Ecological Impact Assessment Report

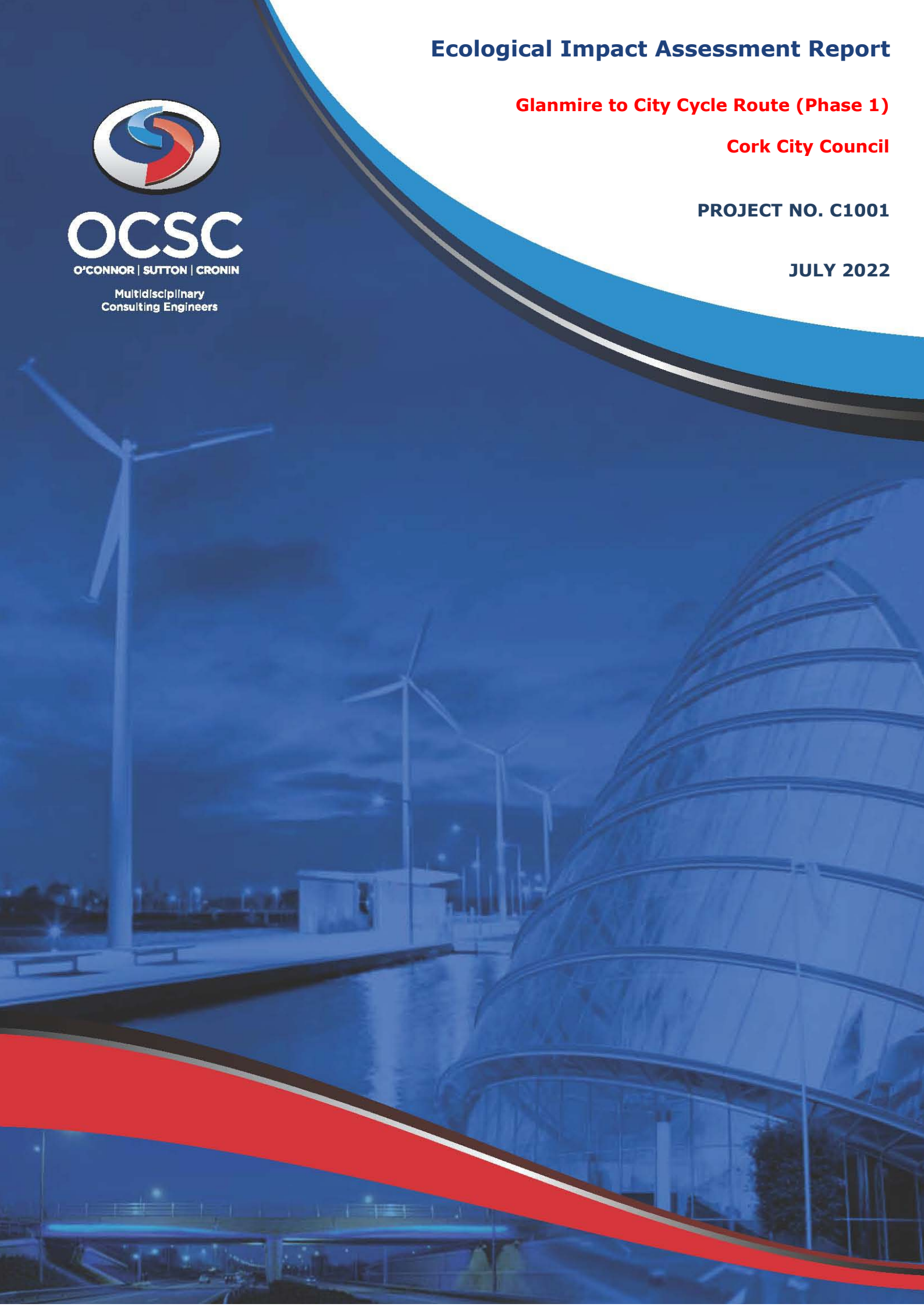
Glanmire to City Cycle Route (Phase 1)

Cork City Council

PROJECT NO. C1001

JULY 2022

OCSC
O'CONNOR | SUTTON | CRONIN
Multidisciplinary
Consulting Engineers



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REPORT

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NOTICE

DOCUMENT CONTROL & HISTORY

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1 INTRODUCTION

1.1 Background

This Ecological Impact Assessment (EcIA) 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.

Figure 1.1: Area in red showing the linear extent of the site (Source: EPA Maps, 2022).

1.2 Aims and Approach

The overall purpose of this report is to assess the status of known potential ecological constraints to the construction and/or operation of the completed and proposed works and to identify mitigation requirements to ensure compliance with relevant national and European statutory requirements for ecological protection.

The report provides an assessment of the estimated potential impacts of the completed and proposed development on the ecological environment, i.e. flora and fauna, collectively known as biodiversity. The Assessment follows Guidelines for Ecological Impact Assessment in the UK and Ireland by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018), and guidelines for ecological report writing (CIEEM, 2017). This EcIA process follows the tasks set out in Table 1.1.

Table 1.1. EcIA process, as detailed in CIEEM (2016).

Task	Description
Scoping	Determining the matters to be addressed in the EcIA, including consultation to ensure the most effective input to defining the scope. Scoping is an ongoing process – the scope of the EcIA may be modified following further ecological survey/research and during impact assessment.
Establishing the baseline	Collecting information and describing the ecological conditions in the absence of the proposed project, to inform the assessment of impacts.
Important ecological features	Identifying important ecological features (habitats and species) that may be affected, with reference to a geographical context in which they are considered important.
Impact assessment	An assessment of whether important ecological features may be subject to potential impacts and characterisation of these impacts and their effects. Assessment of potential residual ecological impacts of the project remaining after mitigation and the significance of their effects, including cumulative effects.
Avoidance, mitigation, compensation, and enhancement	Incorporating measures to avoid, reduce, and/or compensate for potential ecological impacts and the provision of ecological enhancements.
Monitoring	Monitoring impacts of the development and evaluation of the success of proposed mitigation, compensation, and enhancement measures.

1.3 Evidence of Technical Competence and Experience

The fieldwork and report were completed by Luis Iemma BSc, MSc, Ph.D, Senior Ecologist, assisted by Eadaoin Butler BSc in Ecology, Ecologist, and reviewed by Glenda Barry, Principal Consultant, BSc, MSc and approved by Eleanor Burke BSc, MSc, DAS, MIEnvSc, CSci, Technical Principal, and the OCSC Environmental Division Manager.

1.4 Limitations

This Ecological Impact Assessment 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, site visits, 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 February 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.

2 Project description

2.1 Overview

This EcIA has been prepared by OCSC for the Glanmire to City Cycle Route (Phase 1), Cork on behalf of Cork City Council. 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 addition of a public realm space and a boardwalk. 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 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.

2.2 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 to the west and the Glashaboy River to the east.

Figure 2.1: Study Area; approximate site location is shown in red (Source: Google Earth, 2022)

2.3 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. South of the study is made up of 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 2.2 – 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

2.4 Adjacent River

There are no surface water features within the site boundary however there is one located immediately adjacent to the study area. The closest surface water feature is the Glashaboy

River (IE_SW_060_0800) which is located immediately east of and parallel to the proposed cycle track (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 2.2.

The EPA spatial dataset shows that the WFD Transitional Waterbody Risk associated with the Glashaboy Estuary and the Lough Mahon, are both 'At Risk' of not meeting its 2027 WFD objectives (EPA 2022) as shown in Figure 2.3. WFD summary information for this river is summarised in Table 2.2.

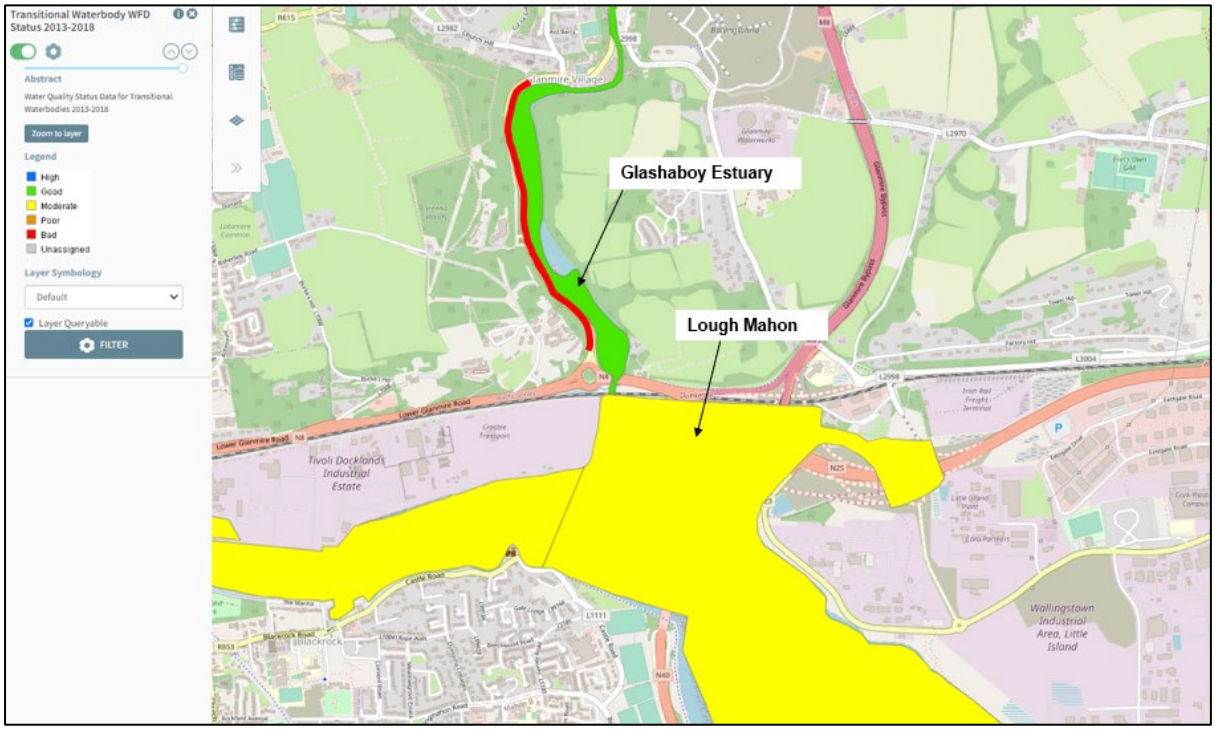

Figure 2.2 Transitional Waterbody WFD Status (approximate site location indicated by the red line) (Source: EPA Maps, 2022).

