Monkstown Creek (Site Code 001979), Lough Beg (Cork) (Site Code 001066), Owenboy River (Site Code 001990), Whitegate Bay (Site Code 001084), Cuskinny Marsh (Site Code 001987), Rostellan Lough (Site Code 001058), and Aghada Shore And Poulnabibe Inlet (Site Code 001076) are indirectly linked to the proposed development via Cork Harbour as they are located downstream of the site.

There is a potential for erosion of bare ground and/or sediment movement resulting from surface run-off during the construction phase. However, given the relatively small-scale and short-term nature of the works, even when considering the location of the nearest European Site adjacent to the site, there will be no significant effects to the European Site anticipated as a result of erosion and/or sedimentation. In addition, through the application of a well thought out and thorough Construction Environmental Management Plan for this project, the potential for excessive suspended solids getting into the existing surface water infrastructure would become very unlikely. Note: a site specific CEMP is not considered 'mitigation' as per the OPR Practice Note PN1 Guidance (2021). Therefore, taking into consideration the above it is unlikely that impacts such as increased siltation and turbidity as well as pollution from surface run-off would cause significant effects on designated water-dependent qualifying interests. Therefore, given the scale of the development and distance to European sites, the effects arising from these works will be negligible.

Given the nature of the development, its scale, and its location it is concluded that the project is foreseen to give rise to negligible impacts on the biodiversity local to the site.

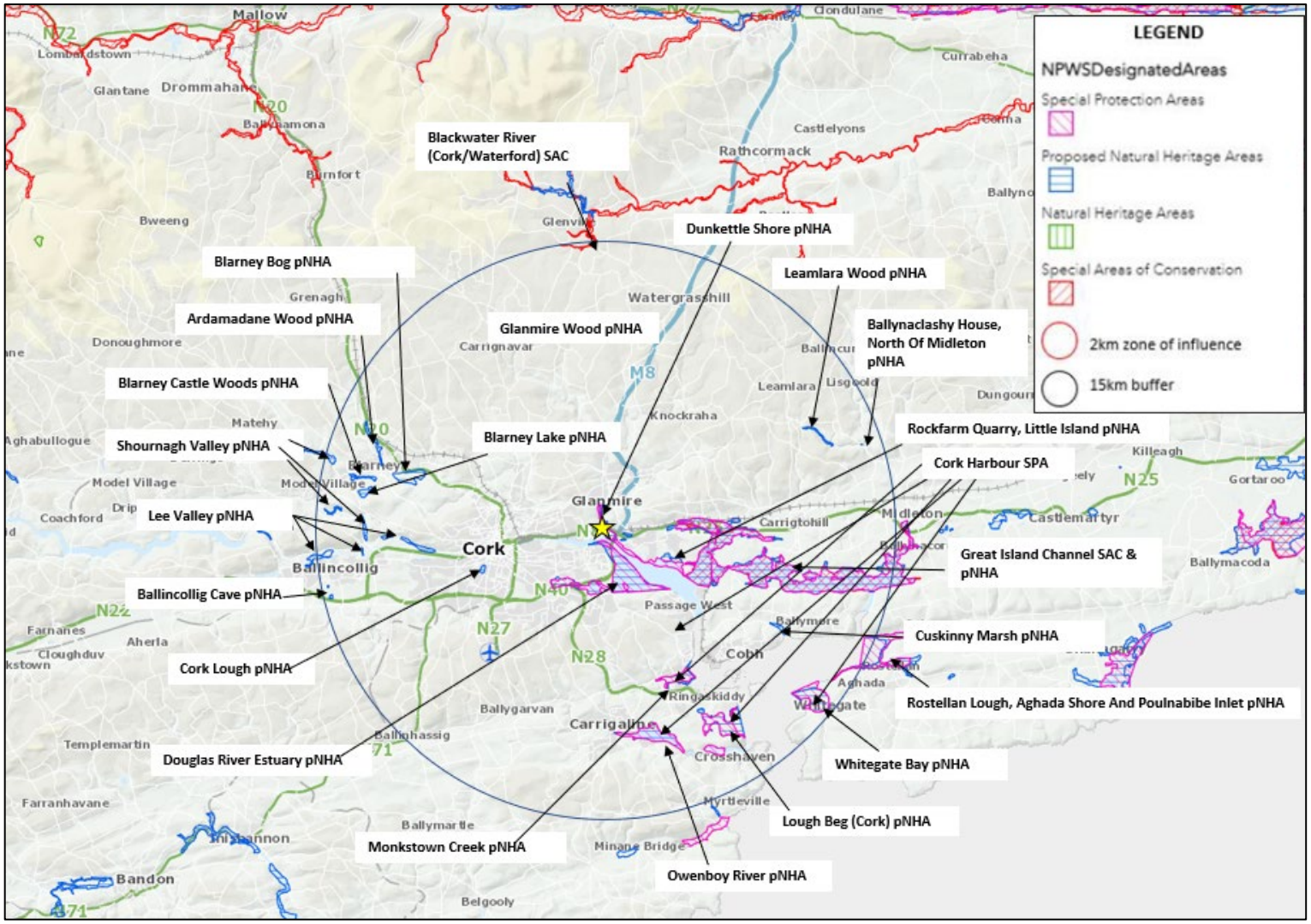

Figure 4.9: Designated Sites within a 15km radius. The site location is shown as a yellow star (Source: NPWS Maps, 2022)

4.8 Topography

The topography of the regional area is varied with a downward slope from the woodland located just west of the site boundary to east of the site at the Glashaboy River (Cork Harbour SPA).

4.9 Unconsolidated Geology

The site is comprised of two different soils: Shallow, rocky, and peaty/peaty mineral complexes, mainly acidic) (as seen by a bright purple colour in Figure 4.10) in the northern portion of the site and well-drained mineral, (mainly acidic), (as seen by a red colour in Figure 4. 10) in the southern part of the site. Just north of the study area the soil is composed of made ground (as seen by a bright blue colour in Figure 4. 10) and Shawell-drained mineral, (mainly basic), (as seen by a dull purple colour in Figure 4. 10) to the west.

