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MULTIDISCIPLINARY CONSULTING ENGINEERS



W383: SOUTH-NORTH ACCESS ROAD

ECOLOGICAL IMPACT ASSESSMENT REPORT

For
Kilkenny County Council

9 September 2024

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1 INTRODUCTION

1.1 BACKGROUND

This Ecological Impact Assessment (EclA) Report has been prepared by O'Connor Sutton Cronin & Associates Ltd. (OCSC) at the request of their Client, Kilkenny County Council, proposed new link road between the Clover Meadows and Abbeygate housing developments and a car park in Ferrybank, County Kilkenny. The proposed development involves constructing a 940m South-North Access Road linking the Belmont and Abbeygate Roundabouts, including new traffic signal junctions, a road overbridge, and enhancements for cyclists, pedestrians, and future bus-stops. It also features upgrades to existing roads, a new Greenway carpark, shared surface link, public lighting, drainage systems, and landscaping. The site location is shown in Figure 1.1.

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 operation of the 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 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 EclA process follows the tasks set out in Table 1.1.

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

Task	Description
Scoping	Determining the matters to be addressed in the EclA, including consultation to ensure the most effective input to defining the scope. Scoping is an ongoing process – the scope of the EclA 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 report was completed by Bruna Guasti, BEng, MIEI, Environment Consultant, Sinéad Doran, BSc, AMIEnvSc, Environment Consultant and Luis Iemma, BSc, MSc, Ph.D., CEcol, MCIEEM, Associate Ecologist; reviewed by Glenda Barry, BSc, MSc, PGeo, EurGeol, Associate; and authorised by Eleanor Burke, BSc, MSc, DAS, MIEnvSc, CSci, and OCSC Director (Environmental).

1.4 LIMITATIONS

This Ecological Impact Assessment Report has been prepared for the sole use of Kilkenny County 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 detailed in this report was undertaken by OCSC in July 2023 and revised in March 2024 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 a 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 EclA Report has been prepared for the proposed new link road between the Clover Meadows and Abbeygate housing developments and a car park in Ferrybank, County Kilkenny. The principal features of the proposed development will consist of:

- Construction of a new road, the South – North Access Road, approximately 940m in length, from the end of the existing access road serving the Clover Meadows Housing Estate to the end of the existing access road serving the Abbeygate Housing estate/Abbeygate Shopping Centre. This to create a continuous road link between the existing Belmont Road Roundabout on the Belmont Road (R711) to the existing Abbeygate Roundabout on the Abbey Road (LP3412);
- Provision of a traffic signal-controlled crossroads junction on the access road approximately 270m north-east of the existing Abbeygate Roundabout on the Abbey Road (LP3412);
- Provision of a traffic signal-controlled crossroads junction on the access road approximately 430m south-east of the Belmont Roundabout on the Belmont Road (R711);
- Provision of a new road overbridge over the existing greenway;
- Minor upgrades to the existing Clover Meadows and Abbeygate access roads being tied into to provide improved pedestrian and cycle facilities and provide additional fencing where required;
- Provision of cyclist and pedestrian facilities along the new access road;
- Provision for 2 No. future bus-stops to both sides of the new road;
- Provision of a new carpark for the greenway accommodating c.172 no. parking spaces and 2 no. coach parking spaces along with toilets (with water supply and wastewater treatment), bicycle parking, accessible car parking spaces (10No.) and car parking spaces of which 20% are provided for e-cars with associated charging facilities;
- Provision of a link from the South-North Access Road footpath to the existing greenway via a ramped shared surface (pedestrians and cyclists) with stepped access also provided;
- Public lighting along the full length of the South - North Access Road and to the greenway carpark;
- The installation of road markings and signage throughout;
- Provision of a surface water drainage system to include Sustainable Drainage Systems (SuDS), attenuation storage both above and below ground and flow restrictors to maintain discharge of surface water to greenfield runoff rates. This also includes an outfall along the adjacent greenway; and
- Hard and soft landscaping including boundary treatments throughout.

The regional site location is illustrated in Figure 2.1.

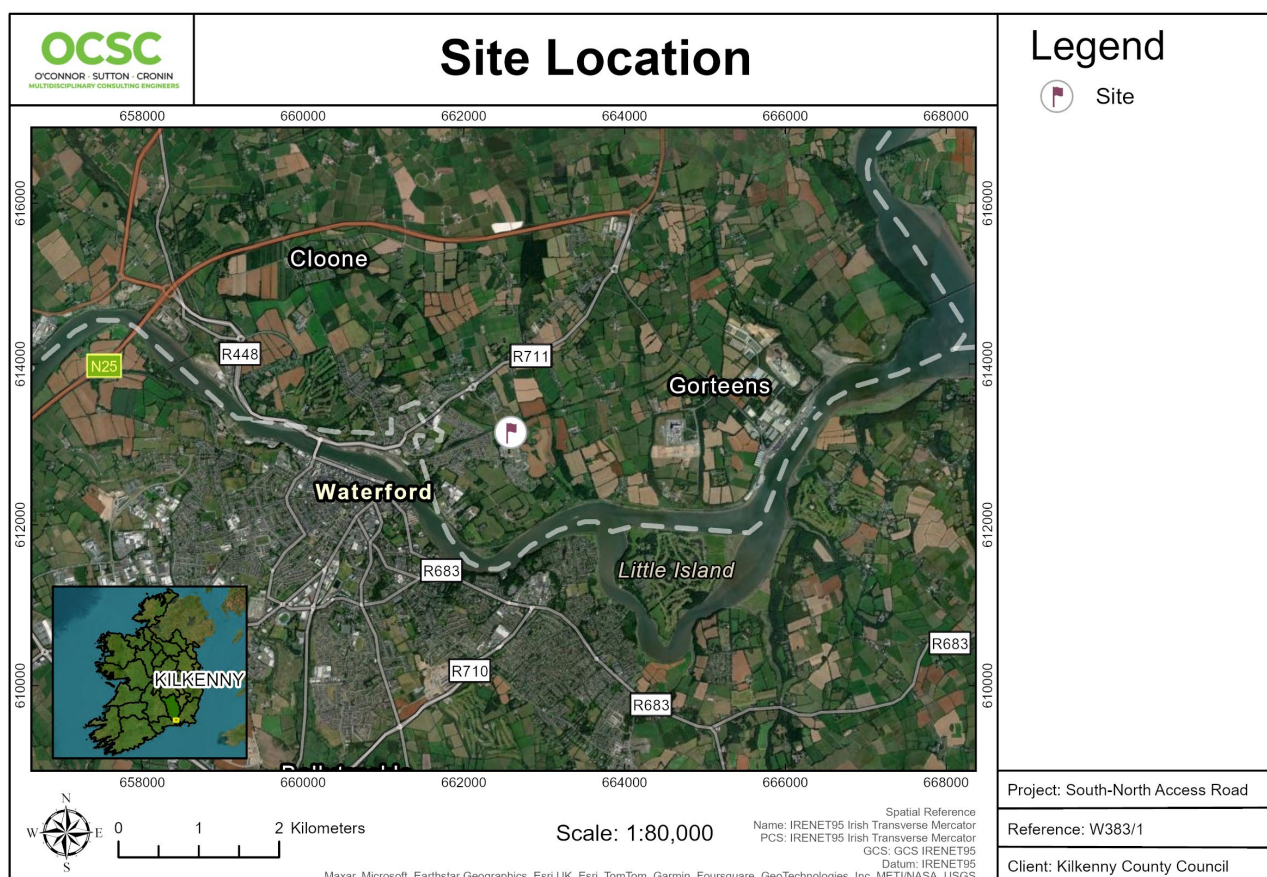


Figure 2.1: Regional Site Location (Source: OCSC, 2024)

2.2 GENERAL DESCRIPTION OF THE SITE

The proposed development site is approximately centred at the Irish Transverse Mercator (ITM) coordinates 662581 E, 613149N. The site is located at Rathculliheen, Co. Kilkenny, just north of the border with Co. Waterford. The road is designed to connect the northern and southern outer suburbs of Ferrybank and the car park is designed to cater for greenway users. The area surrounding the site consists of vacant land in scrub, agricultural, residential, retail, commercial and industrial land uses and a disused rail line as shown in Figure 2.2.

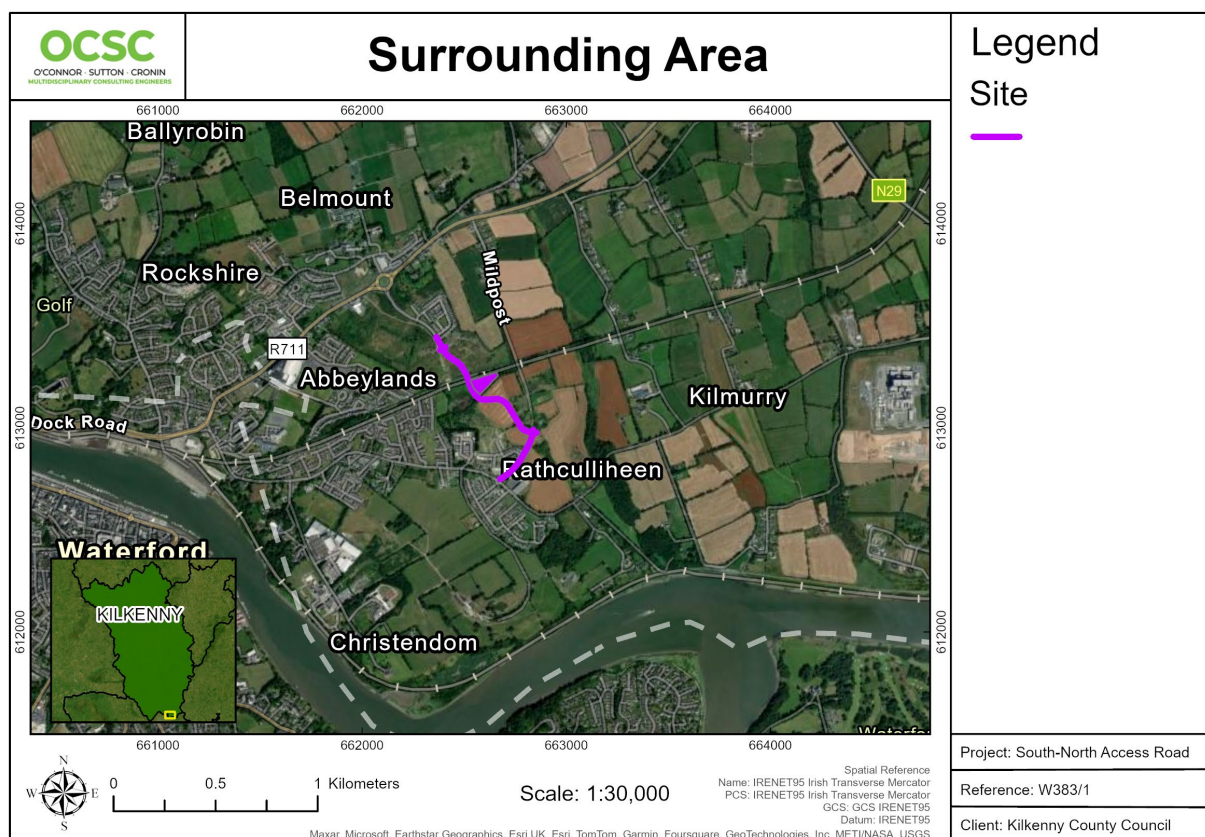


Figure 2.2: Study Area (Source: OCSC, 2024)

2.3 RIVER CROSSINGS

There are no EPA-designated surface water features within the site boundary. There is an undesignated pond approximately 20m west of the site. The nearest EPA-designated surface water feature is the Ferrybank Stream (Luffany _010 - IE_SE_16L680750), which is located approximately 259m east of the site. The Ferrybank Stream flows in a southerly direction and discharges to the River Suir (IE_SE_100_0500) approximately 830m downstream of the closest point of the site and the Ferrybank Stream (259m). The River Suir is designated as an estuary by the EPA in this area and flows in a southeasterly direction, eventually entering Waterford Harbour and then the Eastern Celtic Sea. During the operational phase the project, surface water will discharge to the Ferrybank Stream, an allowable rate equal to or lesser than the green field discharge rate, from the development along the existing greenway at a minimum distance of 550m. See section 5.3 below for more information regarding surface water discharge to the nearby stream.

