

HW Planning

# LRD at Water-Rock, Midleton, Co. Cork

## Ecological Impact Assessment

Woodrow Ref: P00017150

Date: 27 March 2026

COMMERCIAL IN CONFIDENCE



woodrow  
APEM Group

**Client:** HW Planning  
**Address:** 5 Joyce House  
Barrack Square  
Ballincollig  
Cork  
P31 KP84

**Project reference:** P00017150

**Date of issue:** 27 March 2026

---

**Project Director:** Rory Canavan

**Project Manager:** Jenny Kiely

**Project Authors:** Jenny Kiely

---

Woodrow APEM Group  
Unit 609  
Harbour Point Business Park  
Little Island  
Co. Cork  
Tel: +353 71 9140542

Web: [www.woodrow.ie](http://www.woodrow.ie)

Registered in Ireland No. 493496

Report should be cited as:

*“APEM Group Woodrow (2026). LRD at Water-Rock, Midleton, Co. Cork Ecological Impact Assessment. Woodrow APEM Report P00017150. HW Planning, March 2026, V1, Final”*

## Revision and Amendment Register

| <b>Version</b> | <b>Date</b> | <b>Section(s)</b> | <b>Page(s)</b> | <b>Summary of Changes</b> | <b>Approved by</b> |
|----------------|-------------|-------------------|----------------|---------------------------|--------------------|
| <b>D01</b>     | 04/09/2025  | All               | All            | Initial draft             | JG                 |
| <b>D02</b>     | 15/09/2025  | All               | All            | Final draft               | JG                 |
| <b>D03</b>     | 23/01/2026  | All               | All            | Addressing s32 Opinion    | JK                 |
| <b>V01</b>     | 27/03/2026  | All               | All            | Sign off                  | RN                 |

## Table of Contents

|  |    |
|--|----|
| 1. INTRODUCTION.....                                       | 5  |
| 1.1. Site Description.....                                 | 5  |
| 1.2. Purpose of this Report.....                           | 5  |
| 1.3. Relevant Legislation and Policy.....                  | 5  |
| 1.4. Evidence of Technical Competence and Experience ..... | 6  |
| 2. METHODS .....   | 8  |
| 2.1. Scope.....  | 8  |
| 2.2. Study Area.....                                       | 8  |
| 2.3. Zone of Influence .....                               | 8  |
| 2.4. Desk Study .....                                      | 9  |
| 2.5. Field Surveys .....                                   | 10 |
| 2.6. Bat Surveys .....                                     | 10 |
| 2.7. Bird Surveys .....                                    | 13 |
| 2.8. Limitations and Assumptions.....                      | 14 |
| 3. ASSESSMENT APPROACH.....                                | 15 |
| 3.1. Important Ecological Features .....                   | 15 |
| 3.2. Impact Assessment.....                                | 16 |
| 4. EXISTING RECEIVING ENVIRONMENT .....                    | 19 |
| 4.1. Desk Study Results.....                               | 19 |
| 5. FIELD SURVEY RESULTS .....                              | 25 |
| 5.1. Habitats.....   | 25 |
| 5.2. Bats .....  | 28 |
| 5.3. Other Mammals.....                                    | 32 |
| 5.4. Birds .....   | 33 |
| 5.5. Invasive non-native species .....                     | 40 |
| 5.6. Biodiversity Net Gain .....                           | 41 |
| 5.7. Summary of Important Ecological Features .....        | 42 |
| 6. DESCRIPTION OF THE PROPOSED DEVELOPMENT .....           | 44 |
| 6.1. Proposed Development .....                            | 44 |
| 7. ASSESSMENT OF EFFECTS AND MITIGATION MEASURES.....      | 44 |

|      |                                  |    |
|------|----------------------------------|----|
| 7.1. | Do-Nothing Scenario.....         | 45 |
| 7.2. | Likely Significant Effects ..... | 46 |
| 7.3. | Cumulative Effects .....         | 55 |
| 7.4. | Summary of Effects .....         | 59 |
| 8.   | CONCLUSION .....                 | 61 |
|      | REFERENCES .....                 | 62 |
|      | FIGURES.....                     | 64 |
|      | SITE PHOTOGRAPHS.....            | 78 |

### List of Figures

|            |  |    |
|------------|--|----|
| Figure 1:  | Site Location .....  | 65 |
| Figure 2:  | Nature Conservation Sites .....  | 66 |
| Figure 3:  | Proposed Natural Heritage Area .....   | 67 |
| Figure 4:  | Habitat Map .....  | 68 |
| Figure 5:  | Bat Habitat Suitability Map .....  | 69 |
| Figure 6:  | Spring Nighttime Bat Walkover Results .....  | 70 |
| Figure 7:  | Summer NBW Results .....   | 71 |
| Figure 8:  | Autumn NBW Results.....  | 72 |
| Figure 9:  | Static Detector Locations .....  | 73 |
| Figure 10: | Breeding Bird Surveys Red-listed species .....   | 74 |
| Figure 11: | Breeding Bird Surveys Amber-listed species.....  | 75 |
| Figure 12: | Wintering Bird Surveys Red-listed and Amber-listed species .....   | 76 |
| Figure 13: | Post-development ecological connectivity for bats, as identified during the NBW surveys and current suitable habitat. .... | 77 |

### List of Tables

|          |   |    |
|----------|---|----|
| Table 1: | Classification of tree PRFs from Collins, 2023. ....  | 11 |
| Table 2: | Activity levels as per Mathews <i>et al.</i> , 2016 .....                                   | 12 |
| Table 3: | Activity levels as per Mathews <i>et al.</i> , 2016 adapted to hourly activity levels ..... | 12 |
| Table 4: | Landscape Suitability Index for Bat Species .....   | 20 |

|   |    |
|---|----|
| Table 5: Relevant Species Recorded from NBDC 10 km Grid Square W87 .....                  | 21 |
| Table 8: Mean bat passes per hour (bp/h) values .....                                     | 31 |
| Table 9: Bird species recorded during the breeding bird surveys.....                      | 35 |
| Table 10: Bird species recorded during the wintering bird surveys.....                    | 39 |
| Table 11: Summary of Net Loss, No Change and Net Gain in Linear Features and Planting ... | 42 |
| Table 13: Developments currently permitted, under construction or planned.....            | 57 |

### **List of Plates**

|   |    |
|---|----|
| Plate 1: GA1 Agricultural Grassland Site A - April 2025 ..... | 79 |
| Plate 2: GA1 Agricultural Grassland Site B - April 2025 ..... | 79 |
| Plate 3: GA1 Agricultural Grassland Site B - June 2025 .....  | 79 |
| Plate 4: GS4 Wet Grassland Site B - April 2025 .....          | 79 |
| Plate 5: WL1 Hedgerow Site B (removed) – April 2025 .....     | 80 |
| Plate 6: WL1 Hedgerow Site B (retained) – April 2025 .....    | 80 |
| Plate 7: WL2 Treeline Site A (retained) – April 2025.....     | 80 |
| Plate 8: WL2 Treeline Site B (retained)– April 2025.....      | 80 |
| Plate 9: WS1 Scrub Site B – April 2025.....                   | 81 |
| Plate 10: WS2 Immature Woodland Site B – April 2025 .....     | 81 |
| Plate 11: ED3 Recolonising Bare Ground – April 2025.....      | 81 |
| Plate 12: FW2 Depositing/Lowland River – April 2025.....      | 81 |
| Plate 13: Static Detector D.01 Location .....                 | 82 |
| Plate 14: Static Detector D.01 Linear Feature.....            | 82 |
| Plate 15: Static Detector D.02 Location .....                 | 82 |
| Plate 16: Static Detector D.02 Linear Feature.....            | 82 |
| Plate 17: Static Detector D.03 Location .....                 | 83 |
| Plate 18: Static Detector D.03 Linear Feature.....            | 83 |

## **1. INTRODUCTION**

APEM Group Woodrow (herein APEM) was commissioned by HW Planning (the Client) to prepare an Ecological Impact Assessment (EclA) for the proposed large scale residential development (LRD) at Water-Rock, Co. Cork.

### **1.1. Site Description**

The proposed LRD (“the site”) is centred at Irish Transverse Mercator (ITM) coordinates 586040.1, 574731.5 in the townland of Water-Rock, ca. 1.5 km north-west of Midleton centre, Co. Cork (Figure 1). The site comprises mainly agricultural land with treeline and hedgerow.

The site is accessed by the L3618 road, directly off the N25. The surrounding area is largely defined by active residential developments, and agricultural land, all bounded by mature hedgerows and treelines. The Owenacurra River flows in a north-south direction along the western boundary of the site.

### **1.2. Purpose of this Report**

The purpose of this report is to provide supporting information to the competent authority, in this case Cork County Council, to carry out an assessment of the effects of the proposed development on ecology. The aim of this report is to:

- Describe the baseline data collection and assessment methods used.
- Summarise the baseline ecological conditions.
- Identify and describe all potentially significant effects on ecology.
- Set out mitigation and / or compensation measures if required.
- Provide an assessment of the significance of any residual effects in relation to the effects on ecology.
- To identify appropriate enhancement measures and how these will/could be delivered.
- To set out the requirements for post-construction monitoring if required.

### **1.3. Relevant Legislation and Policy**

#### **1.3.1. Legislation**

The following legislation is relevant to this report:

- The Habitats Directive 92/43/EEC.
- The Birds Directive 2009/147/EC.
- European Communities (Birds and Natural Habitats) Regulations 2011.
- Wildlife Acts (as amended).
- Flora (Protection) Order 2015.
- Planning and Development Act 2024.
- Planning and Development (Amendment) Act 2025.
- Planning and Development Regulations 2001 to 2025.

### 1.3.2. Local Planning Policy

The relevant local planning policies have been extracted from the Cork County Development Plan 2022-2028 (CCDP 2022-2028). These policies are concerned with the protection and / or enhancement of the ecology of County Cork. In broad terms these objectives and policies aim to ensure that the correct measures are put in place to identify and protect natural heritage and important environmental features within County Cork.

### 1.4. Evidence of Technical Competence and Experience

This report was prepared by Jenny Kiely. Róisín NigFhloinn carried out the technical review. This report was informed by surveys carried out by Jenny Kiely, Patrick Power, Sarah Brouder, Jason Guile and André Robinson.

**Jenny Kiely** is an Ecologist at APEM Group and holds a BSc (Hons) in Ecology and Environmental Biology from University College Cork. She has extensive field experience, including conducting ecological site walkovers across terrestrial and freshwater habitats. This experience is complemented by skills in kick sampling, fish habitat mapping, and species surveys such as Freshwater Pearl Mussel (*Margaritifera margaritifera*). Jenny has experience in bat ecology, performing roost/habitat suitability surveys, nighttime walkover surveys, and deploying static detectors for large-scale projects. She is highly proficient in acoustic analysis using Kaleidoscope, Bat Explorer, and Anabat Insight. Jenny has undertaken training in Stage 1 & 2 Freshwater Pearl Mussel surveying and Biological Water Quality Assessment (Q-value). Her understanding of the impact assessment process and Irish/EU wildlife legislation is strong, demonstrated through her contributions as a co-author of several ecological reports.

**Róisín NigFhloinn** is an Associate Director with Woodrow. She has more than 15 years' practice working as an ecological consultant in the UK and Ireland with experience in environmental and ecological impact assessment and mitigation design for development projects including national road schemes, national trails, overhead power lines, grid connection, other infrastructure projects and smaller scale commercial and residential developments. She is also an experienced Ecological Clerk of Works. Róisín is a project director, project manager, line manager and field ecologist. She carries out multidisciplinary surveys as well as specialising in habitat and botanical identification, in addition to protected species surveys for mammals, amphibians and reptiles. She is competent in the compilation of Ecological and Environmental reports, including Ecological Impact Assessment (EclA), to inform planning proposals, and as part of Environmental Impact Assessment Reports (EIAR) and reports to inform the Appropriate Assessment process (Screening and Natura Impact Statements (NIS) (Habitats Regulations Assessment in Northern Ireland). Róisín holds a MSc in Ecology and management of the Natural Environment from University of Bristol (2011) and a B.A. Mod (BSc)(Hons)Natural Sciences from Trinity college, Dublin Specialising in Botany (2008).

**Jason Guile** is an Associate Director at APEM Group with over 11 years' experience in the ecological sector in both the UK and Ireland. His skills include an extensive knowledge of planning environmental law and planning requirements for ecology and biodiversity. Jason is a qualified ecologist experienced in ecological survey techniques and methodology including mammals, bats, reptiles, amphibians and habitats, mitigation design, Appropriate Assessment and Ecological Impact Assessment. He has extensive experience of project management and is responsible for coordinating both internal and external surveyors across numerous projects in his current and previous roles. Jason has completed Ecological Impact Assessments (EclA), Environmental Impact Assessment Reports (EIAR) and Appropriate Assessments for a wide variety of projects in Ireland and the UK. He has considerable experience of EIAR and ecological constraints work, which often includes extensive reference to, and interpretation of, Article 6 of 'The Habitats Directive', and to other EU, UK and Irish conservation legislation. Jason has a full understanding of recent CJEU case law pertaining to Appropriate Assessment and EIAR and has practical experience of its application. Jason can foresee the potential impediments that recent case law could bring to the development of a scheme and can therefore de-risk the project throughout constraints assessment and design

**Patrick Power** is an ecologist with Woodrow. Patrick has completed a BSc in Forestry, BSc (Hons) in land management in Forestry with Waterford Institute of Technology and a PGCert in Wildlife Biology and Conservation with Edinburgh Napier University. His work with Woodrow is focused on bat data analysis including bat call identification and bat roost/habitat suitability surveys. Patrick has developed a high level of proficiency with Kaleidoscope and BatExplorer, the analysis software used to assess bat calls and activity. Patrick also possess Reptile, mammal, and woodland tree surveying skills. Patrick currently has a bat licence from the Department of Culture Heritage and the Gaeltacht.

**Sarah Brouder** is a Senior Marine Mammal Consultant at APEM with 3 years' experience in environmental consultancy and a further 2 years' experience in marine mammal research and fieldwork. She has experience in both terrestrial and marine surveys, including marine mammal surveys, bat transect and emergence surveys, and protected mammal surveys. Sarah possesses a strong working knowledge of the Appropriate Assessment process under the Habitats Directive and has been the lead marine mammal technical specialist on multiple Habitat Regulation Assessments (HRAs) and Natura Impact Statements (NIS) across Ireland, the UK, and the Isle of Man.

**André Robinson** is a highly experienced freelance ornithologist working with Woodrow APEM Group, with over 40 years of field ecology expertise across Ireland, the UK, and North America. Since 2020, he has conducted a wide range of ornithological surveys, including seabird transit counts, vantage point surveys, breeding bird surveys, and turbine fatality searches, following industry-standard methodologies. His extensive field experience, meticulous data collection, and deep knowledge of bird identification and behaviour ensure high-quality, reliable survey results that contribute to robust ecological assessments.

## **2. METHODS**

The methods used to carry out the survey of the site, to evaluate the importance of ecological features, and to carry out the assessment are outlined in this section.

### **2.1. Scope**

The scope of this report is to describe the baseline ecological conditions within the site and the potential effects that could arise from the proposed development. This report will determine the zone of influence for the proposed development and if likely significant effects may occur on important ecological features. Important ecological features include sites designated for nature conservation, protected habitats and species, as well as habitats and species identified in red lists or of importance for conservation of biodiversity. An assessment of the effects of the proposed development on these features will be carried out, and mitigation measures will be recommended where necessary.

### **2.2. Study Area**

The study area for the desk study and field surveys was identified by considering the potential impacts of the proposed development, the size and location of the proposed development and the ecological features likely, or known, to be present within the zone of influence.

The desk study was undertaken using the 10km grid square W87, within which the site is located. Grid squares are used to define study area, as species records obtained from the National Biodiversity Centre (NBDC) are provided at grid square level rather than as point data.

The field surveys were undertaken within the site boundary, as defined by the red line boundary of the proposed development. (Figure 1).

### **2.3. Zone of Influence**

The 'zone of influence' Zol for a project is the area over which ecological features may be subject to significant effects because of the proposed project and associated activities. This is likely to extend beyond the site, for example where there are ecological or hydrological links beyond site boundaries. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2018).

While effects will be localised to the site and the immediate surrounds a conservative approach to selecting the Zol has been adopted. Therefore, a Zol of 500m has been selected for the purpose of assessment of the potential effects of the proposed development on biodiversity. This Zol was selected to incorporate the ecological features that would be affected by emissions to air from the site and is also inclusive of the 500m distance for effects of noise or vibrations on waterbirds. Where hydrological connectivity exists, the Zol has been extended to incorporate any downstream sites designated for nature conservation.

## 2.4. Desk Study

A desk study was carried out to collate the available existing ecological information on the selected study area. The site and the surrounding area were viewed using available satellite imagery <sup>1</sup>.

The National Parks and wildlife Service (NPWS)<sup>2</sup> and the National Biodiversity Data Centre (NBDC)<sup>3</sup> websites were accessed for information on sites designated for nature conservation and information on protected habitats and species known from the 10km grid square W87. Only records for the past 10 years are included within this report as older records are unlikely to still be relevant given their age and changes in land management that may have occurred in the intervening period. Environmental Protection Agency (EPA) maps<sup>4</sup> were accessed for other environmental information, such as surface water features, relevant to the preparation of this report.

Birds of Conservation Concern in Ireland (BoCCI)<sup>5</sup> published by BirdWatch Ireland and the RSPB NI, is a list of priority bird species for conservation action on the island of Ireland. The BoCCI lists birds which breed and / or winter in Ireland and classifies them into three separate lists; Red, Amber and Green; based on the conservation status of the bird and hence their conservation priority. Birds on the Red List are those of highest conservation concern, Amber List are of medium conservation concern and Green List are not considered to be threatened. The BirdWatch Ireland website<sup>6</sup> was accessed for information on birds of conservation concern.

The conservation status of mammals within Ireland and Europe is evaluated using one or more of the following documents: Wildlife Acts (as amended), the Red List of Terrestrial Mammals (Marnell *et al.*, 2019) and the EU Habitats Directive 92/43/EEC.

For the purposes of this report “invasive species” are those which are subject to Regulation 49 of the Habitats Directive as listed in Part 1 and Part 2 of the Third Schedule within the Directive and those listed as high, medium and low impact species (Kelly, *et al.*, 2013).

Cork County Council<sup>7</sup> website was accessed for information on relevant planning policy and the Cork County Council planning portal<sup>8</sup> was accessed for information on other proposed and permitted developments in the surrounding area.

---

<sup>1</sup> <https://www.google.com/maps> (last accessed 16/07/2025)

<sup>2</sup> <https://www.npws.ie/> (last accessed 16/07/2025)

<sup>3</sup> <https://maps.biodiversityireland.ie/Map> (last accessed 16/07/2025)

<sup>4</sup> <https://gis.epa.ie/EPAMaps/> (last accessed 16/07/2025)

<sup>5</sup> <https://birdwatchireland.ie/app/uploads/2021/04/BOCCI4-leaflet-2-1.pdf> (last accessed 16/07/2025)

<sup>6</sup> <https://birdwatchireland.ie/> (last accessed 16/07/2025)

<sup>7</sup> <https://www.corkcoco.ie/en/planning> (last accessed 16/07/2025)

<sup>8</sup> <http://planning.corkcoco.ie/ePlan/searchexact> (last accessed 16/07/2025)

The documents reviewed to assist the preparation of this report include the previous ecological assessments, design drawings and project information prepared for the site and made available by the client.

## **2.5. Field Surveys**

### **2.5.1. Preliminary Ecological Appraisal**

A preliminary ecological appraisal (PEA) was undertaken on 23 April 2025 by APEM Ecologist Jenny Kiely. Weather conditions were mostly overcast, rain with a force 3 breeze. The temperature was approximately 12°C. The purpose of the PEA was to classify the habitats present and assess the habitats for likely suitability for protected flora and fauna species, including noting sightings or evidence of species and evaluate the importance of the ecological features.

The habitats present on the site were assessed during the PEA following standard guidance (Smith *et al.* 2011), with all habitats classified into recognised communities defined by Fossitt (2000) and cross-referenced to Annex I habitats of the EU habitats directive where relevant.

The Irish Vegetation Classification (IVC) guidelines were followed to inform habitat classification (Perrin *et al.* 2018, Perrin 2024). During the survey, particular consideration was given to the identification of important and protected habitats, such as Annex I habitats listed under the E.U. Habitats Directive, the presence of Invasive Non-Native Species (INNS), and habitats with the potential to support protected species.

The habitat survey also included targeted searches for INNS (flora and fauna), with stands of non-native and invasive plant species identified and mapped where present.

A walkover survey for mammals was also conducted (see section 2.8 Limitations and Assumptions).

## **2.6. Bat Surveys**

### **2.6.1. Preliminary Roost Assessment**

A Preliminary Roost Assessment (PRA) and bat habitat suitability assessment were undertaken to identify potential bat roosts and important habitats for foraging and commuting bats. Trees within the site were subject to an external ground-level inspection for evidence of, or potential for, bat roosting on 14 July 2025 by APEM ecologists Patrick Power and Jenny Kiely. Weather conditions were overcast, rain, with a force 3 breeze. The temperature was approximately 16°C.

The purpose of this survey was to assess trees for their potential to support roosting bats. Surveys were carried out in accordance with BCT (Collins, 2023) guidance. Surveyors utilised the potential roost assessment criteria described in Collins (2023), supplemented by Marnell *et al.* (2022), which provides guidelines for assessing potential suitability of habitat features as bat roosts and habitat for foraging bats. Refer to Table 1 for classifications.

**Table 1: Classification of tree PRFs from Collins, 2023.**

| Suitability | Description   |
|-------------|---|
| NONE        | Either no PRF's in the tree or highly unlikely to be any.   |
| FAR         | Further assessment required to establish if PRF's are present in the tree.  |
| PRF-I       | A tree feature only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats. |
| PRF-M       | A tree feature suitable for multiple bats and may therefore be used by a maternity colony.  |

### 2.6.2. Night-time Bat Walkover

Night-time bat walkover (NBW) surveys were carried out in May, July and October in 2025. This approach records bat activity and behaviour in spring, summer and autumn.

The survey was led by APEM ecologist Jenny Kiely and supported by Sarah Brouder, APEM environmental consultant. Bat species encountered were recorded along with the number of passes and observed activity (e.g., foraging, commuting, swarming and display). A predetermined transect route was walked, with the direction alternating between clockwise and anticlockwise on successive surveys to ensure different areas of the site were surveyed at varying times. Surveys were undertaken in accordance with standard guidance set out in Collins (2023).

All bat data was recorded using handheld Elekon Batlogger M2 devices.

### 2.6.3. Static Detector

Static detector surveys were undertaken using Anabat Swift detectors and Wildlife Acoustics Song Meter Mini (SM Mini) detectors. Surveys were carried on multiple occasions spanning the full active season from May to October 2025, with data collected over five consecutive nights per month during suitable weather conditions. This approach allows bat activity to be recorded across spring, summer and autumn periods.

Surveys were undertaken in accordance with standard guidance as set out in Collins (2023) and Marnell *et al.*, (2022). The purpose of the static detector surveys was to identify bat species present and to provide an overview of how bat activity is distributed across the site in relation to habitat features, with particular focus on areas of proposed treeline and hedgerow removal.

### 2.6.4. Data Analysis

Data collected using Anabat Swift detectors were analysed using Anabat Insight software to confirm species identification and the number of bat passes per deployment. Data from Wildlife Acoustics Song Meter Mini (SM Mini) detectors were analysed using Kaleidoscope Pro (Wildlife Acoustics) software, while data collected using Elekon Batlogger devices were analysed using BatExplorer software. Published call reference materials, including Russ (2012) and Middleton *et al.* (2014), were used to support species identification during data analysis.

All sound files were processed using automated species identification software, followed by manual verification by APEM Ecologists. Recordings auto-identified as ‘noise’ were considered to fall outside the recording parameters of the survey and were bulk-classified as ‘noise’. A single bat pass was defined as the presence of a bat species within a 15-second sound file. Where multiple species, or multiple individuals of the same species, were recorded within a single file, these were separated into individual passes.

Due to the similarity of echolocation calls within the *Myotis* genus and the limitations of acoustic identification, recordings attributable to *Myotis* species could not be reliably resolved to species level and were therefore classified as *Myotis* sp.

Activity levels were assessed using an adaptation of the criteria applied by Matthews *et al.* (2016), which examined the risk to bats from wind energy developments in the UK. This study uses bat passes per night as a metric of activity. For the purposes of this report, this has been adapted to bat passes per hour. Bat passes provide a measure of relative bat activity rather than the number of individual bats present, as a single bat may generate multiple passes when repeatedly flying within range of the detector, particularly in foraging areas.

**Table 2: Activity levels as per Mathews *et al.*, 2016**

| Classification | Bat passes per night |
|----------------|----------------------|
| Low            | < 3                  |
| Medium         | 3 - 49               |
| High           | ≥ 50                 |

**Table 3: Activity levels as per Mathews *et al.*, 2016 adapted to hourly activity levels**

| Classification | Bat passes per night |
|----------------|----------------------|
| Low            | < 1.99               |
| Medium         | 2 – 4.9              |
| High           | ≥ 5                  |

## 2.7. Bird Surveys

### 2.7.1. Breeding Bird Survey

Four breeding bird surveys were undertaken, alongside a visual assessment of habitats to assess their potential value for nesting bird species, including any European protected Annex I species and Birds of Conservation Concern in Ireland (BoCCI) species of ‘Medium’ (Amber-listed) or ‘High’ (Red-listed) conservation concern (Gilbert *et al.*, 2021). Surveys were conducted twice monthly during May and June 2025 by André Robinson.

Surveys were carried out approximately between sunrise at 04:30 and 10:30, with reference to the Common Birds Census territory mapping method (Gilbert *et al.*, 2021). The breeding bird survey area extended to a minimum of 100m beyond the redline boundary (Figure 1) in order to record bird species with the potential to experience direct and indirect effects during construction and operation.

Surveys were undertaken by systematically walking all field boundaries and other suitable habitats within the site, with birds recorded primarily through visual observations and by listening for song and calls to establish species presence and distribution. The survey was conducted by listening to calls to establish distribution within the site.

All recorded species were assessed for their conservation importance in accordance with the BoCCI traffic light system, classifying species as Green-listed (Low), Amber-listed (Medium), or Red-listed (High) conservation concern for the island of Ireland (Gilbert *et al.*, 2021).

