

Information to Inform an Appropriate
Assessment Screening for a Strategic
Housing Development, 'The Connolly
Quarter', rear of Connolly Station,
Sheriff Street Lower, Dublin 1

Compiled by OPENFIELD Ecological Services

Pádraic Fogarty, MSc MIEMA

for Oxley Holdings Ltd.



www.openfield.ie

October 2019

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 policy instruments for conserving biodiversity in Ireland have been the Birds Directive of 1979 and the Habitats Directive of 1992. 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. 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" (EC, 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 Directive is met. Article 6(3) requires that an 'appropriate assessment' (AA) be carried out for these sites where projects, plans or proposals are likely to have an effect. In some cases this is obvious from the start, for instance where a road is to pass through a designated 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 An Bord Pleanála and this report can aid in that decision.

The Purpose of this document

This document provides information to assist the competent authority to undertake screening for appropriate assessment of the proposed strategic housing development application at a site to the rear of Connolly Station, Dublin 1 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, the Local Authority cannot grant planning permission where significant effects may arise to a Natura 2000 area. In order to make that decision the development must be screened for AA. This report provides the necessary information to allow An Bord Pleanála to carry out this screening.

The proposed project is described thus, as per the planning application:

The development will consist of;

- i. the demolition of 4 no. structures with a combined gross floor area of 3,028sq.m;*
- ii. the construction of 741 no. Build to Rent (BTR) residential units in 8 no. apartment blocks ranging in height from 4 storeys to 23 storeys with lower height buildings located adjacent to the northeast and east site boundaries, with a cumulative gross floor area of 68,535sq.m comprising;*
 - a. Block B1 (maximum building height 54.917m, total gross internal floor area 11,260sq.m, Apartment Mix: Studio: 25, 1-bed: 37, 2-bed: 51);*
 - b. Block B2 (maximum building height 54.917m, total gross internal floor area 10,831sq.m, Apartment Mix: Studio: 20, 1-bed: 35, 2-bed: 51.);*
 - c. Block B3 (maximum building height 51.767m, total gross internal floor area 9,766sq.m, Apartment Mix: Studio: 22, 1-bed: 60, 2-bed: 27, 3-Bed: 1);*
 - d. Block C1 (maximum building height 79.450m, total gross internal floor area 12,705sq.m, Apartment Mix: Studio: 84, 1-bed: 40, 2-bed: 41);*
 - e. Block C2 (maximum building height 39.615 m, total gross internal floor area 4,890 sq.m, Apartment Mix: Studio: 9, 1-bed: 33, 2-bed: 3, 3-Bed: 4);*
 - f. Block C3 (maximum building height 39.650 m, total gross internal floor area 6,775sq.m, Apartment Mix: Studio: 40, 1-bed: 18, 2-bed: 23);*
 - g. Block D1 (maximum building height 53.392 m, total gross internal floor area 8,418 sq.m, Apartment Mix: Studio: 10, 1-bed: 25, 2-bed: 44, 3-Bed: 1);*
 - h. Block D2 (maximum building height 30.950 m, total gross internal floor area 3,890 sq.m, Apartment Mix: Studio: 18, 1-bed: 8, 2-bed: 11);*
- iii. residential support amenities including 1 no. gym, a resident's lounge, work areas, meeting rooms, dining rooms, recreational areas with a combined GFA of 1,444 sq.m;*
- iv. change of use from club house to pedestrian passageway of the existing vault (137sq.m GFA) fronting Seville Place, a Protected Structure (RPS No. 130);*
- v. a basement of 7,253.4 sq.m with vehicular access from Oriel Street Upper incorporating residents' car parking (58 no. spaces), residents cycle parking (640 no. spaces) 7 no. plant rooms (combined 2,228sq.m), waste management facilities (393 sq.m)*
- vi. 766 no. covered cycle parking spaces for residents and visitors, concierge office (233 sq.m) and waste management facilities (126 sq.m);*