The next nearest surface water feature, Abbeylands Stream (Luffany _020 – IE_SE_16L680750), is located approximately 705m east of the site and enters the River Suir downgradient of the discharge point for Ferrybank Stream.

2.4 DESIGNATED SITES

Figure 2.1 and Table 2.2 below indicate locations and details of the key ecological features of designated sites located within 15km of the site.

NPWS Designated Sites

Legend



Site



2km Buffer



15km Buffer



SAC



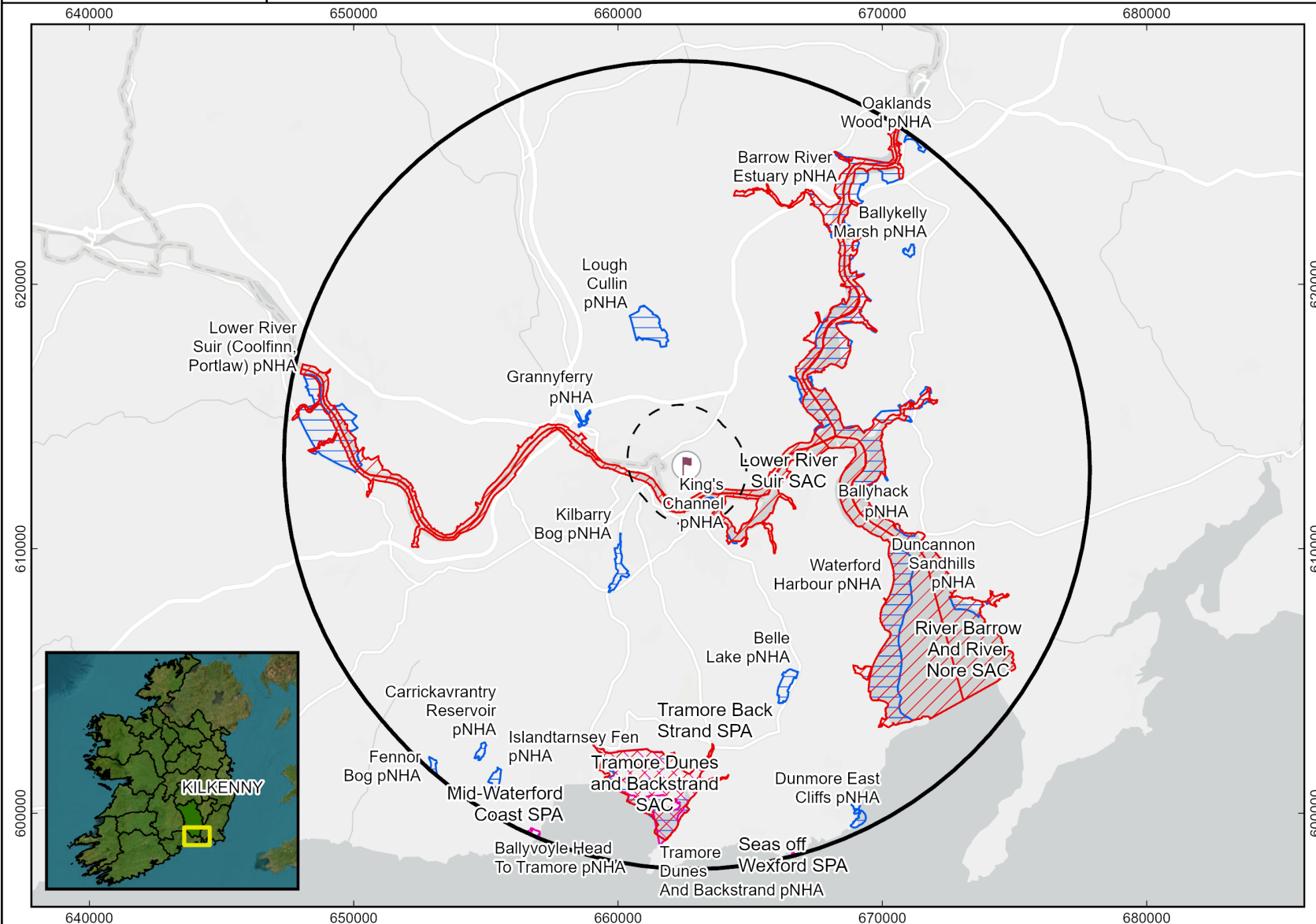
SPA



NHA



pNHA



Project: South-North Access Road

Reference: W383/1

Client: Kilkenny County Council

Spatial Reference
Name: IREN95 Irish Transverse Mercator
PCS: IREN95 Irish Transverse Mercator
GCS: GCS IREN95
Datum: IREN95
Projection: Transverse Mercator
Earthstar Geographics, Esri UK, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS

Scale: 1:220,000

Figure 2.3: NPWS Designated Sites (Source: OCSC, 2024)

Table 2.1: 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)			
002137	Lower River Suir SAC	0.78 S (0.83 downstream)	[1330] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1410] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [3260] Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [6430] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [91A0] Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91E0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, <i>Alnus incanae</i> , <i>Salix alba</i>) [91J0] <i>Taxus baccata</i> woods of the British Isles [1029] <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1092] <i>Austropotamobius pallipes</i> (White-clawed Crayfish) [1095] <i>Petromyzon marinus</i> (Sea Lamprey) [1096] <i>Lampetra planeri</i> (Brook Lamprey) [1099] <i>Lampetra fluviatilis</i> (River Lamprey) [1103] <i>Alosa fallax fallax</i> (Twait Shad) [1106] <i>Salmo salar</i> (Salmon) [1355] <i>Lutra lutra</i> (Otter)
002162	River Barrow and River Nore SAC	4.8 E (6.0 downstream)	[1130] Estuaries [1140] Mudflats and sandflats not covered by seawater at low tide [1170] Reefs [1310] <i>Salicornia</i> and other annuals colonising mud and sand [1330] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1410] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [3260] Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [4030] European dry heaths [6430] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [7220] Petrifying springs with tufa formation (<i>Cratoneurion</i>) [91A0] Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91E0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, <i>Alnus incanae</i> , <i>Salix alba</i>) [1016] <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail) [1029] <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1092] <i>Austropotamobius pallipes</i> (White-clawed Crayfish) [1095] <i>Petromyzon marinus</i> (Sea Lamprey) [1096] <i>Lampetra planeri</i> (Brook Lamprey) [1099] <i>Lampetra fluviatilis</i> (River Lamprey) [1103] <i>Alosa fallax fallax</i> (Twait Shad) [1106] <i>Salmo salar</i> (Salmon) [1355] <i>Lutra lutra</i> (Otter) [1421] <i>Trichomanes speciosum</i> (Killarney Fern) [1990] <i>Margaritifera durrovensis</i> (Nore Pearl Mussel)
000671	Tramore Dunes and Backstrand SAC	10.2 S	[1140] Mudflats and sandflats not covered by seawater at low tide [1210] Annual vegetation of drift lines [1220] Perennial vegetation of stony banks [1310] <i>Salicornia</i> and other annuals colonising mud and sand [1330] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1410] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [2110] Embryonic shifting dunes [2120] Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2130] Fixed coastal dunes with herbaceous vegetation (grey dunes)
004027	Tramore Back Strand SPA	10.2 S	[A046] Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A140] Golden Plover (<i>Pluvialis apricaria</i>) [A141] Grey Plover (<i>Pluvialis squatarola</i>) [A142] Lapwing (<i>Vanellus vanellus</i>) [A149] Dunlin (<i>Calidris alpina</i>) [A156] Black-tailed Godwit (<i>Limosa limosa</i>) [A157] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A160] Curlew (<i>Numenius arquata</i>)

Site Code	Site Name	Distance (km)	Reasons for Designation (*=priority habitats)
			[A999] Wetland and Waterbirds
004193	Mid-Waterford Coast SPA	14.7 SW	[A017] Cormorant (<i>Phalacrocorax carbo</i>) [A103] Peregrine (<i>Falco peregrinus</i>) [A184] Herring Gull (<i>Larus argentatus</i>) [A346] Chough (<i>Pyrrhocorax pyrrhocorax</i>)
004237	Seas off Wexford SPA	14.8 SE	[A001] Red-throated Diver (<i>Gavia stellata</i>) [A009] Fulmar (<i>Fulmarus glacialis</i>) [A013] Manx Shearwater (<i>Puffinus puffinus</i>) [A016] Gannet (<i>Morus bassanus</i>) [A017] Cormorant (<i>Phalacrocorax carbo</i>) [A018] Shag (<i>Phalacrocorax aristotelis</i>) [A065] Common Scoter (<i>Melanitta nigra</i>) [A176] Mediterranean Gull (<i>Larus melanocephalus</i>) [A179] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A183] Lesser Black-backed Gull (<i>Larus fuscus</i>) [A184] Herring Gull (<i>Larus argentatus</i>) [A188] Kittiwake (<i>Rissa tridactyla</i>) [A191] Sandwich Tern (<i>Sterna sandvicensis</i>) [A192] Roseate Tern (<i>Sterna dougallii</i>) [A193] Common Tern (<i>Sterna hirundo</i>) [A194] Arctic Tern (<i>Sterna paradisaea</i>) [A195] Little Tern (<i>Sterna albifrons</i>) [A199] Guillemot (<i>Uria aalge</i>) [A200] Razorbill (<i>Alca torda</i>) [A204] Puffin (<i>Fratercula arctica</i>)
Proposed Natural Heritage Areas (pNHA)			
Site Code	Site Name	Distance (km)	
001702	King's Channel pNHA	1 SE	
001700	Kilbarry Bog pNHA	3.9 SW	
000833	Grannyferry pNHA	4.2 NW	
000406	Lough Cullin pNHA	5.2 NW	
000698	Barrow River Estuary pNHA	6.2 NE	
000695	Ballyhack pNHA	6.9 SE	
000659	Belle Lake pNHA	8.4 SE	
000787	Waterford Harbour pNHA	9.2 SE	
000671	Tramore Dunes and Backstrand	11 SW	
001738	Duncannon Hills	11.3 SE	
000744	Ballykelly Marsh pNHA	11.5 NE	
000399	Lower River Suir (Coolfinn, Portlaw)	12.7 W	
000660	Carrickavrantry Reservoir	12.9 SW	
000666	Islandtarnsey Fen	13.1 SW	
000664	Dunmore East Cliffs	13.7 SE	
001697	Fennor Bog pNHA	14.9 SW	
000774	Oaklands Wood pNHA	14.9 NE	
001693	Ballyvoyle Head to Tramore	14.9 SW	

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 the 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 studies. 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. 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 to a maximum distance of 2km and is likely to be much less than this. The site location and the potential zone of influence are shown in Figure 2.1.

3.3 DESK STUDY

The Site and the surrounding area were viewed using available satellite imagery, and a desk study was carried out to collate the available existing ecological information on the Site. 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).
- The EPA EnVision map viewer (EPA, 2023) and available reports were also reviewed, as was the NPWS (2019) publication “The Status of Protected EU Habitats and Species in Ireland”.
- Data on rare / protected / threatened species and designated sites held online by the NPWS (www.npws.ie) and the NBDC (www.biodiversityireland.ie).

- Kilkenny County Council website was accessed for information on relevant planning policy while the planning portal was accessed for information on other planning applications within the Site and immediately 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 10th of July 2023 by Luis Iemma, BSc, MSc, Ph.D., CEcol, MCIEEM, Associate Ecologist, and Glenda Barry, BSc, MSc, PGeo, EurGeol, Associate. The site visit was carried out in rainy conditions with light breezes, and cloud cover (8/8 Oktas). The temperature was 16°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.

