

# Tallaght to Knocklyon Cycle Route

Ecological Impact Assessment

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South Dublin County Council

County Hall

Tallaght

DUBLIN 24

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## Contract

This report describes work commissioned by South Dublin County Council, by a letter dated 09/09/2021. Malin Lundberg and Mark Desmond of JBA Consulting carried out this work.

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## Abbreviations

AA	Appropriate Assessment
CIEEM	Chartered Institute of Ecology and Environmental Management
CEMP	Construction Environmental Management Plan
DoEHLG	Department of Environment, Heritage and Local Government
EC	European Communities
EclA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EU	European Union
BAP	Biodiversity Action Plan
NBDC	National Biodiversity Data Centre
NHA	Natural Heritage Area
NPWS	National Parks and Wildlife Service
pNHA	proposed Natural Heritage Area
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SDCC	South Dublin County Council
SPA	Special Protection Area
WFD	Water Framework Directive
ZOI	Zone of Influence



# 1 Introduction

JBA Consulting Ireland Ltd. has been commissioned by South Dublin County Council (SDCC) to undertake an Ecological Impact Assessment (EiA) in relation to a proposed cycle route between Tallaght and Knocklyon, South Dublin. The proposed development, which will be submitted under Part 8 of the Planning and Development Act (2000) as amended, consists of a cycle route constructed on existing roadways and green areas with existing footpaths.

## 1.1 Aims

The aims of this EiA are to:

- Establish baseline ecological conditions to enable identification of potentially important ecological features within the zone of influence of the project
- Determine the ecological value of identified ecological features
- Assess the significance of impacts of the proposed project on ecological features of value
- Identify avoidance, mitigation or compensatory measures
- Identify residual impacts after mitigation and the significance of their effects
- Identify opportunities for ecological / biodiversity enhancement

## 1.2 The Existing Site

The location for the development is South Dublin, in the areas of Tallaght, Firhouse, Ballyboden, and Knocklyon. The proposed cycle route will run from Old Bawn Road, Tallaght, to Ballyboden Way, Ballyboden (Figure 1-1). There will be several additions or diversions to this main route. Figure 1-1 also shows names of roads and places that are referred to in the following sections of the report to indicate location of certain ecological features.

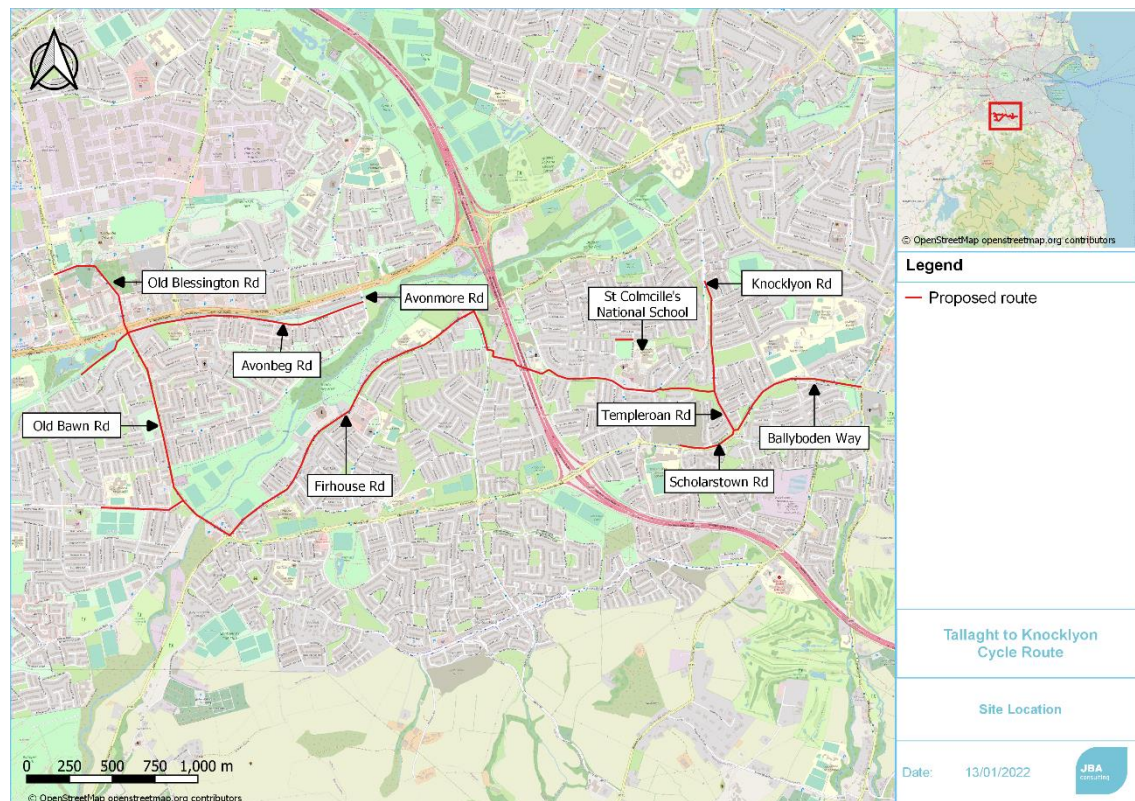


Figure 1-1: Site location (Source: OpenStreetMap openstreetmap.org contributors)

## 2 Project Description

### 2.1 The 'Project'

The proposed cycle route will primarily run along the existing roads or footpaths. Of the total 10.3km length of the scheme, approximately 0.9km will be through parks or other green areas, mostly along existing footpaths, while 9.4km will be along existing roads or adjacent footpaths.

The operation of the site will utilise the existing surface water drainage.

The detailed proposed site layout plan is not available at this time.

## 3 Methodology

### 3.1 The EclA Team

This EclA was completed by JBA Ecologist Malin Lundberg (BSc, MSc). The report has been reviewed by JBA Senior Ecologist Patricia Byrne (BSc (Hons), PhD, CIEEM). These staff members thus fulfil the Environmental Impact Assessment (EIA) Directive personnel requirements of 'competent persons'.

### 3.2 Policy and Legislation

Policy and legislation for nature conservation; and protected and priority species relevant to the proposed project is provided in Appendix A.

### 3.3 Guidance

This assessment was conducted in accordance with the following guidance documents:

- Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management (CIEEM, 2018).
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (Draft) Environmental Protection Agency (EPA, 2017).
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009a).
- Best Practice Guidance for Habitat Survey and Mapping, The Heritage Council. (Smith et al. 2011).

### 3.4 Baseline

To determine the baseline conditions at the site a review of all available information was made. When determining the pre-work conditions on-site, including the presence or absence of protected habitats and/or species, the precautionary principle was used where limited information was available. This review included the following:

- A desk-based assessment was carried out to collate information regarding protected/notable species and statutorily designated nature conservation sites in, or within close proximity to, the study area.
- A data search for protected and notable species was conducted using the National Biodiversity Data Centre (NBDC) Mapping System (NBDC, 2021). The surrounding three 2km grid squares (O02Y, O12D and O12I) were used to encompass the study area and species records were extracted from the map at a 2km<sup>2</sup> resolution.
- Information for statutory designated sites including Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar Sites, Natural Heritage Areas (NHAs) and proposed NHAs (pNHA) was collected from the online resources provided by the National Parks and Wildlife Service (NPWS).

Other information on the local area was obtained, including information from the following sources:

- NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.
- NPWS (2019b). The Status of EU Protected Habitats and Species in Ireland. Habitats Assessment Volume 2. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.
- NPWS (2019c). The Status of EU Protected Habitats and Species in Ireland. Species Assessment Volume 3. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.
- Environmental Protection Agency (EPA) online databases on water quality (Available online at <https://gis.epa.ie/EPAMaps/>).
- Aerial photography available from [www.osi.ie](http://www.osi.ie) and Google Maps <http://maps.google.com/>;



- All Ireland Red Data lists for vascular flora, mammals, butterflies, non-marine molluscs, dragonflies & damselflies, amphibians and fish;
- Water Framework Directive (WFD) water maps (available online at <http://www.wfdireland.ie/maps.html> and <https://www.catchments.ie/>); and
- International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species (available online at <http://www.iucnredlist.org>).

#### 3.4.1 Zone of Influence

The zone of influence (Zoi) for the project is based on a judgement of the likely extent of the ecological impacts. This will vary for different ecological features, depending on their sensitivities to environmental change. **For the majority of the project, impacts will be limited to within the site boundary.** However, for **impacts relating to airborne emissions and ground water, the Zoi is extended to 5km** and for **surface water pathways it is extended 15km for statutory designated sites** (Natura 2000 sites).

#### 3.4.2 Field Surveys

An ecological walkover of the site, including habitat mapping, mammal and preliminary bat roost surveys were conducted on the 29/09/2021 and 30/09/2021 by Mark Desmond and Malin Lundberg of JBA Consulting to inform the ecological baseline of the site.

Aerial photographs and site maps assisted the habitat survey. Habitats have been named and described following A Guide to Habitats in Ireland by Fossitt (2000). Nomenclature for higher plants principally follows that given in Webb's An Irish Flora (Parnell and Curtis, 2012).

The Survey methods were in accordance with those outlined in the following documents:

- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2009b).
- Best Practice Guidance for habitat Survey and Mapping. The Heritage Council. (Smith et al., 2011).
- Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust (Collins, 2016).

### 3.5 Screening of Ecological Features

The ecological features identified during the walkover surveys and from desk-based assessments were reviewed.

An EIA screening has been prepared by JBA (2021a) in conjunction with this report and results of this EclA has informed the EIA screening, so an informal screening process is presented at the start of the results section to ensure that the assessment focuses only on features where the impact could have important consequences for biodiversity (valued ecological features). Any features which are important beyond the site level were identified for further evaluation. Ecological features with little or no value beyond the site level were screened out and a short statement explaining this is given in the screening section.

An Appropriate Assessment (AA) Screening Report has been produced separate to this EclA (JBA, 2021b), to assess the potential for effects on designated Natura 2000 sites. This AA Screening Report was submitted at planning application stage. The AA Screening Report concluded there would be no likely significant effects on European sites arising from the proposed development, either alone or in combination with other plans or projects. Natura 2000 sites are therefore not considered in this report.

### 3.6 Assessment of the Effects on Features

Ecological features include nature conservation sites, habitats, species assemblages/communities, populations or groups of species. The assessment of the significance of predicted impacts on ecological features is based on both the 'value' of a feature, and the nature and magnitude of the impact that the project will have on it. The impact is based on the project which includes a certain amount of designed-in mitigation, including construction best practice measures that will be implemented with a high degree of certainty.

### 3.7 Valuation of Receptors

The value of designated sites, habitats and species populations is assessed with reference to:

- Their importance in terms of 'biodiversity conservation' value (which relates to the need to conserve representative areas of different habitats and the genetic diversity of species populations)
- Any social benefits that habitats and species deliver (e.g. relating to enjoyment of flora and fauna by the public)
- Any economic benefits that they provide

The valuation of designated sites considers different levels of statutory and non-statutory protection. Assessment of habitat depends on several factors, including the size of the habitat, its conservation status and quality. The assessment also takes account of connected off-site habitat that may increase the value of the on-site habitat through association. Valuation of species depends on a number of factors including distribution, status, rarity, vulnerability, and the population size present.

Designated sites, habitats and species populations have been valued using the scale in Table 3-1.

Table 3-1: Examples of criteria used to define the value of ecological feature.

Level of Value	Examples of Criteria
International	<p>An internationally important site e.g. Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar (or a site considered worthy of such designation).</p> <p>A regularly occurring substantial population of an internationally important species (listed on Annex IV of the Habitats Directive). Designated shellfish waters.</p> <p>Major fisheries area.</p>
National	<p>A nationally designated site e.g. Natural Heritage Area (NHA), a proposed Natural Heritage Area (pNHA), statutory Nature Reserve, or a site considered worthy of such designation.</p> <p>A viable area of a habitat type listed in Annex I of the Habitats Directive or of smaller areas of such habitat which are essential to maintain the viability of a larger whole.</p> <p>A regularly occurring substantial population of a nationally important species, e.g. listed on The Wildlife Act 1976 or The Wildlife (Amendment) Act 2000.</p> <p>A species included in the Irish Red Data Lists/Books. Significant populations of breeding birds.</p>
Regional/County (South Dublin County)	<p>Species and habitats of special conservation significance within South Dublin County.</p> <p>An area subject to a project/initiative under the County's Biodiversity Action Plan.</p> <p>A regularly occurring substantial population of a nationally scarce species.</p>
Local (works site and its vicinity)	<p>Areas of internationally or nationally important habitats which are degraded and have little or no potential for restoration.</p> <p>A good example of a common or widespread habitat in the local area.</p> <p>Species of national or local importance, but which are only present very infrequently or in very low numbers within site area.</p>
Less than local	<p>Areas of heavily modified or managed vegetation of low species diversity or low value as habitat to species of nature conservation interest.</p> <p>Common and widespread species.</p>

Ecological Valuation may also be considered of Local Importance (higher value) or Local Importance (lower value) (Table 3-2).

Table 3-2: Examples of criteria used to define the value of ecological features of local importance (NRA, 2009a)

Level of Value	Examples of Criteria
Local Importance (higher value)	<p>Locally important populations of priority species or habitats or natural heritage features identified in the Local Biodiversity Action Plan (BAP), if this has been prepared.</p> <p>Resident or regularly occurring populations (assessed to be important at the Local level) of the following:</p> <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> <p>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</p> <p>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</p>
Local Importance (lower value)	<p>Sites containing small areas of semi-natural habitat that are of some local importance for wildlife;</p> <p>Sites or features containing non-native species that are of some importance in maintaining habitat links</p>

### 3.7.1 Magnitude of Impacts

Ecological effects or impacts can be described and categorised in a number of ways. Examples of relevant terms are listed in the table below.

Table 3-3: Categories of Effects (derived EPA, 2017).

Effects	Categories of effects
<b>Quality of Effects</b>	<p><b>Positive Effects</b></p> <p>A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).</p>
	<p><b>Neutral Effects</b></p> <p>No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error</p>
	<p><b>Negative/adverse Effects</b></p> <p>A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).</p>
<b>Probability of Effects</b>	<p><b>Likely Effects</b></p> <p>The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.</p>
	<p><b>Unlikely Effects</b></p> <p>The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.</p>
<b>Duration and Frequency of</b>	<p><b>Temporary Effects</b></p> <p>Effects lasting less than a year</p>

<b>Effects</b>	<b>Short-term Effects</b> Effects lasting one to seven years
	<b>Medium-term Effects</b> Effects lasting seven to fifteen years
	<b>Long-term Effects</b> Effects lasting fifteen to sixty years.
<b>Types of Effects</b>	<b>Indirect Effects</b> (a.k.a. Secondary Effects) Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
	<b>Cumulative Effects</b> The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.
	<b>'Do-Nothing Effects'</b> The environment as it would be in the future should the subject project not be carried out.
	<b>'Worst case' Effects</b> The effects arising from a project in the case where mitigation measures substantially fail.
	<b>Residual Effects</b> The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
	<b>Synergistic Effects</b> Where the resultant effect is of greater significance than the sum of its constituents,

These factors are assessed together to determine the magnitude of the impact on the status of a habitat or species population, and on the integrity of the site that supports them. Professional judgement is then used to assign the impacts on the receptors to one of four classes of magnitude, detailed in Table 3-4.

Table 3-4: Definition of magnitude.

Level of Value	Examples of Criteria
High	An irreversible or long-term impact on the integrity of a site or conservation status of a habitat, species assemblage/community, population or group. If adverse, this is likely to threaten its sustainability; if beneficial, this is likely to enhance its conservation status.
Medium	A medium to long-term impact on the integrity of a site or conservation status of a habitat, species assemblage/community, population or group, which if adverse, is unlikely to threaten its sustainability (or if beneficial, is likely to be sustainable but is unlikely to enhance its conservation status.
Low	A short-term but temporary impact on the integrity of a site or conservation status of a habitat, species assemblage/community, population or group that is within the range of variation normally experienced between years.
Negligible	A short-term but temporary impact on the integrity of a site or conservation status of a habitat, species assemblage/community, population or group that is within the normal range of annual variation.

### 3.7.2 Significance of Impacts

The significance of an impact is a product of the value of the ecological feature and the magnitude of the impact on it, moderated by professional judgement. Table 3-5 below shows a matrix which is used

for guidance in the assessment of significance, with impacts being considered to be of major, moderate or minor significance, or negligible. Impacts can also either be assessed as positive or negative using the same matrix.

Table 3-5: Significance of impacts matrix.

Value of feature	Magnitude of impact			
	High	Medium	Low	Negligible
International	Major	Major	Moderate	Neutral
National	Major	Moderate	Minor	Neutral
Regional / County	Moderate	Minor	Minor	Neutral
Local	Minor	Minor	Negligible	Neutral
Less than local	Negligible	Negligible	Negligible	Neutral

### 3.7.3 Residual Impacts

The project is assessed including some designed-in mitigation. This is done where mitigation is proven to be effective and will be implemented effectively with a high certainty. Where significant residual impacts are still identified, further mitigation measures will be proposed as part of the Ecological Impact Assessment process to avoid, reduce or minimise them. Each impact assessment section assigns a final significance level to the impact described, which considers and includes the implementation of any stated mitigation measures; these are the residual impacts.

