Tallaght to Knocklyon Cycle Route

AA Screening

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South Dublin County Council

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Contract

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

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Abbreviations

AA	Appropriate Assessment
CIEEM	Chartered Institute of Ecology and Environmental Management
DoEHLG	Department of Environment, Heritage and Local Government
EC	European Communities
EPA	Environmental Protection Agency
EU	European Union
GSI	Geological Survey Ireland
IROPI	Imperative Reasons of Over-riding Public Interest
NBDC	National Biodiversity Data Centre
NOx	Nitrogen Oxides
NPWS	National Parks and Wildlife Service
OPR	Office of the Planning Regulator
QI	Qualifying Interest
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SDCC	South Dublin County Council
SPA	Special Protection Area
WFD	Water Framework Directive
WWTP	Waste Water Treatment Plant
ZoI	Zone of Influence

1 Introduction

1.1 Background

JBA Consulting Engineers and Scientists Ltd. (hereafter JBA) has been commissioned by South Dublin County Council (SDCC) to prepare an Appropriate Assessment Screening Report for the 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.

Screening for appropriate assessment is intended to be an initial examination which must be carried out by the Planning Authority or An Bord Pleanála as the competent authority. However, this screening is completed on behalf of the project proposer to show that likely significant effects have been considered in the project development and design, and where necessary progress with further assessment.

1.2 Legislative Context

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora, known as the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000 sites. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79 / 409 / EEC).

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

"*Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public*."

Article 6(4) deals with the steps that should be taken when it is determined, as a result of Appropriate Assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case.

Article 6(4) states:

"*If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*

Where the site concerned hosts a priority natural habitat type and / or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."

The requirements of Articles 6(3) and 6(4) of the Habitats Directive have been transposed into Irish legislation by means of *inter alia* the European Communities (Birds and Natural Habitats) Regulations 2011-2015 (S.I. No. 477 / 2011) as amended.

1.3 Appropriate Assessment Process

Guidance on the Appropriate Assessment (AA) process was produced by the European Commission in 2002, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DEHLG) (2009). Office of the Planning Regulator (OPR) produced a Practice Note in 2021, PN01 - Appropriate Assessment Screening for Development Management (OPR, 2021). These guidance documents identify a staged approach to conducting an AA, as shown Figure 1-1.

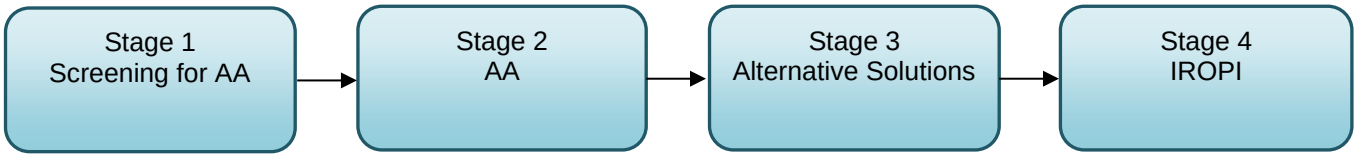


Figure 1-1: The Appropriate Assessment Process (from: Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities, DEHLG, 2009).

1.3.2 Stage 1 - Screening for AA

The initial, screening stage of the Appropriate Assessment is to determine:

whether the proposed plan or project is directly connected with or necessary for the management of the European designated site for nature conservation

if it is likely to have a significant adverse effect on the European designated site, either individually or in combination with other plans or projects

For those sites where, potential adverse impacts are identified, either alone or in combination with other plans or projects, further assessment is necessary to determine if the proposals will have an adverse impact on the integrity of a European designated site, in view of the site's conservation objectives (i.e. the process proceeds to Stage 2).

1.3.3 Stage 2 - AA

This stage requires a more in-depth evaluation of the plan or project, and the potential direct and indirect impacts of them on the integrity and interest features of the European designated site(s), alone and in-combination with other plans and projects, taking into account the site's structure, function and conservation objectives. Where required, mitigation or avoidance measures will be suggested.

The competent authority can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site(s) concerned. If this cannot be determined, and where mitigation cannot be achieved, then alternative solutions will need to be considered (i.e. the process proceeds to Stage 3).

1.3.4 Stage 3 - Alternative Solutions

Where adverse impacts on the integrity of Natura 2000 sites are identified, and mitigation cannot be satisfactorily implemented, alternative ways of achieving the objectives of the plan or project that avoid adverse impacts need to be considered. If none can be found, the process proceeds to Stage 4.

1.3.5 Stage 4 - IROPI

Where adverse impacts of a plan or project on the integrity of Natura 2000 sites are identified and no alternative solutions exist, the plan will only be allowed to progress if imperative reasons of overriding public interest can be demonstrated. In this case compensatory measures will be required.

The process only proceeds through each of the four stages for certain plans or projects. For example, for a plan or project, not connected with management of a site, but where no likely significant impacts are identified, the process stops at stage 1. Throughout the process, the precautionary principle must be applied, so that any uncertainties do not result in adverse impacts on a site.

This report is in support of a Stage 1 Screening for Appropriate Assessment.

1.4 Methodology

The Screening for Appropriate Assessment has been prepared having regard to the Birds and Habitats Directives, the European Communities (Birds and Natural Habitats) Regulations 2011-15 as amended and relevant jurisprudence of the EU and Irish courts. The following documents have also been used to provide guidance for the assessment:

- DEHLG (2009 rev 2010) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government (DEHLG, 2009).
- Office of the Planning Regulator (2021) OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management (OPR, 2021).
- European Communities (EC) (2018) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission (European Commission, 2000).
- EC (2002) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission (European Commission et al., 2002).
- EC (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. European Commission Management (European Commission, 2007).
- CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal, Second Ed. (Chartered Institute of Ecology and Environmental, 2018)
- Fossitt, J, (2000). A Guide to Habitats in Ireland. The Heritage Council, Kilkenny (Fossitt, 2000)

1.4.1 Desktop study

A desktop study was conducted of available published and unpublished information, along with a review of data available on the National Parks and Wildlife Service (NPWS) and National Biodiversity Data Centre (NBDC) web-based databases, in order to identify key habitats and species (including legally protected and species of conservation concern) that may be present within ecologically relevant distances from the project as explained below. A baseline habitat assessment was performed using satellite imagery of the site. The data sources below (accessed October 2021) were consulted for the desktop study:

- Aerial photography available from www.osi.ie and Esri World Imagery.
- NPWS website (www.npws.ie) where Natura 2000 site synopses, data forms and conservation objectives were obtained along with Annex 1 habitat distribution data and status reports.
- River Basin Management Plans (www.wfdireland.ie)
- NBDC Biodiversity Maps (maps.biodiversityireland.ie)
- Catchments (www.catchments.ie)
- Environmental Protection Agency Maps (https://gis.epa.ie/EPAMaps)
- Geological Survey Ireland (GSI) website (www.gsi.ie)
- GSI - Groundwater data viewer (https://dcenr.maps.arcgis.com)
- Planning Applications (myplan.ie)

1.4.2 Ecological Site Survey

To inform this AA Screening an ecological site survey was carried out on 29th and 30th September 2021 by JBA Ecologists Malin Lundberg and Mark Desmond.

The ecological walkover survey recorded habitats and protected species, following the methods outlined in the documents below:

- Heritage Council (2011). Best Practice Guidance for Habitat Survey and Mapping (Smith et al. 2011).
- Fossitt, J. (2000). A Guide to Habitats in Ireland. The Heritage Council, Kilkenny (Fossitt 2000).
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2009b).

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

1.4.3 In-combination Assessment

The in-combination assessment followed the process for in-combination set out by the DTA Handbook (Tyldesley and Chapman, 2013). The in-combination impacts are considered only after the assessment of the project alone. If the result of this is that the project will have no effect at all on a European site then no in-combination assessment would be necessary. However, where there is no adverse effect on site integrity, but some adverse effect an assessment of this adverse effect in-combination with other plans or projects is carried out. Other plans or projects were searched for using the National Planning Application Database, EIA portal and Myplan.ie databases all accessed online. If no other plans or projects are identified then the assessment is complete. Where other plans or projects are identified then initially a review is made of its AA screening, or AA, and if the Competent Authority for the plan or project has made a final determination of no effect on the integrity of any European site, either alone or in-combination, this determination is used in this assessment. Where there is not a full AA, or the findings are unclear or out of date, the plan or project documentation is checked for credible evidence of real (not hypothetical) risk to a European site. Where these are identified then a detailed assessment is carried out. A summary of the approach is presented in Figure 1-2.