3.5 HABITATS

Habitats were identified, described, and classified during the walkover survey to level 3 (where possible) in accordance with 'A Guide to Habitats in Ireland' (Fossitt, 2000) produced by the Heritage Council (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.

3.6 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).

3.7 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").

3.8 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 a 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 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 action but 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.

3.9 SIGNIFICANT EFFECTS

A significant effect, for the purposes of EclA, 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.

3.10 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 existing or proposed or permitted plans and projects, can result in significant effects.

3.11 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 AND POLICY AND LEGISLATION

An EclA is a process of identifying, quantifying, and evaluating potential effects of development or other actions on habitats, species, and ecosystems (CIEEM, 2016). When an EclA 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 EclA is not a statutory requirement; however, it is a best-practice evaluation process. This EclA has been undertaken to support and assess the proposed works as well as to 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) in Annexes I and II, respectively. The Habitats Directive also identifies plant and animal species in 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.

The nearest SAC is the Lower River Suir SAC is located 0.78km south of the site. The proposed development is at least 0.26km from the nearest stream (Ferrybank Stream) that leads downstream to the Lower River Suir SAC (Site Code 002137), however during the operational phase of this project the surface water will discharge to this stream (at an allowable discharge rate and based on the greenfield runoff calculation which will be restricted to pre-development levels) therefore, SACs cannot be scoped out of this assessment and must be included in further considerations.

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.

There is no spatial overlap or hydrological link between the site and the Tramore Back Strand SPA (the nearest SPA located 10.2km south of the site); consequently, SPAs have been scoped out of this EcIA Report.

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. Several 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 4th National Biodiversity Action Plan (NBAP) 2023-2030 was launched in 2024. This plan sets the national biodiversity agenda for the 7 years and aims to deliver the transformative changes required to the ways in which we value and protect nature. The 4th NBAP strives for a "whole of government, whole of society" approach to the governance and conservation of biodiversity. The aim is to ensure that every citizen, community, business, local authority, semi-state and state agency has an awareness of biodiversity and its importance, and of the implications of its loss, while also understanding how they can act to address the biodiversity emergency as part of a renewed national effort to "act for nature". The Plan contains five Objectives, each addressing a different theme that will contribute to the realisation of the vision for biodiversity. These and other targets in the plan have informed the valuation of ecological features, assessment of potential impacts, and development of mitigation in this report, as relevant.

5 SURVEY RESULTS (HABITAT, FLORA, FAUNA)

The habitats present within the site and surrounding area surveyed are described, classified, and evaluated in this section of the report and shown in Figure 5.1.

5.1 HABITAT MAP

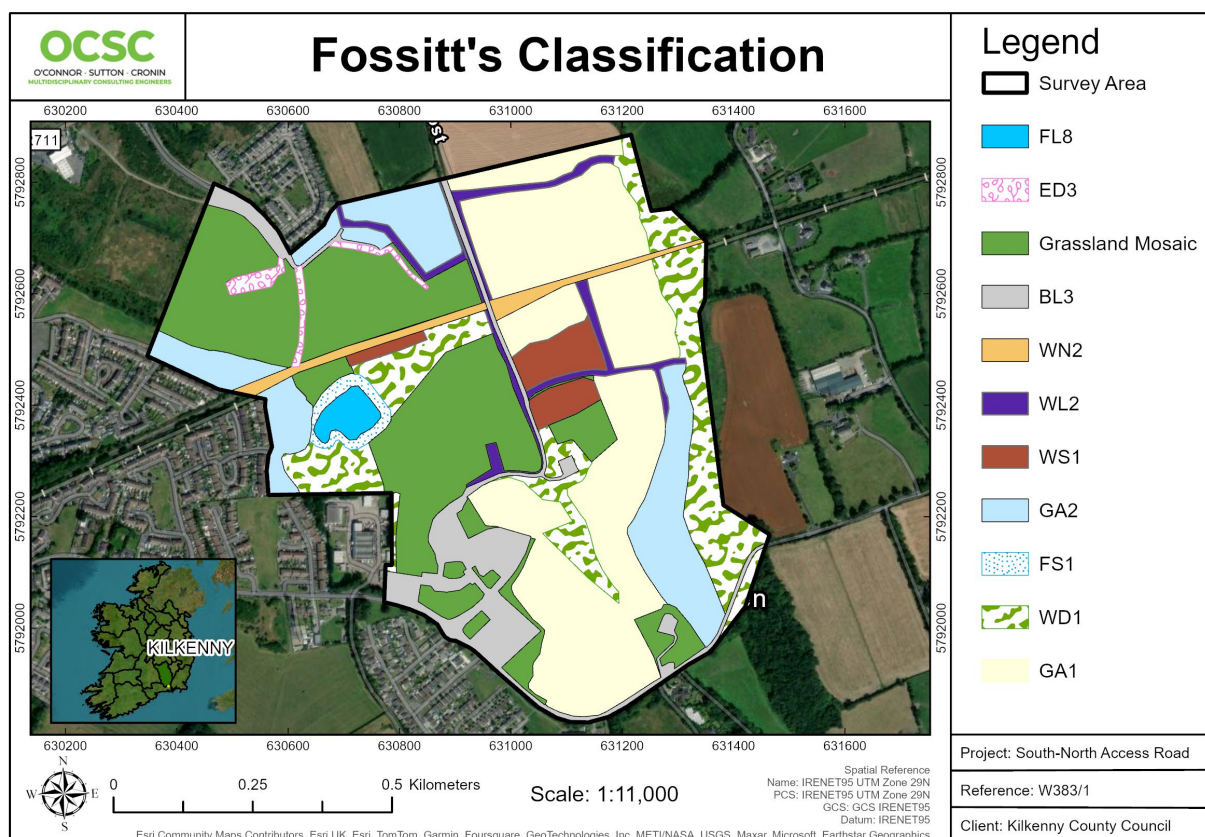


Figure 5.1. Habitat Map Showing the Habitats found in the Survey Area (OCSC, 2024)

❖ Other artificial lakes and ponds (FL8)

This category should be used for artificial or ornamental bodies of standing water that may be found in parks, demesnes, gardens, or golf courses. Flooded quarries, tailings ponds, and water treatment plants (with open water) should also be included. The nutrient status of these artificial water bodies is variable and may be high as in the case of hypertrophic lakes in urban parks. Moats can also be included here if there is no obvious connection to a wider drainage network. There is a pond in the northwestern portion of the survey area, 20m west of the chosen route. This appears to have been man made by a combination of local development altering the groundwater pathways in the area and a bust watermain which discharged a significant amount of water over a long period. The pond is largely surrounded by Bulrush (*Typha latifolia*) as shown in Figure 5.2.

No ecological surveys were carried out inside the pond, but it is worth noting that during the site visit, a few specimens of *Tubificidae* (Oligochaeta) and *Chironomidae* (Diptera) were visually identified near the pond's border. This presence could potentially indicate a low water quality in the pond. No other aquatic groups were observed in the pond.



Figure 5.2: Other artificial lakes and ponds (FL8)

❖ Buildings and artificial surfaces (BL3)

This broad category incorporates areas of built land that do not fit elsewhere in the classification. It includes all buildings (domestic, agricultural, industrial, and community) other than derelict stone buildings and ruins (see stone walls and other stonework - BL1). It also includes areas of land that are covered with artificial surfaces of tarmac, cement, paving stones, bricks, blocks, or astroturf (e.g. roads, car parks, pavements, runways, yards, and some tracks, paths, driveways, and sports grounds). Within the survey area there are many paved roads and buildings as shown in Figure 5.3.



Figure 5.3: Greenway that bisects the proposed development (BL3)(BL3)

❖ Amenity Grassland (Improved) (GA2)

This type of grassland is improved or species-poor and is managed for purposes other than grass production. It includes amenity, recreational, or landscaped grasslands but excludes farmland. Most areas of amenity grassland have been reseeded and are regularly mown to maintain very short swards. Fertilisers and herbicides are often applied, but there is rarely any grazing by livestock. There are a few scattered areas comprised of amenity grassland (improved), mostly located near residential areas as shown in Figure 5.4.



Figure 5.4: Amenity Grassland (Improved) (GA2) near residential areas

❖ Grassland mosaic

Most of the survey area is comprised of some sort of grassland. The species comprising this grassland mosaic varies across the site but are predominantly those associated with Amenity Grassland (Improved), Heath, and Wet Grassland (GS4) (see Figure 5.5). Some plant species which were found and in large numbers across the site included Yorkshire Fog Grass (*Holcus lanatus*), Stinging nettle (*Urtica dioica*), Docks (*Rumex* spp.), Creeping buttercup (*Ranunculus repens*), Field Thistle (*Cirsium arvense*), Common gorse (*Ulex europaeus*), and Purple moor-grass (*Molinia caerulea*) as shown in Figure 5.5.



Figure 5.5: Grassland mosaic

❖ Reed and large sedge swamps (FS1)

This category includes species-poor stands of herbaceous vegetation that are dominated by reeds and other large grasses or large, tussock-forming sedges. Most reed and large sedge swamps are overwhelmingly dominated by one or a small number of species, as in the case of reedbeds. Stands of vegetation can range from very dense to open. Typical components include Common Reed (*Phragmites australis*), Common Club-rush (*Schoenoplectus lacustris*), Reed Sweet-grass (*Glyceria maxima*), Branched Bur-reed (*Sparganium erectum*), Reed Canary-grass (*Phalaris arundinacea*), Great Fen-sedge (*Cladium mariscus*), Greater Tussock-sedge (*Carex paniculata*), Bulrush (*Typha latifolia*), and Water Horsetail (*Equisetum fluviatile*). Stands of Sea Club-rush (*Bolboschoenus maritimus*) may also occur in brackish waters. The section of FS1 surrounds the pond in the survey area with the main component being Bulrush which almost completely surrounds the pond (see Figure 5.6).



Figure 5.6. Reed and large sedge swamps (FS1)

❖ Oak-ash-hazel woodland (WN2)

This category includes native, semi-natural woodland that occurs on base-rich or calcareous soils that are generally dry or well-drained or on rocky limestone terrain. This type of woodland is typically dominated by Pedunculate Oak (*Quercus robur*), Ash (*Fraxinus excelsior*), or Hazel (*Corylus avellana*) or a mixture of some or all of these trees. There are some small patches of WN2 running from east to west within the northern portion of the survey area. (See Figure 5.7).



Figure 5.7. Oak-ash-hazel woodland (WN2) near the pond

❖ (Mixed) broadleaved woodland (WD1)

This general category includes woodland areas with 75-100% cover of broadleaved trees, and 0-25% cover of conifers. It should be used in situations where woodland stands cannot be classified as semi-natural on the basis of the criteria outlined above. Trees may include native and non-native species. Plantations of broadleaved trees are included if the canopy height is greater than 5m, or 4m in the case of wetland areas. Most of the treelines and some larger areas in the survey area are composed of WD1. (See Figure 5.8).



Figure 5.8. (Mixed) broadleaved woodland (WD1) near residential area

❖ Treelines (WL2)

A treeline is a narrow row or single line of trees that is greater than 5 m in height and typically occurs along field or property boundaries. This category includes tree-lined roads or avenues, narrow shelter belts with no more than a single line of trees, and overgrown hedgerows that are dominated by trees. There were single lines of trees scattered throughout the surveyed area but mainly in the central and northern portions of the survey area (See Figure 5.9).



Figure 5.9. Treeline (WL2) (on the right side) in the Eastern Area of the Survey Area

❖ Improved agricultural grassland (GA1)

This category is used for intensively managed or highly modified agricultural grassland that has been reseeded and/or regularly fertilised and is now heavily grazed and/or used for silage making. It includes regularly reseeded monoculture grasslands and rye-grass leys that are planted as part of an arable rotation. These differ significantly from areas of permanent grassland. Improved agricultural grassland is typically species poor. Sward quality varies depending on soil type, fertility, drainage and management. (See Figure 5.10).