- vii. *'other uses' including 10 no. units providing retail, commercial, and community use with a combined GFA of 3,142 sq.m;*
- viii. *A total of 18,562 sq.m of hard and soft landscaping comprising both public, communal and private open space located throughout the development;*
- ix. *A service and emergency vehicle only access ramp from the Oriel Street Upper site entrance to serve CIE's transport needs at Connolly Station;*
- x. *Enabling works of a non-material nature to safeguard the existing vaults (Protected Structures - RPS No. 130) that form part of the subject site fronting Sheriff Street Lower, Oriel Street Upper, and Seville Place during the construction phase;*
- xi. *All associated ancillary development works including drainage, 6 no. electricity substations, pedestrian access; and*
- xii. *Works to the Masonry wall fronting Oriel Street and the Vaults fronting Seville Place (both a Protected Structure) consisting of the creation of a new vehicular and pedestrian entrance.*

Methodology

The methodology for this screening statement is clearly set out in a document prepared for the Environment Directorate General 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 this 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 proposed project that may have an impact on the Natura 2000 sites.

Step 3: Characteristics of the Site

This process identifies the conservation aspects of the Natura 2000 site and determines whether negative impacts can be expected as a result of the project. 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

impacts are likely. Deficiencies in available data are also highlighted at this stage.

Step 4: Assessment of Significance

Assessing whether an effect is significant or not is dependent on whether the proposed project is likely to have an effect on the conservation objectives of the site.

If this analysis shows that significant effects are likely then a full AA will be required.

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 recently published guidelines for Local Authorities from the Department of the Environment, Heritage and Local Government (DoEHLG, 2009).

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 project is not necessary for the management of any Natura2000 site and so Step 1 as outlined above is not relevant.

Brief description of the project

The proposed project location is shown in figures 1 and 2 while the proposed layout is given in figure 3. It is planned to construct a mixed residential/commercial development on the site at Connolly Station, Dublin 1 as previously described. This will include a construction phase to include regrading of the site, new surface water drainage infrastructure and connection to electricity, gas, telecommunication, water supply, and wastewater networks. The main phases of the project include:

- Site clearance and selected demolition of existing structures.
- A construction phase including regrading and excavation of basement.
- Construction will include a new surface water drainage infrastructure, car parking spaces and connection to electricity and wastewater networks.
- During the construction phase there will groundwater lowering and dewatering during the basement excavation. This discharge will go to the combined foul sewer.
- Post-construction landscaping including public realm works and soft planting.
- An operation phase whereby the development will be occupied.