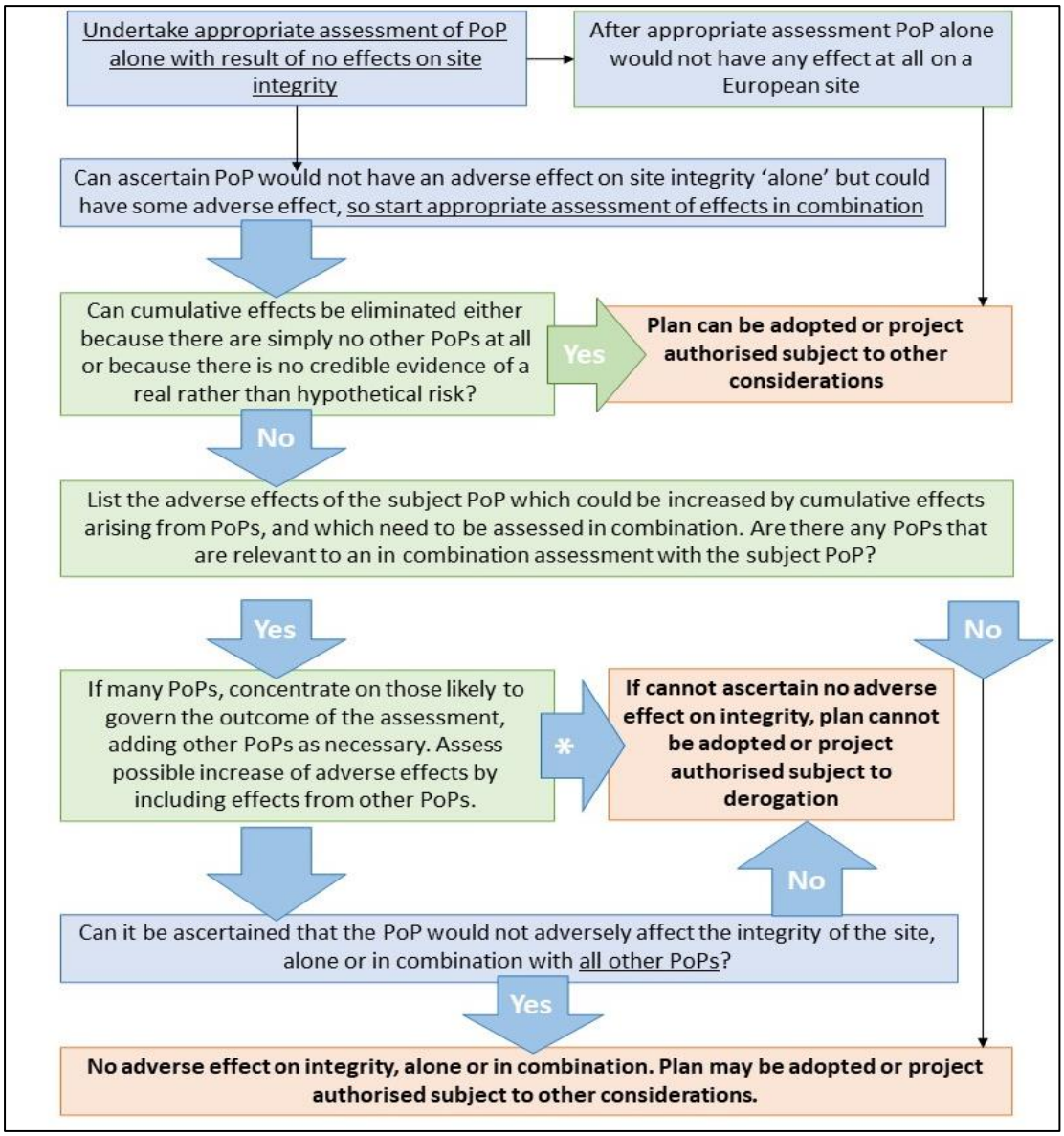


Figure 1-2: Flow diagram of process for in-combination assessment (modified from Chapman & Tyldesley, 2012)

Potential sources of cumulative impacts were identified based on the ecology of valued ecological features only for features where this is a residual or non-significant impact. Potential sources of cumulative impacts were sought within area where there is the potential for a significant impact on relevant Natura sites identified in Section 4.

1.5 Limitations and constraints

The screening assessment necessarily relies on some assumptions and it was inevitably subject to some limitations. These would not affect the conclusion, but the following points are recorded in order to ensure the basis of the assessment is clear:

- Information on the works and conditions on site are based on current knowledge at the time of writing. Changes to the site since this report was drafted cannot be accounted for. However, significant changes to the site are unlikely in the time between the site visit (September 2021) and likely determination date (2022).
- This assessment is based on the methodology for proposed works as described in this report. Where changes to methodology occur, an ecologist will need to be consulted to determine if the changes are likely to alter the ecological impacts and would therefore need reassessment.
- The site visit was only carried out within the proposed works site and not to any of the screened in SAC/SPA sites. The desk-based information available for these sites is sufficient to complete the assessment.
- 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.

2 Project Description

2.1 The 'Project'

The proposed cycle route development is not directly connected with or necessary to the management of any Natura 2000 site and may have potential adverse impacts upon the Natura 2000 sites identified in Section 4. Therefore, the Project is subject to the requirements of the Appropriate Assessment process.

2.2 Site location

The location for the development is South Dublin, in the areas of Tallaght, Firhouse, Ballyboden, and Knocklyon. The proposed cycle route will run from Belgard Road, Tallaght, to Ballyboden Way, Ballyboden. There will be several additions or diversions to this main route (Figure 2-1).

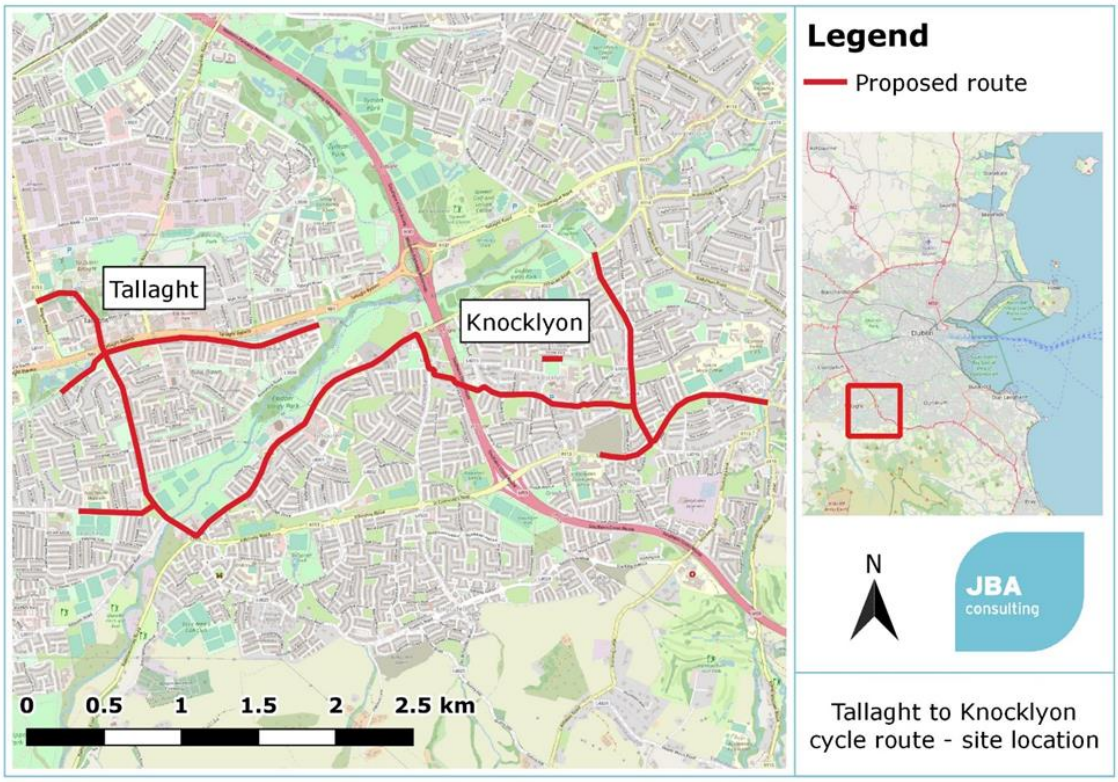


Figure 2-1: Site location (OSM, 2021)

2.3 Proposed project

The proposed cycle route will primarily run along the existing roads or footpaths. Of the total 10.6km length of the scheme, approximately 1.2km 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.

2.3.1 Project Area of Influence

The project will primarily affect the site only, but a wider area of influence is used for impacts relating to noise disturbance (500m), air pollution (5km), surface water (15km).

3 Existing Environment

3.1 Baseline conditions

An ecological walkover survey was carried out on the 29th and 30th September 2021. Descriptions of the habitats and species are provided in the sections below.

3.2 Habitats

A list of habitats and species recorded during the ecological habitat survey is listed in Table 3-1 below and presented in detail in the following sections. A habitat maps are provided in Figure 3-1 and Figure 3-2 and in Appendix A. None of the recorded habitats are Annex 1 habitats.

Table 3-1: 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

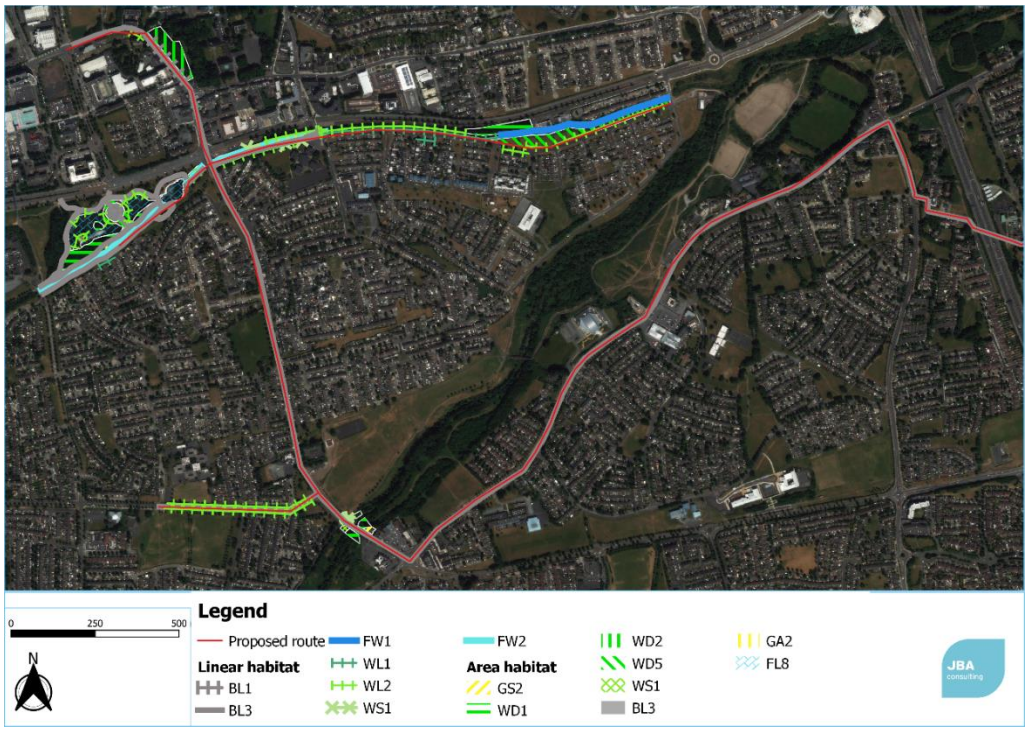


Figure 3-1: Habitat Map showing west end of proposed cycle route (Source: ESRI Satellite World Imagery).