Territory mapping followed the methods described in Bibby (2000) and Gilbert *et al.* (1998). A precautionary approach was followed, whereby a bird was considered to be holding a territory if breeding behaviour (e.g. singing, alarm-calling, adults carrying food, etc.) was observed, or if pairs of birds were observed in suitable habitat, during any survey visit.

### 2.7.2. Wintering Bird Survey

Four wintering bird surveys were undertaken within a 500m buffer of the redline boundary (Figure 1) to record all species with the potential to experience direct or indirect effects arising from the proposed development. Surveys were carried out once monthly between December 2024 and March 2025 inclusive.

Surveys were undertaken in accordance with the methods outlined in Lewis & Tierney (2014). Survey effort comprised visits to suitable vantage points from which species present within the survey area could be observed and identified.

All species recorded were assessed for their conservation importance in accordance with the BoCCI traffic light system of Green-listed (Low), Amber-listed (Medium), or Red-listed (High) conservation concern for the island of Ireland (Gilbert *et al.*, 2021), including consideration of any European protected Annex I species.

Only species actively using habitats within the survey area (e.g. for feeding, roosting, etc.) were mapped. Birds recorded flying over the site at height, displaying clear directional movement and not interacting with habitats, were noted but not mapped.

## **2.8. Limitations and Assumptions**

### **2.8.1. Desk Study**

Desk study data is unlikely to be exhaustive, particularly in relation to species records and is intended to provide contextual information for the assessment. As such, it is possible that habitats of ecological importance or protected species not identified through the data search may occur within the vicinity of the site. Interpretation of mapping and aerial photography was undertaken using the most recent available imagery.

### **2.8.2. Surveys**

Static detector surveys experienced occasional technical faults during deployment on four occasions, resulting in the loss of data for those specific monitoring periods. In addition, during the August survey period, static detector D.01 recorded for a reduced duration due to a high volume of 'noise' files triggered by environmental factors, which caused the SD card to reach storage capacity earlier than expected.

Full seasonal coverage was achieved from May to October, with successful deployments recorded across all months and supported NBW surveys. NBW results align with the static detector patterns and confirm the distribution of bat activity observed across the site. Importantly, the detector (D.03) which consistently recorded the highest levels of bat activity functioned normally throughout the entire survey period, and areas of higher bat activity were independently identified by ecologists during NBW surveys.

On this basis, the combined static and walked datasets provide sufficient coverage to enable a reliable assessment of bat activity and site use.

During the PEA, searches for mammal field signs were carried out, including checks for resting sites/burrows, latrines, tracks, pathways, feeding signs and other indicators of badger or other protected mammal presence. Although suitable habitat for mammal resting and movement exists within the site, no evidence of protected mammal activity or resting sites was recorded. The only resting sites identified were that of rabbit (a medium impact invasive species according to NBDC risk assessments). Given the absence of any signs of protected mammal use and the lack of confirmed resting sites for such species, the deployment of mammal camera traps was not required for this assessment.

### **3. ASSESSMENT APPROACH**

The ecological evaluation and impact assessment approach used in this report is based on *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland* (“CIEEM guidelines”) (CIEEM, 2018). These guidelines were updated in 2024 (Version 1.3), and this has been used to inform this report, as the acknowledged reference on EclA for ecological practitioners.

#### **3.1. Important Ecological Features**

Ecological features may be considered for a number of reasons, including the quality or extent of the site and associated habitats, the rarity of habitats or species present, and the degree to which those habitats or species are threatened or in decline within their wider range (CIEEM, 2018).

##### **3.1.1. Determining Importance**

The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known and / or published accounts of distribution and rarity where available, and professional experience:

- International (European)
- National (Ireland)
- Regional (Munster)
- County (Cork)
- Townland (Water Rock)
- Local (Intermediate between the Site and Townland)
- Site (within the planned red line boundary of the proposed development)

The above frame of reference is applied to the ecological features identified during the desk study and surveys to inform this report. Refer to Appendix A for a breakdown of geographical criteria as determined by NRA (2009) and informed by CIEEM (2018).

In assigning a level of value, consideration is given to its distribution and conservation status, including population trends where historical data are available. Relevant frameworks and designations include species of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive and Annex I of the Birds Directive), species protected under the Wildlife Acts (as amended), and species listed as Red or Amber under the BoCCI.

In accordance with CIEEM guidelines, only ecological features (habitats, species, ecosystems and their functions/processes) that are considered to be important and have the potential to be affected by the proposed development are carried forward to detailed assessment. Ecological features that are sufficiently widespread, unthreatened, and resilient to the predicted impacts, and that are expected to remain viable and sustainable, do not require

detailed assessment. Accordingly, only ecological features of local importance or greater and/or those subject to legal protection have been considered in this report.

### **3.2. Impact Assessment**

The impact assessment process involves the following steps:

- Identifying and characterising potential 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 (refer to Appendix A for full description of effects), 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, that affects ecological resources through effects on an intermediary ecosystem, process or feature, e.g. the creation of roads which cause hydrological changes, which in turn, in the absence of mitigation, could lead to the drying out of a wet grassland for instance.

Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance:

- Habitats – conservation status is determined by the sum of the influences acting on the habitat that may influence its extent, structure and functions as well as its distribution and its typical species within a given geographical area.
- Species – conservation status is determined by the sum of influences acting on the species concerned that may influence its abundance and distribution within a given geographical area.

### **3.2.1. Significant Effects**

The concept of ecological significance is addressed in paragraphs 5.24 through to 5.28 of CIEEM guidelines (2018). Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EclA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'Important Ecological Features' (IEF) or for biodiversity in general. Conservation objectives may be specific (e.g., for a designated site) or 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 and the scale of significance of an effect may or may not be the same as the geographic context in which the feature is considered important.

### **3.2.2. 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.

Other plans and projects that should be considered when establishing cumulative effects are:

- Proposals for which consent has been applied but which are awaiting determination;
- Projects which have been granted consent, but which have not yet been started, or which have been started but are not yet completed (i.e. under construction);
- Proposals which have been refused permission, but which are subject to appeal, and the appeal is undetermined;
- Constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline; or
- Developments specifically referenced in a National Policy Statement, a National Plan or a Local Plan.

### **3.2.3. Avoidance, Mitigation, Compensation and Enhancement**

Where potentially significant effects have been identified, the mitigation hierarchy has been applied in accordance with CIEEM guidelines (CIEEM, 2018). The mitigation hierarchy sets out a sequential approach that prioritises the avoidance of impacts where possible, followed by the application of mitigation measures to minimise unavoidable impacts, and then provides compensation for any residual effects, where applicable. Once avoidance and mitigation measures have been implemented, any remaining residual effects are identified, together with any necessary compensation measures for enhancement opportunities.

For the purposes of this report, it is important to clearly distinguish between avoidance, mitigation, compensation and enhancement. These terms are defined as follows:

- Avoidance is used where an impact has been avoided, e.g. through changes in scheme design;
- Mitigation is used to refer to measures to reduce or remedy a specific negative impact *in situ*;
- Compensation describes measures taken to offset residual effects, i.e. where mitigation *in situ* is not possible; and
- Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

#### **3.2.4. Residual Effects**

After characterising and assessing the potential effects of the proposed development on the IEF's, avoidance or mitigation measures are proposed to avoid and/or mitigate the identified ecological effects. Once measures to avoid and mitigate ecological effects have been finalised, assessment of the residual effects is undertaken to determine the significance of their effects on the IEF's.

## **4. EXISTING RECEIVING ENVIRONMENT**

### **4.1. Desk Study Results**

This section sets out the baseline conditions for the ecological features within the site using the findings of the desk study and field survey.

#### **4.1.1. European Sites**

The closest European Sites to the proposed development are the Great Island Channel Special Area of Conservation (SAC) and Cork Harbour Special Protection Area (SPA) located *ca.* 2 km south-east of the site (Figure 2).

A Natura Impact Statement (NIS) has been prepared in support of this planning application which found that there was potential for likely significant impacts on both of these European Sites as a result of the proposed development (APEM Group Woodrow, 2026). No other sites were considered to be impacted. Mitigation is outlined in the NIS to reduce likely significant effects on the Great Island Channel SAC and Cork Harbour SPA. Therefore, significant impacts to European Sites have been scoped out and excluded from any further consideration in this EclA report. Refer to NIS for full details.

#### **4.1.2. Natural Heritage Areas**

There are no Natural Heritage Areas (NHA) within the Zol. Therefore, NHAs have been scoped out and excluded from any further consideration in this EclA report.

#### **4.1.3. Proposed Natural Heritage Areas**

Great Island proposed Natural Heritage Area (pNHA) is recorded *ca.* 2 km south-east of the proposed development (Figure 3). There is hydrological connectivity from the proposed development to this pNHA. There are no other pNHAs that are connected to the proposed development.

The Great Island pNHA overlaps with and is designated as a SAC and was assessed further in the NIS accompanying this report. Therefore, to avoid repetition, pNHAs have been scoped out and excluded from any further consideration in this report, but the identified pNHA site has been assessed under the impact assessment for the Great Island Channel SAC in the NIS (APEM Group Woodrow, 2026).

#### **4.1.4. Protected Flora**

There are no species identified as being on the Flora (Protection) Order, 2022 list within the NBDC data search results.

#### **4.1.5. Invasive Non-Native Species**

The NBDC data search returned 22 no. invasive species recorded within grid square W87. Of these seven are high impact listed under Regulation 49 of the Habitats Directive in part 2 of

the Third Schedule within the Directive, namely, Common Cord-grass (*Spartina anglica*), *Fallopia japonica x sachalinensis = F. x bohemica*, Himalayan Balsam (*Impatiens glandulifera*), Japanese Knotweed (*Fallopia japonica*), Nuttall's Waterweed (*Elodea nuttallii*), *Rhododendron ponticum*, Harlequin Ladybird (*Harmonia axyridis*) and Brown Rat (*Rattus norvegicus*) (refer to Table 5).

#### 4.1.6. Ballyrichard More Stream Assessment

A desk-based assessment has been prepared as a proportionate appraisal of the potential of the proposed development to affect the Ballyrichard More stream and WFD water bodies. In the absence of baseline data and given that the Ballyrichard More reach of the waterbody does not appear on any EPA mapping system — although it is mapped further downstream as Oatencake (Owenacurra\_040) — the stream has been assumed to be of Good to High Ecological Status for the purposes of this assessment (refer to Appendix C).

#### 4.1.7. Species

Species recorded from the desk study are detailed in Table 5. This includes protected and notable species recorded within 10km grid square W87 in the last ten years including non-native invasive species which are subject to regulations.

The landscape suitability index, as generated by Lundy *et al.*, (2011) for bat species at the site, is detailed in Table 4. The site is in an area classified as moderate suitability for bats (Figure 5). The highest index ratings are for soprano pipistrelle (*Pipistrellus pygmaeus*), Leisler's (*Nyctalus leisleri*), brown long-eared (*Plecotus auritus*) and common pipistrelle (*Pipistrellus pipistrellus*). The overall rating for all bats was 26.89 out of a maximum 100. Ratings indicate that the site and immediate areas support a variety of bat species.

**Table 4: Landscape Suitability Index for Bat Species**

| Species                    | Scientific Name                  | Suitability Index | Suitability Level |
|----------------------------|----------------------------------|-------------------|-------------------|
| All Bats                   |                                  | 26.89             | Moderate          |
| Soprano pipistrelle bat    | <i>Pipistrellus pygmaeus</i>     | 43                | Very High         |
| Leisler's bat              | <i>Nyctalus leisleri</i>         | 39                | Very High         |
| Brown long-eared bat       | <i>Plecotus auritus</i>          | 38                | Very High         |
| Common pipistrelle bat     | <i>Pipistrellus pipistrellus</i> | 37                | Very High         |
| Natterer's bat             | <i>Myotis nattereri</i>          | 32                | High              |
| Whiskered bat              | <i>Myotis mystacinus</i>         | 27                | Moderate          |
| <i>Myotis sp.</i> bat      | <i>Myotis daubentonii</i>        | 22                | Moderate          |
| Nathusius' pipistrelle bat | <i>Pipistrellus nathusii</i>     | 4                 | Very Low          |
| Lesser horseshoe bat       | <i>Rhinolophus hipposideros</i>  | 0                 | Nil               |

**Table 5: Relevant Species Recorded from NBDC 10 km Grid Square W87**

| Species Name  | Record | Date       | Status   |
|---|--------|------------|--|
| Bottle-nosed Dolphin ( <i>Tursiops truncatus</i> )                    | 1      | 10/09/2021 | Protected Species: EU Habitats Directive Annex II and Annex IV    Wildlife Acts  |
| Otter ( <i>Lutra lutra</i> )  | 30     | 23/11/2017 | Protected Species: EU Habitats Directive Annex II and Annex IV    Wildlife Acts  |
| Harbour Seal ( <i>Phoca vitulina</i> )                                | 3      | 20/07/2024 | Protected Species: EU Habitats Directive Annex II and Annex V    Wildlife Acts   |
| Common Dolphin ( <i>Delphinus delphis</i> )                           | 3      | 14/10/2023 | Protected Species: EU Habitats Directive Annex IV    Wildlife Acts   |
| Brown Long-eared Bat ( <i>Plecotus auritus</i> )                      | 4      | 24/09/2021 | Protected Species: EU Habitats Directive Annex IV    Wildlife Acts   |
| Common Pipistrelle ( <i>Pipistrellus pipistrellus sensu stricto</i> ) | 16     | 27/09/2021 | Protected Species: EU Habitats Directive Annex IV    Wildlife Acts   |
| <i>Myotis</i> sp. Bat ( <i>Myotis daubentonii</i> )                   | 44     | 24/09/2021 | Protected Species: EU Habitats Directive Annex IV    Wildlife Acts   |
| Leisler's Bat ( <i>Nyctalus leisleri</i> )                            | 9      | 24/09/2021 | Protected Species: EU Habitats Directive Annex IV    Wildlife Acts   |
| Natterer's Bat ( <i>Myotis nattereri</i> )                            | 3      | 20/09/2020 | Protected Species: EU Habitats Directive Annex IV    Wildlife Acts   |
| Soprano Pipistrelle ( <i>Pipistrellus pygmaeus</i> )                  | 21     | 22/09/2021 | Protected Species: EU Habitats Directive Annex IV    Wildlife Acts   |
| Common Frog ( <i>Rana temporaria</i> )                                | 14     | 06/10/2020 | Protected Species: EU Habitats Directive Annex V    Wildlife Acts  |
| Pine Marten ( <i>Martes martes</i> )                                  | 7      | 12/08/2020 | Protected Species: EU Habitats Directive Annex V    Wildlife Acts  |
| Badger ( <i>Meles meles</i> )   | 31     | 27/07/2016 | Protected Species: Wildlife Acts   |
| Hedgehog ( <i>Erinaceus europaeus</i> )                               | 44     | 24/07/2023 | Protected Species: Wildlife Acts   |
| Red Squirrel ( <i>Sciurus vulgaris</i> )                              | 34     | 06/04/2023 | Protected Species: Wildlife Acts   |
| Golden Plover ( <i>Pluvialis apricaria</i> )                          | 9      | 19/11/2016 | Protected Species: EU Birds Directive Annex I, Annex II Section II Bird Species, and Annex III Section III Bird Species    Wildlife Acts    Threatened Species: Birds of Conservation Concern - Red List |
| Shoveler ( <i>Spatula clypeata</i> )                                  | 6      | 04/01/2021 | Protected Species: EU Birds Directive Annex II, Section I Bird Species and Annex III, Section III Bird Species    Wildlife Acts    Threatened Species: Birds of Conservation Concern - Red List          |
| Curlew ( <i>Numenius arquata</i> )                                    | 16     | 04/12/2021 | Protected Species: EU Birds Directive Annex II, Section II Bird Species    Wildlife Acts    Threatened Species: Birds of Conservation Concern - Red List   |
| Lapwing ( <i>Vanellus vanellus</i> )                                  | 15     | 21/11/2020 | Protected Species: EU Birds Directive Annex II, Section II Bird Species    Wildlife Acts    Threatened Species: Birds of Conservation Concern - Red List   |
| Barn Owl ( <i>Tyto alba</i> )   | 10     | 01/08/2024 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Red List   |
| Black-headed Gull ( <i>Chroicocephalus ridibundus</i> )               | 27     | 16/05/2020 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Red List   |
| Herring Gull ( <i>Larus argentatus</i> )                              | 10     | 05/05/2020 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Red List   |
| Redshank ( <i>Tringa totanus</i> )                                    | 12     | 10/01/2018 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Red List   |
| Yellowhammer ( <i>Emberiza citrinella</i> )                           | 28     | 11/01/2023 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Red List   |
| Teal ( <i>Anas crecca</i> )   | 14     | 05/12/2017 | Protected Species: EU Birds Directive Annex II, Section I Bird Species and Annex III, Section II Bird Species    Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List         |

| Species Name                                      | Record | Date       | Status  |
|---|--------|------------|---|
| Wigeon ( <i>Mareca penelope</i> )                 | 12     | 23/01/2019 | Protected Species: EU Birds Directive Annex II, Section I Bird Species and Annex III, Section II Bird Species    Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Snipe ( <i>Gallinago gallinago</i> )              | 21     | 08/11/2024 | Protected Species: EU Birds Directive Annex II, Section I Bird Species and Annex III, Section III Bird Species    Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List |
| Arctic Tern ( <i>Sterna paradisaea</i> )          | 1      | 05/12/2017 | Protected Species: EU Birds Directive Annex I Bird Species    Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List   |
| Bar-tailed Godwit ( <i>Limosa lapponica</i> )     | 7      | 05/12/2017 | Protected Species: EU Birds Directive Annex I Bird Species    Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List   |
| Dunlin ( <i>Calidris alpina</i> )                 | 9      | 05/12/2017 | Protected Species: EU Birds Directive Annex I Bird Species    Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List   |
| Merlin ( <i>Falco columbarius</i> )               | 3      | 19/11/2016 | Protected Species: EU Birds Directive Annex I Bird Species    Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List   |
| Black-tailed Godwit ( <i>Limosa limosa</i> )      | 15     | 13/11/2019 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Common Gull ( <i>Larus canus</i> )                | 11     | 13/11/2019 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Cormorant ( <i>Phalacrocorax carbo</i> )          | 15     | 05/05/2020 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Great Black-backed Gull ( <i>Larus marinus</i> )  | 12     | 05/05/2020 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Great Crested Grebe ( <i>Podiceps cristatus</i> ) | 5      | 05/12/2017 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Greenshank ( <i>Tringa nebularia</i> )            | 8      | 05/12/2017 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| House Martin ( <i>Delichon urbicum</i> )          | 17     | 18/01/2021 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| House Sparrow ( <i>Passer domesticus</i> )        | 46     | 18/01/2021 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Kestrel ( <i>Falco tinnunculus</i> )              | 25     | 07/04/2024 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Little Grebe ( <i>Tachybaptus ruficollis</i> )    | 12     | 05/12/2017 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Mute Swan ( <i>Cygnus olor</i> )                  | 23     | 27/03/2021 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Oystercatcher ( <i>Haematopus ostralegus</i> )    | 19     | 05/11/2024 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Red Kite ( <i>Milvus milvus</i> )                 | 1      | 18/03/2021 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Reed Warbler ( <i>Acrocephalus scirpaceus</i> )   | 1      | 24/05/2020 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Sand Martin ( <i>Riparia riparia</i> )            | 10     | 22/05/2021 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Shelduck ( <i>Tadorna tadorna</i> )               | 21     | 14/01/2023 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Starling ( <i>Sturnus vulgaris</i> )              | 42     | 06/04/2023 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Stock Dove ( <i>Columba oenas</i> )               | 17     | 04/08/2020 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Swallow ( <i>Hirundo rustica</i> )                | 32     | 22/05/2021 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Swift ( <i>Apus apus</i> )                        | 15     | 24/05/2024 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |
| Tree Sparrow ( <i>Passer montanus</i> )           | 1      | 16/05/2020 | Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern - Amber List  |

| Species Name  | Record | Date       | Status  |
|---|--------|------------|---|
| Little Egret ( <i>Egretta garzetta</i> )                    | 18     | 02/04/2021 | Protected Species: EU Birds Directive Annex I Bird Species    Wildlife Acts   |
| Peregrine ( <i>Falco peregrinus</i> )                       | 5      | 19/11/2016 | Protected Species: EU Birds Directive Annex I Bird Species    Wildlife Acts   |
| Mallard ( <i>Anas platyrhynchos</i> )                       | 31     | 20/04/2023 | Protected Species: EU Birds Directive Annex II, Section I Bird Species and Annex III, Section I Bird Species    Wildlife Acts |
| Pheasant ( <i>Phasianus colchicus</i> )                     | 30     | 06/04/2023 | Protected Species: EU Birds Directive Annex II, Section I Bird Species and Annex III, Section I Bird Species    Wildlife Acts |
| Woodpigeon ( <i>Columba palumbus</i> )                      | 44     | 07/04/2024 | Protected Species: EU Birds Directive Annex II, Section I Bird Species and Annex III, Section I Bird Species    Wildlife Acts |
| Rock Dove ( <i>Columba livia</i> )                          | 16     | 22/05/2015 | Protected Species: EU Birds Directive Annex II, Section I Bird Species    Wildlife Acts                                       |
| Round-leaved Crane's-bill ( <i>Geranium rotundifolium</i> ) | 3      | 17/05/2020 | Threatened Species: Endangered  |
| Dropwort ( <i>Filipendula vulgaris</i> )                    | 2      | 18/06/2020 | Threatened Species: Vulnerable  |
| Common Toadflax ( <i>Linaria vulgaris</i> )                 | 1      | 08/09/2021 | Threatened Species: Near threatened   |
| Pale Flax ( <i>Linum bienne</i> )                           | 1      | 23/05/2016 | Threatened Species: Near threatened   |
| Yellow Bartsia ( <i>Parentucellia viscosa</i> )             | 1      | 16/06/2022 | Threatened Species: Near threatened   |
| Patchwork Leafcutter Bee ( <i>Megachile centuncularis</i> ) | 1      | 22/06/2022 | Threatened Species: Near threatened   |
| Red-tailed Bumblebee ( <i>Bombus lapidarius</i> )           | 36     | 27/07/2023 | Threatened Species: Near threatened   |
| Thornback Ray ( <i>Raja clavata</i> )                       | 1      | 21/08/2021 | Threatened Species: OSPAR Convention  |
| Cornflower ( <i>Centaurea cyanus</i> )                      | 3      | 21/06/2024 | Threatened Species: Waiting list  |
| Common Cord-grass ( <i>Spartina anglica</i> )               | 6      | 14/01/2023 | High Impact Invasive Species    Regulation S.I. 477 (Ireland)   |
| <i>Fallopia japonica x sachalinensis = F. x bohemica</i>    | 1      | 20/10/2015 | High Impact Invasive Species    Regulation S.I. 477 (Ireland)   |
| Himalayan Balsam ( <i>Impatiens glandulifera</i> )          | 9      | 08/08/2023 | High Impact Invasive Species    Regulation S.I. 477 (Ireland)   |
| Japanese Knotweed ( <i>Fallopia japonica</i> )              | 8      | 12/08/2021 | High Impact Invasive Species    Regulation S.I. 477 (Ireland)   |
| Nuttall's Waterweed ( <i>Elodea nuttallii</i> )             | 3      | 22/06/2022 | High Impact Invasive Species    Regulation S.I. 477 (Ireland)   |
| <i>Rhododendron ponticum</i>                                | 4      | 07/11/2022 | High Impact Invasive Species    Regulation S.I. 477 (Ireland)   |
| Harlequin Ladybird ( <i>Harmonia axyridis</i> )             | 17     | 07/04/2024 | High Impact Invasive Species    Regulation S.I. 477 (Ireland)   |
| Brown Rat ( <i>Rattus norvegicus</i> )                      | 7      | 22/05/2016 | High Impact Invasive Species    Regulation S.I. 477 (Ireland)   |
| Cherry Laurel ( <i>Prunus laurocerasus</i> )                | 8      | 06/10/2022 | High Impact Invasive Species  |
| Pacific Oyster ( <i>Magallana gigas</i> )                   | 1      | 10/02/2024 | High Impact Invasive Species  |
| Three-cornered Garlic ( <i>Allium triquetrum</i> )          | 7      | 30/04/2024 | Medium Impact Invasive Species    Regulation S.I. 477 (Ireland)   |
| Australian flatworm ( <i>Australoplana sanguinea</i> )      | 1      | 18/05/2020 | Medium Impact Invasive Species  |
| Butterfly-bush ( <i>Buddleja davidii</i> )                  | 5      | 21/08/2021 | Medium Impact Invasive Species  |
| Himalayan Honeysuckle ( <i>Leycesteria formosa</i> )        | 2      | 18/09/2023 | Medium Impact Invasive Species  |
| Narrow-leaved Ragwort ( <i>Senecio inaequidens</i> )        | 1      | 31/07/2022 | Medium Impact Invasive Species  |

| Species Name   | Record | Date       | Status                         |
|--|--------|------------|--------------------------------|
| Sycamore ( <i>Acer pseudoplatanus</i> )                  | 26     | 16/04/2023 | Medium Impact Invasive Species |
| Traveller's-joy ( <i>Clematis vitalba</i> )              | 5      | 13/07/2024 | Medium Impact Invasive Species |
| Turkey Oak ( <i>Quercus cerris</i> )                     | 3      | 15/07/2023 | Medium Impact Invasive Species |
| Jenkins' Spire Snail ( <i>Potamopyrgus antipodarum</i> ) | 10     | 20/06/2017 | Medium Impact Invasive Species |
| Bank Vole ( <i>Myodes glareolus</i> )                    | 4      | 29/04/2015 | Medium Impact Invasive Species |
| Greater White-toothed Shrew ( <i>Crocidura russula</i> ) | 3      | 30/06/2020 | Medium Impact Invasive Species |
| Rabbit ( <i>Oryctolagus cuniculus</i> )                  | 39     | 20/06/2016 | Medium Impact Invasive Species |

## 5. FIELD SURVEY RESULTS

### 5.1. Habitats

Habitats within the site, as recorded during the PEA, are described in this section. The locations of these habitats are shown in Figure 4.

#### 5.1.1. Improved Agricultural Grassland GA1

Improved agricultural grassland is the dominant habitat within the site comprising *ca.* 9.5 ha of the total area (see Plate 1, Plate 2, Plate 3). This habitat appeared managed, with grass having been cut for hay.