### 3.8 Cumulative Impacts

Potential sources of cumulative impacts were identified based on the ecology of valued ecological features. Potential sources of cumulative impacts were sought within ranges, territories or catchments where there is the potential for a significant impact on a site or species.

The following plans and projects were identified as potential sources of cumulative impacts:

- South County Dublin Development Plan 2016 - 2022
- Greater Dublin Drainage Strategy
- River Basin Management Plan for Ireland 2018-2021
- Planning Applications

### 3.9 Limitations and Constraints

This EclA is based on a site visit and existing data from the above-mentioned sources. The report necessarily relies on some assumptions and is inevitably subject to some limitations. These do not affect the conclusion, but the following points are recorded in order to ensure the basis of the assessment is clear:

- Changes to the site since surveys were undertaken cannot be accounted for, however the site surveys have followed the CIEEM guidance provided on suitable lifespan for surveys ((CIEEM (2019) Advice note on the lifespan of ecological reports and surveys). Significant changes to the site are unlikely in the time between the site visit (September 2021) and likely determination date (2022).
- Adverse weather can cause delays to the schedule and alter the timing of works. This has been accounted for using a worst-case scenario where possible.
- The site visit was carried out in September 2021 period and the data does not reflect the whole ecology of the site throughout the year.
- A detailed site layout plan and description details of temporary works were not available when carrying out the assessment. However, it is considered that the information provided was sufficient to complete the assessment.



## 4 Baseline Conditions

These baseline conditions present information gathered from existing reports and desk-based sources as detailed in Section 3.4 and the site visit conducted on 29th September 2021.

### 4.1 Desk Based Assessment

#### 4.1.1 Designated Sites

This section lists the designated sites of International and National importance. The Zol for this project is 5km for non-statutory designated sites (proposed and existing Natural Heritage Area) and statutory designated sites (SPA/SAC). However, the Zol via surface water pathways is extended to 15km for statutory designated sites. Table 4-1 below lists these designated sites with their respective importance and distance from the proposed site development. Figure 4-1 displays the locations of the statutory designated sites, with Figure 4-2 displaying the non-statutory designated sites within the Zol of the site.

Table 4-2 summarises the site briefs, qualifying interests, relevant threats and pressures and their impacts and sources in relation to the Natura 2000 sites within the Zol.

Table 4-3 summarises the site briefs and ecological features of exclusively proposed Natural Heritage Areas within the Zol,

Table 4-1: Proximity and importance of designated sites within the Zol of the proposed development.

Name	Designation	Importance	Direct distance from site	Distance via surface water pathway
Glenasmole Valley SAC [001209]	SAC	International	2.1km	4.3km upstream
Wicklow Mountains SAC [002122]	SAC	International	4.4km	-
Wicklow Mountains SPA [004040]	SAC	International	4.6km	-
South Dublin Bay and River Tolka Estuary SPA [004024]	SAC	International	7.2km	13.4km
South Dublin Bay SAC [000210]	SAC	International	7.3km	16.8km
North Bull Island SPA [004006]	SPA	International	11.6km	15.2km
North Dublin Bay SAC [000206]	SAC	International	11.6km	15.2km
Dalkey Islands SPA [004172]	SPA	International	13.5km	23.8km
Rockabill to Dalkey Island SAC [003000]	SAC	International	13.8km	20.0km
Dodder Valley [000991]	pNHA	National	Adjacent	0.2km
Glenasmole Valley [001209]	pNHA	National	2.0km	4.3km upstream
Lugmore Glen [001212]	pNHA	National	2.9km	-
Fitzsimon's Wood [001753]	pNHA	National	4.3km	-
Grand Canal [002104]	pNHA	National	4.4km	-

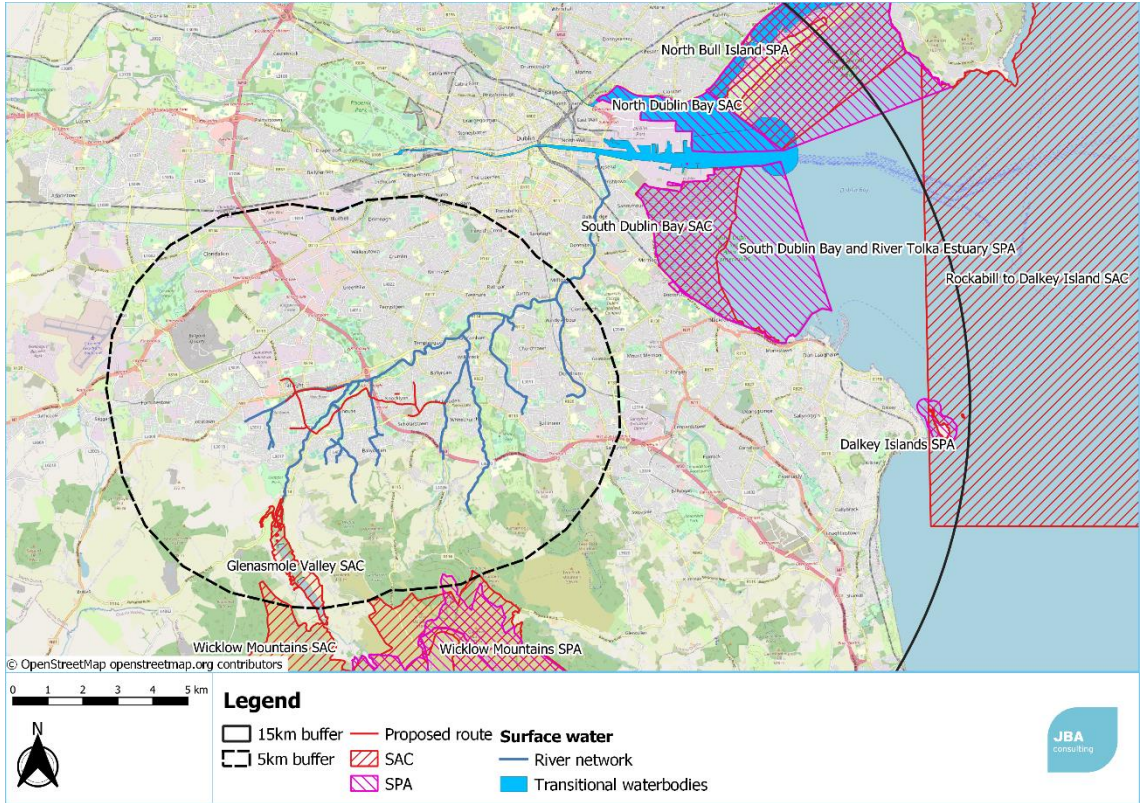


Figure 4-1: Statutory designated sites within the Zol of the development (source: NPWS, 2021)

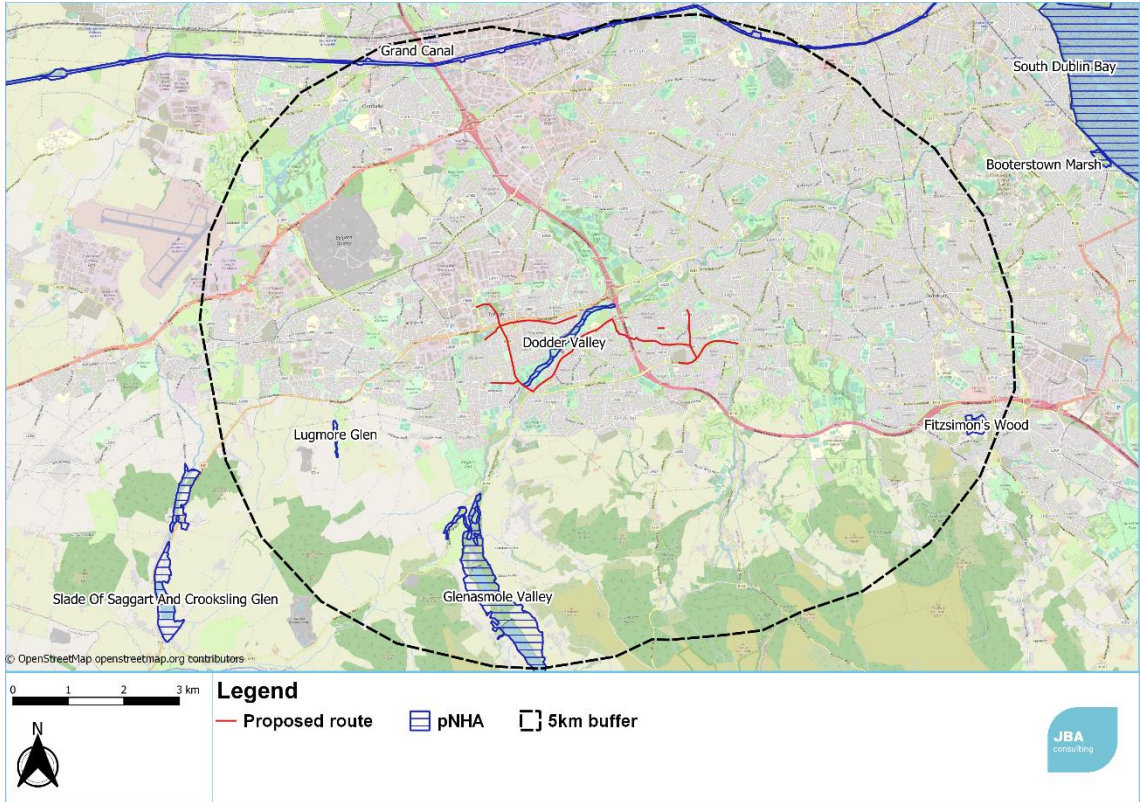


Figure 4-2: Non-statutory designated sites within the Zol of the development (source: NPWS, 2021)



Table 4-2: Site briefs; Qualifying Interests; and project threats /pressures and their impacts and sources to the Natura 2000 sites within the Zol

Site Name	Brief	Qualifying Interests	Project-relevant Pressures: Impact (Source) Threats (Source)
<b>Glenasmole Valley SAC</b>	Glenasmole Valley lies at the northern foothills of the Dublin and Wicklow Mountains. Dry calcareous pasture grassland, improved to varying degrees, is a main habitat of the valley sides and occurs in association with wet grassland and, in places of seepage, fen or marsh type vegetation. The site has important examples of petrifying springs. The physical and chemical properties of the springs have been studied. Good examples of orchid rich calcareous grassland, including <i>Pseudorchis albida</i> (legally protected) and <i>Orchis morio</i> (Red Data Book species) are found here. Molinia meadows are also represented (NPWS, 2017b).	<ul style="list-style-type: none"> <li>- Semi-natural dry grassland and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (*important orchid sites) [6210]</li> <li>- <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410]</li> <li>- Petrifying springs with tufa formation (<i>Cratoneurion</i>)* [7220]</li> </ul> <p>(NPWS, 2020)</p>	<p>Discontinuous urbanisation: Moderate impact (outside)#</p> <p>(Full list of threats / pressures - NPWS, 2017b)</p>
<b>Wicklow Mountains SAC</b>	An extensive upland site comprising much of the Wicklow Mountains and extending into Co. Dublin. The solid geology is mainly Leinster granites, flanked by Ordovician schists, mudstones and volcanics. The area has been glaciated and features fine examples of high corrie lakes, deep valleys and moraines. The site includes the headwaters of several major rivers, including the Liffey, the Dargle and the Slaney. The substrate over much of the site is peat, with poor mineral soil on the slopes and lower ground. Exposed rock and scree are included in the features found in the SAC. The dominant habitats on the site are blanket bog, heaths and upland grassland. The site comprises the largest complex of upland habitats in eastern Ireland, with important examples of blanket bog, wet heath and dry heath, extensive in area and mostly of good quality. Alpine heath occurs at high levels, along with calcareous and siliceous rocky habitats harbouring an arctic-alpine flora. A fine series of oligotrophic lakes occur, with some recorded to contain Arctic char ( <i>Salvelinus alpinus</i> ). Several oakwoods of moderate quality, typical of the dry acidic woods of eastern Ireland, are found. Eurasian Otter ( <i>Lutra lutra</i> ) occurs on several of the riverine systems (NPWS, 2017c).	<ul style="list-style-type: none"> <li>- Otter (<i>Lutra lutra</i>) [1355]</li> <li>- Oligotrophic water containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) [3110]</li> <li>- Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletalia uniflorae and/or Isoeto-Nanojuncetea [3130]</li> <li>- Natural dystrophic lakes and ponds [3160]</li> <li>- Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010]</li> <li>- European dry heaths [4030]</li> <li>- Alpine and Boreal heaths [4060]</li> <li>- Calaminarian grasslands of the <i>Violetalia calaminariae</i> [6130]</li> <li>- Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) * [6230]</li> <li>- Blanket bogs (* if active bog) [7130]</li> <li>- Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladanii</i>) [8110]</li> <li>- Calcareous rocky slopes with chasmophytic vegetation [8210]</li> <li>- Siliceous rocky slopes with chasmophytic vegetation [8220]</li> <li>- Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0]</li> </ul> <p>(NPWS, 2017d)</p>	<p>Wildlife watching: Low impact (inside)#</p> <p>Trampling, overuse: Moderate impact (both)#</p> <p>Urbanised areas, human habitation: Moderate impact (both)#</p> <p>Collection (fungi, lichen, berries etc): Low impact (inside)#</p> <p>Outdoor sports and leisure activities, recreational activities: Moderate impact (both)#</p> <p>Paths, tracks, cycling tracks: Moderate impact (both)#</p> <p>(Full list of threats / pressures - NPWS, 2017c)</p>
<b>Wicklow Mountains SPA</b>	This is an extensive upland site, comprising a substantial part of the Wicklow Mountains. The site supports good examples of both upland and woodland bird communities. It has breeding Merlin <i>Falco columbarius</i> and Peregrine Falcon <i>Falco peregrinus</i> , as well as Ring Ouzel <i>Turdus torquatus</i> and Red	<ul style="list-style-type: none"> <li>- Merlin (<i>Falco columbarius</i>) [A098]</li> <li>- Peregrine Falcon (<i>Falco peregrinus</i>) [A103]</li> </ul> <p>(NPWS 2020b)</p>	<p>N/A</p> <p>(Full list of threats / pressures - NPWS, 2018a)</p>

Site Name	Brief	Qualifying Interests	Project-relevant Pressures: Impact (Source)	Threats /
	Grouse <i>Lagopus lagopus</i> , both of the latter being Red listed in Ireland. It is the only site in Ireland where Common Merganser <i>Mergus merganser</i> breeds regularly (NPWS 2018a).			
South Dublin Bay and River Tolka Estuary SPA	The South Dublin Bay and River Tolka Estuary SPA includes the intertidal area between the River Liffey and Dun Laoghaire, and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included. The site is important for wintering waterfowl, being an integral part of the internationally important Dublin Bay complex. An internationally important population of Light-bellied Brent Goose <i>Branta bernicla hrota</i> occurs regularly and the site is of national importance for a further nine wintering bird species. Furthermore, the site supports a nationally important colony of breeding Common Tern <i>Sterna hirundo</i> and is an internationally important passage/staging site for three tern species. It is of note that four of the species that regularly occur at this site are listed on Annex I of the E.U. Birds Directive, i.e. Bar-tailed Godwit <i>Limosa lapponica</i> , Common Tern, Arctic Tern <i>Sterna paradisaea</i> and Roseate Tern <i>S. dougallii</i> . Sandymount Strand/Tolka Estuary is also a Ramsar Convention site. (Source: NPWS, 2015a)	Light-bellied Brent Goose ( <i>Branta bernicla hrota</i> ) [A046] Oystercatcher ( <i>Haematopus ostralegus</i> ) [A130] Ringed Plover ( <i>Charadrius hiaticula</i> ) [A137] Grey Plover ( <i>Pluvialis squatarola</i> ) [A141] Knot ( <i>Calidris canutus</i> ) [A143] Sanderling ( <i>Calidris alba</i> ) [A144] Dunlin ( <i>Calidris alpina</i> ) [A149] Bar-tailed Godwit ( <i>Limosa lapponica</i> ) [A157] Redshank ( <i>Tringa totanus</i> ) [A162] Black-headed Gull ( <i>Chroicocephalus ridibundus</i> ) [A179] Roseate Tern ( <i>Sterna dougallii</i> ) [A192] Common Tern ( <i>Sterna hirundo</i> ) [A193] Arctic Tern ( <i>Sterna paradisaea</i> ) [A194] Wetland and Waterbirds [A999] (Source: NPWS, 2015b)	Roads, motorways Medium (outside)  Urbanised areas, human habitation High (outside)  Discharges High (inside)  (Source: NPWS, 2017)	
South Dublin Bay SAC	This intertidal site extends from the South Wall at Dublin Port to the West Pier at Dun Laoghaire, a distance of c. 5 km. At their widest, the intertidal flats extend for almost 3 km. The seaward boundary is marked by the low tide mark, while the landward boundary is now almost entirely artificially embanked. Several permanent channels exist, the largest being Cockle Lake. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs near Dun Laoghaire. A number of small streams and drains flow into the site. The proximity of the site to Dublin City results in it being a very popular recreational area. It is also important for educational and research purposes. The site possesses a fine and fairly extensive example of intertidal flats. Sediment type is predominantly sand, with muddy sands in the more sheltered areas. A typical macro-invertebrate fauna exists. The bay has the largest stand of <i>Zostera</i> on the east coast and supports part of the important wintering waterfowl populations of Dublin Bay. It regularly has an internationally important population of Light-bellied Brent Goose, plus nationally important numbers of at least a further 6 species,	Tidal Mudflats and Sandflats [1140] Annual vegetation of drift lines [1210] Salicornia and other annuals colonising mud and sand [1310] Embryonic shifting dunes [2110]  (Source: NPWS, 2013b)	Urbanised areas, human habitation High (outside)  Marine water pollution Medium (both)  Roads, motorways Low (outside)  Discharges Medium (both)  Accumulation of organic material High (inside)  (Source: NPWS, 2017d)	