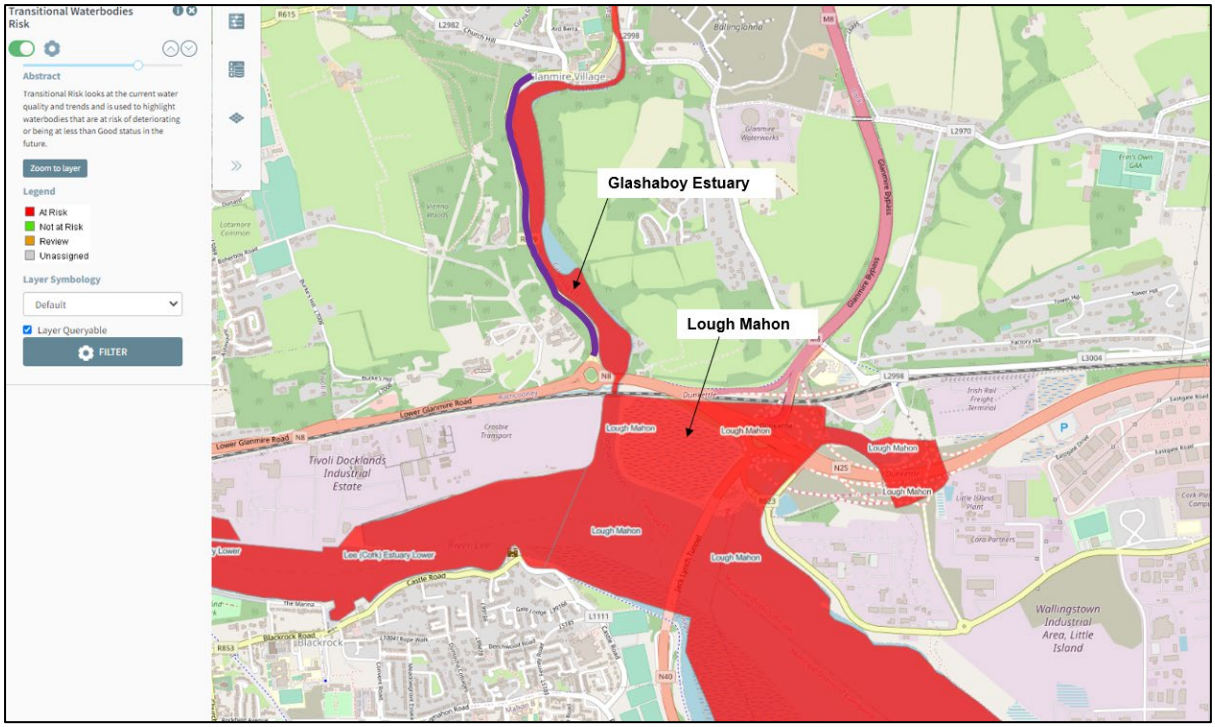

Figure 2.3: Transitional Waterbodies Risk (approximate site location indicated by the purple line) (Source: EPA Maps, 2022).

Table 2.2 - 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

2.5 Designated sites

Figure 2.4 and Table 2.3 below present details of the key ecological features of designated sites located within 15km of the site.

Table 2.3 *European Sites within 15 kilometres (ZOI) of the site.*

Site Code	Site Name	Distance (km)	Reasons for Designation (*=priority habitats)
Special Areas of Conservation (SAC) and Special Protection Areas (SPA)			
004030	Cork Harbour SPA	0.01 E	[A004] Little Grebe (Tachybaptus ruficollis) [A005] Great Crested Grebe (Podiceps cristatus) [A017] Cormorant (Phalacrocorax carbo) [A028] Grey Heron (Ardea cinerea) [A048] Shelduck (Tadorna tadorna) [A050] Wigeon (Anas penelope) [A052] Teal (Anas crecca) [A054] Pintail (Anas acuta) [A056] Shoveler (Anas clypeata)

Site Code	Site Name	Distance (km)	Reasons for Designation (*=priority habitats)
			[A069] Red-breasted Merganser (Mergus serrator) [A130] Oystercatcher (Haematopus ostralegus) [A140] Golden Plover (Pluvialis apricaria) [A141] Grey Plover (Pluvialis squatarola) [A142] Lapwing (Vanellus vanellus) [A149] Dunlin (Calidris alpina) [A156] Black-tailed Godwit (Limosa limosa) [A157] Bar-tailed Godwit (Limosa lapponica) [A160] Curlew (Numenius arquata) [A162] Redshank (Tringa totanus) [A179] Black-headed Gull (Chroicocephalus ridibundus) [A182] Common Gull (Larus canus) [A183] Lesser Black-backed Gull (Larus fuscus) [A193] Common Tern (Sterna hirundo) [A999] Wetland and Waterbirds
001058	Great Island Channel SAC	3.7 E	[1140] Mudflats and sandflats not covered by seawater at low tide [1330] Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
002170	Blackwater River (Cork/Waterford) SAC	12.8 N	[1130] Estuaries [1140] Tidal Mudflats and Sandflats [1220] Perennial Vegetation of Stony Banks [1310] Salicornia Mud [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [3260] Floating River Vegetation [91A0] Old Oak Woodlands [91E0] Alluvial Forests* [1029] Freshwater Pearl Mussel (Margaritifera margaritifera) [1092] White-clawed Crayfish (Austropotamobius pallipes) [1095] Sea Lamprey (Petromyzon marinus) [1096] Brook Lamprey (Lampetra planeri) [1099] River Lamprey (Lampetra fluviatilis) [1103] Twaite Shad (Alosa fallax) [1106] Atlantic Salmon (Salmo salar) [1355] Otter (Lutra lutra) [1421] Killarney Fern (Trichomanes speciosum)

Proposed Natural Heritage areas (pNHA)

Site Code	Site Name	Distance (km)
001082	Dunkettle Shore pNHA	0.01 E
001054	Glanmire Wood	0.02 E
001046	Douglas River Estuary	0.7 S
001058	Great Island Channel pNHA	3.2 E
001081	Cork Lough	6.2 SW
001979	Monkstown Creek	8.1 SE
000094	Lee Valley	8.7 SW
001857	Blarney Bog	8.8 W
001987	Cuskinny Marsh	9.7 SE
001990	Owenboy River	10.3 S
001066	Lough Beg (Cork)	10.4 SE
001074	Rockfarm Quarry, Little Island pNHA	10.8 SW
001064	Leamlara Wood pNHA	10.9 NE
001799	Ardamadane Wood	11.1 W
001798	Blarney Lake	11.4 W
001039	Blarney Castle Woods	11.4 W
000103	Shournagh Valley	11.7 W
001084	Whitegate Bay	12.7 SE
000099	Ballynaclashy House, North of Midleton pNHA	13.5 NE
001076	Rostellan Lough, Aghada Shore and Poulnabibe Inlet	13.9 SE
001249	Ballincollig Cave	14 SW

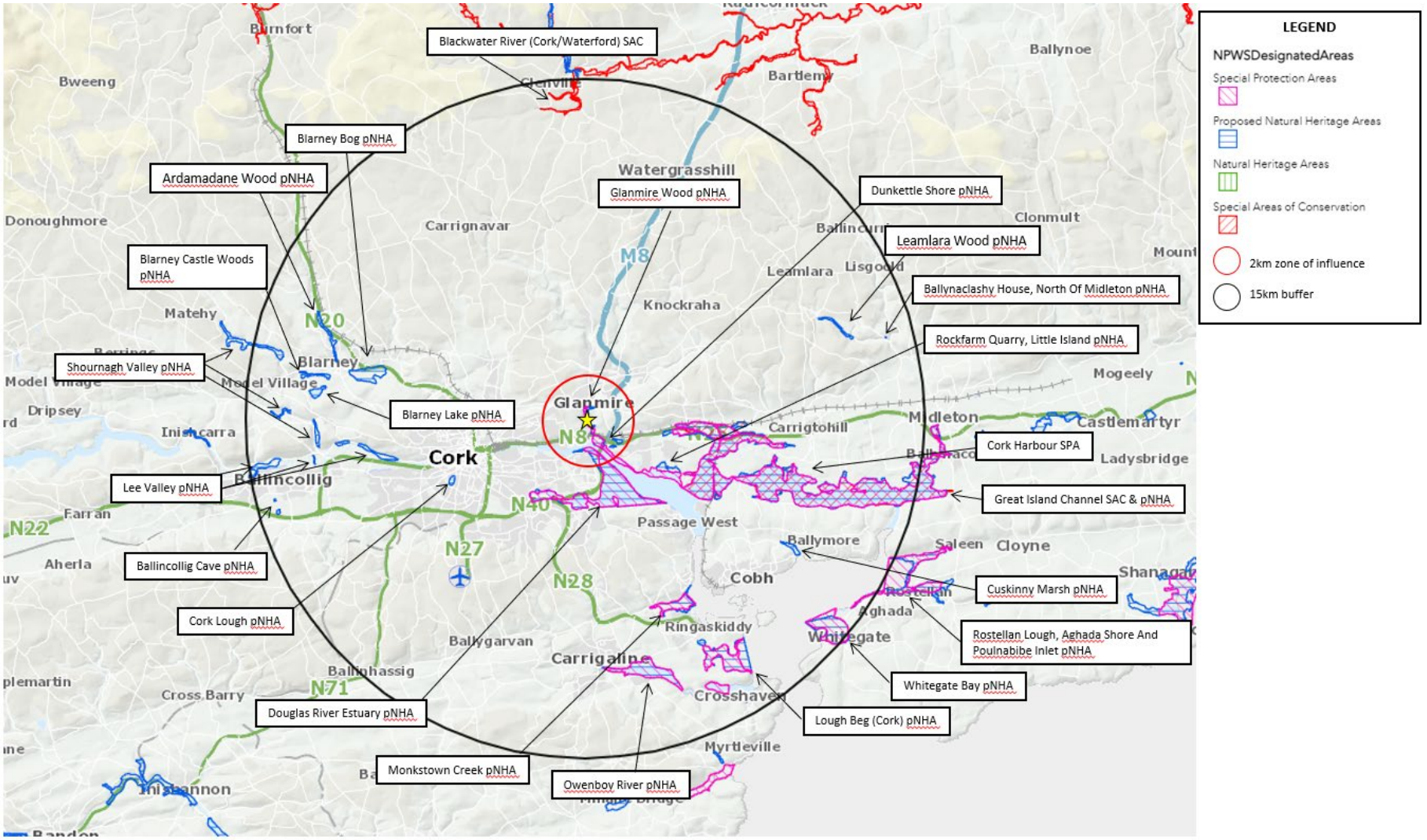

Figure 2.4: Designated Sites within 15km radius. The approximate site location is shown as a star (Source: NPWS Maps, 2022).

3 Methodology

The methods used to carry out the survey of the site, to evaluate the habitats and species, and to prepare the report are outlined in this section. The assessment method for this report was developed using the standard professional impact assessment guidance published in 2018 by Chartered Institute of Ecology and Environmental Management (CIEEM).

3.1 Scope of the Report

The scope of this report is to set out the baseline ecology of the site using the findings of the desk and field study. The extent of the study area is delineated by the site boundary. The scope of the baseline ecology survey is to classify the habitats present within the site and to evaluate their suitability to support protected species.

3.2 Zone of Influence

Construction and operation of machinery have the potential to result in localised impacts and minor localised effects. However, the potential zone of influence for developments of this scale and nature, that do not result in emissions to air or water or where such emissions are so low that any effect would not be appreciable, would be limited a maximum distance of 2 km and is likely to be much less than this. The site location and the potential zone of influence is shown on Figure 2.4.

3.3 Desk Study

A desk study was carried out to collate the available existing ecological information on the Site. The Site and the surrounding area were viewed using available satellite imagery.

The desk study included research on the National Parks and Wildlife Service (NPWS) and National Biodiversity Data Centre (NBDC) websites and a literature review of published information on flora and fauna occurring within the zone of influence of likely significant ecological impact. Key resources included:

- Information on nationally designated sites available in site synopses available from the NPWS online (www.npws.ie);
- Data on rare / protected / threatened species and designated sites held online by the NPWS (www.npws.ie) and the National Biodiversity Data Centre (www.biodiversityireland.ie);
- Cork County Council website was also accessed for information on relevant planning policy while the planning portal was accessed for information on other planning applications within the Site and immediate surrounding area.

The conservation status of mammals within Ireland and Europe was evaluated using one or more of the following documents: Wildlife Acts (1976 - 2012), the Red List of Terrestrial Mammals (Marnell et al., 2009), and the EU Habitats Directive 92/43/EEC.

