

Screening Report for Appropriate Assessment of proposed Strategic Housing Development at Capdoo & Abbeylands, Clane, Co. Kildare

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Introduction

This report has been prepared by Padraig 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 (EIA) in Ireland. OPENFIELD is a full member of the Institute of Environmental Management and Assessment (IEMA).

This report finds that significant effects to Natura 2000 sites will not arise as a result of this project, either alone or in combination with other plans and projects, and that this conclusion is beyond a reasonable scientific doubt on the basis of the best scientific knowledge available.

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. This places specific obligations on the relevant competent authority to assess the impact of a plan or project on any European sites within a reasonable proximity of the proposed development (usually considered to be 15km) or within the functional area of the competent authority. A planning authority or the Board may grant consent with modifications or conditions where they are satisfied that the proposed development, if carried out in accordance with the consent (and its modifications or conditions), would not adversely affect the integrity of the European Site concerned.

This is a two-stage process of screening and appropriate assessment. The competent national authority is required to decide whether a 'plan' or 'project' is likely to have a significant effect on a designated site. The first stage of the procedure requires the carrying out of a 'screening' exercise. If the screening exercise produces a 'positive' result, i.e. the plan or project is likely to have a significant effect, then it is necessary for the competent authority to carry out an 'appropriate assessment'. This involves a preliminary screening for appropriate assessment in order to determine whether the plan or project is likely to have a significant effect on a 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 An Bord Pleanála.

The Purpose of this document

This document provides for the screening of a proposed residential development at a site at residential development at Capdoo & Abbeylands, Clane, Co. Kildare, 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, all developments must be screened for AA by the competent planning authority. This report provides the necessary information to allow An Bord Pleanála to carry out this screening.

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 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 project that may have an impact on the Natura 2000 site.

Step 3: Characteristics of the Natura Site

This process identifies the conservation aspects of the 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 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.

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

Step 2: Brief description of the project

The project is described here, as per the planning application:

This project consists of an application for a Strategic Housing Development by Westar Investments Limited (the applicant) for a new residential development on lands measuring approximately 10.36 hectares at Capdoo & Abbeylands, Celbridge Road, Clane, Co. Kildare. The application is for a development that includes 333 dwellings consisting of: 121 no. 2, 3 & 4 bedroom housing units, 144 no. 1, 2 & 3 bedroom apartments, 68 no. 1, 2 & 3 bedroom duplex & maisonette type units, a crèche and a public park adjacent to the River Liffey with 3 no. vehicular/pedestrian accesses and site, landscaping and associated infrastructural works. The subject site is situated on the eastern side of Regional Road R403 in the eastern environs of Clane Town, c. 650m from the Town Centre.

The site location is shown in figures 1 and 2.