Figure 3-2: Habitat Map showing east end of proposed cycle route (Source: ESRI Satellite World Imagery).

3.2.1 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.

3.2.2 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.

3.2.3 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.

3.2.4 FW1; FW2 - Eroding/upland rivers; Depositing/lowland rivers

Whitestown Stream (Figure 3-3) is flowing in an easterly direction through the Sean Walsh Park and eventually joins with 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 north east direction and feeds into the ponds. Both channels are merged downstream 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.

Figure 3-3: Downstream section of Whitestown Stream.

3.2.5 GA2 - Amenity grassland (improved)

There are areas of amenity grassland (Figure 3-4) which includes lawns in parks where the proposed cycle route will pass, including Sean Walsh Park, Dargle Wood and Landsdowne Park. 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*.

Figure 3-4: Amenity grassland and broadleaved woodland to the right.

3.2.6 GS2 - Dry meadows and grassy verges

Grassy verges were recorded next to River Dodder on the north side of Old Bawn Road and in Landsdown Park. These areas are 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.

3.2.7 WD1 - (Mixed) broadleaved woodland

Mixed broadleaved woodland occurs at several locations along the proposed route (Figure 3-4). These occur next to Whitestown stream and River Dodder, next to Templeroan Road and just south of Firhouse Road (R114) at the eastern most location of the proposed route. 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* × *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*.

3.2.8 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.

3.2.9 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 3-5) 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.

Figure 3-5: Scattered trees and parkland habitat next to Whitestown Stream.

3.2.10 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 *Smyrnium olusatrum* and Nettle. Most frequent recorded were Bramble and Hawthorn.

3.2.11 WL2 - Treelines

Treelines are also frequent along the proposed route (Figure 3-6). 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.

Figure 3-6: Treeline along Knocklyon Road

3.2.12 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.

3.3 Protected Species

The survey did not record any protected fauna or floral species that are qualifying interests of a Natura 2000 site.

3.4 Waterbodies within the Vicinity of the Proposed Site

The proposed site lies within the Water Framework Directive (WFD) Liffey and Dublin Bay catchment and Dodder_SC_010 sub-catchment (EPA, 2020). Parts of the route run along rivers or streams, while at other locations the route crosses directly over rivers at existing bridges (Figure 3-7).

The section running through Sean Walsh Park adjacent to the N81 will run beside the Whitestown Stream (DODDER_040).

The route will cross over the River Dodder in Firhouse just north of Old Bawn Cross, on the existing R113 road (DODDER_030 and DODDER_040).

The far eastern section of the route will cross over the Owendoher River at Ballyboden Way, on the existing R113 road (OWENADOHER_010).

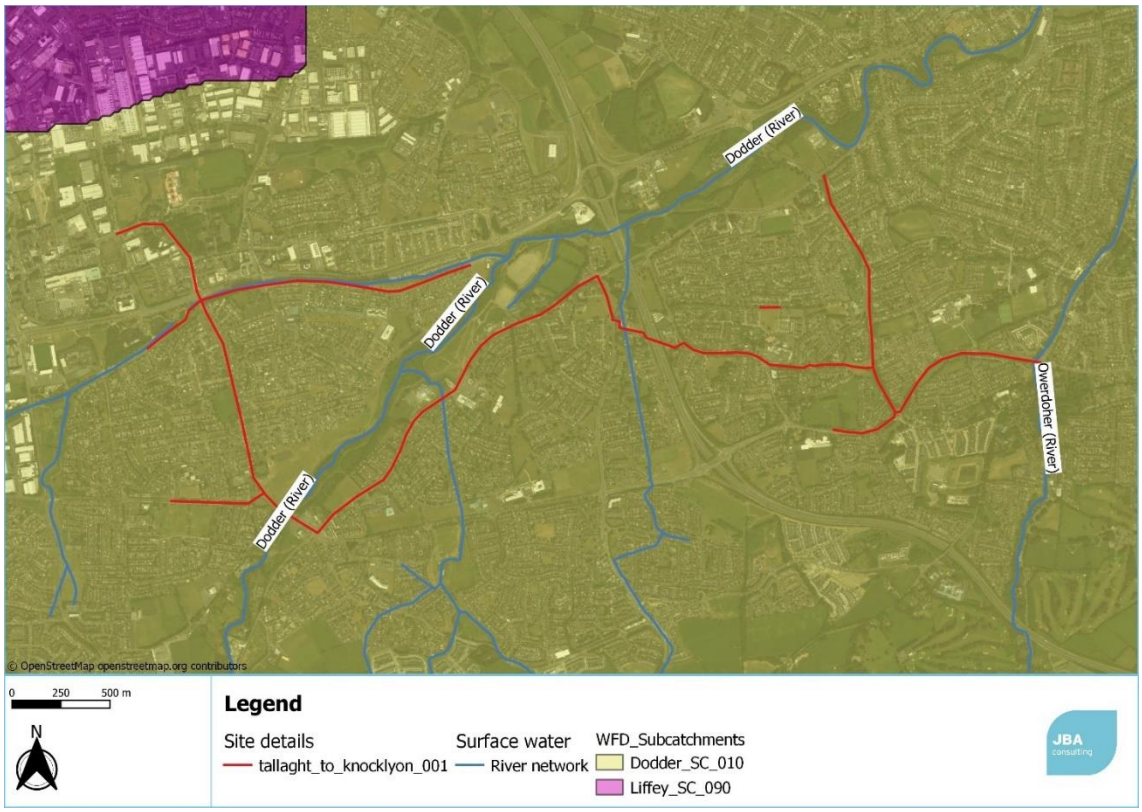


Figure 3-7: Surface waterbodies within the vicinity of the proposed site

3.5 Groundwater

The groundwater body underlying the majority of the site is Dublin (IE_EA_G_008), which is Good status and Under Review (EPA, 2021). A small section of the eastern edge is Kilcullen (IE_EA_G_003), which is Good status and At Risk (Figure 3-8).

Groundwater vulnerability, a measure of the likelihood of groundwater contamination occurring, is Low across most of the site. The Dodder Valley, across which the route runs, is Moderate to High vulnerability, while a small area in Tallaght is Moderate. Most of the site is therefore at low risk of groundwater contamination (Figure 3-9).

There are no Groundwater Zone of Contribution sites listed by the EPA near the development site, nor any drinking water sites with groundwater abstraction that are not on the groundwater quality monitoring network.

Figure 3-8: Groundwater bodies within the vicinity of the site.

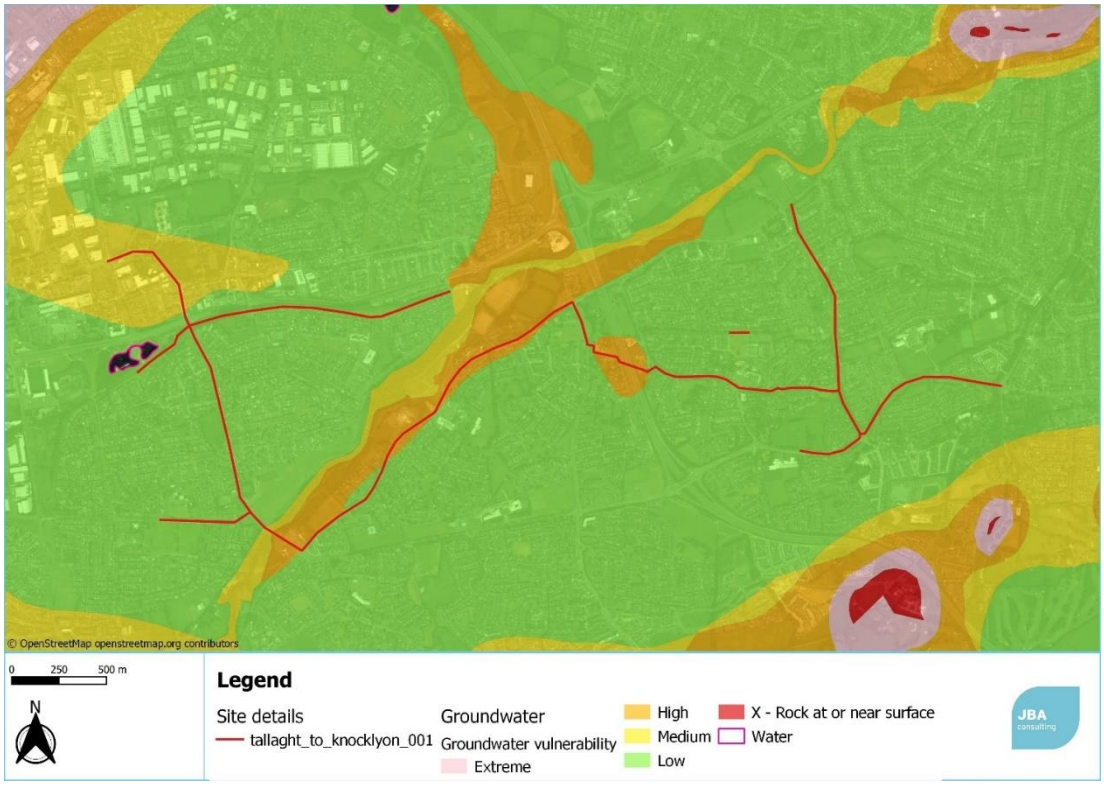


Figure 3-9: Groundwater vulnerability in the vicinity of the site.

