

Screening Report for
Appropriate Assessment
of a proposed Strategic Housing
Development on
Frankfort Castle, Old Frankfort, Dundrum,
Dublin 14

Compiled by OPENFIELD Ecological Services

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1.0 Introduction

Biodiversity is a contraction of the words 'biological diversity' and describes the enormous variability in species, habitats and genes that exist on Earth. It provides food, building materials, fuel and clothing while maintaining clean air, water, soil fertility and the pollination of crops. A study by the Department of Environment, Heritage and Local Government placed the economic value of biodiversity to Ireland at €2.6 billion annually (Bullock et al., 2008) for these 'ecosystem services'.

All life depends on biodiversity and its current global decline is a major challenge facing humanity. In 1992, at the Rio Earth Summit, this challenge was recognised by the United Nations through the Convention on Biological Diversity which has since been ratified by 193 countries, including Ireland. Its goal to significantly slow down the rate of biodiversity loss on Earth has been echoed by the European Union, which set a target date of 2010 for *halting* the decline. This target was not met but in 2010 in Nagoya, Japan, governments from around the world set about redoubling their efforts and issued a strategy for 2020 called 'Living in Harmony with Nature'. In 2011 the Irish Government incorporated the goals set out in this strategy, along with its commitments to the conservation of biodiversity under national and EU law, in the second national biodiversity action plan (Dept. of Arts, Heritage and the Gaeltacht, 2011). A third plan was published in 2017.

The main legislation for conserving biodiversity in Ireland have been the Directive 2009/147//EC of the European Parliament and of the Council of November 2009 on the conservation of wild birds (Birds Directive) and Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive). Among other things, these require member states to designate areas of their territory that contain important bird populations in the case of the former; or a representative sample of important or endangered habitats and species in the case of the latter. These areas are known as Special Protection Areas (SPA) and Special Areas of Conservation (SAC) respectively. Collectively they form a network of sites across the European Union known as Natura 2000. The Birds and Habitats Directives have been transposed into Irish legislation by the European Communities (Birds and Natural Habitats) Regulations 2011-2015. A report into the economic benefits of the Natura 2000 network concluded that "there is a new evidence base that conserving and investing in our biodiversity makes sense for climate challenges, for saving money, for jobs, for food, water and physical security, for cultural identity, health, science and learning, and of course for biodiversity itself" (EU, 2013).

Unlike traditional nature reserves or national parks, Natura 2000 sites are not 'fenced-off' from human activity and are frequently in private ownership. It is the responsibility of the competent national authority to ensure that 'good conservation status' exists for their SPAs and SACs and specifically that Article 6(3) of the Habitats Directive is met. Article 6(3) states:

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.

Sections 177U and 177V of the Planning and Development Act 2000 sets out the purpose of AA Screening is as follows:

A screening for appropriate assessment shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

The test at stage 1 AA Screening is that:

The competent authority shall determine that an appropriate assessment of a proposed development is required if it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.

The test at stage 2 (Appropriate Assessment) is:

Whether or not the proposed development, individually or in-combination with other plans or projects would adversely affect the integrity of a European site.

However, where this is not the case, a preliminary screening must first be carried out to determine whether or not a full AA is required. This screening is carried out by the competent authority, in this case An Bord Pleanála.

2.0 The Purpose of this document

This document provides a screening report for Appropriate Assessment of a proposed residential development at Frankfort Castle, Old Frankfort, Dundrum, Dublin 14, and its potential effects in relation to Natura 2000 sites (SACs and SPAs).

Under the Planning and Development Act 2000 (as amended), and the Birds and Natural Habitats Regulations 2011 (as amended), the planning authority can only grant planning permission if the project will not adversely affect the integrity of a

Natura 2000 site. In order to make that decision the development must be screened for AA. This report provides the necessary information to allow An Bord Pleanála as the competent authority for this planning application to carry out this screening.

This Screening Report for Appropriate Assessment has been prepared by Pádraic Fogarty of OPENFIELD Ecological Services. Pádraic Fogarty has worked for 25 years in the environmental field and in 2007 was awarded an MSc from Sligo Institute of Technology for research into Ecological Impact Assessment (EclA) in Ireland. He is a full member of the Institute of Environmental Management and Assessment (IEMA).

3.0 Methodology

The methodology for this screening statement is clearly set out in a document prepared for the Environment DG of the European Commission entitled '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' (Oxford Brookes University, 2001). Chapter 3, part 1, of the aforementioned document deals specifically with screening while Annex 2 provides the template for the screening/finding of no significant effects report matrices to be used.

In accordance with this guidance, the following methodology has been used to produce this screening statement:

Step 1: Management of the Natura 2000 site

This determines whether the project is necessary for the conservation management of the site in question.

Step 2: Description of the Project

This step describes the aspects of the project that may have an effect on the Natura 2000 site. This step also includes the description of other plans and projects that in combination have the potential for having significant effects to Natura 2000 sites.

Step 3: Characteristics of the Natura Site

This process identifies the conservation objectives of the site. This is done through a literature survey and consultation with relevant stakeholders – particularly the National Parks and Wildlife Service (NPWS). All potential effects are identified including those that may act alone or in combination with other projects or plans.

Using the precautionary principle, and through consultation and a review of published data, it is normally possible to conclude at this point whether potential effects are likely. Deficiencies in available data are also highlighted at this stage.

Step 4: Assessment of Significance

Assessing whether an effect is significant must be made in light of the conservation objectives for that SAC or SPA.

A full AA of a proposed development is required if it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.

The steps are compiled into a screening matrix, a template of which is provided in Appendix II of the EU methodology.

Reference is also made to guidelines for Local Authorities from the Department of the Environment, Heritage and Local Government (DoEHLG, 2009), guidance from the European Commission 'Managing Natura 2000 sites – the provisions of Article 6 of the Habitats Directive 92/43/EEC'.

A full list of literature sources that have been consulted for this study is given in the References section to this report while individual references are cited within the text where relevant.

Screening Template as per Annex 2 of EU methodology:

This plan is not necessary for the management of any Natura 2000 site and so Step 1 as outlined above is not relevant for the purposes of this assessment.

4.0 Brief description of the project

The proposed development comprises the demolition of most of the buildings on the site followed by the construction of a housing development. It is described thus, as per the planning application:

The proposed development will consist of 115 no. residential units comprising 45 no. one-bed units and 70 no. two-bed units. The proposed units will be accommodated in the partially retained Frankfort Castle building and in 3no. blocks with a maximum height of 5 storeys. Additional works proposed include the provision of a childcare facility (80sqm), car and cycle parking at surface and basement levels, hard and soft landscaping, surface water drainage infrastructure and attenuation tank, and all associated site development and infrastructure works.

The site location is shown in figures 1 and 2. The extent of demolition is shown in figure 3.

The site is not located within or directly adjacent to any Natura 2000 site (SAC or SPA). This part of Dublin lies within the suburban zone of the city while historic mapping shows buildings in this area for many years. Current land use in the vicinity is predominantly residential and commercial in nature along with transport arteries.

The Slang Stream flows close to the east of the development site area and this is a tributary of the River Dodder. The Dodder system is of significant value to wildlife within the urban context of Dublin City although this stretch is not within any area designated for nature conservation.