Figure 5.10. Improved agricultural grassland (GA1).

❖ **Recolonising bare ground (ED3)**

This category is used for any areas where bare or disturbed ground, derelict sites, or artificial surfaces of tarmac, concrete, or hard core have been invaded by herbaceous plants. Vegetation cover should be greater than 50% for inclusion in this category. Most of the typical colonisers are ruderals or weed plants. There are small patches of ED3 on the western part of the survey area where plants such as Rosebay Willowherb (*Epilobium angustifolium*) are abundant (See Figure 5.11).



Figure 5.11. Recolonising bare ground (ED3)

❖ Scrub (WS1)

This broad category includes areas that are dominated by at least 50% cover of shrubs, stunted trees, or brambles. The canopy height is generally less than 5 m, or 4 m in the case of wetland areas. Scrub frequently develops as a precursor to woodland and is often found in inaccessible locations or on abandoned or marginal farmland. In the absence of grazing and mowing, scrub can expand to replace grassland or heath vegetation. Trees are included as components of scrub if their growth is stunted as a result of exposure, poor soils, or waterlogging. If tall trees are present, these should have a scattered distribution and should not form a distinct canopy. There are small patches of scrub near the pond and proposed car park within the central portion of the survey area. Some of the abundant plants in those areas include Common gorse (*Ulex europaeus*), Bramble (*Rubus fruticosus*), Blackthorn (*Prunus spinosa*), and Hawthorn (*Crataegus monogyna*) (See Figure 5.12).



Figure 5.12. Scrub (WS1 in the eastern area of the survey area).

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 that had suitability to support roosting bats. Trees were studied and assessed for the presence of potential roost features including 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 and other suitable areas as having Negligible, Low, Moderate, or High suitability for roosting bats in accordance with Bat Conservation Trust guidelines (Collins, 2016).

The suitability index of the area is considered high (43.44 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 (Figure 5.13) combined in addition to individual species' indices. The suitability indices for individual species are shown in Table 5.1.

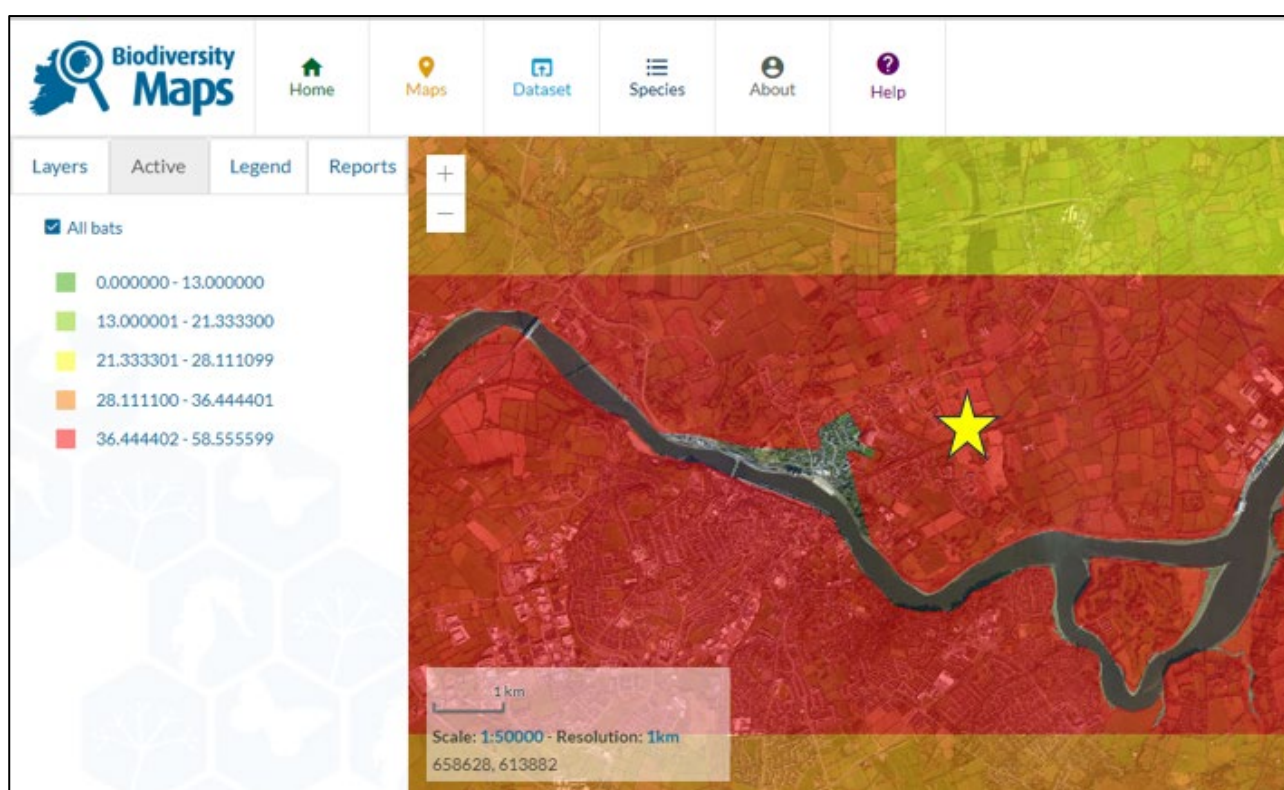


Figure 5.13. Suitability index for all bats in the site and surrounding areas; approximate site location indicated by the yellow star (NBDC, 2023)

Table 5.1: Suitability Index for all bat species

Species	Suitability Index
All Bats	43.44
Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)	50
Brown long-eared bat (<i>Plecotus auritus</i>)	63
Common pipistrelle (<i>Pipistrellus pipistrellus</i>)	56
Lesser horseshoe bat (<i>Rhinolophus hipposideros</i>)	1
Leisler's bat (<i>Nyctalus leisleri</i>)	51
Whiskered Bat (<i>Myotis mystacinus</i>)	52
Daubenton's bat (<i>Myotis daubentonii</i>)	43
Nathusius' pipistrelle (<i>Pipistrellus nathusii</i>)	24
Natterer's bat (<i>Myotis nattereri</i>)	51

When considering each of the common species separately, the following species are listed as high in the index:

- Brown long-eared bat (*Plecotus auritus*) scores 63 in the scale (High) as shown in Figure 5.14 and has an IUCN status of 'Least Concern'. This species commonly forages in parkland, open deciduous and coniferous woodland, orchards, and gardens.
- Common pipistrelle (*Pipistrellus pipistrellus*) scores 56 in the scale (High) as shown in Figure 5.15 and has an IUCN conservation status of 'Least Concern'. This species is common in many habitats including stone walls and other stonework (BL1) and treelines (WL2).
- Soprano pipistrelle (*Pipistrellus pygmaeus*) scores 50 in the scale as shown in Figure 5.16 and has IUCN conservation status of 'Least Concern'. This species has an aerial hunting strategy for insects associated with aquatic or damp habitats.
- Leisler's bat (*Nyctalus leisleri*) scores 51 in the scale (High) as shown in Figure 5.19 and has an IUCN status of 'Least Concern'. This species is common over pastures, rivers, lakes, canals, and forestry and around streetlights/flood lights.
- Whiskered Bat (*Myotis mystacinus*) scores 52 in the scale (High) as shown in Figure 5.21 and has an IUCN status of 'Least Concern'.
- Natterer's bat (*Myotis nattereri*) scores 51 in the scale (High) as shown in Figure 5.22 and has an IUCN status of '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 (scores 43) (Figure 5.20).
- For bats species with lower score indices, see Figures 5.17 (Nathusius' pipistrelle) and 5.18 (Lesser horseshoe bat).

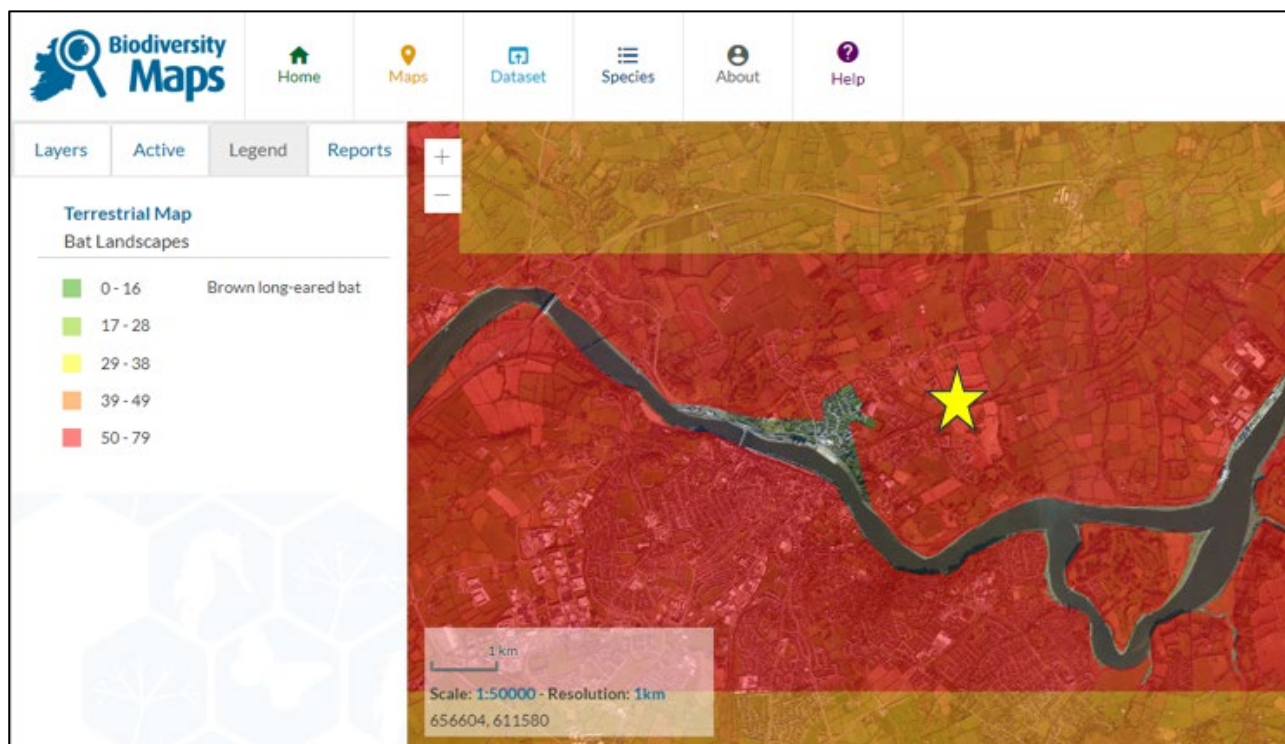


Figure 5.14. Suitability index for Brown long-eared bat in the site and surrounding areas; approximate site location indicated by the yellow star (NBDC, 2023)