3.4 Field surveys

A site walkover was undertaken on the 17th of February 2022 by Ecologist, Eadaoin Butler. The site visit was carried out in dry weather conditions with moderate breezes and cloud cover (8/8 Oktas). The temperature was 8°C. The objective of the site visit was to undertake a walkover survey to better understand the ecology of the site and to determine its ecological value.

3.4.1 Habitats

Habitats were identified, described, and classified to level 3 (where possible) of the standard Heritage Council classification scheme (Fossitt, 2000) during the walkover survey (see Figure 5.1). Features of ecological interest, if present, were noted, and the dominant plant species present in each habitat type were recorded. This is not a comprehensive list of plant species but is sufficient to broadly describe the botanical interest of the site. Species nomenclature follows Parnell & Curtis (2012) for scientific and English names of vascular plants.

3.4.2 Species

Mammal tracks, signs, or direct observations were recorded during the walkover survey of the site. Incidental sightings of birds, mammals, or amphibians were noted during the walkover survey. The habitats present were also evaluated in terms of suitability to support foraging bats. Trees with features such as areas of loose, flaking bark, splits, cavities, etc. that could provide suitable roost sites for bats, where present, were also noted during the ground level survey. The suitability of the habitats for roosting, commuting, and foraging bats was evaluated using the Bat Conservation Trust guidelines (Collins 2016).

3.5 Impact Assessment

The ecological evaluation and impact assessment within this report has been undertaken following the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland ("CIEEM guidelines").

3.6 Importance of Features to be Considered

Ecological features should be evaluated within a defined geographical context (CIEEM, 2016). These are based upon criteria identified in the CIEEM (2016) and NRA (2009a) guidance, which categorise the geographic context of ecological importance as within one of the following:

- International and European;
- National;
- Regional;

- County or local authority; and,
- Local Importance (High or Low Value).

Only features deemed "important ecological features" (the term used in CIEEM, 2016) are carried forward into the assessment of potential impacts.

Ecological features valued at Local Importance (Lower Value) or of negligible value, as per the valuation criteria in Bat Conservation Trust guidelines (Collins 2016) are not considered significant features and are scoped out of impact assessment. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened, and resilient to project impacts and will remain viable and sustainable (CIEEM, 2016). In some cases, the data collected as part of the scoping process will be sufficient to inform the assessment of effects on a given feature. In other cases, additional surveys will need to be undertaken. Ecological features which are within the zone of influence of a development but not considered important ecological features can be 'scoped out' (excluded), with justification.

The impact assessment process involves the following steps:

- identifying and characterising impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects (if required); and
- identifying opportunities for ecological enhancement.

When describing impacts, reference has been made to the following characteristics, as appropriate:

- Positive or negative;
- Extent;
- Magnitude;
- Duration;
- Timing;
- Frequency; and
- Reversibility.

The impact assessment process considers both direct and indirect impacts. Direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat occupied by a species during the construction process. Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process, or feature, e.g. the creation of roads which cause hydrological changes, which, in the absence of mitigation, could lead to the drying out of wet grassland.

3.6.1 Significant Effects

A significant effect, for the purposes of EcIA, is defined as an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site), broad (e.g. national/local nature conservation policy), or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local.

The nature of the identified impacts on each assessed feature is characterised. Where it is concluded that an effect would be likely to reduce the importance of an assessed feature, it is described as significant. The degree of significance of the effect takes into account the geographic context of the feature's importance and the degree to which its interest is judged to be affected.

3.6.2 Cumulative Effects

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects.

3.6.3 Mitigation

Where significant impacts have been identified, the mitigation hierarchy has been taken into account, as suggested in the 2018 CIEEM Guidelines which set out a sequential approach of avoidance of impacts where possible, application of mitigation measures to minimise unavoidable impacts, and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied, along with any necessary compensation measures, and opportunities for enhancement incorporated, residual impacts have then been identified.

4 Relevant Planning Policy and Legislation

An EcIA is a process of identifying, quantifying, and evaluating potential effects of development or other actions on habitats, species, and ecosystems (CIEEM, 2016).

When an EcIA is undertaken as part of an EIA process it is subject to the EIA Regulations (under the EU Planning and Development [Environmental Impact Assessment] Regulations 2001-2018). An EcIA is not a statutory requirement; however, it is a best practise evaluation process. This EcIA has been undertaken to support and assess the potential impact that the proposed works may have on the ecology of the site and its environs. Where a potential risk to the environment is identified, measures are proposed on the basis that, by deploying such measures, the risk is eliminated or reduced to an insignificant level.

4.1 Planning Policy, Guidelines, and Legislation

4.1.1 European Union Habitats Directive

The "Habitats Directive" (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna) is the main legislative instrument for the protection and conservation of biodiversity within the European Union (EU). The Habitats Directive lists habitats and species that must be protected within Special Areas of Conservation (SAC) on Annexes I and II, respectively. The Habitats Directive also identifies plant and animal species on Annex IV which are subject to strict protection anywhere they occur. The Habitats Directive sets out the protocol for the protection and management of SACs. However, due to the lack of connectivity between the closest SAC site and the proposed site and the small-scale nature of the development, European sites have been scoped out of this EcIA Report. Refer to the standalone Appropriate Assessment Screening Report for further detail (OCSC, 2022).

4.1.2 European Union Birds Directive

The "Birds Directive" (Council Directive 2009/147/EC on the Conservation of Wild Birds) provides a network of sites in all member states to protect birds at their breeding, feeding, or roosting areas. The Birds Directive identifies in Annex I species that are rare, in danger of extinction, or vulnerable to changes in habitat and which require special protection (so-called 'Annex I' species). Special Protection Areas (SPA) are designated under the Birds Directive to protect a range of bird populations including those of Annex I species. Although the site immediately borders an SPA site, the proposed works are relatively small-scale with no instream works proposed nor significant impacts on the site anticipated; therefore, European sites have been scoped out of this EcIA Report. Refer to the standalone Appropriate Assessment Screening Report for further detail (OCSC, 2022).

4.1.3 National legislation

The primary domestic statutes in the Republic of Ireland providing for wildlife protection are the Wildlife Acts of 1976 and 2000, as amended (hereafter 'The Wildlife Acts'). All bird species are protected under the Wildlife Acts from offences including intentional killing or injury and

disturbance during the breeding season (to include eggs, young, and nests which are also protected). A range of mammal species, two amphibian species, one butterfly species, and one reptile species are all similarly protected from intentional killing or injury, whilst the breeding or resting sites of these species are also protected.

Unless specified otherwise, the term "invasive species" in this report refers to species scheduled to the European Communities (Bird and Natural Habitat) Regulations 2011 and 2015 (hereafter 'the effects Regulations'). The Regulations make it an offence to plant, disperse, allow or cause to disperse, spread, or otherwise cause to grow any of the scheduled species. A number of vascular (i.e. flowering plants) and non-vascular plant species (i.e. non-flowering or 'lower plants') are afforded legal protection under the Flora (Protection) Order, 2015 (hereafter 'The Flora Protection Order'). It is an offence to cut, pick, collect, uproot, or otherwise take, injure, damage, or destroy any specimens of the species listed under the Flora Protection Order.

The third National Biodiversity Plan (2017-2021) was launched in 2017. This plan includes 119 targeted actions for public authorities in relation to their obligations for biodiversity. One particularly important policy change in the plan (Objective 1) relates to the 'mainstreaming' of biodiversity into decision-making across all sectors. Specifically, there is an obligation on all Public Authorities to "move towards no net loss of biodiversity through strategies, planning, mitigation measures, appropriate offsetting, and/or investment in Blue-Green infrastructure". This and other relevant policies in the plan have informed the valuation of ecological features, assessment of potential impacts, and development of mitigation in this report, as relevant. The fourth National Biodiversity Plan (2022-2026) is due later this year.

5 Survey Results (habitat, flora, and fauna)

The habitats present within the site are described, classified, and evaluated in this section of the report and shown on Figure 5.1. The site comprises of mostly habitat type BL3 (Buildings and Artificial Surfaces). Although within this, there are grassy margins* and trees, they do not surpass 50% plant cover and so are included in BL3.

Figure 5.1: Map showing the proposed site and the corresponding number for site sketches.

Figure 5.2: Site sketch for corresponding boundary 1. Horizontal scale exaggerated. **Note** limited access was available to the car sales site located north Sketch 1 during the site inspection. This area can be classified as habitat type BL3 (Buildings and Artificial Surfaces)

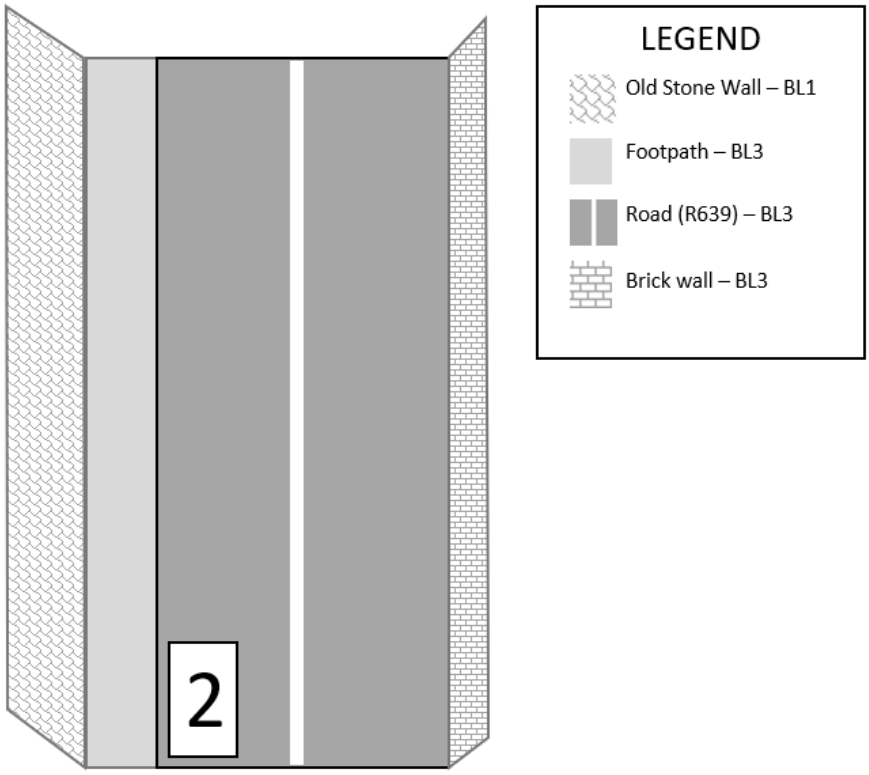

Figure 5.3: Site sketch for corresponding boundary 2. Horizontal scale exaggerated.