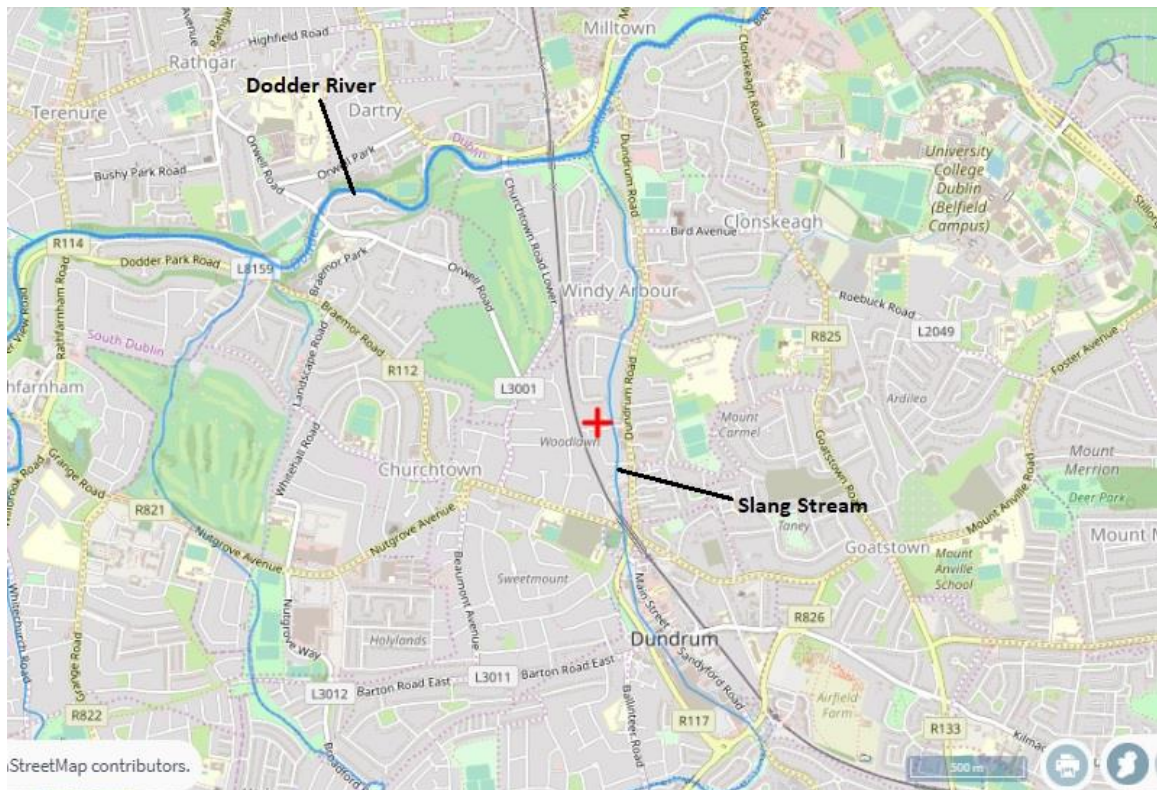


Figure 1 – Site location (red cross) showing local water courses. There are no Natura 2000 sites in this view (from www.epa.ie).

The site was surveyed for this study on September 19th 2019, March 12th, June 21st and June 28th 2021. September is within the optimal season for general habitat survey (Smith et al., 2010). Habitats are described here in accordance with standard classifications (Fossitt, 2000). This found that the lands are composed of **buildings and artificial surfaces – BL3** along with **scattered trees and parklands – WD5** which includes both buildings and garden areas. These contain a number of trees including specimens of Cypress *Cuprocyparis sp.*, Birch *Betula sp.*, Pine *Pinus sp.* and Maple *Acer sp.* Lawns are well mown while shrubs are predominantly non-native with New Zealand Broadleaf *Grisilinea littoralis* and Privet *Ligustrum vulgare*. Along some boundary stretches these make up **treelines – WL1**.

An area of disused land to the south is made up of **scrub – WS1** with a **hedgerow – WL1** surround. There are extensive areas of Brambles *Rubus fruticosus agg.*, Elder *Sambucus nigra*, Butterfly-bush *Buddleja davidii*, Cherry Laurel *Prunus laurocerasus*, Ash *Fraxinus excelsior*, Elm *Ulmus sp.*, and Rosebay Willowherb *Chamerion angustifolia*.

There is an existing vehicle crossing of the Slang Stream. The watercourse itself is narrow and its banksides on either side of the crossing are steep. The vegetation is a combination of native and non-native/horticultural plants and includes Sycamore *Acer pseudacorus*, Ivy *Hedera helix*, Elder, Brambles, Snowberry *Symphoricarpos albus* and Cherry Laurel *Prunus laurocerasus*.

There are no other water courses on the the development lands, no bodies of open water other than a small garden pond and no habitats which could be considered wetlands. There are no plant species which are listed as alien invasive under Schedule 3 of SI No 477 of 2011.

The habitats of the development site are not suitable for regularly occurring populations of wetland/wading/wintering birds which may be qualifying interests of Natura 2000 sites. These species are typically associated with intertidal or coastal habitats while some species, most notably the Light-bellied Brent Goose, can utilise inland amenity grassland sites for feeding. The development site contains no such habitat and it not adjacent to any such habitat.

The development will see the demolition of most of the existing buildings (see figure 3), excavation to basement level and construction within the site footprint. No structural works are planned to the bridge over the Slang Stream and no instream works will be undertaken. Work in this area is limited to re-surfacing of the bridge to alter the traffic configuration. There will be no change to the existing cross-section of the bridge structure.

Foul effluent from the proposed development will be sent to the wastewater treatment plant at Ringsend in Dublin. Emissions from the plant are currently not in compliance with the Urban Wastewater Treatment Directive. In April 2019 Irish Water was granted planning permission to upgrade the Ringsend plant.

Contractors for the upgrade work to the plant comprising a new 400,000 population equivalent extension were appointed in February 2018. The work on this 25% increase in capacity is scheduled to be completed by 2021. In addition, it is stated that Irish Water is working on infrastructure to achieve a population equivalent of two million by the end of 2022. The upgrade to use of aerobic granular sludge (which allows for a greater amount of wastewater to be treated to a higher standard within the current plant) and other phased upgrades to achieve a population equivalent of 2.4 million is expected to be completed by 2025.

Currently there is no attenuation of surface water at the proposed development site. The proposed development will increase the area of hard standing and this may affect the pattern of run-off. SUDS measures are included in the project design in order to maintain run-off at a 'greenfield' rate. This will include green roofs, water storage butts, permeable paving, low water usage appliances, tree pits and an attenuation tank with controlled release to the sewer. There is a public surface water sewer available and so foul and surface systems will be entirely separate. An outfall to the Slang Stream already exists and so no works are required to this water course. The proposed site layout is presented in figure 4.



Figure 2 – recent aerial view of the subject lands and indicative site boundary (from www.google.com).



Figure 3 – Existing site layout showing buildings to be demolished (in blue).



Figure 4 – proposed site layout (ground floor)

5.0 Brief description of Natura 2000 sites

In assessing the zone of influence of this project upon Natura 2000 sites the following factors were considered:

- Potential effects arising from the project
- The location and nature of Natura 2000 sites
- Pathways between the development and the Natura 2000 network

As already confirmed in Section 4 above, the development site is not located within or directly adjacent to any Natura 2000 site. For projects of this nature an initial 15km radius is normally examined. All Natura 2000 sites within 15km of the development site are included in this analysis.



Figure 5 – Approximate 15km radius around the proposed development site (red cross) and Natura 2000 sites (www.epa.ie).

Baldoyle Bay SAC/SPA (site code 0199 & 4016; c.14km from development site)

This SAC (site code: 0199) is the estuary of the Sluice and the Mayne Rivers that is largely enclosed by a sand spit that stretches from Portmarnock to Howth. At low tide it has large areas of exposed mud and sediment that support rich invertebrate communities. There are a number of habitats within this SAC/SPA that are listed in the EU's Habitats Directive Annex I while there are two plants recorded from the Bay that are protected under the Flora Protection Order: Borrer's Saltmarsh-grass *Puccinellia fasciculata* and Meadow Barley *Hordeum secalinum*.

The reasons why the bay falls under the SAC designation are set out in the qualifying interests. They are either habitat types listed in Annex I or species listed in Annex II of the Habitats Directive. This information is provided by the National Parks and Wildlife Service (NPWS) and is shown in table 1 below. In this case the SAC is designated only for protected habitat types. Status is based on the NPWS national assessments under Article 17 of the Habitats Directive and unless otherwise stated do not refer to the status within the SAC in question.