Species diversity is sparse in this habitat, dominated by grasses such as perennial ryegrass (*Lolium perenne*), annual bluegrass (*Poa annua*), Creeping bent (*Agrostis stolonifera*), sweet vernal grass (*Anthoxanthum odoratum*), and Yorkshire fog (*Holcus lanatus*). Herbs were frequent along field margins and included dandelion (*Taraxacum agg.*), creeping buttercup (*Ranunculus repens*), nettle (*Urtica dioica*), purple dead nettle (*Lamium purpureum*) and creeping thistle (*Cirsium arvense*).

Improved agricultural grassland is a heavily modified and disturbed habitat. The species which do occur are common and widespread. This habitat is evaluated as being of 'Site' level importance and is scoped out of further consideration in this report.

#### 5.1.2. Wet Grassland GS4

Wet grassland is recorded within the south of the site. The total area of this habitat in the study area is *ca.* 1.2 ha (see Plate 4).

Dominant species recorded in this habitat include grasses such as Yorkshire fog, soft rush (*Juncus effusus*), water mint (*Mentha aquatica*), horsetail (*Equisetum spp.*), silverweed (*Argentina anserina*), nettle, creeping thistle, docks (*Rumex spp.*), cleavers (*Galium aparine*), creeping buttercup, lesser spearwort (*Ranunculus flammula*), ribwort plantain (*Plantago plantago*), Trefoil spp., and marsh thistle (*Cirsium palustre*).

The wet grassland habitat within the site supports a species composition of good ecological quality and is not highly improved. Given the national pressures on semi-natural grasslands, it is considered to be of 'Local' importance and has been retained for further consideration in the assessment.

#### 5.1.3. Hedgerow WL1

Hedgerows are recorded within the site along the field boundaries. The total area of this habitat is *ca.* 1.0 ha (see Plate 5 and Plate 6). The hedgerows are intact, dense and *ca.* 4-6 m high.

The hedgerows are dominated by hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), gorse (*Ulex europaeus*), elder (*Sambucus nigra*), bramble (*Rubus spp.*) and bracken

(*Pteridium aquilinum*). There was also some semi-mature to mature ash (*Fraxinus excelsior*) and sycamore (*Acer pseudoplatanus*) present. To the west of the proposed development site there is a stream that runs in a northerly to southerly direction. Riparian pioneer species such as willow (*Salix spp.*) and alder (*Alnus glutinosa*) can be found growing here.

Due to the composition of the hedgerows within the site, along with the CCDP 2022-2028 detailing the importance of hedgerow as ecological corridors, the habitat is evaluated as being of 'Local' importance and brought forward for further assessment.

#### **5.1.4. Treeline WL2**

Treelines are recorded within the site and along the field boundaries. The total area of this habitat is ca. 0.65 ha (see Plate 7 Plate 8). The treelines are intact, semi-mature to mature, and ca. 7-18 m high.

The treelines are dominated by alder, ash, oak (*Quercus spp.*), Scots pine (*Pinus sylvestris*), and beech (*Fagus sylvatica*). Other tree species on-site included sycamore (*Acer pseudoplatanus*), elm (*Ulmus procera*), hazel (*Corylus avellana*), and birch (*Betula spp.*). Ivy (*Hedera hibernica*) cover is common, with some trees having some traveller's joy (*Clematis vitalba*) cover. The ground layer includes nettle, native bluebell (*Hyacinthoides non-scripta*), dog violet (*Viola riviniana*), creeping buttercup, lesser celandine (*Ficaria verna*), common hogweed (*Heracleum sphondylium*), lords-and-ladies (*Arum maculatum*) and ground-ivy (*Glechoma hederacea*).

Due to the composition of the treelines within the site, along with the CCDP 2022-2028 detailing the importance of treelines as ecological corridors, the habitat is evaluated as being of 'Local' importance and brought forward for further assessment.

#### **5.1.5. Scrub WS1**

Scrub is recorded along the boundary to the north of the site, and in a small patch to the east of site B (see Plate 9). The total area of this habitat in the study area is ca. 0.05 ha.

The dominant species recorded in this habitat include bramble (*Rubus fruticosus agg.*) and nettle, with scattered hawthorn and willow providing additional structure.

Although the species present are commonly occurring, the scrub is relatively dense and provides valuable shelter, foraging, and potential nesting opportunities for birds, as well as habitat for invertebrates, small mammals, and potential bat foraging/commuting. On this basis, the scrub is evaluated as being of 'Local' importance and brought forward for further assessment.

#### **5.1.6. Immature Woodland WS2**

A small copse of immature woodland was recorded in the middle of the site. The total area of this habitat in the study area is ca. 0.05ha (see Plate 10).

The dominant species recorded in this habitat are willows with some elder. The ground layer consists of nettle, grasses, creeping buttercup, dock species and lady-fern (*Athyrium filix-femina*).

Based on its botanical composition and the valuable shelter, foraging and nesting opportunities it provides for birds, together with resources for invertebrates, small mammals and potential bat foraging/commuting, the immature woodland is evaluated as being of 'Local' importance and is brought forward for further assessment.

#### **5.1.7. Recolonising Bare Ground ED3**

Recolonising bare ground was recorded along field margins at entrances, where the ground was recently disturbed and has been colonised by herbaceous plants. The total area of this habitat in the study area is ca. 0.05 (see Plate 11).

Dominant species recorded in this habitat include willowherb (*Epilobium ciliatum*, *Epilobium parviflorum*), creeping thistle, common ragwort (*Jacobaea vulgaris*), cleavers, herb Robert (*Geranium robertianum*), Pineappleweed (*Matricaria discoidea*), and common mouse-ear (*Cerastium fontanum*).

The species which do occur are common and widespread. This habitat is evaluated as being of 'Site' level importance and is scoped out of further consideration in this report.

#### **5.1.8. Depositing/lowland river FW2**

Ballyrichard More stream runs along with western boundary of the site (see Plate 12). This stream discharges to Owenacurra Estuary and into the Great Island Channel SAC and Cork Harbour SPA approximately 2 km downstream of the proposed development site. This watercourse is bordered by mature treeline including alder, willow and oak. In the absence of baseline data, and given that the Ballyrichard More reach of the waterbody does not appear on any EPA mapping system — although it is mapped further downstream as Oatencake (Owenacurra\_040) — the stream has been assumed to be of Good to High Ecological Status for the purposes of this assessment (refer to Appendix C).

The habitat is evaluated as being of 'Local' importance and brought forward for further assessment.

## 5.2. Bats

### 5.2.1. Preliminary Roost Assessment

The site comprises a network of treelines and hedgerows bordering agricultural grassland and Ballyrichard More stream. Deciduous treelines and hedgerows throughout the site were assessed for their potential to support roosting bats. The majority of linear features comprised mature hedgerows with occasional mature trees with Negligible potential roosting features. The following trees presenting suitable roosting features were identified:

- A mature hedgerow, with several moderate PRF-I. The hedgerow also has a decaying elder (*Sambucus nigra*) tree with moderate PRF-M (ITM: 586088.57, 574991.45). Features on this tree include flaking bark and tear-outs.
- A mature treeline with moderate PRF-I, located at the most southern treeline (ITM: 586021.77, 574625.32). Feature on this tree include snapped branches, possible cavities and subsidence cracks.
- A mature hedgerow with a low PRF-I (ITM: 585977.61, 574718.57). Features on this tree include a compression snap.

In accordance with Collins (2023) guidance, PRF inspection surveys for PRF-M features require three separate survey visits. The assessments were carried out in July, August and September 2025. These three assessments ensure full compliance with recommended survey approach. No signs of bat activity were identified during any of the visits.

### 5.2.2. Nighttime Bat Walkover Surveys

NBW surveys were conducted on three occasions in 2025. Survey dates, weather conditions survey effort are summarised in Table 6. Survey results are shown in Figure 6Figure 7Figure 8.

The spring NBW identified four species of bat using the site, namely: common pipistrelle (37 passes), soprano pipistrelle (22 passes), Leisler's (18 passes) and *Myotis* spp. (1 pass).

The summer NBW identified four species of bat using the site, namely: common pipistrelle (32 passes), soprano pipistrelle (7 passes), Leisler's (2 passes) and *Myotis* spp. (1 pass).

The autumn NBW identified two species of bat using the site, namely *Myotis* spp. (1 pass) and soprano pipistrelle (1 pass).

**Table 6: Survey effort and weather conditions for NBW surveys**

| Date            | Start time | End time | Weather conditions                  |
|-----------------|------------|----------|-------------------------------------|
| 27 May 2025     | 21:40      | 23:00    | Dry, force 2 Beaufort, 6 okta, 14°C |
| 08 July 2025    | 21:28      | 23:49    | Dry, force 3 Beaufort, 1 okta, 16°C |
| 15 October 2025 | 19:00      | 20:30    | Dry, force 2 Beaufort, 6 okta, 13°C |

Most of the bat activity was associated with linear features such as hedgerow and treeline, although some recordings were found in more open areas. Most of the activity recorded so far has been identified along the treeline to the south of the Site.

### 5.2.3. Static Detector Surveys

Static detectors were deployed monthly from May to October in 2025. Survey dates and effort are shown in Table 7. Five species of bat have been recorded to date using the site. The average bat passes per hour are outlined in Table 8. Static detector locations are shown in Figure 9.

**Table 7: Survey effort for static surveys**

|                   | May      | June     | July       | August     | September  | October    |
|-------------------|----------|----------|------------|------------|------------|------------|
| <b>Deployment</b> | 27/05/25 | 08/06/25 | 14/07/2025 | 18/08/2025 | 19/09/2025 | 07/10/2025 |
| <b>Collection</b> | 01/06/25 | 13/06/25 | 19/07/2025 | 23/08/2025 | 24/09/2025 | 12/10/2025 |
| <b>Minutes</b>    | 2,625    | 2,530    | 2,650      | 2,310*     | 3,832      | 4,180      |

\*While the standard deployment period for August yielded 2,310 minutes, D.01 experienced a technical fault resulting in reduced recording time of 2,114 minutes. All subsequent data analysis calculations account for this discrepancy.

There was a total of 3,538 passes recorded during the May deployment. These calls were mainly made up of common pipistrelle with a total of 2,361 passes. Soprano pipistrelle accounted for 861 passes, Leisler’s accounted for 268 passes, *Myotis* sp. accounted for 36 passes, and brown long-eared accounted for 12 passes.

There was a total of 2,879 passes recorded during the June deployment. These calls were mainly made up of common pipistrelle with a total of 2000 passes. Soprano pipistrelle accounted for 622 passes, Leisler’s accounted for 206 passes, *Myotis* sp. accounted for 47 passes, and brown long-eared accounted for 4 passes.

There was a total of 2,248 passes recorded during the July deployment. These calls were mainly made up of common pipistrelle with a total of 1,735 passes. Soprano pipistrelle accounted for 336 passes, Leisler’s accounted for 158 passes, *Myotis* sp. accounted for 15 passes, and brown long-eared accounted for 4 passes.

There was a total of 4,241 passes recorded during the August deployment. These calls were mainly made up of common pipistrelle with a total of 2,627 passes. Soprano pipistrelle accounted for 950 passes, Leisler’s accounted for 365 passes, *Myotis* sp. accounted for 277 passes, and brown long-eared accounted for 22 passes.

There was a total of 3,594 passes recorded during the September deployment. These calls were mainly made up of common pipistrelle with a total of 2,006 passes. Soprano pipistrelle accounted for 1,168 passes, Leisler’s accounted for 76 passes, *Myotis* sp. accounted for 327 passes, and brown long-eared accounted for 17 passes.

There was a total of 706 passes recorded during the October deployment. These calls were mainly made up of soprano pipistrelle with a total of 328 passes. Common pipistrelle

accounted for 271 passes, Leisler's accounted for 9 passes, *Myotis* sp. accounted for 84 passes, and brown long-eared accounted for 14 passes.

#### **5.2.4. Bats Evaluation**

The bat surveys recorded a typical assemblage of species associated with lowland agricultural landscapes containing hedgerows, treelines and small watercourses. Activity was dominated by common and soprano pipistrelle, with smaller numbers of Leisler's and occasional detections of *Myotis* spp. The species recorded and their relative levels of activity are consistent with habitats present onsite and within the wider landscape and do not indicate elevated ecological sensitivity.

The PRA identified only a small number of trees with low to moderate PRFs. All PRF-M trees were assessed in full accordance with Collins (2023), with three inspections undertaken across the active season. No evidence of roosting bats was recorded, and no features of high roost suitability were identified. As such, the potential for the site to support significant roosting activity is low.

NBW surveys recorded moderate levels of activity, predominantly concentrated along hedgerows and treelines, confirming their function as commuting and foraging corridors. Records within open grassland were limited and *Myotis* sp. activity was rare. Activity levels did not indicate any particularly high concentrations of use within the site when referring to Activity levels as per Mathews *et al.*, 2016 adapted to hourly activity levels.

Static detector surveys further support these patterns, with pipistrelle species accounting for the vast majority of recordings across all months. *Myotis* activity remained low throughout, with only brief bouts of activity recorded during late summer and early autumn. Brown long-eared occurrences were infrequent and typical of occasional use of hedgerow edges. Overall activity levels fluctuate seasonally but remain within the range expected for a semi-improved grassland landscape with commuting and foraging boundary features.

The results indicate that the site supports a bat assemblage of 'local (townland)' importance, dominated by widespread and more disturbance-tolerant species. The habitats present provide commuting and foraging value at a local scale, but the absence of roosting evidence and low frequency of more sensitive species indicate that the site scale of impact is relatively low (Kelleher & Marnell, 2006).

**Table 8: Mean bat passes per hour (bp/h) values**

| Unit        | Species             | May   |       | June  |       | July  |       | August |       | September |       | October |      |
|-------------|---------------------|-------|-------|-------|-------|-------|-------|--------|-------|-----------|-------|---------|------|
|             |                     | Total | bp/h  | Total | bp/h  | Total | Bp/h  | Total  | bp/h  | Total     | bp/h  | Total   | bp/h |
| <b>D.01</b> | Common pipistrelle  | 347   | 7.93  | 683   | 16.20 | N/A   | N/A   | 354    | 10.05 | 1071      | 16.77 | N/A     | N/A  |
|             | Soprano pipistrelle | 162   | 3.70  | 57    | 1.35  | N/A   | N/A   | 144    | 4.09  | 672       | 10.52 | N/A     | N/A  |
|             | Leisler's           | 171   | 3.91  | 111   | 2.63  | N/A   | N/A   | 83     | 2.36  | 30        | 0.47  | N/A     | N/A  |
|             | <i>Myotis</i> sp.   | 2     | 0.05  | 5     | 0.12  | N/A   | N/A   | 26     | 0.74  | 44        | 0.69  | N/A     | N/A  |
|             | Brown long-eared    | 7     | 0.16  | 0     | 0.00  | N/A   | N/A   | 1      | 0.03  | 2         | 0.03  | N/A     | N/A  |
| <b>D.02</b> | Common pipistrelle  | 336   | 7.68  | 462   | 10.96 | 142   | 3.22  | 1312   | 24.52 | N/A       | N/A   | N/A     | N/A  |
|             | Soprano pipistrelle | 81    | 1.85  | 108   | 2.56  | 53    | 1.20  | 311    | 5.81  | N/A       | N/A   | N/A     | N/A  |
|             | Leisler's           | 6     | 0.14  | 5     | 0.12  | 86    | 1.95  | 193    | 3.61  | N/A       | N/A   | N/A     | N/A  |
|             | <i>Myotis</i> sp.   | 6     | 0.14  | 3     | 0.07  | 3     | 0.07  | 170    | 3.18  | N/A       | N/A   | N/A     | N/A  |
|             | Brown long-eared    | 0     | 0.00  | 0     | 0.00  | 2     | 0.05  | 15     | 0.28  | N/A       | N/A   | N/A     | N/A  |
| <b>D.03</b> | Common pipistrelle  | 1678  | 38.35 | 855   | 20.28 | 1593  | 36.07 | 961    | 17.96 | 935       | 14.64 | 271     | 3.89 |
|             | Soprano pipistrelle | 618   | 14.13 | 457   | 10.84 | 283   | 6.41  | 495    | 9.25  | 496       | 7.77  | 328     | 4.71 |
|             | Leisler's           | 91    | 2.08  | 90    | 2.13  | 72    | 1.63  | 89     | 1.66  | 46        | 0.72  | 9       | 0.13 |
|             | <i>Myotis</i> sp.   | 28    | 0.64  | 39    | 0.92  | 12    | 0.27  | 81     | 1.51  | 283       | 4.43  | 84      | 1.21 |
|             | Brown long-eared    | 5     | 0.11  | 4     | 0.09  | 2     | 0.05  | 6      | 0.11  | 15        | 0.23  | 14      | 0.20 |

### **5.3. Other Mammals**

#### **5.3.1. Otter**

No signs of otter were noted during the site visits.

The Ballyrichard More stream provides suitable foraging and commuting habitat for otter within the wider landscape and has hydrological connectivity to the Great Island Channel SAC. While not recorded within the site, due to the historical records, the sites connectivity with this stream and the EU Annex II and Annex IV protection of the species, otter is evaluated as being of 'Local' importance and brought forward for further assessment.

#### **5.3.2. Badger**

No signs of badger were noted during the site visits.

The grassland on-site does provide suitable foraging habitat, and the scrub could provide some cover for badger resting sites along with the hedgerows and treeline providing commuting corridors. While not observed or evidenced within the site during the survey (some areas of scrub being inaccessible), due to the habitats present, the species is evaluated as being of 'Local' importance and brought forward for further assessment.

#### **5.3.3. Pine marten**

No signs of pine marten were noted during the site visits.

The treeline, hedgerow and scrub habitat on-site could provide foraging and commuting habitat for pine marten. However, the dominance of open agricultural grassland within the site and surrounding area limits foraging and refuge opportunities. While this species was not observed or evidenced within the site, due to the historical records and areas of suitable habitat present (treelines and copse of woodland), the species is evaluated as being of 'Local' importance and brought forward for further assessment.

#### **5.3.4. Hedgehog**

No signs of hedgehog were noted during the site visits.

The agricultural grassland on-site does provide suitable foraging habitat and the scrub, immature woodland and hedgerows do provide suitable commuting, refuge and nesting habitat for this species. While not observed or evidenced within the site, due to the habitats present, the species is evaluated as being of 'Local' importance and brought forward for further assessment.

#### **5.3.5. Red Squirrel**

No signs of red squirrel were noted during the site visits.

Red squirrels are dependent on continuous woodland habitat with a mix of coniferous and broadleaved trees. Although the site has some mature treeline and a small area of immature

broadleaved woodland, these habitats are not substantial enough to provide long-term habitat for the species. It is possible that red squirrels occasionally commute through the site.

Due to a lack of mature and extensive woodland at this site, it is considered unlikely that red squirrel utilises the site often, therefore the species is evaluated as being of 'Local' importance and brought forward for further assessment.

### **5.3.6. Other Mammals Evaluation**

The site provides suitable foraging and commuting habitat for otter, pine marten, badger, hedgehog and red squirrel. However, no resting sites for these species were identified on site during any of the site visits.

Given the supporting habitats on site, the proposed development is considered to be of 'Local' importance for mammals – and accordingly they have been brought forward for further consideration within this EclA report.

## **5.4. Birds**

### **5.4.1. Breeding Bird Surveys**

Breeding bird surveys were conducted on four separate occasions during the breeding bird season in 2025. Two surveys were completed in May and two in June as per BTO guidelines.

The objective of the surveys was to identify bird species breeding within the proposed development site and within a 100 m surrounding buffer, and to assess the presence of species of conservation concern. All species were mapped using BTO species codes, and behaviours were categorised to breeding evidence levels (confirmed, probable, possible and non-breeding behaviour).

The site is characterised by improved agricultural grassland with well-established hedgerows and treelines. These linear features provide valuable nesting and foraging resources birds and are the primary habitats supporting breeding birds within the site.

A total of 55 species were recorded during the four survey visits, including several BoCCI Red and Amber listed species. Seven Red listed species were recorded: Curlew (*Numenius arquata*), Grey wagtail (*Motacilla cinerea*), Kestrel (*Falco tinnunculus*), Meadow pipit (*Anthus pratensis*), Stock dove (*Columba oenas*), Swift (*Apus apus*) and Yellowhammer (*Emberiza citrinella*). Most Red listed species were recorded only over-flying and therefore did not show evidence of breeding dependence on the site. Swift and Swallow were observed feeding in the site but there are no buildings within the proposed development boundary (and as such their nesting sites are not found within the site). Yellowhammer was the only Red listed species showing breeding behaviour (singing) in and around the site, indicating a small number of breeding territories adjacent to the site (Figure 10).

15 Amber listed species were recorded, including Starling (*Sturnus vulgaris*), House martin (*Delichon urbicum*), House sparrow (*Passer domesticus*), Swallow (*Hirundo rustica*), Willow

warbler (*Phylloscopus trochilus*), Linnet (*Linaria cannabina*), Greenfinch (*Chloris chloris*), Goldcrest (*Regulus regulus*), Spotted flycatcher (*Muscicapa striata*), Mute swan (*Cygnus olor*), Mallard (*Anas platyrhynchos*), Lesser black-backed gull (*Larus fuscus*), Herring gull (*Larus argentatus*), Black-headed gull (*Chroicocephalus ridibundus*) and Cormorant (*Phalacrocorax carbo*). Many of the gull species and Cormorant were recorded over-flying only.

Nine of these species showed breeding activity on or adjacent to the site in the mature treelines and dense hedgerows. Starling, Swallow and House martin were all confirmed nesting outside of the site or in nearby buildings or structures (Figure 11).

One Annex I species, Little egret (*Egretta garzetta*), was recorded during both June surveys at the Owenacurra Estuary, approximately 2 km from the site. This species was observed foraging within estuarine habitats only and was not recorded using the proposed site. Several SCI species for Cork Harbour SPA, Cormorant, Grey heron, Curlew, and Black-headed gull, were also recorded during the wider surveys. However, all were recorded as flying over or off-site foraging birds, and none displayed breeding or foraging behaviour within the site.

Overall, the site supports a diverse assemblage of common hedgerow and farmland birds, with confirmed nests and fledglings for several species. The Red and Amber listed species recorded on site did not demonstrate significant reliance on habitats within the redline boundary. No Annex I or Cork Harbour SPA qualifying interest species were recorded breeding within the site or using habitats that could be considered functionally linked to the SPA. However, given the variety of birds found on the site, this IEF has been classed as being of 'Local' importance and has been brought forward into the assessment.

**Table 9: Bird species recorded during the breeding bird surveys**

| Species                  |                                   | Record Total | EU BD | BoCCI | SPA QI | Behaviour                                  |
|--------------------------|-----------------------------------|--------------|-------|-------|--------|--|
| Blackbird                | <i>Turdus merula</i>              | 118          |       |       |        | Foraging, calling, singing, fledging birds |
| Blackcap                 | <i>Sylvia atricapilla</i>         | 27           |       |       |        | Foraging, singing                          |
| Black-headed gull        | <i>Chroicocephalus ridibundus</i> | 11           |       | Amber | ✓      | Foraging                                   |
| Blue tit                 | <i>Cyanistes caeruleus</i>        | 10           |       |       |        | Nesting, calling, singing                  |
| Bullfinch                | <i>Pyrrhula pyrrhula</i>          | 17           |       |       |        | Foraging, flying calling                   |
| Buzzard                  | <i>Buteo buteo</i>                | 13           |       |       |        | Flying, calling, soaring                   |
| Chaffinch                | <i>Fringilla coelebs</i>          | 64           |       |       |        | Foraging, flying, calling, singing         |
| Chiffchaff               | <i>Phylloscopus collybita</i>     | 19           |       |       |        | Singing                                    |
| Coal tit                 | <i>Periparus ater</i>             | 3            |       |       |        | Calling, Singing                           |
| Cormorant                | <i>Phalacrocorax carbo</i>        | 1            |       | Amber | ✓      | Roosting                                   |
| Curlew                   | <i>Numenius arquata</i>           | 1            |       | Red   | ✓      | Flying                                     |
| Dunnock                  | <i>Prunella modularis</i>         | 48           |       |       |        | Foraging, flying, calling, singing         |
| Goldcrest                | <i>Regulus regulus</i>            | 4            |       | Amber |        | Calling, singing                           |
| Goldfinch                | <i>Carduelis carduelis</i>        | 40           |       |       |        | Foraging, feeding, calling, singing        |
| Grasshopper warbler      | <i>Locustella naevia</i>          | 2            |       |       |        | Singing                                    |
| Great tit                | <i>Parus major</i>                | 14           |       |       |        | Foraging, flying, calling, singing         |
| Greenfinch               | <i>Chloris chloris</i>            | 11           |       | Amber |        | Calling, singing                           |
| Grey heron               | <i>Ardea cinerea</i>              | 5            |       |       | ✓      | Roosting, foraging, flushed                |
| Grey wagtail             | <i>Motacilla cinerea</i>          | 1            |       | Red   |        | Flying                                     |
| Herring gull             | <i>Larus argentatus</i>           | 6            |       | Amber |        | Flying                                     |
| Hooded (grey) crow       | <i>Hooded crow</i>                | 27           |       |       |        | Breeding, nesting, calling                 |
| House martin             | <i>Delichon urbicum</i>           | 38           |       | Amber |        | Nesting, foraging                          |
| House sparrow            | <i>Passer domesticus</i>          | 19           |       | Amber |        | Flying, calling                            |
| Jackdaw                  | <i>Corvus monedula</i>            | 23           |       |       |        | Nesting, flying, calling                   |
| Kestrel                  | <i>Falco tinnunculus</i>          | 1            |       | Red   |        | Hunting                                    |
| Lesser black-backed gull | <i>Larus fuscus</i>               | 8            |       | Amber |        | Foraging, flying                           |
| Linnet                   | <i>Linaria cannabina</i>          | 10           |       | Amber |        | Foraging, flying, singing                  |

| Species            |                                   | Record Total | EU BD | BoCCI | SPA QI | Behaviour                                  |
|--------------------|-----------------------------------|--------------|-------|-------|--------|--|
| Little egret       | <i>Egretta garzetta</i>           | 2            | I     |       |        | Foraging                                   |
| Little grebe       | <i>Tachybaptus ruficollis</i>     | 1            |       |       |        | Roosting                                   |
| Long-tailed tit    | <i>Aegithalos caudatus</i>        | 9            |       |       |        | Calling                                    |
| Magpie             | <i>Pica pica</i>                  | 19           |       |       |        | Foraging, calling                          |
| Mallard            | <i>Anas platyrhynchos</i>         | 42           |       | Amber |        | Roosting, foraging, swimming               |
| Meadow pipit       | <i>Anthus pratensis</i>           | 1            |       | Red   |        | Calling                                    |
| Mistle thrush      | <i>Turdus viscivorus</i>          | 6            |       |       |        | Foraging, calling, singing                 |
| Moorhen            | <i>Gallinula chloropus</i>        | 6            |       |       |        | Foraging, swimming                         |
| Mute swan          | <i>Cygnus olor</i>                | 9            |       | Amber |        | Swimming                                   |
| Pheasant           | <i>Phasianus colchicus</i>        | 9            |       |       |        | Calling, flushed                           |
| Pied wagtail       | <i>Motacilla alba yarrellii</i>   | 2            |       |       |        | Flying                                     |
| Raven              | <i>Corvus corax</i>               | 1            |       |       |        | Calling                                    |
| Robin              | <i>Erithacus rubecula</i>         | 59           |       |       |        | Foraging, calling, singing, fledging birds |
| Rook               | <i>Corvus frugilegus</i>          | 27           |       |       |        | Flying                                     |
| Sedge warbler      | <i>Acrocephalus schoenobaenus</i> | 1            |       |       |        | Singing                                    |
| Song thrush        | <i>Turdus philomelos</i>          | 62           |       |       |        | Foraging, flying, calling, singing         |
| Sparrowhawk        | <i>Accipiter nisus</i>            | 3            |       |       |        | Hunting, flying, flushed                   |
| Spotted flycatcher | <i>Muscicapa striata</i>          | 2            |       | Amber |        | Calling                                    |
| Starling           | <i>Sturnus vulgaris</i>           | 224          |       | Amber |        | Foraging, flying                           |
| Stock dove         | <i>Columba oenas</i>              | 3            |       | Red   |        | Flying                                     |
| Stonechat          | <i>Saxicola rubicola</i>          | 22           |       |       |        | Flying, calling, singing                   |
| Swallow            | <i>Hirundo rustica</i>            | 50           |       | Amber |        | Breeding, nesting, flying, calling         |
| Swift              | <i>Apus apus</i>                  | 3            |       | Red   |        | Feeding                                    |
| Whitethroat        | <i>Curruca communis</i>           | 9            |       |       |        | Calling, singing, displaying               |
| Willow warbler     | <i>Phylloscopus sibilatrix</i>    | 2            |       | Amber |        | Calling, singing                           |
| Woodpigeon         | <i>Columba palumbus</i>           | 64           |       |       |        | Calling, displaying                        |
| Wren               | <i>Troglodytes troglodytes</i>    | 124          |       |       |        | Calling, singing                           |
| Yellowhammer       | <i>Emberiza citrinella</i>        | 7            |       | Red   |        | Calling, singing                           |

#### 5.4.2. Wintering Bird Surveys

Wintering bird surveys were conducted on four separate occasions during the wintering bird season in 2024 and 2025. One survey was conducted monthly from December 2024 to March 2025.