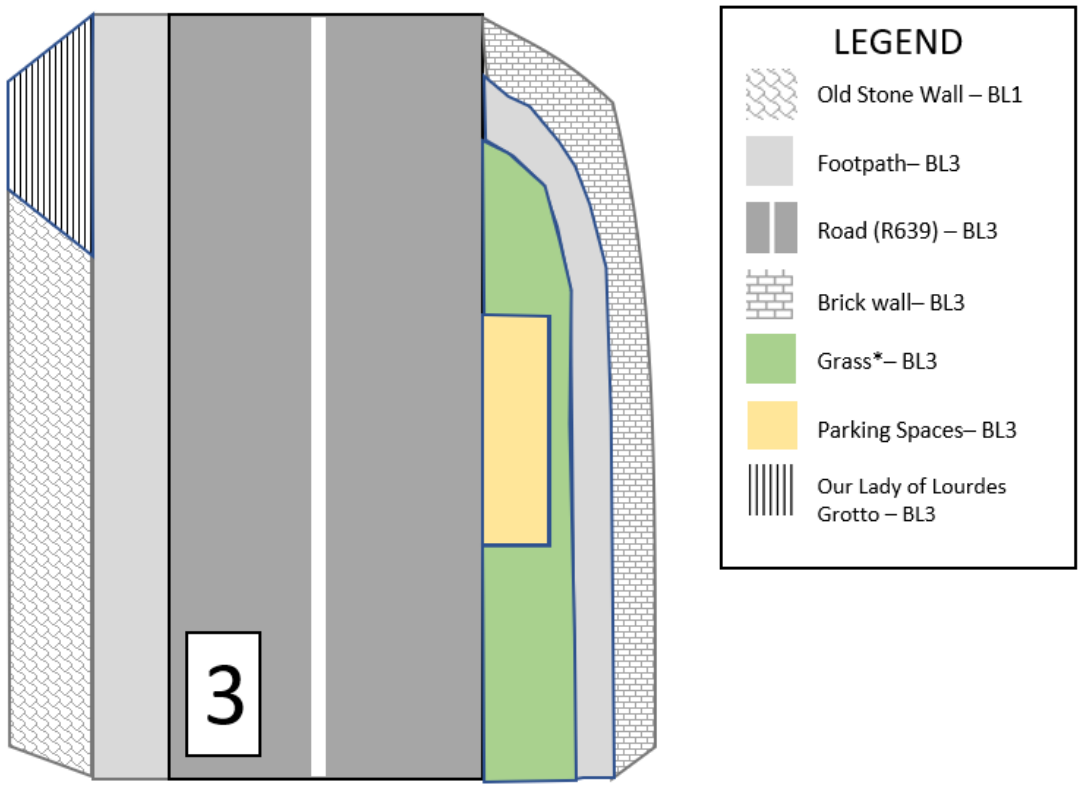

Figure 5.4: Site sketch for corresponding boundary 3. Horizontal scale exaggerated.

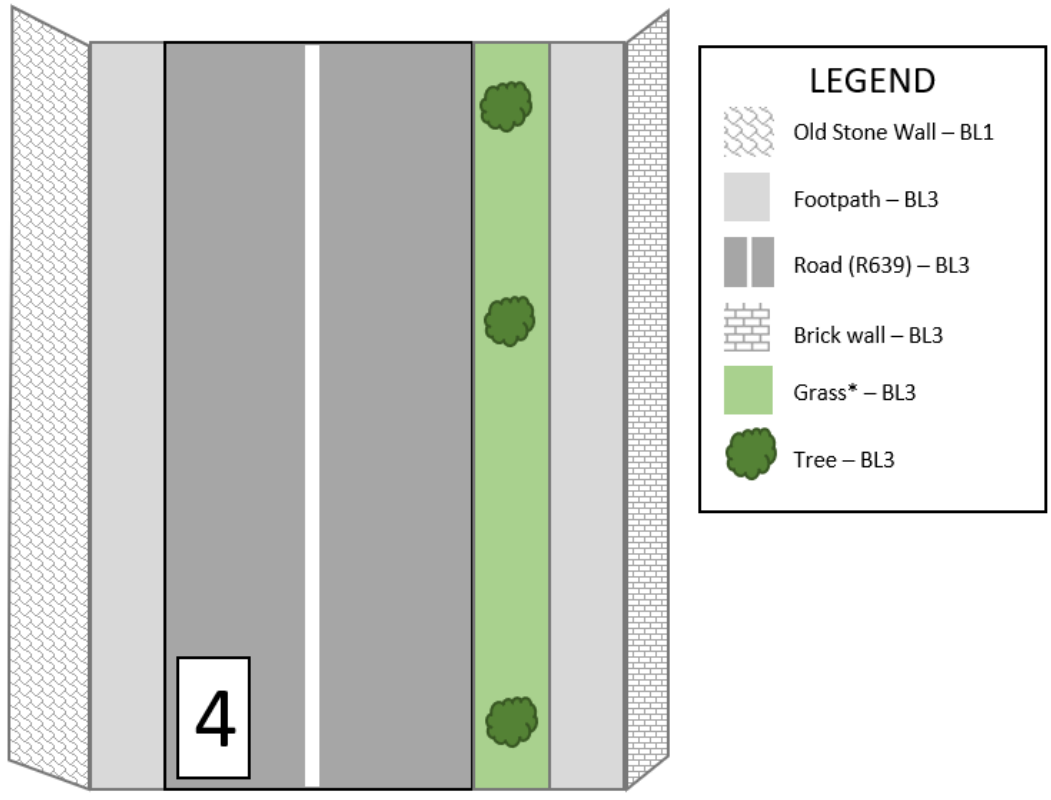

Figure 5.5: Site sketch for corresponding boundary 4. Horizontal scale exaggerated.

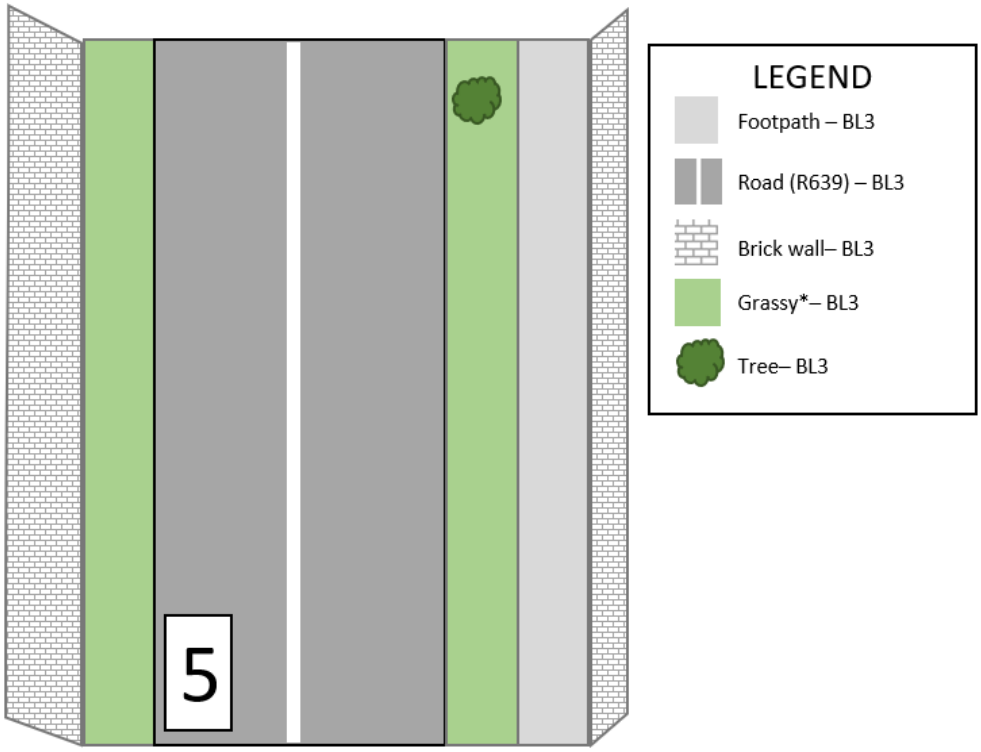

Figure 5.6: Site sketch for corresponding boundary 5. Horizontal scale exaggerated.

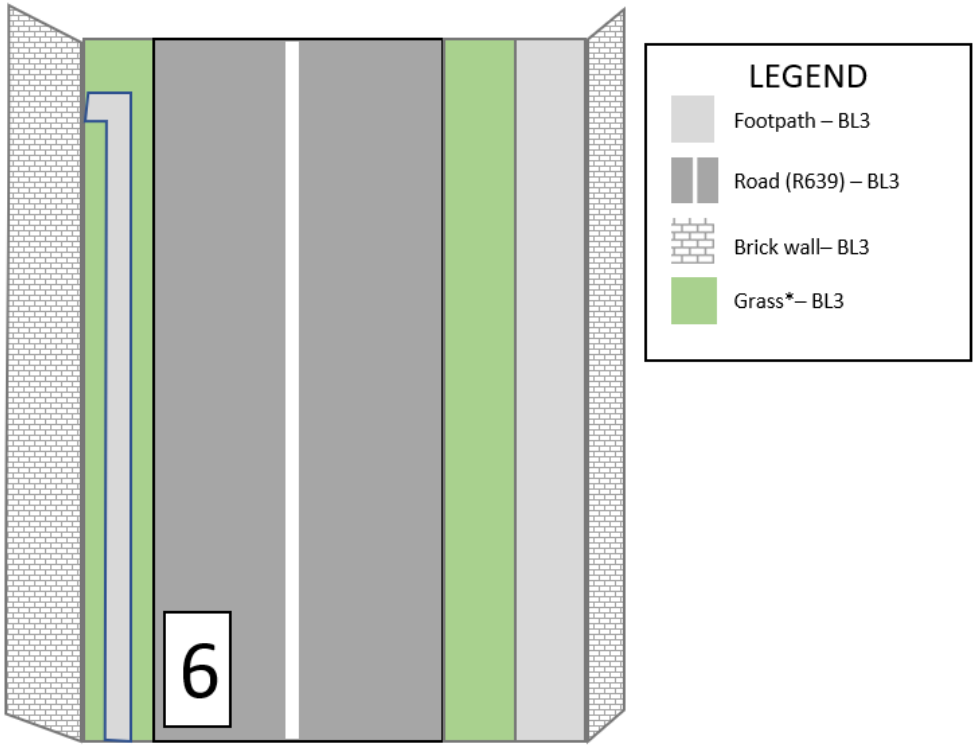

Figure 5.7: Site sketch for corresponding boundary 6. Horizontal scale exaggerated.

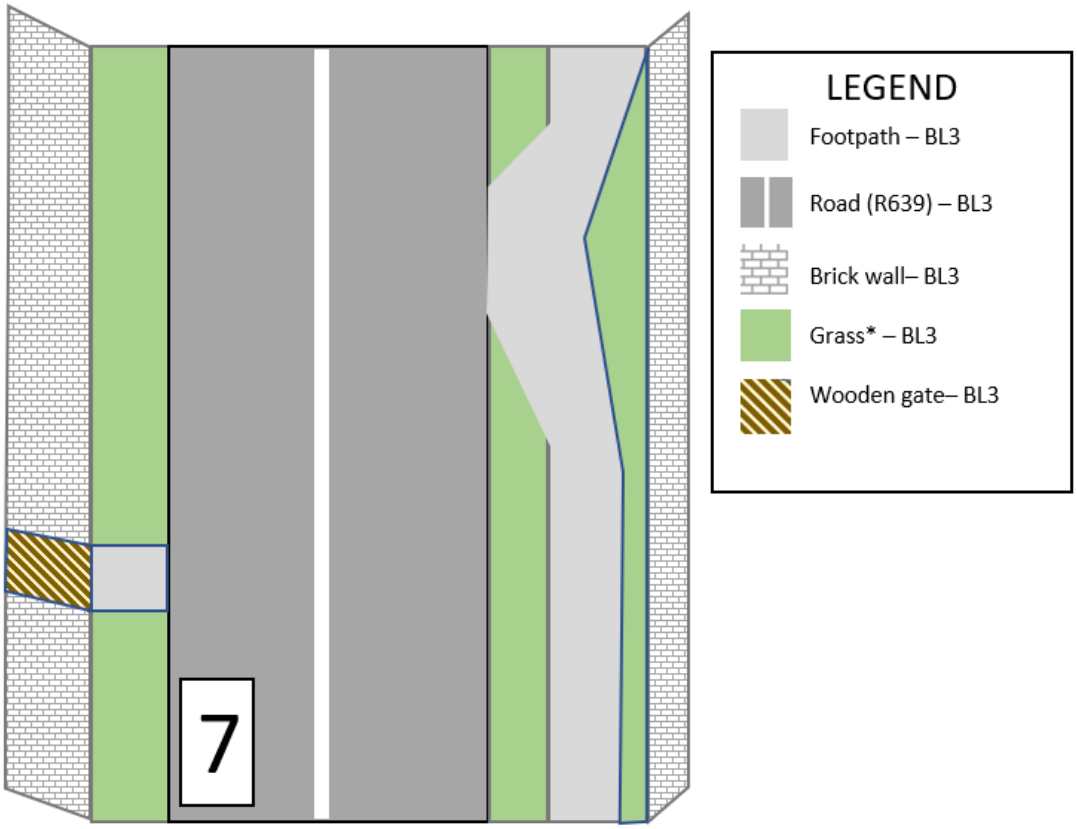

Figure 5.8: Site sketch for corresponding boundary 7. Horizontal scale exaggerated.

