

Screening Report for Appropriate Assessment of Road Development at Belmayne, Dublin 13

prepared by OPENFIELD Ecological Services
for Dublin City Council

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1.0 INTRODUCTION

1.1 About OPENFIELD Ecological Services

OPENFIELD Ecological Services is headed by Pádraic Fogarty who has worked for over 20 years in the environmental field and in 2007 was awarded an MSc from Sligo Institute of Technology for research into Ecological Impact Assessment (EclA) in Ireland. Pádraic has a primary degree in Analytical Science from DCU, and diplomas in Field Ecology (UCC), Environment and Geography (Open University) and Environmental Protection (IT Sligo). Since its inception in 2007 OPENFIELD has carried out numerous EclAs for Environmental Impact Assessment (EIA), Appropriate Assessment under the EU Habitats Directive, as well as individual planning applications. Pádraic is a full member of the Institute of Environmental Management.

1.2 Protection of biodiversity

Biodiversity is a contraction of the words 'biological diversity' and describes the enormous variability in species, habitats and genes that exist on Earth. It is an integral component of our heritage while also providing food, building materials, fuel and clothing, maintaining clean air, water, soil fertility and pollinating 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.

In Europe, the main policy instruments for conserving biodiversity have been the Birds Directive of 1979 and the Habitats Directive of 1992, which are transposed into Irish law through the European Union (Natural Habitats) Regulations SI94/1997 (as amended by SI233/1998 & SI378/2005). This legislation requires member states to designate areas of their territory that are important for certain listed habitats and species other than birds in the case of the Habitats Directive, and species or significant gatherings of birds in the case of the Birds Directive. These areas are known as Special Areas of Conservation (SAC) and Special Protection Areas (SPA) respectively. Together SACs and SPAs form the Natura 2000 network of protected sites. Unlike traditional nature reserves or national parks, Natura 2000 areas 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 'favourable conservation status' exists for their SACs and SPAs including that Article 6(3) of the Habitats Directive is met. Article 6(3) requires that an 'appropriate assessment' (AA)

be carried out for those areas 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 area. However, where this is not the case, a preliminary screening must first be carried out to determine whether or not the full AA is required.

1.3 Purpose of this Report

This document provides for a screening of a proposed Part 8 development in Belmayne, Dublin 13, and its potential effects in relation to Natura 2000 sites (SACs and SPAs). This application is for the completion of road developments along Main Street and Belmayne Avenue, including changes to the existing layout. It is also proposed to construct a new route to provide a link between New Priory and the Malahide Road. The roads will provide for vehicular traffic, bus lanes, cycle lanes and pedestrians. It will include artificial lighting and provision of drainage works.

This document will assess whether effects to the Natura 2000 network are likely occur as a result of the construction or operation phases of this project. It will determine whether these effects are likely to be significant, and if so, will recommend appropriate mitigation measures.

1.4 Methodology

The assessment was carried out in accordance with the following methodologies and guidelines:

1. '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, 2001). Annex 2 of this document sets out an assessment template that is used in this report. Reference is also made to recently published guidelines 'Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities' (Dept. of Environment, Heritage and Local Government, 2009).
2. 'Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities' (DOEHLG 2009).

Note: Reference from this point forth to the 'site' indicates the development site and not the SAC or SPA.

In accordance with the above-mentioned guidance notes, the following steps are followed:

Step 1: Analysis of the SAC/SPA

This involves assessing the current status of the SAC/SPA and underlying trends affecting it. This is done through a combination of literature review, site survey, and consultation with relevant stakeholders.

Step 2: Analysis of the proposed development

Identifying aspects of the plan that may affect the SAC/SPA

Step 3: Analysis of other plans and projects

Identifying aspects of other plans or projects that may act 'in combination' with the proposed development to affect the integrity of the SAC/SPA

Step 4: Determination of significance

Determination whether any of these effects, either alone or in combination with other plans and projects, will be significant.

The AA process is an iterative one where the report actively identifies potential effects, the project is then modified to avoid or mitigate these effects, and then the new project design is re-assessed until such point as no significant effects are predicted to occur. It is important to note that any AA, or screening for AA, is carried out by the competent authority (in this case Dublin City Council) and this screening report has been prepared in order to aid that decision.

2.0 Step 1 – Analysis of the Natura 2000 network

2.1 Site location and extent

The development site is located in Belmayne, Dublin 13, which is close to the Clare Hall intersection, between the Northern Cross Road and the Malahide Road. This location is shown in figure 1 which also shows its position in relation to the boundary of nearby areas designated for nature conservation.