Site Name	Brief	Qualifying Interests	Project-relevant Pressures: Impact (Source)	Threats (Source)
	including Bar-tailed Godwit. The bay is a regular autumn roosting ground for significant numbers of Sterna terns, including Roseate Tern. (NPWS 2017d)			
North Bull Island SPA	<p>The site covers all of the inner part of north Dublin Bay. The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th centuries. It is almost 5 km long and 1 km wide and runs parallel to the coast between Clontarf and Sutton. Part of the interior of the island has been converted to golf courses. The SPA is of international importance for waterfowl on the basis that it regularly supports in excess of 20,000 waterfowl. The site supports internationally important populations of three species, Light-bellied Brent Goose, Black-tailed Godwit <i>Limosa limosa</i> and Bar-tailed Godwit. The site is one of the most important in the country for Light-bellied Brent Goose. A further of 14 species have populations of national importance.</p> <p>North Bull Island is a Ramsar Convention site, and part of the North Bull Island SPA is a Statutory Nature Reserve and a Wildfowl Sanctuary.</p> <p>(Source: NPWS, 2014a)</p>	<p>Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]            Shelduck (<i>Tadorna tadorna</i>) [A048]            Teal (<i>Anas crecca</i>) [A052]            Pintail (<i>Anas acuta</i>) [A054]            Shoveler (<i>Anas clypeata</i>) [A056]            Oystercatcher (<i>Haematopus ostralegus</i>) [A130]            Golden Plover (<i>Pluvialis apricaria</i>) [A140]            Grey Plover (<i>Pluvialis squatarola</i>) [A141]            Knot (<i>Calidris canutus</i>) [A143]            Sanderling (<i>Calidris alba</i>) [A144]            Dunlin (<i>Calidris alpina</i>) [A149]            Black-tailed Godwit (<i>Limosa limosa</i>) [A156]            Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]            Curlew (<i>Numenius arquata</i>) [A160]            Redshank (<i>Tringa totanus</i>) [A162]            Turnstone (<i>Arenaria interpres</i>) [A169]            Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]            Wetland and Waterbirds [A999]</p> <p>(Source: NPWS, 2015c)</p>	<p>Roads, motorways            Medium (outside)</p> <p>Continuous urbanisation            Medium (outside)</p> <p>Discharges            Medium (both)</p> <p>(Source: NPWS, 2017b)</p>	
North Dublin Bay SAC	<p>The sediment which forms North Bull Island is predominantly glacial in origin and siliceous in nature. Between the island and the mainland there occurs two sheltered intertidal areas. The seaward side of the island has a fine sandy beach. A substantial area of shallow marine water is included in the site.</p> <p>Site possesses an excellent diversity of coastal habitats. The North Bull Island dune system is one of the most important systems on the east coast and is one of the few in Ireland that is actively accreting. It possesses extensive and mostly good quality examples of embryonic, shifting marram and fixed dunes, as well as excellent examples of humid dune slacks. Both Atlantic and Mediterranean salt marshes are well represented, and a particularly good marsh zonation is shown. The salt marshes grade into mudflats and sandflats, some of which are dominated by annual Salicornia species.</p>	<p>Mudflats and sandflats not covered by seawater at low tide [1140]            Annual vegetation of drift lines [1210]  <i>Salicornia</i> and other annuals colonising mud and sand [1310]            Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]            Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]            Embryonic shifting dunes [2110]            Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]            Fixed coastal dunes with herbaceous vegetation (grey dunes)* [2130]            Humid dune slacks [2190]  <i>Petalophyllum ralfsii</i> (Petalwort) [1395]</p>	<p>Urbanised areas, human habitation            High (outside)</p> <p>Discharges            High (inside)</p> <p>(Source: NPWS, 2017c)</p>	



Site Name	Brief	Qualifying Interests	Project-relevant Pressures: Impact (Source)	Threats (Source)
	(Source: NPWS, 2017c)	(Source: NPWS, 2013b)		
<b>Dalkey Islands SPA</b>	The site comprises Dalkey Island, Lamb Island, Maiden Rock, the intervening rocks and reefs between Dalkey Island, Lamb Island and Clare Rock, and the sea area around Maiden Rock to a distance of 100 m. The site is of importance for both breeding and staging <i>Sterna</i> terns. There is a well-established colony of Common Tern <i>Sterna hirundo</i> and smaller numbers of Arctic Tern <i>Sterna paradisaea</i> . <i>Roseate Tern Sterna dougallii</i> bred in 2003 and 2004, one of only three known sites in the country - this came about after several years of conservation management aimed at attracting the species. The site along with other parts of south Dublin Bay is used by the three <i>Sterna</i> tern species as a major post-breeding/pre-migration autumn roost area. (Source: NPWS, 2018c)	Roseate Tern ( <i>Sterna dougallii</i> ) [A192] Common Tern ( <i>Sterna hirundo</i> ) [A193] Arctic Tern ( <i>Sterna paradisaea</i> ) [A194]  (Source: NPWS, 2021)	Urbanised areas, human habitation High (outside)  (NPWS, 2018c)	
<b>Rockabill to Dalkey Island SAC</b>	The selected site forms a strip of dynamic inshore and coastal waters in the western Irish Sea, extending approximately 40 km in length and encompassing a range of comparatively shallow marine habitats, including diverse seabed structures, reefs, islets and islands. The area represents a key habitat for the Annex II species - Harbour Porpoise <i>Phocoena phocoena</i> , within the Irish Sea. The Reefs are subject to strong tidal currents with an abundant supply of suspended matter resulting in good representation of filter feeding fauna such as sponges, anemones and echinoderms (NPWS, 2017g).	Reefs [1170] Harbour Porpoise ( <i>Phocoena phocoena</i> ) [1351]  (Source: NPWS, 2013a)	Discharges High (outside)  Diffuse pollution to surface waters due to other sources not listed Medium (inside)  (NPWS, 2017g)	

\* = priority Annex I habitat

# = indirect threat via the increase in the local populace and workforce; and recreational activities as a result of the development

Table 4-3: Site briefs and ecological features of proposed Natural Heritage Areas within their respective 5km Zol.

Site Name	Brief	Ecological Features of Conservation Concern
Dodder Valley pNHA	This stretch of the River Dodder extends for about 2 km between Firhouse Bridge and Oldbawn Bridge in the south-west of Dublin City. The vegetation consists of woodland scrub mainly comprising Willows spp., but up to thirteen species of tree have been recorded. The understorey vegetation contains a good variety of plant species, including Early-purple Orchid ( <i>Orchis mascula</i> ) and Bugle. Along the banks there are wildflower meadows with a good diversity of plant species. Forty-eight bird species have been recorded recently in the area, including Little Grebe ( <i>Tachybaptus ruficollis</i> ), Kingfisher ( <i>Alcedo atthis</i> ), White-throated Dipper ( <i>Cinclus cinclus</i> ) and Grey Wagtail ( <i>Motacilla cinerea</i> ). Part of the riverbank supports a Sand Martin ( <i>Riparia riparia</i> ) colony of up to 100 pairs. The site also supports a population of Otter. The site represents the last remaining stretch of natural riverbank vegetation on the River Dodder in the built-up Greater Dublin Area (NPWS, 2009a).	<ul style="list-style-type: none"> <li>- Little Grebe (<i>Tachybaptus ruficollis</i>)</li> <li>- Kingfisher (<i>Alcedo atthis</i>)</li> <li>- Grey Wagtail (<i>Motacilla cinerea</i>)</li> <li>- Sand Martin (<i>Riparia riparia</i>)</li> <li>- Otter (<i>Lutra lutra</i>)</li> </ul>
Glenasmole Valley pNHA	As per the Natura 2000 SAC description.	As per those outlined in Natura 2000 SAC description.
Lugmore Glen pNHA	This small wooded glen is located about 2km south-east of Saggart in Co Dublin. It is quite a narrow valley cut in glacial drift. A small stream winds through the valley. The wood is mainly comprised of dense Hazel ( <i>Corylus avellana</i> ) but also contains Ash, Elder ( <i>Sambucus nigra</i> ) and Blackthorn ( <i>Prunus spinosa</i> ). The herb layer is quite rich, especially towards the stream, with species such as Wood-sorrel, Bugle ( <i>Ajuga reptans</i> ), Primrose ( <i>Primula vulgaris</i> ), Honeysuckle ( <i>Lonicera periclymenum</i> ), Bluebell ( <i>Hyacinthoides non-scripta</i> ), Ivy ( <i>Hedera hibernica</i> ), Wood-sedge ( <i>Carex sylvatica</i> ), Woodruff ( <i>Galium odoratum</i> ) and Wood Speedwell occurring. The importance of this site is that it is a fine example of a wooded glen with a good representation of woodland plants. The flora of the site is notable for the presence of the rare Red Data Book species, Yellow Archangel (NPWS, 2009c).	<ul style="list-style-type: none"> <li>- Yellow Archangel (<i>Lamiastrum galeobdolon</i>)</li> </ul>
Fitzsimon's Wood pNHA	Fitzsimon's Wood consists of mature birch ( <i>Betula</i> spp.) with some oak ( <i>Quercus</i> spp.), together with a well-developed understorey of Holly ( <i>Ilex aquifolium</i> ). Natural regeneration is occurring and there is a profuse growth of young birch, Ash ( <i>Fraxinus excelsior</i> ), oak and other species. Some marshy areas also occur within the woodland. An area of heath, dominated by Gorse ( <i>Ulex europaeus</i> ) scrub is also included in the site (NPWS, 2009f).	Mature woodland with <i>Birch Betula</i> spp.
Grand Canal pNHA	The Grand Canal is a man-made waterway linking the River Liffey at Dublin with the Shannon at Shannon Harbour and the Barrow at Athy. The Grand Canal pNHA comprises the canal channel and the banks on either side of it. A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland. The diversity of the water channel is particularly high in the eastern section of the Main Line - between the Summit level at Lowtown and Inchicore. Otter spraints are found along the towpath, particularly where the canal passes over a river or stream. The Smooth Newt ( <i>Lissotriton vulgaris</i> ) breeds in the ponds on the bank at Gollierstown in Co. Dublin. The rare and legally protected Opposite-leaved Pondweed ( <i>Groenlandia densa</i> ) (Flora Protection Order 1987) is present at a number of sites in the eastern section of the Main Line, between Lowtown and Ringsend Basin in Dublin (NPWS, 2009b).	<ul style="list-style-type: none"> <li>- Otter (<i>Lutra lutra</i>)</li> <li>- Smooth Newt (<i>Lissotriton vulgaris</i>)</li> <li>- Opposite-leaved Pondweed (<i>Groenlandia densa</i>)</li> </ul>

## 4.1.2 Screening of Designated Sites

### 4.1.2.1 Natura 2000 sites

An AA Screening has been carried out for this project by JBA (2021b). Following initial screening, and based upon best scientific judgement it is concluded that there will be **no likely significant effects** from the project on the following Natura 2000 sites within the AA Screening ZoI, either alone or in combination with any other plans or projects:

- Glenasmole Valley SAC (001209)
- Wicklow Mountains SAC (002122)
- Wicklow Mountains SPA (004040)
- South Dublin Bay and River Tolka Estuary SPA (004024)
- South Dublin Bay SAC (000210)
- North Bull Island SPA (004006)
- North Dublin Bay SAC (000206)
- Dalkey Islands SPA (004172)
- Rockabill to Dalkey Island SAC (003000)

### 4.1.2.2 Proposed Natural Heritage Areas

Glenasmole Valley pNHA is located within Glenasmole Valley SAC. This pNHA have the same receptors as the Natura 2000 site. The AA Screening (JBA, 2021b) concludes that due to the site location, distance to the Natura 2000 sites and prevailing winds, impacts are not anticipated on the Natura 2000 site. As the pNHA has the same receptors, it is covered by the assessment in the AA Screening report and is not considered to be impacted.

The following pNHAs lie within or partly within the same sub-catchment as the proposed site: Dodder Valley pNHA and Grand Canal pNHA. Due to lack of surface water pathway between the proposed development site and the Grand Canal pNHA, impacts are not anticipated on this designated site and it is not considered further in this report. Dodder Valley pNHA is adjacent to the proposed development and could be impacted via surface water and air pathways. Therefore, Dodder Valley pNHA is considered further in the assessment in this report.

Lugmore Glen pNHA and Fitzsimon's Wood pNHA are woodland habitats and the only potential connection with the site would be via air pathways. Given the distance (2.9km and 4.3km respectively) and type of habitats, these sites are not anticipated to be significantly impacted by the proposed development and are not considered further in this report.

Therefore, as there are no direct pathways between the site and the pNHA sites, the following pNHA sites are **screened out**:

- Glenasmole Valley [001209]
- Lugmore Glen [001212]
- Fitzsimon's Wood [001753]
- Grand Canal [002104]

The following pNHA is **screened in**:

- Dodder Valley [000991]

## 4.2 Results of Site Visit

An ecological walkover survey was conducted on the 29<sup>th</sup> and 30<sup>th</sup> September 2021 by JBA Ecologists Mark Desmond and Malin Lundberg. Habitats and species recorded at the site are presented in detail in the following sections. The value of each habitat is based on recordings from the site visit, following the criteria set out in Table 3-2.

### 4.2.1 Habitats

Habitats recorded are listed in Table 4-4 and detailed descriptions are provided in the sections below. Habitat maps are provided in Figure 4-3 and Figure 4-4 and in Appendix B.

Table 4-4: List of habitats recorded on site

Habitat	Fossitt Code
Stone walls and other stonework	BL1
Buildings and artificial surfaces	BL3
Other artificial lakes and ponds	FL8
Eroding/upland rivers	FW1
Depositing/lowland rivers	FW2
Amenity grassland (improved)	GA2
Dry meadows and grassy verges	GS2
(Mixed) broadleaved woodland	WD1
Mixed broadleaved/conifer woodland	WD2
Scattered trees and parkland	WD5
Hedgerows	WL1
Treelines	WL2
Scrub	WS1

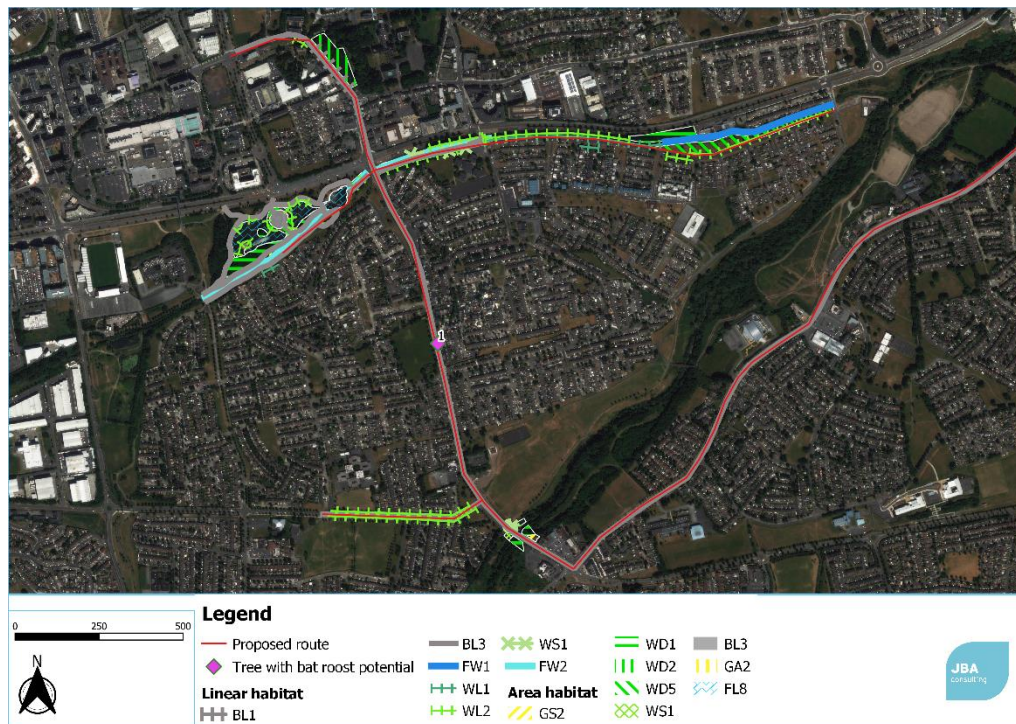


Figure 4-3: Habitat Map showing west end of proposed cycle route (Source: ESRI Satellite World Imagery).