4 Natura 2000 Sites

The DEHLG (2009) guidance identifies that Screening for Appropriate Assessment of a plan or project should consider the following Natura 2000 sites:

- Any Natura 2000 sites within or adjacent to the plan or project area.
- Any Natura 2000 sites within the likely zone of impact of the plan or project. This is dependent on the nature and scale of the plan, with 15km generally recommended for plans, but potentially much less for projects.
- Any Natura 2000 sites that are more than 15km from the plan or project area, but may potentially be impacted upon, for example, through a hydrological connection.

As the scale of proposed works are considered of 'Project' status, Natura 2000 sites within a 5km range of the proposed development were examined, and within a 15km range for those with a hydrological connection on the basis that there were no source-pathway-receptors identified outside these ranges. The Natura 2000 sites within the range are listed in Table 4-1 below and their location are shown in **Error! Reference source not found.** in overleaf.

Table 4-1: Natura 2000 sites located within the Zone of Influence (ZoI) of the proposed development.

Natura 2000 site	Site Code	Approximate direct distance from site
Glenasmole Valley SAC	001209	2.1km
Wicklow Mountains SAC	002122	4.4km
Wicklow Mountains SPA	004040	4.6km
South Dublin Bay and River Tolka Estuary SPA	004024	7.2km
South Dublin Bay SAC	000210	7.3km
North Dublin Bay SAC	000206	11.6km
North Bull Island SPA	004006	11.6km
Dalkey Islands SPA	004172	13.5km
Rockabill to Dalkey Island SAC	003000	13.8km

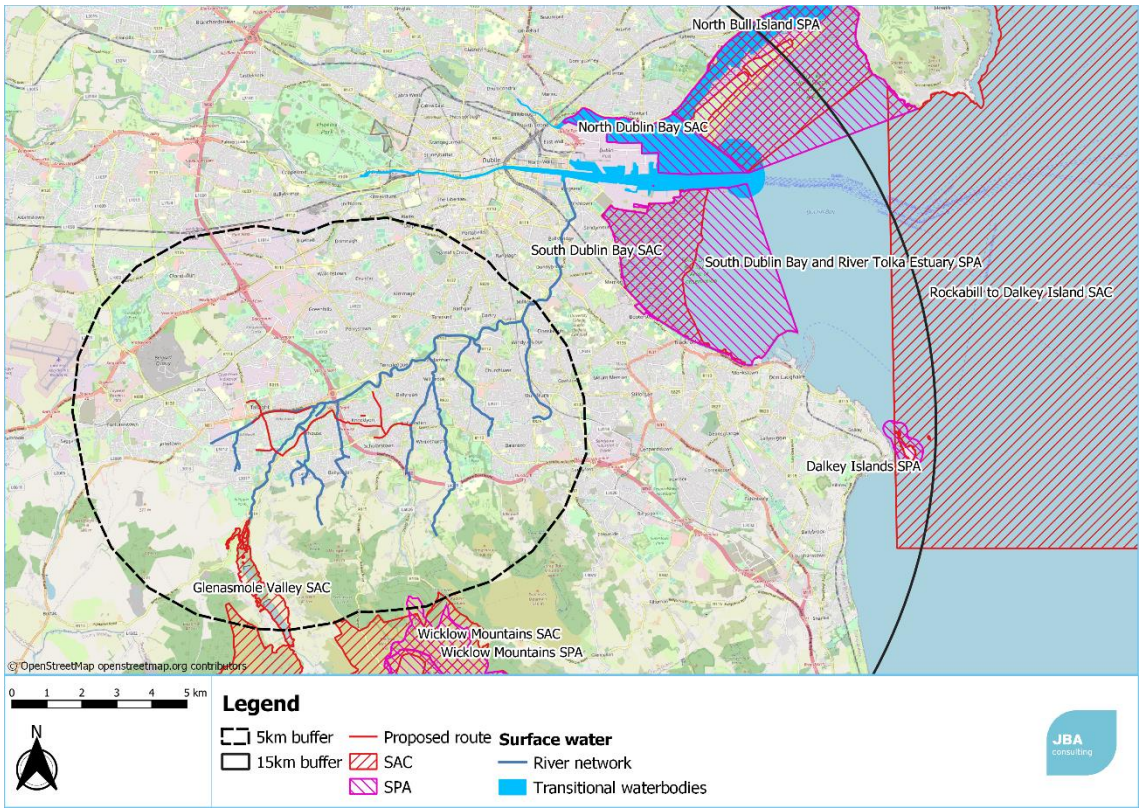


Figure 4-1: Natura 2000 sites and site location.

Glenasmole Valley SAC, Wicklow Mountains SAC and Wicklow Mountains SPA are all within 5km of the proposed cycle route and could be impacted via land and air pathways and groundwater pathways. They are therefore considered further in this assessment.

There is a surface water pathway between the proposed route and South Dublin Bay and River Tolka Estuary SPA, South Dublin Bay SAC, North Dublin Bay SAC, North Bull Island SPA, Dalkey Islands SPA and Rockabill to Dalkey Island SAC. As pollutants can be transported via watercourses and end up in Dublin Bay, the potential impact on these Natura 2000 sites is assessed in detail in Section 6.

Site descriptions, Qualifying Interests (QI) and threats/pressures for the above Natura 2000 sites are provided in Table 4-2.

Table 4-2: Site briefs; Qualifying Interests; and project-relevant threats /pressures and their impacts and sources in relation to the Natura 2000 sites within the 15km ZoI (plus hydrological connectivity extension).

Site Name	Brief	Qualifying Interests	Project Relevant Threats / Pressures: Impact (Source)
Glenasmole Valley SAC (001209)	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 *Pseudorchis albida* (legally protected) and *Orchis morio* (Red Data Book species) are found here. Molinia meadows are also represented (NPWS 2017a).	- Semi-natural dry grassland and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (*important orchid sites) [6210] - Molinia meadows on calcareous, peaty or clayey-silt laden soils (*Molinion caeruleae*) [6410] - Petrifying springs with tufa formation (*Cratoneurion*)* [7220] (NPWS 2020a)	Discontinuous urbanisation: Moderate impact (outside)# (Full list of threats / pressures - NPWS, 2017a)
Wicklow Mountains SAC (002122)	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 *Salvelinus alpinus*. Several oakwoods of moderate quality, typical of the dry acidic woods of eastern Ireland, are found. Eurasian Otter *Lutra lutra* occurs on several of the riverine systems (NPWS 2017b).	-Otter (*Lutra lutra*) [1355] - Oligotrophic water containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110] - Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletalia uniflorae* and/or *Isoeto-Nanojuncetea* [3130] - Natural dystrophic lakes and ponds [3160] - Northern Atlantic wet heaths with *Erica tetralix* [4010] - European dry heaths [4030] - Alpine and Boreal heaths [4060] - Calaminarian grasslands of the *Violetalia calaminariae* [6130] - Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) * [6230] - Blanket bogs (* if active bog) [7130] - Siliceous scree of the montane to snow	Urbanised areas, human habitation: Moderate impact (both)# (Full list of threats / pressures - NPWS, 2017b)

Site Name	Brief	Qualifying Interests	Project Relevant Threats / Pressures: Impact (Source)
		levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) [8110] - Calcareous rocky slopes with chasmophytic vegetation [8210] - Siliceous rocky slopes with chasmophytic vegetation [8220] - Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0] (NPWS 2017c)	
Wicklow Mountains SPA (004040)	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 *Falco columbarius* and Peregrine Falcon *Falco peregrinus*, as well as Ring Ouzel *Turdus torquatus* and Red Grouse *Lagopus lagopus*, both of the latter being Red listed in Ireland. It is the only site in Ireland where Common Merganser *Mergus merganser* breeds regularly (NPWS 2018a).	- Merlin (*Falco columbarius*) [A098] - Peregrine Falcon (*Falco peregrinus*) [A103] (NPWS 2020b)	N/A (Full list of threats / pressures - NPWS, 2018a)
South Dublin Bay and River Tolka Estuary SPA (004024)	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 *Branta bernicla hrota* 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 *Sterna hirundo* 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 *Limosa lapponica*, Common Tern, Arctic Tern *Sterna paradisaea* and	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Oystercatcher (*Haematopus ostralegus*) [A130] Ringed Plover (*Charadrius hiaticula*) [A137] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Bar-tailed Godwit (*Limosa lapponica*) [A157] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	Roads, motorways Medium (outside) Urbanised areas, human habitation High (outside) Discharges High (inside) (Source: (NPWS, 2017d)

Site Name	Brief	Qualifying Interests	Project Relevant Threats / Pressures: Impact (Source)
	Roseate Tern *S. dougallii*. Sandymount Strand/Tolka Estuary is also a Ramsar Convention site. (Source: NPWS, 2015a)	Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Wetland and Waterbirds [A999] (Source: NPWS, 2015b)	
South Dublin Bay SAC (000210)	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 Zostera 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, including Bar-tailed Godwit. The bay is a regular autumn roosting ground for significant numbers of Sterna terns, including Roseate Tern. (NPWS 2018b)	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, 2013a)	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, 2018b)
North Bull Island SPA (004006)	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	Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] Shelduck (*Tadorna tadorna*) [A048] Teal (*Anas crecca*) [A052]	Roads, motorways Medium (outside) Continuous