The purpose of the surveys was to identify any wintering bird species using habitat within the proposed development redline boundary and a surrounding buffer of 500m. The intention was to determine whether the site supports any species or habitats of conservation concern, including potential off-site supporting habitat for the nearby Cork Harbour SPA, located approximately 2 km east. All bird species recorded during the surveys were mapped using BTO species codes, and their behaviours were categorised (e.g. foraging, flying, flushed, perched) to distinguish between species using the site and those overflying.

A total of 24 species were recorded within or over the site during the four survey visits. These include a range of BoCCI Red listed and Amber listed species. Nine species are red listed, namely, Black-tailed godwit, Curlew, Grey wagtail, Kestrel, Lapwing (*Vanellus vanellus*), Oystercatcher (*Haematopus ostralegus*), Snipe (*Gallinago gallinago*), and Stock dove. However, it is important to note that most of these species were not recorded using the site itself, but were recorded at Owenacurra estuary, approximately 2 km east of the site. Species such as Black-tailed godwit, Curlew, Lapwing, Oystercatcher and Redshank are associated with estuarine habitats and were found not to be dependent on the habitats within or immediately adjacent to the site during the surveys. Of the Red-listed species recorded within the site, Grey wagtail and Kestrel were recorded flying over, and Yellowhammer was recorded calling, indicating only occasional passage or use of field boundary features rather than core habitat use. With the exception of Snipe, which were recorded repeatedly across all four surveys, with numerous individuals flushed from within the site (Figure 12). Regular flushing indicates that Snipe were present on the ground prior to disturbance and were using the site for foraging and/or roosting, consistent with their behaviour in wet grassland. The consistency of these records suggests that the site supports a small (17 in total across the four surveys) wintering population of Snipe. While Snipe is a BoCCI Red-listed species, it is not a qualifying interest of Cork Harbour SPA, and its presence therefore represents a local ecological constraint. The species is widespread in winter throughout Ireland, and potential impacts on Snipe at this location can be assessed at a 'Local level of importance' rather than national or European level.

Nine amber listed species were recorded, namely, Common gull (*Larus canus*), Cormorant, Herring gull, Lesser black-backed gull, Mallard, Mediterranean gull (*Larus melanocephalus*), Mute swan, Redshank (*Tringa totanus*), and Teal (*Anas crecca*). As with the red listed estuarine species, the majority of amber listed waterbirds were again recorded at the Owenacurra Estuary, rather than within the site. Lesser black-backed gull, Mallard and Mute swan were recorded flying over the site only, with no evidence of habitat use on site for these species.

Four Annex I bird species were recorded during the surveys, though all of these were 500 m or more from the site, primarily within the Owenacurra estuary approximately 2 km away, where they are known to occur. While several SCI species for Cork Harbour SPA were recorded during the wider surveys (including Black-headed Gull, Black-tailed Godwit, Common Gull, Cormorant, Curlew, Grey Heron, Lapwing, Lesser Black-backed Gull, Oystercatcher, Redshank, and Teal), none of these species were recorded using habitat within the site and therefore the site does not function as supporting habitat for SPA populations. Within the redline boundary, observed behaviours were largely limited to flyovers, occasional boundary foraging, or perched raptors (notably Buzzard). Apart from Snipe, no waterbirds or waders were observed landing, feeding, or roosting within the site during the four survey visits. This strongly indicates that the site's habitats do not provide resources of relevance to the wintering SCI assemblage of Cork Harbour SPA. As such, significant effects on the SPA will not occur as a result of the Proposed Development (APEM Woodrow, 2026). The site is assessed as having no functional link to the qualifying interest species of Cork Harbour SPA, full details of this are available in the NIS report for the proposed development. The full list of species recorded during the wintering bird surveys is presented below.

**Table 10: Bird species recorded during the wintering bird surveys**

| Species                  |                                   | Record Total | EU BD | BoCCI | SCI | Behaviour                           |
|--------------------------|-----------------------------------|--------------|-------|-------|-----|-------------------------------------|
| Black-headed gull        | <i>Chroicocephalus ridibundus</i> | 537          |       | Amber | ✓   | Foraging, flying                    |
| Black-tailed godwit      | <i>Limosa limosa</i>              | 2            | I     | Red   | ✓   | Foraging                            |
| Buzzard                  | <i>Buteo buteo</i>                | 26           |       |       |     | Flying, soaring, displayed          |
| Common gull              | <i>Larus canus</i>                | 50           |       | Amber | ✓   | Roosting, foraging, flying          |
| Cormorant                | <i>Phalacrocorax carbo</i>        | 2            |       | Amber | ✓   | Flying                              |
| Curlew                   | <i>Numenius arquata</i>           | 2            |       | Red   | ✓   | Foraging                            |
| Greenshank               | <i>Tringa nebularia</i>           | 10           |       |       |     | Foraging                            |
| Grey heron               | <i>Ardea cinerea</i>              | 4            |       |       | ✓   | Foraging, flying                    |
| Grey wagtail             | <i>Motacilla cinerea</i>          | 1            |       | Red   |     | Flying                              |
| Herring gull             | <i>Larus argentatus</i>           | 19           |       | Amber |     | Roosting, foraging                  |
| Kestrel                  | <i>Falco tinnunculus</i>          | 1            |       | Red   |     | Flying                              |
| Lapwing                  | <i>Vanellus vanellus</i>          | 500          |       | Red   | ✓   | Roosting                            |
| Lesser black-backed gull | <i>Larus fuscus</i>               | 13           |       | Amber | ✓   | Foraging, flying                    |
| Little egret             | <i>Egretta garzetta</i>           | 11           | I     |       |     | Foraging                            |
| Mallard                  | <i>Anas platyrhynchos</i>         | 14           |       | Amber |     | Foraging, feeding                   |
| Mediterranean gull       | <i>Larus melanocephalus</i>       | 3            | I     | Amber |     | Foraging                            |
| Mute swan                | <i>Cygnus olor</i>                | 4            |       | Amber |     | Flying, swimming                    |
| Oystercatcher            | <i>Haematopus ostralegus</i>      | 42           |       | Red   | ✓   | Roosting                            |
| Peregrine falcon         | <i>Falco peregrinus</i>           | 2            | I     |       |     | Hunting                             |
| Redshank                 | <i>Tringa totanus</i>             | 76           |       | Amber | ✓   | Foraging                            |
| Snipe                    | <i>Gallinago gallinago</i>        | 91           |       | Red   |     | Roosting, foraging, flying, flushed |
| Stock dove               | <i>Columba oenas</i>              | 6            |       | Red   |     | Flying                              |
| Teal                     | <i>Anas crecca</i>                | 67           |       | Amber | ✓   | Roosting, foraging                  |
| Yellowhammer             | <i>Emberiza citrinella</i>        | 1            |       | Red   |     | Calling                             |

### 5.4.3. Birds Evaluation

The breeding and wintering bird surveys recorded a typical assemblage of farmland and hedgerow bird species. The species recorded are characteristic of agricultural grassland, treeline and hedgerow habitats in the wider landscape.

During the breeding season, most species recorded were widespread passerines commonly associated with hedgerow. Although a number of BoCCI Red and Amber listed species were observed, these were either recorded under non-breeding behaviours (e.g. flying, feeding, hunting) or were associated with habitats outside the redline boundary. 7 no. of Yellowhammer were noted within or surrounding the site during the breeding season, with possible territories along hedgerows, and these territories occur within habitat that is abundant and typical of the wider landscape. No Annex I or Cork Harbour SPA qualifying interest species were recorded breeding within the site, nor were any habitats present that would support them.

Wintering bird activity within the site was limited. The majority of wintering waterbirds and waders recorded during the surveys were associated with the Owenacurra Estuary and surrounding coastal habitats, outside of the redline boundary (2.2 km at their closest point). Records within the site consisted largely of birds flying over the site, or raptors using the wider vicinity (400 m at their closest proximity). With the exception of 17 no. number of Snipe using the areas of damp grassland locally, no other species demonstrated reliance on the site for winter feeding or roosting. This confirms that the site does not function as off-site supporting habitat for Cork Harbour SPA, but it is of 'local' importance for snipe.

Overall, the habitats within the site support birds of 'local' (townland) importance, typical of lowland agricultural areas. Unmitigated, the proposed development will result in the loss of 488m hedgerow and grassland, including 1.2 ha of wet grassland.

### 5.5. Invasive non-native species

High levels of rabbit (*Oryctolagus cuniculus*) activity was recorded across the site. Rabbit are a widespread non-native mammal and are classified as a 'medium-risk' invasive species in Ireland according to NBDC risk assessments. Rabbit burrows were identified within hedgerow and treeline habitats, with rabbit droppings observed in the vicinity of the burrows and within areas of improved agricultural grassland throughout the proposed development. Rabbit are not afforded legal protection under Irish wildlife legislation and are not subject to statutory invasive species control regulations.

Traveller's-joy (*Clematis vitalba*) a non-native invasive plant species classified as having a 'medium ecological impact' in Ireland, was recorded within hedgerow and treeline habitats across the site. No high-impact or statutorily regulated invasive plant species were identified during the surveys, and no other invasive flora species were recorded at the site.

In the absence of high-impact or legally regulated invasive species, the invasive and non-native species recorded are evaluated as being of 'Site' importance and are scoped out of further consideration in this report.

## 5.6. Biodiversity Net Gain

The proposed development will result in the permanent loss of *ca.* 9.5 ha agricultural grassland to accommodate for residential land use. However, the majority of the grassland is improved and modified through regular agricultural management and is of 'low ecological value' and its loss does not represent a significant ecological constraint. Removal of *ca.* 1.3 ha of wet grassland will have a residual impact on the biodiversity of the site. 488 m removal of hedgerow and treeline will occur to accommodate the necessary access route(s), road layout and essential infrastructure. The site design incorporates embedded mitigation as a first preference, including the retention of the mature boundary hedgerows and treelines, particularly those that contribute most strongly to ecological connectivity along the boundaries of Site B and those bordering the Ballyrichard More stream.

The retained hedgerows along the northern boundary of Site A, together with the scrub patches within Site B, currently comprise sections of scrub or degraded hedgerow structure. Where these occur, they will be enhanced through infill planting and managed appropriately to retain their biodiversity and structure. This will improve the overall quality, species diversity and functionality of these linear habitats. Native hedgerow species, including pollinator-friendly planting and the extensive new tree planting proposed throughout the open spaces will further increase structural diversity and provide long-term benefits for pollinators, birds and bats (see All-Ireland Pollinator Plan<sup>9</sup>).

Importantly, ecological connectivity across the site and into the environs of the proposed development will be retained and managed. In particular, the riparian hedgerow and treeline network along the Ballyrichard More stream corridor will remain intact, preserving a key corridor for bats and other wildlife at the site (Figure 13). The combined approach of retention of mature boundary features, their enhancement where appropriate and new native planting in green spaces will go towards maintaining habitat connectivity and ecological function, as well as improving species diversity as detailed in Table 11.

---

<sup>9</sup> [All-Ireland Pollinator Plan » All-Ireland Pollinator Plan](#)

**Table 11: Summary of Net Loss, No Change and Net Gain in Linear Features and Planting**

| <b>Vegetation Removed (Net Loss)</b>   |                             | <b>Unit</b> | <b>Total</b>     |              |
|--|-----------------------------|-------------|------------------|--------------|
| Trees                                  |                             | no.         | 19               |              |
| Hedgerow / Tree Groups                 |                             | m           | 488              |              |
| <b>Vegetation Retained (No Change)</b> |                             | <b>Unit</b> | <b>Total</b>     |              |
| Hedgerow / Tree Groups                 |                             | m           | 1,285            |              |
| <b>Mitigation Planting (Net Gain)</b>  |                             | <b>Unit</b> | <b>Breakdown</b> | <b>Total</b> |
| Trees                                  | Open Space                  | no.         | 306              | 783          |
|  | Street                      | no.         | 269              |              |
|  | Orchard                     | no.         | 18               |              |
|  | Garden                      | no.         | 238              |              |
| Tall Shrubs                            |                             | no.         | 62               | 62           |
|  | Native Hedgerow             | m           | 1,071            |              |
| Hedgerow / Tree Groups                 | Pollinator Hedge            | m           | 437              | 1,710        |
|  | Native Enhancement Planting | m           | 202              |              |

### 5.7. Summary of Important Ecological Features

Table 12 summarises the IEF evaluation for which further detailed assessment is required. The evaluation of habitats is based on the botanical value of the habitat as well as other important ecological features that the habitat may support, e.g. breeding bird or bats.

**Table 12: Summary of Important Ecological Features**

| Ecological Feature                         | Evaluation       | Justification  | Important ecological feature |
|--|------------------|--|------------------------------|
| <b>Improved Agricultural Grassland GA1</b> | Site             | Improved agricultural grassland is a heavily modified and disturbed habitat. The species which do occur are common and widespread. | No                           |
| <b>Wet Grassland GS4</b>                   | Local            | The species which do occur are common and widespread   | Yes                          |
| <b>Hedgerow WL1</b>                        | Local            | Composition and CCDP 2022-2028   | Yes                          |
| <b>Treeline WL2</b>                        | Local            | Composition and CCDP 2022-2028   | Yes                          |
| <b>Scrub WS1</b>                           | Local            | Composition commonly occurring in the local area   | Yes                          |
| <b>Immature Woodland WS2</b>               | Local            | Composition commonly occurring in the local area   | Yes                          |
| <b>Recolonising Bare Ground ED3</b>        | Site             | Commonly occurring in the local area   | No                           |
| <b>Depositing/lowland river FW2</b>        | Local            | No baseline data, precautionary approach   | Yes                          |
| <b>Bats</b>                                | Local (Townland) | Habitats present and data collected  | Yes                          |
| <b>Other mammals</b>                       | Local            | Habitat present  | Yes                          |
| <b>Breeding birds</b>                      | Local (Townland) | Observations of red and amber-listed birds   | Yes                          |
| <b>Wintering birds</b>                     | Local (Townland) | Observations of red and amber-listed birds   | Yes                          |
| <b>INNS</b>                                | Site             | No high impact species identified within the Site  | No                           |

## 6. DESCRIPTION OF THE PROPOSED DEVELOPMENT

### 6.1. Proposed Development

The Site in Water Rock is located in east Cork, near Midleton. The following outline project description was provided by HW Planning (in their CEWMP – provided as an outline and iterative document for this proposal):

*“The development will be delivered on a phased basis and consists of the construction of a residential development of 452 no. residential units with supporting resident amenity facilities, single-storey crèche, and all ancillary site development works.*

*The proposed development makes provision for 219 no. two storey houses, comprising 17 no. detached units (14 no. 4-bed units and 3 no. 3 bed units), 120 no. semi-detached units (104 no. 4 bed units and 16 no. 3 bed units), 82 no. 3 bed terraced units. It also provides for 233 no. apartment / duplex units, comprising 99 no. duplex/own-door apartments (42 no. 3 bed units, 15 no. 2 bed units and 42 no. 1 bed units) in 20 no. 3 storey blocks and 134 no. apartments units (74 no. 2 bed units, 32 no. 1 bed units and 28 no. studios) in 4 no. 3 – part 5 storey blocks.*

*The proposal makes provision for 2 no. communal rooms in Block C and Block E, outdoor amenity areas including a linear park along the Glounamuck Stream, landscaping, and ancillary infrastructure development works in the form of wastewater infrastructure, surface water attenuation, water utility services, public lighting, surface car parking, bin stores, bicycle stores, roof mounted solar panels, plant and comms rooms, 6 no. ESB substations, and all associated site development works.*

*Vehicular access to the development will be via 2 no. entrances off Water-rock Road (L3618) to Site B and 1 no. entrance to Site A off the Water-Rock Urban Expansion Area Service Corridor Link Road (L3822-5). The proposal includes pedestrian and cycling paths and access points, and makes provision for the delivery of part of the Carrigtwohill to Midleton Inter-Urban Cycleway to the south of Site A.”*

Full details regarding the proposed works are detailed in the Construction, Environmental & Waste Management Plan (CEWMP).

## 7. ASSESSMENT OF EFFECTS AND MITIGATION MEASURES

The potential impacts and effects because of construction and operation of the proposed development at Water-Rock are discussed in the following sections. The following design principles and “embedded” mitigation have informed the assessment of impacts.

Within the design of the proposal good practice environmental and pollution control measures are employed with regard to current best practice guidance such as, but not limited to, the following:

- CIRIA C532, 'Control of water pollution from construction sites: guidance for consultants and contractors' (2001).
- CIRIA C648, 'Control of water pollution from linear construction projects - Technical guidance' (2006).
- CIRIA C741, 'Environmental good practice on site guide' (2015 4th Ed.).

Landscape measures are embedded within the design of the development to minimise loss of biodiversity on site and includes:

- ca. 783 no. of specimen tree planting across the site including open space trees, street trees, orchard trees and garden trees.
- Retention of existing boundary hedgerows and trees.
- 437 m of pollinator-friendly planting through the site with emphasis on the use of native species.
- The promotion of wildflower meadow areas within open spaces by means of differential mowing regimes.
- Openings in garden fences to allow small mammals to pass through back gardens (e.g. hedgehog highway).
- Installation of a mixture of woodcrete bat box types<sup>10</sup> (e.g. 4 no. Schwegler 2F, 4 no. Schwegler 3FF and 4 no. Schwegler 1FF or suitable woodcrete equivalents) and nesting habitats for invertebrates along retained hedgerow and treeline corridors (including pollinators)<sup>11</sup>.

Taking the above into account, the principal potential impacts of the proposed development are as outlined in the following sections. The mitigation will be implemented in full by the Appointed Contractor's suitably qualified Ecological Clerk of Works (ECow) in the appropriate locations outlined within the final CEWMP.

### 7.1. Do-Nothing Scenario

Under a do-nothing scenario, it is anticipated that the existing baseline conditions within the site would remain broadly unchanged. The site is currently subject to intensive agricultural management, and it is expected that practices such as fertiliser application, grazing, mowing, and periodic ploughing would continue at similar levels.

Ongoing agricultural management would continue to limit opportunities for natural habitat succession across the site. In common with intensively managed agricultural landscapes, ecological succession towards scrub or woodland would be largely prevented by regular farming activities. Limited scrub development may continue to occur in unmanaged field margins, hedgerows, and isolated field corners, but this would remain localised and of minor extent.

---

<sup>10</sup> [IWM134.pdf](#)

<sup>11</sup> [pollinators.ie/wp-content/uploads/2022/12/Pollinator-Nesting-How-to-Guide-2022-WEB.pdf](#)

As no change in land use or management is anticipated under the do-nothing scenario, no significant effects on existing ecological receptors are predicted.

## **7.2. Likely Significant Effects**

### **7.2.1. Habitats**

#### **7.2.1.1. Wet Grassland**

##### **7.2.1.1.1. Potential Impact**

There will be a permanent loss of ca. 1.2 ha of wet grassland to allow for the proposed development. There will be no other loss of semi-natural grassland as part of the proposed development as the remaining fields are improved agricultural grassland GA1. Therefore, there will be a permanent, negative and likely significant effect at a local geographical scale for wet grassland.

##### **7.2.1.1.2. Mitigation Measures**

To reduce the impact associated with the permanent loss of approximately 1.2 ha of wet grassland, soil excavated from the field will be carefully stripped, stored and reused to enhance the proposed wildflower meadow habitat within the dry detention basins outlined in the Landscape Plan accompanying this application. Reusing this soil will retain much of the existing seed bank, promoting native wildflowers and grassland species existing on site. These meadows will be managed under a low-intensity regime to encourage long-term establishment and maximise their value for invertebrates, birds and small mammals. Best-practice measures will be applied during construction to maintain seed viability.

##### **7.2.1.1.3. Residual Effects**

Following implementation of these mitigation measures, a permanent loss of wet grassland will still occur. However, the creation of wildflower meadow habitat using the original wet-grassland soils will provide partial ecological compensation. While the newly created habitats embedded into the Landscape Plan will not replicate wet grassland, they will enhance biodiversity and support pollinators and other wildlife. As a result, the residual effect is assessed as permanent and negative but reduced in magnitude.

### **7.2.1.2. Treeline, Hedgerow, Woodland and Scrub**

#### **7.2.1.2.1. Potential Impacts**

There will be a permanent loss of ca. 488 m of hedgerow and treeline, including 19 trees, within site to allow for the proposed development. There will also be a loss of 0.05 ha of immature woodland. There will be no other loss of woodland and scrub as part of the proposed development.

During construction works, there is potential for the existing woodland and scrub to be damaged via machinery tracking through or too close to the trees or stockpiling materials within the root zone, along with dust deposition.

In the absence of mitigation, the proposed development will result in a permanent loss of woodland and scrub habitat, as such there will be a permanent, negative and likely significant effects on these habitats.

#### **7.2.1.2.2. Mitigation Measures**

A pre-construction assessment of hedgerows and treelines adjacent to the works corridor, targeting sections that will be retained post-construction, will be undertaken by an appropriately qualified arboriculturist. Root Protection Areas (RPA), will be implemented in line with BSI (2012) at locations where construction activities, including excavation, access and storage of materials, will be limited, to avoid negative effects on the health of hedgerow/trees adjacent to the area of construction works.

The proposed development has adopted a landscape-led approach to site layout design, refer to Appendix B for full details. This methodology ensures that ecological considerations are embedded from the outset, with the layout informed by a detailed tree appraisal and arboriculture assessment. The design prioritises the retention of high-quality trees, hedgerows, and areas of ecological value, while minimising the removal of vegetation to only those specimens of low arboriculture quality or necessary for the proposed development delivery.

The layout also responds to the Compact Settlement Guidelines (2024), which advocate for increased densities near public transport nodes while maintaining sensitivity to existing natural features. Public open spaces have been strategically located to retain and enhance biodiversity assets, including scrub and transitional woodland habitats. Substantial compensatory planting is proposed, including native hedgerows, pollinator-friendly species, and a diverse mix of trees across open spaces, streets, and gardens. This integrated approach ensures a biodiversity net gain and supports the long-term ecological resilience of the site.

To reduce the impact of dust, the following standard measures will be implemented:

- Drop heights from conveyors, loading shovels, hoppers and other loading equipment will be minimised.
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.
- Any road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary.

- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.
- During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.

#### **7.2.1.2.3. Residual Effects**

The loss of approximately 488 m of hedgerow and treeline and 0.05 ha of immature woodland will result in a permanent and negative effect on these habitat features. However, the proposed mitigation, comprising a network of retained boundary hedgerows and treelines alongside extensive compensatory native planting, will help to partially offset this impact. The retained vegetation will maintain functional ecological corridors during and after construction (Figure 13), while the compensatory planting will exceed the length of hedgerow removed, creating a net increase in native woody vegetation across the site. Although these measures will enhance long-term habitat structure and connectivity as planting establishes, they will not fully negate the permanent loss of the existing mature hedgerow resource.

There remains the potential for site-level residual impacts due to the change in land-use, particularly in relation to the transition from semi-natural vegetated boundaries to more managed landscape planting. While these impacts are localised and partially offset through compensatory planting and retention of key boundary features, they cannot be entirely avoided due to the permanent nature of the development footprint.

#### **7.2.1.3. Depositing/Lowland River**

##### **7.2.1.3.1. Potential Impacts**

There will be no instream works associated with the proposed development to result in direct impacts to stream. However, the proximity of the proposed development to the stream has the potential to result in indirect impacts, including changes to surface water runoff, sedimentation and release of hydrocarbons.

In the absence of mitigation, there is potential for indirect negative, short (during construction and the period of the suspended solids/pollutants in the surface water run-off) to medium-term (as suspended solids/pollutants are likely to persist in the watercourse post-construction) and likely significant effects on depositing/lowland rivers at a local geographical scale.