Figure 4-4: Habitat Map showing east end of proposed cycle route (Source: ESRI Satellite World Imagery).

#### 4.2.2 BL1 - Stone walls and other stonework

There is a small section of Old Blessington Road that is bounded by a stonewall with a small amount of Ivy *Hedera hibernica* and Red Valerian *Centranthus ruber* growth.

This habitat is considered to be of less than local importance.

#### 4.2.3 BL3 - Buildings and artificial surfaces

The cycle route is proposed to be constructed along existing roads and pedestrian walkways, which make up the habitat buildings and artificial surfaces.

This habitat is considered to be of less than local importance.

#### 4.2.4 FL8 - Other artificial lakes and ponds

There are three artificial ponds in the eastern end of Sean Walsh Park and the proposed cycle route will be located to the south of these ponds. Whitestown Stream is divided in two channels upstream of these ponds, one channel goes through the ponds and one channel on the south side of the ponds and they then reconnect downstream of the ponds.

Two of the ponds are fringed with instream vegetation including Yellow Flag *Iris pseudacorus*, Bulrush *Typha latifolia*, Willowherb *Epilobium* spp. and Brooklime *Veronica beccabunga*. The most eastern pond does not have much fringing vegetation as the banks are made of concrete.

The ponds provide habitat for birds, species recorded during include Mute Swan *Cygnus olor*, Black-headed Gull *Chroicocephalus ridibundus*, Tufted Duck *Aythya fuligula*, Mallard *Anas platyrhynchos*, Moorhen *Gallinula chloropus* and Grey Heron *Ardea cinerea*. A total of 13 Grey Heron were recorded.

This habitat is considered to be of regional importance.

#### 4.2.5 FW1; FW2 - Eroding/upland rivers; Depositing/lowland rivers

Whitestown Stream (Figure 4-5) flows in an easterly direction through Sean Walsh Park and eventually joins with the River Dodder downstream of Avonmore Road. The stream has eroding and depositing sections.

Upstream of the three ponds in the park the Whitestown Stream is divided in two channels, one channel continues straight through the park and the other channel goes in a northeast direction and feeds into



the ponds. Both channels are merged downstream of the eastern most pond where the outflow feeds into a single channel.

Kingfisher *Alcedo atthis* has been recorded along the Whitestown Stream within the park.

The upstream section of Whitestown Stream has previously been surveyed for fish (Triturus, 2021) which found Three-spined Stickleback *Gastrosteus aculeatus* to be present and eDNA samples provided positive results for Eel *Anguilla anguilla*, indicating the presence of this species.

This habitat is considered to be of regional importance.



Figure 4-5: Downstream section of Whitestown Stream.

#### 4.2.6 GA2 - Amenity grassland (improved)

There are areas of amenity grassland (Figure 4-6) which include lawns in parks where the proposed cycle route will pass, including Sean Walsh Park and Dargle Wood. Vegetation recorded include Perennial Ryegrass *Lolium perenne*, Dandelions *Taraxacum* spp., White Clover *Trifolium repens*, Creeping Buttercup *Ranunculus repens*, Ribwort Plantain *Plantago lanceolata*, Red Clover *Trifolium pratense*, Yorkshire Fog *Holcus lanatus*, Self-heal *Prunella vulgaris*, Silver Weed *Potentilla anserina* and Birds-foot Trefoil *Lotus corniculatus*.

This habitat is considered to be of less than local importance.





Figure 4-6: Amenity grassland with broadleaved woodland to the left and treeline to the right.

#### 4.2.7 GS2 - Dry meadows and grassy verges

Grassy verges were recorded next to River Dodder on the east side of Old Bawn Road. This area is not mown regularly. Species include Cock's-foot *Dactylis glomerata*, Thistle *Cirsium* spp., Ragwort *Jacobaea vulgaris*, Dock *Rumex* spp., Bramble *Rubus fruticosus* agg., Hedge Bindweed *Calystegia sepium*, Speedwell *Veronica* spp., Red Clover *Trifolium pratense*, Hawksbeard *Crepis* spp., White Clover, Perennial Ryegrass, Yorkshire Fog, Dandelion, Dock, Ribwort Plantain and Nettle *Urtica dioica*.

Japanese Knotweed *Reynoutria japonica* is present in the area next to River Dodder but is being treated.

This habitat is considered to be of local (higher) importance.

#### 4.2.8 WD1 - (Mixed) broadleaved woodland

Mixed broadleaved woodland occurs at several locations along the proposed route (Figure 4-6). These occur next to Whitestown stream and River Dodder, and next to Templeroan Road. These woodlands include a mix of species, including Poplar *Populus* spp., Sycamore *Acer pseudoplatanus*, Ash *Fraxinus excelsior*, Elm *Ulmus* spp., Elder *Sambucus nigra*, Leyland Cypress *Cupressus x leylandii*, Lime *Tilia* spp., Italian Alder *Alnus cordata*, Hawthorn, Beech *Fagus sylvatica*, Silver Birch *Betula pendula*, Willow *Salix* spp., Aspen *Populus tremula* and Scots Pine *Pinus sylvestris*. The understorey varies between the woodlands and includes a variety of the following species: Ivy, Hogweed *Heracleum mantegazzianum*, Bramble, Wood Avens *Geum urbanum*, Hedge Bindweed, Willowherb and Herb Robert *Geranium robertianum*.

This habitat is considered to be of regional importance as it provides habitat and corridors for wildlife to move in the landscape.

#### 4.2.9 WD2 - Mixed broadleaved/conifer woodland

Mixed broadleaved/conifer woodland occurs at the northern end of Old Blessington Road, and next to Templeroan Road and Scholarstown Road. These include a mix of broadleaved and conifer species, such as Scots Pine, Hazel *Corylus avellana*, Beech, Birch, Hawthorn, Lime, Ash, Sycamore, Black Walnut *Juglans nigra* and Yew *Taxus baccata*. Understorey includes Ivy, Bramble, Hawthorn and Thistle. Grey Squirrel *Sciurus carolinensis* was observed in the woodland along Templeroan Road.

This habitat had quite low diversity where it occurred and is considered to be of local (higher) importance.



#### 4.2.10 WD5 - Scattered trees and parkland

Scattered trees and parkland are areas of amenity grassland with scattered trees present. This habitat is present along Whitestown Stream (Figure 4-7) and the area west of Saint Colmcille's National School. Grassland species include Creeping Buttercup *Ranunculus repens*, White Clover, False Oatgrass *Arrhenatherum elatius*, Dandelion *Taraxacum* spp., Ragwort and Dock. Trees present include Pedunculate Oak *Quercus robur*, Hornbeam *Carpinus betulus* and Lime.

This habitat is considered to be of less than local importance.



Figure 4-7: Scattered trees and parkland habitat next to Whitestown Stream.

#### 4.2.11 WL1 - Hedgerows

Hedgerows occur along several of the roads with a variety of species. Woody species include the native species Bramble, Hawthorn, Hazel, Field Maple *Acer campestre*, Ivy, and Ash, and non-native species Leyland Cypress, Firethorn *Pyracantha coccinea*, Sycamore, Privet *Ligustrum* spp., Cherry Laurel *Prunus laurocerasus*, *Pittosporum* spp., Beech, *Cotoneaster* spp., Box *Buxus* spp., Cherry *Prunus* spp. and Norway Maple *Acer platanoides*. Herbal species recorded include Alexander's *Smyrniolum olusatrum* and Nettle. Most frequent recorded were Bramble and Hawthorn.

This habitat is considered to be of local (higher) importance, particularly where native species are dominating.

#### 4.2.12 WL2 - Treelines

Treelines are also frequent along the proposed route (Figure 4-8). Species include Ash, Sycamore, Willow, Italian Alder, Horse Chestnut *Aesculus hippocastanum*, Hornbeam, Butterfly-bush, Birch, Rowan *Sorbus aucuparia*, Hawthorn, *Cotoneaster*, Firethorn, Elm and Beech. There is a section of treeline along Knocklyon Road where Elm is present and most of the trees are impacted by the Dutch elm disease and are dead.

This habitat is considered to be of local (higher) importance.



Figure 4-8: Treeline along Knocklyon Road

#### 4.2.13 WS1 - Scrub

Areas of dense scrub occur in a few locations where Bramble is the dominating species, but also Dock, Hedge Bindweed, Hawthorn, Elder, Thistle, Cock's-foot, False Oatgrass and Tufted Vetch *Vicia cracca* also occur. Magpie *Pica pica* and Wood Pigeon *Columba palumbus* were recorded in the scrub habitat.

This habitat is considered to be of local (higher) importance.

#### 4.2.14 Flora

No protected floral species were recorded by JBA ecologists during the ecological walkover survey of the proposed site. The NBDC (2021) records were referenced, and no occurrence of protected floral species has been recorded within the site's boundary to date.

#### 4.2.15 Fauna

Records of protected fauna including invertebrates, amphibians, fish, birds and mammals collated from the NBDC (2021) database, present within the surrounding three 2km squares (O02Y, O12D and O12I) within the past 10 years are listed in Appendix C. This list includes their level of protection, if they are red or amber listed on the International Union for the Conservation of Nature and Natural Resources (IUCN) Red List and the date of the last record of this species at this location.

##### 4.2.15.1 Terrestrial Mammals

A review of records held by the NBDC returned records of the following terrestrial mammal species protected under the Wildlife Acts (As Amended) within the three 2km squares of the proposed site:

- Eurasian Badger *Meles meles*
- Pygmy Shrew *Sorex minutus*
- West European Hedgehog *Erinaceus europaeus*
- Eurasian Red Squirrel *Sciurus vulgaris*
- Pine Marten *Martes martes*
- European Otter *Lutra lutra*

#### Badger, Hedgehog and Pygmy Shrew

The site may occasionally be used by Badger, Hedgehog and Pygmy Shrew, mainly along the river corridors and parks. Mammal paths and fresh digging (snuffle holes) in the lawn (Figure 4-9) was recorded in the park area west of Knocklyon Road (shown in Figure 4-4) and are likely to belong to



Badger. The scrub was dense with Bramble and inaccessible and the mammal paths were leading into the scrub. This area is not within the proposed cycle route.

Due to the presence of suitable habitats, the site is considered to be of higher local importance for these mammals.



Figure 4-9: Digging (snuffle holes) in the lawn.

#### Red Squirrel and Pine Marten

These mammals are extremely shy and woodland specialists therefore, due to the urban environment, the site can be considered of less than local importance for these mammals.

#### Otter

No signs of Otter were recorded within the site. River Dodder is known to provide habitat for Otter and a recent study recorded a high present of Otter along the river (Macklin et al., 2019). Otter has also been recorded along the Whitestown Stream, with both Otter spraint found and a video footage of an individual beneath the R113 overpass, downstream of Sean Walsh Park (Fers Ltd 2019). Otter is protected under the Wildlife Act and Annex II of the Habitats Directive. Since the proposed cycle route crosses River Dodder, the site is considered to be of regional importance for the species.

#### 4.2.15.2 Bats

##### Preliminary Bat Roost Survey

Trees present in vicinity of the proposed route were inspected from ground level. The survey identified three trees with low bat roost potential. Two of the trees occur in the park at Landsdowne Park. Both are mature Ash with thick Ivy growth (point no. 2 and 3 in Figure 4-4). The Ivy has recently been chopped on both trees. The third tree is a Sycamore with a hollow in the trunk (point no. 1 in Figure 4-3). The tree is next to Old Bawn Road and is exposed to disturbance from traffic and pedestrians.

Given that there is potential for bats to be roosting in these trees, even though low potential, the site is considered to be of local importance for roosting bats.

##### Foraging and Commuting Habitat

Bats use linear features, such as hedgerows/treelines and watercourses, to commute. Suitable habitat for bats is present along the watercourses (Whitestown Stream and River Dodder) and hedgerows/treelines next to them. While treelines and hedgerows are present along parts of the roads of the proposed route, they are of less value for commuting bats as they go through highly urbanised areas and are impacted by existing street lighting.



The site provides habitat of **moderate suitability for commuting bats**.

Four bat species have been recorded along Whitestown Stream in Sean Walsh Park by JBA in 2020 (JBA, 2021c), namely Common Pipistrelle *Pipistrellus pipistrellus*; Soprano Pipistrelle *Pipistrellus pygmaeus*; Leisler's Bat *Nyctalus leisleri*; and *Myotis* spp. The *Myotis* spp. is likely to be Daubenton's Bat *Myotis daubentonii*, as this species is highly associated with rivers and lakes and has been recorded several times along the River Dodder (NBDC, 2021).

In the absence of bat activity survey data, under the precautionary principal, it is assumed that bats are likely to utilise this site for commuting given the presence of treelines/hedgerows and watercourses.

Part of the site is considered to be of regional importance for commuting and foraging bats as it includes areas along Whitestown Stream and some parks.

#### 4.2.15.3 Breeding Birds

Several amber listed birds have been recorded on NBDC within the three 2km grid squares, some of which use the same type of habitat found on site and could therefore be found within the site.

No nests were observed at the time of the survey; however woodlands, scrub, hedgerow and trees may be used by birds for nests.

As a precautionary approach, due to the presence of suitable nesting habitat, the site has been valued as being of local (higher) ecological importance for birds.

#### 4.2.15.4 Wintering Birds

The proposed route does not go through or beside any areas identified as wintering bird habitats. Wintering birds are likely to use the grasslands in Dodder Valley Park for foraging and potentially roosting, however this is not considered to be within the zone of influence of the proposed cycle route.

The site is considered to be of less than local importance for wintering birds.

#### 4.2.15.5 Amphibians

The ponds in Sean Walsh Park may provide suitable habitat for amphibians. However, given that the ponds are connected with Whitestown Stream it is likely that fish (Stickle-back) are present and thus reducing the suitability of the habitat for amphibians as they are preyed upon by fish.

JBA undertook an amphibian survey in Sean Walsh Park in 2020 and recorded no spawn or presence of full-grown individuals in any of the main ponds (JBA, 2021c). However, frog spawn was found in isolated small ponds ditches in the south-western area of Sean Walsh Park, though these are not connected to the main watercourses and would not be impacted by the proposed works. An eDNA test was carried out for the presence of newts and the result was negative for the occurrence of newts.

No other suitable habitat for amphibians (still water or ponds) was recorded during the ecological walkover of the site and no individuals were recorded.

Due to the presence of suitable habitat in Sean Walsh Park, the site is considered to be of local (lower) ecological importance for amphibians.

#### 4.2.15.6 Fish

A fisheries survey was carried out by Triturus (2021) in 2020 of the ponds in Sean Walsh Park and Whitestown Stream in the area upstream and downstream of the ponds.

The upstream section of Whitestown Stream was found to have a concrete bed and weirs with a highly degraded aquatic habitat and supports a limited biota. The only fish species recorded was Three-spined Stickleback *Gasterosteus aculeatus*, typically the last fish species remaining in degraded channels. The section downstream of the ponds was more natural despite evident historical modifications to the channel. The stream is highly enriched and silted and offers poor habitat for salmonids, which would not survive in these conditions where oxygen levels would fluctuate highly.

The three eastern ponds in the park also had the presence of Three-spined Stickleback, the eastern most pond being of limited fisheries value given the concrete-walled margins and lack of macrophytes. All three ponds had some suitability for European Eel *Anguilla anguilla* and eDNA test provided positive results for Eel being present. However, instream barriers for Eel passage are present both between and downstream of the ponds with several weirs present.

Five fish species were recorded in River Dodder in 2018, Brown Trout *Salmo trutta* being the most abundant (Matson et al., 2019). European Eel was recorded at one location and the other three species present included Minnow *Phoxinus phoxinus*, Stone Loach *Barbatula barbatula* and Three-spined Stickleback. Lamprey *Lampetra* spp. was recorded in 2015 and 2016, but not in 2018.

The European Eel currently has Critically Endangered IUCN status and is protected under the OSPAR Convention. Lamprey is currently protected under Annex II and V of the EU Habitats Directive

The waterbodies are considered to be of regional importance for Eel and Lamprey.

#### 4.2.16 Invasive Non-native species

A total of 7 invasive non-native species were recorded during the ecological walkover survey within or adjacent to the site. Two of these are listed on the Third Schedule of the EC (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/2011, Japanese Knotweed *Reynoutria japonica* and Giant Rhubarb *Gunnera tinctoria*. These are also considered High Impact invasive species, as is Cherry Laurel *Prunus laurocerasus* which was recorded in Sean Walsh Park. All invasive species are listed in Table 4-5 and whether they are listed on the Third Schedule and a High Impact invasive species. Their location is shown in Figure 4-10.

Table 4-5: Invasive species recorded during the ecological walkover survey.

Invasive Species	On the Third Schedule	High Impact Species
Giant Butterbur <i>Petasites japonicus</i>	No	No
Japanese Knotweed <i>Reynoutria japonica</i>	Yes	Yes
<i>Cotoneaster</i> spp.	No	No
Giant Rhubarb <i>Gunnera tinctoria</i>	Yes	Yes
Himalayan Honeysuckle <i>Leycesteria formosa</i>	No	No
Cherry Laurel <i>Prunus laurocerasus</i>	No	Yes
Snowberry <i>Symphoricarpos albus</i>	No	No



Figure 4-10: Invasive non-native species recorded in the vicinity of the proposed cycle route. (Source: Open Street Map)

Most of these species were recorded within Sean Walsh Park, including Giant Rhubarb, Himalayan Honeysuckle, Cherry Laurel, Snowberry and Giant Butterbur. An invasive species management plan for Sean Walsh Park is currently being developed which involves the eradication of all the above listed species.