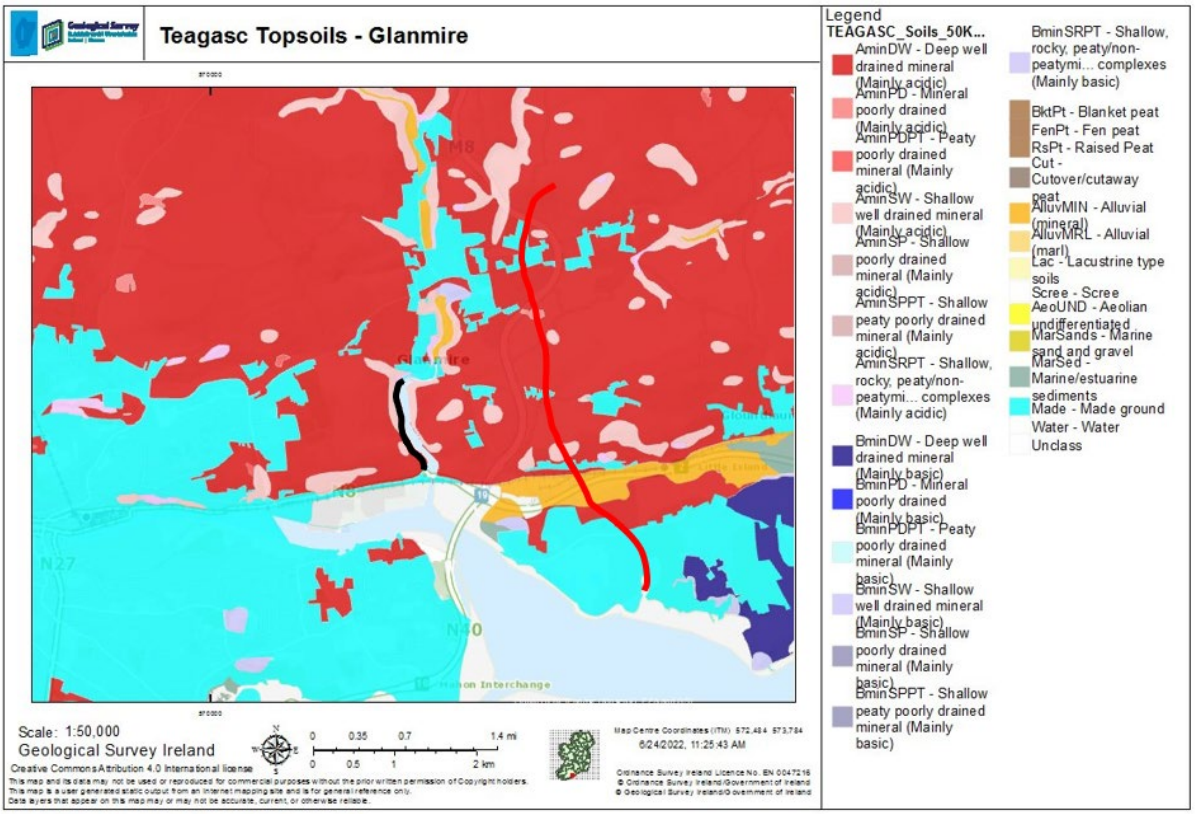

Figure 4.10: Teagasc Topsoil Soil Classification; approximate site location indicated by black line (Source: GSI, 2022).

4.10 Geology

The site is underlain by Gyleen Formation as shown in green in Figure 4.11. The formation is described as 'fining upwards sequences of subsidiary red sandstone and dominant red sandstones with thinly bedded alternations of green and red sandstones, siltstones, and mudstones towards the top' (GSI, 2022). The maximum thickness is said to be 463m.

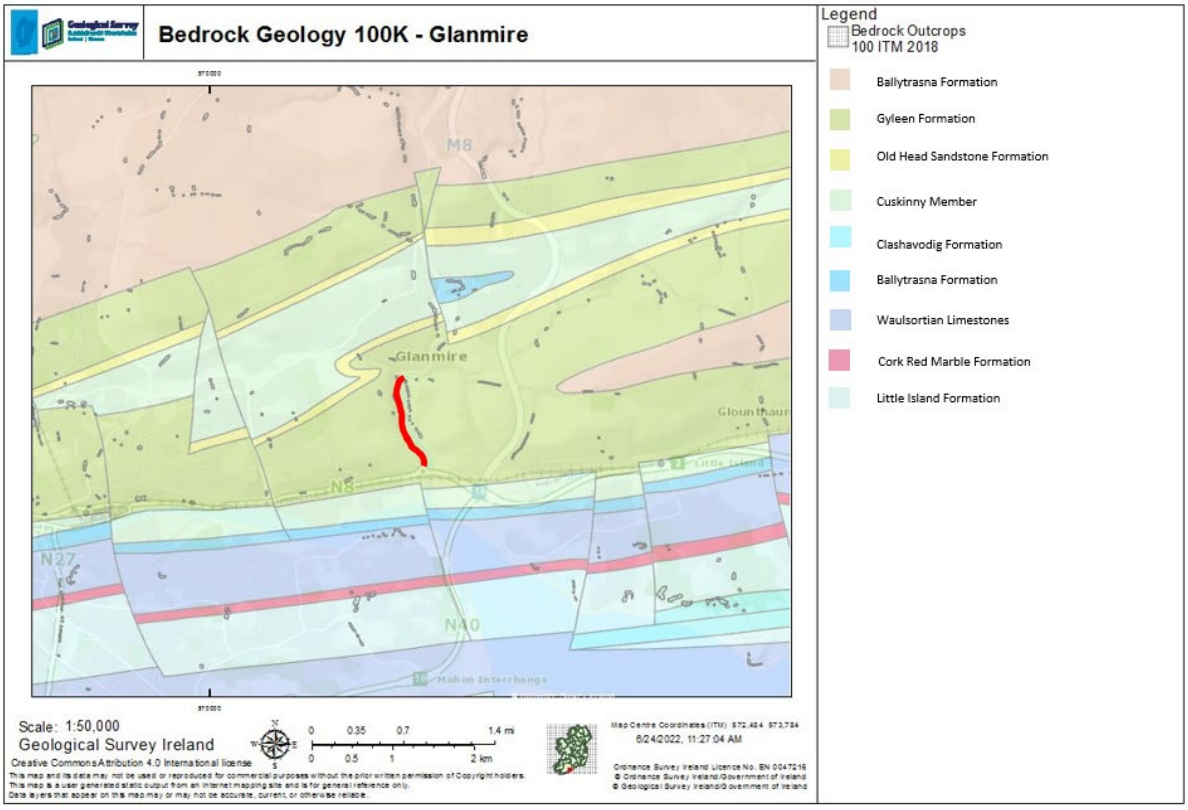

Figure 4.11: Bedrock Geology; approximate site location indicated by red line (Source: GSI, 2022).

4.11 Areas of Geological Interest

The GSI online mapping service was consulted regarding areas of geological interest in the vicinity of the site. The nearest area of geological interest is Beaumont Quarry (CC002) which is located 2.83km southwest of the site and is a designated County Geological Site (CGS). Beaumont Quarry is a partially revegetated quarry of historical importance in the city, with accessible cave systems. It has carboniferous limestone that was quarried and used in buildings throughout the city. The second nearest area of geological interest is an area of the Blackrock Diamond Quarry (site code CC003), located 3.43km southwest of the site. It is a CGS and is recommended for Geological Natural Heritage Area (NHA). This historical quarry is where amethyst was found but has largely been built over, though some portions of quarry walls are still visible. Waulsortian limestones from the Dinantian have historically yielded amethyst crystals at this locality. Karst features such as pipes are infilled with Quaternary diamict at this site.

Given the distance between the site and the two nearest areas of geological interest, it can be considered that these are not within the area of influence of the proposed development. See Figure 4.12.