Site Name	Brief	Qualifying Interests	Project Relevant Threats / Pressures: Impact (Source)
	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 *Limosa limosa* 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. 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. (Source: NPWS, 2014)	Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Knot (*Calidris canutus*) [A143] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999] (Source: NPWS, 2015c)	urbanisation Medium (outside) Discharges Medium (both) (Source: NPWS, 2017e)
North Dublin Bay SAC (000206)	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 5km long and 1km wide and runs parallel to the coast between Clontarf and Sutton. The sediment which forms the 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. Site possesses an excellent diversity of coastal habitats. The North Bull Island dune system is one of the most important systems on	Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] *Salicornia* and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Embryonic shifting dunes [2110]	Urbanised areas, human habitation High (outside) Discharges High (inside) (Source: NPWS, 2017c)

Site Name	Brief	Qualifying Interests	Project Relevant Threats / Pressures: Impact (Source)
	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. The site has five Red Data Book vascular plant species and four Red Data Book bryophyte species and is one of the most important sites for wintering waterfowl in Ireland. It is also an important site for some invertebrates of national importance. (Source: NPWS, 2017c)	Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes)* [2130] Humid dune slacks [2190] *Petalophyllum ralfsii* (Petalwort) [1395] (Source: NPWS, 2013b)	
Dalkey Islands SPA (004172)	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 *Sterna* terns. There is a well-established colony of Common Tern *Sterna hirundo* and smaller numbers of Arctic Tern *Sterna paradisaea. Roseate Tern Sterna dougallii* 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 Sterna tern species as a major post-breeding/pre-migration autumn roost area. (Source: NPWS, 2018c)	Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] (Source: NPWS, 2021)	Urbanised areas, human habitation High (outside) (NPWS, 2018c)
Rockabill to Dalkey Island SAC (003000)	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 *Phocoena phocoena*, within the Irish Sea. The	Reefs [1170] Harbour Porpoise (*Phocoena phocoena*) [1351] (Source: NPWS, 2013a)	Discharges High (outside) Diffuse pollution to surface waters due

Site Name	Brief	Qualifying Interests	Project Relevant Threats / Pressures: Impact (Source)
	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).		to other sources not listed Medium (inside) (NPWS, 2017g)

* = priority Annex I habitat

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

5 Other Relevant Plans and Projects

5.1 Cumulative Effects

As part of the Screening for an Appropriate Assessment, in addition to the proposed works, other relevant projects and plans in the region that may induce cumulative impacts must also be considered at this stage.

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

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

5.2 Plans

5.2.1 South Dublin County 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.

5.2.2 Greater Dublin Drainage Strategy

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 Waste Water Treatment Plant (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 Clonshaugh, 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).

5.2.3 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 RMBP 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 is due to be published in December 2021. The 3rd 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.

5.3 Other Projects

There are several other recent developments or planning applications in the vicinity of the proposed project. Larger development planning applications in the near vicinity from the last three years that have been granted permission are listed below. Applications for home extensions, internal alterations and retention are not considered. Identified projects are listed in Table 5-1.

Table 5-1: Projects granted planning permission since October 2018 in vicinity of proposed site.

Planning Application Reference	SHD3ABP-305878-19
Development address	'Beechpark' and 'Maryfield', Scholarstown Road, Dublin 16
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.	
Final Decision on Application	Grant permission
Decision Date	09-Mar-2020

Planning Application Reference	SHD3ABP-307222-20
Development address	Site at Taylors Lane and Edmondstown Road, Taylors Lane, Ballyboden, Dublin 16
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.	
Final Decision on Application	Grant permission
Decision Date	14-Sep-2020

Planning Application Reference	SD20A/0140
Development address	Lands adjacent to Carmel of the Assumption Convent, Firhouse Road, Firhouse, Dublin 24
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.	
Final Decision on Application	Grant permission
Decision Date	08-Jun-2021

Planning Application Reference	SD19A/0106
Development address	Bolbrook Enterprise Centre, Avonmore Road, Tallaght, Dublin 24
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.	
Final Decision on Application	Grant permission
Decision Date	05/09/2019

5.4 Summary

The County Development Plan, Greater Dublin Drainage Strategy, RBMP and projects near the proposed project are considered in combination with the currently proposed project in the Screening Assessment section below.

6 Screening Assessment

6.1 Introduction

This screening exercise will focus on assessing the likely adverse effects of the project on the Natura 2000 site identified in Section 4 above.

This section identifies the potential impacts which may arise as result of the proposed project. It then goes on to identify how these impacts could potentially impact on Natura 2000 sites listed in Table 4-1. The significance of potential impacts is also assessed, with any potential in-combination effects also identified.

The Natura 2000 sites to be assessed are:

- 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)

6.2 Assessment Criteria

6.2.1 Description of the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 sites

Potential adverse impacts that could cause a significant effect on the qualifying interests of the Natura 2000 sites, during the construction and operational phases of the project, will impact on the sites via surface water pathways, groundwater pathways and land and air pathways. Surface water pathways can impact on surface water quality and surface water dependent habitat quality. Groundwater pathways can impact on groundwater quality and quality of groundwater dependent habitats. Land and air pathways can impact by release or discharges of sediment or chemicals to surface or groundwater.

The proposed project is not anticipated to impact on the qualifying interests of any of the identified SACs or SPAs. The rationale for excluding impacts via the main pathways is given in more detail in the following section.

6.2.2 Surface Water Pathways

The proposed route lies partly within the same sub-catchment as Glenasmole Valley SAC, South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA. Glenasmole Valley SAC is located upstream from the proposed site and will not be impacted via surface water pathway. While North Dublin Bay SAC, North Bull Island SPA, Dalkey Islands SPA and Rockabill to Dalkey Island SAC are not within the same sub-catchment, they are hydrologically connected to the site as the River Liffey reaches Dublin Bay.

The construction phase may produce pollutants (e.g. hydrocarbon spillages) and silt runoff from the site. There are three locations along the route where the road crosses a watercourse, namely where Old Bawn Road Crosses River Dodder, Firhouse Road crosses a tributary to River Dodder and Ballyboden Way crosses Owendoher River (tributary to River Dodder). The proposed cycle route will be located along a section of Whitestown Stream downstream of Old Bawn Road and ends before the confluence with River Dodder.

The proposed cycle route is along existing road and where they are crossing a river, stonewalls are present along the road as is shown in Figure 6-1. This prevents any direct runoff from the proposed works into the watercourses.

There is a section along Whitestown Stream where there is a vegetated grass verge between the cycle route and the stream and there is potential for runoff of silt and pollutants during heavy rainfall to enter the stream and be carried Dublin Bay via River Dodder. Any potential runoff entering the watercourses would travel approximately 15.5km via surface water pathway to the nearest Natura 2000 sites (South Dublin Bay and River Tolka Estuary SPA). Dilution and settlement of silt would occur in the surface water bodies before reaching any of the Natura 2000 sites in Dublin Bay with further dilution occurring with transitional and coastal water in Dublin Bay.

Therefore, given the temporary nature of the construction phase of the project, the limited amount of silt/pollutants that could potentially enter the surface water, as well as the distance to any Natura 2000 site, a significant impact on any of the QIs is not expected for South Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, North Dublin Bay SAC, North Bull Island SPA, Dalkey Islands SPA and Rockabill to Dalkey Island SAC.

Figure 6-1: Stonewall along road where it crosses River Dodder. (Source: © 2021 Google)

Operational Phase

The proposed cycle route will be along existing roads with surface drainage systems in place. Some sections along the proposed route will result in vegetation being replaced with hard surface. This will result in an increase in surface water runoff, however any impact on water quality will be negligible. Therefore, no significant impacts are anticipated on any of the Natura 2000 sites.

In summary it is assessed that surface water impacts during construction and operation are not anticipated to have a significant impact on any of the Natura 2000 sites. Table 6-1 provides a summary of the screening rationale for the surface water pathway. Surface water pathways to Natura 2000 sites are seen in Figure 6-1.

Table 6-1: Surface water pathway screening summary for Natura 2000 sites

Natura 2000 sites	Screening outcome for Surface Water Pathway	Rationale
• Glenasmole Valley SAC (001209) • South Dublin Bay and River Tolka Estuary SPA (004024)	No significant effect (Screened out)	Distance / high level of dilution by larger freshwater system and transitional /

• 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) No surface water pathway: • Wicklow Mountains SAC (002122) • Wicklow Mountains SPA (004040)		coastal waters. Temporary nature of construction phase. Appropriate operational surface water drainage systems.