##### **7.2.1.3.2. Mitigation Measures**

There are several standard best practice guidelines on working near water, and standard mitigation measures for controlling pollution and sediment from construction sites including CIRIA and Inland Fisheries Ireland publications. Measures include

- Riparian buffer zone of 10 m will be maintained. Where works will encroach on the buffer zone, no plant machinery will track within the buffer zone.
- Spoil will be managed in accordance with a spoil management plan included in the CEWMP.
- For works within 50 m of a watercourse, weather conditions will be monitored to avoid excavation during adverse weather (e.g. Met Éireann yellow rain warnings or higher).
- Emergency drainage measures will be in place to manage runoff during heavy rainfall.
- Roadside drains will discharge through riparian buffer zones and temporary settlement ponds, with diffuse overland flow used for final discharge.
- Silt fencing and traps will be installed in areas with potential for sediment mobilisation.
- Dust suppression measures during construction as detailed in mitigation section for hedgerow/ treelines above
- Refuelling will occur in bunded areas at least 50 m from watercourses; all machinery will carry spill kits and undergo mechanical checks before arriving on site.
- Cut-off drains will be used to divert clean water away from construction zones.
- Spoil deposition areas will be enclosed with silt fencing and isolated from temporary drainage systems; SuDS features will be used to retain runoff.
- Bare ground will be re-seeded or stabilised with jute matting as soon as practicable.
- Welfare facilities will be installed and managed to prevent nutrient loading of aquatic environments.

#### **7.2.1.3.3. Residual Effects**

There will be no significant adverse residual effects on the receiving watercourse, associated with the proposed development. Sustainable Drainage Systems (SuDS) will be incorporated into the project design, supported by appropriate sediment-control and pollution-prevention measures to ensure that surface-water runoff is managed effectively during both construction and operation.

Although no significant effects are anticipated, there remains the potential for site-level residual impacts due to the change in land-use, particularly relating to the transition from a semi-natural landscape to a more managed urban environment.

#### **7.2.2. Bats**

##### **7.2.2.1. Potential Impacts**

In line with Collins (2023) guidance, three inspections were undertaken for PRF-M trees, with no evidence of bat roosting recorded. Further hedgerows and treelines proposed for removal contain trees with low to moderate PRF-I features. However, due to there being appropriate roost resource in the wider landscape, and there being no confirmation of the PRFs being used by bat species, the removal of the features are not anticipated to impact the local population.

In the absence of mitigation, the loss of PRFs will result in a direct permanent, negative and likely not significant effect<sup>12</sup> at a local geographical scale for roosting bats.

Field boundaries within the site provide commuting and foraging resources for bats and will largely be retained as part of the proposed development. As such, significant habitat fragmentation is not anticipated (Figure 13).

Additional potential impacts from the proposed development include increased human disturbance, noise, and artificial light during the construction period. While most of the population will be used to heavy machinery in the area from agricultural practices, increased usage over a longer period of time (more than 2-3 days) will likely discourage use of the area. Artificial lighting, particularly UV-emitting sources, can disorient bats, disrupt feeding behaviour, and reduce prey availability by attracting insects away from traditional foraging routes. These impacts are of particular concern where lighting may affect key habitats such as hedgerows, treelines, woodland edges, and watercourses (Bat Conservation Ireland, 2010 and ILP 2023).

In the absence of mitigation, disturbance and displacement effects on bats arising from construction works and artificial lighting will result in a likely negative, temporary (during construction period), not significant effect at a local geographical scale.

#### **7.2.2.2. Mitigation Measures**

While no roosts have been identified, a precautionary approach has been taken. This will include:

A mixture of woodcrete bat box types<sup>13</sup> (e.g. 4 no. Schwegler 2F, 4 no. Schwegler 3FF and 4 no. Schwegler 1FF or suitable woodcrete equivalents) will be installed to mitigate for the loss of hedgerow and trees within the site.

Felling will be undertaken outside the activity season (May to September inclusive) or the hibernation season (October to March inclusive). Should this not be possible, felling will be conducted under derogation license and will involve additional measures including:

- Checking the PRF(s) of the tree to be felled and all PRFs within 30m for live bats no later than the morning of felling.
- Tree to be removed will be 'soft felled', as outlined in the NRA (2005) guidelines:
  - Removing the tree in sections, starting with the top branches and then working down the trunk trying to avoid cutting through cavities.
  - Any sections with PRFs must be lowered with care and laid on the ground with potential entrances to roosts orientated upwards to allow bat to vacate the roost.

---

<sup>12</sup> An effect which causes noticeable changes in the character of the environment but without significant consequences

<sup>13</sup> [JWM134.pdf](#)

- Sections must be left in situ for at least 24 hours in suitable weather conditions to allow any bats to disperse.

While there are not expected to be any significant impacts from artificial lighting or increased human/machinery presence, some effects are expected. Therefore, taking a precautionary approach, lighting will take into account ILP 08/23 guidance to avoid artificial lighting impacts on bat species. This will include (but not limited to):

- LED luminaires are to be used where practicable due to their sharp cut-off, lower intensity, good colour retention and dimming capability.
- Column heights to be considered to minimise light spill.
- Accessories such as baffled, hoods or louvres can be used to reduce light spill and direct it only where needed; and
- Where works to be undertaken at night, lighting will be directed away from roosts and foraging/commuting features to reduce the potential for impacts.
- Where lighting will remain in place, measures will be maintained for the lifetime of the Development.

The precautionary approach to increased human presence and machinery will include (but not limited to):

- Operators of all mobile equipment will be instructed to avoid unnecessary revving of machinery.
- Use of appropriate plant and equipment with low noise level generation where possible.
- All construction plant to be used on site will have effective well-maintained silencers.
- A speed restriction of 20 km/hr will be applied on-site.
- Regular and effective maintenance of site machinery including a full maintenance schedule to ensure that all pieces of equipment are in good working order.
- Training of site staff in the proper use and maintenance of tools and equipment.
- Avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment.
- Machines that could be in intermittent use will be shut down between work periods or will be throttled down to a minimum.
- Plant start-up will be sequential rather than all together.
- Internal access tracks to be well maintained.
- Plant known to emit noise strongly in one direction will, when possible, be orientated so that the noise is directed away from noise-sensitive locations.
- Drop heights for materials such as gravels will be minimised.

#### **7.2.2.3. Residual Effects**

There will be no significant adverse residual effects on these species, associated with the proposed development.

### **7.2.3. Other Mammals**

#### **7.2.3.1. Otter**

##### **7.2.3.1.1. Potential Impacts**

While otter was not observed or evidence found of them using the site, a precautionary approach has been taken and otter assumed present.

No resting or breeding locations were found on the site, therefore there will be no direct impacts to otter resting sites. Given the significant watercourse here, and the suitable supporting habitat, they are considered likely to forage and commute through the environs of the proposed development.

While otters are known to tolerate certain levels of human disturbance, increased noise, vibration, and human activity during construction may temporarily displace individuals using the stream corridor. However, as construction works will occur during daylight hours and otters are primarily nocturnal, significant disturbance is considered unlikely. Indirect impacts such as sedimentation and changes in water quality could affect fish and aquatic invertebrates, which are prey resources for otter.

In the absence of mitigation, the proposed development will likely result in an indirect negative, temporary (during construction period), moderate effect<sup>14</sup> at a local geographical scale on the species.

##### **7.2.3.1.2. Mitigation Measures**

Construction will be limited to daylight hours to reduce disturbance to nocturnal species such as otter. Artificial lighting if required near the stream will be directed towards the site and baffles used to reduce light spill in the direction of the stream. Riparian buffer zone of 10 m will be maintained. Where works will encroach on the buffer zone, no plant machinery will track within the buffer zone. Refer also to the depositing/lowland river mitigation and bat mitigation sections above.

Although no otters, holts or couches were recorded during survey, the adjoining stream forms part of a wider riparian corridor connected downstream to an SAC. As a precaution, works will avoid disturbance along the watercourse, maintain riparian vegetation, and ensure good practice pollution-prevention and sediment-control measures are implemented to protect water quality<sup>15</sup>.

If any evidence of otter activity (e.g. spraints, couches or potential holts) is identified during construction, works in the affected area will cease and a targeted otter survey will be

---

<sup>14</sup> An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.

<sup>15</sup> <https://www.tii.ie/media/wsm1bxbmv/guidelines-for-the-treatment-of-otters-prior-to-the-construction-of-national-road-schemes.pdf>

undertaken by a qualified ecologist. If a holt were confirmed, the appropriate stand-off distances would apply.

Although no such features occur at this site, maintaining a precautionary buffer, controlling lighting, and avoiding disturbance or degradation of riparian habitat will ensure protection of potential commuting or foraging otters that may use the watercourse downstream.

#### **7.2.3.1.3. Residual Effects**

There will be no significant adverse residual effects on this species, associated with the proposed development.

#### **7.2.3.2. Badger, Pine Marten, Hedgehog and Red Squirrel**

##### **7.2.3.2.1. Potential Impacts**

No resting or breeding were found on the site, therefore there will be no direct impacts to terrestrial mammals including badger, pine marten, hedgehog and red squirrel.

There is potential for indirect impacts on badger, pine marten, hedgehog and red squirrel through increased noise, vibration, lighting and human activity during construction, which could temporarily disturb commuting or foraging individuals using the site or surrounding habitats. Although no signs of these mammals were recorded during site visits, the presence of suitable foraging habitat and commuting corridors suggests likely use of the site. Construction works could disrupt movement patterns or discourage use of the area.

In the absence of mitigation, disturbance and displacement effects on badger, pine marten, hedgehog and red squirrel arising from construction works and artificial lighting will result in a likely negative, temporary (during construction period), moderate effect at a local geographical scale.

##### **7.2.3.2.2. Mitigation Measures**

Construction will be limited to daylight hours to reduce disturbance to nocturnal species. Artificial lighting near key habitat features such as hedgerow will be directed away from the feature and baffles used to reduce light spill in the direction of the feature. The risk of mammals becoming trapped if falling into excavated holes and trenches will be minimised through the provision of egress points, e.g. placing escape planks or spoil runs. In addition, the length of time holes will be exposed will be limited. Fencing will have appropriate holes/gaps at the bottom to maintain movement through the site. Refer also to bat mitigation above.

All excavations and open trenches will be secured outside of working hours to prevent the entrapment of small mammals. This will include one of the following measures:

- providing suitable escape ramps (e.g. secured rough-surfaced planks) at an angle of <math><45^\circ</math> to allow badger and other mammals to exit safely;

- or securely covering excavations with heavy-duty sheeting or plates where escape ramps cannot be installed.

Any temporarily exposed pipework will be capped or heavily taped at the end of each working day to prevent animals entering and becoming trapped.

If fieldworkers identify any evidence of badger activity (paths, latrines, snuffle holes, foraging signs, or potential setts) during pre-construction checks or construction works, the site ecologist will assess the activity level and implement the appropriate measures in line with NRA Guidelines<sup>16</sup>, including the establishment of a suitable exclusion zone around any active sett. Should works ever require encroachment within the recommended protection zone of an active sett, all actions will comply with NPWS licensing requirements.

General good-practice measures to avoid displacement or injury to small mammals will also be implemented, including careful vegetation clearance under ecological supervision, maintaining connectivity through gaps under site hoarding where appropriate, and ensuring food waste and construction materials are managed to avoid attracting wildlife into working areas.

#### **7.2.3.2.3. Residual Effects**

There will be no significant adverse residual effects on these species, associated with the proposed development.

#### **7.2.4. Birds**

##### **7.2.4.1. Potential Impacts**

The bird species recorded within and adjacent to the proposed development are typical of the habitats present and largely comprise common species. While no rare or uncommon species were recorded within the site, several red and amber listed species were observed in proximity to the site, particularly flying over the site or near Owenacurra Estuary. Snipe were occasionally recorded within the rough grassland/wet field margins and are likely to use these areas opportunistically for foraging.

The proposed development will result in the direct loss of breeding, wintering and foraging habitat, including sections of grassland, hedgerow, and treeline. However, due to the extent of similar habitat in the surrounding landscape, along with the majority of red/amber and Annex I species occurring off site, the birds present within the site are not wholly reliant of the site itself. For species such as Snipe, while the site provides some foraging habitat, more suitable wet grassland and marsh habitat is available locally. Therefore, the potential for displacement is limited to redistribution within the wider landscape.

---

<sup>16</sup> <https://www.tii.ie/media/gtajacj2/guidelines-for-the-treatment-of-badgers-prior-to-the-construction-of-a-national-road-scheme.pdf>

In the absence of mitigation, the loss of breeding, wintering and foraging habitat will result in a direct permanent, negative and likely not significant effect<sup>17</sup> at a Townland geographical scale for the local bird assemblage. This includes displacement of Snipe due to changes in land-use, although suitable alternative habitat is available within the wider area.

Construction activities may lead to indirect impacts including temporary displacement of other birds due to increased noise and human presence. Generally, birds can experience disturbance impacts if disturbance incident occurs within 500 m of foraging, nesting, or roosting areas (Holloway 1997; Maarten & Henkensj 1997; Scarton 2018). The displacement of birds from areas within and surrounding developments can effectively amount to habitat loss.

In the absence of mitigation, the loss of habitat will result in an indirect permanent, negative and likely not significant effect<sup>18</sup> at a Townland geographical scale for the local bird assemblage

#### **7.2.4.2. Mitigation Measures**

Vegetation clearance will be scheduled outside the bird breeding season (March to August inclusive). Should this not be possible, clearance will be conducted under supervision of an Ecological Clerk of Works (ECoW). Pre-clearance surveys will be undertaken no more than 72 hours prior to clearance works commencing, should nesting birds be found within the Site, buffer zones around the nest will be demarcated to avoid direct disturbance. Should the buffer zone be too large and works be required within, the works will be carried out under derogation license and will involve additional measures determined appropriate to the species by the ECoW.

#### **7.2.4.3. Residual Effects**

There will be no significant adverse residual effects on these species, associated with the proposed development.

### **7.3. 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 project 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 (CIEEM, 2018).

Within the planning search conducted via the Myplan.ie website<sup>19</sup> developments within the zone of influence which were considered to be small-scale, such as extensions and alterations

---

<sup>17</sup> An effect which causes noticeable changes in the character of the environment but without significant consequences

<sup>18</sup> An effect which causes noticeable changes in the character of the environment but without significant consequences

<sup>19</sup> [Home - My Plan](#)

to single dwellings or individual dwellings within larger development applications, applications for temporary structures (e.g. creche) while the consented developments are undertaken, all of which are unlikely to contribute meaningfully to cumulative effects. Larger developments (Table 13) were reviewed for potential in-combination impacts, particularly in relation to surface water runoff, wastewater loading, and recreational pressure. This review was informed by planning application data, available EIAR/EclA reports, available screening reports, and Natura Impact Statements where applicable. Reasoning for potential for cumulative effects are also provided.

**Table 13: Developments currently permitted, under construction or planned**

| Planning Application | Development Description   | Decision Date | Potential for Cumulative effects | Reasoning   |
|----------------------|---|---------------|----------------------------------|---|
| <b>245937</b>        | Permission for the Midleton Wastewater Loading Diversion Project which will consist of the provision of a new foul pumping station and rising main connection to Water-Rock wwps.   | 15/05/2025    | N                                | The planning application submitted an EclA and NIS with appropriate mitigation measures to avoid impacts from the project alone or in-combination with other projects. Therefore, should the measures be adhered to, there is no potential for cumulative effects with the proposed development.  |
| <b>226627</b>        | A ten-year planning permission for the following Large Scale Residential development comprising the construction of 330 no. residential units (199 no. 3 and 4-bed dwelling houses and 131 no. 2 bed apartment units).                  | 21/09/2023    | N                                | The planning application submitted an EclA and NIS with appropriate mitigation measures to avoid impacts from the project alone or in-combination with other projects. Therefore, should the measures be adhered to, there is no potential for cumulative effects with the proposed development.  |
| <b>225032</b>        | The Midleton North Wastewater Pumping Station and Network.  | 13/02/2023    | N                                | The planning application submitted an EclA and NIS with appropriate mitigation measures to avoid impacts from the project alone or in-combination with other projects. Furthermore, the project will be aligned with the principal of biodiversity net gain. The project will also, in the long term, have a positive effect on water quality. Therefore, should the measures be adhered to, there is no potential for cumulative effects with the proposed development.  |
| <b>225839</b>        | Largescale Residential Development. Ten-year planning permission for 400 residential units to be constructed in a series of phases, a creche and community use unit and ancillary infrastructure, services, and site development works. | 22/12/2022    | N                                | While the project was initially screened out of appropriate assessment, request for further information included an NIS. The subsequent NIS concluded with implementation of appropriate mitigation measures the proposed project will not adversely affect the integrity of any European Site, either alone or in-combination with other projects or plans. The EclA also concluded that enhancement measures would have a long-term positive effect to biodiversity within the Site. Therefore, should the mitigation and enhancement measures be adhered to, there is no potential for cumulative effects with the proposed development. |

|               |  |            |   |   |
|---------------|--|------------|---|---|
| <b>217264</b> | <p>Permission for development at this site (6.7 ha) on existing greenfield lands at Knockgriffin (Imokilly) and Water Rock, Midleton, Co. Cork. The development will consist of the demolition and removal of existing derelict buildings, structures, outbuildings and hardstanding (total 842sq.m) and the construction of a mixed-use scheme comprising 284no. residential units, a Childcare Facility, a Retail unit, a Café unit, a Medical clinic, Office units and all associated ancillary accommodation, site and development works.</p>  | 13/09/2022 | N | <p>While the project was initially screened out of appropriate assessment, request for further information included an NIS. The subsequent NIS concluded with implementation of appropriate mitigation measures the proposed project will not adversely affect the integrity of any European Site, either alone or in-combination with other projects or plans. The EIA also concluded that no significant residual effects, should the mitigation and enhancement measures be adhered to. Therefore, should the mitigation and enhancement measures be adhered to, there is no potential for cumulative effects with the proposed development.</p> |
| <b>217265</b> | <p>Permission for development at this site (10.8 ha) on existing greenfield/brownfield lands at Knockgriffin (Imokilly), Knockgriffin (Barrymore) and Water Rock, Midleton, Co. Cork. The development will consist of the demolition and removal of existing derelict buildings, structures, outbuildings and hardstanding (total 1661sq.m) and the construction of a mixed-use scheme comprising 434no. residential units, a childcare facility, a Research and Development building, a Neighbourhood Centre, a 90-bed Nursing Home and all associated ancillary accommodation, site and development works.</p> | 12/09/2022 | N | <p>While the project was initially screened out of appropriate assessment, request for further information included an NIS. The subsequent NIS concluded with implementation of appropriate mitigation measures the proposed project will not adversely affect the integrity of any European Site, either alone or in-combination with other projects or plans. The EIA also concluded that no significant residual effects, should the mitigation and enhancement measures be adhered to. Therefore, should the mitigation and enhancement measures be adhered to, there is no potential for cumulative effects with the proposed development.</p> |
| <b>215089</b> | <p>A 10 year planning permission for 2 no.33kv underground electricity interconnector cables of c.2.59 km in length to be provided predominantly in excavated trenches and include associated underground ducting, joint bays, communication chambers and all associated site development and reinstatement works.</p>   | 20/10/2021 |   | <p>The planning application submitted a NIS and further information request with appropriate mitigation measures to avoid impacts from the project alone or in-combination with other projects. Therefore, should the measures be adhered to, there is no potential for cumulative effects with the proposed development.</p>   |
| <b>206891</b> | <p>A 10 year planning permission for a solar farm consisting of circa 14,600 m2 of solar panels on ground mounted frames, 2 no. single storey electrical inverter/transformer stations, battery storage container, battery control unit, security fencing, satellite pole, CCTV, access tracks, upgrade to existing agricultural field entrance, temporary construction compound, landscaping and all associated ancillary development works.</p>  | 19/2/2021  |   | <p>The planning application submitted an EclA and NIS with appropriate mitigation measures to avoid impacts from the project alone or in-combination with other projects. Therefore, should the measures be adhered to, there is no potential for cumulative effects with the proposed development.</p>   |

Based on the analysis of cumulative effects, it is concluded that the proposed development, when considered in combination with other plans or projects within the zone of influence, will not result in any significant adverse effects on the integrity of any Natura 2000 site. This conclusion is contingent upon the full and correct implementation of effective mitigation measures across the proposed development and other relevant projects

#### **7.4. Summary of Effects**

A summary of potential impacts, proposed mitigation and significance of residual effects is provided for each important ecological feature included in the assessment in Table 14.

**Table 14: Summary of effects, mitigation and residual effects**

| Ecological Feature                                    | Potential Impacts  | Mitigation   | Residual Effects  |
|---|--|--|---|
| <b>Wet Grassland</b>                                  | Loss of existing wet grassland.  | Reuse of excavated soil and existing seed bank to enhance the proposed wildflower meadow habitat.  | no significant adverse residual effects                             |
| <b>Treeline, hedgerow, woodland and Scrub</b>         | Loss of existing hedgerow and treeline. Damage to retained trees during construction phase.      | New planting as part of the landscape plan. Setback distance during construction and operation phases.   | potential for site level residual impacts due to change in land-use |
| <b>Depositing Lowland River</b>                       | Changes in water quality.  | SuDS mitigation will be incorporated, sediment control, and pollution prevention measures.   | potential for site level residual impacts due to change in land-use |
| <b>Bats</b>   | Disturbance through lighting of foraging and commuting resources.                                | Lighting plan to include directional lighting away from commuting links and foraging resources. Retained and planted hedgerow will maintain connectivity. Installation of bat boxes. | no significant adverse residual effects                             |
| <b>Otter</b>  | Noise/light disturbance causing displacement. Changes in water quality affecting prey resources. | Construction will be limited to daylight hours. Surface Water mitigation will be implemented to preserve the integrity of Ballyrichard More stream.                                  | no significant adverse residual effects                             |
| <b>Badger, pine marten, hedgehog and red squirrel</b> | Noise/light disturbance causing displacement.  | Construction will be limited to daylight hours. Directional lighting away from commuting corridors. Retained and planted hedgerow will maintain connectivity.                        | no significant adverse residual effects                             |
| <b>Birds</b>  | Loss of foraging and nesting habitat.  | Vegetation removal outside of the bird nesting period. Retained and new planting as part of the landscape plan.  | potential for site displacement for Snipe due to change in land-use |

## 8. CONCLUSION

This Ecological Impact Assessment has evaluated the likely effects of the proposed development on habitats and species within the site and its surrounding environment. The habitats present are typical of the wider landscape and do not support features of high ecological value. Bird surveys confirmed the presence of common and widespread species, with no significant assemblages or species of elevated conservation concern recorded.

Defined sections of hedgerow and treeline in Site B (refer to Appendix B) will be removed to facilitate the development layout. These sections are of generally moderate ecological and arboricultural quality, and their removal has been minimised as far as practicable. The majority of boundary vegetation and higher-value features, such as the stream buffers have been retained and integrated into the project, ensuring that the boundary ecological corridors, particularly for bats and birds, remain functional (Figure 13).

Although the proposed mitigation and compensatory planting will substantially improve ecological structure and function over time, some residual effects at a site level are unavoidable, particularly those associated with the permanent change in land-use and the loss of existing mature hedgerow and treeline features.

Comprehensive mitigation measures have been embedded within the project to avoid or reduce potential effects. These include the protection of retained vegetation, reuse of existing soil and seed bank for proposed wildflower and wetland areas, best-practice pollution and sediment control, and a sensitive lighting strategy designed to maintain dark corridors and minimise disturbance to commuting and foraging bats. Substantial compensatory planting of native hedgerows, trees, and shrub species will enhance habitat structure and connectivity, providing alternative movement routes and foraging opportunities for bats, birds, and terrestrial mammals. This planting will strengthen the ecological network both within the site and in its connection to the wider landscape.

Temporary disturbance to fauna may occur during construction. However, no significant long-term effects on species of conservation concern are predicted. As new planting establishes and matures, the site will support a diverse network of woody vegetation, resulting in maintained ecological connectivity and long-term biodiversity enhancement.

Overall, with the implementation of the mitigation and enhancement measures outlined in this report, the proposed development will have some site level residual effects due to change in land-use, but will not result in significant residual ecological effects.

## REFERENCES

APEM Group Woodrow (2026). *LRD at Water-Rock, Midleton, Co. Cork Appropriate Assessment and Natura Impact Statement*. Woodrow APEM Report P00017150. HW Planning, March 2026, V1, Final

Bibby, C., Burgess, N.D., Hill, D., & Mustoe, S. (2000) *Bird Census Techniques – Second Edition*. Academic Press, London, England

CIEEM, (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3*. Chartered Institute of Ecology and Environmental Management, Winchester. [EclA-Guidelines-v1.3-Sept-2024.pdf](#)

Collins, J., (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition)*. s.l.:The Bat Conservation Trust London.

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

Gilbert, G., Gibbons, D.W., Evans, J. (1998). *Bird Monitoring Methods*. RSPB, Sandy.

Gilbert, G., Stanbury, A. & Lewis, L., (2021). *Birds of Conservation Concern in Ireland 2020–2026*. Irish Birds, Volume 9, p. 523–544 .

ILP, (2023). *Bats and Artificial Lighting at Night*. Guidance Note (GN) 08/23., s.l.: Institute of Lighting Professionals.

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.

Kelly, J., O'Flynn, C. & Maguire, C., (2013). *Risk Analysis and Prioritisation for Invasive and Non-Native Species In Ireland and Northern Ireland* , s.l.: Invasive Species Ireland for The Northern Ireland Environment Agency and the National Parks and Wildlife Service. Available at: [Microsoft Word - Risk analysis and prioritization 29032012 FINAL.docx](#) (Last accessed July 2025).

Lewis, L. J. & Tierney, T. D. (2014) *Low tide waterbird surveys: survey methods and guidance notes*. Irish Wildlife Manuals, No. 80. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland

Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N., (2011) *Landscape conservation for Irish bats & species specific roosting characteristics*. Bat Conservation Ireland.

Marnell, F., Looney, D. & Lawton, C. (2019) *Ireland Red List No. 12: Terrestrial Mammals*. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland. [Ireland](#)

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 [IWM134.pdf](#)

Mathews, F., Richardson, S., Lintott, P.R., Hosken, D., (2016). Understanding the Risk to European Protected Species (bats) at Onshore Wind Turbine Sites to inform Risk

Middleton, Neil & Froud, Andrew & French, Keith. (2022). Social Calls of the Bats of Britain and Ireland 2nd Edition. 10.53061/OELT7442.