Japanese Knotweed was recorded south of River Dodder, east of Old Bawn Road. The stands are being treated, as can be seen in Figure 4-11. Furthermore, the plants are growing on the grass verge and a stone wall is located between the grass verge and the road and cycle path.

Giant Butterbur also occurs along a section of Whitestown Stream, north of Avonbeg Road.

Cotoneaster spp. was recorded in the park at Dargle Wood as part of the boundary treeline.

As the works are restricted to the existing roads and widening of footpaths, they will not disturb the invasive species given their locations. However, machineries may cause further spread of invasive species when the move between sites.

All invasive non-native species on the NBDC (2021) database, present within the relevant 2km squares (O02Y, O12D and O12I) of the proposed development site, are provided in Appendix C.





Figure 4-11: Japanese Knotweed being treated south of River Dodder.

### 4.3 Screening of Ecological Features

The screening of ecological features is given in Table 4-6. Those features screened out are not considered further in this assessment. Ecological features that are screened in are assessed for potential impact during construction and operation in the following sections.

Table 4-6: Summary of ecological features and the screening assessment.

Ecological feature	Value	Screening	Reasoning
Glenasmole Valley SAC [001209]	International	Screened out	Lack of connectivity
Wicklow Mountains SAC [002122]	International	Screened out	Lack of connectivity
Wicklow Mountains SPA [004040]	International	Screened out	Lack of connectivity
South Dublin Bay and River Tolka Estuary SPA [004024]	International	Screened out	Lack of connectivity
South Dublin Bay SAC [000210]	International	Screened out	Lack of connectivity
North Bull Island SPA [004006]	International	Screened out	Lack of connectivity
North Dublin Bay SAC [000206]	International	Screened out	Lack of connectivity
Dalkey Islands SPA [004172]	International	Screened out	Lack of connectivity
Rockabill to Dalkey Island SAC [003000]	International	Screened out	Lack of connectivity
Dodder Valley pNHA [000991]	National	<b>Screened in</b>	
Glenasmole Valley pNHA [001209]	National	Screened out	Lack of connectivity
Lugmore Glen pNHA [001212]	National	Screened out	Lack of connectivity



Ecological feature	Value	Screening	Reasoning
Fitzimon's Wood pNHA [001753]	National	Screened out	Lack of connectivity
Grand Canal pNHA [002104]	National	Screened out	Lack of connectivity
Stone walls and other stonework	Less than local	Screened out	Low value
Buildings and artificial surfaces	Less than local	Screened out	Low value
Other artificial lakes and ponds	Regional	<b>Screened in</b>	
Eroding/upland rivers, Depositing/lowland rivers	Regional importance	<b>Screened in</b>	
Amenity grassland (improved)	Less than local	Screened out	Low value
Dry meadows and grassy verges	Local (higher) importance	<b>Screened in</b>	
(Mixed) broadleaved woodland	Regional	<b>Screened in</b>	
Mixed broadleaved/conifer woodland	Local (higher) importance	<b>Screened in</b>	
Scattered trees and parkland	Less than local	Screened out	Low value
Hedgerows	Local (higher) importance	<b>Screened in</b>	
Treelines	Local (higher) importance	<b>Screened in</b>	
Scrub	Local (higher) importance	<b>Screened in</b>	
Mammals - Badger, Hedgehog, Pygmy Shrew	Local (higher) importance	<b>Screened in</b>	
Otter	Regional	<b>Screened in</b>	
Mammals - Red Squirrel, Pine Marten	Less than local	Screened out	Low suitability
Bats - roosting	Local (higher) importance	<b>Screened in</b>	
Bats - commuting and foraging	Regional	<b>Screened in</b>	
Breeding Birds	Local (higher) importance	<b>Screened in</b>	
Wintering Birds	Less than local	Screened out	Low suitability
Amphibians	Local (lower) importance	Screened out	Low suitability, amphibian surveys did not record any amphibians being present.
Fish (Eel and Lamprey)	Regional	<b>Screened in</b>	
Invasive non-native species	-	Screened in	Occur along the proposed route

## 5 Potential Impacts

The impacts on the valued ecological features are assessed here. The initial assessment considers the potential impact pathways and whether these apply to the ecological features. The impact assessment considers the project and the anticipated effects in the absence of any mitigation.

The following sections described the nature of immediate / short-term impacts, as well as any medium- or long-term impacts, predicted for designated protected sites, habitats and species in the absence of implemented mitigation measures during the maintenance works.

### 5.1 Do Nothing Scenario

If the proposed works were not to go ahead and the present land management continues as is, the ecological value of the site would remain.

### 5.2 Construction Phase

#### 5.2.1 Designated Sites

##### 5.2.1.1 Dodder Valley pNHA

Dodder Valley is adjacent to the site, between Old Bawn Road and M50. There are stonewalls present along the road where the proposed cycle route crosses the River Dodder (Figure 5-1), which will prevent any direct runoff from the proposed works into the watercourse.

Whitestown Stream flows into the Dodder Valley pNHA. The main impact concerns would be that of pollutants (hydrocarbon leakages from site machinery) and excess sediment from the excavations and any works carried out close to the banks of the watercourse. This could impact on water quality and the protected aquatic and riverine species that it supports, notably including Little Grebe, Kingfisher, Grey Wagtail, Sand Martin and Otter.

Impacts could arise from excavation works generating air pollutants and potential noise disturbance.

The proposed works are not anticipated to generate a great amount of dust given the small scale works where the proposed route will be along existing roads and involve resurfacing or widening of paths. The main habitats within the pNHA, woodland, scrub and wildflower meadows, are not sensitive to dust.

There will be an increase in local traffic attending the site during construction, resulting in an increase in NO<sub>x</sub> emissions, however the works are temporary and will not significantly impact on the ecological features of the pNHA.

While the works will generate some noise, it will mainly impact the local area and will be temporary in nature. Given that Dodder Valley pNHA is located in an urban setting and next to the M50 motorway, the noise generated from the works will not increase the disturbance to the species within the pNHA.

Therefore, in the absence of mitigation, temporary, minor impacts on water quality to Dodder Valley pNHA are anticipated.



Figure 5-1: Stonewall along road where it crosses River Dodder. (Source: © 2021 Google)

## 5.2.2 Habitats

### 5.2.2.1 Other artificial lakes and ponds

The artificial lakes and ponds are located in Sean Walsh Park and the proposed cycle route which may involve widening of the existing pathway is located to the south of the ponds. Whitestown Stream runs between the proposed route and the ponds, preventing any runoff into the two upstream ponds. Whitestown Stream joins with the downstream, easternmost pond. Accidental spill resulting in pollutants (hydrocarbon leakages from site machinery) entering the Whitestown Stream and the excess sediment from excavation works may impact on the downstream pond.

The works are small scale and temporary during the construction phase. Therefore, in the absence of mitigation, temporary, minor impacts to this habitat of regional importance are anticipated.

### 5.2.2.2 Eroding/upland rivers, Depositing/lowland rivers

There are sections along Whitestown Stream where there only is a vegetated grass strip between the cycle route and the stream, this includes the section that runs south of the ponds and east of Old Bawn Road. Potential runoff of silt and pollutants during heavy rainfall would run over the grass strip which is between circa 7-13m in width before entering the stream. These inputs could lead to a degradation of the Whitestown Stream. However, the grass strip will act as a buffer and reduce the potential for silt entering the stream. The Q-value of Whitestown Stream is 'Poor' (EPA, 2021).

Any other areas where the proposed route is crossing a watercourse (River Dodder and tributaries) there are stonewalls present along the road (as shown in Figure 5-1). This prevents direct runoff from the proposed works into the watercourses.

The works are considered to be small, and any impact would be temporary during the construction phase. Therefore, the impacts are considered to be minor on this habitat of regional importance.

### 5.2.2.3 Dry meadows and grassy verges

The grassy verge next to Old Bawn Road, beside River Dodder will not be impacted by the proposed works as the route in this location will be on the existing road with potential surface upgrade. A stonewall is present between the road and the habitat, further preventing the likelihood of impact on this habitat.

Therefore, negligible impact to this habitat of local importance is anticipated.

### 5.2.2.4 (Mixed) broadleaved woodland

No impact is anticipated to this habitat. The potential widening of the road will not require removal of any trees within the (mixed) broadleaved woodland habitats.

Therefore, the proposed works are anticipated to have a neutral impact on this habitat of local importance.

#### 5.2.2.5 Mixed broadleaved/conifer woodland

Although the proposed route will be located adjacent to the mixed broadleaved/conifer woodland habitats, there will be no impact to this habitat. The woodland habitats occur along existing road and pathways, on the far side of the pathway, and the proposed works will not require the removal of any trees.

Therefore, the proposed works will have a neutral impact on this habitat of local importance.

#### 5.2.2.6 Hedgerows, Treelines, Scrub

The introduction of cycle route and widening of footpaths may require the removal of some trees along the roads to allow widening of the path.

Therefore, in the absence of mitigation, long-term, minor impacts to these habitats of local are anticipated.

### 5.2.3 Species

#### 5.2.3.1 Mammals - Badger, Hedgehog, Pygmy Shrew and Otter

Potential impact on Badger, Hedgehog and Pygmy Shrew is through increased noise and human activity during construction and dust deposition leading to changes in structural, foraging and commuting habitat. Although this group of species are generally mobile, constructional impacts attributed to noise and dust deposition must be considered. Dust can have direct impacts on insect and other invertebrate populations. Impacts on plant and invertebrate communities may result in effects further up the food chain (terrestrial mammals).

Given the temporary and small scale of the works, generation of dust is not anticipated to impact on this species group as it is not anticipated to impact on the foraging habitat.

Noise disturbance could cause stress to this species group and cause displacement. In the context of this suburban landscape, available habitats are decreasing. Noise effects associated with the works would be temporary during daytime hours and will not affect the foraging behaviour of these mostly nocturnal species (Pygmy Shrew forage day and night).

Therefore, in the absence of mitigation, temporary Negligible impacts to Badger, Hedgehog and Pygmy Shrew which are of local importance and temporary minor impacts to Otter of regional importance, are anticipated.

#### 5.2.3.2 Bats

##### Roosting

No impact to potential bat roosts is anticipated. Two of the trees with bat roost potential (2 and 3 in Figure 4-4) are not along the proposed route and the tree next Old Bawn Road (1 in Figure 4-3) is already considered to be impacted by existing traffic and lighting and the proposed works on the cycle route are not anticipated to have any further impact.

Therefore, in the absence of mitigation, neutral impacts to bats roosting habitat are anticipated.

##### Commuting and Foraging

Predicted impacts to bats will results from construction site lighting at night during the bat active season (April-October), which could illuminate commuting and foraging habitats and potential roosts, thus reduce the quality of these habitats. However, bats using the site should be used to light disturbance as lighting already exists along most of the proposed route. Noise effects associated with the works would be temporary during diurnal parts of the day and no nocturnal noise effects are anticipated.

Therefore, in the absence of mitigation, temporary, neutral impacts to bats commuting and foraging are anticipated during construction.



### 5.2.3.3 Breeding Birds

Potential impact on birds during construction is through habitat removal and noise disturbance. Removal of vegetation (scrub, trees) during the breeding season which are used by nesting birds could result in the loss of individuals, including young of the species. Given that birds are mobile species and the majority of available habitat will be retained, long-term impact is not considered on any of the bird species using the site.

The disturbance caused by noise and increased human presence is unlikely to cause stress to this group, given the temporary nature of the works.

Therefore, in the absence of mitigation, temporary negligible impacts to this species group of local importance are anticipated.

### 5.2.3.4 Fish (European Eel and Lamprey)

There may be impacts during construction to European Eel living in the Whitestown Stream and European Eel and Lamprey in River Dodder. The main impact concerns would be that of pollutants (hydrocarbon leakages from site machinery) and excess sediment from the removal of topsoil. This could result in a reduction in water quality in Whitestown Stream, which is already 'Poor', and thus impact on the overall fitness of European Eel. It could also impact on prey species, such as aquatic invertebrates and smaller fish. This could also impact on European Eel and Lamprey populations in River Dodder downstream of the confluence with Whitestown Stream.

Therefore, in the absence of mitigation, temporary, minor impacts to European Eel and Lamprey are anticipated during construction.

### 5.2.3.5 Invasive non-native species

No construction works are proposed in locations where invasive non-native species have been recorded. However, given that they are adjacent to works site there is the potential for machinery to cause further spread of invasive species when they move between sites and if materials are stored in these locations.

Biosecurity measures should be in place to avoid contamination and further spread of invasive non-native species.

## 5.3 Operational Phase

### 5.3.1 Designated Sites

#### 5.3.1.1 Dodder Valley pNHA

It is not anticipated that the operational phase will impact on Dodder Valley pNHA as there will be no additional emissions produced from the site that could potentially impact the ecological features of the pNHA.

### 5.3.2 Habitats

#### 5.3.2.1 Other artificial lakes and ponds

While widening of the existing footpath in Sean Walsh Park may increase surface water runoff due to an increase in hardstanding surface, it is not anticipated to be significant. Impacts on this habitat during the operational phase of the project are anticipated to be neutral.

#### 5.3.2.2 Eroding/upland rivers, Depositing/lowland rivers

The proposed cycle route will involve reduction of vegetation and an increase in hardstanding surfaces which will result in an increase in surface water runoff. However, the increase is not anticipated to be significant. Impacts on this habitat during the operational phase of the project are anticipated to be neutral.

#### 5.3.2.3 Dry meadows and grassy verges

Impacts to this habitat during operation of the cycle route are anticipated to be neutral.

#### 5.3.2.4 (Mixed) broadleaved woodland

Impacts to the broadleaved woodland habitat during operation of the cycle route are anticipated to be neutral.

#### 5.3.2.5 Mixed broadleaved/conifer woodland

Impacts to the mixed broadleaved/conifer woodland habitat during operation of the cycle route are anticipated to be neutral.

#### 5.3.2.6 Hedgerows, Treelines, Scrub

Impacts to these habitats during the operation of the cycle route are anticipated to be neutral.

### 5.3.3 Species

#### 5.3.3.1 Mammals - Badger, Hedgehog, Pygmy Shrew and Otter; Bat; Birds

Potential impact during operation on Badger, Hedgehog, Pygmy Shrew, Otter, bats and birds is through operational noise disturbance and human activity. Any disturbance would be intermittent during day-time hours and nocturnal noise effects are anticipated to be limited. Species habiting the area would be used to human presence and noise disturbance given the urban landscape.

Therefore, in the absence of mitigation, negligible impact to this species group is anticipated during the operational phase of the project.

#### 5.3.3.2 Fish (European Eel and Lamprey)

The proposed cycle route will involve reduction of vegetated areas and an increase in hardstanding surfaces which will result in an increase in surface water runoff. However, the increase is not anticipated to be significant. Impacts on European Eel and Lamprey during the operational phase of the project are anticipated to be neutral.

#### 5.3.3.3 Invasive non-native species

It is not anticipated that the operation of the project will cause further spread of invasive non-native species.

## 5.4 Summary

The following potential impacts have been identified and possible mitigation is discussed in the next chapter:

- Reduction of water quality during construction with temporary impacts to Dodder Valley pNHA and its ecological features, aquatic habitats (pond and watercourse) and fish (European Eel and Lamprey).
- Potential removal of trees/scrub along the proposed cycle route impacting on treelines and hedgerows.
- Potential spread of invasive non-native species between sites.

## 6 Mitigation

The following mitigation is recommended to ensure that the proposed works do not adversely impact on the ecological receptors outlined in Section 5.

### 6.1 Do nothing scenario

If the proposed works were not to go ahead, it is likely that the current regime of management of the land will continue as currently.

### 6.2 Construction Phase

#### 6.2.1 Construction impacts to water quality

The water column may be temporarily impacted by potential pollutants and increased sediment during works carried out near Whitestown Stream. This may impact the water quality of the stream, the downstream pond, which may impact ecological features such as European Eel and Lamprey. This could also impact of Dodder Valley pNHA which is located downstream of Whitestown Stream.

The following pollution and sediment controls shall be implemented when carrying out works near the watercourse.

##### 6.2.1.1 Sediment Control Measures

Appropriate mitigation measures should be implemented prior and during the construction phase to ensure that the water quality is not adversely affected through pollution incidents and the release of contaminants from the site. The measures outlined below should be included in a Construction Environmental Management Plan (CEMP) for the proposed development.

Relevant legislation and best practice guidance that have been considered include, but are not limited to the following:

- C532 Control of water pollution from construction sites. Guidance for consultants and contractors ([www.ciria.org](http://www.ciria.org));
- C515 Groundwater control – design and practice, 2nd ed. ([www.ciria.org](http://www.ciria.org));
- Inland Fisheries Ireland 2016 'Guidance on Protection of Fisheries During Construction Works In and Adjacent to Waters';
- IFI 2020. Planning for watercourses in the Urban Environment. A Guide to the Protection of Watercourses through the use of Buffer Zones, Sustainable Drainage Systems, Instream Rehabilitation, Climate / Flood Risk and Recreational Planning. (IFIUrbanWatercoursesPlanningGuide ([fisheriesireland.ie](http://fisheriesireland.ie)));
- NRA 2008 ' Guidelines for the crossing of watercourses during the construction of national road schemes'.