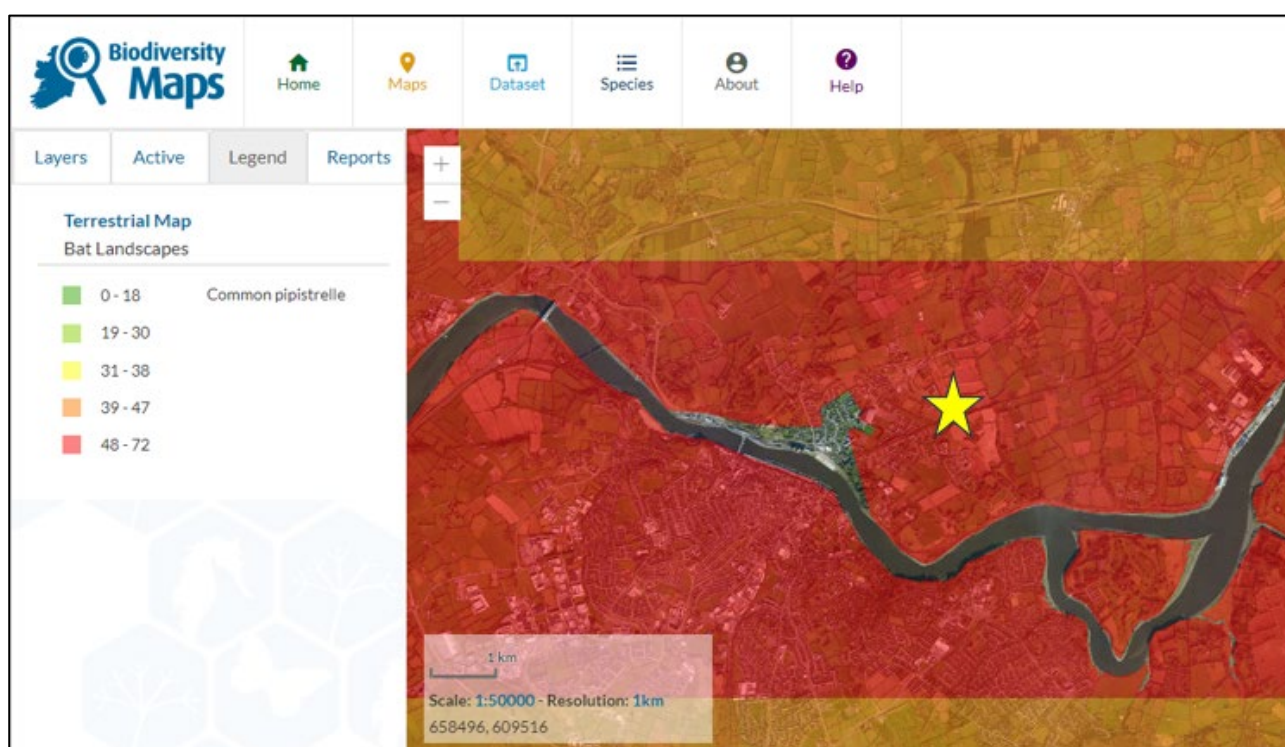


Figure 5.15: Suitability index for Common pipistrelle bat in the site and surrounding areas; approximate site location indicated by the yellow star (NBDC, 2023)

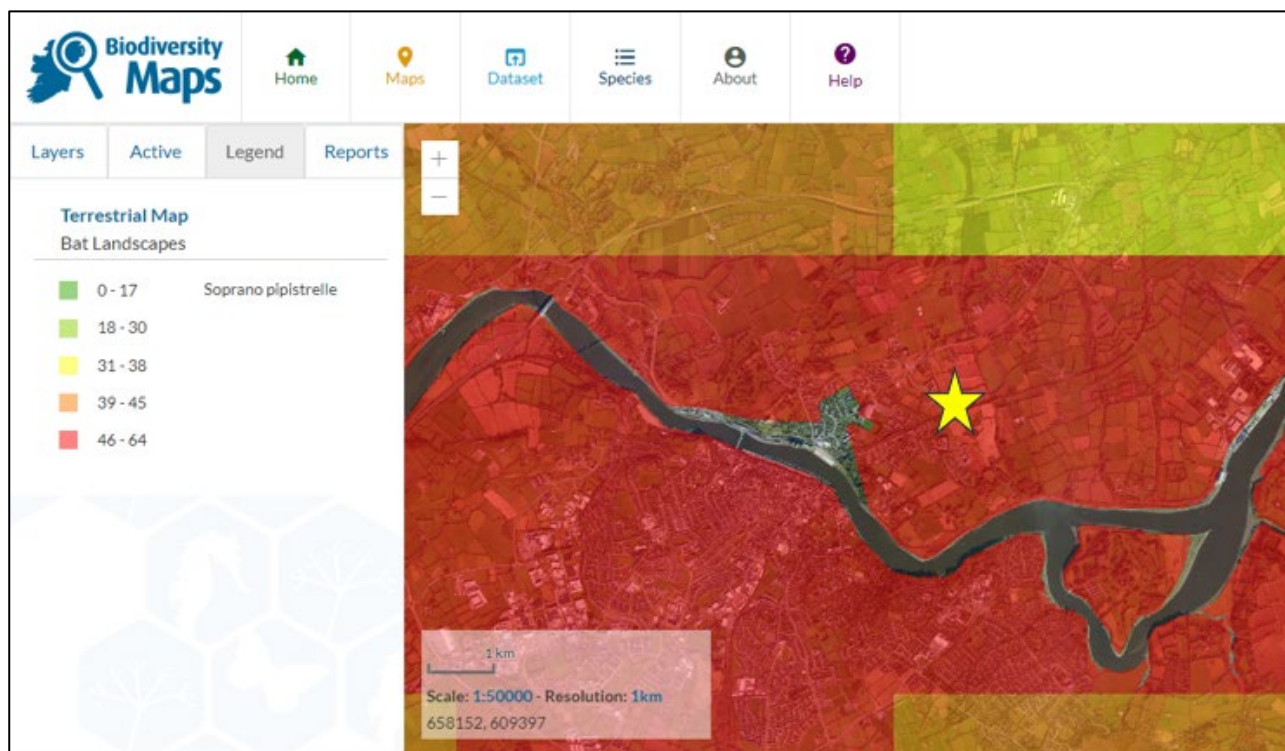


Figure 5.16: Suitability index for Soprano pipistrelle in the site and surrounding areas; approximate site location indicated by the yellow star (NBDC, 2023)

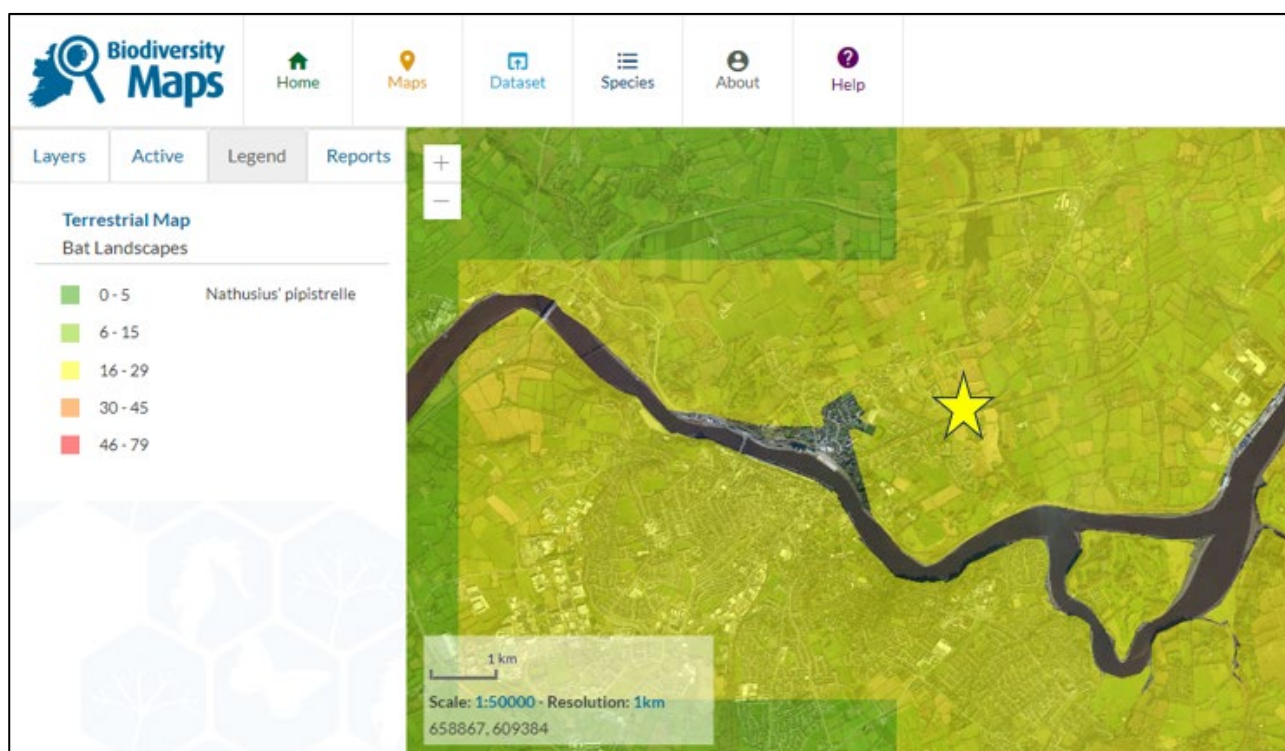


Figure 5.17: Suitability index for Nathusius' pipistrelle in the site and surrounding areas; approximate site location indicated by the yellow star (NBDC, 2023)

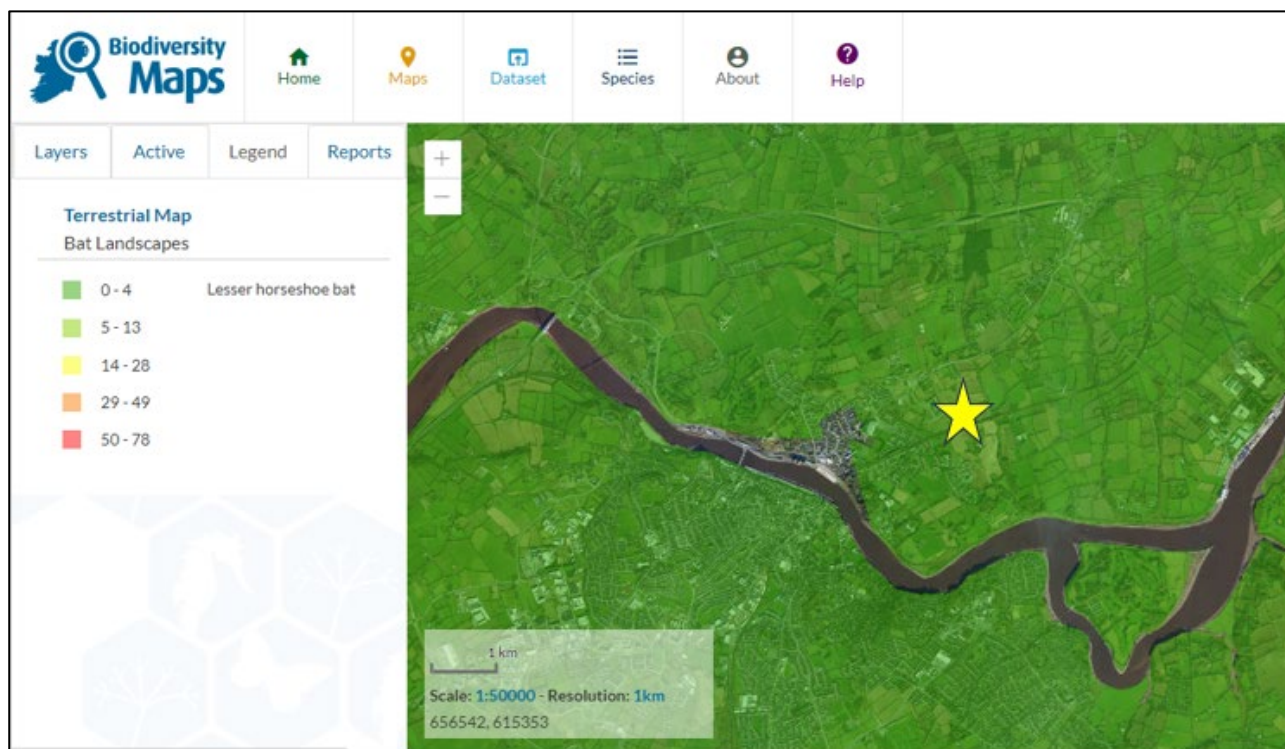


Figure 5.18: Suitability index for Lesser horseshoe bat in the site and surrounding areas; approximate site location indicated by the yellow star (NBDC, 2023)