5.1 Habitat map

❖ Stone walls and other stonework BL1

This category incorporates stone walls and most other built stone structures in rural and urban situations, apart from intact buildings. This old stone wall (Plate 5.1) is located towards the northern end of the western boundary with a contiguous wall constructed in brick in the central and southern portion of the site which then runs along the rest of the site towards the N8 roundabout located south of the site.

Plate 5.1: Photo showing a stone wall BL1.

❖ Buildings and Artificial Surfaces BL3

This broad category includes all buildings (domestic, agricultural, industrial, and community) other than derelict stone buildings and ruins. It also includes areas of land that are covered with artificial surfaces of tarmac, cement, paving stones, bricks, blocks, or artificial turf (e.g. roads, car parks, pavements, runways, yards, and some tracks, paths, driveways, and sports grounds) (Plate 5.2). The majority of the site is listed as BL3 as plant cover does not exceed 50%. This includes the car sales property located to the north of the scheme and south of Glanmire Village.

Plate 5.2: Photo showing the road R639 BL3.

❖ Other Habitats Adjacent to the Site

The following habitats occur outside of the proposed site boundaries and there is no proposed works in these areas. However, these may be important if additional works are considered at a later stage.

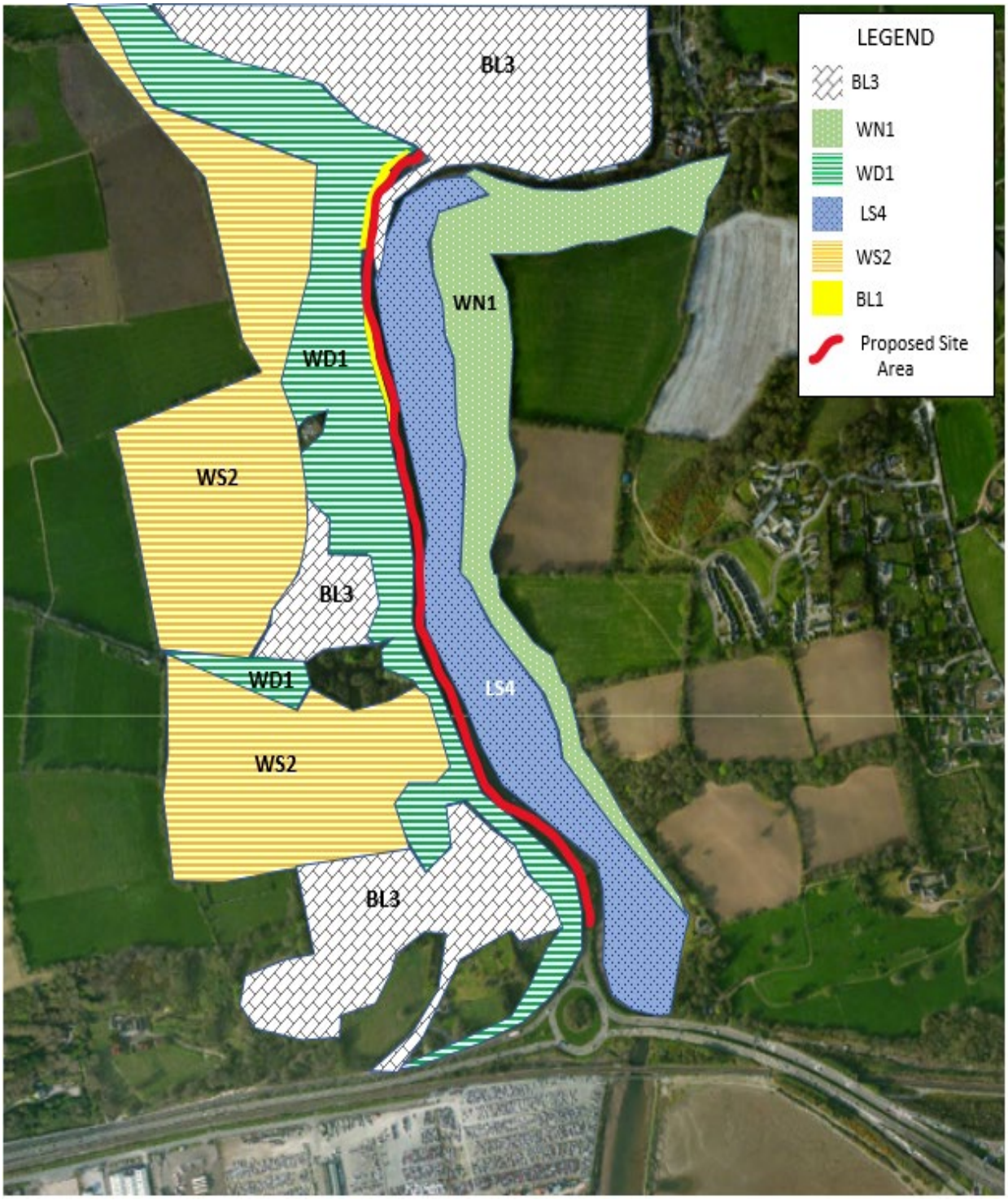

Figure 5.8: Map showing the different habitats present immediately adjacent to the site.

❖ Buildings and Artificial Surfaces BL3

This broad category includes all buildings (domestic, agricultural, industrial, and community) other than derelict stone buildings and ruins. It also includes areas of land that are covered with artificial surfaces of tarmac, cement, paving stones, bricks, blocks, or artificial turf (e.g. roads, car parks, pavements, runways, yards, and some tracks, paths, driveways, and sports grounds). A derelict building is located behind the western boundary of the site and is a suitable structure for roosting bats (Plate 5.3). The location of this building is shown on sketch 7, the entrance is shown as a wooden gate (Figure 5.8). A car sales property is located to the north of the scheme and south of Glanmire Village. Any addition or changes to lighting along the cycle track should be done with knowledge of potential bats.

Plate 5.3: Photo showing a direlict building on site BL3.

❖ Mud Shores LS4

Mud shores are formed primarily of very fine sediment and usually occur along the most sheltered sections of coastline (Plate 5.4). Mud shores are often characterised by elevated mudflats that are dissected by networks of shallow channels associated with flooding and drainage. Mud shores are located east of the proposed development site along the Glashaboy River. There are no proposed instream works as part of the design.

Plate 5.4: Mud Shores LS4.

❖ Oak-birch-holly Woodland WN1

Native, semi-natural, broadleaved woodland that occurs on acid or base-poor soils that may be either dry or humid, but not waterlogged. Stands are usually dominated by Sessile Oak (*Quercus petraea*) or mixed stands of Sessile and Pedunculate Oak (*Q. petraea* and *Q. robur*) or their hybrids. This stand is located east of the site on the opposite side of the Glashaboy River (Plate 5.5). This treeline has the potential to be used by bats for roosting, foraging and commuting. There is no direct connection across the river.

Plate 5.5: Oak-birch-holly woodlands to the east of the site WN1.

❖ WD1(Mixed) broadleaved woodland

This general category includes woodland areas with 75-100% cover of broadleaved trees and 0-25% cover of conifers. This stand of woodland occurs on elevated ground and stretches along the majority of the western site boundary. It is part of the Vienna Woods which is on the grounds of the Vienna Hotel (Plate 5.6). Any addition or changes to lighting along the cycle track should be done with knowledge of bats potentially using this wood for roosting, foraging and commuting.

Plate 5.6: Photo showing mixed broadleaved woodland to the west of the site.

WS2 Immature Woodland

Immature woodland includes areas that are dominated by young or sapling trees that have not yet reached the threshold heights (5 metres, or 4 metres in the case of wetland areas) for inclusion in the other woodland categories. Although this area of immature trees was within the 50m zone of influence, it cannot be observed from the study area due to the presence of as WD1(Mixed) broadleaved woodland, located in front as seen in Figure 5.8.

5.2 Fauna

5.2.1 Bats

A preliminary roost assessment was carried out to identify, from ground level in daylight, any potential roost features (PRF) within trees or structures that had suitability to support roosting bats. All walls and structures within and adjacent to the proposed works were assessed. Trees were studied and assessed for the presence of potential roost features: cavities, frost cracks, trunk and branch splits, rot holes where branches have been removed, and hollow sections of trunk, branches, and roots. The results were used to grade trees as having Negligible, Low, Moderate, or High suitability for roosting bats in accordance with Bat Conservation Trust guidelines (Collins, 2016).

The historical records (National Biodiversity Data Centre) reveal that Brown Long-Eared bat, Daubenton's bat, and Natterer's bat species clusters have been identified in close proximity to the site. The suitability index of the area is considered moderate (between 28.11 and 36.44 on a scale that ranges from 0 to 100 with 0 being least favourable and 100 most favourable for bats). The index is for all species combined in addition to individual species' indices (Figure 5.2). When considering each of the common species separately, the following species are listed as high in the index:

Common pipistrelle scores 48 in the scale (High) as shown in Figure 5.3 and has an IUCN conservation status of 'Least Concern'. This species is common in many habitats including Stone walls and other stonework (BL1) present on site and also treelines present in its surroundings, they were included in this list.

Leisler's Bat (*Nyctalus leisleri*), scores 49 in the scale (High) (Figure 5.5) and has an IUCN conservation status of 'Least Concern'. This species is common over pasture, rivers, lakes, canals, forestry, and around streetlights/flood lights.

Soprano pipistrelle (*Pipistrellus pigmaeus*) scores 50 in the scale (High) (Figure 5.6) and has an IUCN conservation status of 'Least Concern'. This species is common in riparian habitats and semi-natural woodland or treelines but can also be seen in urban parks and gardens.

Brown Long-eared bat (*Plecotus auritus*) scores 51 in the scale (High) (Figure 5.7) and has an IUCN conservation status of 'Least Concern'. This species is common foraging in parkland, open deciduous and coniferous woodland, orchards, and gardens.

Natterer's Bat (*Myotis nattereri*), scoring 39, is considered moderate-high in the scale (Figure 5.8). The IUCN conservation status is 'Least Concern'. This species is mainly found in woodlands (both deciduous and coniferous), along tree lines and hedgerows, in pasture, and over water including white rapids where it hunts higher than Daubenton's Bat.

It is also worthy of mention that Daubenton's Bat (Figure 5.4) and Whiskered bat (Figure 5.9) are also considered of moderate occurrence in the area and they both typically forage near water bodies such as the one near the site.