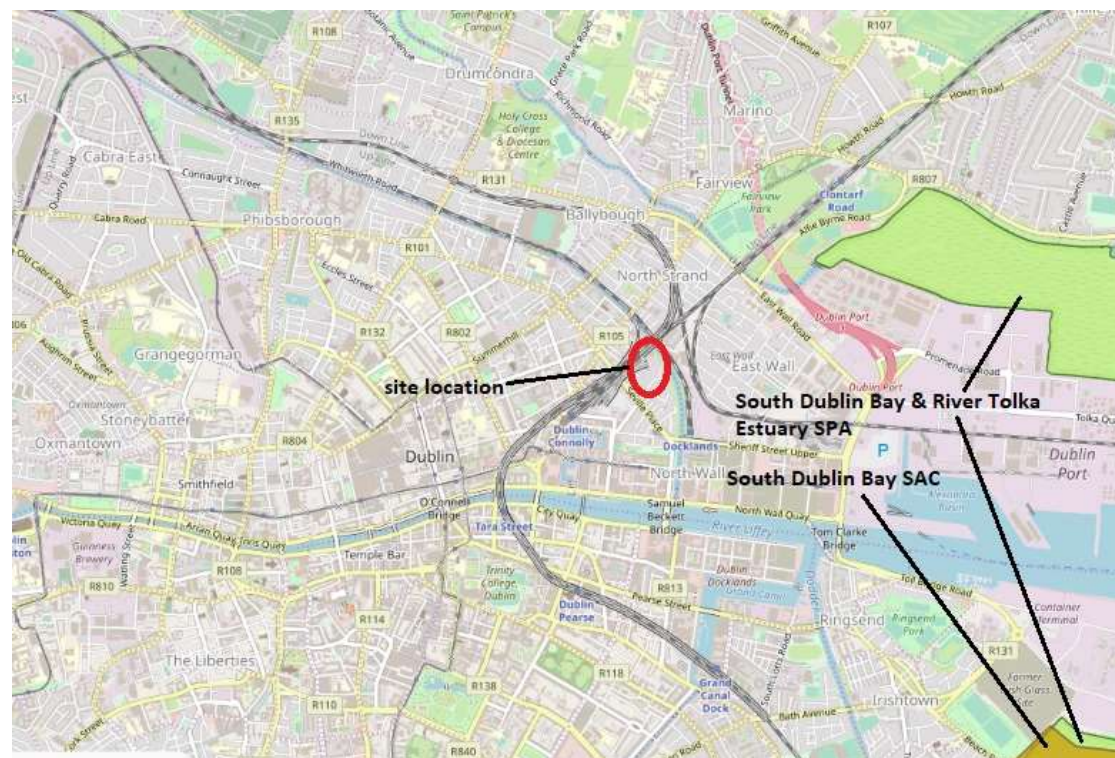


Figure 1 – Project Site location (red circle) (from www.epa.ie). The boundary of the SPA is shown in lime green. The SAC is in tan and is coincident with the SPA south of the River Liffey.

The project site is not located within or directly adjacent to any Natura 2000 area (SAC or SPA). This part of north Dublin is a built-up business and residential zone and is entirely composed of buildings and areas of hard surfacing. Recent aerial photography shows that the site is entirely composed of artificial surfaces. The site is approximately 430m from the banks of the River Liffey, which is characterised by quay walls in this location.

The project site is surrounded on all sides by either roads or other commercial properties. Any construction and demolition waste will be disposed of by a contractor licenced under the Waste Management Act 1996.

The proposed project will include a new surface water drainage system which has been designed in accordance with SUDS principles. Attenuation storage will be provided at roof level in the green roof drainage medium (“blue roofs”); roof water outlets will incorporate flow control devices to limit discharge from roof level down to lower levels. The streets and public square will drain through pervious paving and planted bio-retention areas to be stored in the underlying drainage medium, which will be provided over the basement level and in pervious paving sub-strata. Runoff will be conveyed through the drainage medium and outfall through flow control chambers to the receiving sewerage network. It is proposed to discharge surface water to the existing combined sewerage network adjacent to the site, which drains to the Ringsend wastewater treatment plant via Irish Water’s Mayor Street Pumping Station.



Figure 2 – Aerial view showing red line development boundary (from www.google.com).

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 permission to upgrade the Ringsend plant (ABP Ref:

PL29S.301798). This will see improved treatment standards and will increase network capacity by 50%, with a target completion date of 2023. There are no other discharges from the proposed project.

Fresh water supply for the development will be via a mains supply. This originates in the Poulaphouca Reservoir. The proposed development is not likely to significantly affect the demand for potable water.

A project site visit was carried out on November 15th 2018 and this confirmed that the project site is entirely composed of buildings and other artificial surfaces. No alien invasive plant species as listed in Schedule 3 of SI No. 477 of 2011 are growing on the project lands.