Table 1 – Qualifying interests for the Baldoyle Bay SAC (from NPWS)

Code	Habitats	Status
1140	Mudflats and sandflats	Inadequate
1310	Salicornia and other annuals colonizing mud and sand	Favourable
1330	Atlantic salt meadows	Inadequate
1410	Mediterranean salt meadows	Inadequate

- Tidal mudflats (1140). This is an intertidal habitat characterised by fine silt and sediment. Most of the area in Ireland is of favourable status however water quality and fishing activity, including aquaculture, are negatively affecting some areas.
- Salicornia mudflats (1310): This is a pioneer saltmarsh community and so is associated with intertidal areas. It is dependent upon a supply of fresh, bare mud and can be promoted by damage to other salt marsh habitats. It is chiefly threatened by the advance of the alien invasive Cordgrass *Spartina anglica*. Erosion can be destructive but in many cases this is a natural process.
- Atlantic and Mediterranean salt meadows (1330 & 1410): these are intertidal habitats that differ somewhat in their vegetation composition. They are dynamic habitats that depend upon processes of erosion, sedimentation and colonisation by a typical suite of salt-tolerant organisms. The main pressures are invasion by the non-native *Spartina anglica* and overgrazing by cattle and sheep.

The Baldoyle Bay SPA (site codes: 4016) is composed of estuarine habitats. They are some of the most productive in the world and the nutrients that are deposited here fuel primary and secondary production (levels in the food chain) that in turn provide food for internationally significant numbers of wintering birds (Little, 2000). It had a mean of 5,780 birds between the winters of 2006/07 and 2010/11 (Crowe et al., 2012). Specifically, it has a number of species which are 'features of interest' of the SPA, along with 'wetlands and waterbirds'. Table 2 details these.

Table 2 – Features of Interest for the Baldoyle Bay SPA (from NPWS)

Species	National Status ¹	SPA Status ²
<i>Branta bernicula hrota</i> Light-bellied brent goose	Amber (Wintering)	Favourable
<i>Charadrius hiaticula</i> Ringed plover	Green	Intermediate unfavourable
<i>Limosa lapponica</i> Bar-tailed godwit	Amber (Wintering)	Highly unfavourable
<i>Pluvialis apricaria</i> Golden plover	Red (Breeding & Wintering)	Unfavourable
<i>Pluvialis squatarola</i> Grey plover	Amber (Wintering)	Unfavourable
<i>Tadorna Tadorna</i> Shelduck	Amber (Breeding & Wintering)	Favourable
Wetlands & Waterbirds		

- **Light-bellied Brent Goose.** There has been a 67% increase in the distribution of this goose which winters throughout the Irish coast (Balmer et al., 2013). The light-bellied subspecies found in Ireland breeds predominantly in the Canadian Arctic.
- **Ringed Plover.** This bird is a common sight around the Irish coast where it is resident. They breed on stony beaches but also, more recently, on cut-away bog in the midlands.
- **Bar-tailed Godwit.** These wetland wading birds do not breed in Ireland but are found throughout the littoral zone during winter months. They prefer estuaries where there are areas of soft mud and sediments on which to feed.
- **Golden Plover.** In winter these birds are recorded across the midlands and coastal regions. They breed only in suitable upland habitat in the north-west. Wintering abundance in Ireland has changed little in recent years although it is estimated that half of its breeding range has been lost in the last 40 years.

¹ Birds of Conservation Concern in Ireland. Colhoun & Cummins, 2013

² Conservation Objectives Supporting Document. Version 1. National Parks & Wildlife Service. 2012.

- **Grey Plover.** These birds do not breed in Ireland but winter throughout coastal estuaries and wetlands. Its population and distribution is considered to be stable.
- **Shelduck.** The largest of our ducks, Shelduck both breed and winter around the coasts with some isolate stations inland. Its population and range are considered stable.

Of those species with unfavourable status in the SPA, Ringed Plover and Bar-tailed Godwit have exhibited losses at Baldoyle Bay while the national population remains stable or has increased. It is therefore reasonable to assume that local factors are leading to declines. The NPWS list a number of factors that may be contributing to this including human disturbance (walkers with or without dogs) and nutrient enrichment (pollution). The latter effect is exhibited by algal mats, typically Sea-lettuce *Ulva* sp. which covers the sediment surface at low tide. This is good for those species which feed on Sea-lettuce but bad for those which cannot reach their favoured prey under the mats.

North Dublin Bay SAC/North Bull Island SPA (site code 0206 & 4006; c. 8km from development site)

The North Dublin Bay SAC is focussed on the sand spit on the North Bull island. The qualifying interests for it are shown in table 3. The status of the habitat is also given and this is an assessment of its range, area, structure and function, and future prospects on a national level and not within the SAC itself.

Table 3 – Qualifying interests for the North Dublin Bay SAC

Code	Habitat/Species	Status
1140	Mudflats and sandflats not covered by seawater at low tide	Inadequate
1320	Salicornia and other annuals colonizing mud and sand	Favourable
1330	Atlantic salt meadows	Inadequate
1410	Mediterranean salt meadows	Inadequate
1210	Annual vegetation of drift lines	Inadequate
2110	Embryonic shifting dunes	Inadequate
2120	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	Inadequate
2130	Fixed coastal dunes with herbaceous vegetation (grey dunes)	Bad
2190	Humid dune slacks	Inadequate

1395	<i>Petalophyllum ralfsii</i> Petalwort	Favourable
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- **Annual vegetation of drift lines (1210)** This habitat of the upper shore is characterised by raised banks of pebbles and stones. They are inhabited by a sparse but unique assemblage of plants, some of which are very rare. The principle pressures are listed as gravel extraction, the building of pipelines and coastal defences.
- **Embryonic shifting dunes (2110).** As their name suggests these sand structures represent the start of a sand dune's life. Perhaps only a meter high they are a transient habitat, vulnerable to inundation by the sea, or developing further into white dunes with Marram Grass. They are threatened by recreational uses, coastal defences, trampling and erosion.
- **Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) (2120).** These are the second stage in dune formation and depend upon the stabilising effects of Marram Grass. The presence of the grass traps additional sand, thus growing the dunes. They are threatened by erosion, climate change, coastal flooding and built development.
- **Fixed coastal dunes with herbaceous vegetation (grey dunes) (2130 – priority habitat).** These are more stable dune systems, typically located on the landward side of the mobile dunes. They have a more or less permanent, and complete covering of vegetation, the quality of which depends on local hydrology and grazing regimes. They are the most endangered of the dune habitat types and are under pressure from built developments such as golf courses and caravan parks, over-grazing, under-grazing and invasive species.
- **Humid dune slacks (2190).** These are wet, nutrient enriched (relatively) depressions that are found between dune ridges. During winter months or wet weather these can flood and water levels are maintained by a soil layer or saltwater intrusion in the groundwater. There are found around the coast within the larger dune systems.
- **Petalwort (1395).** There are 30 extant populations of this small green liverwort, predominantly along the Atlantic seaboard but also with one in Dublin. It grows within sand dune systems and can attain high populations locally.