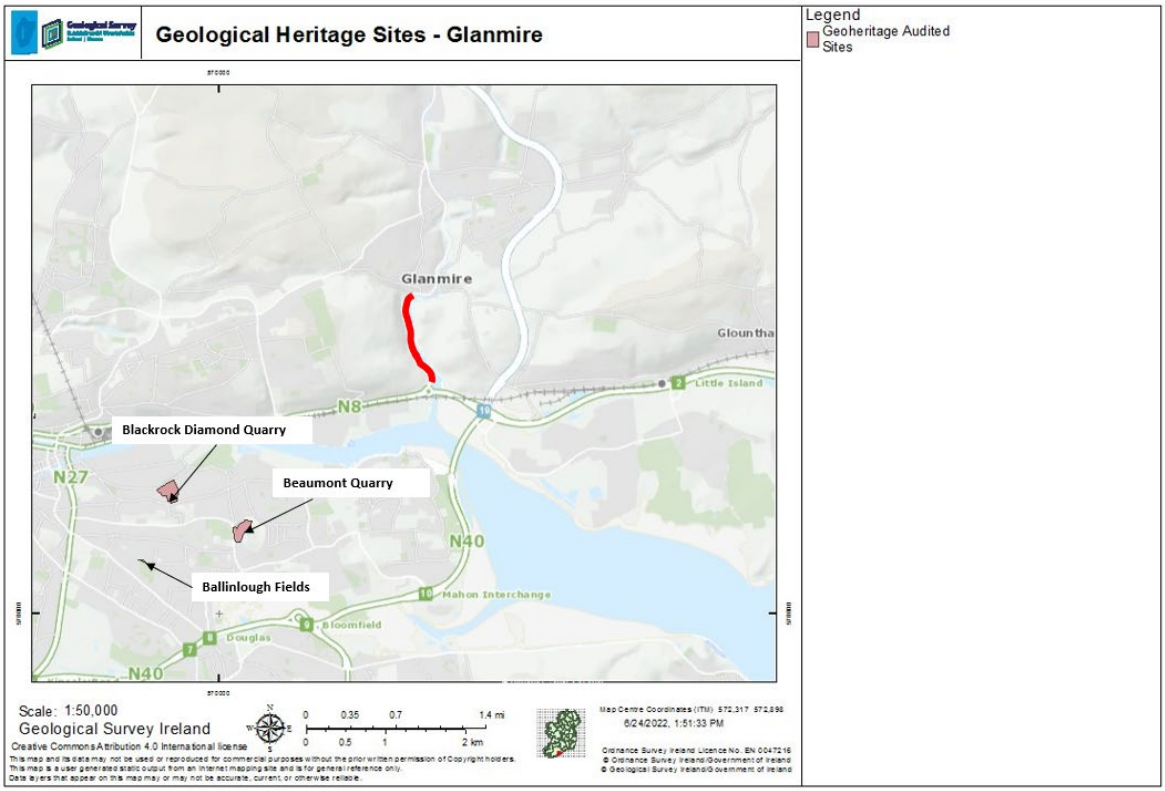

Figure 4.12: Geological Heritage Sites; approximate site location indicated by red line (Source: GSI, 2022).

4.12 Aquifers

The GSI provides a methodology for aquifer classification based on resource value (Regionally Important, Locally Important, and Poor) and vulnerability (Extreme, High, Moderate, or Low). Resource value refers to the scale and production potential of the aquifer whilst vulnerability refers to the ease with which groundwater may be contaminated by human activities (vulnerability classification primarily based on the permeability and thickness of subsoils). The site is underlain primarily by a locally important aquifer, which is moderately productive only in local zones. Just south of the site the area is underlain by a locally important gravel aquifer as shown in Figure 4.13.

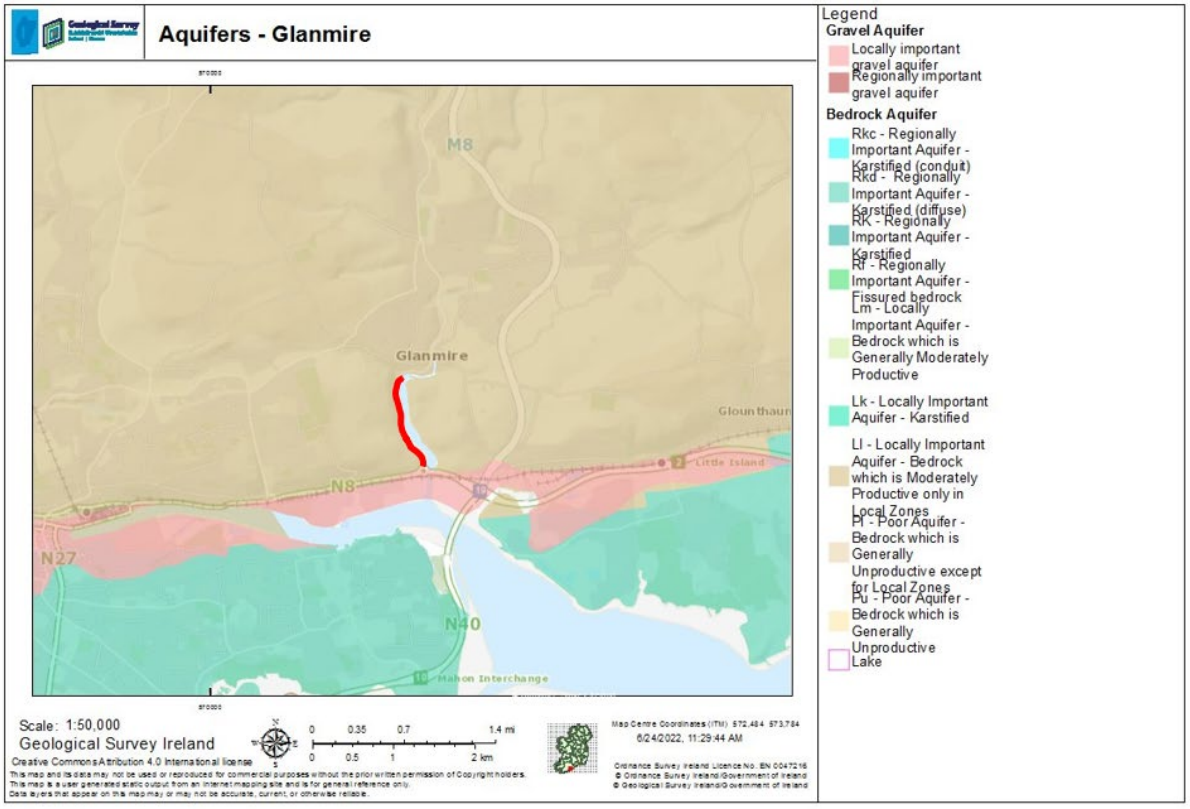

Figure: 4.13 Aquifers: approximate site location indicated by red line (Source: GSI, 2022).

4.13 Groundwater Vulnerability

The GSI resources describe three different groundwater vulnerabilities beneath the site: the northern portion and most of the site as 'Rock at or near Surface or Karst', the centre of the site as Extreme 'E' and the southern portion of the site as 'H' high. See Figure 4.14.

Vulnerability ratings are related to a function of overburden thickness and permeability which might offer a degree of protection and/or attenuation to the underlying aquifer from surface activities and pollution.