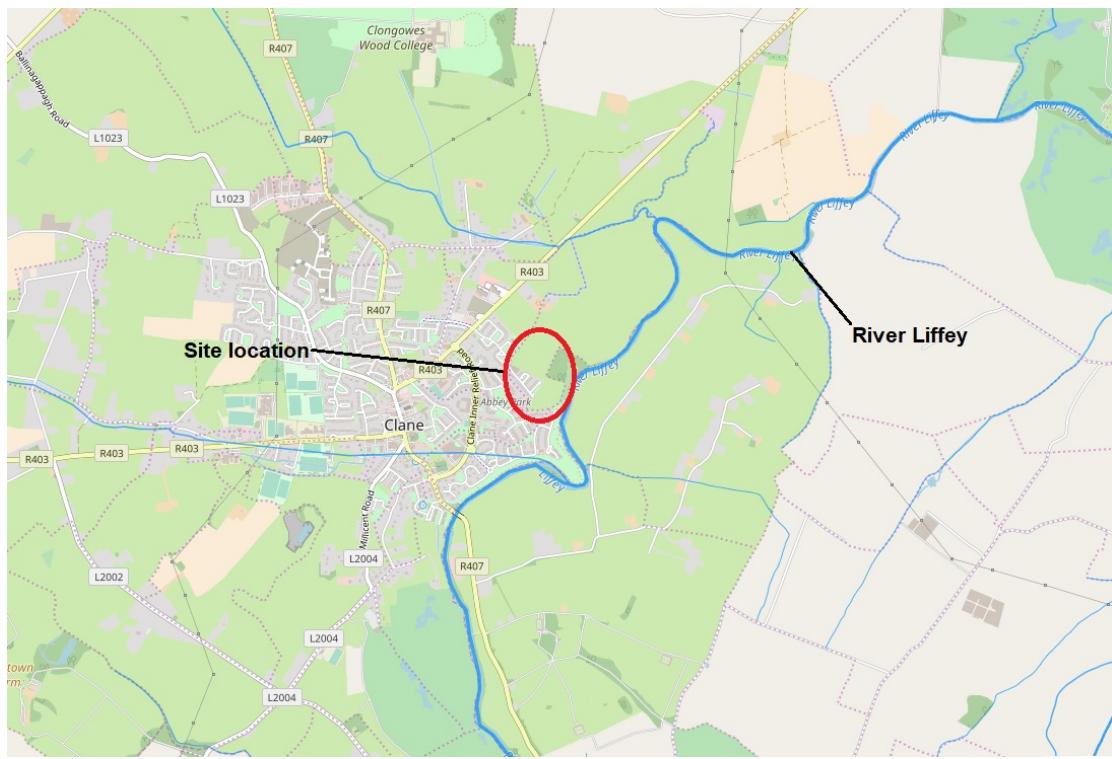


Figure 1 – Site location (red circle) highlighting local water courses (from www.epa.ie). There are no Natura 2000 sites in this view.

It is planned to construct a 333-home residential development on the site at Capdoo & Abbeylands to include access roads, open space and all associated infrastructure.

The development site was surveyed for this planning application on 2nd August 2018, the 21st of March 2019, the 3rd of June 2020 and the 25th of November 2020. August and June lie within the optimal season for general habitat survey while March and November lie within the optimal season for surveying wintering birds (Smith et al., 2011). Habitats are described here as per standard classifications (Fossitt, 2000).

The two fields to the north-west are both **improved agricultural grassland – GA1** with common species such as Perennial Rye *Lolium perenne* and Clovers *Trifolium sp.* They had been recently cut. The field to the south is not in agricultural use and is a combination of **dry meadow – GS2** and **scrub – WS1**. Grasses dominate, such as Creeping Bent *Agrostis stolonifera* and Cock's-foot *Dactylis glomerata* but there are also broad-leaved plants such as Willowherbs *Epilobium sp.*, Thistles *Cirsium sp.*, and Nettle *Urtica dioica*. These habitats are of low biodiversity value. The field to the north-east is scrub with Grey Willow *Salix cinerea*, Alder *Alnus glutinosa* and Brambles *Rubus fruticosus agg.* This is bordered by a more mature band of scrub with Grey Willow, Hawthorn *Crataegus monogyna*, Brambles and Elder *Sambucus nigra*.

Field boundaries are either **hedgerows – WL1** or **treelines – WL2**. These can be similar in species composition and differ in that treelines are dominated by tall trees over 5m in height. Methodology is available from the Heritage Council which evaluates the quality of field boundaries based upon their age, species

diversity and structure (Foulkes et al., 2013). These field divisions appear on historic OSI maps from 1888-1913 and so are of significant age. The boundary to the east appears as a townland boundary and so may be ancient (8th Century). All boundaries are evaluated as 'higher significance' due to their age and species diversity. Trees and woody species typically comprise Ash *Fraxinus excelsior*, Grey Willow, Hawthorn, Wych Elm *Ulmus glabra*, Ivy *Hedera helix*, Elder and Honeysuckle *Lonicera periclymenum*. Ground flora includes Herb Robert *Geranium robertianum*, Primrose *Primula vulgaris* and Lords-and-Ladies *Arum maculatum* along with the ferns: Soft-shield Fern *Polystichum setiferum* and Hart's-tongue *Asplenium scolopendrium*. These treelines and hedgerows are dense and well-structured, providing excellent habitat for a range of plants and animals, and are of high local value to biodiversity.

Some of these are associated with **drainage ditches – FW4** although these were dry on the day of survey. It could be seen however that they are wet on occasion and this was evidenced by the presence of wetland plants such as Water Mint *Mentha aquatica*, Angelica *Angelica sylvestris* and Purple-loosestrife *Lythrum salicaria*. These drain towards the River Liffey, which passes along to the site boundary to the east.