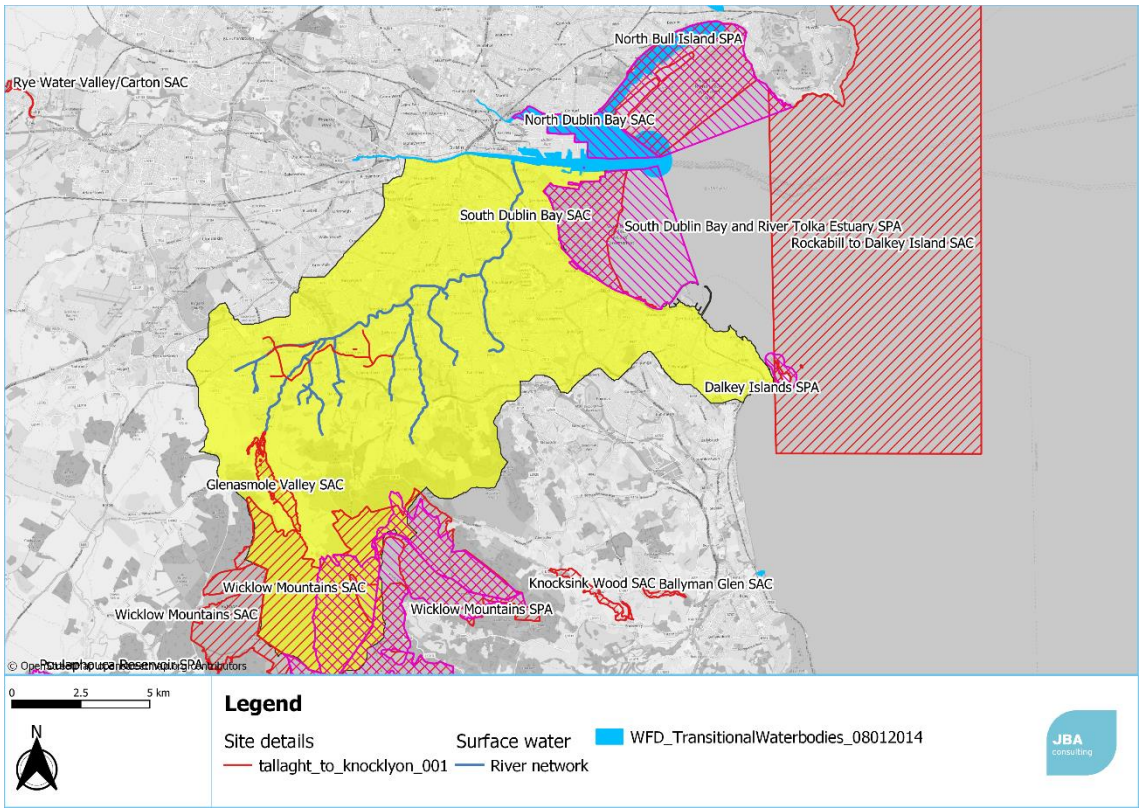


Figure 6-1: Site location and Natura 2000 sites, with surface water sub-catchment.

6.2.3 Groundwater

The proposed route is located within Dublin (IE_EA_G_008) and Kilcullen (IE_EA_G_003) groundwater bodies (EPA 2021). The sub-soil permeability is generally low except along the Dodder Valley where it is moderate to high (GSI, 2021). The aquifer vulnerability of the site is mostly low except for Dodder Valley where it is moderate to high (Figure 3-9) and the Bedrock is Moderately Productive only in local zones. Groundwater dependent QIs of Glenasmole Valley SAC and Wicklow Mountains SAC include Petrifying springs with tufa formation (*Cratoneurion*) [7220] and Blanket bogs [7130] respectively. North Dublin Bay SAC and South Dublin Bay SAC also have QIs which are groundwater dependent, namely Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] and Mediterranean salt meadows (*Juncetalia maritimi*) [1410]. These habitats are also associated with the QIs of North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA, as these are important habitats for many of the birds. However, excavation requirements will be shallow to provide for new cycle lanes and any contaminants entering the groundwater would discharge into the nearest watercourses (River Dodder and tributaries) where it would be further diluted. Therefore, given that the proposed route is located in

an urban setting where the sub-soil permeability of the site and the surrounding is generally low, and the aquifer vulnerability is generally low, negative impacts on the Natura 2000 sites are not anticipated.

During the operation phase, potential pollutants will enter the existing sewer system and will not be able to infiltrate the groundwater, therefore, adverse impacts to any Natura 2000 site are not anticipated during the operational phase.

Adverse impacts on any Natura 2000 sites are not expected via a groundwater pathway. Table 6-2 gives a summary of the screening rationale for the groundwater pathway.

Table 6-2: Ground water pathway screening summary for Natura 2000 sites

Natura 2000 sites	Screening outcome for Groundwater Pathway	Rationale
• South Dublin Bay and River Tolka Estuary SPA (004024) • South Dublin Bay SAC (000210) • North Bull Island SPA (004006) • North Dublin Bay SAC (000206) • Glenasmole Valley SAC (001209) • Wicklow Mountains SAC (002122) No groundwater dependent QIs: • Wicklow Mountains SPA (004040) • Rockabill to Dalkey Island SAC (003000) • Dalkey Islands SPA (004172)	No significant effect (Screened out)	Generally low sub-soil permeability and low aquifer vulnerability. Shallow excavations. Groundwater would discharge to closest watercourse and be diluted. Appropriate operational surface water drainage systems.

6.2.4 Land and Air

The loss or degradation of supporting habitats outside the identified Natura 2000 sites via land- and air-based impacts could have potential adverse impacts on a number of the QIs associated with these Natura 2000 sites. Rockabill to Dalkey Island SAC and Dalkey Islands SPA are not within land and air pathway of the proposed route.

Land and air pathways are assessed separately below.

Land (physical on-site and noise disturbance)

Direct physical impacts and indirect impacts, such as visual and noise impacts, do not have the potential to physically disturb habitats as well as the floral and faunal species within the Natura 2000 sites due to the distance from the proposed site to the Natura 2000 sites.

The proposed site is not considered to provide suitable ex-situ foraging habitat for any QIs of the Natura 2000 sites. The site is in an urban location consisting mainly of built-up features, therefore, impacts via land pathways in terms of ex-situ supporting habitats are not anticipated to have a significant impact on any of the Natura 2000 sites.

Air Pollution

Dust release and vehicle emissions can travel considerable distances and could potentially affect the QIs for which the following Natura 2000 sites are designated: Glenasmole Valley SAC (001209), Wicklow Mountains SAC (002122), Wicklow Mountains SPA (004040). All other Natura 2000 sites are outside of the ZoI for air pollution.

The distance and direction of travel is dependent upon wind speed and direction. The prevailing wind in the area is south-west (based on measurements carried out between 2010-2021 at Casement Aerodrome (Windfinder.com, 2021)). This means that on average winds will blow away from the Natura 2000 sites. The urban setting of the proposed route also provides barriers, such as buildings and treelines, which will prevent further dispersal of particles.

There will be an increase in local traffic attending the site during construction, resulting in an increase in NOx emissions, however vehicular emissions and dust emissions are not anticipated to significantly impact the QIs of the Natura 2000 sites due to the relatively small size and temporary nature of proposed works and distance between proposed site and Natura 2000 sites. The improvement of the cycle routes may reduce the amount of vehicular traffic with more people cycling in the long term and thus improve the air quality. Table 6-3 summarises the screening rationale for Land and Air pathways.

Table 6-3: Land and air pathway screening summary for Natura 2000 sites

Natura 2000 sites	Screening outcome for Land and Air Pathway	Rationale
• 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) Not within land & air pathway: • Rockabill to Dalkey Island SAC (003000) • Dalkey Islands SPA (004172)	No significant effect (**Screened out)**	No physical, visual or noise disturbance due to the distances between the site and the Natura 2000 sites. The site offers no suitable supporting habitat for any QIs of the Natura 2000 sites. Natura 2000 sites within the ZoI of air pathway are not in the general direction of the prevailing wind. Presence of barriers preventing dispersal of dust particles. Reduction of vehicular traffic in the long term.

6.2.5 Cumulative Impact

In assessing plans and projects outlined in Section **Error! Reference source not found.**, the projects that could have a cumulative impact along with the proposed site are those that are in close proximity to the proposed site and have hydrological connections to the River Dodder. These are listed in Table 5-1 and include SHD3ABP-305878-19, SHD3ABP-307222-20, SD20A/0140 and SD19A/0106.

Application SHD3ABP-305878-19 involves demolition of existing structures on site, construction of 590 no. residential units and is located at Scholarstown Road. The AA Screening carried out for this development screened out any potential impact (alone or in combination with other projects) on any Natura 2000 site due to the nature of the development and the distance from the Natura 2000 sites.

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, which ultimately enter the River Liffey and Dublin Bay. Significant impacts on the Dublin Bay Natura 2000 sites are ruled out due to distance and dilution effect. The Dublin Bay Natura 2000 sites

are highly dynamic estuarine habitats which are subject to twice daily tidal ingress and egress - along with the associated movement of sediments.

Application SD20A/0140 involves construction of two grass playing pitches in Dodder Valley Park at Firhouse Road. The AA Screening identified pathway via wastewater and surface water to Dublin Bay, via Ringsend WWTP and River Dodder. Any potential sediment runoff will not have a significant effect on the Dublin Bay Natura 2000 sites due to distance and temporary works and the fact that tidal and coastal habitats are not sensitive to sedimentation.

Application SD19A/0106 involves demolition of 42sq.m including the entrance lobby, reception area and adjacent office; construction of extension of 140sq.m to the Community Enterprise Hall building at Avonmore Road. The AA Screening identified surface water pathway via River Dodder and Jobstown Stream to Dublin Bay. Due to the small scale works and distance to Dublin Bay Natura 2000 sites where any pollution will be highly diluted, there are no likely significant impacts.

The listed county development and catchment plans have been subject to Stage 2 Appropriate Assessment. The conclusion from these assessments is that the projects will have a negligible impact on the QIs of any Natura 2000 site with the implementation of proposed mitigation measures.

As the proposed project is not anticipated to have any significant impact on QIs or conservation objectives on any Natura 2000 site and based on the screening statements of the above plans and planning applications, there is no potential for other plans or projects to act in combination with it to result in likely significant effects on Natura 2000 sites.

