

Screening Report for Appropriate Assessment of proposed residential development at Capdoo & Abbeylands, Clane, Co. Kildare

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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 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 10.32 hectares at Capdoo, Celbridge Road, Clane, Co. Kildare.

The application is for a development that includes 305 dwellings consisting of:

- *01 no. 1 bedroom Apartments (Block C)*
- *12 no. 1 bedroom own door Maisonette (Types J, K, L & M)*
- *103 no. 2 bedroom Apartments (Block C, D, F & L)*
- *8 no. 2 bedroom Maisonette (Types N, ND, O & OD)*
- *34 no. 2 bedroom own door Apartments (Type G)*
- *01 no. 3 bedroom Apartments (Block C)*
- *34 no. 3 bedroom own door Duplex Apartments (Type H)*
- *20 no. 2 bedroom mid terrace houses (Types F)*
- *34 no. 3 bedroom semi-detached houses (Types B, BD, D & DD)*
- *14 no. 3 bedroom end of terrace houses (Types E & ED)*
- *44 no. 4 bedroom semi-detached houses (Types A & AD)*

The development also includes a single-storey creche facility (Part of the ground floor of Apartment Block D); associated car parking; surface water attenuation, site entrances, landscaping and all associated site development works. 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 areas in this view.

It is planned to construct a 305-home residential development on the site at Capdoo & Abbeylands to include access roads, open space and all associated infrastructure.

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 **bare ground – ED2**. 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 **recently-felled woodland – WS5** and had little vegetation. This is bordered by a band of **scrub – WS1** with Grey Willow *Salix cinerea*, Hawthorn *Crataegus monogyna*, Brambles *Rubus fruticosus agg.* 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.

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 area (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 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 (in red line) (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.

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 area. 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.

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]	

The **South Dublin Bay and Tolka Estuary SPA** (side 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.

- **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 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.

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** (side 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.

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

Table 3 – Qualifying interests for the North Dublin Bay SAC

Habitat/Species	Status ²
Mudflats and sandflats not covered by seawater at low tide	Intermediate
Salicornia and other annuals colonizing mud and sand	Intermediate
Atlantic salt meadows	Intermediate
Mediterranean salt meadows	Intermediate
Annual vegetation of drift lines	Intermediate
Embryonic shifting dunes	Intermediate
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	Intermediate
<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. They 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. 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.

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 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

The site visit has shown that habitats on the site are not associated with any of the habitats or species listed in table 1 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. In 2018 the second river basin management plan was published to address pollution issues and includes a 'programme of measures' which are to be completed. This has identified 190 'areas for action' where resources are to be focussed over the 2018-2021 period. The status of the River Liffey through Clane is 'good' and this is maintained until Celbridge whereupon it deteriorates to 'poor' or 'moderate' for the remainder of its length.

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 2.

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 (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 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.

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.

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 2017 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 may have an impact on the Water Framework Directive status. However, the upstream BOD is close to the EQS threshold and improvements in the sewer network are expected to lead to further improvements in the receiving water quality”. Upgrade works to address non-compliant surface water overflows are to be undertaken by 2021.

Water quality in Dublin Bay meanwhile is ‘good’.

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 area. Therefore they are not considered to be mitigation in an AA context.

Pollution during construction

During the site clearance and construction phase it is unlikely that sediment will become entrained in run-off as there are no ditches or other water courses on this 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.

Disturbance

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.

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 areas.

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 complaint 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 planned, they may not be complete until 2021.

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 Osberstown plant will not contribute to capacity issues at that plant as ample capacity exists. No negative effects to Natura areas is 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.

List of agencies consulted

Due to the low ecological sensitivity of these lands, nature conservation observations were not sought from 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 Natura 2000 network. A Stage 2, full AA, is not required.

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