The North Bull Island SPA is largely coincident with the North Dublin Bay SAC with the exception of the terrestrial portion of Bull Island. Table 4 lists its features of interest

Table 4 – Features of interest for the North Bull Island SPA

North Bull Island SPA	National Status
Light-bellied Brent Goose <i>Branta bernicla hrota</i>	Amber (Wintering)
Oystercatcher <i>Haematopus ostralegus</i>	Red
Teal <i>Anas crecca</i>	Amber (Breeding & Wintering)
Pintail <i>Anas acuta</i>	Amber (Wintering)

Shoveler <i>Anas clypeata</i>	Red
Shelduck <i>Tadorna tadorna</i>	Amber
Golden Plover <i>Pluvialis apricaria</i>	Red
Grey Plover <i>Pluvialis squatarola</i>	Red (Wintering)
Knot <i>Calidris canutus</i>	Red (Wintering)
Sanderling <i>Calidris alba</i>	Green (Wintering)
Dunlin <i>Calidris alpina</i>	Red
Black-tailed Godwit <i>Limosa limosa</i>	Red (Wintering)
Bar-tailed Godwit <i>Limosa lapponica</i>	Red (Wintering)
Curlew <i>Numenius arquata</i>	Red
Redshank <i>Tringa totanus</i>	Red
Turnstone <i>Arenaria interpres</i>	Amber (Wintering)
Black-headed Gull <i>Larus ridibundus</i>	Amber
Wetlands & Waterbirds	

- **Oystercatcher.** Predominantly coastal in habit Oystercatchers are resident birds whose numbers continue to expand in Ireland.
- **Teal.** In winter this duck is widespread throughout the country. Land use change and drainage however have contributed to a massive decline in its breeding range over the past 40 years.
- **Pintail.** Dabbling duck wintering on grazing marshes, river floodplains, sheltered coasts and estuaries. It is a localised species and has suffered a small decline in distribution in Ireland for unknown reasons.
- **Shoveler.** Favoured wintering sites for this duck are inland wetlands and coastal estuaries. While there have been local shifts in population and distribution, overall their status is stable in Ireland.
- **Knot.** These small wading birds do not breed in Ireland but gather in coastal wetlands in winter. Their numbers have increased dramatically since the mid-1990s although the reasons for this are unclear.
- **Sanderling.** This small bird breeds in the high Arctic and winters in Ireland along sandy beaches and sandbars. Its wintering distribution has increased by 21% in the previous 30 years.
- **Dunlin.** Although widespread and stable in number during the winter season, the Irish breeding population has collapsed by nearly 70% in 40 years.

Breeding is now confined to just seven sites in the north and west as habitat in former nesting areas has been degraded.

- **Black-tailed Godwit.** Breeding in Ireland these waders winter in selected sites around the Irish coast, but predominantly to the east and southern halves. Their range here has increased substantially of late.
- **Curlew.** Still a common sight during winter at coastal and inland areas around the country but its breeding population here has effectively collapsed. Their habitat has been affected by the destruction of peat bogs, afforestation, farmland intensification and land abandonment. Their wintering distribution also appears to be in decline.
- **Redshank.** Once common breeders throughout the peatlands and wet grasslands of the midlands Redshanks have undergone a 55% decline in distribution in the past 40 years. Agricultural intensification, drainage of wetlands and predation are the chief drivers of this change.
- **Turnstone.** This winter visitor to Irish coasts favours sandy beaches, estuaries and rocky shores. It is found throughout the island but changes may be occurring due to climate change.
- **Black-headed Gull.** Widespread and abundant in winter these gulls are nevertheless considered to be in decline. The reasons behind this are unclear but may relate to the loss of safe nesting sites, drainage, food depletion and increased predation.

The South Dublin Bay and Tolka Estuary SPA (site code 4024; c. 3.5km from the development site)

The SPA is largely coincident with the South Dublin Bay SAC boundary with the exception of the Tolka Estuary. These designations encompass all of the intertidal areas in Dublin Bay from south of Bull Island to the pier in Dun Laoghaire. Wintering birds in particular are attracted to these areas in great number as they shelter from harsh conditions further north and avail of the available food supply within sands and soft sediments. Table 6 lists the features of interest.

- **Light-bellied Brent Goose.** There has been a 67% increase in the distribution of this goose which winters throughout the Irish coast. The light-bellied subspecies found in Ireland breeds predominantly in the Canadian Arctic.
- **Sanderling.** This small bird breeds in the high Arctic and winters in Ireland along sandy beaches and sandbars. Its wintering distribution has increased by 21% in the previous 30 years.
- **Dunlin.** Although widespread and stable in number during the winter season, the Irish breeding population has collapsed by nearly 70% in 40 years. Breeding is now confined to just seven sites in the north and west as habitat in former nesting areas has been degraded.
- **Knot.** These small wading birds do not breed in Ireland but gather in coastal wetlands in winter. Their numbers have increased dramatically since the mid-1990s although the reasons for this are unclear.

- **Black-headed Gull.** Widespread and abundant in winter these gulls are nevertheless considered to be in decline. The reasons behind this are unclear but may relate to the loss of safe nesting sites, drainage, food depletion and increase predation.
- **Ringed Plover.** This bird is a common sight around the Irish coast where it is resident. They breed on stony beaches but also, more recently, on cut-away bog in the midlands.
- **Oystercatcher.** Predominantly coastal in habit Oystercatchers are resident birds whose numbers continue to expand in Ireland.
- **Bar-tailed Godwit.** These wetland wading birds do not breed in Ireland but are found throughout the littoral zone during winter months. They prefer estuaries where there are areas of soft mud and sediments on which to feed.
- **Grey Plover.** These birds do not breed in Ireland but winter throughout coastal estuaries and wetlands. Its population and distribution is considered to be stable.
- **Roseate Tern.** This tern breeds at only a few stations along Ireland's east coast. Most of these are in decline although at Dublin their colony is increasing.
- **Common Tern.** This summer visitor nests along the coast and on islands in the largest lakes. Its breeding range has halved in Ireland since the 1968-1972 period.
- **Arctic Tern.** These long-distance travellers predominantly breed in coastal areas of Ireland. They have suffered from predation by invasive mink and are declining in much of their range.
- **Redshank.** Once common breeders throughout the peatlands and wet grasslands of the midlands Redshanks have undergone a 55% decline in distribution in the past 40 years. Agricultural intensification, drainage of wetlands and predation are the chief drivers of this change.

Bird counts from BirdWatch Ireland are taken from Dublin Bay as a whole and are not specific to any particular portion of the Bay. Dublin Bay is recognised as an internationally important site for water birds as it supports over 20,000 individuals. Table 5 shows the most recent count data available³.

Table 5 – Annual count data for Dublin Bay from the Irish Wetland Birds Survey (IWeBS)

Year	2010/11	2011/12	2012/13	2013/14	2014/15	Mean
Count	27,931	30,725	30,021	35,878	33,486	31,608

There were also internationally important populations of particular birds recorded in Dublin Bay (i.e. over 1% of the world population): Light-bellied brent geese *Branta bernicula hrota*; Black-tailed godwit *Limosa limosa*; Knot *Calidris canutus* and Bar-tailed godwit *L. lapponica*.

³ <https://f1.caspio.com/dp.asp?AppKey=f4db3000060acbd80db9403f857c>

Table 6 – Features of interest for the South Dublin Bay & River Tolka Estuary SPA (EU code in square parenthesis)

South Dublin Bay and Tolka Estuary SPA
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>) [A140]
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>Croicocephalus ridibundus</i>) [A179]
Roseate Tern (<i>Sterna dougallii</i>) [A192]
Common Tern (<i>Sterna hirundo</i>) [A193]
Arctic Tern (<i>Sterna paradisaea</i>) [A194]
Wetlands & Waterbirds [A999]

The **South Dublin Bay SAC (side code: 0210; c. 3.5km from the development site)**

This SAC) is concentrated on the intertidal area of Sandymount Strand. It has four qualifying interests: 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) and Embryonic shifting dunes (2110).

- **Annual vegetation of drift lines (1210)** This habitat of the upper shore is characterised by raised banks of pebbles and stones. They are inhabited by a sparse but unique assemblage of plants, some of which are very rare. The principle pressures are listed as gravel extraction, the building of pipelines and coastal defences.
- **Embryonic shifting dunes (2110).** As their name suggests these sand structures represent the start of a sand dune's life. Perhaps only a meter high they are a transient habitat, vulnerable to inundation by the sea, or developing

further into white dunes with Marram Grass. They are threatened by recreational uses, coastal defences, trampling and erosion.