Within the site boundary

Any trees within the proposed site area relatively young without cavities, cracks, hallows or other features that would support bat roosting. The trees are spaced out along the footpath and provide no connectivity, so the potential for use by commuting bats is low. The old stone wall that in the upper western border of the site has many cracks and crevices that may be suitable for bat roosts (Figure 5.2.). Limited access was available to the car sales property. A detailed bat survey including dawn and dusk emergence surveys will be required in advance of demolition.

Outside the site boundary

The site has treelines and hedgerows immediately adjacent to the east and west, likely to be critical for any local bat populations. Also, the wood to the west of the site, namely Vienna Wood, has good connectivity which runs the whole length of the proposed cycle track. The area adjacent to the site does offer moderate potential for roosting bats, and the potential for use by foraging and/or commuting bats is high.

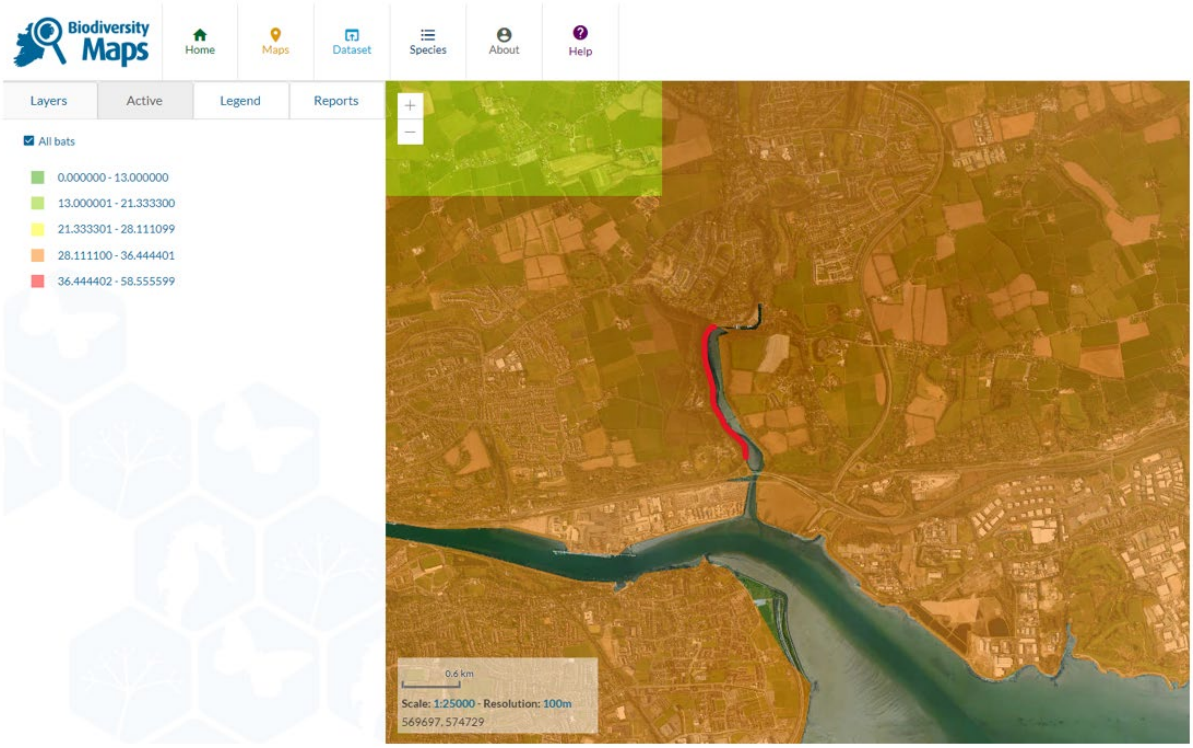

Figure 5.3. Suitability index for all bats in the site and surrounding areas (NBDC, 2022).

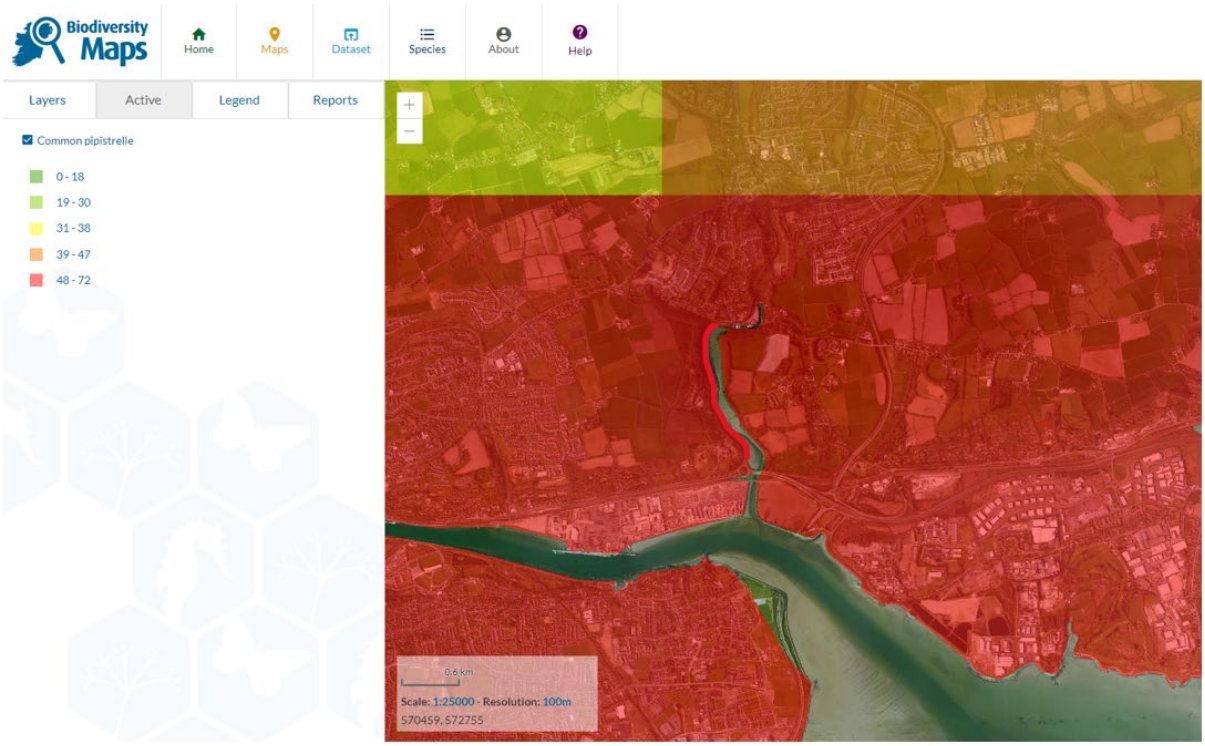

Figure 5.4. Suitability index for Common pipistrelle in the site and surrounding areas (NBDC, 2022).

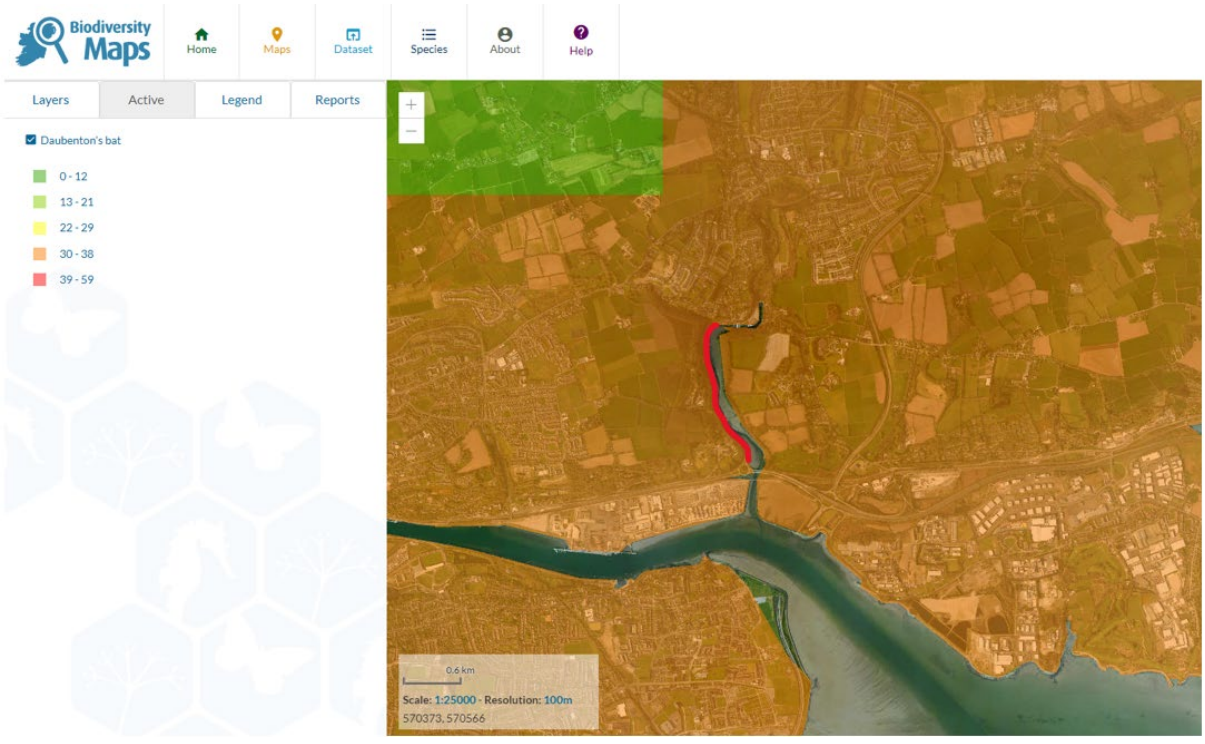

Figure 5.5. Suitability index for Daubenton's bat in the site and surrounding areas (NBDC, 2022).

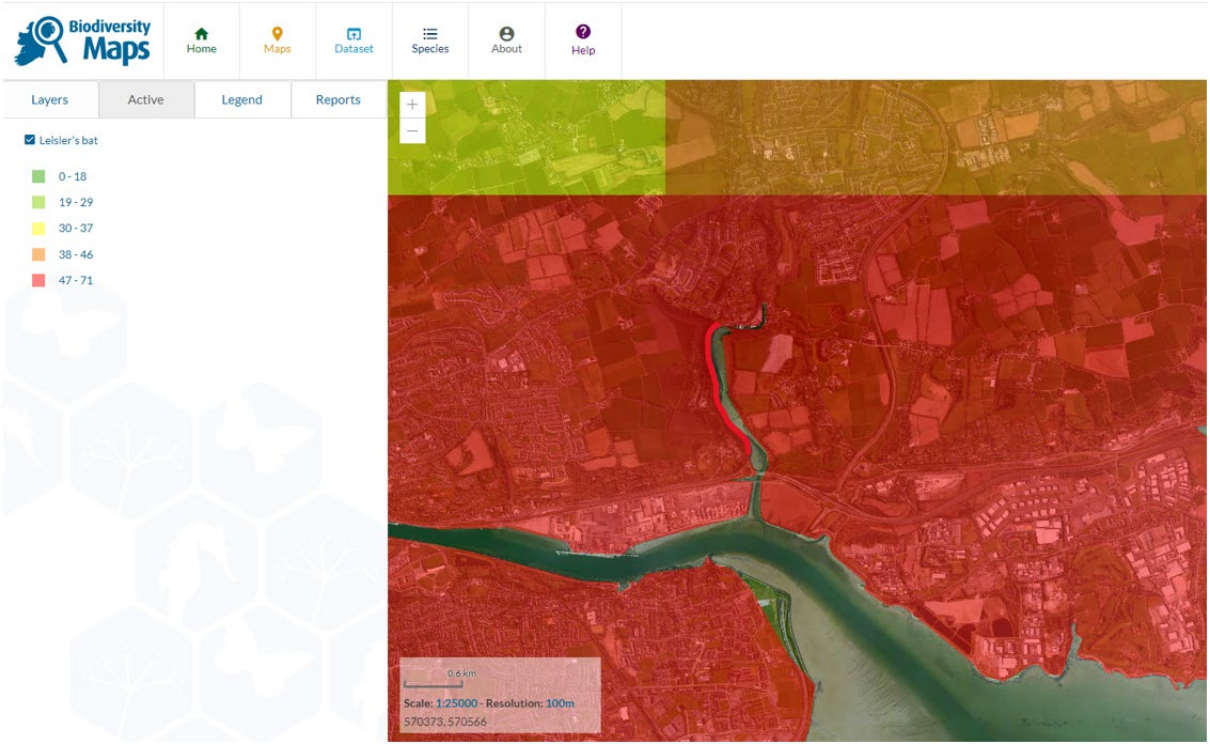

Figure 5.6. Suitability index for Lesser Noctule in the site and surrounding areas (NBDC, 2022).