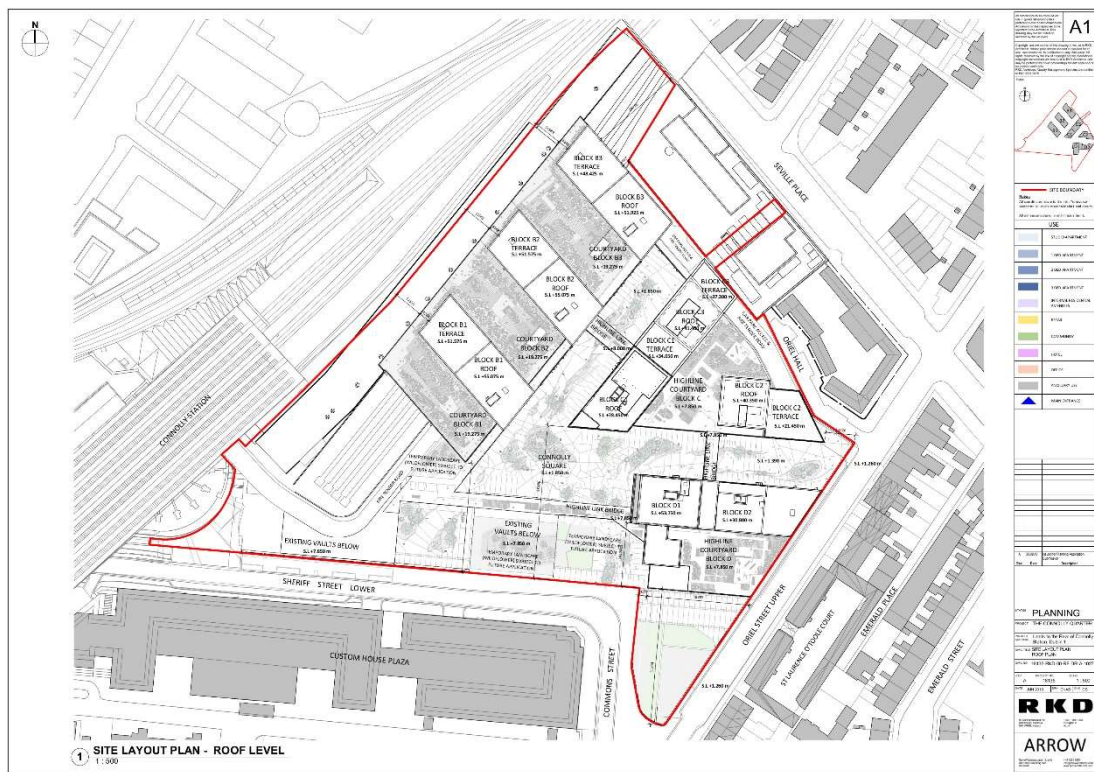


Figure 3 – Proposed overview of the development

Brief description of Natura 2000 sites

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

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

It has already been stated that the project site is not located within or directly adjacent to any Natura 2000 area. There is no prescribed radius to determine which Natura 2000 sites should be examined as this depends upon the zone of influence of the project. For projects of this nature an initial 2km radius is normally examined (IEA, 1995). This is an arbitrary distance however and impacts can occur at distances greater than this. There is one Natura 2000 area within this radius: the **South Dublin Bay and River Tolka Estuary SPA (site code: 4024)**. The **South Dublin Bay SAC (site code: 0210)**, **North Dublin Bay SAC (site code: 0206)** and **North Bull Island SPA (site code: 4006)** are also in this locality and there is a pathway to these areas via wastewater discharges from the Ringsend treatment plant. The **Poulaphouca Reservoir SPA (site code: 4063)**, from which drinking water supply for this development will originate, is also considered to fall within the zone of influence of this project. These are considered to be the only Natura 2000 areas within the zone of influence of the development as pathways do not exist to other areas.