The above best practice mitigations will alleviate the risk associated with accidental spills and runoff events. In particular silt runoff into the Whitestown Stream will be prevented by incorporating the following actions:

- A silt fence shall be installed between the works and the banks of the watercourse, where there is no stonewall present to prevent runoff entering the watercourse. This will be installed prior to any works commencing. The silt fencing should be removed only when bare soil is re-vegetated and sediment movement is no longer a risk.
- The silt fence will be a permeable geotextile barrier installed vertically on support posts and entrenched in the ground.
- A 10m buffer zone of vegetation will remain undisturbed between the works and the watercourse where possible. Where the grass strip between the path and watercourse is narrower, as wide vegetated buffer strip as possible will be left;
- Run-off from the working site or any areas of exposed soil should be channelled and intercepted for discharge to silt-traps with over-flows directed to land to prevent any flow of surface water to the watercourse;

- Silt-traps should be maintained and cleaned regularly during the course of site works;
- All excavations close to the watercourse should be carried out in the dry and there will be no working near the watercourse during heavy or sustained period of rain; and
- All soil stockpiles shall be located >10m away from the watercourse. All stockpiles shall be covered to minimise the risk of rain / wind erosion.

#### General measures

- No excavation shall take place below the water-table on the site;
- Any stockpiling of topsoil must be considered and planned such that risk of pollution from these activities is minimised. Drainage from the topsoil storage area should not enter the stream;
- The compound shall be located within the site boundary and will be sited as far from the watercourse (>50m) as possible in order to minimise potential impacts;
- Drainage collection system for washing area to prevent run-off into surface water system;
- There must be no discharge to, including any suspended solids or other deleterious matter, to the watercourse;
- All site runoff will be controlled and if necessary diverted to a sediment tank and the contents will be removed off site by a licenced waste contractor; and
- Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective should be removed from site immediately or positioned in a place of safety until such time that it can be removed.

#### 6.2.1.2 Pollution Control and Spill Prevention

##### Prevention measures

- Regular inspections and maintenance of plant and machinery checking for leaks, damage or vandalism will be made on all plant and equipment.
- The site compound storage areas and cleaning areas will be rendered impervious and will be constructed to ensure no discharges will cause pollution to surface or ground waters.
- Re-fuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in a designated area which will be away from any existing surface water drains which could also provide pathways to the underlying geology.
- Mobile plant will refuel over a drip tray with an absorbent mat.
- Potentially contaminated run off from plant and machinery maintenance areas will be managed within the site compound surface water collection system.
- Damaged or leaking containers will be removed from use and replaced immediately.
- During all works the weather forecast will be monitored and a contingency plan developed to prevent damage or pollution during extreme weather. Machinery and equipment will not be left on-site during such events and will be removed beforehand.

##### Control measures

In the event of a spill the Contractor will ensure that the following procedures are in place:

- Emergency response awareness training for all Project personnel on-site works.
- Appropriate and sufficient spill control materials will be installed at strategic locations within the site. Spills kits for immediate use will be kept in the cab of mobile equipment.
- Oil booms and oil soakage pads should be maintained on-site to enable a rapid and effective response to any accidental spillage or discharge. The correct disposal of these booms and pads will be demonstrated during the tool box talks. Records will be maintained by the environmental manager of the used booms and pads taken off site for disposal.
- Spill kits will be stored in the site compound with easy access for delivery to site in the case of an emergency. A minimum stock of spill kits will be maintained at all times and site vehicles will carry spill kits at all times. Spill kits must include suitable spill control materials to deal with the type of spillage that may occur and where it may occur. Typical contents of an on-site spill kit will include the following as a minimum;



- Absorbent granules;
  - Absorbent mats/cushions;
  - Absorbent booms.
  - Spill kits will contain gloves to handle contaminated materials and sealable disposal sacks.
- Track mats, drain covers and geotextile material.
  - Absorbent material will be used with pumps and generators at all times.
  - Any pollutant chemicals, fuels of any kind, concrete additives etc. used on site will be stored in labelled waterproof and secured protective containers to mitigate the risk of pollution of the watercourses.
  - All used spill materials e.g. absorbent pads will be placed in a bunded container in the contractor's compound. The material will be disposed of by a licenced waste contractor at a licenced facility. Records will be maintained by the environmental site manager.
  - To minimise any impact on the underlying subsurface strata from material spillages, all oils, solvents etc, used during construction will be stored in temporary bunded area within the construction compound, however they will not be stored on site overnight.
  - Oil and fuel storage tanks shall be stored in designated areas, and these areas will, as a minimum, be bunded to a volume not less than the following;
    - 110% of the capacity of the largest tank or drum within the bunded area (plus an allowance of 30 mm for rainwater ingress); or
    - 25% of the total volume of substances which could be stored within the bunded area.
  - The contractor will ensure that no hazardous or noxious materials enters a watercourse/drain. Should this situation arise emergency procedures will be activated.

### 6.2.2 Removal of vegetation (treeline, hedgerow)

During removal of vegetation and construction works, vegetation to be retained will be protected to avoid damage. The following recommendations are from 'Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post Construction of National Road Schemes' (NRA, 2006).

- A protective fencing will be erected prior to any excavation and construction activities start.
- Any excavation carried out within the Root Protection Area should be undertaken with extreme care, avoiding damage to the protective bark covering larger roots.
- Once any remedial works are complete and all plant equipment has evacuated the site, protective barriers can be removed.

Removal of vegetation will be conducted outside of the bird nesting season (March to August 31st inclusive). If this is not possible, a breeding bird survey will be undertaken in advance of the works to ensure that there will be no impacts on nesting birds. The survey will be carried out by an appropriately qualified ecologist, i.e. able to identify bird species and experience in undertaking breeding bird surveys. If nests are found, they will be safeguarded, with an appropriate buffer, until the chicks have successfully fledged.

### 6.2.3 Disturbance/harm to species (mammals, bats)

Although it has been identified that there will be no permanent impact through disturbance to wildlife during the work, it is advised that general avoidance measures be undertaken to protect wildlife while the works are being carried out.

General avoidance measures that should be incorporated by the contractors working on site include:

- Limit the hours of working to daylight hours, to limit disturbance to nocturnal and crepuscular animals;
- Due to the potential presence of Badger; Hedgehog; Pygmy Shrew; and bat species, the use of lighting at night should be avoided. If the use of lighting is essential, then a directional cowl should be fitted to all lights to prevent light spill and to be directed away from treelines / hedgerows;

- Contractors must ensure that no harm comes to wildlife by maintaining the site efficiently and clearing away materials which are not in use, such as wire or bags in which animals can become entangled; and
- Any pipes should be capped when not in use (especially at night) to prevent animals becoming trapped. Any excavations should be covered overnight to prevent animals from falling and getting trapped. If that is not possible, a strategically placed plank should be placed to allow animals to escape.

#### 6.2.4 Tree planting

Where roadside trees in treelines need to be removed to allow for the new route, they should be replaced in adjacent locations where possible. The landscape plan should include tree replacement and planting of new trees as appropriate.

The selection of tree species when planting new trees should consider their value for wildlife and it is recommended that native tree species are chosen. Listed below are examples of species and their biodiversity benefits:

- Silver Birch *Betula pendula* - provides food and habitat for a wide range of insect species, including caterpillars of many moths. The seeds are eaten by Siskins, Greenfinches and Redpolls.
- Bird Cherry *Prunus padus* - Flowers support numerous pollinator species, while the fruits are often consumed by Badger, other small mammals and bird species.
- Lime *Tilia cordata* - Supports diverse insect life, including pollinator species like bees and moths, supplying local birds and bats with prey.
- Field maple *Acer campestre* - It is attractive to many species of ladybird, hoverfly and birds. Lots of species of moths feed on its leaves. The flowers provide nectar and pollen sources for bees and birds, and small mammals eat the fruits.
- Sessile Oak *Quercus petraea* - Supports diverse insect life, supplying local birds and bats with prey. Additionally, the acorns are consumed by Badger.
- Guelder Rose *Viburnum opulus* - The red berries are an important food source for birds and the shrub canopy provides shelter for a wide range of wildlife. The flowers are especially attractive to hoverflies.
- Hazel *Corylus avellana* - Provides food for the caterpillars of moths, supplying local birds and bats with prey. Additionally, hazelnuts are eaten by Greater Spotted Woodpecker, Wood Pigeon and small mammals.

#### 6.2.5 Biosecurity

Given that invasive non-native species are present adjacent to the proposed cycle route, there is a risk of spread between sites via machine tracks, boots or clothes that have been contaminated. Measures will need to be put in place to ensure that there is no spread of invasive non-native species or diseases. The Check-Clean-Dry approach should be followed, ensuring that all PPE and equipment is cleaned before leaving site. For more information refer to: [www.nonnativespecies.org/checkcleandry](http://www.nonnativespecies.org/checkcleandry).

No material or equipment will be stored at the location where Japanese Knotweed was recorded (Figure 4-10).

### 6.3 Recommended Enhancements

The following measures are recommended to enhance the opportunities for biodiversity within the site. These measures are not mitigation measures required to ensure no negative residual impacts but rather represent significant opportunities for enhancements.

#### 6.3.1 All Ireland Pollinator Plan

It is recommended that All-Ireland Pollinator Plan actions be carried out along the route during the operation. A new All-Ireland Pollinator Plan (2021-2025) came out in March 2021 and recommended actions in the guidance document Councils: actions to help pollinators (All-Ireland Pollinator Plan 2015-2020) still stands:

<https://www.biodiversityireland.ie/wordpress/wp-content/uploads/Pollinator-Council-Guide-FINAL.pdf>

A summary of the actions in this document includes:

- Protect what you have.
- Protect and enhance the natural habitats that are already available to pollinators.
- Alter mowing regime of grassy areas.
- The most cost-effective way to help pollinators is to reduce mowing and allow grassland species such as Dandelions, Clover, and Birds-foot Trefoil to flower.
- Further guidance on this can be found here: <https://pollinators.ie/wp-content/uploads/2019/04/Pollinator-friendly-grass-cutting-A5-Flyer-PRINT.pdf>.
- Plant Pollinator-friendly plants.
- Choosing to plant native and nectar/pollen rich species that provide food sources for pollinators from early spring to autumn.
- Further guidance on this can be found here <https://pollinators.ie/wordpress/wp-content/uploads/2018/04/Planting-Code-2018-WEB.pdf>.
- Provide nesting habitat. Pollinators early life cycles are dependent on their nesting habitats, not just the food that is provided. Many pollinators nest in hedgerows, earth/sand banks, holes in wood or concrete, or in bee/bug hotels.
- Further guidance can be found here: <https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Nesting-2018-WEB.pdf>.
- Reduce or eliminate pesticides.
- Use alternatives to pesticides like glyphosate or eliminate their use altogether.

## 7 Residual Impact

Residual ecological impacts are those that remain once the development proposals have been implemented. The main aim of ecological mitigation, compensation, and enhancement is to minimise or eliminate residual impacts.

### 7.1 Do Nothing Scenario

Under the current use of the site there is a neutral effect on the general ecology of the area. If the proposed works were not to go ahead, it is likely that the current regime of management of the land will continue as currently with no residual impacts.

### 7.2 Construction Phase

The proposed works could impact on water quality of Whitestown Stream and downstream pond and indirectly impact on European Eel and Lamprey. It could also impact on Dodder Valley located downstream. There is also the potential that single trees or scrub require removal with the potential for physical damaged to roots and stems on retained vegetation. While the works are likely to cause some disturbance to mammals and bats commuting and foraging within and around the site, the species using the area are likely to be used to human presence and noise disturbance given the urban landscape.

Mitigation measures to be implemented include sediment and pollution control measures, protection of retained vegetation and general avoidance measures incorporating good site management and construction practices to minimise harm and disturbance to species. The mitigation in place will minimise any significant and/or permanent impact on the environment and residual impacts during the construction phase are not anticipated.

### 7.3 Operational Phase

The operation of the site will be similar to the current use. Where trees are being removed, they will be replaced in adjacent locations where possible, using native species.

With the mitigation in place, there will be no residual impact during the operational phase.

### 7.4 Summary Table

Table 7-1 below presents a summary of the EclA assessment describing the ecological features, the potential impacts of the works on these ecological features, their value according to European environmental law, the severity of the impact and mitigation measures which are to be implemented to avoid these impacts. Residual impacts following the implementation of mitigation measures are also provided.



Table 7-1: Summary table of impact assessment, mitigation measures and residual impact during construction phase.

Ecological Features	Importance of Feature	Potential Impact	Impact without Mitigation	Mitigation	Significance of Effects of Residual Impacts
<b>Construction Impacts</b>					
<i>Designated Sites</i>					
Dodder Valley pNHA	National	Reduction in water quality	Minor	Follow measures outlined in Section 6.2.1, including installation of silt fence between the works and the banks of Whitestown Stream and pollution prevention measures.	No significant residual impact
<i>Habitats</i>					
Other artificial lakes and ponds	Regional	Reduction in water quality	Minor	Follow measures outlined in Section 6.2.1, including installation of silt fence between the works and the banks of Whitestown Stream and pollution prevention measures.	No significant residual impact
Eroding/upland rivers, Depositing/lowland rivers	Regional	Reduction in water quality	Minor		No significant residual impact
Dry meadows and grassy verges	Local (higher)	None anticipated	-	-	No significant residual impact
(Mixed) broadleaved woodland	Regional	None anticipated	-	-	No significant residual impact
Mixed broadleaved/conifer woodland	Local (higher)	None anticipated	-	-	No significant residual impact
Hedgerows, Treelines, Scrub	Local (higher)	Reduction of habitat	Minor	Follow measures outlined in Section 6.2.2, including protective fencing around retained vegetation and timing of removal of vegetation to avoid impacts on breeding birds.  Follow measures outlined in Section 6.2.4, including	No significant residual impact

Ecological Features	Importance of Feature	Potential Impact	Impact without Mitigation	Mitigation	Significance of Effects of Residual Impacts
				replanting of trees elsewhere if removal is required.	
<i>Species</i>					
Mammals - Badger, Hedgehog, Pygmy Shrew  Otter	Local (higher)  Regional	Disturbance to commuting and foraging activities in the vicinity of the site	Minor	Follow measures outlined in Section 6.2.3, including limit work to daylight hours, any necessary lighting directed away from vegetation and ensuring pipes are capped and excavations covered during night to avoid mammals becoming entrapped.	No significant residual impact
Bats - roosting	Local (higher)	None anticipated	-	-	No significant residual impact
Bats – foraging and commuting	Regional	Disturbance to commuting and foraging activities in the vicinity of the site	Neutral	-	No significant residual impact
Breeding birds	Local (lower)	Noise and human activity disturbance  Harm to individuals if vegetation is removed during nesting season	Negligible	Follow measures outlined in section 6.2.2. Vegetation should be removed outside of the bird nesting season (March to August 31st inclusive). If this is not possible, a breeding bird survey will be undertaken in advance of the works to ensure that there will be no impacts on nesting birds.	No significant residual impact
Fish (European Eel, Lamprey)	Regional	Reduction of water quality  Reduced fitness and impact on prey species	Minor	Follow measures outlined in Section 6.2.1, including installation of silt fence between the works and the banks of Whitestown Stream and pollution prevention measures.	No significant residual impact

## 8 Cumulative Impacts

Potential sources of cumulative impacts were identified based on the ecology of valued ecological features. Potential sources of cumulative impacts were sought within areas where there is the potential for a significant impact on a site or species. The following plans were identified as potential sources of cumulative impacts:

### 8.1 Plans

#### 8.1.1 South Dublin County Council Development Plan 2016 - 2022

The proposed development is in line with the South Dublin County Development Plan 2016-2022. It is an objective of the Council to re-balance priorities towards sustainable modes of transportation by prioritising walking and cycling facilities.

- TM3 Objective 1: To create a comprehensive and legible County-wide network of cycling and walking routes that link communities to key destinations, amenities and leisure activities with reference to the policies and objectives contained in Chapter 9 (Heritage, Conservation and Landscape) particularly those that relate to Public Rights of Way and Permissive Access Routes.
- TM3 Objective 2: To ensure that connectivity for pedestrians and cyclists is maximised in new communities and improved within existing areas in order to maximise access to local shops, schools, public transport services and other amenities, while seeking to minimise opportunities for anti-social behaviour and respecting the wishes of local communities.
- TM3 Objective 3: To ensure that all streets and street networks are designed to prioritise the movement of pedestrians and cyclists within a safe and comfortable environment for a wide range of ages, abilities and journey types.
- TM3 Objective 4: To prioritise the upgrade of footpaths, public lighting & public realm maintenance and supporting signage on public roads/paths where a demonstrated need exists for busy routes used by runners & walkers.
- TM3 Objective 5: To provide that planning permissions granted for the development of all new schools or for existing schools where 25% or greater expansion in classrooms is proposed, should include a requirement for the provision of cycle paths from the school to join the nearest cycle network, where feasible.
- TM3 Objective 6: To ensure that all walking and cycling routes have regard to pertaining environmental conditions and sensitivities and incorporate appropriate avoidance and mitigation measures as part of any environmental assessments.