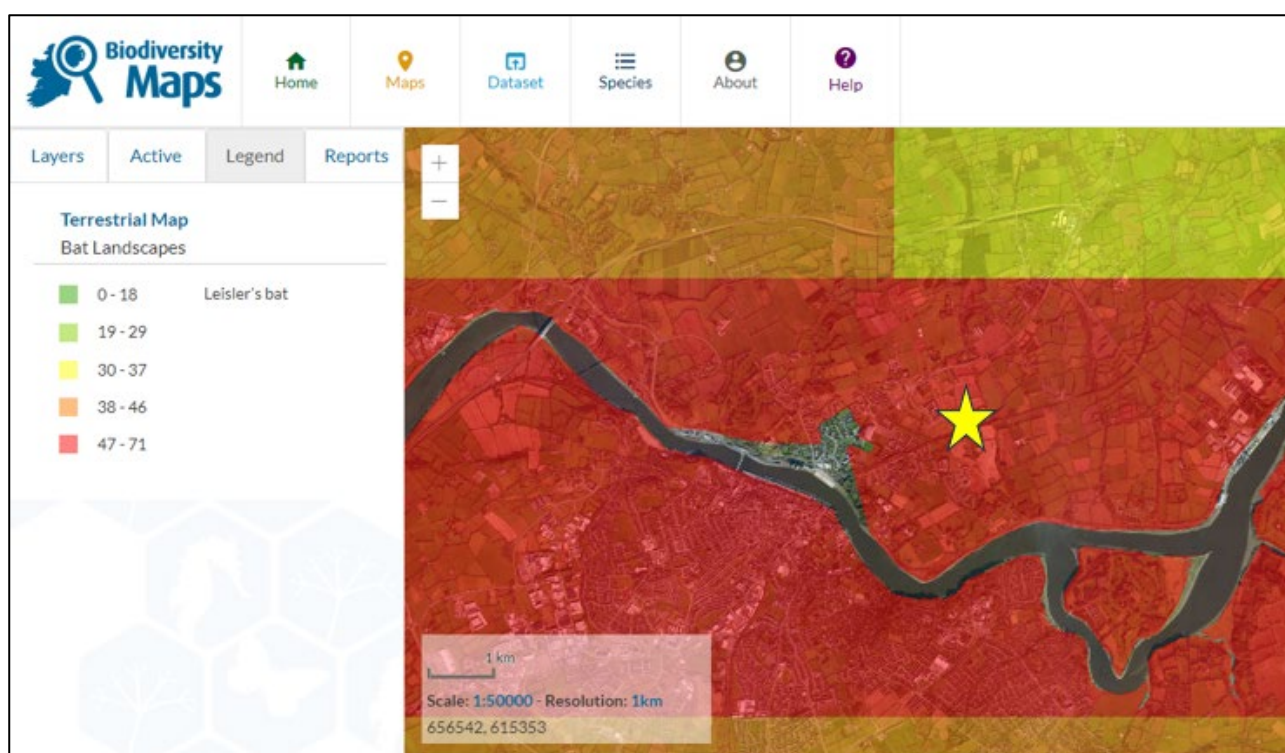


Figure 5.19: Suitability index for Leisler's bat in the site and surrounding areas; approximate site location indicated by the yellow star (NBDC, 2023)

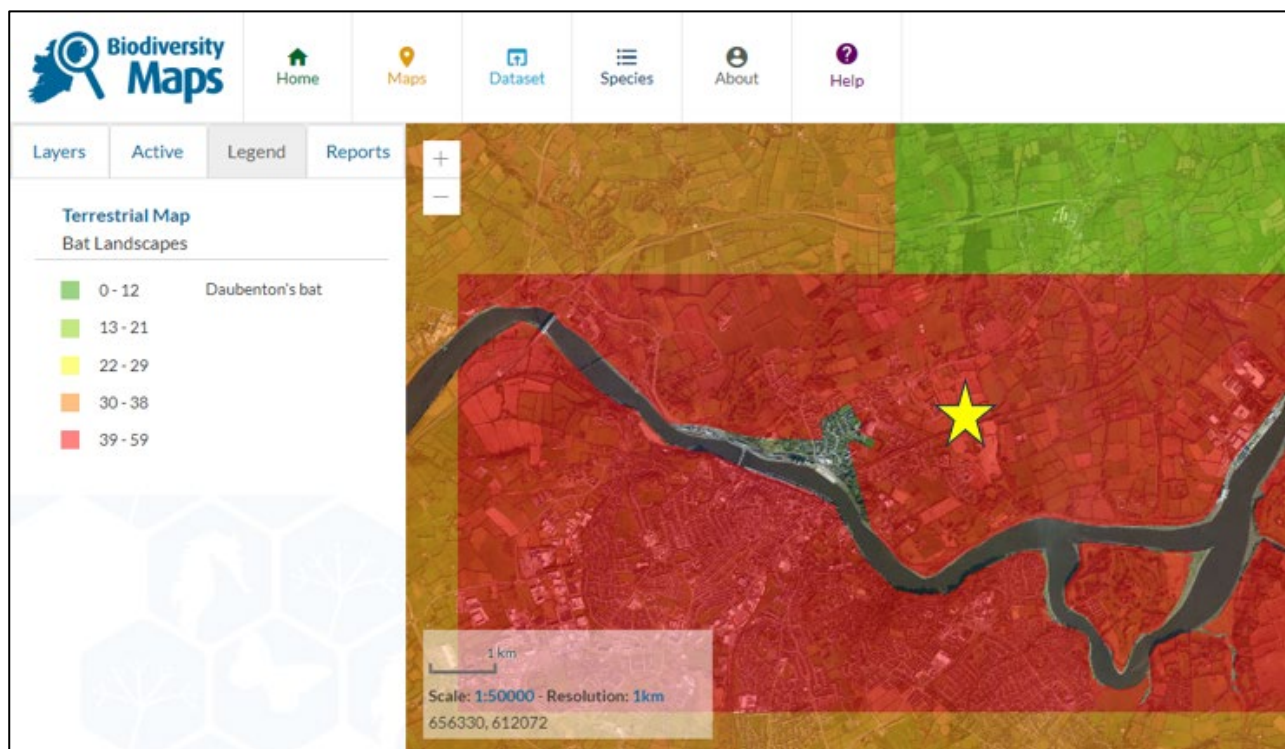


Figure 5.20: Suitability index for Daubenton's bat in the site and surrounding areas; approximate site location indicated by the yellow star (NBDC, 2023)

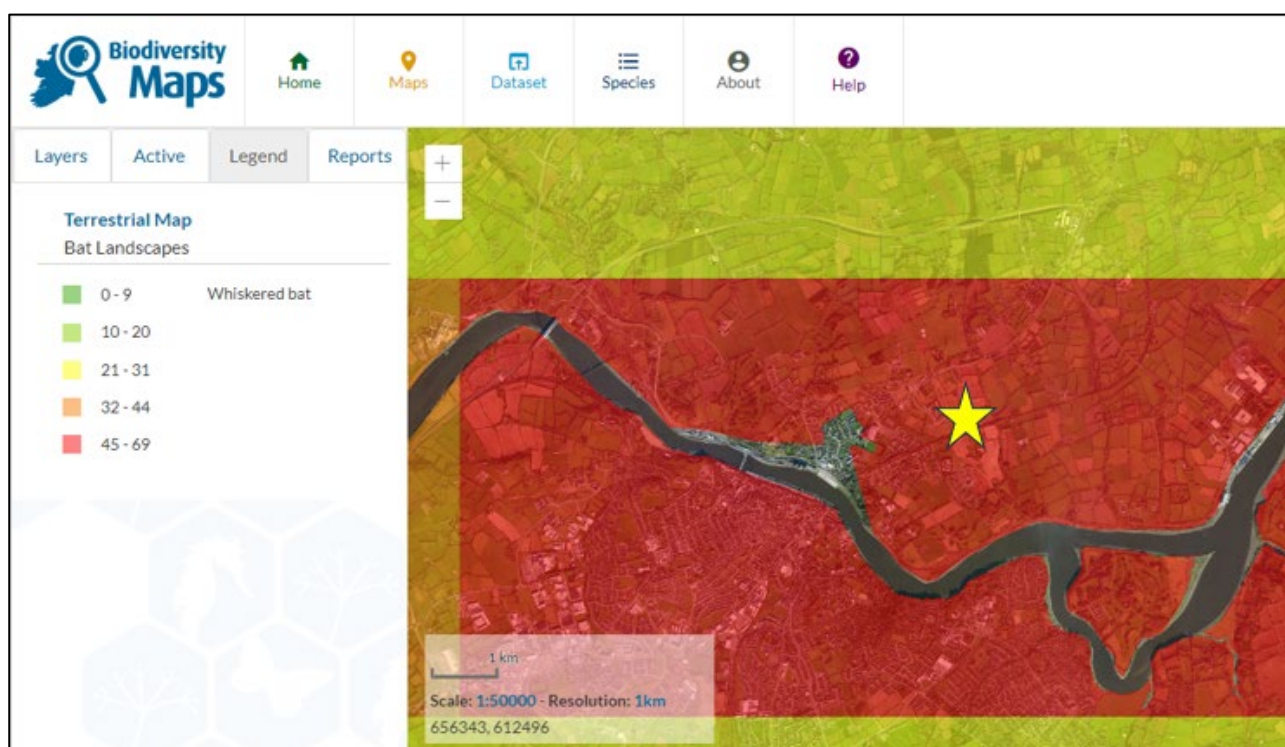


Figure 5.21: Suitability index for Whiskered bat in the site and surrounding areas; approximate site location indicated by the yellow star (NBDC, 2023)

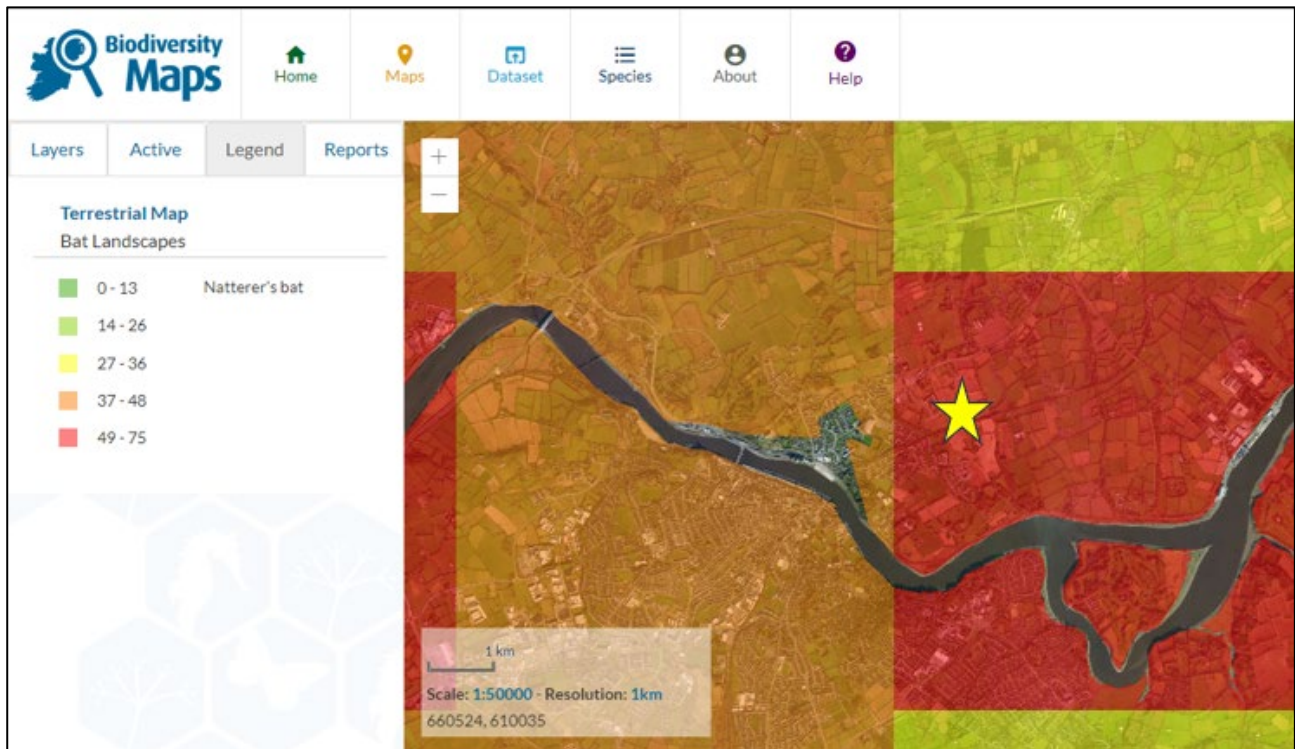


Figure 5.22: Suitability index for Natterer's bat in the site and surrounding areas: approximate site location indicated by the yellow star (NBDC, 2023)

PRF survey identified that, although no bats were seen, there are crevices with roosting potential found on mature trees in many locations within the surveyed area in close proximity to the site. Given that the site is somewhat connected to the surrounding area through treelines and surrounding vegetation, it is likely to be a critical habitat for local bat populations.