- **Tidal mudflats (1140)**. This is an intertidal habitat characterised by fine silt and sediment. Most of the area in Ireland is of favourable status however water quality and fishing activity, including aquaculture, are negatively affecting some areas.
- **Salicornia mudflats (1310)**: This is a pioneer saltmarsh community and so is associated with intertidal areas. It is dependent upon a supply of fresh, bare mud and can be promoted by damage to other salt marsh habitats. It is chiefly threatened by the advance of the alien invasive Cordgrass *Spartina anglica*. Erosion can be destructive but in many cases this is a natural process.

Howth Head SAC and Howth Head Coast SPA (site code 0202 & 4113; c. 12.5km from the development site)

The Howth Head SAC is designed for two qualifying interests: vegetated sea cliffs and dry heath. Site specific conservation objectives have been published for this SAC. These include maintaining the habitat extent, condition, vegetation composition, and community diversity for the two habitats listed as qualifying interests.

- **Vegetated sea cliffs (1230)** These coastal habitats can be composed of hard or soft material which in turn influences the rate at which erosion occurs. Vegetation can be sparse but composed of a variety of specially adapted species. It is nationally assessed as of intermediate status.
- **Dry heath (4030)**: This is a community of heather shrubs that occurs on well-drained, acidic, nutrient-poor mineral or peaty soils. Pressures on this habitat arise from high levels of sheep grazing, as well as afforestation, mining and quarrying. Unregulated burning is also identified as an important threat to the structure of this habitat. It is nationally assessed as of bad status.

The Howth Head Coast SPA is home to large colonies of breeding seabirds, particularly Kittiwake, the SPAs only feature of interest. These vocal seagulls spend most of their time at sea, returning to favoured coastal sites for breeding. Nesting is on suitable rocky cliffs around the Irish coast. These Irish colonies are considered stable (Balmer et al., 2013).

Howth Head is also a pNHA and is home to a number of threatened plant species as well as locally rare or noteworthy habitats, such as patches of blanket bog.

Rockabill to Dalkey Island SAC (site code 3000; c. 14.5km from the development site)

This is a recently designated off-shore (i.e. marine) SAC. It has two qualifying interests which are reefs and Harbour Porpoise *Phocoena phocoena*. Conservation objectives for this SAC have been published to maintain or restore the area of habitat and status of the population to 'favourable conservation status'.

- Reefs can be intertidal or subtidal features and are characterised by hard or rocky substrates. The main pressures that have been identified by the NPWS are commercial fishing, aquaculture, water pollution and commercial/recreational uses of the marine environment. Nationally their status is assessed as 'bad' (NPWS, 2013).
- Harbour porpoise This is the smallest cetacean species regularly occurring in Irish waters. It is commonly found in residential pods close to the shore and it is not considered threatened in Irish waters. Its status nationally is 'good'.

Dalkey Islands SPA (site code: 4172; c. 11km from the development site)

This SPA is protected for its breeding colonies of three tern species:

- **Roseate Tern.** This tern breeds at only a few stations along Ireland's east coast. Most of these are in decline although at Dublin their colony is increasing.
- **Common Tern.** This summer visitor nests along the coast and on islands in the largest lakes. Its breeding range has halved in Ireland since the 1968-1972 period.
- **Arctic Tern.** These long-distance travellers predominantly breed in coastal areas of Ireland. They have suffered from predation by invasive mink and are declining in much of their range.

The Glenasmole Valley SAC (code: 1209; c.10km from the development site)

This SAC is the flooded valley of the Dodder river, dammed to provide drinking water for the city of Dublin, and covering an area of nearly 150ha. Woodland has developed around its margins while species-rich grassland is to be found on some of its slopes. A number of rare plants species, including a variety of orchids, are to be found here.

The SAC is designated only for protected habitat types and these are given in table 7.

Table 7 – Qualifying interests for the Glenasmole Valley SAC (from NPWS)

Code	Habitats	Status
6210	Orchid rich grassland/Calcareous grassland	Bad
6410	Molinea meadows	Bad
7220	Petrifying springs (priority habitat)	Inadequate

- **Orchid-rich grassland (6210)** This is a species rich grassland habitat found on well drained calcareous soils. It must be important for orchids in order to fall into this category. While there is evidence that an increased occurrence of flooding on some sites may be having a detrimental effect the principle threats listed are from agricultural intensification and 'stock feeding', i.e. overgrazing.
- **Molinea meadows (6410)** *Molinea caerulea*, the Purple Moor-grass, is typically associated with upland peatland habitats but this habit type occurs on lowland sites associated with traditional agricultural practices. The main threats that it faces are associated with changes in land use, e.g. land abandonment or intensification.
- **Petrifying Springs (7220)**: These are very localised habitats that arise from the precipitation of excess calcium carbonate in supersaturated running water. They are associated with characteristic bryophytes. They are vulnerable to changes in water quality, flow regime and intensification of land use practices (NPWS, 2013).

Bray Head SAC (site code: 0714; c.15.5km from the development site).

This coastal SAC encompasses the high plateaux between the towns of Bray and Greystones. Much of this habitat consists of dry heath along with dry calcareous grassland, which are important for their vegetation communities. The coastal cliffs provide habitat for significant numbers of sea birds, particularly during the breeding season, as well as Peregrine *Falco peregrinus*, which is listed under Annex I of the Birds Directive. Bray Head falls within the Natura 2000 network of European sites due to two habitat types: vegetated sea cliffs (code 1230), and dry heath (code 4030). The 'site synopsis' states "the heath and grassland habitats at this site are threatened by reclamation for agriculture and also by frequent burning. The site is a popular recreational area and is especially used by walkers".

- **Vegetated sea cliffs (1230)** These coastal habitats can be composed of hard or soft material which in turn influences the rate at which erosion occurs. Vegetation can be sparse but composed of a variety of specially adapted species.
- **Dry heath (4030)**: This is a community of heather shrubs that occurs on well-drained, acidic, nutrient-poor mineral or peaty soils. Pressures on this habitat arise from high levels of sheep grazing, as well as afforestation, mining and quarrying. Unregulated burning is also identified as an important threat to the structure of this habitat.

Knocksink Wood SAC (site code: 0725; approximately 10km from the development site)

This important woodland site is located near Enniskerry, Co. Wicklow and is within the valley of the Glencullen River. It has mature stands of Oak forest with two important habitats at a European level: alluvial wet woodland, and petrifying

springs; both listed on Annex I of the Habitats Directive. The Wood is also of note for its bird and mammal fauna and its particularly rich community of invertebrates.

Knocksink is a National Nature Reserve and so is of significance for a range of wildlife as well as being of amenity value. It should be reiterated that the AA process strictly looks at potential effects to the SAC in light of the conservation objectives which have been set.

Table 8 – Qualifying interests for the Knocksink Wood SAC (from NPWS)

Code	Habitats/Species	Status
7220	Petrifying springs	Inadequate
21E0	Alluvial forests	Bad
91A0	Old Oak Woodlands	Bad

- **Alluvial Wet Woodland (91E0 – priority habitat):** This is a native woodland type that occurs on heavy soils, periodically inundated by river water but which are otherwise well drained and aerated. The main pressures are identified as alien invasive species, undergrazing and overgrazing. Pollution from agricultural land may also be significant.
- **Petrifying Springs (7220 – priority habitat):** These are very localised habitats that arise from the precipitation of excess calcium carbonate in supersaturated running water. They are associated with characteristic bryophytes. They are vulnerable to changes in water quality, flow regime and intensification of land use practices.
- **Old Oak Woodlands (91A0):** This native woodland type is typified by Sessile Oak *Quercus patrea*, Holly *Ilex aquifolium* and Hard Fern *Blechnum spicant*. Its range is much reduced from historic levels while the principle threats are alien invasive species and overgrazing by deer but also cattle, goats and sheep.