The Plan also aims to protect and enhance surface water quality, to support, improve and protect Natura 2000 sites, and to develop an integrated Green Infrastructure network to enhance biodiversity, provide accessible parks, open spaces and recreational facilities (SDCC, 2016a). The plan also states that work will be in conjunction with Irish Water to protect existing water and drainage infrastructure, to promote investments aiming to support environmental protection and facilitate the sustainable growth of the county (SDCC, 2016a).

A Screening for Appropriate Assessment was carried out on the plan. This concluded that there are no likely significant direct, indirect or secondary impacts of the project on any Natura 2000 sites (SDCC, 2016b), therefore the SDCC Development Plan is not anticipated to contribute to cumulative or in-combination effects.

#### 8.1.2 Greater Dublin Drainage Plan

The Greater Dublin Drainage Strategy sets out the strategic planning for the development of waste water treatment in the Greater Dublin area in relation to the Ringsend WWTP Upgrade, Greater Dublin Drainage Project and associated wastewater network drainage projects (Irish Water, 2018). The Ringsend WWTP Upgrade includes plans to expand the WWTP to its ultimate capacity, together with associated network upgrades required. The Greater Dublin Drainage Project is planned to relieve both the Ringsend WWTP and network loading by construction of a new WWTP at Clonsaugh, an orbital sewer and provision of an outfall pipe discharging 1km north east of Ireland's Eye.

The Ringsend WWTP upgrade is in progress and carried out in stages, with an increased capacity of 400,000 PE by the first half of 2021 and the ultimate capacity of 2.4 million PE to be in operation by 2024 (Irish Water, 2021).

The Greater Dublin Drainage Project is strategically important to the Dublin Region in that it will provide capacity for residential and commercial growth (Irish Water, 2018).

The Greater Dublin Drainage Strategy is not anticipated to contribute to cumulative or in-combination effects.

### 8.1.3 River Basin Management Plan for Ireland 2018-2021

The River Basin Management Plan (RBMP) for Ireland 2018-2021 sets out the actions that Ireland will take to improve water quality and achieve 'good' ecological status in water bodies (rivers, lakes, estuaries and coastal waters) by 2021 (DoHPLG, 2018a). Changes from previous River Basin Management Plans is that all River Basin Districts are merged as one national River Basin District. The Plan provides a more coordinated framework for improving the quality of our waters — to protect public health, the environment, water amenities and to sustain water-intensive industries, including agri-food and tourism, particularly in rural Ireland.

The first cycle of River Basin Management Plans included the Eastern River Basin District - River Basin Management Plan 2009 – 2015 (WFD, 2010). The plans summarised the waterbodies that may not meet the environmental objectives of the WFD by 2015 and identified which pressures are contributing to the environmental objectives not being achieved. The plans described the classification results and identified measures that can be introduced in order to safeguard waters and meet the environmental objectives of the WFD;

- Prevent deterioration of water body status.
- Restore good status to water bodies.
- Achieve protected areas objectives.
- Reduce chemical pollution of water bodies

The RBMP for Ireland (2018-2021) outlines the new approach that Ireland will take to protect our waters over the period to 2021. It builds on lessons learned from the first planning cycle in a number of areas:

- stronger and more effective delivery structures have been put in place to build the foundations and momentum for long-term improvements to water quality
- a new governance structure, which brings the policy, technical and implementation actors together with public and representative organisations. This will ensure the effective and coordinated delivery of measures.

The River Basin Management Plan for Ireland 2018-2021 is not anticipated to contribute to cumulative or in-combination effects.

Ireland's third River Basin Management Plan 2022-2027 was due to be published in December 2021. The draft RBMP 2022-2027 is available for public consultation until 31<sup>st</sup> March 2022. The 3<sup>rd</sup> cycle draft Catchment Reports were published in August 2021. The draft Catchment Reports provides a summary of the water quality assessment outcomes for respective catchment, including status and risk categories, significant threats and pressures, details on protected areas and a comparison cycle 2 and cycle 3. The draft Catchment Report for Liffey and Dublin Bay Catchment identifies an overall improvement of 5 waterbodies across the catchment since the cycle 2 assessment (Catchment Science & Management Unit 2021). The significant pressures of the River Dodder are urban runoff and urban wastewater, where the impacts are a combination of nutrient and organic pollution and Ringsend agglomeration. The transitional and coastal waterbodies meet the requirements for the habitats and species of the SACs, including the Dublin Bays SACs. Specific water supporting conditions have not been identified for the dependent bird species in the SPAs and so waterbodies associated with SPAs are not included in the assessment, though for Dublin Bay they overlap with the SACs.



#### 8.1.4 Other Projects

Since October 2018, the projects listed below (Table 8-1), which are not retention applications, home extensions and/or internal alterations, have been granted planning permission in the locality of the proposed site.

Table 8-1: Projects granted planning permission since October 2018 in vicinity of proposed site.

Planning Reference	Address	Application Status	Decision date	Summary of development
SHD3ABP-305878-19	'Beechpark' and 'Maryfield', Scholarstown Road, Dublin 16	Grant permission	09-Mar-2020	Description: Demolition of all existing structures on site which include a single storey dwelling known as 'Beechpark' (172sq.m), a 2 storey dwelling known as 'Maryfield' (182sq.m), with associated garage/shed (33.5sq.m) and associated outbuildings (47.1sq.m); and the construction of 590 residential units (480 Build-to-Rent apartment units and 110 Build-to-Sell duplex units and apartments), ancillary residential support facilities and commercial floorspace. The total gross floor space of the development is 51,252sq.m over a partial basement of 5,888sq.m (which principally provides car and bicycle parking, plant and bin stores). The 480 'Build-to-Rent' units will be provided in 8 blocks as follows: 7 blocks ranging in height from part 5 to part 6 storeys (Blocks B1-B5, C1 and C3) and 1 block ranging in height from part 4 to part 6 storeys (Block C2) and will comprise 246 one bed units and 234 two bed units. The 110 'Build-to-Sell' units will be provided in 9 duplex blocks which will be 3 storeys in height (Blocks A1-A9) and will comprise 55 two bed units and 55 three bed units. The development will also consist of the provision of a part 1 to part 2 storey ancillary amenity block (Block D1) (414sq.m) within the central open space which comprises a gymnasium, lobby, kitchenette and lounge at ground floor level and lounge at first floor level in addition to a roof terrace (facing north, south and west) to serve the 'Build-to-Rent' residents; a 2 storey retail/café/restaurant building(Block D2 - 657sq.m) comprising 2 retail units at ground floor level (328.5sq.m) and a café/restaurant unit at first floor level (328.5sq.m); a creche (438sq.m) within Block C2 at ground floor level; and a Management Suite (261sq.m) and café/restaurant (288sq.m) within Block C3 at ground floor level all at a 5.35 hectare site located north of Scholarstown Road incorporating dwellings known as 'Beechpark' and 'Maryfield', Scholarstown Road, Dublin 16, D16 X3X8 and D16 N6V6. Works are also proposed to Scholarstown Road and Woodfield junction including new traffic signals, the elimination of the left-turn slip-lane into Woodfield off Scholarstown Road, upgraded public lighting and upgraded cycle and pedestrian facilities on an area measuring 0.7 hectares, providing a total application site area of 6.05 hectares.
SHD3ABP-307222-20	Site at Taylors Lane and Edmondstown Road, Taylors Lane, Ballyboden, Dublin 16	Grant permission	14-Sep-2020	Description: Demolition of existing former institutional buildings and associated outbuildings. Construction of 496 residential units within 3 apartment/duplex blocks (over basement car parks) ranging in height from 2-7 storeys. Block A - 6-7 storeys in height and consists 152 units in 2 L shaped buildings along with a creche and 2 retail units. Block B- 3 x 6-7 storey buildings with 141 units, plus 6 x 2 storey duplex units in 2 buildings providing a total of 147 units. Block C- 5-6 storeys in height and consists 197 units plus a community room all in one building. Provision of a new public park along Taylors Lane. Provision of 372 car parking spaces and 1144 cycle parking spaces. Revised vehicular access from Edmondstown Road and an emergency vehicular access off Taylors Lane along with provision of

				pedestrian accesses to the site. Road improvement works along Edmondstown Road including the existing junction off Scholarstown Road/Edmondstown Road. All associated development works, substations, bin stores and landscaping required.
SD20A/0140	Lands adjacent to Carmel of the Assumption Convent, Firhouse Road, Firhouse, Dublin 24	Grant permission	08-Jun-2021	Description: Construction of 2 grass playing pitches: pitch No.1 will measure some 145m long by 90m wide and pitch No.2 will measure some 133m long by 80m wide; club facilities including 4 changing rooms measuring 51sq.m each; storage facilities; function rooms; meeting rooms; physiotherapy facilities; kitchen facilities; wc and circulation space; site works include removal of existing hedgerows and trees; replanting areas; formation of a new pedestrian and vehicular entrance on Firhouse road; 67 car parking spaces; 24 bicycle spaces; perimeter pathway; fencing and attendant landscaping works.
SD19A/0106	Bolbrook Enterprise Centre, Avonmore Road, Tallaght, Dublin 24	Grant permission	05/09/2019	Description: Demolition of 42sq.m including the entrance lobby, reception area and adjacent office; construction of extension of 140sq.m; fenestration and emergency egress doors; decorative cladding to exterior; logo and signage to facade; minor works associated with interior alterations; the works to the Community Enterprise Hall building include new fenestration and emergency egress doors; decorative cladding to exterior; logo and signage to facade; minor works associated with interior alterations; bicycle shelter; hard and soft landscaping and all associated site works.

## 8.2 Summary of Cumulative Impacts

The above planning applications are assessed in-combination with the proposed development as they may impact on the present aquatic and terrestrial features.

Application SHD3ABP-305878-19 involves demolition of existing structures on site, construction of 590 no. residential units and is located at Scholarstown Road. The Biodiversity Chapter of the EIAR carried out for the project identified additional loading to Ringsend WWTP and loss of habitats due to urbanisation as potential cumulative effects. However, they state that higher value habitats will largely be retained, and post-construction landscaping will provide additional resources for wildlife. The proposed cycle route will not increase the load to Ringsend WWTP, thus there is not potential for cumulative effect.

Application SHD3ABP-307222-20 involves demolition of existing structures and construction of 496 no. apartments and is located at Taylors Lane. There is no direct hydrological connection via a watercourse on site, however surface waters from the lands ultimately drain to the Owendoher River and the River Dodder. An EclA was prepared for the site which identified a significant loss of natural habitat, disturbance to species, fragmentation, and potential water pollution due to the development. A range of mitigation measures are incorporated, including planting of native species, wetland creation, installation of bird and bat boxes and pollution prevention measures. Residual impact on water quality is not anticipated but a moderate negative impact on flora and fauna is expected. The proposed cycle route will mainly be along existing roads and will not cause fragmentation of habitats. Therefore, cumulative impacts are not anticipated.

Application SD20A/0140 involves construction of two grass playing pitches in Dodder Valley Park at Firhouse Road. The EclA identified potential pollution and sediment runoff to River Dodder during construction and loss of habitat of local value. With mitigation measures in place no long-term negative impacts on biodiversity are anticipated.

Application SD19A/0106 involves demolition of 42sq.m building including the entrance lobby, reception area and adjacent office; construction of extension of 140sq.m to the Community Enterprise Hall building at Avonmore Road. There is potential for surface water runoff to River Dodder and Jobstown Stream. Given the small scale project it is not anticipated to significantly impact on water quality.

Therefore, significant cumulative impacts are not expected to occur on the ecological features within the proposed site.



## 9 Conclusion

The construction of the proposed cycle route has been shown to potentially impact a number of different habitats with regional and local importance (artificial lake and ponds; eroding/upland rivers, depositing/lowland rivers; treeline; hedgerow; and scrub) and faunal groups (Badger; Hedgehog; Pygmy Shrew; European Eel; and Lamprey) with local and regional ecological importance. Potential minor impacts were also identified for Dodder Valley pNHA which is of national importance.

Based upon the information supplied and provided that the development is constructed in accordance with the mitigation measures outlined above, there will be no significant impact in combination with other projects and plans, as result of the development and associated works on the ecology of the area and on any designated conservation sites.

## Appendices

### A Relevant Policy and Legislation

The legislation discussed below is intended as a guide only and does not replace formal legal advice.

#### A.1 Biodiversity Policy Guidance

'Biodiversity: The National Biodiversity Action Plan 2017-2021 (DCHG, 2017) sets out actions through which a range of government, civil and private sectors will undertake to achieve Ireland's 'Vision for Biodiversity' and has been developed in response to The Earth Summit, held in Rio de Janeiro in 1992 (UN Convention on Biological Diversity) and subsequent EU and International Biodiversity strategies and policies.

As part of the Action Plan process Local Authorities (LA) must produce Biodiversity Action Plans (BAP). BAPs highlight local biodiversity issues and set out a series of objectives and action plans for the conservation of priority species and habitats where they occur in each district or county.

#### A.2 Designated Sites and Nature Conservation

##### A.2.1 Statutory Designated Nature Conservation Sites

Sites with statutory designations receive varying degrees of legal protection under Irish statute (i.e. Wildlife Act 1976 and Wildlife (Amendment) Act (2000) and European Directives (i.e. the EC Birds Directive (2009/147/EC) and EC Habitats Directive (92/43/EC). The EU directives were transposed into Irish national law and subsequent amendments were revised and consolidated in the European Communities (Birds and Natural Habitats) Regulations 2011 and Irish Statutory Instrument 477/2011

There are a number of statutory designations used for sites of high nature conservation value in Ireland, which are applied depending upon the importance of the site in a local, regional, national or international context. These include:

- National
- Natural Heritage Area (NHA)
- Wildfowl Sanctuary
- Statutory Nature Reserve
- Refuge for Fauna
- European
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- International
- UNESCO Biosphere Reserve
- Ramsar Convention Site
- National Park (Category II) Sites

##### A.2.2 Non-Statutory Designations

Non-statutory sites are afforded no statutory legal protection, but are normally recognised by local planning authorities and statutory agencies as being of local nature conservation value

A proposed Natural Heritage Area (pNHA) is an area deemed to be of special interest containing important wildlife habitat and often containing rare or threatened species. They may also be selected on the basis of their geology or geomorphology.

##### A.2.3 Protected and Notable Species

A number of species are protected under Irish and international legislation. In Ireland, primary protection is provided under the 1976 Wildlife Act and Wildlife (Amendment) Acts (2000 & 2010) and revision 2018. Species of European importance receive additional protection in Ireland under the Birds and Natural habitats Regulations 2011.

The Flora (Protection) Order (2015) makes it illegal to cut, uproot or damage a listed species in any way. It is illegal to alter, damage or interfere in any way with their habitats.

#### A.2.4 Birds

Almost all resident wild birds are protected under the 1976 Wildlife Act (and amendments) This makes it an offence to:

- intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built
- take, destroy or possess the egg of any wild bird.

#### A.2.5 Badger

Badgers are protected under the 1976 Wildlife Act (and amendments) and it is illegal to intentionally kill, capture, injure or ill-treat any Badger. It is also an offence to obstruct, destroy or damage a Badger sett or disturb Badgers within a sett. Disturbance is defined, for development purposes, as any activity that could damage a sett or be greater than what Badgers commonly tolerate.

#### A.2.6 Bats

All Irish bat species are European Protected Species (EPS), protected under the Wildlife Act (and amendments) and the Conservation of Habitat and Species Regulations 2017 (as amended). This makes it an offence to:

- deliberately capture, injure or kill a bat
- intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
- damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)
- intentionally or recklessly obstruct access to a bat roost.

#### A.2.7 Otter

The European Otter is an EPS protected under the Conservation of Habitats and Species Regulations 2017 (as amended), making it an offence to:

- deliberately capture, injure or kill an Otter
- deliberately disturb an Otter such as to affect local populations or breeding success
- damage or destroy an Otter holt, possess or transport an Otter or any part of an Otter
- sell or exchange an Otter.
- Otters also receive protection under the Wildlife Act (and amendments), this makes it an offence to:
  - intentionally or recklessly disturb any Otter whilst within a holt
  - intentionally or recklessly obstruct access to a holt.

#### A.2.8 Reptiles and Amphibians

Common Frog *Rana temporaria*, Natterjack Toad, *Bufo calamita*, Smooth Newt *Triturus vulgaris* and Common Lizard *Zootoca vivipara* are all protected under the Wildlife Act 1976 (and amendments).