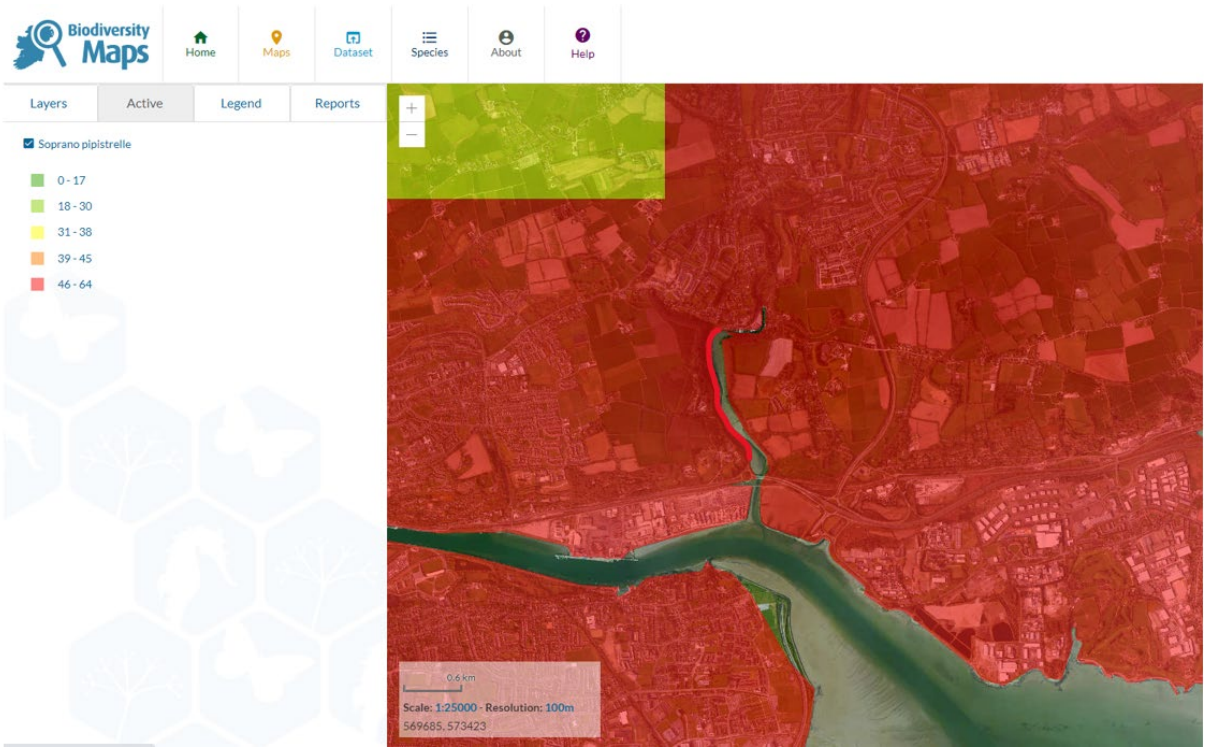

Figure 5.7. Suitability index for Soprano pipistrelle in the site and surrounding areas (NBDC, 2022).

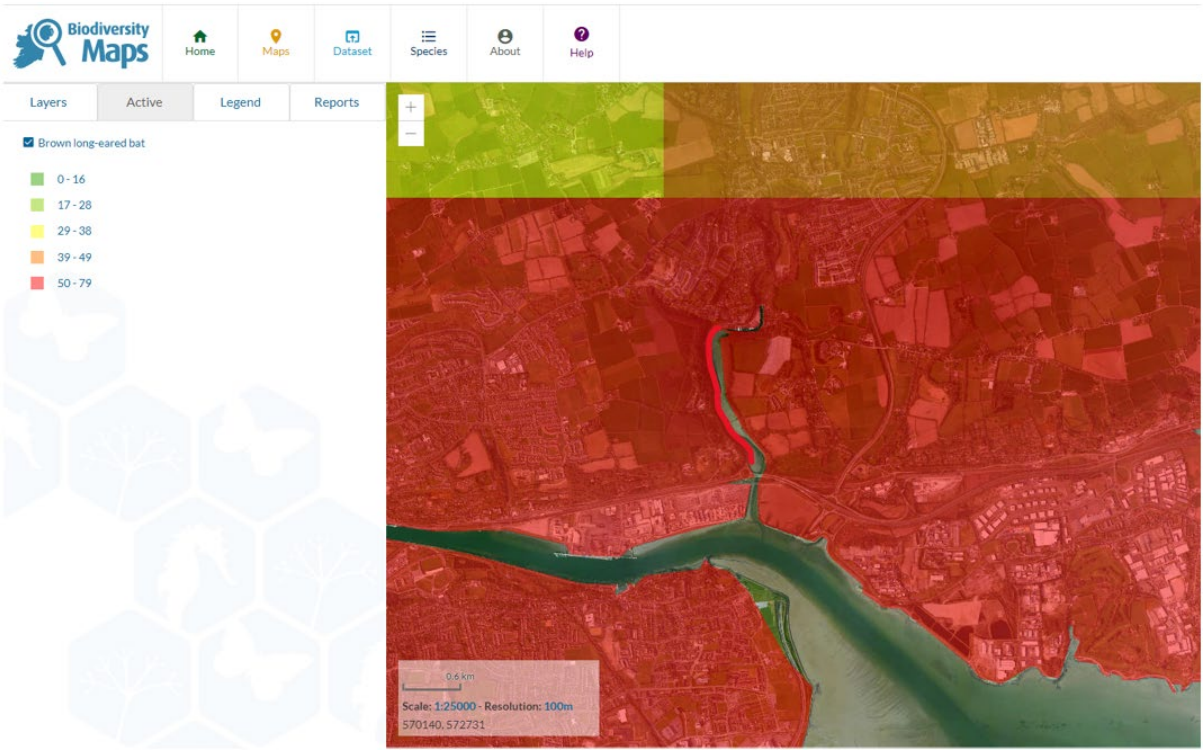

Figure 5.8. Suitability index for Brown long-eared bat in the site and surrounding areas (NBDC, 2022).

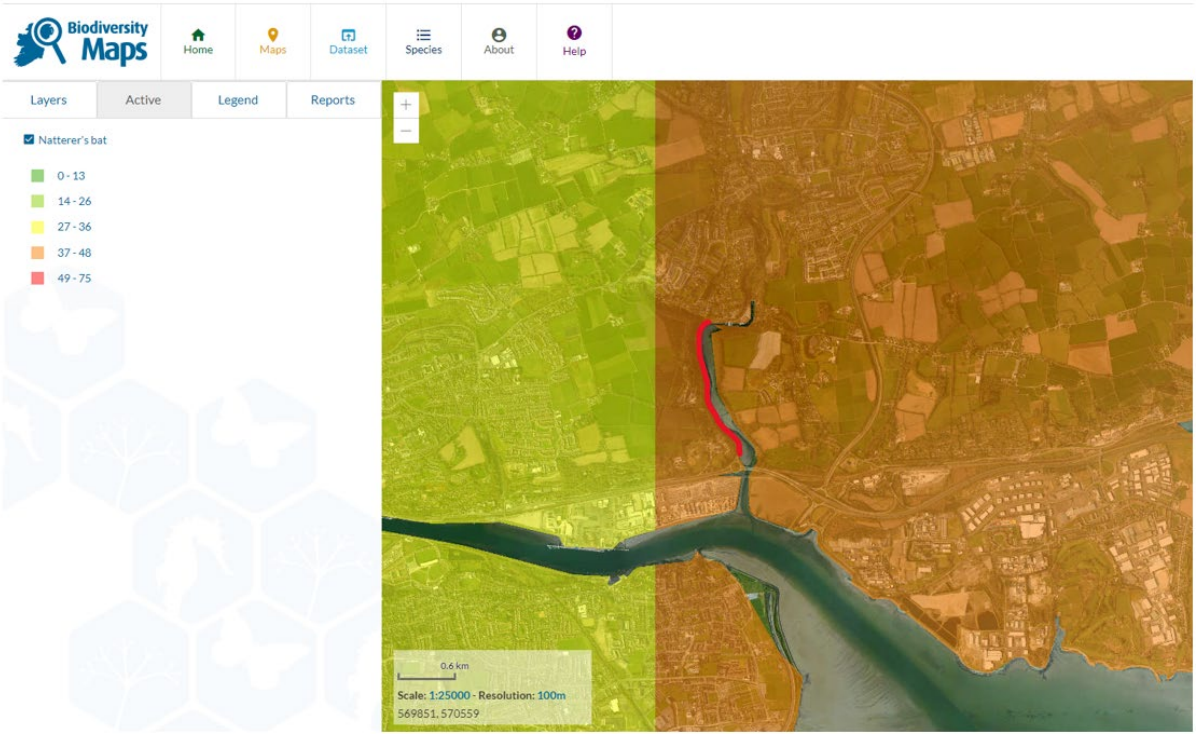

Figure 5.9. Suitability index for Natterer's bat in the site and surrounding areas (NBDC, 2022).

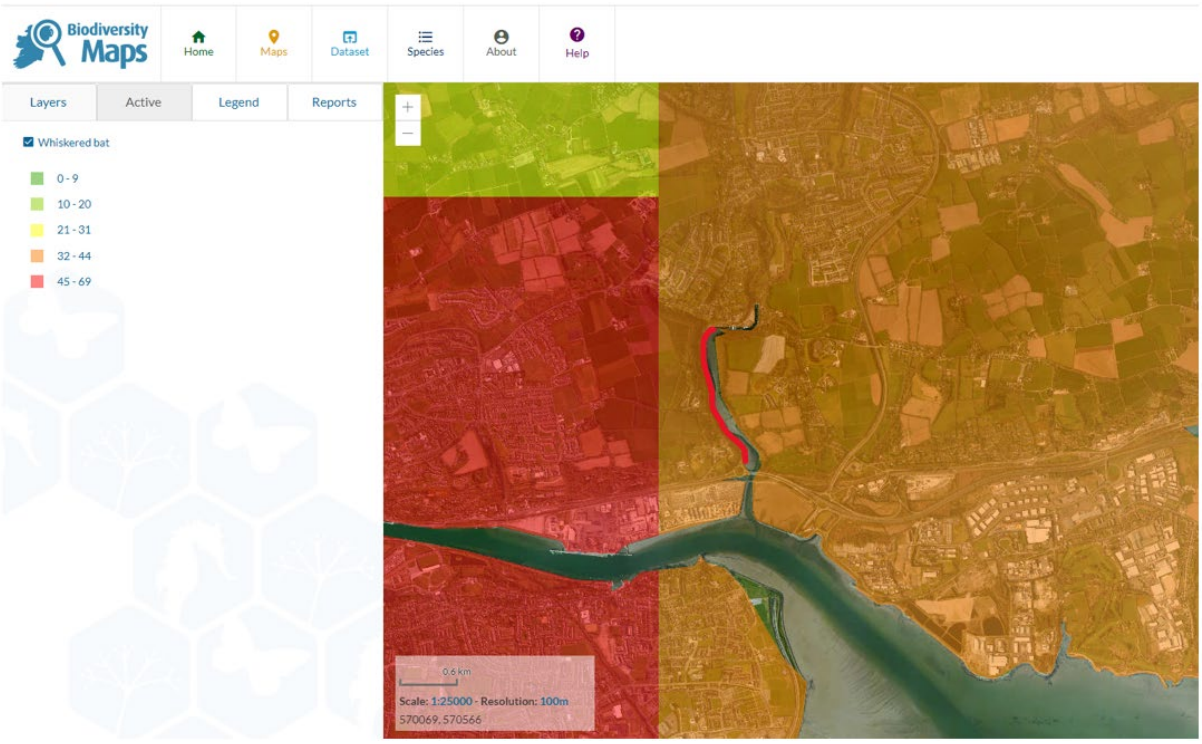

Figure 5.10. Suitability index for Whiskered bat in the site and surrounding areas (NBDC, 2022).