National Roads Authority (NRA) (2009). *Guidelines for Assessment of Ecological Impacts of National Road Schemes*. Revision 2. National Roads Authority, Dublin.

Perrin, P.M., FitzPatrick, Ú. & Lynn, D. (2018) The Irish Vegetation Classification – An Overview of Concepts, Structures and Tools. In Practice – Bulletin of the Chartered Institute of Ecology and Environmental Management. Issue 102.

Perrin, P. M. (2024) Handbook for the Irish Vegetation Classification. Series No. 38. National Biodiversity Data Centre, Waterford, Ireland.

Russ, J. (2012) *British Bat Calls: A Guide to Species Identification*. Pelagic Publishing, Exeter.

Smith, G.F., O'Donoghue, P., O'Hora, K. & Delaney, E. (2011) Best Practice Guidance for Habitat Survey and Mapping. The Heritage Council, Kilkenny.  
[best practice guidance habitat survey mapping onscreen version 2011 8mb.pdf](#)

## FIGURES

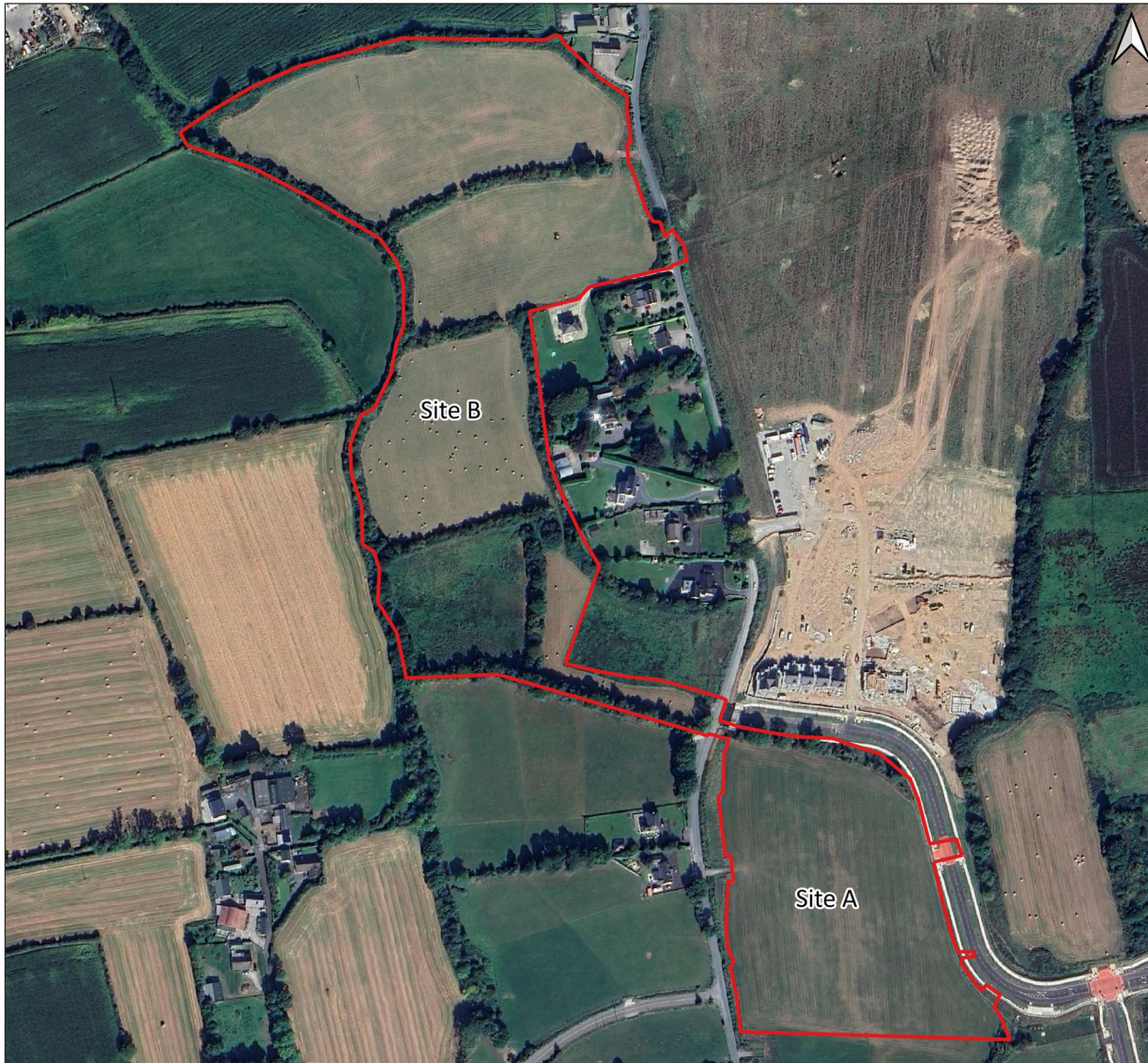


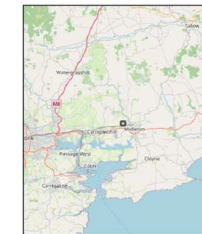
Figure Reference: [P00017150 - Water Rock LRD]

© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

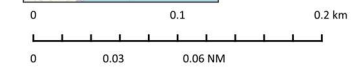
**Water Rock LRD**  
P00017150

**Site Location**

Site Boundary



**Notes**  
Basemap: ESRI  
OpenStreetMaps (2026).  
Coordinate System:  
ETRS89-IRE [ETRF2000] /  
Irish Transverse Mercator






Scale: 1:4000 @ A4 Date: 30/03/2026 Drawn by: JK Checked by: RC Approved by: RC

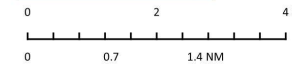
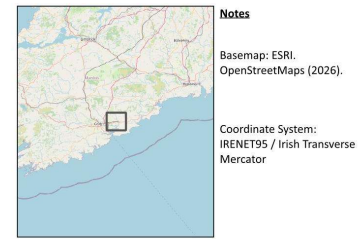
APEM Group,  
Unit 609,  
Harbour Point Business Park,  
Little Island,  
Cork  
T45 D230  
<http://www.apemltd.com>



**Figure 1: Site Location**

**Natura 2000 Sites**

-  Site Boundary
-  Special Protection Area (SPA)
-  Special Area of Conservation (SAC)



Scale: 1:90000 @ A4    Date: 06/03/2026    Drawn by: JK    Checked by: RC    Approved by: RC

APEM Group,  
Unit 609,  
Harbour Point Business Park,  
Little Island,  
Cork  
T45 D230  
<http://www.apemtd.com>



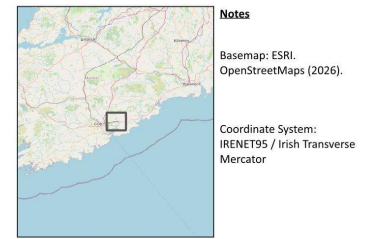
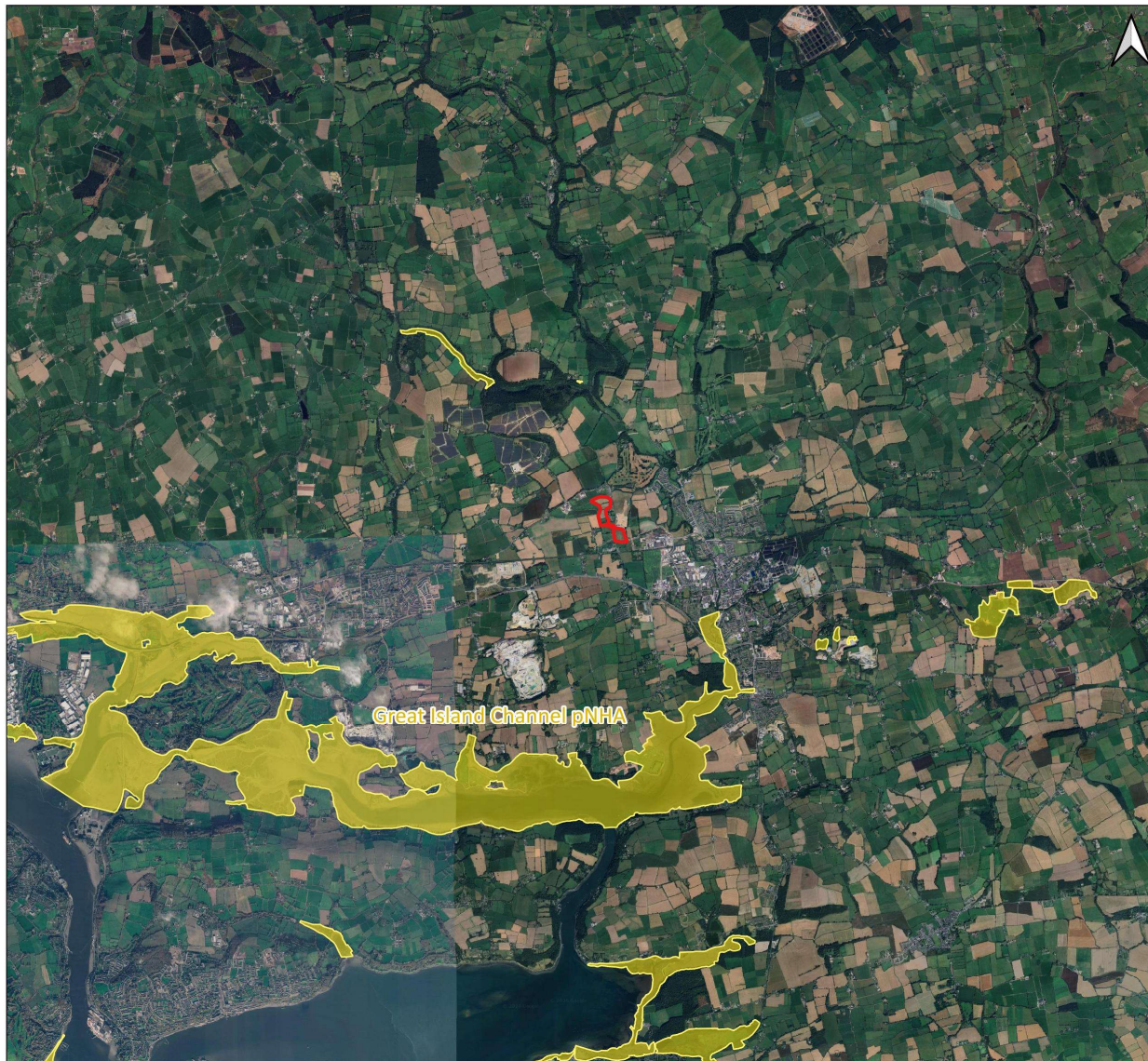
Figure Reference: [P00017150 - Water Rock LRD Natura]

© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

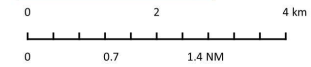
**Figure 2: Nature Conservation Sites**

**Proposed Natural Heritage Area**

- Site Boundary
- pNHA



**Notes**  
 Basemap: ESRI, OpenStreetMaps (2026).  
 Coordinate System: IRENET95 / Irish Transverse Mercator



Scale: 1:90000 @ A4    Date: 06/03/2026    Drawn by: JK    Checked by: RC    Approved by: RC

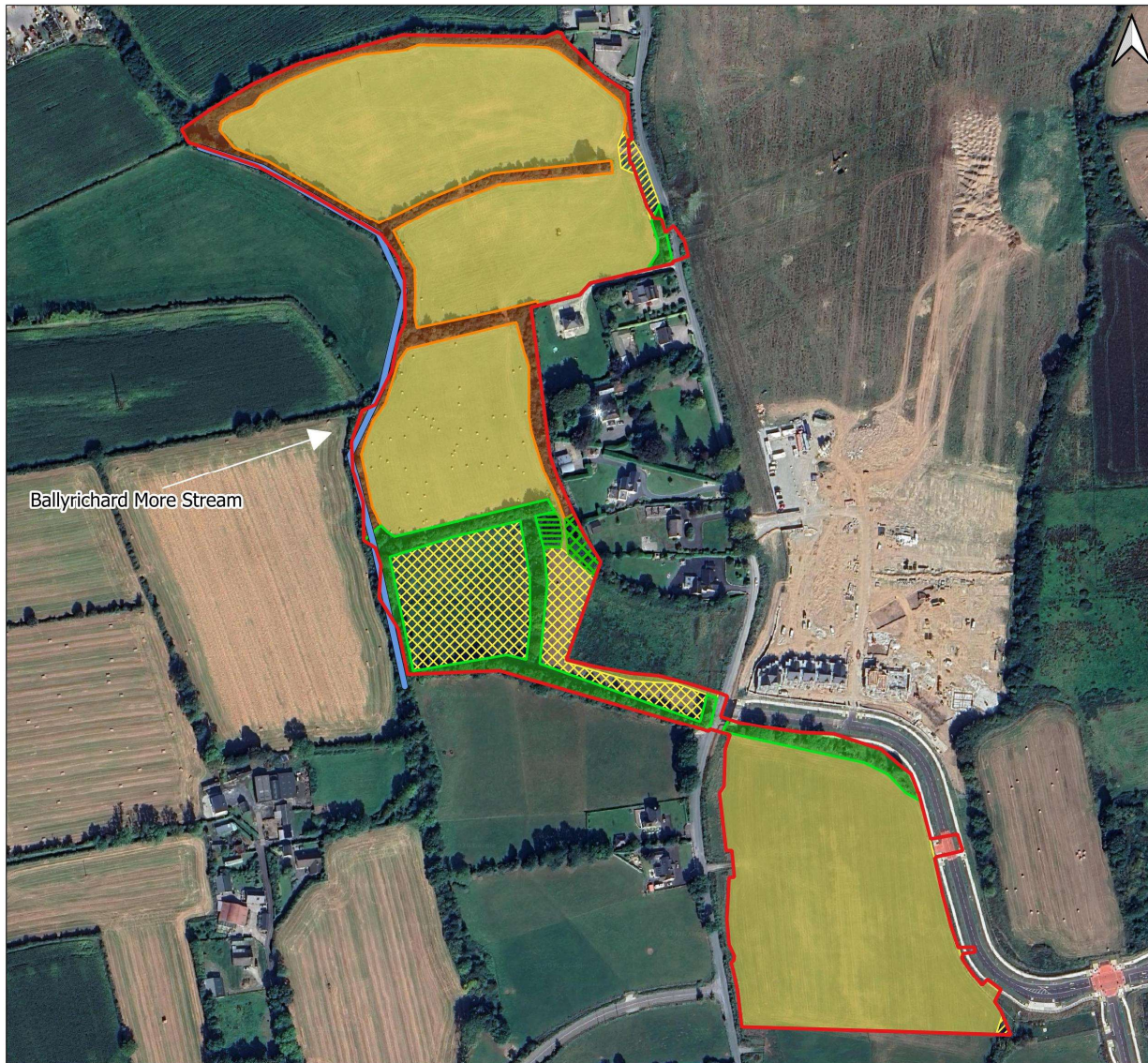
APEM Group,  
 Unit 609,  
 Harbour Point Business Park,  
 Little Island,  
 Cork  
 T45 D230  
<http://www.apemtd.com>



Figure Reference: [P00017150 - Water Rock LRD Natura]

© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

**Figure 3: Proposed Natural Heritage Area**

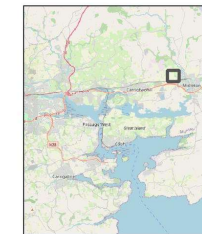


Ballyrichard More Stream

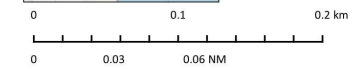
### Water Rock LRD P00017150

### Habitat Survey Results

- Site Boundary
- GA1 Agricultural grassland
- ED3 Re-colonising ground
- GS4 Wet grassland / Agriculture
- WS2 Immature woodland
- WS1 Scrub
- WL1 Hedgerow
- WL2 Treeline



**Notes**  
 Basemap: ESRI  
 OpenStreetMaps  
 (2025).  
 Coordinate System:  
 IRENET95 / Irish  
 Transverse Mercator



Scale: 1:4000 @ A4      Date: 30/03/2026      Drawn by: JK      Checked by: MR      Approved by: MR

APEM Group,  
 Unit 609,  
 Harbour Point Business Park,  
 Little Island,  
 Cork  
 T45 D230  
<http://www.apemltd.com>



Figure Reference: [P00017150 - Water Rock LRD Habitat Survey Map]

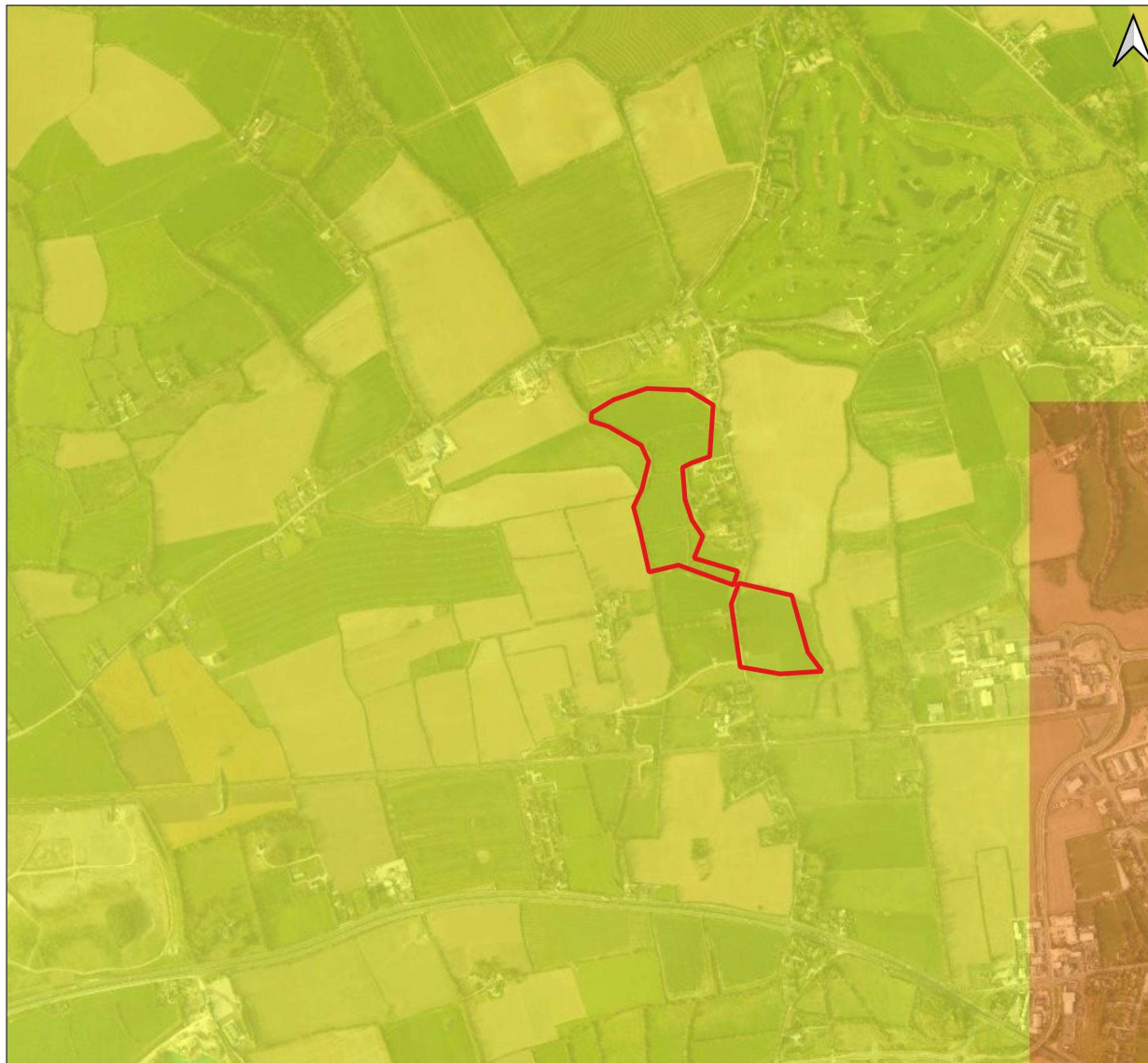
© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

Figure 4: Habitat Map

**Water Rock LRD**  
P00017150

**Bat Habitat Suitability**

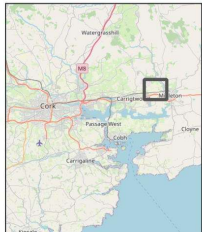
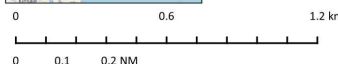
- Site Boundary
- 0.000000 - 13.000000
- 13.000001 - 21.333300
- 21.333301 - 28.111099
- 28.111100 - 36.444401
- 36.444402 - 58.555599



**Notes**

Basemap: ESRI, OpenStreetMaps (2025).

Coordinate System: WGS 84 / Pseudo-Mercator

Scale: 1:23100 @ A4 Date: 27/08/2025 Drawn by: JK Checked by: JG Approved by: JG

APEM Group,  
Unit 609,  
Harbour Point Business Park,  
Little Island,  
Cork  
T45 D230  
<http://www.apemtd.com>



Figure Reference: [P00017150 - Water Rock LRD Bat Habitat Suitability Map]

© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

**Figure 5: Bat Habitat Suitability Map**

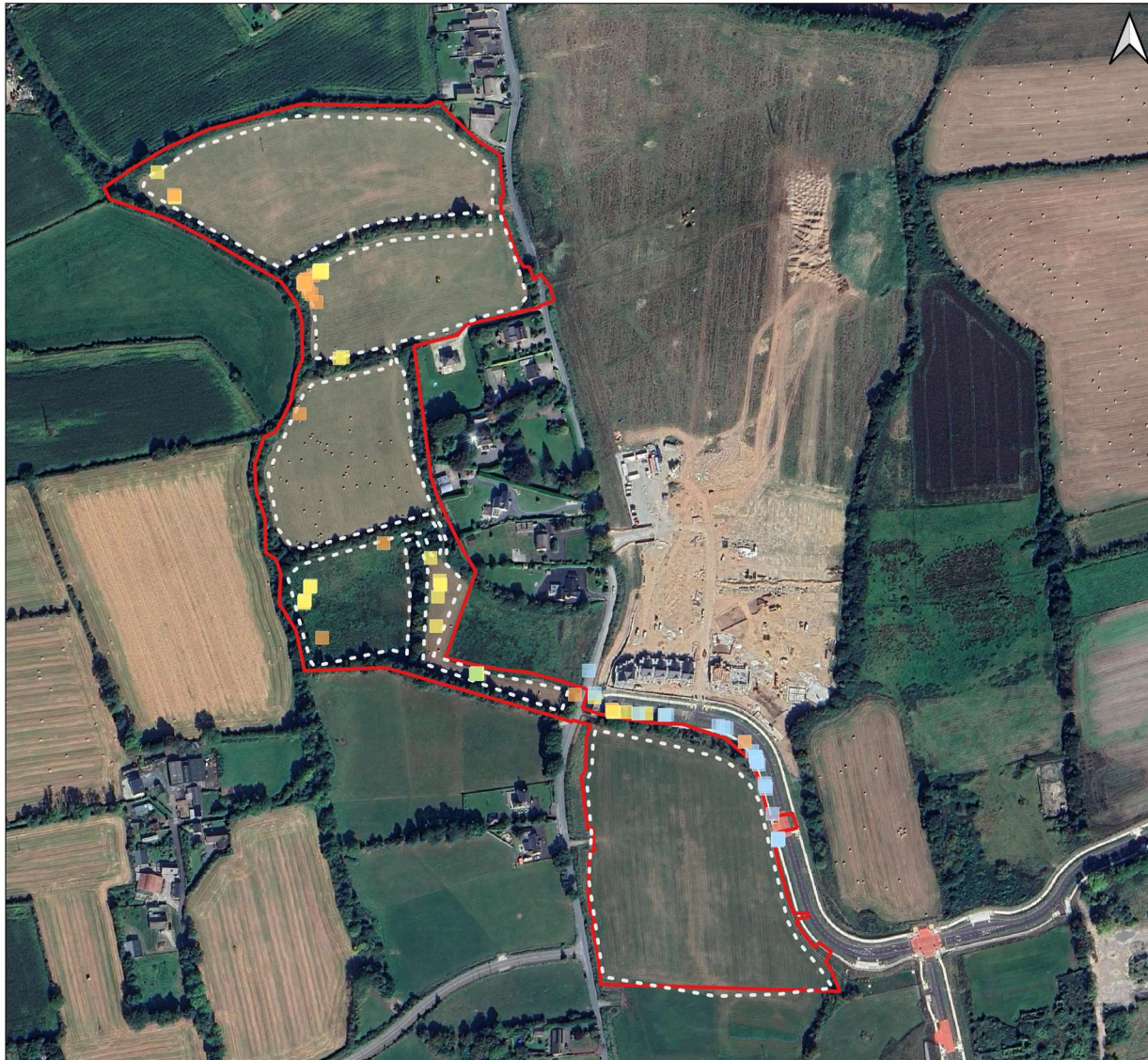


Figure Reference: [P00017150 - Water Rock LRD]

© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

**Water Rock LRD**  
P00017150

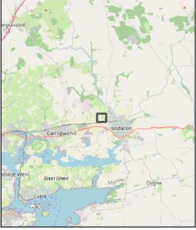
**Spring NBW Results**

- Site Boundary
- Transect Route
- Common pipistrelle
- Soprano pipistrelle
- Leisler's
- Myotis spp.

**Notes**

Basemap: ESRI, OpenStreetMaps (2026).