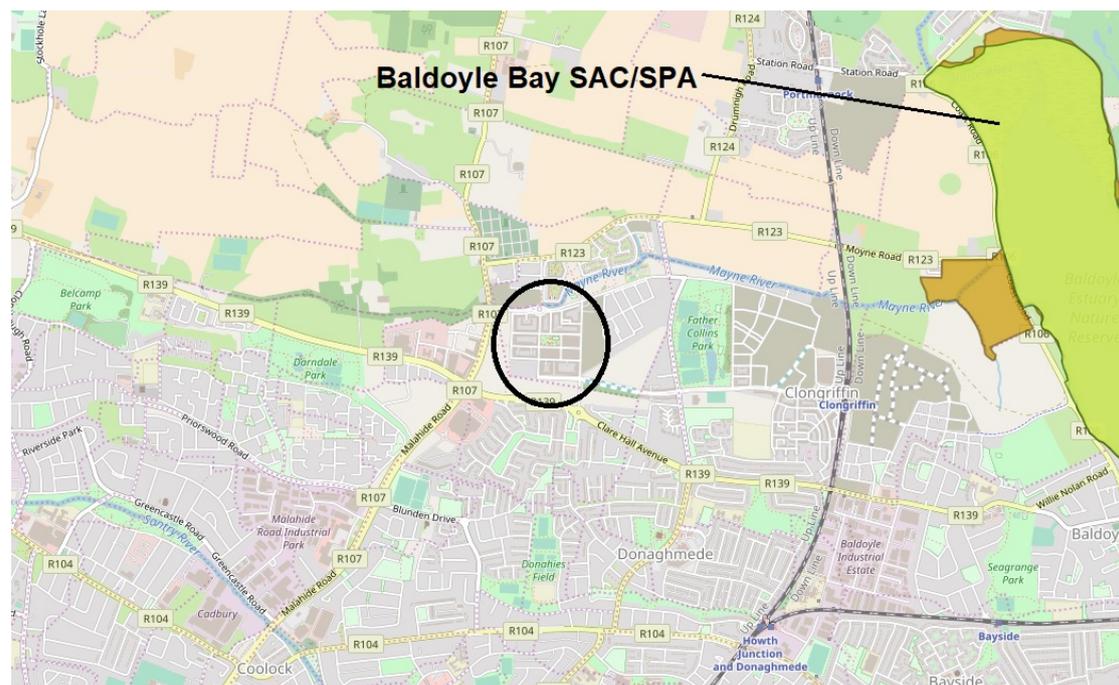


Figure 1 – Location of development site at Belmayne, Dublin 13 (black circle). The SAC boundary is shown in brown while that of the SPA is shown in lime green. (from www.epa.ie)

There is no prescribed radius around a site for determining what Natura 2000 sites should be studied. This is determined by the zone of influence of the project although a preliminary radius of 2km is usually examined (IEA, 1995). Figure 1 shows this approximate area and as can be seen there are two Natura 2000 sites within this radius: Baldoye Bay SPA and SAC. In addition to these European designations Baldoye Bay is also recognised as a wetland of international importance under the RAMSAR Convention (site 25/10/88). It is also a proposed Natural Heritage Area, a designation under national legislation.

OSI mapping shows that the Mayne River flows close to the northern site boundary and this discharges into Baldoye Bay along with the Sluice River. The site is in an area that was shown as agricultural land in aerial photography from 2000 but has since been developed, primarily with residential properties.

The extent of the road works at Belmayne is shown in figure 2.