6.2.6 Summary

Due to the location of the proposed site, the temporary nature of the works and its distance to the Natura 2000 sites within the ZoI, the proposed project is not anticipated to have a significant impact via surface water, groundwater and land and air pathways to any Natura 2000 site.

6.2.7 Description of likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 sites

Project Elements	Comment
Size and scale	The proposed cycle route will primarily run along the existing roads or footpaths. Of the total 10.6km length of the scheme, approximately 1.2km will be through parks or other green areas, mostly along existing footpaths, while 9.4km will be along existing roads or adjacent footpaths.
Land-take	There will be no direct land take from any of Natura 2000 sites.
Distance from Natura 2000 site or key features of the site	The Natura 2000 sites and their proximity to the proposed site: • Glenasmole Valley SAC (001209) - 2.1km • Wicklow Mountains SAC (002122) - 4.4km • Wicklow Mountains SPA (004040) - 4.6km • South Dublin Bay and River Tolka Estuary SPA (004024) - 7.2km • South Dublin Bay SAC (000210) - 7.3km • North Dublin Bay SAC (000206) - 11.6km • North Bull Island SPA (004006) - 11.6km • Dalkey Islands SPA (004172) - 13.5km • Rockabill to Dalkey Island SAC (003000) - 13.8km
Resource requirements (water abstraction etc.)	There will be no water abstraction requirement.
Emissions (disposal to land, water or air)	Construction Phase: Water Potential pollutants will be utilised at the site, including diesel and engine/hydraulic oils and topsoil will be removed. These pollutants

	could potentially spill or leak into the surface water and groundwater and silt could runoff into surface water. Pollutants would be diluted and silt settle in the watercourse for a distance of 15.5km before reaching Dublin Bay Natura 2000 sites. Therefore, significant impacts are not anticipated via surface water. No significant impacts are anticipated via groundwater pathways given the ground conditions, where the general aquifer vulnerability and sub-soil permeability is low and any infiltration to the groundwater would discharge to the closes watercourse (River Dodder and tributaries). Air Excavations at the site will produce loose top and sub soil, and emissions may arise from working machinery. However, this is not anticipated to have a significant impact on habitats or species of any Natura 2000 site due to the distance, general wind direction and the presence of barriers in the urban setting. In the absence of any mitigation, the emissions from the project would not result in a negative impact on the Natura 2000 sites. Operation phase: The proposed development will use existing surface water drainage and there will be no increased load to surface water systems. Therefore, there will be no permanent impacts on any Natura 2000 site.
Excavation requirements	Excavations will be shallow involving excavations for the new cycle lanes.
Transportation requirements	Temporary Impacts: Levels of traffic to the site during the construction phase will increase traffic to the area but will be temporary in nature. All access to the site will be on pre-existing roads and transportation requirements will not affect Natura sites. Permanent Impacts: Given the size, scale and location of the proposed project, transportation requirements will not affect Natura 2000 sites.
Duration of construction, operation, decommissioning etc.	Construction will take 6 months. Operation will be permanent, and no decommissioning is anticipated.
Other	None

6.2.8 Description of likely changes to the Natura 2000 sites

Potential Impact	Comments
Reduction of habitat area	There will be a reduction in habitat area for any of the Natura 2000 sites.
Disturbance to key species	*Temporary Impacts:* The construction works will temporarily increase the noise level and disturbance locally. However, no significant impacts are anticipated to key species given scale and temporary nature of the construction phase and distance from the Natura 2000 sites. *Permanent Impacts*:

	No disturbance to key species is anticipated during operation of the project.
Habitat or species fragmentation	There will be no temporary or permanent habitat or species fragmentation within any of the Natura 2000 sites.
Reduction in species density	There will be no temporary or permanent reduction in species density within any of the Natura 2000 sites, or any QIs of these sites.
Changes in key indicators of conservation value (water quality etc.)	There will be no temporary or permanent changes in key indicators of conservation value (surface water, groundwater and air quality).
Climate change	N/A

6.2.9 Description of likely impacts on the Natura 2000 sites as a whole

Potential Impact	Comments
Interference with the key relationships that define the structure of the site	There will be no interference with the key relationships that define the structure of the sites.
Interference with key relationships that define the function of the site	There will be no interference with the key relationships that define the function of the sites.

Provide indicators of significance as a result of the identification of effects set out above in terms of:

Potential Impact	Indicators
Loss (Estimated percentage of lost area of habitat)	No Natura 2000 sites will experience a direct loss in habitat area.
Fragmentation	Fragmentation of habitat and/or species is not anticipated.
Disruption & disturbance	Disruption and/ or disturbance is anticipated.
Change to key elements of the site (e.g. water quality etc.)	Potential temporary changes to key elements (i.e. water quality) of the site are not anticipated.

6.2.10 Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is unknown

Based upon best scientific judgement, no significant effects are expected from the elements mentioned above; and there are no elements where the scale or magnitude of impacts is unknown.

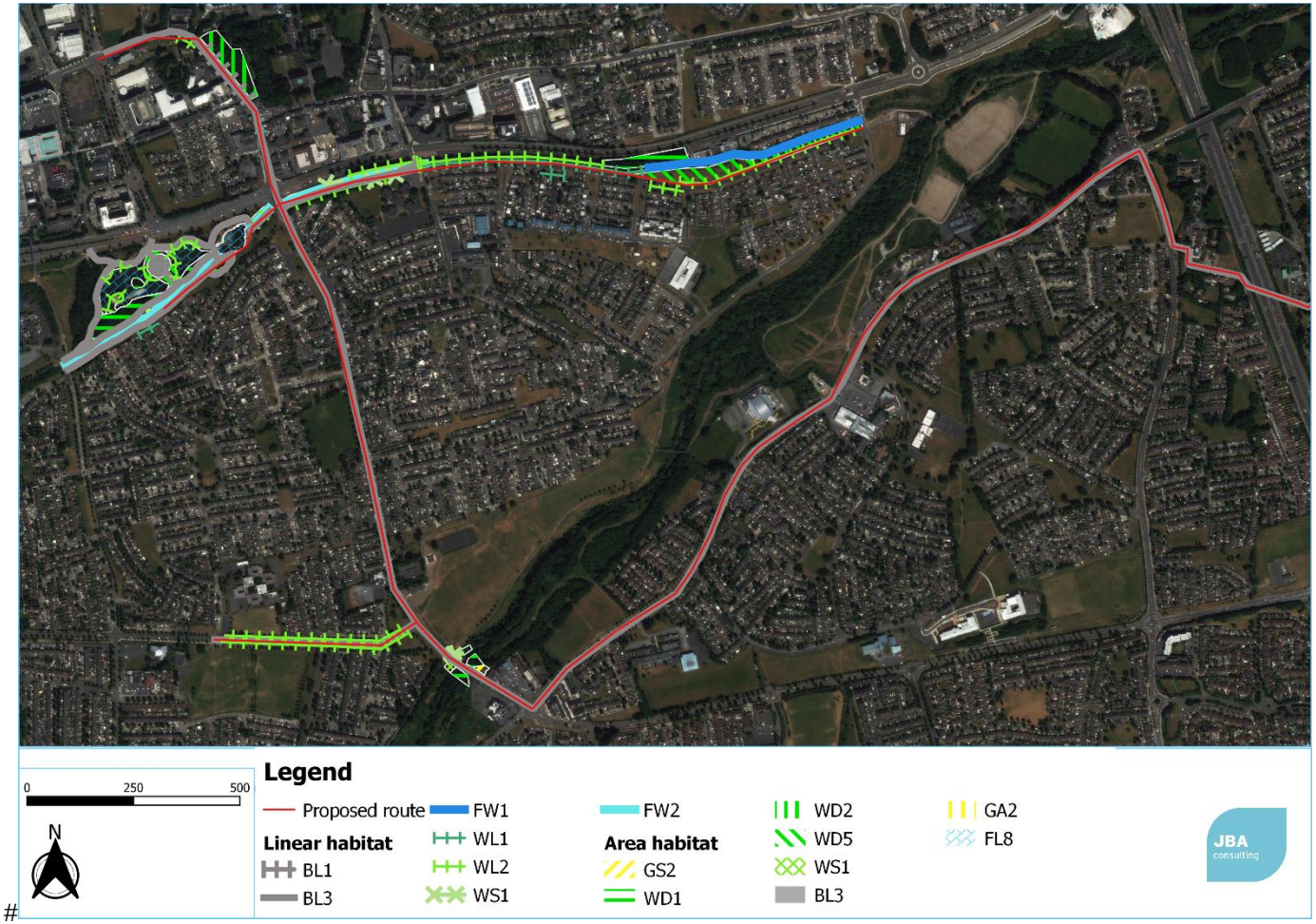
6.3 Concluding Statement

In carrying out this AA screening, mitigation measures have not been taken into account. Standard best practice construction measures which could have the effect of mitigating any effects on any European Sites have similarly not been taken into account.

On the basis of the screening exercise carried out above, it can be concluded that the possibility of any significant impacts on any European Sites, whether arising from the project itself or in combination with other plans and projects, can be excluded beyond a reasonable scientific doubt on the basis of the best scientific knowledge available.