The River Liffey at this point is a lowland, **depositing river – FW2**, which is lined with trees, particularly Alder *Alnus glutinosa* and Willow *Salix sp.* In the water itself there are stands of the Common Club-rush *Schoenoplectus lacustris*. Between the river there is a walking path and the habitats within this band can best be described as scrub, as previously described.

No plant species were found which is listed as alien invasive under Schedule 3 of S.I. 477 of 2011. No rare or threatened plant species was recorded.

Surveys in March 2019 and November 2020 were carried out during the optimal season for wintering birds. No wetland/wintering/wading birds which may be associated with coastal Natura 2000 sites were noted and the habitats are not suitable for these species.

There are no habitats which are examples of those listed in Annex I of the Habitats Directive while there is no evidence that species listed in Annex II of that Directive are present. Figure 2 shows the site boundary superimposed on a recent aerial photograph.

Wastewater from the development will pass to the Osberstown wastewater treatment plant (also known as the Upper Liffey Valley Regional Sewerage Scheme). This plant discharges treated wastewater to the River Liffey under licence from the Environmental Protection Agency (EPA).

Surface water run-off from roofs and driveways will be retained within the curtilage of each dwelling through employment of SuDS techniques. Surplus run-off will discharge to a surface water sewer via attenuation storage tanks, flow control devices and oil/grit interceptors. These will be split over two catchments within the development. In this way surface water quantity and quality will be maintained at a 'greenfield' standard. These are standard measures which are

included in all development projects and are not included here to avoid or reduce an effect to any Natura 2000 site.

The site is not located within or directly adjacent to any Natura 2000 site (SAC or SPA). This part of Kildare is characterised by urban land uses, being close to the town of Clane, although there are also areas of agricultural and other open space. The site itself lies directly adjacent to residential estates and public roads. Mapping from the OSI and EPA show the River Liffey flowing along the boundary to the east of the development. The River Liffey is subject to no Natura 2000 designations. At Dublin Bay, where it discharges to the Irish Sea, it is within a number of such areas however.

The construction phase will involve the clearance of top soil and sub-soil while treeline and hedgerow boundary features are to be largely retained. Any inert construction and demolition waste will be removed by a licenced contractor and disposed of in accordance with the Waste Management Act.



Figure 2 – Site boundary and habitats (aerial photo from www.epa.com).

Water will be supplied from a mains supply which originates from reservoirs at Ballymore Eustace, along the River Liffey. The reservoirs at Poulaphouca are designated as an SPA.

There are no point air emissions from the site while some dust and noise can be expected during the construction phase.

The operation phase will see the development occupied and this will bring with it human disturbance as well as noise and artificial light.



Figure 3 – proposed site layout

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 development and the Natura 2000 network

It has already been stated that the site is not located within or directly adjacent to any Natura 2000 site. For studies of this nature a 15km radius is sometimes given and this is shown in figure 4. This is an arbitrary radius however and impacts can occur at greater distances depending upon the zone of influence of the project.