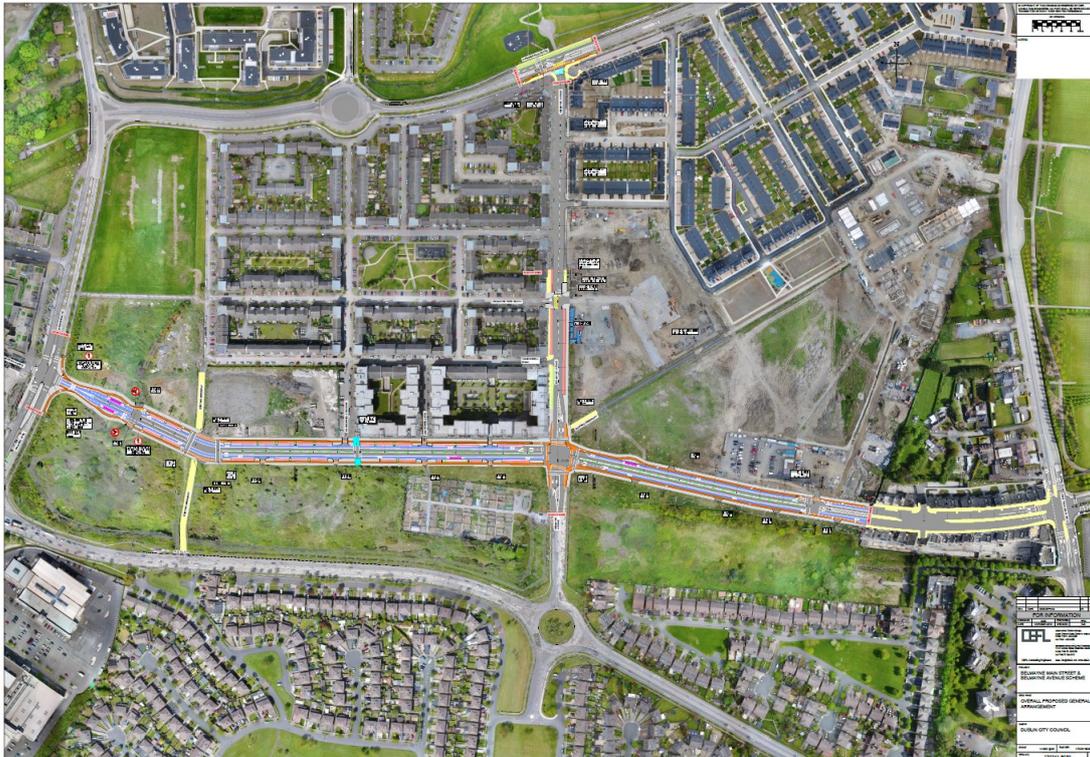


Figure 2 – Location and extent of proposed works. The boundary of the Baldoye Bay SAC and SPA is approximately 2km to the east at its nearest point.

2.2 Natura 2000 Sites

2.2.1 Baldoye Bay SAC (code: 0199)

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

The reasons why the bay falls under the SAC designation are set out in the qualifying interests. They are either habitat types listed in Annex I or species listed in Annex II of the Habitats Directive. This information is provided by the National Parks and Wildlife Service (NPWS) and is shown in table 1 below. In this case the SAC is designated only for protected habitat types.

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

Code	Habitats
1140	Mudflats and sandflats not covered by seawater at low tide
1310	Salicornia and other annuals colonizing mud and sand
1330	Atlantic salt meadows
1410	Mediterranean salt meadows

- **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 dependant upon a supply of fresh, bare mud and can be promoted by damage to other salt marsh habitats. It is chiefly threatened by the advance of the alien invasive Cordgrass *Spartina anglica*. Erosion can be destructive but in many cases this is a natural process.
- **Atlantic and Mediterranean salt meadows (1330 & 1410):** these are intertidal habitats that differ somewhat in their vegetation composition. They are dynamic habitats that depend upon processes of erosion, sedimentation and colonisation by a typical suite of salt-tolerant organisms. The main pressures are invasion by the non-native *Spartina anglica* and overgrazing by cattle and sheep.

2.2.2 Baldoye Bay SPA (site codes: 4016)

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

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

Species	Status ¹
<i>Branta bernicula hrota</i> Light-bellied brent goose	Amber
<i>Charadrius hiaticula</i> Ringed plover	Green
<i>Limosa lapponica</i> Bar-tailed godwit	Amber
<i>Pluvialis apricaria</i> Golden plover	Red
<i>Pluvialis squatarola</i> Grey plover	Amber
<i>Tadorna tadorna</i> Shelduck	Amber
Wetlands & Waterbirds	

- **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.
- **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.

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

- **Bar-tailed Godwit.** These wetland wading birds do not breed in Ireland but are found throughout the littoral zone during winter months. They prefer estuaries where there are areas of soft mud and sediments on which to feed.
- **Golden Plover.** In winter these birds are recorded across the midlands and coastal regions. They breed only in suitable upland habitat in the north-west. Wintering abundance in Ireland has changed little in recent years although it is estimated that half of its breeding range has been lost in the last 40 years.
- **Grey Plover.** These birds do not breed in Ireland but winter throughout coastal estuaries and wetlands. Its population and distribution is considered to be stable.
- **Shelduck.** The largest of our ducks, Shelduck both breed and winter around the coasts with some isolate stations inland. Its population and range is considered stable.

Whether the SAC or SPA is likely to be affected must be measured against its 'conservation objectives'. Specific conservation objectives have been set for both of these areas. In the SAC 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 (NPWS, 2012a).

For the SPA the conservation 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, 2013).

2.3 Literature Review

As can be seen from figures 1 and 2, the site is not located within or directly adjacent to any area designated for nature conservation. It is situated approximately 2km from the boundary of the Baldoyle Bay SAC and SPA. The site is situated within the catchment of the Mayne River, which flows approximately 100m to the north of Belmayne Road.