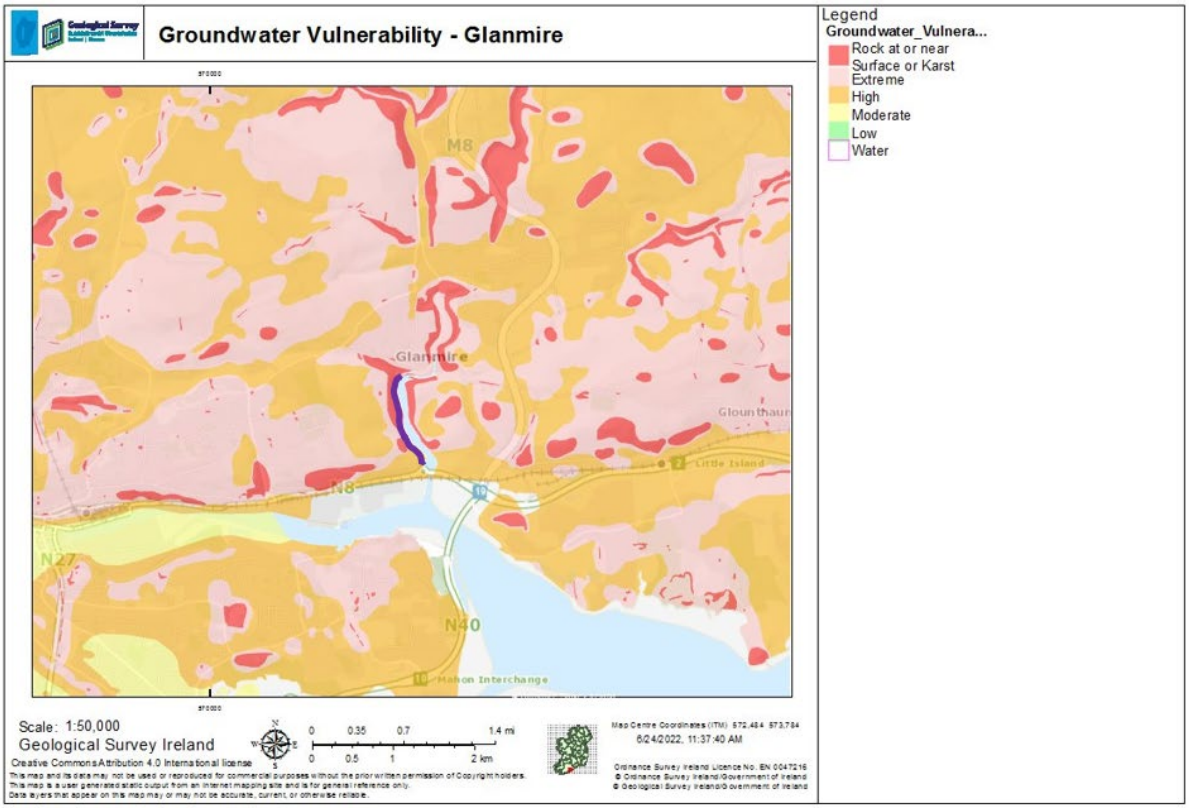

Figure 4.14: Groundwater Vulnerability; approximate site location indicated by purple line (Source: GSI, 2022).

4.14 Groundwater Recharge

Diffuse recharge generally occurs via rainfall percolating through the subsoil with its rate being higher in areas where the subsoil is thinner and/or more permeable. The proportion of effective rainfall that recharges the aquifer is largely determined by the thickness and permeability of the soil and subsoil and by the slope. The groundwater recharge zones associated with the site are shown in Figure 4.15. GSI groundwater recharge model parameters for these zones are summarised in Table 4.1.

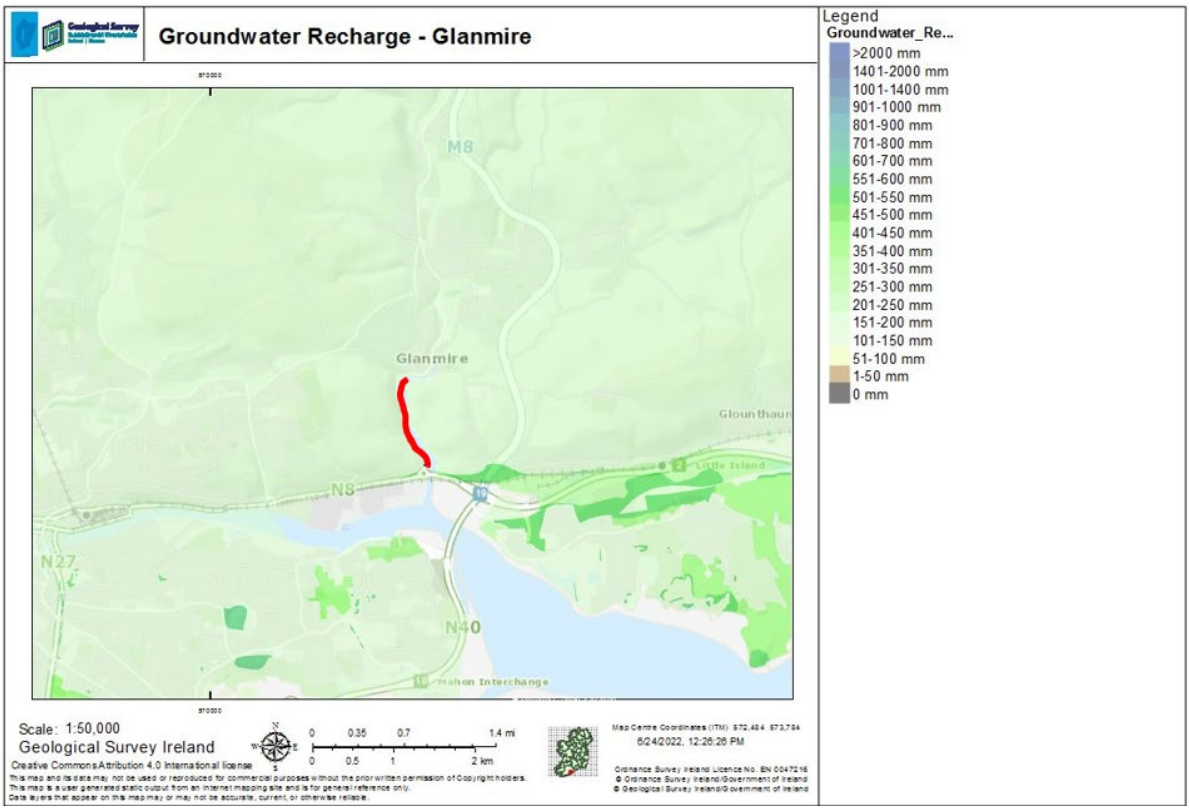

Figure 4.15: Groundwater Recharge; approximate site location indicated by blue line (Source: GSI, 2022).

Table 4.1: GSI Groundwater Recharge Parameters

Groundwater Recharge Parameters						
Site Location:	Northern	The Grotto	Cork's Vienna Woods Hotel and Holiday Homes	Centre	Before Lota House And Dunkettle	At Dunkettle roundabout
Average Recharge (mm/yr.):	130	200	200	200	200	200
Hydrogeological Setting:	1.m	1. i	1. i	1. i	1. iv	2. ii
Hydrogeological Setting Description:	E Vul: Made ground	E Vul: Areas where rock is at ground surface or karst feature	E Vul: Areas where rock is at the ground surface or karst feature	E Vul: Areas where rock is at the ground surface or karst feature	E Vul: Till overlain by well-drained soil	H Vul: High permeability subsoil (sand & gravel) overlain by well-drained soil
Recharge Coefficient (%):	20.00	85.00	85.00	85.00	60.00	85.00
Effective Rainfall (mm/yr):	652.100	623.200	616.000	644.400	644.400	644.400
Recharge (mm/'yr):	130	530	524	548	387	548
Subsoil Permeability Description:	N/A	N/A	N/A	N/A	N/A	High
GW Vulnerability:	Extreme	Rock at or near the Surface of Karst	Rock at or near the Surface of Karst	Rock at or near the Surface of Karst	Extreme	High
Aquifer Category:	LI	LI	LI	LI	LI	LI
Aquifer Category Description:	Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones	Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones	Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones	Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones	Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones	Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones

4.15 Wells & Springs

A search of the GSI groundwater well database was conducted to identify registered wells within the site footprint and/or the surrounding area. There were no boreholes found within the site boundary.

There are twenty-five boreholes located within a 2km radius of the site boundary and were installed for agricultural & domestic use, public supply and other uses. The closest well or spring, the type is unknown (1707SWW092) was dug for an unknown reason on October 1st 1961. This well or spring was dug to a depth of 28.7m and is located approximately 0.02km north of the site. The second nearest borehole (1707SWW097) is located 0.15km west of the site across the Glashaboy River. The borehole was dug to a depth of 24m on November 1st 1998 for an unknown use. See Figure 4.16 for the location of the other wells/springs.

The GSI database also provides a framework for the protection of groundwater source zones (e.g. areas of contribution to water supply bores). There are no reported source protection zones (SPZs) within a 2km radius of the proposed site. The nearest SPZ is Carraig na bhFear which is situated approximately 9.54km west-northwest of the site. See Figure 4.17.