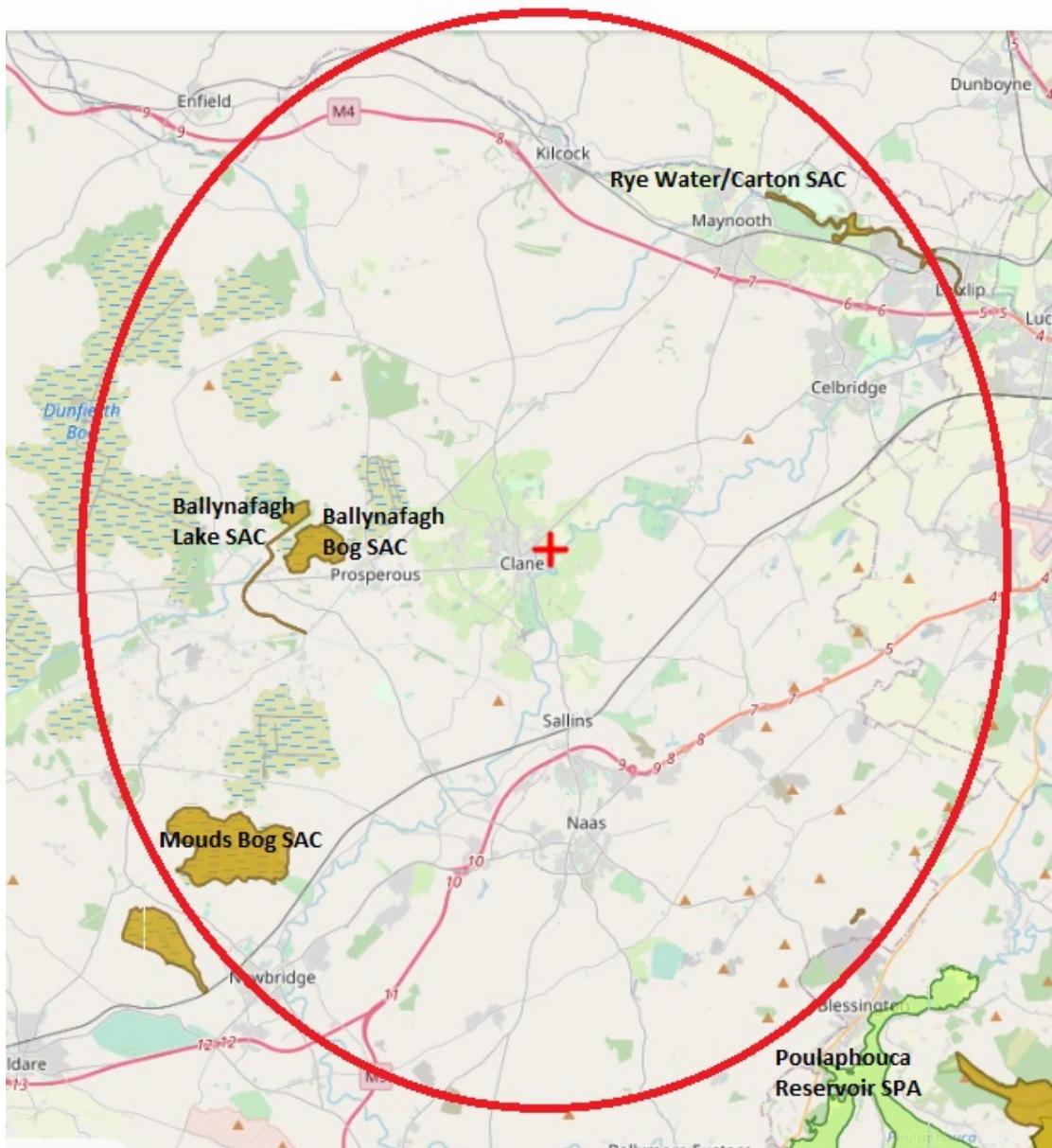


Figure 4 – Approximate 15km radius from the development site and Natura 2000 sites (from www.epa.ie).

Surface water and wastewater pathways ultimately lead to Dublin Bay and this area is subject to a number of designations, including the **South Dublin Bay and River Tolka Estuary SPA (site code: 4024)**, the **South Dublin Bay SAC (0210)**, the **North Dublin Bay SAC (0206)** and the **North Bull Island SPA (4006)**. The distance to the boundary of these SACs/SPAs is over 4.3km as the crow flies. 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.

The **South Dublin Bay and Tolka Estuary SPA** (site code: 4024) is largely coincident with the South Dublin Bay SAC boundary with the exception of the Tolka Estuary. The **North Bull Island SPA** (site code: 0206) 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 1 lists the features of interest for both of the SPAs.

Table 1 – Features of interest for SPAs in Dublin Bay (EU 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]	

- **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 increased substantially of late.
- **Curlew.** Still a common sight during winter at coastal and inland areas around the country 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.
- **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 2 shows the most recent count data available¹.

¹ <https://f1.caspio.com/dp.asp?AppKey=f4db3000060acbd80db9403f857c>

Table 2 – 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.
- **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 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)	Inadequate
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 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 18km 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*.

² NPWS. 2019. *The Status of EU Protected Habitats and Species in Ireland*. Habitat Assessments Volume 1. Unpublished Report, National Parks & Wildlife Services. Department of Culture, Heritage and the Gaeltacht, Dublin, Ireland.