Table 1 – Natura2000 sites within study area

Natura2000 site	Distance from project	source-pathway-receptor
South Dublin Bay and River Tolka Estuary SPA (004024)	c. 1.2km	Wastewater and surface water
South Dublin Bay cSAC (000210)	c.2.8km	
North Dublin Bay SAC (00206)	c.4.2km	
North Bull Island SPA (004006)	C4.2km	
Poulaphouca Reservoir SPA (site code: 4063)	N/A	Freshwater

Table 2 – Features of interest for SPAs in Dublin Bay (EU species code in square parenthesis)

North Bull Island SPA	South Dublin Bay and Tolka Estuary SPA
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	Oystercatcher (<i>Haematopus ostralegus</i>) [A130]

Teal (<i>Anas crecca</i>) [A052]	Ringed Plover (<i>Charadrius hiaticula</i>) [A137]
Pintail (<i>Anas acuta</i>) [A054]	Grey Plover (<i>Pluvialis squatarola</i>) [A140]
Shoveler (<i>Anas clypeata</i>) [A056]	Knot (<i>Calidris canutus</i>) [A143]
Shelduck (<i>Tadorna tadorna</i>) [A048]	Sanderling (<i>Calidris alba</i>) [A144]
Golden Plover (<i>Pluvialis apricaria</i>) [A140]	Dunlin (<i>Calidris alpina</i>) [A149]
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]
Knot (<i>Calidris canutus</i>) [A143]	Redshank (<i>Tringa totanus</i>) [A162]
Sanderling (<i>Calidris alba</i>) [A144]	Black-headed Gull (<i>Croicocephalus ridibundus</i>) [A179]
Dunlin (<i>Calidris alpina</i>) [A149]	Roseate Tern (<i>Sterna dougallii</i>) [A192]
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	Common Tern (<i>Sterna hirundo</i>) [A193]
Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	Arctic Tern (<i>Sterna paradisaea</i>) [A194]
Curlew (<i>Numenius arquata</i>) [A160]	Wetlands & Waterbirds [A999]
Redshank (<i>Tringa totanus</i>) [A162]	
Turnstone (<i>Arenaria interpres</i>) [A169]	
Black-headed Gull (<i>Larus ridibundus</i>) [A179]	
Wetlands & Waterbirds [A999]	

The **South Dublin Bay and Tolka Estuary SPA** is largely coincident with the **South Dublin Bay SAC** boundary with the exception of the Tolka Estuary. The **North Bull Island SPA** meanwhile is largely coincident with the **North Dublin Bay SAC** with the exception of the terrestrial portion of Bull Island. These designations encompass all of the intertidal areas in Dublin Bay from south of the Howth peninsula 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 2 lists the features of interest for both of the SPAs.

- **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.
- **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.
- **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.
- **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.

- **Black-tailed Godwit.** Breeding in Iceland these waders winter in selected sites around the Irish coast, but predominantly to the east and southern halves. Their range here has increase substantially of late.
- **Curlew.** Still a common sight during winter at coastal and inland areas around the country it 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.
- **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.

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 3 shows the most recent count data available¹.

Table 3 – 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*.

The **South Dublin Bay SAC** (site code: 0210) 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.

¹ <https://fl.caspio.com/dp.asp?AppKey=f4db3000060acbd80db9403f857c>

- **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.

The **North Dublin Bay SAC** (site code: 0206) 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 as assessed by the National Parks and Wildlife Service (NPWS) 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

Habitat/Species	Status ²
Mudflats and sandflats not covered by seawater at low tide	Inadequate
Salicornia and other annuals colonizing mud and sand	Favourable
Atlantic salt meadows	Inadequate
Mediterranean salt meadows	Inadequate
Annual vegetation of drift lines	Inadequate
Embryonic shifting dunes	Inadequate
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	Intermediate
Fixed coastal dunes with herbaceous vegetation (grey dunes)	Bad
Humid dune slacks	Inadequate
<i>Petalophyllum ralfsii</i> Petalwort	Good

- **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)**. 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

² NPWS. 2013. *The Status of EU Protected Habitats and Species in Ireland*. Habitat Assessments Volume 2. Version 1.0. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

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.

At its nearest point the **Poulaphouca Reservoir SPA** (site code: 4063) is located approximately 25km from the site of the proposed development. Its 'features of interest' include the Greylag Goose *Anser anser* and the Lesser Black-backed Gull *Larus fuscus*.