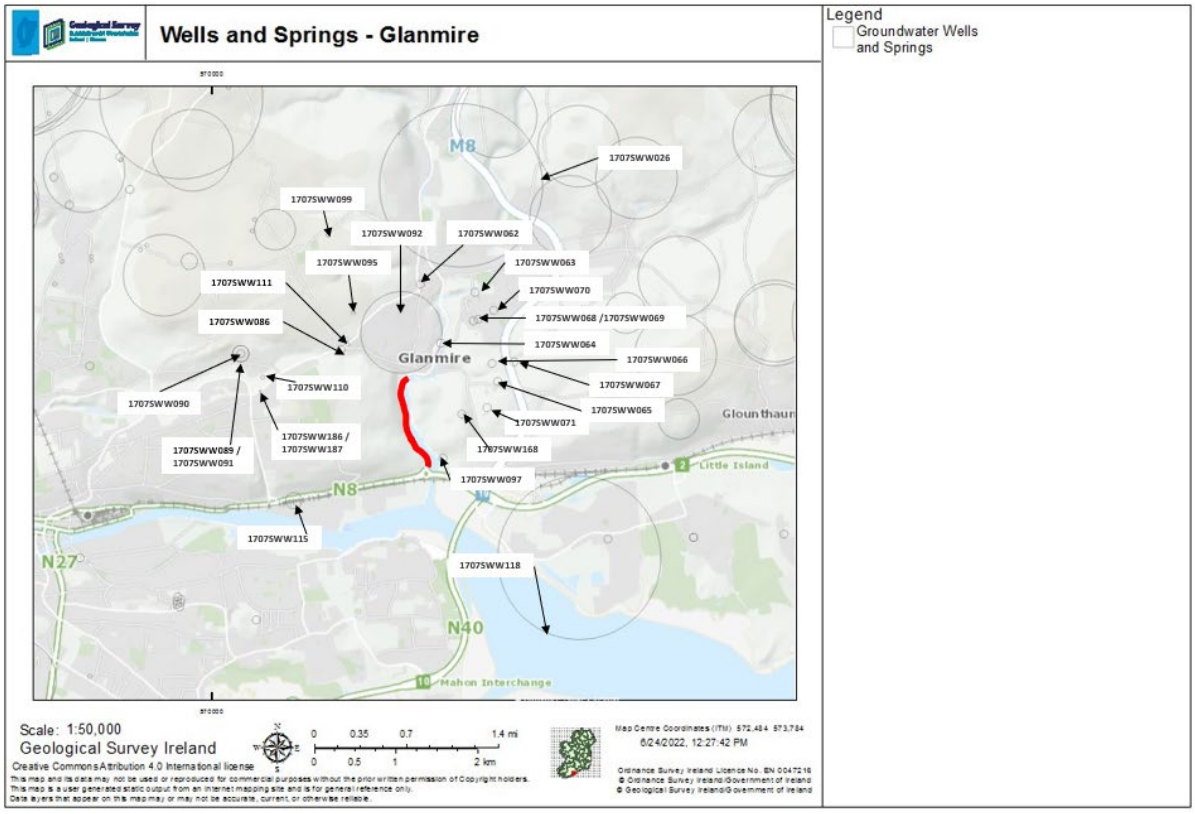

Figure 4.16:Wells and Springs; approximate site location indicated by red line (Source: GSI, 2022).

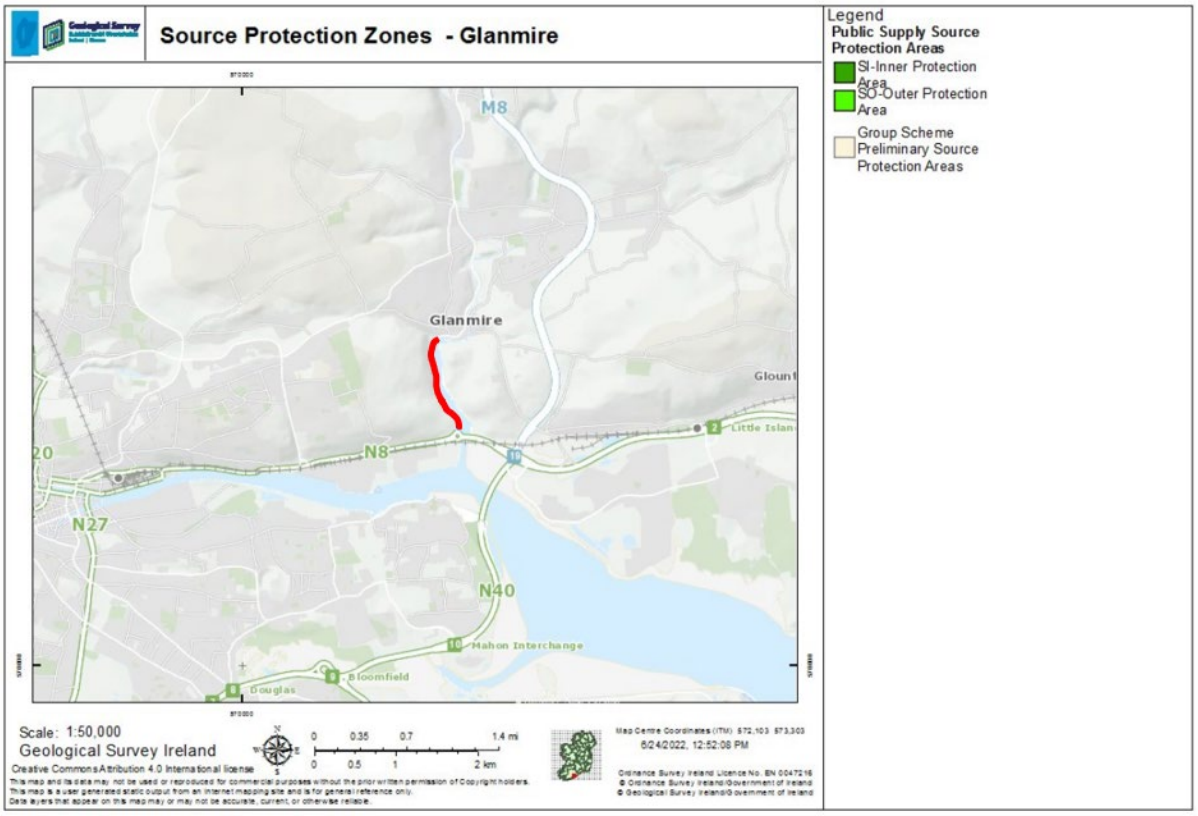

Figure 4.17:Source Protection Zones; approximate site location indicated by red line (Source: GSI, 2022).

4.16 Hydrology

There are no surface water features within the site boundary however the Glashaboy River (IE_SW_060_0800) is located immediately east of and parallel to the Glanmire to City Cycle Route (Phase 1) (Figure 1.1). The Glashaboy River flows from north to south where it enters the River Lee (IE_SW_060_0750), Lough Mahon the Transitional Waterbody. The River Lee flows southeast to Cork Harbour and discharges into the sea.

The EPA designated the transitional waterbody of Glashaboy Estuary (Code IE_SW_060_0800) as having an overall Water Framework Directive (WFD) Status of 'Good' based on the most recent water quality information from 2013-2018. Lough Mahon Transitional Waterbody (Code IE_SW_060_0750) has an overall Water Framework Directive (WFD) Status of 'Moderate'; according to the 2013-2018 information. See Figure 4.18.

The EPA spatial dataset shows that the WFD Transitional Waterbody Risk associated with the Glashaboy Estuary and Lough Mahon, both are 'At Risk' of not meeting its 2027 WFD objectives (EPA 2022) as shown in Figure 4.19. WFD summary information for these waterbodies are summarised in Table 4.2.