Coordinate System: ETRS89-IRE [ETRF2000] / Irish Transverse Mercator



0 0.1 0.2 km

0 0.03 0.06 NM

Scale: 1:4500 @ A4    Date: 30/03/2026    Drawn by: JK    Checked by: JG    Approved by: JG

APEM Group  
Unit 609  
Harbour Point Business Park  
Little Island  
Cork  
T45 D230  
<http://www.apemltd.com>



**Figure 6: Spring Nighttime Bat Walkover Results**

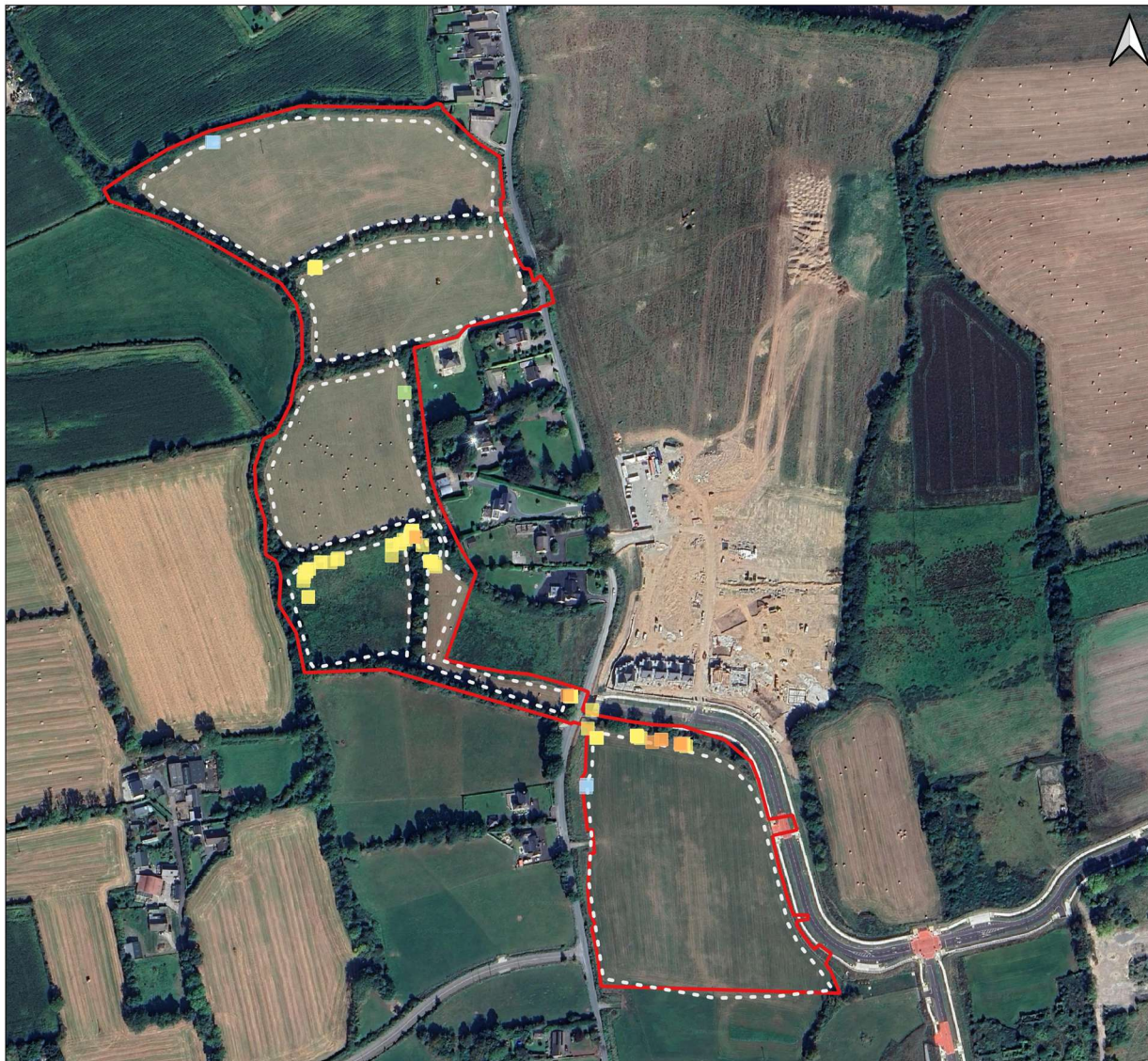


Figure Reference: [P00017150 - Water Rock LRD]

© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

**Water Rock LRD  
P00017150**

**Summer NBW Results**

- Site Boundary
- Transect Route
- Common pipistrelle
- Soprano pipistrelle
- Leisler's
- Myotis spp.

**Notes**

Basemap: ESRI, OpenStreetMaps (2026).

Coordinate System: ETRS89-IRE [ETRF2000] / Irish Transverse Mercator

0 0.1 0.2 km

0 0.03 0.06 NM

Scale: 1:4500 @ A4      Date: 30/03/2026      Drawn by: JK      Checked by: JG      Approved by: JG

APEM Group  
Unit 609  
Harbour Point Business Park  
Little Island  
Cork  
T45 D230  
<http://www.apemltd.com>



**Figure 7: Summer NBW Results**

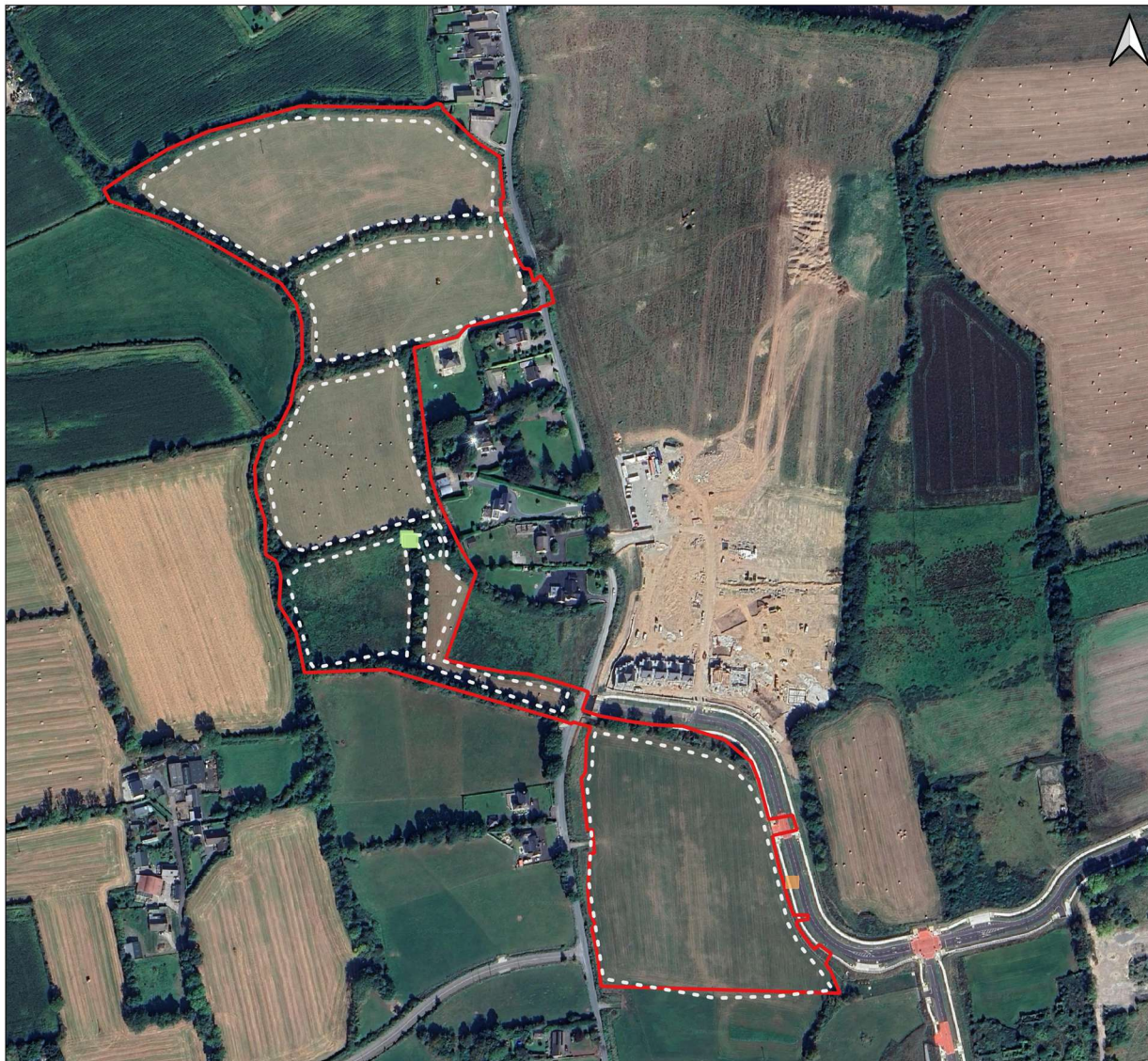


Figure Reference: [P00017150 - Water Rock LRD]

© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

**Water Rock LRD**  
P00017150

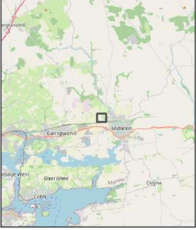
**Autumn NBW Results**

- Site Boundary
- Transect Route
- Soprano pipistrelle
- Myotis spp.

**Notes**

Basemap: ESRI, OpenStreetMaps (2026).

Coordinate System: ETRS89-IRE [ETRF2000] / Irish Transverse Mercator



0 0.1 0.2 km

0 0.03 0.06 NM

Scale: 1:4500 @ A4    Date: 30/03/2026    Drawn by: JK    Checked by: JG    Approved by: JG

APEM Group  
Unit 609  
Harbour Point Business Park  
Little Island  
Cork  
T45 D230  
<http://www.apemltd.com>



**Figure 8: Autumn NBW Results**




Figure Reference: [P00017150 - Water Rock LRD]

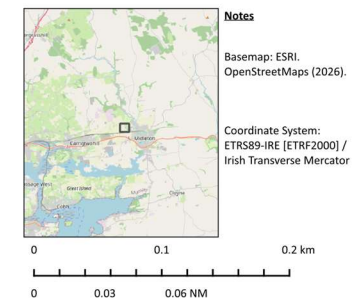
© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

**Water Rock LRD**  
P00017150

**Static Detector Locations**

 Site Boundary

 Static Detector



Scale: 1:4500 @ A4 Date: 30/03/2026 Drawn by: JK Checked by: JG Approved by: JG

APEM Group  
Unit 609  
Harbour Point Business Park  
Little Island  
Cork  
T45 D230  
<http://www.apemltd.com>



**Figure 9: Static Detector Locations**

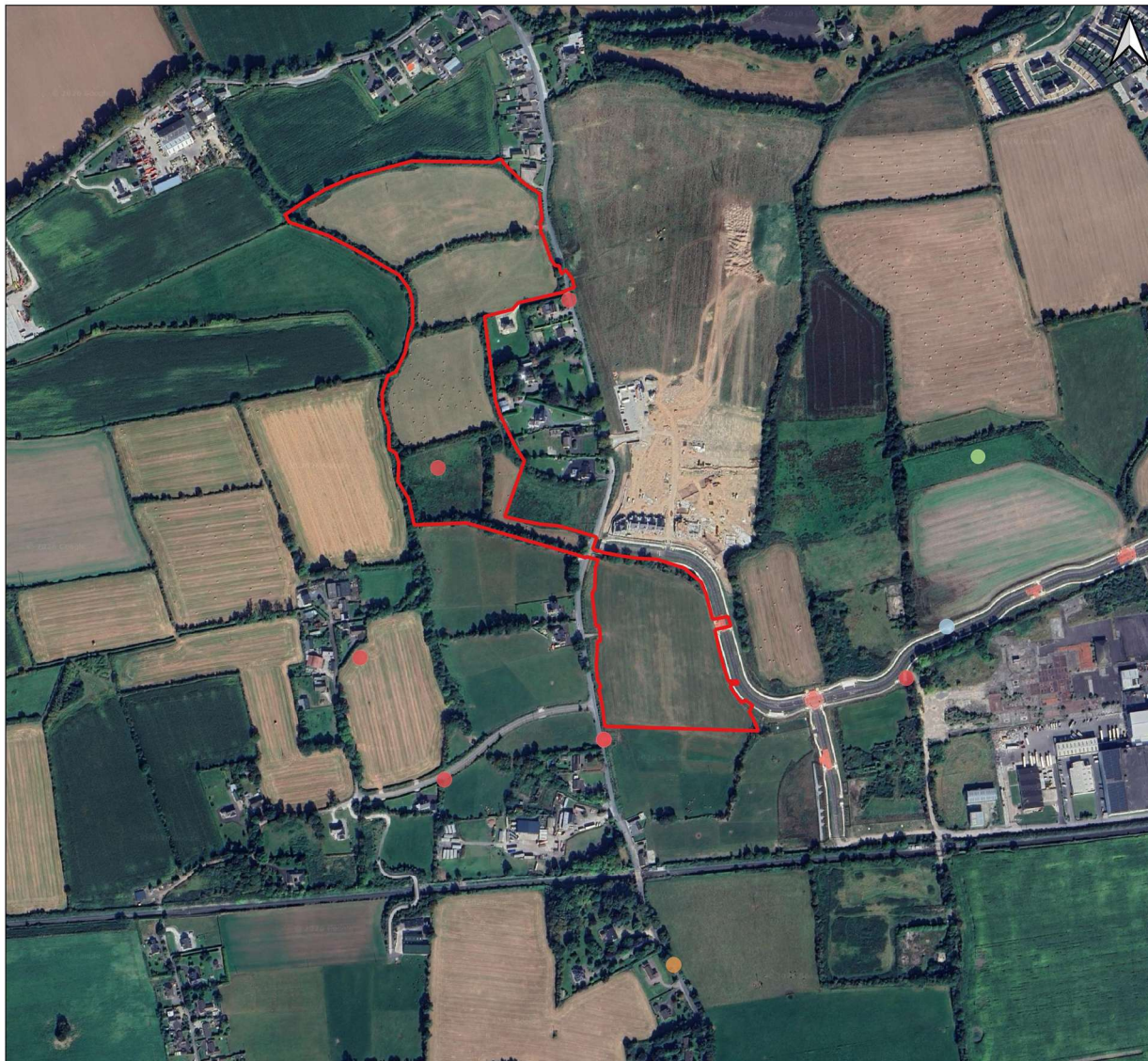


Figure Reference: [P00017150 - Water Rock LRD]

© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.



**Water Rock LRD**  
**P00017150**

**Breeding Bird Surveys**  
**Red-listed Species**

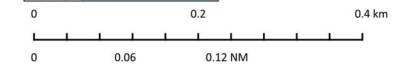
- Site Boundary
- Yellowhammer
- Meadow pipit
- Swift
- Kestrel



**Notes**

Basemap: ESRI, OpenStreetMaps (2026).

Coordinate System: ETRS89-IRE [ETRF2000] / Irish Transverse Mercator



Scale: 1:7000 @ A4      Date: 30/03/2026      Drawn by: JK      Checked by: JG      Approved by: JG

APEM Group,  
Unit 609,  
Harbour Point Business Park,  
Little Island,  
Cork  
T45 D230  
<http://www.apemltd.com>



**Figure 10: Breeding Bird Surveys Red-listed species**

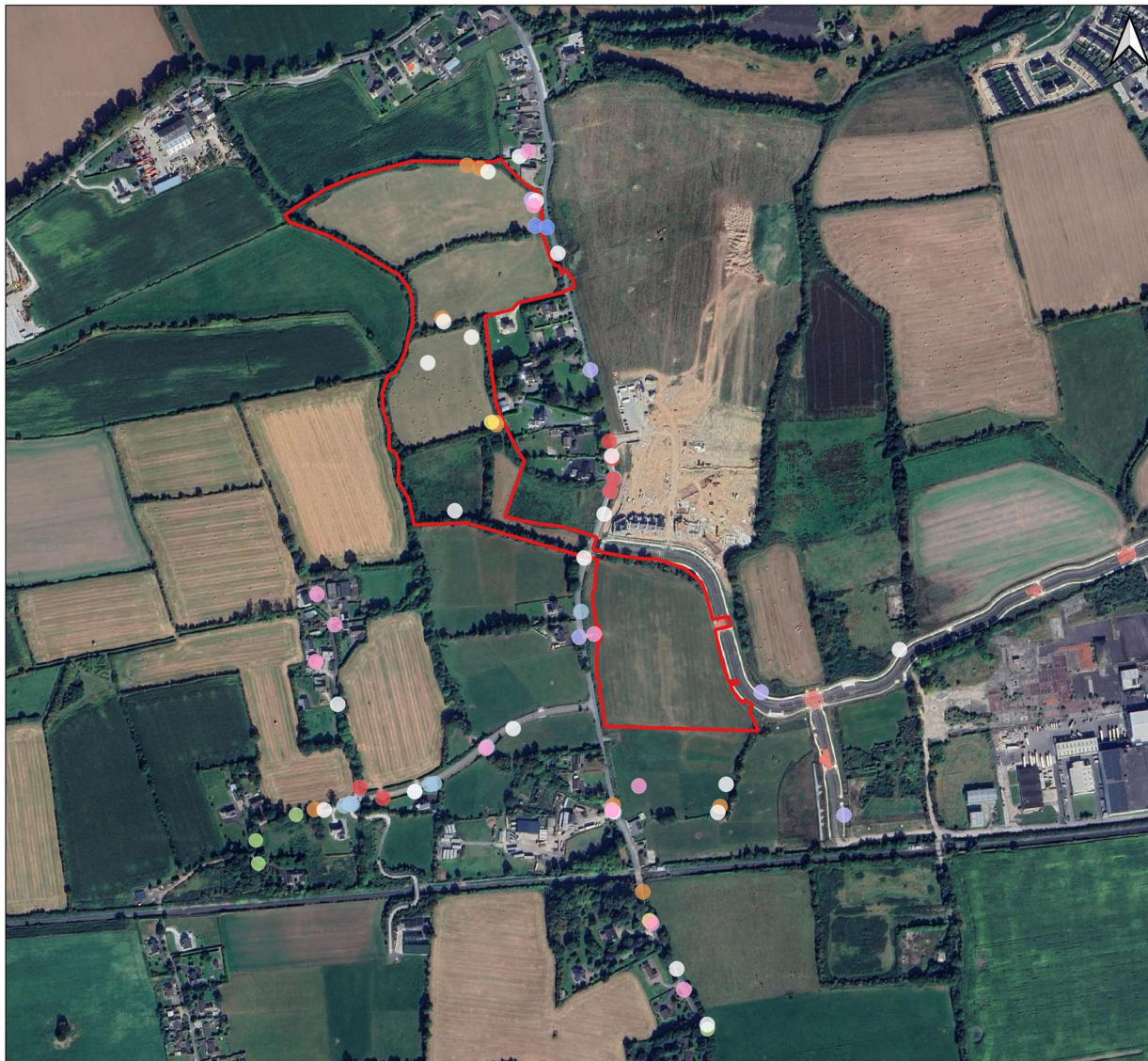


Figure Reference: [P00017150 - Water Rock LRD]

© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

**Water Rock LRD**  
**P00017150**

**Breeding Bird Surveys**  
**Amber-listed Species**

- Site Boundary
- Starling
- Swallow
- House martin
- Greenfinch
- House sparrow
- Goldcrest
- Linnet
- Willow warbler
- Spotted flycatcher

**Notes**

Basemap: ESRI, OpenStreetMaps (2026).

Coordinate System: ETRS89-IRE [ETRF2000] / Irish Transverse Mercator

0 0.2 0.4 km

0 0.06 0.12 NM

Scale: 1:7000 @ A4 Date: 30/03/2026 Drawn by: JK Checked by: JG Approved by: JG

APEM Group,  
Unit 609,  
Harbour Point Business Park,  
Little Island,  
Cork  
T45 D230  
<http://www.apemltd.com>



**Figure 11: Breeding Bird Surveys Amber-listed species**

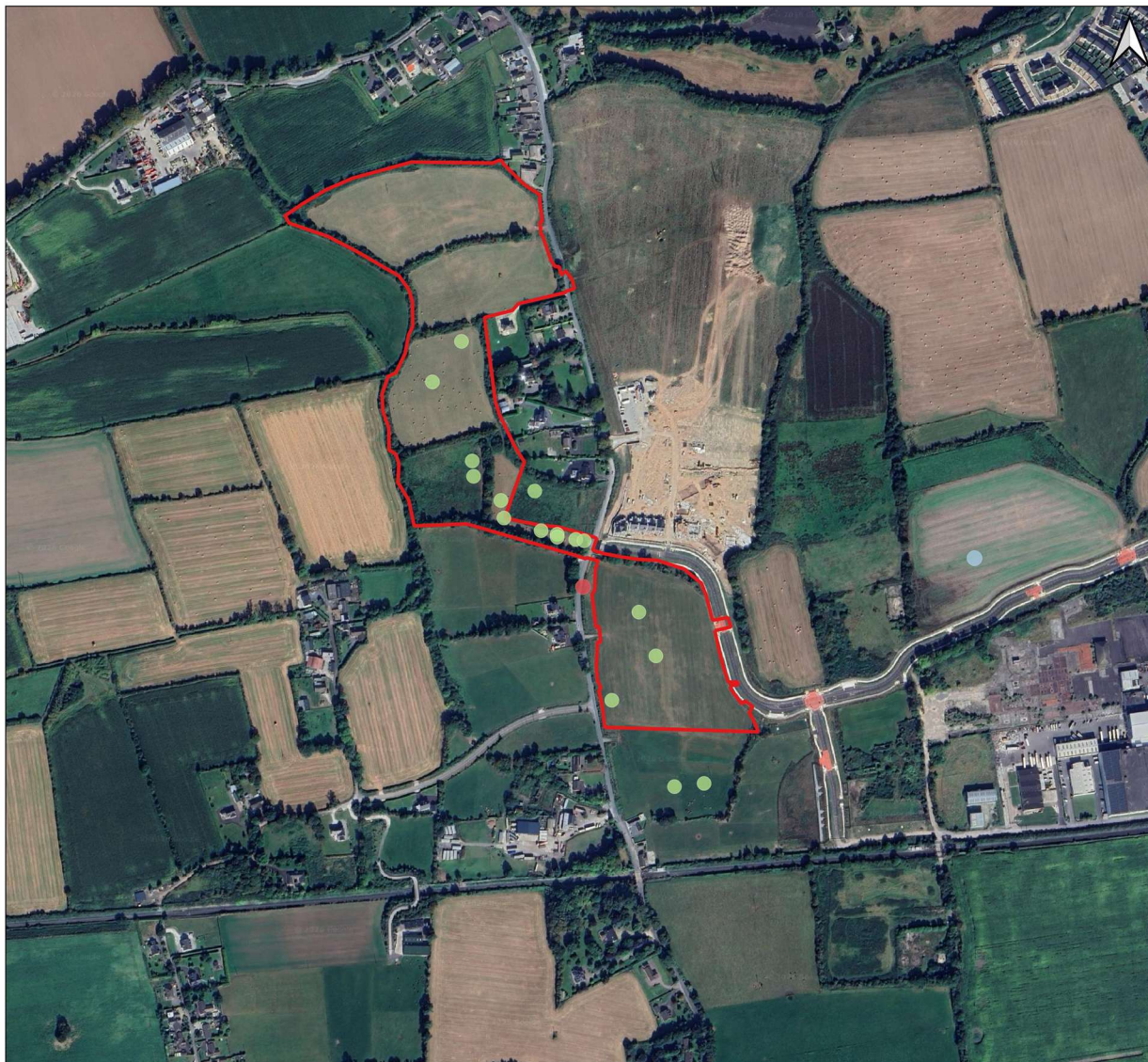


Figure Reference: [P00017150 - Water Rock LRD]

© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

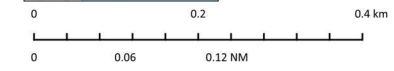
**Water Rock LRD**  
P00017150

**Wintering Bird Surveys**  
**BoCCI Species**

- Site Boundary
- Snipe - Red
- Yellowhammer - Red
- Black-headed gull - Amber



**Notes**  
 Basemap: ESRI, OpenStreetMaps (2026).  
 Coordinate System: ETRS89-IRE [ETRF2000] / Irish Transverse Mercator



Scale: 1:7000 @ A4    Date: 30/03/2026    Drawn by: JK    Checked by: JG    Approved by: JG

APEM Group,  
 Unit 609,  
 Harbour Point Business Park,  
 Little Island,  
 Cork  
 T45 D230  
<http://www.apemltd.com>



**Figure 12: Wintering Bird Surveys Red-listed and Amber-listed species**

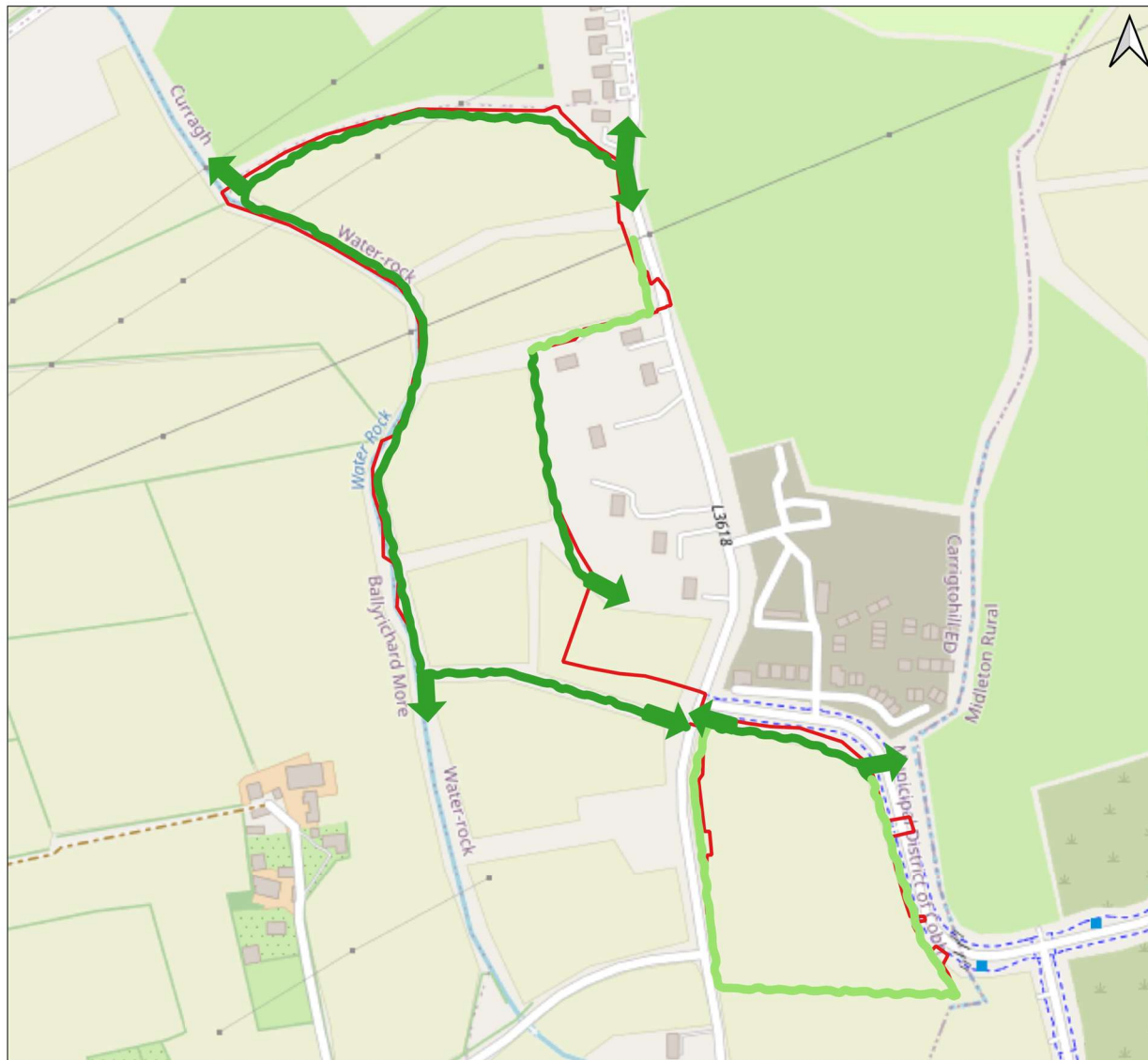






Figure Reference: [P00017150 - Water Rock LRD]

© This drawing and its content are the copyright of APEM Group, and may not be reproduced or amended except by prior written permission.