Ballyman Glen SAC (site code: 0713; c.12km from the development site)

This internationally important site consists of wet fen vegetation with petrifying springs. These are rare habitats in Dublin and this site is noted for its particularly rich diversity of orchids and sedges. Its qualifying interests are shown in table 9.

Table 9 – Qualifying interests for the Ballyman Glen SAC (from NPWS)

Code	Habitats/Species	Status
7220	Petrifying springs	Inadequate
7230	Alkaline fen	Bad

- **Alkaline Fens (7230):** Threats of ‘high importance’ are groundwater abstractions, land reclamation, diffuse groundwater pollution, land

abandonment/under-grazing. These fen systems are often a complex mosaic of habitats, with tall sedge beds, reedbeds, wet grasslands, springs and open-water often co-occurring at a given fen site. Their integrity is reliant upon a stable, high water table; calcareous/low-nutrient water supply; and controlled mowing and/or grazing.

Wicklow Mountains SAC & SPA (site codes: 2122 & 4040; c. 7.5km from the development site)

Wicklow Mountains is a large area and is designated as both an SAC and SPA as well as being a National Park. It is an upland area underlain with granite and is an important amenity and recreational area, as well as being of high conservation value. Its qualifying interests are shown in table 10 while its 'features of interest' are given as Merlin *Falco columbarius* (breeding) and Peregrine *Falco peregrinus* (breeding).

Table 10 – Qualifying interests for the Wicklow Mountains SAC (site code: 4040)

Habitats	Status
Active Blanket bog	Bad
Atlantic wet heath	Bad
European dry heath	Bad
Old oak woodland	Bad
Siliceous rocky slopes	Inadequate
Calcareous rocky slopes	Inadequate
Siliceous scree	Inadequate
Alpine and Boreal heath	Bad
Natural dystrophic lakes	Inadequate
Oligotrophic lakes	Inadequate
Species rich Nardus grassland	Bad
Calaminarian Grassland	Inadequate
Otter	Favourable

- **Active Blanket Bog (7130)** This is a very widespread habitat in Ireland found on uplands and lowlands along the Atlantic seaboard. Active blanket bog is peat forming, principally indicating the presence of *Sphagnum* sp. mosses but also other species. Degraded bog, where there is now forestry or bare peat, are excluded as they are not considered 'active'.
- **Atlantic wet heath (4010)** This is a heather dominant habitat that is intermediate between dry heath and blanket bog, and is frequently found in association with these two. Grazing and trampling by sheep is identified as the greatest threat to the status of the habitat but non-native invasive species such as *Rhododendron* and the moss *Campylopus introflexus* also impact negatively upon the habitat.

- **Dry heath (4030):** This is a community of heather shrubs that occurs on well-drained, acidic, nutrient-poor mineral or peaty soils. Pressures on this habitat arise from high levels of sheep grazing, as well as afforestation, mining and quarrying. Unregulated burning is also identified as an important threat to the structure of this habitat.
- **Alpine and Boreal Heath (4060)** This habitat occurs on exposed mountain tops with acid substrate where stunted growths of heather are found. It is also found in the Burren, Co. Clare at low altitudes.
- **Siliceous Scree (8110)** This is a mountainous habitat characterised by expanses of shattered siliceous rock from small, mobile stones to stable boulders. Vegetation is sparse and frequently dominated by moss or lichen communities.
- **Calcareous or Siliceous Rocky Slopes (8210 & 8220)** These are vertical or near vertical slopes of calcareous or siliceous rock with cracks and fissures that are home to unique communities of plants. Climate change is considered to be the greatest threat where specialist arctic-alpine plants are to be found.
- **Upland Oligotrophic lakes (3130).** These are naturally low nutrient status lakes that in Ireland are associated with expanses of blanket bog. They are threatened by eutrophication (excessive input of nutrients) and peatland drainage.
- **Dystrophic lakes (3160)** These are naturally low oxygen, nutrient poor, acid lakes that occur in association with peatland habitats. They have low species diversity but some of these species are uniquely associated with this habitat.
- **Camalinarian Grassland (6130).** This unusual grassland community is found in Ireland on the sites of previous extraction works such as old mines. Certain bryophyte and vascular plants, including some notable rarities, thrive in conditions of high heavy metal concentrations, such as copper, lead or zinc.
- **Otter (1355)** This aquatic mammal lives its entire life in and close to wet places, including rivers, lakes and coastal areas. They will feed on a wide variety of prey items. Despite local threats from severe pollution incidents and illegal fishing, its population is considered stable and healthy, and so is assessed as being of 'good' status.

At its nearest point the **Poulaphouca Reservoir SPA** (site code: 4063; c.26km from the development site)

The 'features of interest' of this SPA include the Greylag Goose *Anser anser* and the Lesser Black-backed Gull *Chroicocephalus ridibundus*.

- **Greylag Goose.** Wintering Greylag Geese are very scattered in Ireland and occur on both coastal and inland sites. Their population has expanded greatly in their more northerly ranges (Iceland and Scotland) and this has coincided with losses elsewhere.
- **Black-headed Gull.** Widespread and abundant in winter these gulls are nevertheless considered to be in decline. The reasons behind this are unclear

but may relate to the loss of safe nesting sites, drainage, food depletion and increase predation.

Pathway Analysis

The Slang Stream provides a direct, natural, hydrological connection from the site to Dublin Bay, via the River Dodder. There is also an indirect pathway through the foul sewers which include significant dilution on route to the Ringsend WWTP .

Sampling of water quality in Dublin Bay (and presented in the 2019 Annual Environmental Report for the WWTP⁴) indicates that the discharge from the wastewater treatment plant is having an observable effect in the ‘near field’ of the discharge. This includes the inner Liffey Estuary and the Tolka Estuary, but not the coastal waters of Dublin Bay. This indicates that potential effects arising from the treatment plant are confined to these areas, and that the zone of influence does not extend to the coastal waters or the Irish Sea.

As there are pathways to Dublin Bay, there are consequently pathways to a number of Natura 2000 sites. There are hydrological links to the South Dublin Bay and River Tolka Estuary SPA (site code: 4024), the South Dublin Bay SAC (site code: 0210), the North Bull Island SPA (site code: 4006) and the North Dublin Bay SAC (site code: 0206). The Poulaphouca Reservoir SPA (site code: 4063), from which drinking water supply for this development may originate, is also considered to fall within the zone of influence of this project.

Table 14 – Summary table of Natura 2000 sites

Natura 2000 sites found to lie within the zone of influence of the project
North Dublin Bay SAC
North Bull Island SPA
South Dublin Bay SAC
South Dublin Bay and River Tolka Estuary SPA
Poulaphouca Reservoir SPA
Natura 2000 sites examined but found not to lie within the zone of influence of the project

⁴ Uisce Éireann; Irish Water. Annual Environmental Report. 2019. Ringsend D0034-01

Baldoyle Bay SAC
Baldoyle Bay SPA
Howth Head SAC
Howth Head Coast SPA
Rockabill to Dalkey SAC
Dalkey Islands SPA
Glenasmole Valley SAC
Knocksink Wood SAC
Ballyman Glen SAC
Wicklow Mountains SAC
Wicklow Mountains SPA
Bray Head SAC

6.0 Data collected to carry out the assessment

Details from the NPWS site synopsis report and the most recent data from BirdWatch Ireland's Wetlands Bird Survey (IWeBS) indicate that Dublin Bay is of international importance for wintering birds meaning that it regularly holds a population of over 20,000 birds (Lewis et al., 2016). Total counts from IWeBS are shown in table 5.

The proposed development site is composed of artificial habitats with highly modified areas open space. It is located in a built-up area of Dublin city albeit close to the Slang Stream. It is connected to a number of Natura 2000 sites via wastewater and surface water run-off.