The area offers moderate potential for roosting/foraging and commuting bats. Therefore, it is considered that bats require further detailed assessment for this proposal and cannot be scoped out.

5.2.2 BIRDS

According to the NBDC, there are records of 16 protected species of birds from the 2km grid square (S61G) within which the site is located.

- Black-tailed Godwit (*Limosa limosa*)
- Common Greenshank (*Tringa nebularia*)
- Common Redshank (*Tringa totanus*)
- Common Kestrel (*Falco tinnunculus*)
- Common Sandpiper (*Actitis hypoleucos*)
- Common Snipe (*Gallinago gallinago*)
- Common Swift (*Apus apus*)

- Dunlin (*Calidris alpina*)
- Eurasian Curlew (*Numenius arquata*)
- Great Cormorant (*Phalacrocorax carbo*)
- Little Egret (*Egretta garzetta*)
- Little Grebe (*Tachybaptus ruficollis*)
- Mallard (*Anas platyrhynchos*)
- Merlin (*Falco columbarius*)
- Northern Lapwing (*Vanellus vanellus*)
- Peregrine Falcon (*Falco peregrinus*)

Numerous trees in the (Mixed) broadleaved woodland (WD1) and Oak-ash-hazel woodland (WN2) areas offer excellent nesting potential. As a result, birds cannot be scoped out of the assessment, as the development traverses an area of mature trees.

5.2.3 BADGERS

According to the NBDC, there are records of the Eurasian Badger (*Meles meles*) from the 2km grid square (S61G) within which the site is located. The footprint of the proposed works and surrounding area was searched for evidence of badgers including the presence of setts, foraging evidence, access runs, hairs caught on wires and bushes, tracks, and prints. No badgers were found on site, nor foraging evidence. However, the area has a suitable habitat; therefore, badgers cannot be scoped out of this assessment and further consideration is needed.

5.2.4 OTTERS

According to the NBDC, there are records of the European Otter (*Lutra lutra*) from the 2km grid square (S61G) within which the site is located. The footprint of the proposed works and surrounding area was also searched for evidence of otters including spraints, foraging evidence, and remains such as fish bones, access runs, tracks, and prints. None of these were observed on site. Although the presence of suitable habitats for this group within the pond and nearby stream, the chosen route will consistently maintain a distance of over 2 meters from both bodies of water. Therefore, otters can be scoped out of this assessment.

5.2.5 AMPHIBIANS

According to the NBDC, there are no records of amphibians within the 2km grid square (S61G) within which the site is located. During the site visit, no amphibians have been recorded. Although the presence of suitable

habitats for this group within the pond and nearby stream, the chosen route will consistently maintain a distance of over 2 meters from both bodies of water. Therefore, amphibians can be scoped out of this assessment.

5.2.6 LEPIDOPTERA

Surveys were carried out during the window of butterfly flight in spring/summer, but no species were recorded. A number of common butterflies are likely to occur within the area. According to the NBDC, no protected species of Lepidoptera has been previously recorded within the 2km grid square that the site is located in (S61G).

The South-North access road and the car park are not expected to have any impacts on Lepidoptera; therefore, they can be scoped out of further assessment.

5.3 NATURA 2000 (EUROPEAN SITES)

There is one Natura 2000 site within the 2km potential zone of influence of the proposed development, the Lower River Suir SAC. This SAC is located 0.78km south of the proposed development. There is an indirect hydrological connection to the Lower River Suir SAC via the Ferrybank Stream, as the SAC is 0.83km downstream of the Ferrybank Stream. However, this stream is located approximately 0.26km from the site at its nearest point (See Figure 5.23). Therefore, in the absence of mitigation measures, changes in water quality during the construction phase in the Lower River Suir SAC are anticipated to be unlikely and imperceptible, given the distance from the route to the Ferrybank Stream (0.26km).

During the operational phase, surface water from the site will be treated before discharge by attenuation and oil separation to ensure that the water quality of the receiving watercourse is not adversely impacted. The rate of discharge will be discharged at an allowable rate equal to or lesser than the green field (estimated Q_{bar} rate is 6.7l/s) discharge rate from the development into the nearest stream. The development's storm network outfall chamber will be fitted with a site flow control device, this will help restrict the stormwater flows to pre-development levels for the Soil Type 2. Therefore, during the operational phase of the project the site will have an indirect hydrological connection to the Lower Suir SAC (1380m downstream), via the drainage along the greenway to the Ferrybank Stream (550m) and from the Ferrybank Stream to the River Suir (830m). See Figure 5.23 below. Although the operational phase of the proposed project will contribute intermittent additional surface water to the Ferrybank Stream and the River Suir due to rainfall events, it is unlikely to cause a significant impact on the Lower River Suir SAC due to the nature of the works and distance downstream. Furthermore, there is no physical connectivity in the form of hedgerows, treelines, or woodlands between the area of the proposed works and any of the designated sites. Therefore, European sites will not be considered further in this report. Therefore, Natura 2000 sites can be scoped out of this assessment.

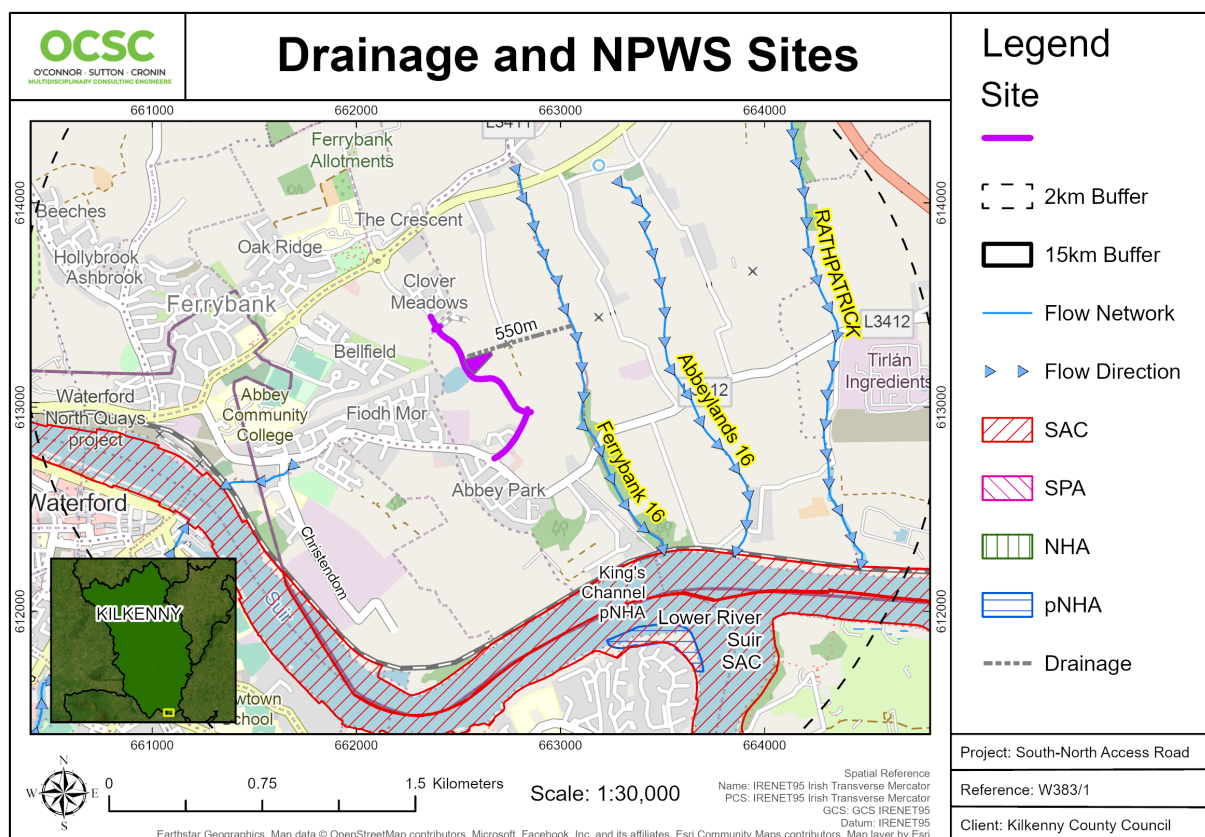


Figure 5.23: Site Drainage to the Ferrybank Stream (Source: OCSC, 2024)

5.4 NATIONALLY IMPORTANT SITES

There are no Natural Heritage Areas (NHAs) and one pNHA within the 2km potential zone of influence of the proposed development, the King's Channel pNHA (Site Code 001702) located 1km south of the site. There is an indirect hydrological connection to the pNHA and the site via the Ferrybank Stream (1.2km downstream of the site's closest point to the Ferrybank Stream and 2.2km downstream during the operational phase). However, due to the distance to the site and the short-term nature of the works, impacts to this protected area are anticipated to be unlikely, negligible and not significant. Therefore, pNHAs can be scoped out of this assessment.

5.5 APPROACH TO POLLUTION

The construction of the new carriageway, footpaths, cycle lane, verge, car park and associated drainage system between the Clover Meadows and Abbeygate housing developments in Ferrybank, County Kilkenny,

will create the potential for impact on the local surface waters from run-off of sediments and materials used during the construction phase.

The majority of any dust produced as the result of the development will be deposited close to the potential source. Any impacts from dust deposition will typically be within two hundred metres of the construction area. However, the dust threshold distance for ecological sensitivity is 50m. As there are no European or Designated Sites within 50m of the site boundary, there are predicted to be no significant impacts on ecological sites from the construction works due to dust.

The surface water from the site will be treated before discharge by attenuation and oil separation to ensure that the water quality of the receiving watercourse is not adversely impacted. The rate will be discharged at an allowable rate equal to or lesser than the green field (estimated Qbar rate is 6.7l/s) discharge rate from the development into the nearest stream. The development's storm network outfall chamber will be fitted with a site flow control device, this will help restrict the stormwater flows to pre-development levels for the Soil Type 2. As such the Lower Suir SAC will be located 1.79km downstream of the site during the operational phase. As a result, no significant impacts to the hydrology of the nearby European or Designated sites are predicted.

An Appropriate Assessment (AA) Screening Report prepared by OCSC (2023) concluded that the proposed works are not likely to create significant impacts on the Lower River Suir SAC or any other European sites in the absence of mitigation.

5.6 INVASIVE SPECIES

According to the NBDC, there is one invasive plant listed for the 2km grid square (S61G) in which the site is located:

- Butterfly-bush (*Buddleja davidii*)

During the site walkover (on the 10th of July 2023), the aforementioned species was present in the northern area of the survey area (Figure 5.24). Therefore, invasive species cannot be scoped out of this assessment.



Figure 5.24: Butterfly-bush (*Buddleja davidii*) in the northern portion of the survey area

5.7 SUMMARY OF EVALUATION OF ECOLOGICAL FEATURES

Table 5.2 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 features forward for detailed assessment.