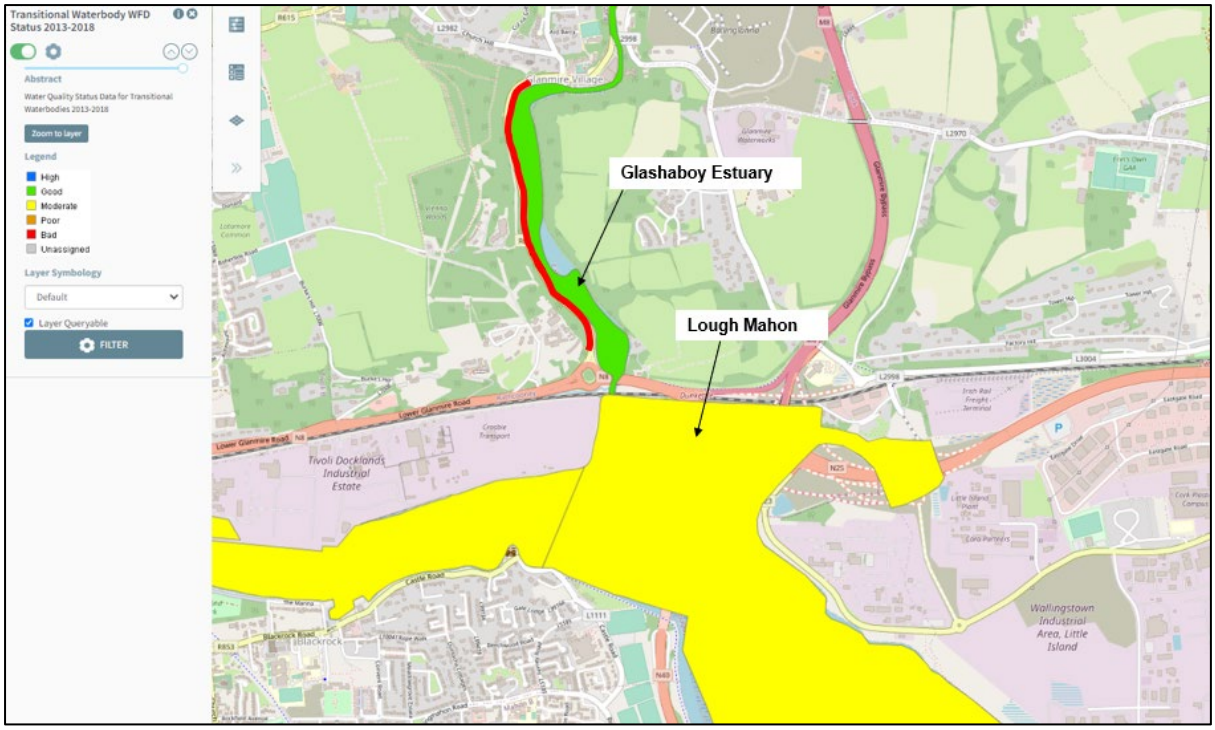

Figure 4.18:Transitional Waterbody WFD Status (approximate site location indicated by the red line) (Source: EPA Maps, 2022).

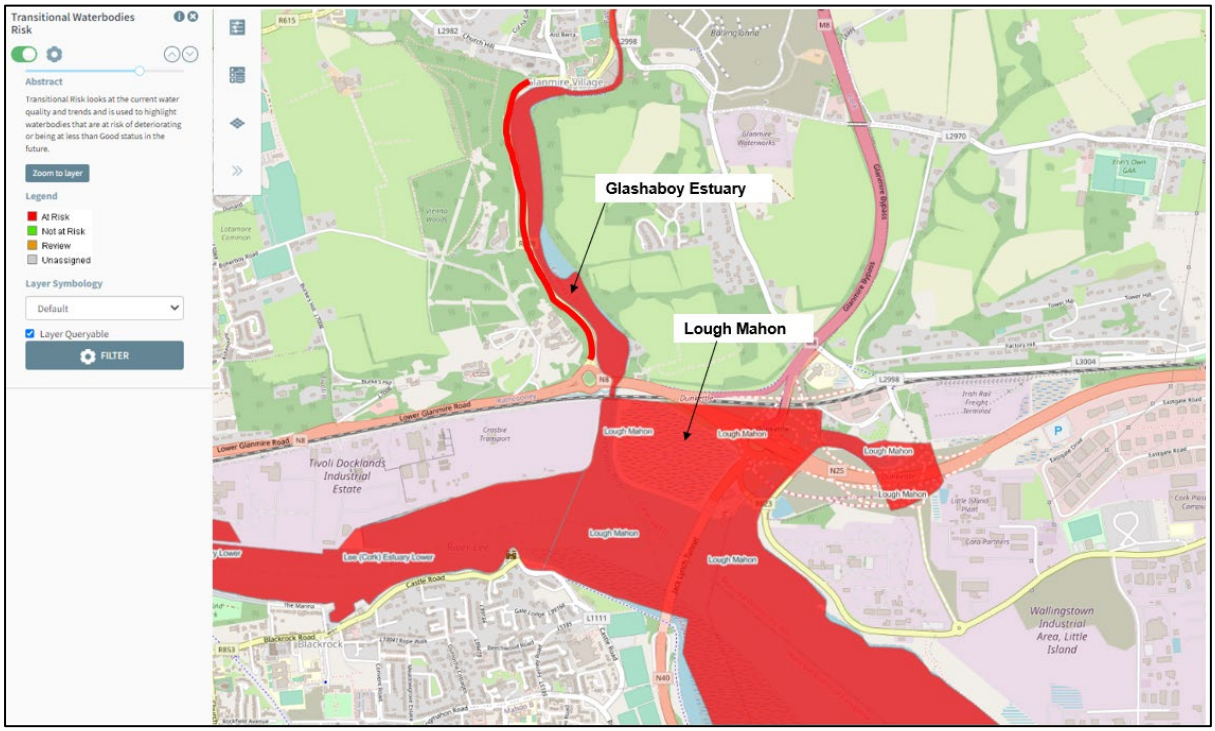

Figure 4.19: Transitional Waterbodies Risk (approximate site location indicated by the red line) (Source: EPA Maps, 2022).

Table 4.2:WFD Summary Information - Glashaboy Estuary & Lough Mahon

Waterbody Code	IE_SW_060_0800	IE_SW_060_0750
Waterbody Name	Glashaboy Estuary	Lough Mahon
Waterbody Type	Transitional	Transitional
Iteration	SW 2013-2018	SW 2013-2018
Status	Good	Moderate
Risk	At-Risk	At-Risk

4.17 Radon

According to the EPA (now incorporating the Radiological Protection Institute of Ireland), the site has been classified as having two different radon results. In the northern part of the site about 1 in 5 homes in this area is likely to have high radon levels and in the southern part of the site about 1 in 10 homes in this area is likely to have high radon levels as shown in Figure 4.20.