The EU's Water Framework Directive (WFD) stipulates that all water bodies must attain 'good ecological status' by 2015. This includes estuarine waters and Dublin Bay was located within the Eastern River Basin District under the first River Basin Management Plan (RBMP) published in 2009 to address pollution issues. There are no monitoring stations along the Slang Stream. The River Dodder has been assessed under the WFD 2013-2018 reporting period as 'moderate'. The Dodder enters the River Liffey near the East Link bridge in Dublin city centre. The lower Liffey Estuary is assessed as 'good' while the coastal waters of Dublin Bay are also 'good'. The estuary of the River Tolka is 'moderate'.

These classifications indicate that water quality downstream of the Custom House and the confluence of the Rivers Liffey and Dodder is currently meeting the requirements of the WFD.

In 2018 a second RBMP was published which highlighted 190 'priority areas for action' where resources were to be focused over the 2018-2021 period. The River Dodder is among these areas although the specific actions to be undertaken to achieve 'good status' are not available.

Of the species listed as qualifying interests of SPAs in Dublin Bay eleven: Curlew, Dunlin, Redshank, Shoveler, Oystercatcher, Grey Plover, Knot, Golden Plover, Bar-tailed Godwit, Black-tailed Godwit and Black-headed Gull are listed as of high conservation concern, and on BirdWatch Ireland's red list (Gilbert et al., 2021).

In 2020 the NPWS published a report entitled 'The monitoring and assessment of six EU Habitats Directive Annex I Marine Habitats' (Sally & Hewett, 2020). This report specifically assessed the status of the habitat: mudflats and sandflats not covered by seawater at low tide (1140) which is a qualifying interest of the North Dublin Bay SAC and the South Dublin Bay SAC. Table 22 of this report assessed the status of this habitat within both SACs as 'favourable'.

In June 2018 Irish Water applied for (and subsequently received) planning permission for works to the Ringsend Wastewater Treatment (WwTP) facility. As part of this application an Environmental Impact Assessment Report (EIAR) was submitted. Sections 5 and 6 of this EIAR related to Marine Biodiversity and Terrestrial Biodiversity respectively and each contained a section on the 'do-nothing scenario'. These review the effects to biodiversity in Dublin Bay in the absence of the upgrade works and so are relevant to this report. Extracts from these sections include:

"If the Proposed WwTP Component is not constructed, the nutrient and suspended solid loads from the plant into Dublin Bay will continue at the same levels and the impact of these loadings should maintain the same level of effects on marine biodiversity. [...]"

If the status quo is maintained there will be little or no change in the majority of the intertidal faunal assemblages found in Dublin Bay which would likely continue to be relatively diverse and rich across the bay [our emphasis]. Previous studies suggest that the outer and south bays are largely unaffected by the nutrient inputs from the WwTP at Ringsend and from the Liffey and Tolka rivers. Therefore, the sandy communities found in those areas will likely remain dominated by the same assemblage of Nephtys, tellinids and other pollution-sensitive species, albeit subjected to natural spatial and seasonal variations.

However, the areas in the Tolka Estuary and North Bull Island channel will continue to be affected by the cumulative nutrient loads from the river Liffey and Tolka and the effluent from the Ringsend WwTP. These areas will likely continue to be colonised by opportunistic taxa tolerant of organic enrichment. There is a possibility that an increase in the nutrient outputs from the plant due to the operational overload and storm water discharges could result in a decline in the biodiversity of these communities as a result of low oxygen availability caused by increased organic enrichment. Considering the existing situation, it is possible that through the future oversupply of DIN to the area impacted by the existing outfall, benthic production could be adversely impacted due to hypoxic or even anoxic conditions. An increase in the cover of opportunistic macroalgae could lead to further deterioration in the lagoons in the North Bull as they add to the organic load on the benthos and further increase the BOD. These events, although localised, could deteriorate the biological status for Dublin Bay as a whole. **Nonetheless, it is unlikely, as existing historical data suggests that pollution in Dublin Bay has had little or no effect on the composition and richness of the benthic macroinvertebrate fauna** [our emphasis]. Although a localised decline could occur, it is not envisaged to be to a scale that could pose a threat to the shellfish, fish, bird or marine mammal populations that occur in the area. (section 5.7.1) [...]

If there is no change to the treatment process at Ringsend WwTP then the terrestrial environment adjacent to the site will remain largely unchanged [our emphasis]. [...]

If the Proposed WwTP Component is not implemented, there will be little or no change in the majority of the intertidal faunal assemblages found in Dublin Bay which would likely continue to be relatively diverse and rich across the bay [...]. The sandy communities found in South Dublin Bay will likely remain dominated by the same assemblage of the polychaete worm *Nephtys caeca*, Cockle *Cerastoderma edula*, tellinids and other pollution-sensitive species, albeit subjected to natural spatial and seasonal variations. **Bird populations in these areas will be unaffected by the discharge from the WwTP** [our emphasis].

If the Proposed WwTP Component is not implemented, there is a possibility that an increase in the nutrient outputs from the plant due to operational overload and storm water discharges could result in a decline in the biodiversity of invertebrate communities in the Tolka Estuary and North Bull Island channel as a result of low oxygen availability caused by increased organic enrichment. An increase in the cover of opportunistic macroalgae could lead to further deterioration in the lagoons in the North Bull as they add to the organic load on the benthos and further increase the BOD. These events, although localised, could deteriorate the biological status for Dublin Bay as a whole. **It is unlikely that they would have any significant impact on the waterbird populations that forage on invertebrates in Dublin Bay** [our emphasis] (section 6.5.1)."

A graphic from the EIAR prepared by Irish Water in 2018 showed the zone of influence of the discharge from the Ringsend WwTP and this indicated that effects from the discharge do not extend to the south side of the bay. This is reproduced in figure 6.

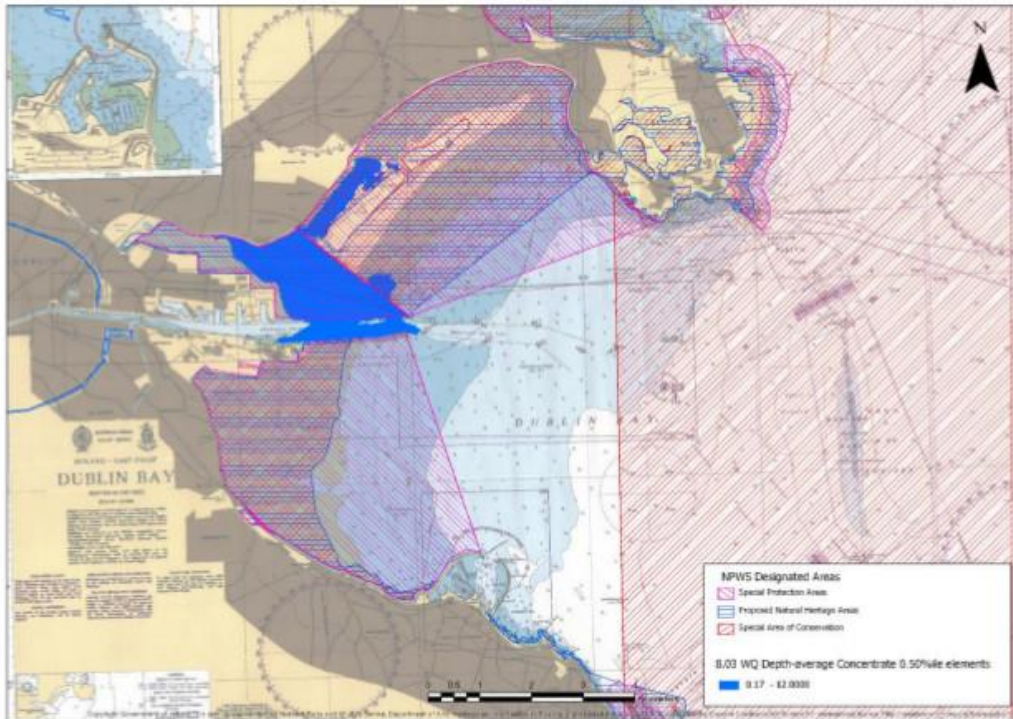


Figure 5-16: Extent of the Zone of Influence (in blue) of the effluent from the Proposed WwTP Component on the predicted modelled output for Winter depth averages 50%ile for Dissolved Inorganic Nitrogen (DIN)

Figure 6 – Extract from the EIAR prepared by Irish Water (2018) showing the zone of influence of the Ringsend WWTP outfall pipe.