Appendices

A Habitat Map



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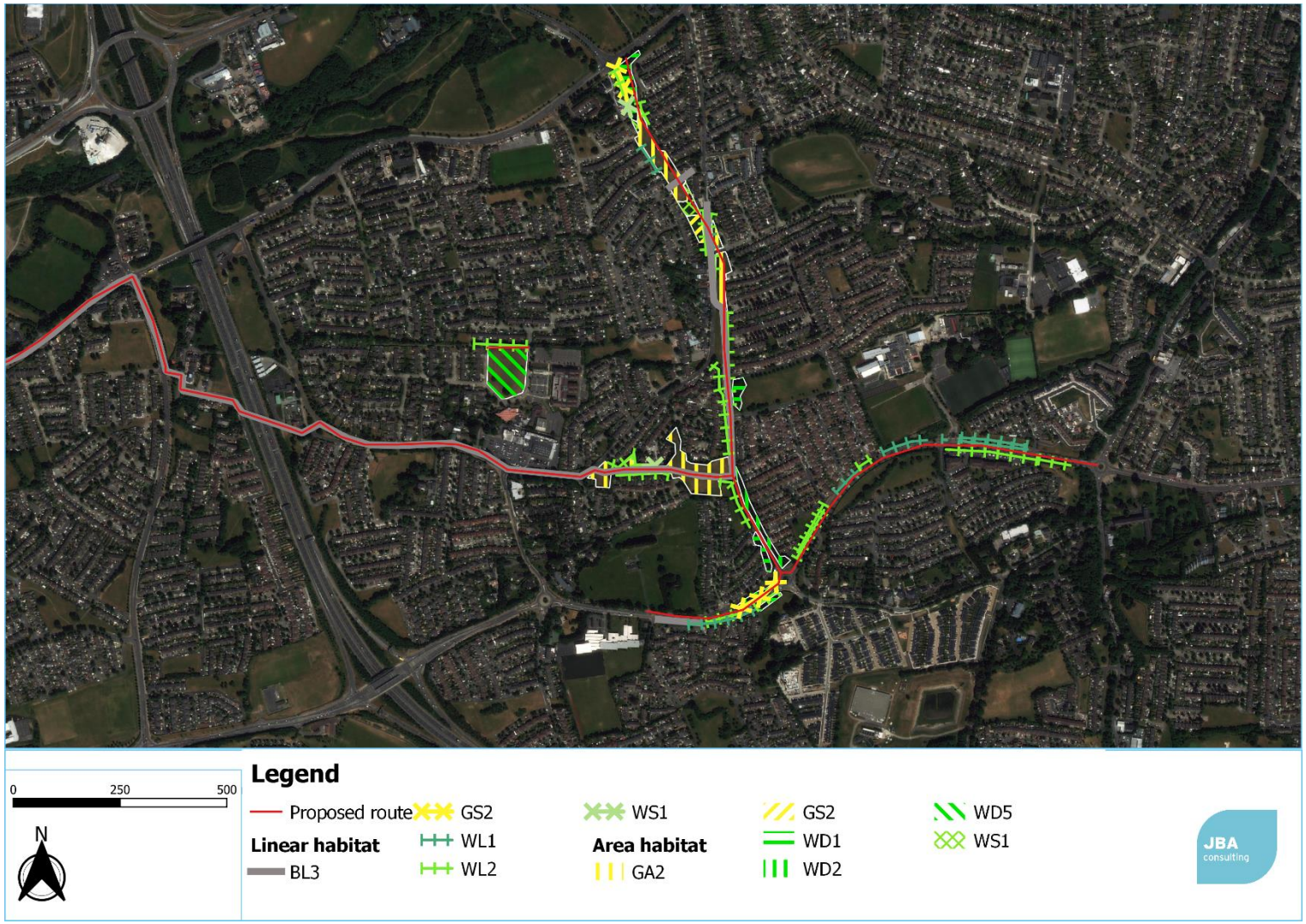
Legend
0
250
500
N
Proposed route
Linear habitat
BL3
GS2
WL1
WL2
WS1
Area habitat
GA2
GS2
WD1
WD2
WD5
WS1
JBA consulting

References

Catchment Science & Management Unit (2021) 3rd Cycle Draft Liffey and Dublin Bay Catchment Report (HA 09), available: https://catchments.ie/wp-content/files/catchmentassessments/09%20Liffey%20and%20Dublin%20Bay%20Catchment%20Summary%20WFD%20Cycle%203.pdf [accessed 6 Sep 2021].

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

DoEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities., Department of the Environment, Heritage and Local Government, available: http://www.wicklow.ie/sites/default/files/Manager's%20report%20on%20submissions%20to%20the%20Proposed%20Amendments.pdf [accessed 12 Jan 2017].

DoHPLG (2018) 'River Basin Management Plan for Ireland 2018-2021', available: https://www.housing.gov.ie/sites/default/files/publications/files/rbmp_report_english_web_version_final_0.pdf [accessed 22 Jan 2019].

EPA (2021) EPA Maps [online], Next Generation EPA Maps, available: https://gis.epa.ie/EPAMaps/ [accessed 15 Jan 2021].

European Commission (Ed.) (2000) Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities: Luxembourg.

European Commission (2007) 'Guidance document on Article 6 (4) of the "Habitats Directive" 92/43/EEC - Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission.'

European Commission, Directorate-General for the Environment, Oxford Brookes University, Impacts Assessment Unit (Eds.) (2002) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, EUR-OP: Luxembourg.

Fossitt, J.A. (2000) A Guide to Habitats in Ireland, Heritage Council of Ireland series, Heritage Council/Chomhairle Oidhreachta: Kilkenny.

GSI (2021) Geological Survey Ireland Spatial Resources [online], available: https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228 [accessed 15 Jan 2020].

Irish Water (2018) 'Greater Dublin Drainage Strategy - Overview & Future Strategic Needs', available: https://www.ringsendwwtpupgrade.ie/planning-sites/ringsend-planning/docs/planning-documents/technical-reports/180601_RGD%20Planning%20App%20-%20GDDS%20-%20Overview.pdf [accessed 18 Jun 2019].

Irish Water (2021) Ringsend Wastewater Treatment Plant Upgrade Project [online], Irish Water, available: https://www.water.ie/projects-plans/ringsend/ [accessed 12 Jan 2021].

NPWS (2013a) 'Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1.', available: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO003000.pdf [accessed 19 Jun 2019].

NPWS (2013b) 'Conservation Objectives: North Dublin Bay SAC 000206. Version 1.', available: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000206.pdf [accessed 18 Jun 2018].

NPWS (2014) 'Site Synopsis: North Bull Island SPA 004006', available: https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004006.pdf [accessed 17 Jun 2019].

NPWS (2015a) 'Site Synopsis: South Dublin Bay and River Tolka Estuary SPA (004024)', available: https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004024.pdf [accessed 17 Jun 2019].

NPWS (2015b) 'Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024', available: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004024.pdf [accessed 17 Jun 2019].

NPWS (2015c) 'Conservation Objectives: North Bull Island SPA 004006. Version 1.', available: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004006.pdf [accessed 17 Jun 2019].

NPWS (2017a) 'Natura 2000 Standard Data Form - Glenasmole Valley SAC', available: https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF001209.pdf [accessed 12 Dec 2018].

NPWS (2017b) 'Natura 2000 - Standard Data Form: Wicklow Mountains SAC 002122', available: https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF002122.pdf [accessed 24 Jun 2019].

NPWS (2017c) 'Conservation Objectives: Wicklow Mountains SAC 002122', available: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002122.pdf [accessed 24 Jun 2019].

NPWS (2017d) 'Natura 2000 Standard Data Form - South Dublin Bay and River Tolka Estuary SPA 004024', available: https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF004024.pdf [accessed 17 Jun 2019].

NPWS (2017e) 'Natura 2000 - Standard Data Form: North Bull Island SPA 004006', available: https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF004006.pdf [accessed 18 Jun 2019].

NPWS (2017f) 'Natura 2000 - Standard Data Form: North Dublin Bay 000206', available: https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF000206.pdf [accessed 18 Jun 2019].

NPWS (2017g) 'Natura 2000 standard data form: Rockabill to Dalkey Island SAC 003000', available: https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF003000.pdf [accessed 19 Jun 2019].

NPWS (2018a) 'Wicklow Mountains SPA 004040 - Natura Standard Data Form', available: https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF004040.pdf [accessed 13 Aug 2020].

NPWS (2018b) 'South Dublin Bay SAC 000210 - Natura Standard Data Form', available: https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF000210.pdf [accessed 13 Aug 2020].

NPWS (2018c) 'Natura Standard Data Form: Dalkey Islands SPA 004172', available: https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF004172.pdf [accessed 19 Oct 2020].

NPWS (2020a) 'Glenasmole Valley SAC 001209 - Conservation Objectives', available: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001209.pdf [accessed 13 Aug 2020].

NPWS (2020b) 'Wicklow Mountains SPA 004040- Conservation Objectives', available: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004040.pdf [accessed 13 Aug 2020].

NPWS (2021) 'Conservation Objectives: Dalkey Islands SPA 004172', available: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004172.pdf [accessed 3 Jun 2021].

OPR (2021) 'OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management'.

SDCC (2016a) South Dublin County Council Development Plan 2016-2022 Index Map, South Dublin County Council.

SDCC (2016b) Screening for Appropriate Assessment South Dublin County Council Development Plan 2016-2022, available: https://www.southdublindevplan.ie/sites/default/files/documents/AA%20Screening%20Report%20f

or%20SDCC%20Development%20Plan%202016-2022%20June%202016.pdf [accessed 18 Dec 2018].

Smith, G.F., O'Donoghue, P., O'Hora, K., Delaney, E. (2011) 'Best practice guidance for habitat survey and mapping', The Heritage Council: Ireland.

Tyldesley, D., Chapman, C. (2013) 'The Habitat Regulations Assessment Handbook, May 2021 edition'.

Windfinder.com (2021) Windfinder.Com - Wind and Weather Statistic Casement Aerodrome [online], Windfinder.com, available: https://www.windfinder.com/windstatistics/casement_aerodrome [accessed 12 Mar 2021].

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