Droppings (probably from bats) were found on the old stone wall that runs alongside the western boundary. A detailed bat survey including dawn and dusk emergence surveys will be required in advance of works commencing.

5.2.2 Other Mammals

There are records of six protected species from the 2km grid square (W77G) within which the site is located.

- West European Hedgehog (*Erinaceus europaeus*)
- European Otter (*Lutra lutra)*
- Eurasian Badger *(Meles meles)*
- Eurasian Pygmy Shrew (*Sorex minutus*)
- Eurasian Red Squirrel (*Sciurus vulgaris*)
- Common Dolphin (*Delphinus delphis)*

The footprint of the proposed works was also searched for evidence of badgers including the presence of setts, foraging evidence, access runs, hairs caught on wires and bushes, tracks,

and prints. As none of these were found on site, badgers are scoped out of this assessment and excluded from further consideration within this report.

5.2.3 Amphibians

There were no amphibians recorded during the site visit. There are records of three protected species from the grid square within which the site is located:

- Common Frog (*Rana temporaria*)
- Smooth Newt (*Lissotriton vulgaris*)
- Common Lizard (*Zootoca vivipara*)

This area is a good habitat to support the Common Frog and Smooth Newt. Due to the old stone walls running along the west border of the site, there is potential to support the Common Lizard. Further detailed assessment of amphibians may be required once the design is finalised.

5.2.4 Invertebrates

Surveys were carried out outside the window of butterfly flight in spring/summer. A number of common butterflies are likely to occur, but no species of conservation concern on the Irish Red List of butterflies (Regan et al., 2010) are predicted to occur due to the absence of specialist butterfly habitats such as oak woods or Kidney Vetch within the site area.

There was no potential habitat for Ireland's only European protected butterfly species, the Marsh Fritillary (*Euphydryas aurinia*). There was also no habitat for Ireland's only nationally protected butterfly, the Small Blue (*Cupido minimus*), since no Kidney Vetch (*Anthyllis vulneraria*), the larval food plant was found within the footprint of the proposed development site.

5.3 Approach to Pollution

Pollution effects from the proposed development have been scoped out from the EcIA as any pollution would be limited to site area. For the drainage system, new outlets will be designed to join existing drainage in accordance with the Glashaboy River (Glanmire/Sallybrook) Drainage Scheme, and CIRIA C753 The SuDS Manual. The surface water design should be carried out so that all rainfall runoff is restricted to a maximum that is equal to, or less than, the natural greenfield runoff equivalent. The magnitude of discharge is likely to be small and will not contribute to additional surface water discharge to rivers. Even when considering the distance to the adjacent European site (Cork Harbour SPA) and the indirect hydrological connectivity, it is considered that the surface water drainage from the proposed works will not give rise to any significant impacts on nearby European sites.

5.4 Nationally Important Sites

There are no Natural Heritage Areas (NHA) and 3No. proposed Natural Heritage Areas (pNHAs) within the 2 km potential zone of influence of the proposed development. The Dunkettle Shore pNHA (001082) is immediately located east of the study area, the Douglas River Estuary pNHA (001046) is 0.7km south of the site at its closest point, and Glanmire Wood pNHA (001054) is 0.02km east of the site at its closest point.

There is no potential for direct impacts and effects such as habitat loss within the pNHA as a result of the proposed development as there is no overlap of the site and the boundary of The Dunkettle Shore pNHA, the Douglas River Estuary, or the Glanmire Wood pNHA.

The Dunkettle Shore pNHA is separated from the site by a small stone wall and a hedgerow. There are drainage pipes running underneath the proposed site connecting the Vienna Wood to the west of the site and the Glashaboy River to the east. However, because there are no in-stream works are predicted for this project and due to its small scale, there is no potential for indirect impacts or effects to the habitats that comprise the Dunkettle Shore pNHA. It can, therefore, be excluded from further consideration in this report as it is not considered likely to be affected by the proposed development.

There are other nationally important sites within 5 km of the proposed development but due to the small scale of the project and given that the sites are separated by agricultural land and many hedgerows, there is no potential for impacts, and they can be scoped out of this assessment and are not considered further in this report.

5.5 Invasive species

There are 25 invasive plants listed for this area according to the Biodiversity Maps (NBDC). During the site walkover (on 17th of February 2022), no invasive species were found on site or in its surroundings, so they can be scoped out of this assessment and are not considered further in this report.

5.6 Summary of evaluation of ecological features

Table 5.1 summarises the ecological features described and evaluated in the preceding sections of this chapter. The importance of these features is summarised along with their legal status and rationale for not carrying forward any features for detailed assessment.

Table 5.1. Summary of evaluation of ecological features.

Ecological Feature	Scale at which Feature is important	Comments on legal status and/or importance
Natura 2000 sites	International	Natura 2000 sites have been screened out in the Appropriate Assessment Screening report prepared as part of this application.

pNHA/NHA (nationally important sites)	National	pNHA / NHA sites have been scoped out due to the small scale of the works and no in stream works predicted on site.
Habitats	Local (Higher)	The habitats present evaluated as important at the site level are sufficiently widespread and commonly occurring within the landscape. The habitats are resilient, so they do not require detailed assessment.
Mammals	Local (Higher)	Mammals, are scoped out of further consideration within this report as either not likely to be present at all or are not likely to be significantly affected by the proposed development.
Bats	County	Trees within the proposed site area are spaced out and provide no connectivity, so the potential for use by commuting bats is low. The area adjacent to the site does offer moderate potential for roosting bats, and the potential for use by foraging and/or commuting bats is high. However, it is considered that further detailed assessment is not required due to the small scale of the proposed works and the fact that the project does not include the stone wall that runs along the site area.
Amphibians	Local (Higher)	This site area is suitable for Common Frog and Smooth Newt. Due to the old stone walls running along both east and west sides of the site, there is potential to support the Common Lizard. But since there are no instream works and the works on site are small in scale and not affecting the outer walls, further detailed assessment of amphibians is not required, and they can be scoped out of further consideration in this report.
Invertebrates	Local-County (Higher)	No protected species of invertebrates or suitable habitats for those were found on site, so the invertebrates were scoped out.
Invasive species	County	No invasive species were found on site; therefore, they are scoped out.

6 Assessment of Effects

This section sets out the potential impacts and their effects on important ecological features. The information available from the desk study and fieldwork has been used to identify impacts and the significant effects including positive, negative, direct, indirect, and cumulative effects.

6.1 Do Nothing Impact

In the absence of development, it is assumed that the proposed site would remain basically unchanged. The Do-Nothing Impact would result in no positive or negative change in the ecological interest of the site over time.

6.2 Potential Impacts of the Development

The potential impacts of developing the Site are limited to temporary disturbance, with no displacement of species and no pollution to the Glashaboy River.

6.3 Cumulative Impacts

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects.

The effects of the proposed construction are likely to be confined to the immediate area of the site and will be limited to habitat degradation of commonly occurring and widespread habitats as well as temporary disturbance and displacement of species within the immediate surroundings of the site. These effects are not thought to be significant. Therefore, it is considered that there is no pathway for other plans and projects to act in-combination and to give rise to cumulative effects.

7 Mitigation

In this section, the minimum mitigation measures to be employed by the appointed Contractor(s) during construction and/or during operation are presented.

7.1 Operation phase

The following general mitigation applies.

- In the event that bats are found on the proposed development site during construction or demolition works, works will immediately cease in that area and the local NPWS conservation ranger will be contacted. The bats should be removed by hand by a suitably qualified and licenced bat surveyor, under licence from the NPWS.
- Existing trees should be retained where possible and site boundaries replanted where feasible. Treelines are of far greater benefit to bats than single, free-standing trees or shrubs, as they provide corridors for movement, avoidance of light and predators, a better shelter belt for the clustering of insects, and greater substrate for insect breeding and feeding (bats food source).
- The installation of public lighting on both sides of the roadway is needed for public safety. In general, artificial light creates a barrier for commuting bats. To minimise the impact to potential bats in the area, directional lighting (i.e. lighting which is focused on work areas and not nearby countryside) shall be used during the construction phase. Any permanent lighting structures being installed should be slightly angled so that Vienna woods and other area with potential bat presence, remain shaded and outside of direct lighting. Installation of shorter lamp posts would also be beneficial for permanent lighting as it keeps light focused on the target area i.e. the cycle track, with less indirect lighting to the surrounding area.

An experienced Ecologist should be on site during construction works and site clearance to provide ecological advice to avoid and/or minimize ecological impacts.

8 Enhancement

There is limited scope for biodiversity enhancement. Biodiversity enhancement would have to be enacted primarily through the landscape management within the public realm space.

9 Conclusion

The proposed construction of a cycle track from Glanmire Village to the junction of the R639 and N8 roundabout will not result in significant effects on the ecology of the area.

There will be no effect on sites designated for nature conservation as a result of the proposed development. There will be a permanent loss of some disturbed habitat within the site, but as these are commonly occurring and widespread habitats in the area, their loss will not be significant. Overall, the residual effects are not anticipated to be significant.

10 References

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

Kelleher, C. & Marnell, F. (2006) Bat Mitigation Guidelines for Ireland. Irish Wildlife Manuals, No. 25. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

IFI (2016) Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters. Inland Fisheries Ireland.

Ciria (2015) Environmental Good Practice on Site Guide (Fourth Edition). www.ciria.org

Colhoun, K., Cummins, S. (2013) Birds of Conservation Concern in Ireland 2014 – 2019. Irish Birds, 9: 523-544

Collins, J., (2016). Bat surveys for Professional Ecologists: Good practice guidelines (3rd Edition). Bat Conservation Trust.

Fossitt J.A. (2000) A Guide to Habitats in Ireland. Published by The Heritage Council, Kilkenny.

Marnell, F., Kelleher, C. & Mullen, E. (2022) Bat mitigation guidelines for Ireland v2. Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.

(2009) Ireland Red List No. 3: Terrestrial Mammals. National Parks and Wildlife Service.

Purnell, J. & Curtis, T. (2015) Webb's An Irish Flora. 8th ed. Cork University Press. Smith G. F., O'Donoghue P., O'Hora K. and Delaney E. (2011) Best Practice Guidance for Habitat Survey and Mapping. Published by The Heritage Council.