Whether any of these SACs or SPAs is likely to be affected must be measured against their 'conservation objectives'. Specific conservation objectives have been set for all of these areas with the exception of the Poulaphouca Reservoir. Generic conservation objectives have been published by the NPWS and are stated as:

To maintain or restore the favourable conservation condition of the Annexed species for which the SPA has been selected.

In a generic sense 'favourable conservation status' of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long - term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

While the 'favourable conservation status' of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long - term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long - term basis.

Specific conservation objectives have been set for mudflats in the South Dublin Bay SAC (NPWS, 2013) and for all qualifying interests the North Dublin Bay SAC (NPWS, 2013). The objectives relate to habitat area, community extent,

community structure and community distribution within the qualifying interest. There is no objective in relation to water quality.

For the South Dublin Bay & Tolka Estuary SPA and the North Bull Island SPA the conservations objectives for each bird species relates to maintaining a population trend that is stable or increasing and maintaining the current distribution in time and space (NPWS, 2015a & b).

For the Poulaphouca Reservoir SPA, generic conservation objectives have been published by the NPWS and are as previously stated above (NPWS, 2018).

Data collected to carry out the assessment

Habitats on the project site are not associated with either intertidal habitats or species listed in table 3.

The EU's Water Framework Directive (WFD) stipulates that all water bodies were to have attained 'good ecological status' by 2015, or with exemptions by 2027 at the latest. In 2010 the first River Basin Management Plan (RBMP) was published for the Eastern River Basin District to address pollution issues and included a 'programme of measures' which was to be completed.

The Tolka Estuary has most recently (2014) been assessed by the Environmental Protection Agency (EPA) as 'potentially eutrophic' – a term which implies moderate pollution either from point or diffuse sources (from www.epa.ie). It was assessed as 'moderate' in terms of its status under the Water Framework Directive for the 2010-15 reporting period. This classification indicates that water quality in the estuary is of an insufficient standard to meet the requirements of the WFD. Measures must therefore be taken in the coming years to address existing problems and any new developments within the catchment must not contribute to the pollution loading.

In 2018 a second RBMP was published which highlights 190 'priority areas for action' where resources will be focussed during the 2018-2021 period. The Tolka and Dodder, as well as the upper Liffey are among those areas where improvements are expected.

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. Total counts from IWeBS are shown in table 3.

Of the species listed in table 2 six: Curlew, Dunlin, Redshank, Pintail, Shoveler and Black-headed Gull are listed as of high conservation concern, and on BirdWatch Ireland's red list (Colhoun & Cummins, 2013).

- Dunlins do not breed on the east coast of Ireland while their winter range, which includes a number of coastal and wetland areas across the country, has declined by over 50% between 1994/5 and 2008/09. The reason for this decline is unclear.
- Wintering Redshank numbers in Ireland have changed little since the early 1980s while their breeding sites, based around wetlands west of the River Shannon and some eastern coastal areas, has fallen by 55% in 40 years. This can be attributed to habitat loss from agricultural intensification and drainage.
- Black-headed Gulls remain a frequent winter presence and their red listing relates to their breeding status only. This has seen a 55% decline in 40 years for reasons which are not clear but may relate to loss of nesting sites, predation, food depletion or drainage. They are not recorded as breeding in the Dublin area.
- Wintering Pintails and Shoveler are believed to be declining in Dublin Bay
- Wintering Curlew have experienced a small decline but their status is nevertheless assessed as 'favourable' (Balmer et al., 2013).

A 'supporting document' has been published by the NPWS which gives a detailed assessment of the features of interest for which SPAs in Dublin Bay have been designated (NPWS, 2014). In particular it presents information on the trends of these features and the pressures which are likely to affect these trends. It has determined that five species: Grey Plover, Shelduck, Pintail, Shoveler, Golden Plover and Black-headed Gull, are of unfavourable status while the remainder are 'favourable'. In the case of the Grey Plover it was found that its population trend is decreasing both within Dublin Bay and at an all-Ireland level. For this reason, it is reasonable to assume that the factors for its decline are not unique to Dublin Bay. The Black-headed Gull population was not assessed in this way. Only for Shoveler is it considered that significant declines are being experienced due to site conditions.