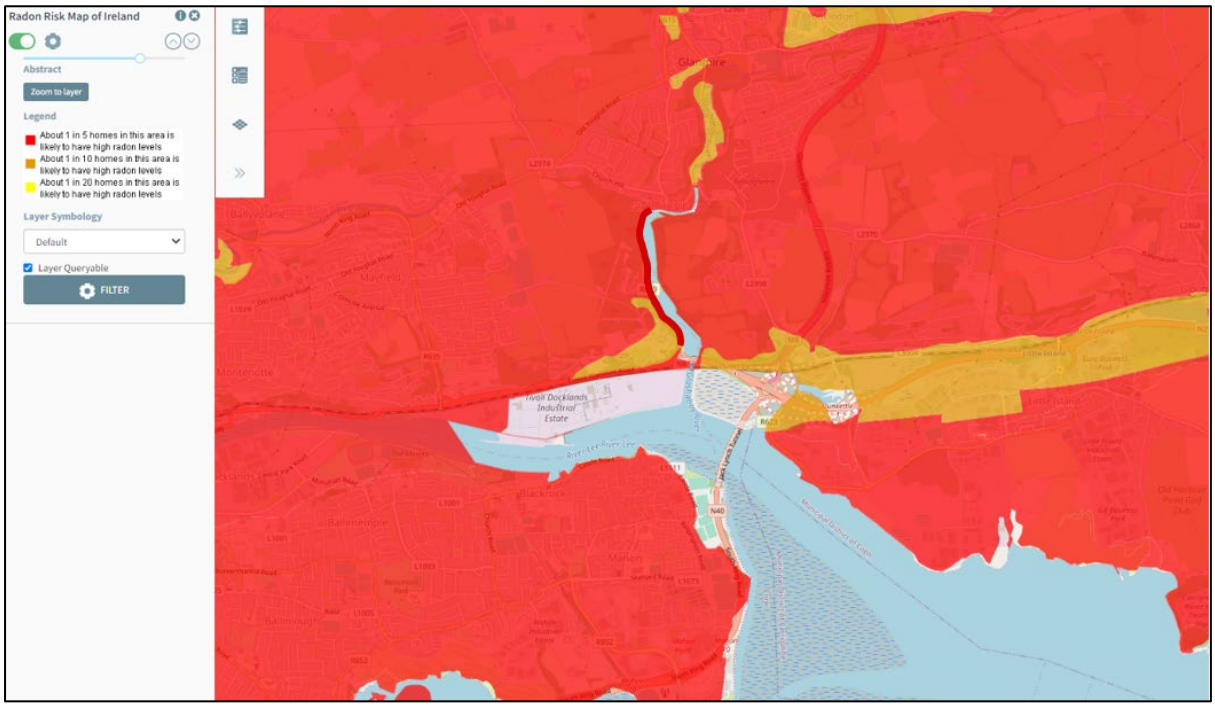

Figure 4.20: Radon Risk; approximate site location indicated by red line (Source: EPA Maps, 2022).

4.18 Protected Structures

The National Monuments Service (NMS) maps show that there are fifteen protected structures within a 20m radius of the proposed works, See Figure 4.20 for the location of each. To the north there are; 1-3 - The Cottages, Reg. No. 20860012 / 20860013 / 20860014, built between 1800 and1840; 4 - Glen Mervyn House Reg. No. 20860017, built as a school between 1800 and 1820, now used as gates/railings/walls, 5 -Glen Mervyn House, Reg. No. 20860009, was a house now used as an office built between 1860 and 1880; 6 - The Old Post Office; now used as a house, Reg. No. 20860015, built between 1800 and 1840, 7 – St Mary's and All

Saints Church, Reg No. 20860010 / CO074-104, built between 1780 and 1785; 8 – A school, Reg. No. 20860011, built between 1820 and 1840 and now used as a flat; 9 - The Cottage, Reg. No. 20860008, a worker's house built between 1820 and 1840 now used as a house; to the west, 10 - Vienna Woods, a country house, Reg. No. 20864026, built between 1900 and 1905, now used as a hotel; to the southwest, 12 – Brothers of Charity Southern Services, Reg. No. 20864025, built between 1860 and 1890, a folly now used as a graveyard; 13-15 – Brothers of Charity Southern Services, Reg. No. 20864024 /20864023 / CO074-026, built between 1960 and 1970, a country house now used as a church / nursing home. Some protected structures are located on the same grounds.

See Figure 4.21 for the locations of protected structures in relation to the site.

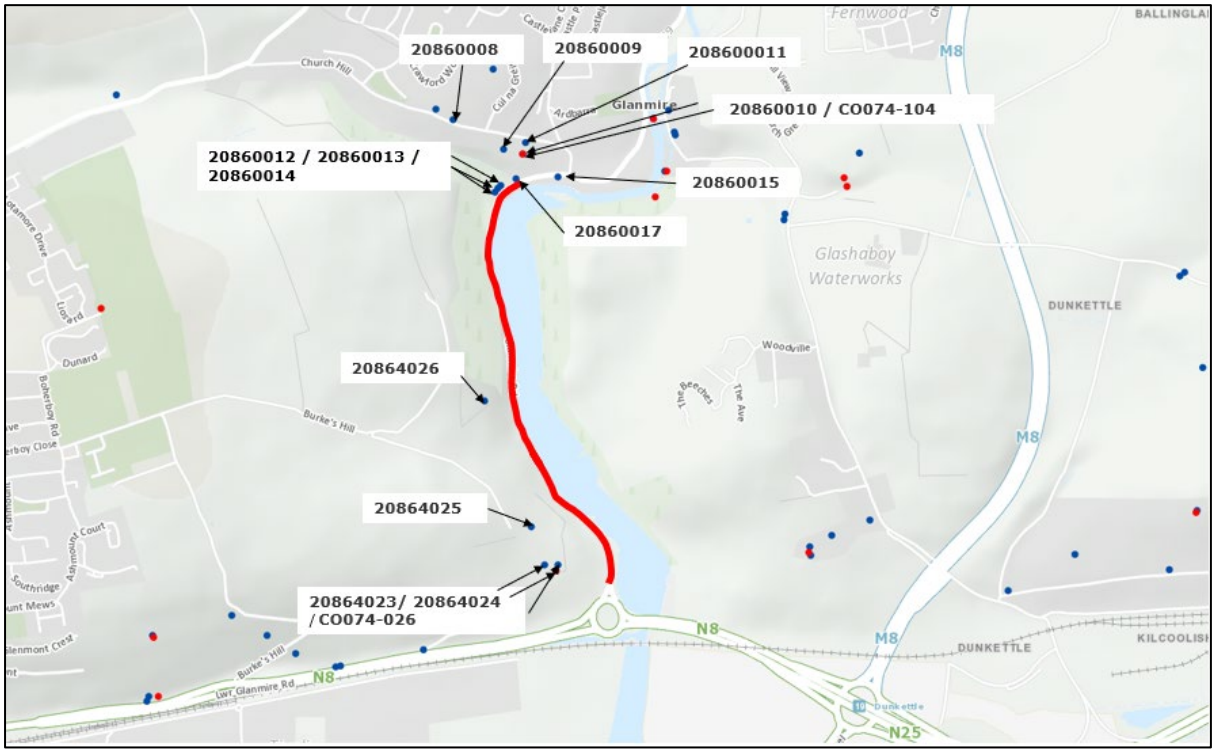

Figure 4.21: National Monument Service Protected Structures within 20m of the proposed site; approximate site location indicated by red line (Source: NMS, 2022).

4.19 Nearby Site Investigations

The Geological Survey of Ireland (GSI) have compiled a database from site investigations carried out in Ireland. Figure 4.22 identifies the site investigation's locations closest to the vicinity of the site.

There are twenty investigations located within a 2km radius of the site. The nearest investigation (Report ID 6,846) to the site runs north to south along the eastern side of the site. The next nearest (Report ID 3,893) is a group of boreholes located 0.06km south of the site. No further information was given about both of these investigations. Report ID 3,015 is located 0.13km south of the site and was investigated for a GSI Pionjar Probe Survey. See Figure 4.22 for the location of all other site investigations and nearby boreholes.