7.0 The Assessment of Significance of Effects

Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.

In order for an effect to occur there must be a pathway between the source (the development site) and the receptor (the SAC or SPA). Where a pathway does not exist an effect cannot occur.

The proposed development is not located within, or adjacent to, any SAC or SPA.

Habitat loss

At its closest point the development site is over 3.5km away (as the crow flies) from the boundary of the South Dublin Bay SAC and the South Dublin Bay & River Tolka Estuary SPA (the nearest Natura 2000 sites to the development site). In reality however, this distance is greater as the hydrological pathway follows the course of the drainage network to Dublin Bay. There is no direct pathway to the River Dodder as the two areas are separated by a public road and other built development. Because of the distance separating the site and the SPA/SAC there is no pathway for loss or disturbance of important habitats or important species associated with the features of interest of the SPA.

Habitat disturbance/Ex-situ effects

The development site is located in a heavily urbanised environment close to significant noise and artificial light sources such as roads. This development cannot contribute to potential disturbance effects to species or habitats of for which Natura 2000 sites have been designated. The habitats on the site are not suitable for populations of wintering/wetland/wading birds which may be associated with Natura 2000 sites in Dublin Bay. No ex-situ effects are likely to arise.

Hydrological pathways

There is a pathway from the site via wastewater and surface water flows to Dublin Bay, via the Ringsend plant and the River Slang/Dodder respectively. However, there is no evidence that poor water quality is currently negatively affecting the conservation objectives of Natura 2000 sites in Dublin Bay. This project is unlikely to alter the patterns of flows of either surface or wastewater.

A. Pollution during operation – wastewater

The Ringsend plant is licenced to discharge treated effluent by the EPA (licence number D0034-01) and is managed by Irish Water. It treats effluent for a population equivalent (P.E.) on average of 1.65 million however weekly averages can spike at around 2.36 million. This variation is due to storm water inflows during periods of wet weather as this is not separated from the foul network for much of the older quarters of the city, including at the subject site.

The Annual Environmental Report for 2019, the most recent available, indicated that there were a number of exceedences of the emission limit values set under the Urban Wastewater Treatment Directive and these can be traced to pulse inflows arising from wet weather. In April 2019 Irish Water was granted planning permission to upgrade the Ringsend plant. This will see improved treatment standards and will increase network capacity by 50%.

The upgrading works at Ringsend are expected to be completed by 2025 while the proposed development may be completed and occupied by 2023. While the issues at Ringsend wastewater treatment plant are being dealt with in the medium term evidence suggests that some nutrient enrichment is benefiting wintering birds for which SPAs have been designated in Dublin Bay (Nairn & O'Hallaran eds, 2012).

No negative effects to Natura 2000 sites are likely to arise from the additional loading arising from this development as the evidence suggests that no negative effects are occurring to SACs or SPAs from water quality.

B. Pollution during operation - surface water

New attenuation measures (SUDS) means that the net effect of the project will be positive on the drainage character of the site. SUDS are standard measures which are included in all development projects and are not included to reduce or avoid any effect to a Natura 2000 site. The inclusion of SUDS is a requirement of the South Dublin County Development Plan (policy E18) as well as the Greater Dublin Strategic Drainage Study (GSDSDS). SUDS are not mitigation in an AA context. No negative effects to Natura 2000 sites from this source are likely to arise.

C. Pollution – construction phase

There is unlikely to be escape of sediment during the construction phase due to the lack of direct pathways to the River Dodder or the River Slang. Works near the river are confined to resurfacing of the road crossing. No works are to be undertaken which threaten the loss of construction pollutants to the water and no works in the river, or at the river bank will occur. However, even in the event that pollution does escape, it is unlikely to result in significant pollution due to the distance from sensitive receptors, and the temporary nature of the works. Tidal and coastal habitats are not sensitive to sediment pollution in the way that freshwater bodies are. No effects to Natura 2000 sites are likely to arise during the construction phase.

D. Abstraction

Abstraction for this development may originate at the Poulaphouca Reservoir SPA. Evidence suggests that abstraction is not affecting the conservation objectives for Greylag Geese or Black-headed Gulls at the Poulaphouca Reservoir. Nationally the Greylag Goose has undergone a significant increase over 30 years in its wintering population in Ireland. The Bird Atlas 2007-11 shows that there has been a decrease in the Poulaphouca numbers however. This source suggests that the

decline, which also occurred in a number of other sites in Ireland, “may be linked with a northerly redistribution of the Icelandic wintering population” (Balmer et al., 2013).

No significant effects are likely to occur to the Poulaphouca Reservoir SPA as a result of the proposed development.

Are there other projects or plans that together with the project or plan being assessed could affect the site?

Implementation of the WFD will ensure that improvements to water quality in Dublin Bay and the River Liffey are maintained or enhanced where relevant.

Environmental water quality can be impacted by the effects of surface water run-off from areas of hard standing. These impacts are particularly pronounced in urban areas and can include pollution from particulate matter and hydrocarbon residues, and downstream erosion from accelerated flows during flood events. In this case the proposed development will result in a small enhancement to the quality and quantity of water leaving the site.

In March 2005 the Greater Dublin Drainage Study (GDDS) was published as a policy document designed to provide for future drainage infrastructure. The implementation of this policy will see broad compliance with environmental and planning requirements in an integrated manner. This is likely to result in a long-term improvement to the quality and quantity of storm water run-off in the capital. This project is fully compliant with the GDDS.

The proposed development will make a very small contribution to the overall capacity of the licensed WwTP at Ringsend. While there are capacity issues at the WwTP, substantial upgrades to capacity are expected to be delivered over the medium term. The drainage and water attenuation design included in the proposed development will have a net beneficial impact on capacity at the WwTP, particularly during heavy rainfall events. Water quality assessment undertaken in Dublin Bay confirms that Dublin Bay is classified as “unpolluted” and there is no evidence that operations from the WwTP are affecting the conservation objectives of the European sites in Dublin Bay. It is assessed that the proposed development in combination with the WwTP won't have any significant effects on any European sites."

This application can be seen in combination with other 'brown field', or in-fill, developments across the city. This is leading to improvements in the standard of surface water attenuation but at the same time increasing pressure on the Ringsend wastewater treatment plant. As described, this is being addressed by on-going upgrade works at the plant. There are no known developments either underway or at planning stage in the immediate vicinity of the development site.

There are no in combination effects which can result in significant effects to Natura 2000 sites.

8.0 Conclusion and Finding of No Significant Effects

No significant effects will arise from this project to Natura 2000 sites in Dublin Bay: the North Dublin Bay SAC, South Dublin Bay SAC, the North Bull Island SPA or the South Dublin Bay and River Tolka Estuary SPA.

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 effects 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.

The proposed development site is located 3.5km from the nearest Natura 2000 site which is located in the marine environment, across a suburban environment. There is no direct pathway or intact biodiversity corridor to any Natura 200 sites.

Having taking into consideration the surface water and foul water discharges from the proposed development works, the distance between the proposed development site to designated conservation sites, lack of direct hydrological pathway or biodiversity corridor link to conservation sites, it is concluded that this development that would not give rise to any significant effects to designated sites. The construction and operation of the proposed development will not effect the conservation objectives or features of interest of Natura 2000 sites

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