**Water Rock LRD**  
P00017150

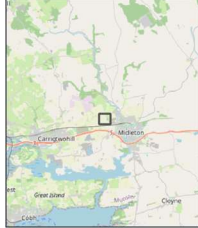
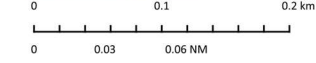
**Post-Development Ecological Connectivity**

-  Site Boundary
-  Wider Landscape Connectivity
-  Retained / enhanced bat corridor
-  Proposed boundary planting

**Notes**

Basemap: ESRI, OpenStreetMaps (2025).

Coordinate System: ETRS89-IRE [ETRF2000] / Irish Transverse Mercator

Scale: 1:4500 @ A4    Date: 30/03/2026    Drawn by: JK    Checked by: RC    Approved by: RC

APEM Group,  
Unit 609,  
Harbour Point Business Park,  
Little Island,  
Cork  
T45 D230  
<http://www.apemltd.com>



**Figure 13: Post-development ecological connectivity for bats, as identified during the NBW surveys and current suitable habitat.**

## **SITE PHOTOGRAPHS**



**Plate 1: GA1 Agricultural Grassland Site A - April 2025**



**Plate 2: GA1 Agricultural Grassland Site B - April 2025**



**Plate 3: GA1 Agricultural Grassland Site B - June 2025**



**Plate 4: GS4 Wet Grassland Site B - April 2025**



**Plate 5: WL1 Hedgerow Site B (removed) – April 2025**



**Plate 6: WL1 Hedgerow Site B (retained) – April 2025**



**Plate 7: WL2 Treeline Site A (retained) – April 2025**



**Plate 8: WL2 Treeline Site B (retained) – April 2025**



**Plate 9: WS1 Scrub Site B – April 2025**



**Plate 10: WS2 Immature Woodland Site B – April 2025**



**Plate 11: ED3 Recolonising Bare Ground – April 2025**



**Plate 12: FW2 Depositing/Lowland River – April 2025**



**Plate 13: Static Detector D.01 Location**



**Plate 14: Static Detector D.01 Linear Feature**



**Plate 15: Static Detector D.02 Location**



**Plate 16: Static Detector D.02 Linear Feature**



**Plate 17: Static Detector D.03 Location**



**Plate 18: Static Detector D.03 Linear Feature**

## Appendix A: Assessment Criteria

### Geographic frame of reference used to determine ecological value (NRA, 2009a)

| Importance                             | Criteria   |
|--|--|
|  | <ul style="list-style-type: none"> <li>• ‘European Sites’ including Special Areas of Conservation (SACs), Sites of Community Importance (SCIs), or Special Protection Area (SPAs).</li> <li>• Proposed Special Area of Conservation (pSAC) or proposed Special Protection Area (pSPA).</li> <li>• Site that fulfils the criteria for designation as a ‘European Site’ (see Annex III of the Habitats Directive, as amended).</li> <li>• Features essential to maintaining the coherence of the Natura 2000 Network.</li> <li>• Site containing ‘best examples’ of the habitat types listed in Annex I of the Habitats Directive.</li> <li>• Resident or regularly occurring populations (assessed to be important at the national level) of the following:                             <ul style="list-style-type: none"> <li>• Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or</li> </ul> </li> </ul>  |
| <p><b>International Importance</b></p> | <ul style="list-style-type: none"> <li>• Species of animal and plants listed in Annex II and/or IV of the Habitats Directive.</li> <li>• Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat, 1971).</li> <li>• World Heritage Site (Convention for the Protection of World Cultural &amp; Natural Heritage, 1972).</li> <li>• Biosphere Reserve (UNESCO Man &amp; The Biosphere Programme).</li> <li>• Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979).</li> <li>• Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979).</li> <li>• Biogenetic Reserve under the Council of Europe.</li> <li>• European Diploma Site under the Council of Europe.</li> <li>• Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988).</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Sites, habitats and species populations of importance in a national context.</li> <li>• Site designated or proposed as a Natural Heritage Area (NHA) in Ireland.</li> <li>• National or statutory Nature Reserve.</li> <li>• Undesignated site fulfilling the criteria for designation as a Natural Heritage Area (NHA); Statutory Nature Reserve.</li> <li>• Refuge for Fauna and Flora protected under the Wildlife Act; and/or a National Park.</li> </ul> |
| <p><b>National Importance</b></p>      | <ul style="list-style-type: none"> <li>• Site containing ‘viable areas’<sup>1</sup> of habitat types listed in Annex I of the Habitats Directive.</li> <li>• Resident or regularly occurring populations (assessed to be important at the national level in Ireland) of the following:                             <ul style="list-style-type: none"> <li>• Species protected under the Wildlife Acts; and/or</li> <li>• Species listed on the relevant Red Data list.</li> </ul> </li> <li>• Site containing ‘viable areas’ of the habitat types listed in Annex I of the Habitats Directive. Species listed on the relevant Red Data list.</li> </ul>  |

|   |  |
|---|--|
| <p><b>Regional/County Importance</b></p>            | <ul style="list-style-type: none"> <li>• Area of Special Amenity.</li> <li>• Area subject to a Tree Preservation Order.</li> <li>• Area of High Amenity, or equivalent, designated under the County Development Plan.</li> <li>• Resident or regularly occurring populations (assessed to be important at the County level) of the following:             <ul style="list-style-type: none"> <li>• Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;</li> <li>• Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;</li> <li>• Species protected under the Wildlife Acts (Ireland); and/or</li> <li>• Species listed on the relevant Red Data list.</li> </ul> </li> <li>• County important populations of species; or viable areas of semi-natural habitats; or natural heritage features identified in the National or Local BAP; if this has been prepared.</li> <li>• Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance.</li> <li>• Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county.</li> <li>• Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.</li> </ul> |
| <p><b>Townland or Local (Higher) Importance</b></p> | <ul style="list-style-type: none"> <li>• Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared;</li> <li>• Resident or regularly occurring populations (assessed to be important at the Local level) of the following:             <ul style="list-style-type: none"> <li>• Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;</li> <li>• Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;</li> <li>• Species protected under the Wildlife Acts; and/or</li> <li>• Species listed on the relevant Red Data list.</li> </ul> </li> <li>• Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality;</li> <li>• Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.</li> </ul>  |
| <p><b>Site or Local (Lower) Importance</b></p>      | <ul style="list-style-type: none"> <li>• Sites containing small areas of semi-natural habitat that are of some local importance for wildlife;</li> <li>• Sites or features containing non-native species that are of some importance in maintaining habitat links.</li> </ul>  |

## Description of Effects

**Beneficial or Adverse [EJ1]:** Beneficial and Adverse impacts and effects should be determined according to whether the change is in accordance with nature conservation objectives and policy. A beneficial change improves the quality of the environment e.g. by increasing species diversity, extending habitat or improving water quality. This may also include halting or slowing an existing decline in the quality of the environment. An adverse change reduces the quality of the environment e.g. destruction of habitat, removal of foraging habitat, habitat fragmentation, pollution.

**Extent:** The extent is the spatial or geographical area over which the impact/effect may occur under a suitably representative range of conditions (e.g. noise transmission under water).

**Magnitude:** Magnitude refers to size, amount, intensity and volume. It should be quantified if possible and expressed in absolute or relative terms e.g. the amount of habitat lost, percentage change to habitat area, percentage decline in a species population.

**Duration:** Duration should be defined in relation to ecological characteristics (such as the lifecycle of a species) as well as human timeframes. For example, five years, which might seem short-term in the human context or that of other long-lived species, would span at least five generations of some invertebrate species. The duration of an activity may differ from the duration of the resulting effect caused by the activity. For example, if short-term construction activities cause disturbance to birds during [EJ2] their breeding period, there may be long-term implications from failure to reproduce that season. Impacts and effects may be described as short, medium or long-term and permanent or temporary. These will need to be defined in months/years.

**Frequency and Timing:** The number of times an activity occurs will influence the resulting effect. For example, a single person walking a dog will have very limited impact on nearby waders using wetland habitat, but numerous walkers will subject the waders to frequent disturbance and could affect feeding success, leading to displacement of the birds and knock-on effects on their ability to survive. The timing of an activity or change may result in an impact if it coincides with critical life-stages or seasons e.g. bird nesting season.

**Reversibility:** An irreversible effect is one from which recovery is not possible within a reasonable timescale or there is no reasonable chance of action being taken to reverse it. A reversible effect is one from which spontaneous recovery is possible or which may be counteracted by mitigation. In some cases, the same activity can cause both reversible and irreversible effects.

## **Appendix B: Site Layout Design**

All hedgerows proposed for removal were subject to full ecological survey, including assessment of roost potential, bat foraging/commuting value, and mammal and bird usage. The EclA sets out the mitigation and design measures incorporated to maintain ecological function and connectivity where practicable (refer to **Section 7**).

The extent of removal reflects the multidisciplinary design process, which considered arboricultural constraints and landscape objectives. Ecological mitigation has been incorporated into the final layout to minimise effects on hedgerows of higher ecological value.

### ***Approach to Site Layout Design***

The proposed layout has full regard to the landscape and open space proposals contained in the Water-Rock Urban Design Framework and the specific zoning objectives of the subject lands. A landscape-led approach has been adopted to the site layout design which has been informed by the following design evolution stages:

#### ***Stage 1***

The carrying out of a detailed Tree Appraisal and Arboricultural Assessment at the project outset by GeoTree to identify which elements were important to retain. A total of 77 individual trees and 10 tree groups were assessed. Five of the individual trees and four of the tree groups were assessed as being Class U trees that should be removed for reasons of sound arboricultural management, consisting of dead or diseased Ash and Elm trees and deemed a hazard. Other trees and groups of trees were categorised from A to C in terms of quality and condition. The arboriculturist also surveyed 17 sections of hedgerow, noting maturity and quality. At the outset it was established that, in line with a landscape-led approach, tree and hedgerow removal would be kept to an absolute minimum, focussing on the removal of those identified as low quality specimens.

#### ***Stage 2***

The approach was also informed by the Compact Settlement Guidelines (2024) in which it notes that developments should positively respond to natural features with particular regard to biodiversity. Conversely, the Guidelines indicate that highest densities should be applied to lands within 1km of an existing or planned high-capacity urban public transport node, such as the Water-Rock Train Station, and decrease with distance. This creates the need for a balance between achieving greater density without undue impact on the existing vegetation.

#### ***Stage 3***

The requirement to increase the density of the proposed scheme was also highlighted by the Council at the first S247 meeting. Any increase in density inevitable requires more compact development patterns with increased impacts on existing field boundaries.

## **Stage 4**

The requirement for all roads, footpaths and cycleways to be Design Manual for Urban Roads and Streets (DMURS) compliant also inadvertently reduces the ability of the design team to respond flexibly to trees and hedgerows within the site.

Arising from these conflicting pressures, the design team has endeavoured to retain and utilise high quality trees and hedgerow where possible, guided by the arborists report. This is not only in view of their important role in relation to biodiversity but also as a key asset to define and enhance attractive landscaped areas. Public open spaces have been designed and located to maximise the retention of ecological features such as the areas of scrub/transitional woodland habitat in Parcel B, while offering valuable recreational opportunities for residents. Arising from this approach the resulting proposed removals have been minimised as follows:

5 no. U Class individual trees as originally envisaged, with the addition of the removal of 14 other trees (2 no. Class A, 9 no. Class B and 3 no. Class C) identified to support the development.

The removal of 4 no. U Class groups of trees as originally envisaged, with the addition of the removal of a C2 Class tree group.

The removal of 6 sections of hedgerow and 2 partial sections, 4 of these are of poor or fair quality, in total this equates to 516m.

However, as can be seen from Figure below, substantial compensatory planting is proposed in the form of 226 no. open space trees, 329 no street trees, 16 no. orchard trees, and 253 no garden trees. In addition, the planting of 37 no. tall shrubs is proposed, alongside the planting of 835m of native hedgerow and 110m of pollinator hedge. Overall, it has been a primary objective of the design team to ensure that there will be a biodiversity net gain associated with the proposed development.

### **Green Blue Infrastructure – Extracted from Landscape Report**

The Council commissioned Water-Rock Urban Design Framework 2020 acknowledges:

‘As the nature of the site changes as the Water-Rock settlement develops, the context for the existing hedgerows also changes.

Within the new development, different conditions will arise whereby it will sometimes be appropriate to retain hedgerows, and sometimes to remove them. Each development site should examine the ecological features within its zone of impact, and make balanced and appropriate proposals for removal and/or retention’.

The approach to the site layout has been developed having regard to this, informed by detailed site-specific survey work focused on retention of areas of highest hedgerow value while balancing the critical policy need to deliver compact urban development forms consistent with the UEA designation for the area.





NOTE: THIS DRAWING IS INTENDED FOR THE PURPOSE OF MAKING A PLANN APPLICATION AND MAY NOT BE USED FOR ANY OTHER PURPOSE.

| REV | DATE | AMENDMENT |
|-----|------|-----------|
|     |      |           |

CUNNANE STRATTON REYNOLDS  
LAND PLANNING & DESIGN

CORK OFFICE  
CORLEY HALL, COTTERS STREET, CORK  
TEL: 021 486 9224 FAX: 021 486 9012  
EMAIL: corkinfo@csrdplan.ie



**DRAFT**

|   |                     |
|---|---------------------|
| PROJECT:<br>WATER ROCK, MIDDLETON<br>CORK | DATE: MARCH 2026    |
| DRAWING:<br>BIODIVERSITY LOSS/GAIN        | SCALE: NOT TO SCALE |
|   | DRAWN:<br>CHECKED:  |
|   | DRAWING NO: 25190-2 |

## Appendix C: Ballyrichard More Stream Assessment

The purpose of a Water Framework Directive (WFD) assessment is to determine whether specific components or activities associated with a proposed development will compromise WFD objectives or result in a deterioration or prevent the improvement of the status of any water bodies in the vicinity or downstream of the proposed development site. This Ballyrichard More stream desk-based assessment has been prepared as a proportionate appraisal of the potential of the proposed development to affect the stream and WFD water bodies. The Ecological Impact Assessment (EclA) applies a precautionary Good to High baseline status to the stream in the vicinity of the proposed development to ensure that the potential deterioration risk is not underestimated and that mitigation is appropriately robust to comply with the WFD. Detailed construction and operational phase measures to prevent deterioration of water body status are provided in the EclA, SuDS and CEWMP.

### Classification and Status

The proposed development site is located within the Lee, Cork Harbour and Youghal Bay catchment (ID 19) and the Owennacurra\_SC\_010 sub-catchment (ID 19\_13).

There is a short watercourse which runs alongside the western border of the site, which is named locally as Ballyrichard More stream. At this location it is not classed as a WFD water body, but further downstream it is mapped by the EPA as part of the Owennacurra\_040 water body (IE\_SW\_19O030500) and is named the Oatencake at this point. The Ballyrichard More stream and the Oatencake stream are therefore different reaches of the same stream. Although the water quality status of the Owennacurra\_040 (2019-2024) is defined as Poor<sup>20</sup>, this is based on data from a survey location on the main Owennacurra river flowing through Midleton itself (see Figure C.1 below). The Oatencake stream is not monitored and therefore no data are available.

The Ballyrichard More stream empties into the Owenacurra Estuary (IE\_SW\_060\_0400). The water quality status of this transitional waterbody (2016-2021) is Moderate.

### *Owennacurra Sub-catchment*

The Owennacurra River and its associated tributaries form the primary hydrological network within the Owennacurra\_SC\_010 sub-catchment. The lowest river water body in this system is mapped as Owennacurra\_040, which incorporates both the main downstream continuation of the Owennacurra\_030 water body and the separate Oatencake stream that drains the lands of Water-Rock. Both channels ultimately discharge to the same receiving Owenacurra Estuary (IE\_SW\_060\_0400).

The main Owennacurra\_040 waterbody flows southwards from Owennacurra\_030 through Midleton before entering the estuary. This section is the primary continuation of the Owennacurra River and is subject to pressures associated with diffuse urban sources from Midleton town. It has been classified

---

<sup>20</sup> [https://www.catchments.ie/data/#/waterbody/IE\\_SW\\_19O030500?\\_k=0trxa1](https://www.catchments.ie/data/#/waterbody/IE_SW_19O030500?_k=0trxa1)

as “At Risk” due to its Poor biological status and the influence of urban runoff and wastewater-related pressures.

In contrast, the western Owennacurra\_040 waterbody (herein Oatencake) is recognised downstream of the proposed development site. Although the EPA classifies both branches under the single waterbody code IE\_SW\_19O030500 (Owennacurra\_040), they represent separate water bodies with distinct source areas and drainage characteristics. The Oatencake does not run through the urban area of Middleton and is therefore assumed to have fewer urban pressures; it is, however, in an area of intense grazing and cultivation with associated agricultural impacts, so the “At Risk” classification is likely to be equally valid.

The proposed development site is situated directly along the Ballyrichard More stream which connects to Oatencake. Surface water from the site drains to the Ballyrichard More stream. There are no direct hydrological linkages between the site and the main Owennacurra\_040 waterbody. Instead, the site interacts solely with the Ballyrichard More stream and ultimately the Oatencake waterbody, which forms part of the same WFD waterbody designation but represents a different waterbody to the main Owenacurra\_040.

During the ecological surveys, detailed in Section 5 of the EclA, the Ballyrichard More stream along the western boundary of Site B supports continuous flow throughout the year, with water depths that fluctuate naturally in response to rainfall and seasonal conditions. The Ballyrichard More stream is a well-defined but shallow channel with continuous flow and variable depths across its width. The channel substrate is dominated by fine sediments, including sand and small gravel, with intermittent patches of coarser material such as pebbles and cobbles. Banks are heavily vegetated, providing significant shading and instream macrophytes are scarce.

**WFD Status**

The Ecological Status of water bodies is recorded by the EPA and that for Owenacurra\_040 is shown in Table 1, demonstrating a deterioration in quality over time. The WFD risk status for Owenacurra\_040 is “At Risk”.

**Table 1: Owenacurra\_040 WFD Ecological Status**

| Status       | Assessment Technique | Status Confidence         | Value    |
|--------------|----------------------|---------------------------|----------|
| SW 2019-2024 | Monitoring           | Medium confidence         | Poor     |
| SW 2016-2021 | Monitoring           | high confidence           | Moderate |
| SW 2013-2018 | Monitoring           | high confidence           | Moderate |
| SW 2010-2015 | Monitoring           | high confidence           | Moderate |
| SW 2010-2012 | Monitoring           | no information or unknown | Moderate |
| SW 2007-2009 | Monitoring           | no information or unknown | Good     |

**Table 2: Owenacurra EPA Q Value Data**

| Station Code | 1981 | 1983 | 1986 | 1988 | 1994 | 1997 | 1999 | 2003 | 2005 | 2008 | 2011 | 2014 | 2017 | 2020 | 2023 |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| RS19O030500  | 2-3  | 2-3  | 3-4  | 3-4  | 4    | 3-4  | 3-4  | 3-4  | 3-4  | 4    | 3-4  | 3-4  | 3-4  | 3-4  | 3    |

### **Groundwater Bodies**

The Groundwater body Midleton (IE\_SW\_G\_058) underlies the proposed development site. It has Good status. The groundwater vulnerability in this area is Moderate to High (“Groundwater here has natural characteristics that mean it has moderate vulnerability to contamination by human activities.”). It WFD Risk is designated as ‘Review’ and is subject to anthropogenic pressures.

### **Designated Sites**

The nearest hydrologically connected designations are:

**Great Island Channel SAC 001058**, located *ca.* 2 km southeast of the site; and

**Cork Harbour SPA 004030**, located *ca.* 2 km southeast of the site.

A Natura Impact Statement (NIS) has been prepared in support of this planning application which found that there was potential for likely significant impacts on both of these European Sites as a result of the proposed development (Woodrow, 2026). No other sites were considered to be impacted. Mitigation is outlined in the NIS to reduce likely significant effects on the Great Island Channel SAC and Cork Harbour SPA.

### **Characteristics of the Proposed Development**

The proposed development site comprises predominantly improved agricultural grassland, with fields bounded by hedgerows and treeline. To the south of Site B, a low-lying field supports an area of wet grassland near the Ballyrichard More stream. This grassland supports semi-natural grassland species typical of seasonally damp soils.

Well established hedgerow and treeline define the site boundary and subdivide individual fields. These linear features support a variety of native tree and shrub species, provide structural connectivity across the landscape, and function as important ecological corridors. The Landscaping Plan accompanying this application retains the majority of high-quality hedgerow and treeline habitat along the site boundary and along the Ballyrichard More stream. Where feasible, existing linear features will be preserved, and sections of lower ecological value will be strengthened through targeted planting of additional native species to enhance continuity, structure, and biodiversity value.

It is recommended that soil from the wet grassland field be reused in areas designated for wildflower meadows located on the proposed dry detention basins. This soil contains a seed bank adapted to periodic moisture and nutrient conditions characteristic of the existing wet grassland, thereby supporting the successful establishment of species-rich meadow habitat and maintaining continuity with the site’s existing botanical community.

### **Potential Impacts and Mitigation**

Relevant measures to manage surface water runoff and protect downstream water quality will be implemented in accordance with a Sustainable Drainage System (SuDS) and the Construction Environmental and Waste Management Plan (CEWMP). Potential construction and operational phase surface water impacts are also addressed in detail within **Section 7** of the EclA. As the Ballyrichard More

stream is not an EPA monitored section of the Owennacurra\_040 waterbody, this assessment applies a precautionary Good to High baseline status to ensure that no potential deterioration risk is underestimated and that mitigation is appropriately robust to comply with the Water Framework Directive.

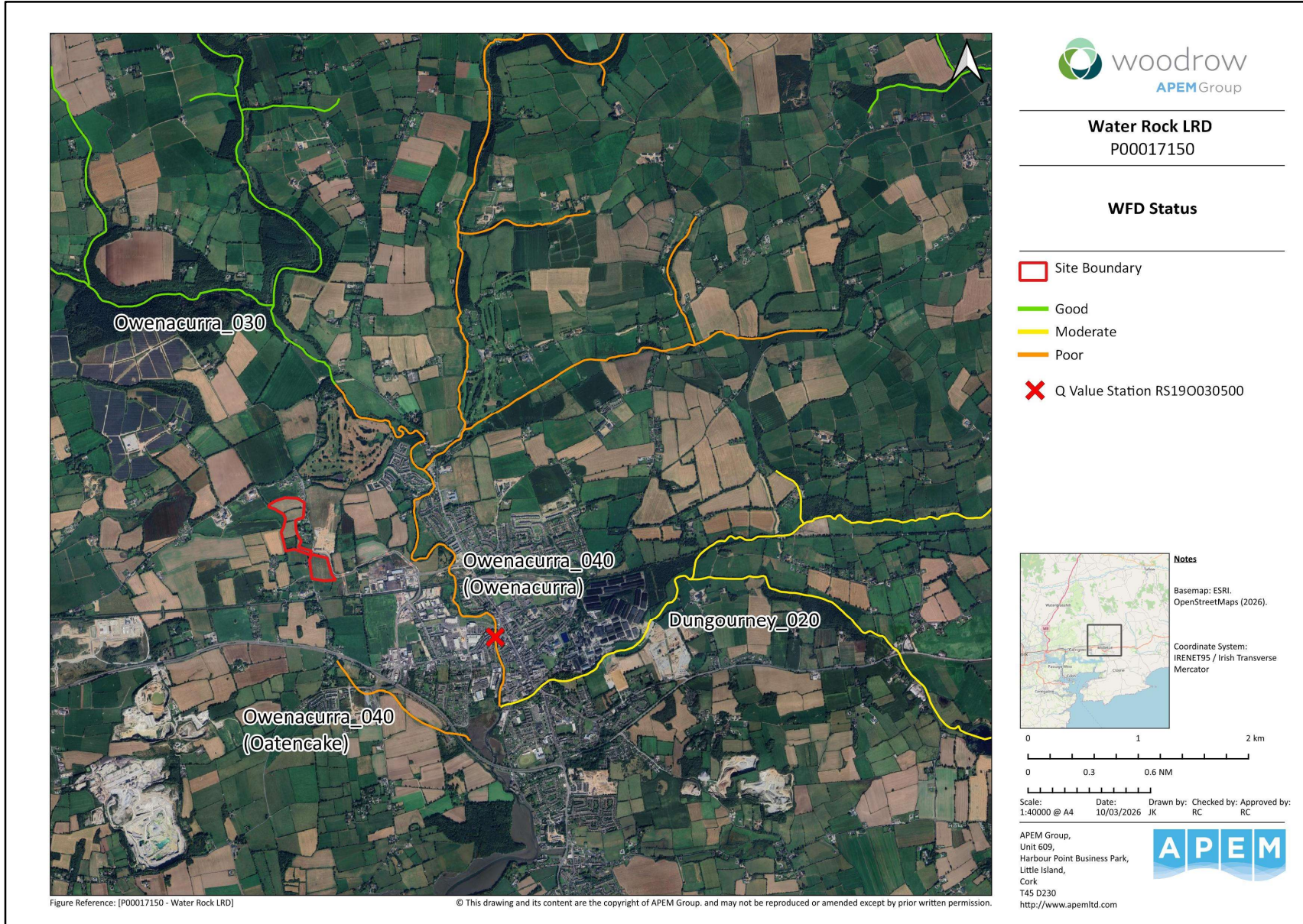


Figure C.1: The proposed development site in relation to Owenacurra\_040 (Oatencake) and Owenacurra\_040 (Owenacurra)