Of relevance to this study this report highlights that poor water quality has long been an issue in Dublin Bay. This was manifest in macroalgal blooms of brown and green algae, particularly around Bull Island and the Tolka Estuary. Some improvements in the trophic status has occurred since the 1990s, particularly as a result of new wastewater treatment facilities at Ringsend in 2003. On-going improvements to water quality are highlighted as a potential risk to certain bird populations as a reduction in primary production (i.e. food for birds) may arise both as densities of invertebrates and algal mats is reduced.

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 impact cannot occur.

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

Habitat loss

The site is approximately 1.2km from the boundary of the South Dublin Bay and River Tolka estuary SPA as the crow flies but following surface hydrological pathways this distance is nearly 5km. Because of this significant distance separating the two areas there is no pathway for loss or disturbance of habitats listed in table 2 or other semi-natural habitats that may act as ecological corridors for important species associated with the qualifying interests of the Natura 2000 sites.

Habitat disturbance

The development is not likely to affect amenity use at Natura 2000 sites due to the nature and location of the development.

Hydrological pathways

There is a pathway from the site via surface and wastewater water flows to Dublin Bay via the Ringsend wastewater treatment plant. As surface water from the site does not flow to the River Tolka there is no pathway between the site and the Tolka Estuary. The proposed development is likely to increase the loading to the Ringsend plant.

Pollution during operation - wastewater

Based on the nature and extent of the proposed development, the expected daily wastewater generation is 340m³/day. 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). Additional loading to this plant arising from the operation of this project are not considered to be significant based on two points:

1. There is no evidence that pollution through nutrient input is affecting the conservation objectives of the South Dublin Bay and River Tolka Estuary SPA.
2. Accepting that pollution is undesirable, regardless of the conservation objectives of the SPA, and would be contrary to the aims of the Water Framework Directive, then the upgrading works at Ringsend wastewater treatment plant will address future capacity demand.

Pollution during operation – surface water

Because SUDS principles have been integrated with the project design, there will be a positive impact from this development on the quantity and quality of surface water leaving the site. These measures are standard in all development projects and are not included here to avoid or reduce any effect to a Natura 2000 area. Surface water ultimately enters the combined sewer and is treated in the Ringsend wastewater treatment plant.

Pollution during construction

During the construction phase sediment is unlikely to enter water courses as there are no streams or rivers in this immediate vicinity although sediment can be transported through the foul sewer network. Water pumped from basement level excavation during this phase will be sent to the foul sewer and so treated in the Ringsend wastewater treatment plant. No significant effects are likely to occur to Natura 2000 sites during this phase.

During the construction phase it can be expected that some dust emission will occur. It is difficult to quantify this but is likely to be localised and temporary in nature. Dust deposition can impact upon ecosystems through blocking the stomata of leaves, thus retarding plant growth. Research has found however that this impact is localised in nature and typically occurs where there are significant dust emissions (Bell & Treeshow, 2002). Given the distance to Natura 2000 sites and the lack of natural vegetation in the vicinity of the site, this is not considered significant.

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

Eventual implementation of the WFD will result in continued improvements to water quality in Dublin Bay. 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. The latter impact is unlikely to occur in Dublin since the estuary mouth has long been channelled and defined by sea walls and other defences.

In March 2005 the Greater Dublin Drainage Study (GDDS) was published as a policy document designed to provide for drainage infrastructure to 2030. 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 compliant with the requirements of this policy.