Rye Water Valley/Carton SAC (site code: 1398)

The Rye Water is a tributary of the Liffey and the SAC boundary stretches from east of Maynooth as far as Leixlip village. It flows through the Carton demesne which is wooded with specimen native and non-native trees. The river is dammed in a number of locations and this has created a series of small lakes. The SAC covers an area of nearly 73 ha.

Table 4 – Qualifying interests for the Rye Water/Carton SAC

Code	Habitats/Species	Status
7220	Petrifying springs with Tufa formation	Inadequate
1014	Narrow-mouthed whorl snail <i>Vertigo angustior</i>	Inadequate
1016	Desmoulin's whorl snail <i>Vertigo mouliniana</i>	Inadequate

The reasons why this area 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. The status provided refers to the status of the habitat or species at a national level and not necessarily within the SAC.

- **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.
- **Narrow-mouthed Whorl Snail (1014).** This whorl snail is present in a wide variety of habitats from dunes and coastal grasslands, to fens, salt-marshes and floodplains. The principle threats to its habitat derives from undergrazing and overgrazing.
- **Desmoulin's Whorl Snail (1016)** is a tiny mollusc that is particularly sensitive to changes in water level. It occurs in swamps, fens and marshes. The greatest threats have been drainage of wetlands and riparian management of canals.

Ballynafagh Lake SAC (site code: 1387)

This shallow alkaline lake was originally constructed as a reservoir, created by the Grand Canal Company, but has since developed a very naturalised vegetation including dense stands of reeds and sedges. The Blackwood Feeder leads to the Royal Canal and this is included in the SAC boundary.

The lake is of value for its important habitats as well as its invertebrate diversity – particularly freshwater molluscs. In winter it is home to a number of bird species including the Whooper Swan *Cygnus cygnus*.

The reasons why the Ballynafagh Lake is an SAC are set out in the site's 'qualifying interests' and these are given in table 5. Also given is the status of the feature as assessed by the National Parks and Wildlife Service in its routine reporting to the European Commission (2019). It should be noted

however that this is the status on a national level and not necessarily within the SAC relevant to this study.

Table 5 – Qualifying interests of the Ballynafagh Lake SAC

Aspect	Level of Protection	Status
Alkaline Fens (code: 7230)	Habitats Directive Annex I	Bad
Desmoulin's Whorl Snail <i>Vertigo moubensiana</i> (code: 1016)	Habitats Directive Annex II	Inadequate
Marsh Fritillary Butterfly <i>Euphydryas aurinia</i> (code: 1065)		Inadequate

The NPWS has identified the main qualifiers of structure and function to these features as follows:

- Alkaline Fens: 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.
- Desmoulin's Whorl Snail: a tiny mollusc that is particularly sensitive to changes in water level. Occurs in swamps, fens and marshes. The greatest threats have been drainage of wetlands and riparian management of canals.
- Marsh Fritillary: Good habitat is considered to be moderate to high coverage of *Succisa pratensis* (Devil's-bit Scabious, food plant for the caterpillars), low-growing unintensive sward with low levels of scrub. The species survives best in an open landscape where movement is largely unimpeded and habitat patches are easily reached by the relatively sedentary adults.

Ballynafagh Bog SAC (site code: 0391)

This SAC is situated close to Prosperous and is an example of a typical midlands raised bog. In 2007 the NPWS estimated that nearly half of its area was intact but that afforestation, mechanised peat cutting and drainage were threatening its status. Intact raised bogs are very rare habitats and Ireland has approximately half of all the intact raised bogs remaining in Europe. The qualifying interests for this SAC are shown in table 6 below.

Table 6 – Qualifying interests of the Ballynafagh Bog SAC

Aspect	Level of Protection	Status
Active raised bog (code: 7110)	Habitats Directive Annex I priority	Bad

Degraded raised bog (code: 7120)	Habitats Directive Annex I	Bad
Rhynchosporian depressions (code: 7150)		Intermediate

These features are interrelated and are subject to an on-going recovery programme which, if successful, will result in a reduction in area of degraded raised bog and Rhynchosporian depressions in favour of active raised bog. The structure and function of raised bog and its associated habitats is dependent upon maintaining a high water table and a growing layer of *Sphagnum sp.* mosses.