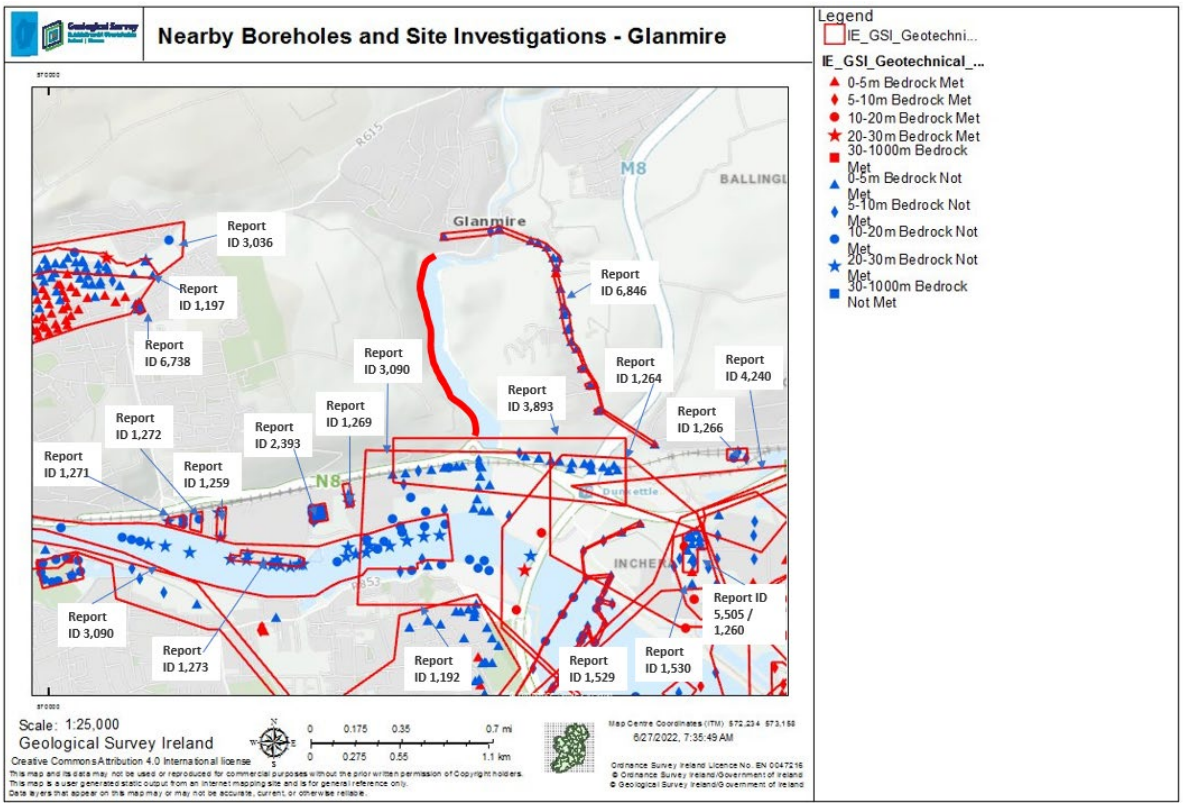

Figure 4.22: Nearby Boreholes and Site Investigations; approximate site location indicated by yellow (Source: GSI, 2022).

4.20 Summary of the Physical Site Setting

Summary of the site physical setting are outlined in Table 4.3.

Table 4.3:Summary Site Setting

feature	details & comments
Topography	The topography of the regional area is varied with a downward slope from the woodland located just west of the site boundary to east of the site at the Glashaboy River (Cork Harbour SPA).
Geology	**Topsoil:** The site is comprised of two different soils, Shallow, rocky, peaty/non-peaty mineral complexes, (Mainly acidic), in the northern portion of the site and Deep well drained mineral (Mainly acidic), in the southern part of the site.
	Solid Geology: The site is underlain by Gyleen Formation.
Hydrogeology	**Aquifer Classification:**

	The site is underlain primarily by a locally important aquifer (LI), which is moderately productive only in local zones. Just south of the site the area is underlain by a locally important gravel aquifer
	Vulnerability & Recharge: The GSI resources describe three different groundwater vulnerabilities beneath the site: the northern portion and most of the site as 'Rock at or near Surface or Karst', the centre of the site as Extreme 'E' and the southern portion of the site as 'H' high. GSI groundwater recharge model parameters for these zones are summarised in Table 4.1.
	Well Search: There are twenty-five boreholes located within a 2km radius of the site boundary and were installed for Agri & domestic use, Public supply and other uses There were no Source Protection Zones identified within 2 km of the site. It is therefore assumed that there are no public supply wells within this area.
Hydrology	**Surface Water Courses:** The closest surface water feature is the Glashaboy River (IE_SW_060_0800) which is located immediately east of and parallel to the Glanmire to City Cycle Route (Phase 1).

5 TYPES AND CHARACTERISTICS OF POTENTIAL IMPACTS

The likely significant effects on the environment of proposed development in relation to specified criteria are outlined below.

5.1 Magnitude and Spatial Extent of Impact

This project relates to the construction of a cycle track, public realm space, boardwalk and associated public lighting along the existing R639. This project is relatively small in magnitude and extent and occupies the existing road footprint. In addition (but not relying on) the application of a well thought out and thorough Construction Environmental Management Plan for this project will further reduced the potential of any impacts.

5.2 The Nature of the Impact

This project relates to the construction of cycle track, public realm space, boardwalk and associated public lighting along the existing R639. This project is small in magnitude and extent. Any potential impacts are not likely to be significant.

5.3 The Transboundary Nature of the Impact

There is no potential for transboundary impacts.

5.4 The Intensity and Complexity of the Impact

The project involves a small work area which has been limited to that required to create safe cycle access through the area. Any potential impacts are not likely to be significant.

5.5 The Probability of the Impact

The probability of impacts is low based on the following considerations:

- A project-specific CEMP will be prepared by the appointed contractor.
- The receiving environment is considered sensitive given the location of an SPA located immediately adjacent to the study area; however, no in-stream works will take place as part of the proposed development and a no discharge will occur during construction.

5.6 Expected Onset, Duration, Frequency and Reversibility of the Impact

Based on the limited work area required to undertake the proposed enhancement works and the short duration of the project, no significant or long-term potential impacts are anticipated.

5.7 The Cumulation of the Impact with the Impacts of other Existing and/or Future Developments

There are no likely cumulative impacts of the proposed works in conjunction with committed developments based on a review of planning grants.

5.8 The Possibility of Effectively Reducing the Impact

The small area affected has been limited to that required to enhance cycle access and safety in the area along the Glashaboy River. A CEMP will be prepared by the appointed contractor taking into account all site works and detailing all required mitigation measures.

The potential exists, particularly at the construction stage, for a small amount of nuisance associated with localised traffic disruption and construction noise and dust. However, for the most part, construction impacts related to this project are likely to be minimal and temporary.

5.9 Screening Decision

Based on the nature, scale, and location of the proposed project, by itself and in combination with other plans and projects, it is considered that the overall impact on the receiving environment will be low.

An Appropriate Assessment (AA) Screening Report has been prepared by OCSC which concluded that the project will not give rise to significant impact on any European sites and therefore has been screened out.

Please refer to the completed Screening Checklist identified in European Commission publication Environmental Impact Assessment of Projects, Guidance on Screening (2017).

Table 5. 1:Environmental Impact Assessment of Projects Screening Checklist.

Checklist	Response
Will there be a large change in environmental conditions?	No
Will new features be out-of-scale with the existing environment?	No. The improvement will create access for pedestrians.
Will the impact be unusual in the area or particularly complex?	No
Will the impact extend over a large area?	No
Will there be any potential for transboundary impact?	No
Will many people be affected?	Minor temporary impacts. Overall positive impact in creating new pedestrian access.
Will many receptors of other types (fauna and flora, businesses, facilities) be affected?	No (refer to AA screening)
Will valuable or scarce features or resources be affected?	No (refer to AA screening)
Is there a risk that environmental standards will be breached?	No (refer to AA screening)
Is there a risk that protected sites, areas, and features will be affected?	No
Is there a high probability of the effect occurring?	No
Will the impact continue for a long time?	Temporary, short term.
Will the effect be permanent rather than temporary?	No (refer to AA screening)
Will the impact be continuous rather than intermittent?	Temporary and short-term following construction.

If it is intermittent will it be frequent rather than rare?	-
Will the impact be irreversible?	No
Will it be difficult to avoid, or reduce or repair or compensate for the effect?	No