Table 5.2: 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 can be scoped out since the site is indirectly hydrologically linked to the Lower River Suir SAC (0.83km) via the Ferrybank Stream and the Ferrybank Stream is 0.26km from the site, during the operational phase the SAC will be located 1.79km downstream of the site. As such, Natura 2000 sites can also be scoped out. The AA Screening Report conducted by OCSC (2024) found that there were not likely to be significant adverse effects on the qualifying interests, special conservation interests, or the conservation objectives of the Lower River Suir SAC.
pNHA/NHA	National	pNHA/NHA sites can be scoped out since the site is indirectly hydrologically linked to the King's Channel pNHA (1.2km) via the Ferrybank Stream and the Ferrybank Stream is 0.26km from the site. During the operational phase the pNHA will be located 2.2km downstream of the site. As such, pNHAs can also be scoped out.
Habitats	Local (Higher)	The habitats found in the survey area which have been evaluated as important at a site level are sufficiently widespread and commonly occurring within the landscape. The habitats are resilient and can be scoped out of this assessment.
Otters	Local (Higher)	No otter evidence was found on site. Despite the presence of suitable habitats for this group within the pond and nearby stream, the development will consistently maintain a distance of over 2 meters from both bodies of water. Therefore, otters can be scoped out of the assessment.
Badgers	Local (Higher)	Badgers are not scoped out of further consideration within this report as either likely to be present or are likely to be significantly affected by the proposed development.
Bats	County	There were crevices with roosting potential found on mature trees in many locations within the survey area. Given that the site is somewhat connected to the surrounding area through treelines and surrounding vegetation, it is likely to be critical for local bat populations. Bats cannot be scoped out of the report.
Birds	Local (Higher)	There are many mature trees with nesting potential for birds. Since there are 16 protected species within the 2km square where the site is located, birds cannot be scoped out of this assessment.
Amphibians	Local (Higher)	This site is suitable for amphibians especially the pond and nearby stream. Despite the presence of suitable habitats for this group within the pond and nearby stream, the development will consistently maintain a distance of over 2 meters from both bodies of water. Therefore, amphibians can be scoped out of the assessment.
Invertebrates	Local-County (Higher)	There were no protected invertebrates found on site or identified within the NBDC 2km square (S61G) in which the site is located; therefore, invertebrates can be scoped out.
Invasive species	County	One invasive species, Butterfly-bush (<i>Buddleja davidii</i>), was found within the NBDC 2km square (S61G) and also on the survey area; therefore, invasive species will need further consideration.

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 with the continued development of scrubland and recolonisation of bare ground. The Do-Nothing Impact would result in a slight positive change due to recolonization in some parts of the site area.

6.2 POTENTIAL IMPACTS OF THE PROJECT

The construction phase of the proposed project is short-term and will have no significant effects on European sites given the small scale and duration of the works and the distance to European sites. The access road and car park will be a permanent feature with no decommissioning phase and are predicted to have no significant effects on European sites during operations due to the nature of its use, the design mitigation measures incorporated in its construction, and the distance to European sites.

During the operational phase, surface water from the site will be treated before discharge by attenuation and oil separation to ensure that the water quality of the receiving watercourse is not adversely impacted. The rate of discharge will be equal to or lesser than the green field discharge rate from the development into the River Suir and the Lower River Suir SAC. The development's storm network outfall chamber will be fitted with a site flow control device, this will help restrict the stormwater flows to pre-development levels for Soil Type 2. Therefore, although the operational phase of the proposed project will contribute intermittent additional surface water to the River Suir and the Lower River Suir SAC (1.79km downstream) due to rainfall events, it is unlikely to cause a significant impact on the River Barrow and River Nore SAC (7.04km downstream).

There are risks for some of the fauna associated with the site area. The development can impact bats and birds with the removal of mature trees. Badgers are also under risk since their habitat is either near or being crossed by this project.

6.3 CUMULATIVE IMPACTS

Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in-combination with impacts of other existing, proposed, and/ or permitted plans and projects,

can result in significant effects. Within the immediate area, the effects of the construction of the proposed carriageway, footpaths, cycle lane, verge, and associated drainage system are likely to 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 likely to be not significant subject to the implementation of design and construction phase mitigation measures.

Planning applications, grants of planning, and existing land use in the vicinity of the site were reviewed to identify existing activities and works of a significant scale which may produce in-combination effects with the proposed works. The following planning grants of larger than a single domestic scale were identified:

- **19730:** construction of 98 no. residential units immediately north of the study area
- **20453:** construction of 40 no. residential units within the study area
- **20845:** for the following: a) change of use of the existing first floor area to residential use to provide 15 no. apartments, b) construct a new rooftop penthouse containing 8 no apartments (23 apartments in total) together with c) elevational modifications, and all associated site works

Other granted planning permissions in the vicinity of the site pertain primarily to small-scale agricultural, residential, and commercial constructions, alterations, extensions, change of use, or retention of works. Although three larger planning grants were identified within and in the vicinity of the site and the site is located in an area of residential, commercial, and agricultural land use, due to the small scale of the proposed development and the distance to the nearest SAC, in-combination effects with these are considered to be unlikely and not significant.

7 MITIGATION

This section presents the minimum mitigation measures to be employed by the appointed Contractor(s) during the proposed works.

7.1 PRE-CONSTRUCTION SURVEYS

The following surveys must be conducted at least one month before the commencement of construction, during the appropriate season:

- Dawn/dusk (emergence) bat surveys, particularly focusing on the woodlands that provide suitable roosting habitats for bats
- Breeding bird surveys: Conduct breeding bird surveys during the appropriate breeding season to identify nesting locations and potential breeding sites
- Nesting habitat assessment: Identify and evaluate potential nesting habitats, including trees, shrubs, and other vegetation that birds may use for nesting
- Perform a pre-commencement survey to identify any invasive species, especially Butterfly-bush (*Buddleja davidii*)
- A pre-commencement for badgers is necessary, especially within the woodlands area. The proposed route crosses suitable areas for badgers

7.2 CONSTRUCTION PHASE

The proposed design has incorporated intrinsic mitigation measures aimed at avoiding or lessening the impact of the proposed works on the key biodiversity receptors within the study area. The construction works will be compliant with the following requirements:

- Construction works will be limited to daylight hours to avoid effects on bats and birds. The use of construction lighting will be limited to an absolute minimum. In general, artificial light creates a barrier for commuting bats so lighting should be avoided where possible. If any external lighting is required, it must be sensitive to the presence of bats commuting in the area. Directional lighting (i.e., lighting that is cowed away from sensitive habitats with no light spillage, in line with Best Practice) shall be used.
- 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).
- In general, artificial light creates a barrier for commuting bats so lighting should be avoided where possible. If any external lighting is required, it must be sensitive to the presence of bats commuting in the area.
- If nesting sites must be disturbed due to construction, nests must be relocated to nearby safe locations. This must be done by a qualified ecologist.

- Minimise the removal of trees and vegetation where birds are likely to nest. Preserve existing nesting trees whenever possible, and plan construction activities to work around these areas.
- Badgers rely on specific habitats for food, shelter, and breeding. Preserving natural habitats, especially setts (badger burrows), and adjacent foraging areas is crucial for their survival. Therefore, erecting sturdy fences or barriers would prevent them from accessing sensitive locations like agricultural fields, or roadsides.
- If working near the stream or pond, suitable net fencing should be installed at least 1 metre from the highest part of the bank on both sides of the stream or around the pond to prevent silt and sediment from entering the water. A double layer of geotextile membrane is recommended for use. It should be installed along the river ensuring about 30cm of the material is buried underground. Regular checks should be carried out (approximately once a week and again after any periods of heavy wind or rain) to ensure the net remains upright and intact. Any damaged sections should be replaced immediately.
- In the event that bats are found on the site during construction 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 bat surveyor.
- Avoid construction activities in areas known to support amphibians, such as ponds, marshes, and streams.
- If amphibians are found on site, install temporary exclusion fencing around amphibian breeding sites and habitats to prevent direct access and disturbances by construction personnel and equipment.
- A management plan for all invasive species identified during the pre-construction survey must be prepared and implemented. The management plan will detail the treatment programme which can be divided into three main stages: initial removal, control of stems and roots, and follow up. The management plan will quantify the number of invasive species and their characteristics (age, condition, and previous treatments) and when to begin clearance. Suitable conditions for the recovery of native ground flora will be created which will reduce open areas for recolonisation by invasive species. The management plan will detail acceptable timeframes for planned clearance and repeated treatments. As part of the plan, follow-up work will be necessary to remove any small plants and seedlings that have been missed or that have germinated following the initial remediation phase.
- An experienced Ecologist should be on site when required during construction works and site clearance to provide ecological advice to avoid and/or minimize ecological impacts.

7.2.1 MITIGATION FOR BUTTERFLY BUSH (*BUDDLEJA DAVIDII*)

The proposed design has integrated inherent measures to minimize the impact of Butterfly Bush (*Buddleja davidii*) on surrounding areas. The construction activities will adhere to the following criteria:

- Site assessment: Conduct a thorough assessment of the construction site to identify any existing *Buddleja davidii* plants or potential areas of invasion. This assessment will help determine the appropriate mitigation strategies.

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- Removal before construction: Remove *Buddleja davidii* plants on the site or within the construction zone before construction activities begin. Use proper techniques to uproot and dispose of the plants, ensuring that no seeds or vegetative parts remain to prevent regrowth.
 - Establish buffer zones: Create buffer zones around the construction area to prevent the encroachment of *Buddleja davidii* from neighbouring properties or adjacent natural areas. Monitor and control any potential spread from these buffer zones.
 - Prevent seed dispersal: *Buddleja davidii* is notorious for its ability to produce large quantities of seeds that can disperse over long distances. Implement measures to prevent seed dispersal during construction, such as covering the plants with tarps or nets.
 - Regular inspections: Assign someone to conduct regular inspections of the construction site to detect and remove any *Buddleja davidii* seedlings or regrowth promptly. Early intervention is critical to preventing widespread infestations.
 - Soil disturbance management: Minimise soil disturbance as much as possible during construction. Disturbed soil provides an opportunity for *Buddleja davidii* seeds to germinate and establish.
 - Site hygiene: Maintain a clean construction site by regularly removing plant debris, soil, and equipment that could inadvertently transport *Buddleja davidii* seeds to other areas.
 - Herbicide application: As a last resort and under the guidance of a professional, consider using herbicides specifically labelled for *Buddleja davidii* control if other methods have not been effective. Use herbicides responsibly and follow all safety and environmental guidelines.
 - Native plant restoration: After construction is complete, implement a native plant restoration plan for the affected area. Replanting with native species will help prevent *Buddleja davidii* from recolonizing and restore the natural ecosystem.
 - Educate construction workers: Ensure that all personnel working on the construction site are aware of the invasive nature of *Buddleja davidii* and the importance of implementing mitigation measures.

8 CONCLUSION

The construction of the new link road between the Clover Meadows and Abbeygate housing developments and car park in Ferrybank, County Kilkenny is likely to create impacts, especially on the local fauna in the absence of mitigation. There is a Natura 2000 site, the Lower River Suir SAC, located 0.78km direct from the site. Given that the distance between the Ferrybank stream and the is 0.26km (measured at its nearest point), despite the indirect hydrological connection between the proposed site and the Lower River Suir SAC (1.79km downstream during the operational phase), impacts on European sites are anticipated to be unlikely and negligible.

Potential concerns arising from the works include:

- Temporary disturbance of species.
- Facilitation of the spread of invasive species within the site and further.
- Negative impacts on local fauna populations such as bats, birds and badgers

Although the negative impacts outlined above have been identified for the proposed project, the implementation of detailed design and construction stage mitigation strategies will allow for avoidance or reduction of impacts to negligible levels in the short term. It is recommended that pre-construction surveys such as dawn/dusk (emergence) for bats, pre-commencement surveys for nesting birds and pre-construction surveys for invasive species (especially for Butterfly Bush (*Buddleja davidii*) be carried out.

It is concluded that once mitigation has been put into place, the proposed project is not foreseen to give rise to any significant adverse effects on any of the aforementioned groups, alone or in combination with other plans or projects.

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10 VERIFICATION

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