Mouds Bog SAC (code: 2331)

A synopsis report has been published for the SAC (NPWS, 2014). It gives a broad description of the designated area as well as discussing the SAC's qualifying interests and other features of ecological importance.

This SAC is a typical example of a midlands raised bog. It is approximately 590ha in extent and much of this is 'high bog'. Marginal areas have been cut away either by hand or on an industrial scale and this has altered the hydrology of the bog. Affected areas have ceased to lay down new layers of peat while in central depressions 'active' bog is still to be found and is characterised by a series of wet flats, hummocks, pools and lawns of the bog building moss *Sphagnum sp.* Raised bogs once extended across as much as 309,000 ha in Ireland but only 8% of this original area was of any conservation interest over a decade ago (Foss et al., 2001). This percentage is likely to be less today. The principle threats to this habitat are peat cutting, drainage, forestry and burning (NPWS, 2008). Turf-cutting has been prohibited on Mouds bog since 2011.

The reasons why this area 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 7 below. In this case the SAC is designated only for protected habitat types.

Table 7 – Qualifying interests for the Mouds bog SAC (from NPWS)

Code	Habitats	National Status
7110	Active raised bog	Bad
7120	Degraded raised bog	Bad
7150	Rhynchosporian depressions	Bad

- **Raised Bog habitats (7110 & 7120).** These features are interrelated and are subject to an on-going recovery programme which, if successful, will result in a reduction in area of degraded raised bog and Rhynchosporian depressions in favour of active raised bog. The structure and function of

raised bog and its associated habitats is dependant upon maintaining a high water table and a growing layer of *Sphagnum* sp. mosses.

- **Rhyncosporion Depressions (7150).** *Rhyncosporion alba* is the White-beaked Sedge and is a pioneer species on exposed peat and areas of disturbed bog.

Pathway Analysis

There is no direct natural hydrological connection from the site to Dublin Bay. There is an indirect pathway through the stormwater and foul sewers which include significant dilution on route to the Ringsend WWTP.

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

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 13 – 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
Ballynafagh Lake SAC
Ballynafagh Bog SAC
Mouds Bog SAC
Rye Water/Carton SAC

Significance of Effects

Whether effects are significant or not must be measured against the conservation objectives of the SAC or SPA in question.

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 Natura 2000 sites in Dublin Bay, Ballynafagh Bog SAC and Mouds Bog SAC however elsewhere only generic conservation objectives have been published. These are states by the NPWS 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 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, Rye Water/Carton SAC and Ballynafagh Lake SAC, generic conservation objectives have been published by the NPWS and are as previously stated above (NPWS, 2020).

At Mouds Bog SAC and Ballynafagh Bog SAC, specific conservation objectives have been published for the active raised bog qualifying interest only (NPWS, 2015).

Data collected to carry out the assessment

Site visits have shown that habitats on the site are not associated with any habitats or species associated with any Natura 2000 site or which are suitable for roosting wetland birds.

The EU's Water Framework Directive (WFD) stipulates that all water bodies were to have attained 'good ecological status' by 2015. This includes estuarine waters and Dublin Bay is located within the Eastern River Basin District. In 2009 a management plan was published to address pollution issues and includes a 'programme of measures' which must be completed. This plan was approved in 2010 while the second River Basin Management Plan was published in 2018. The status of the River Liffey through Clane is 'good' and this is maintained until Lucan after which point it is not assessed.

The lower Liffey Estuary (the boundary between the lower and upper estuaries is marked at the Custom House) and the coastal water beyond the estuary have also been assessed as 'good status' (from www.epa.ie). These classifications indicate that water quality across Dublin Bay is currently meeting the requirements of the WFD. The estuary of the River Tolka meanwhile is 'moderate'.

Details from the NPWS site synopsis report and the most recent data from BirdWatch Ireland's Wetlands Bird Survey (IWeBS) (Crowe et al., 2012) indicate that Dublin Bay is of international importance for wintering birds meaning that it regularly holds a population of over 20,000 birds.

Of the species listed in table 1 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.

In 2020 the NPWS published a report entitled 'The monitoring and assessment of six EU Habitats Directive Annex I Marine Habitats' (Scally & 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'.