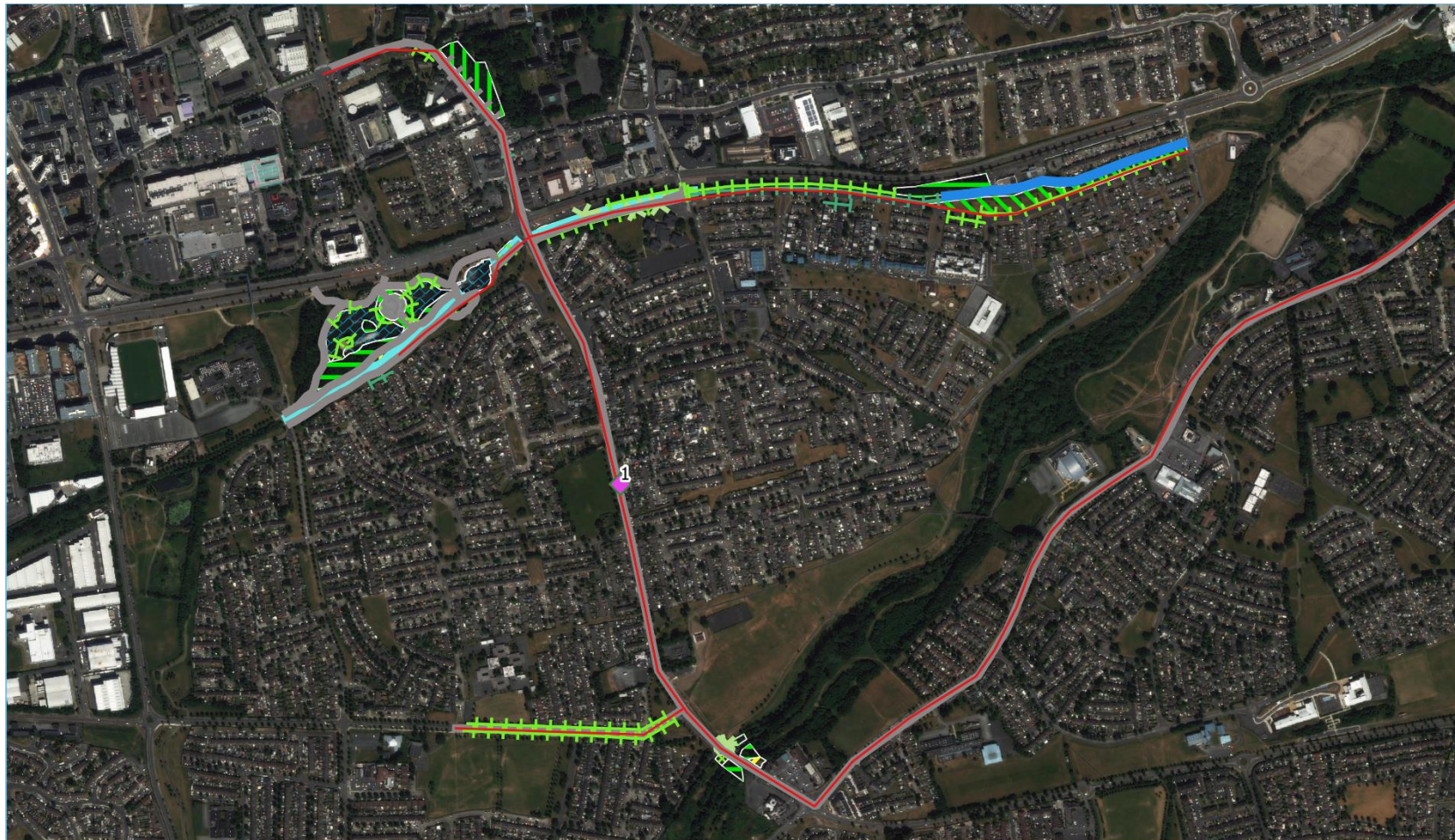
#### A.2.9 Invasive Non-native Species

Certain invasive non-native animals and plants are listed under the Third Schedule of S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011. This makes it an offence to release, plant them in the wild or cause them to disperse, spread or otherwise cause them to grow. If these species occur on a site proposed for development or other work which may disturb the ground, control of these species is likely to be required.

European Council's Regulation on the prevention and management of the introduction and spread of invasive alien species [1143/2014] sets out to prevent, minimise and mitigate the adverse impacts of the introduction and spread, both intentional and unintentional, of invasive alien species on biodiversity and the related ecosystem services as well as on human health and the economy



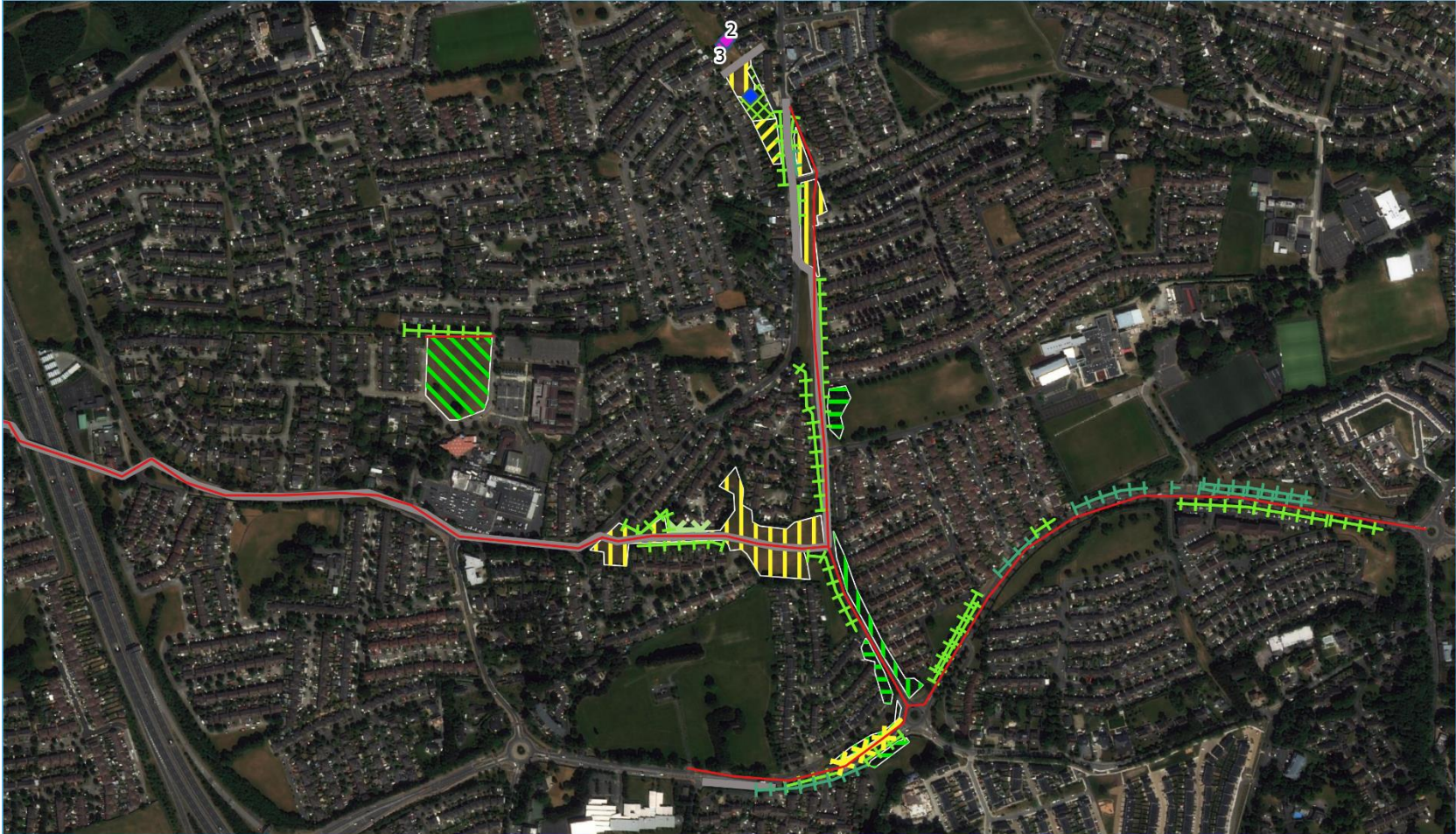
## B Habitat Map



**Legend**

<p>— Proposed route</p> <p>◆ Tree with bat roost potential</p> <p><b>Linear habitat</b></p> <p>— BL1</p>	<p>— BL3</p> <p>— FW1</p> <p>— WL1</p> <p>— WL2</p> <p><b>Area habitat</b></p> <p>— GS2</p>	<p>— WS1</p> <p>— FW2</p> <p>— WL2</p> <p><b>Area habitat</b></p> <p>— WS1</p>
<p>— BL3</p> <p>— GA2</p> <p>— FL8</p>	<p>— WD1</p> <p>— WD2</p> <p>— WD5</p>	<p>— WS1</p>





0 100 200 m

**Legend**

<ul style="list-style-type: none"> <li><span style="color: red; font-weight: bold;">—</span> Proposed route</li> <li><span style="color: purple; font-weight: bold;">◆</span> Tree with bat roost potential</li> <li><span style="color: blue; font-weight: bold;">◆</span> Signs of Badger</li> </ul>	<p><b>Linear habitat</b></p> <ul style="list-style-type: none"> <li><span style="border-bottom: 1px solid gray; width: 20px; display: inline-block;"></span> BL3</li> <li><span style="color: yellow; font-weight: bold;">✖✖</span> GS2</li> <li><span style="color: green; font-weight: bold;">++</span> WL1</li> <li><span style="color: lightgreen; font-weight: bold;">++</span> WL2</li> <li><span style="color: lightgreen; font-weight: bold;">✖✖</span> WS1</li> </ul>	<p><b>Area habitat</b></p> <ul style="list-style-type: none"> <li><span style="color: green; font-weight: bold;">   </span> WD2</li> <li><span style="color: lightgreen; font-weight: bold;">   </span> WD5</li> <li><span style="color: lightgreen; font-weight: bold;">✖✖</span> WS1</li> <li><span style="color: yellow; font-weight: bold;">   </span> GA2</li> <li><span style="color: yellow; font-weight: bold;">   </span> GS2</li> <li><span style="color: green; font-weight: bold;">   </span> WD1</li> </ul>
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## C NBDC Records

### C.1 Recent records (within 10 years) of protected species within the 2km squares (O12D, O12I, O02Y) of the site (National Biodiversity Data Centre, 2021)

Species name	Date of last record	Title of dataset	Designation
Common Frog ( <i>Rana temporaria</i> )	03/03/2020	Amphibians and reptiles of Ireland	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex V    Protected Species: Wildlife Acts
Barn Swallow ( <i>Hirundo rustica</i> )	26/04/2020	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Black-headed Gull ( <i>Larus ridibundus</i> )	20/11/2017	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
Common Coot ( <i>Fulica atra</i> )	16/04/2020	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Common Kestrel ( <i>Falco tinnunculus</i> )	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Common Kingfisher ( <i>Alcedo atthis</i> )	23/04/2020	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Common Linnet ( <i>Carduelis cannabina</i> )	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds

Species name	Date of last record	Title of dataset	Designation
			of Conservation Concern - Amber List
Common Snipe ( <i>Gallinago gallinago</i> )	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section III Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Common Starling ( <i>Sturnus vulgaris</i> )	16/05/2020	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Common Swift ( <i>Apus apus</i> )	04/05/2020	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Common Wood Pigeon ( <i>Columba palumbus</i> )	02/05/2020	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
Eurasian Teal ( <i>Anas crecca</i> )	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Eurasian Woodcock ( <i>Scolopax rusticola</i> )	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section III Bird Species    Threatened Species: Birds of Conservation Concern    Threatened



Species name	Date of last record	Title of dataset	Designation
			Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Great Cormorant ( <i>Phalacrocorax carbo</i> )	01/09/2017	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Herring Gull ( <i>Larus argentatus</i> )	20/11/2017	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
House Martin ( <i>Delichon urbicum</i> )	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
House Sparrow ( <i>Passer domesticus</i> )	16/05/2020	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Lesser Black-backed Gull ( <i>Larus fuscus</i> )	16/04/2020	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Little Egret ( <i>Egretta garzetta</i> )	03/01/2021	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species
Little Grebe ( <i>Tachybaptus ruficollis</i> )	24/04/2020	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Mallard ( <i>Anas platyrhynchos</i> )	03/05/2020	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section I Bird Species
Mew Gull ( <i>Larus canus</i> )	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species:



Species name	Date of last record	Title of dataset	Designation
			Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Mute Swan ( <i>Cygnus olor</i> )	20/11/2017	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Northern Lapwing ( <i>Vanellus vanellus</i> )	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List
Peregrine Falcon ( <i>Falco peregrinus</i> )	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex I Bird Species
Rock Pigeon ( <i>Columba livia</i> )	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species
Sand Martin ( <i>Riparia riparia</i> )	03/04/2021	Birds of Ireland	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Spotted Flycatcher ( <i>Muscicapa striata</i> )	31/12/2011	Bird Atlas 2007 - 2011	Protected Species: Wildlife Acts    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List
Tufted Duck ( <i>Aythya fuligula</i> )	05/04/2020	Birds of Ireland	Protected Species: Wildlife Acts    Protected Species: EU Birds Directive    Protected Species: EU Birds Directive >> Annex II, Section I Bird Species    Protected Species: EU Birds Directive >> Annex III, Section II Bird Species    Threatened Species: Birds of Conservation Concern    Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List

Species name	Date of last record	Title of dataset	Designation
Wood Bitter-vetch ( <i>Vicia orobus</i> )	30/05/2017	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Threatened Species: Endangered
Large Red Tailed Bumble Bee ( <i>Bombus (Melanobombus) lapidarius</i> )	29/06/2021	Bees of Ireland	Threatened Species: Near threatened
Megachile ( <i>Delomegachile willughbiella</i> )	01/08/2019	Bees of Ireland	Threatened Species: Near threatened
Moss Carder-bee ( <i>Bombus (Thoracombus) muscorum</i> )	28/07/2019	Bees of Ireland	Threatened Species: Near threatened
Common Lizard ( <i>Zootoca vivipara</i> )	15/06/2019	Amphibians and reptiles of Ireland	Protected Species: Wildlife Acts
Daubenton's Bat ( <i>Myotis daubentonii</i> )	27/08/2014	National Bat Database of Ireland	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Eurasian Badger ( <i>Meles meles</i> )	24/10/2015	Atlas of Mammals in Ireland 2010-2015	Protected Species: Wildlife Acts
Eurasian Pygmy Shrew ( <i>Sorex minutus</i> )	12/07/2018	Mammals of Ireland 2016-2025	Protected Species: Wildlife Acts
Eurasian Red Squirrel ( <i>Sciurus vulgaris</i> )	21/05/2017	Mammals of Ireland 2016-2025	Protected Species: Wildlife Acts
European Otter ( <i>Lutra lutra</i> )	04/07/2012	Atlas of Mammals in Ireland 2010-2015	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Lesser Noctule ( <i>Nyctalus leisleri</i> )	24/08/2012	National Bat Database of Ireland	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Pipistrelle ( <i>Pipistrellus pipistrellus sensu lato</i> )	24/08/2012	National Bat Database of Ireland	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
Soprano Pipistrelle ( <i>Pipistrellus pygmaeus</i> )	24/08/2012	National Bat Database of Ireland	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
West European Hedgehog ( <i>Erinaceus europaeus</i> )	25/07/2020	Hedgehogs of Ireland	Protected Species: Wildlife Acts

## C.2 Recent records (within 10 years) of invasive non-native species within the 2km squares (O12D, O12I, O02Y) of the site (National Biodiversity Data Centre, 2021)

Species name	Date of last record	Title of dataset	Designation
American Skunk-cabbage ( <i>Lysichiton americanus</i> )	05/04/2020	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> Medium Impact Invasive Species    Invasive Species: Invasive Species >> EU Regulation No. 1143/2014    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
Butterfly-bush ( <i>Buddleja davidii</i> )	08/05/2020	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> Medium Impact Invasive Species
Giant Hogweed ( <i>Heracleum mantegazzianum</i> )	31/12/2017	National Invasive Species Database	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> High Impact Invasive Species    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
Himalayan Balsam ( <i>Impatiens glandulifera</i> )	31/12/2017	National Invasive Species Database	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> High Impact Invasive Species    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
Japanese Knotweed ( <i>Reynoutria japonica</i> )	19/04/2020	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> High Impact Invasive Species    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
Parrot's-feather ( <i>Myriophyllum aquaticum</i> )	26/06/2008	National Invasive Species Database	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> High Impact Invasive Species    Invasive Species: Invasive Species >> EU Regulation No. 1143/2014    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
Sycamore ( <i>Acer pseudoplatanus</i> )	01/05/2020	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> Medium Impact Invasive Species
Three-cornered Garlic ( <i>Allium triquetrum</i> )	21/04/2020	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> Medium Impact Invasive Species    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
Harlequin Ladybird ( <i>Harmonia axyridis</i> )	08/11/2018	National Invasive Species Database	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> High Impact Invasive Species    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
American Mink ( <i>Mustela vison</i> )	23/03/2014	Atlas of Mammals in Ireland 2010-2015	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> High Impact Invasive Species    Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland)
Eastern Grey Squirrel ( <i>Sciurus carolinensis</i> )	31/12/2017	National Invasive Species Database	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> High Impact Invasive Species    Invasive Species: Invasive Species >> EU Regulation No. 1143/2014    Invasive

			Species: Invasive Species >> Regulation S.I. 477 (Ireland)
European Rabbit ( <i>Oryctolagus cuniculus</i> )	06/01/2016	Mammals of Ireland 2016-2025	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> Medium Impact Invasive Species



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