This development will add to the loading at the Ringsend wastewater treatment plant. This plant is not compliant with its emission limit standards however work is underway to increase treatment capacity. According to the 2018 Annual

Environmental Report for the plant, “the discharge from the wastewater treatment plant does have an observable negative impact on the water quality in the near field of the discharge and in the Liffey and Tolka Estuaries”. This report highlights that other sources of pollution also present from riverine inputs, sewerage overflows, misconnections and unsewered properties. The AER does not comment on whether, or how, these issues are affecting Natura 2000 sites in Dublin Bay and there is currently no evidence to suggest that such effects are occurring. It is therefore not considered that ‘in combination’ effects may arise from this source. The completion of upgrade works at Ringsend by 2023 will see greater compliance with quality standards of effluent and so an expected improvement in water quality in Dublin Bay.

There are no projects which can act in combination with this development which can give rise to significant effect to Natura areas within the zone of influence.

List of agencies consulted

Because of the low sensitivity of this location it was not considered to seek the views of third parties.

Conclusion and Finding of No Significant Effects

This project has been screened for AA under the appropriate methodology. It has found that significant effects are not likely to arise, either alone or in combination with other plans or projects to the integrity of the Natura 2000 network.

References

Bell J.N.B. & Treshow M. 2002. *Air Pollution and Plant Life*. 2nd Edition. Wiley.

Bullock C., Kretch C. & Candon E. 2008. *The Economic and Social Aspects of Biodiversity*. Stationary Office.

Cabot D. 2004. *Irish Birds*. Collins.

Colhoun K. & Cummins S. 2013. *Birds of Conservation Concern in Ireland 2014 – 2019*. Irish Birds. Volume 9 Number 4 pg523-541.

Council Directive 79/409/EEC on the conservation of wild birds.

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

Council Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy – more commonly known as the Water Framework Directive

Crowe O., Boland H., & Walsh A. 2011. *Irish Wetland Bird Survey: results of waterbird monitoring in Ireland in 2009/10*. Irish Birds Volume 9 Number 2 pg229-240.

Department of Arts, Heritage and the Gaeltacht. 2011. *Actions for Biodiversity 2011 – 2016. Ireland's National Biodiversity Plan*.

Department of Environment, Heritage and Local Government. 2009. *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities'*

Eastern River Basin District. 2010. *River Basin Management Plan 2009 – 2015*.

Fossitt J. 2000. *A Guide to Habitats in Ireland*. Heritage Council.

Francis, C.D. et al. 2012. *Noise pollution alters ecological services: Enhanced pollination and disrupted seed dispersal*. Proceedings of the Royal Society B. doi:10.1098/rspb.2012.0230.

Hundt L. 2012. *Bat Surveys: Good Practice Guidelines. 2nd Edition*. Bat Conservation Trust.

Lack P. 1986. *The Atlas of Wintering Birds in Britain and Ireland*. T&AD Poyser.

Monaghan S., Shannon D., Wall B. & O'Leary G. 2012. *Focus on Urban Waste Water Discharges in Ireland*. Environmental Protection Agency.

Nairn R. & O'Halloran J. Editors. 2012. *Bird Habitats in Ireland*. The Collins Press.

NPWS. 2013. *Site Synopsis. South Dublin Bay SAC (Site Code: 0210)*. National Parks and Wildlife Service.

NPWS. 2008. *Site Synopsis. South Dublin Bay and Tolka Estuary SPA (Site Code: 4024)*. National Parks and Wildlife Service.

NPWS. 2013a. *The Status of EU Protected Habitats and Species in Ireland. Habitat Assessments Volume 2. Version 1.0. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.*

NPWS. 2013b. *Conservation Objectives: South Dublin Bay SAC 00210. Version 1.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS. 2014. *North Bull Island Special Protection Area (Site Code 4006) & South Dublin Bay and River Tolka Estuary Special Protection Area (Site Code 4024). Conservation Objectives Supporting Document VERSION 1*

NPWS. 2015a. *Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS. 2018. *Conservation objectives for Poulaphouca Reservoir SPA [004063]. Generic Version 4.0.* Department of Arts, Heritage and the Gaeltacht

Oxford Brookes University. 2001. *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.* European Commission, Environment DG.

Roberts C. 2012. *Ocean of Life*. Allen Lane.