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 over 30km from the boundary of the South Dublin Bay and River Tolka estuary SPA/SAC as the crow flies but following the flow of the River Liffey this distance is significantly greater. Because of this distance separating the two areas there is no pathway for loss or disturbance of species listed in table 1 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/Ex-situ impacts

The site is too far from bird roosting areas to result in impacts from noise or other forms of human disturbance.

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

Hydrological pathways

There is a pathway from the site via surface and wastewater water flows to Dublin Bay via the Osberstown wastewater treatment plant and the River Liffey. 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 source of freshwater may be from the Poulaphouca Reservoir SPA.

Pollution during operation - wastewater

The plant at Osberstown is licenced to discharge treated effluent to the River Liffey by the EPA (licence no.: D0002-01). It has a capacity to treat wastewater for a population equivalent (P.E.) of 130,000. The Annual Environmental Report (AER) for 2019 shows that the average loading was well within this capacity and the standard of effluent was fully compliant with emission limit values set under the Urban Wastewater Treatment Directive. Monitoring of the receiving water (i.e. the River Liffey) takes place at points upstream and downstream of the discharge point. The AER states that “The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status”.

Water quality in Dublin Bay meanwhile is ‘good’. There are no effects which can arise from this project to Natura 2000 sites.

Pollution during operation – surface water

The installation of surface water attenuation measures will ensure that there will be no negative impact to water quality or quantity arising from the change in land use from agricultural to residential. These are standard measures in all development projects and are not included here to avoid or reduce an effect to any Natura 2000 site. Therefore they are not considered to be mitigation in an AA context.

Pollution during construction

During the site clearance and construction phase it is possible that sediment could become entrained in run-off and there is a pathway to the River Liffey via drainage ditches on the development site. This effect is not considered significant given the temporary nature of this phase and given that large quantities of sediment are deposited in estuaries as part of their natural functioning. Pollution will be prevented during this phase however this is not considered to be mitigation in an AA context as even in the absence of these measures, no effects to Natura 2000 sites can occur.

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 this is not considered significant.

Abstraction

There are no effects which can occur due to abstraction of freshwater. Evidence suggests that abstraction is not resulting in negative effects to Natura 2000 sites in the zone of influence of the development project.

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 overall improvements to water quality throughout the Liffey catchment. Specifically, the Morrell, the Liffey Upper and the Clonshanbo/Lyreen catchments (all of which are part of the wider Liffey catchment) have been identified as ‘prioritised areas for action’ under the current River Basin Management Plan 2018-2021.

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 (Mason, 1996). There will no impact to surface water quality and quantity from this development due to the incorporation of proven SUDS methods.

Land use change can impact upon biodiversity through disturbance effects and the cumulative impact of water pollution. Impacts to water quality arising from this project have been assessed and are not predicted to result in negative effects to Natura 2000 sites.

Water quality in Dublin Bay can be influenced by multiple sources of effluent including diffuse run-off from agriculture or one-off houses. Substantial point sources also exist, particularly from the wastewater treatment plants at Leixlip (the Lower Liffey Regional Sewerage Scheme which also discharges to the Liffey) and the main treatment plant for Dublin city at Ringsend, which discharges to Dublin Bay. The former plant is currently compliant with its discharge licence however long-standing problems at Ringsend persist. The discharge here is not compliant with licence values and although upgrading works are underway.

However, evidence suggests that some nutrient enrichment in coastal estuaries is benefiting wintering birds for which SPAs have been designated in Dublin Bay (Nairn & O'Hallaran eds, 2012).

The additional loading from this project to the Upper Liffey Valley plant will not contribute to capacity issues at that plant as ample capacity exists. The River Liffey is assessed as 'good' status for the entire downstream portion from Clane to Lucan, indicating that wastewater treatment plants are not contributing to water quality issues at the Tolka Estuary. No negative effects to Natura 2000 sites are likely to occur from this source.

The subject lands are zoned for residential development under the Clane Local Area Plan 2017-2023. This plan was subject to AA Screening by the planning authority and this concluded that its implementation would not result in negative effects to Natura 2000 areas.

There are no further effects which can act in combination with other similar effects, to result in significant effects to the SAC or SPAs in question.

Conclusion and Finding of No Significant Effects

No significant effects will arise from this project to any Natura 2000 site.

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

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

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