The River Mayne is a relatively short water course that rises to the east of Dublin airport and enters the Irish Sea at Baldoyle. The Environmental Protection Agency maintains one monitoring station, at the Wellfield Bridge, and here ecological conditions were most recently (2016) assessed as 'poor'. Under the Water Framework Directive the overall status of the Mayne catchment has been assessed as of 'poor' status. This indicates point or diffuse pollution sources, or other ecological problems such as obstructions. The ecological quality of the transitional water body at Baldoyle Bay has been assessed as 'eutrophic', indicating 'bad' status.

It is clear from OSI historic mapping and aerial photography that significant land use change has occurred in this area over the past 10-15 years. Prior to 2000 the land can be seen to be typical agricultural fields with tree and hedge boundaries.

Because this site is already largely built upon, and is not within or near to any SAC or SPA, a site visit was not carried out. Recent aerial photography shows that the lands are predominantly composed of artificial surfaces, although near the Malahide Road there is some growth of scrub vegetation.

2.4 Consultation

Because of the low sensitivity of this site no third party consultation was carried out.

2.5 Trends affecting the SAC/SPA

There are no management plans for the designated areas in Baldoyle Bay however some work has been done to determine the site-specific trends or threats to their conservation status.

Tables 3 & 4 shows the most recent bird count data from Baldoyle Bay and these show that while numbers fluctuate from one year to the next, positive or negative trends are not clear. These data are likely to mask variations between species present and as table 2 shows there are a number of species here that are of high and medium conservation concern (red and amber lists). However a link between water quality and bird numbers cannot be established. In fact, the discharge of nutrient effluent from artificial fertilisers and poorly treated sewage can promote primary production that in turn provides food for wintering and resident birds in bays and estuaries (Nairn & O'Halloran eds., 2012).

Table 3 – Bird count data from the winters of 2005/06 – 2009/10 (Crowe et al., 2011; Boland & Crowe, 2006)

01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11
8,891	6,825	4,290	4,626	4,196	5,927	5,544	5,766	5,884	-

Table 4 – Baldoyle Bay bird count data (Irish Wetland Bird Survey)

Year	2010/11	2011/12	2012/13	2013/14	2014/15	Mean
Number	N/A	N/A	N/A	6,459	3,994	5,227

The status of features of interest in the Baldoyle Bay SPA has been assessed (NPWS, 2012c). Of those species with unfavourable status in the SPA, Ringed Plover and Bar-tailed Godwit have exhibited losses at Baldoyle Bay while the national population remains stable or has increased. It is therefore reasonable to assume that local factors are leading to declines. The NPWS list a number of factors that may be contributing to this including human disturbance (walkers with or without dogs) and nutrient enrichment (pollution). The latter effect is exhibited by algal mats, typically Sea-lettuce *Ulva* sp. which covers the sediment surface at low tide. This is good for those species which feed on Sea-lettuce but bad for those which cannot reach their favoured prey under the mats.

Water quality in the catchment is monitored by the Environmental Protection Agency (EPA) which maintains a regular assessment programme. There are no monitoring points along the Sluice River. At the monitoring point along the Mayne, which also enters Baldoyle Bay, site water quality has most recently been determined to be 'poor status'. Meanwhile the trophic status of Baldoyle Bay has been assessed as 'eutrophic' (from www.epa.ie).

Pollution may be a factor in the poor status of Bar-tailed Godwit and Ringed Plover at Baldoyle Bay due to reasons already described. While definitive evidence for this is lacking the Precautionary Principle dictates that where sufficient doubt persists, there must be a presumption in favour of negative effects.

3.0 Step 2 – Analysis of the Project

This application is for the construction and operation of new roads along with all associated services as described under section 1.3.

The construction phase will involve the use of standard construction materials. This will involve the loss of the existing low, or negligible, biodiversity value habitats, to be replaced with buildings and artificial surfaces which will be of negligible biodiversity value.

Works will require site preparation and the removal of inert construction waste. Foundations for the roads will be laid, along with electricity and drainage services. The finished road will be surfaced to the appropriate standard and ancillary infrastructure installed, e.g. foot paths, lamp standards, road markings etc.

The road will then be used by vehicular, cycle and pedestrian traffic. This will bring with it a certain level of noise and artificial lighting.

Surface water for existing roads drain to the existing drainage network for the development, and which passes to the Mayne River. For the new section linking to the Malahide Road, the surface water sewer will link to this wider network. A new attenuation storage tank will be installed for this section. Surface water infrastructure will therefore confirm to the Greater Dublin Strategic Drainage Study (GSDSDS).

A cross section of the new road layout is shown in figure 4.

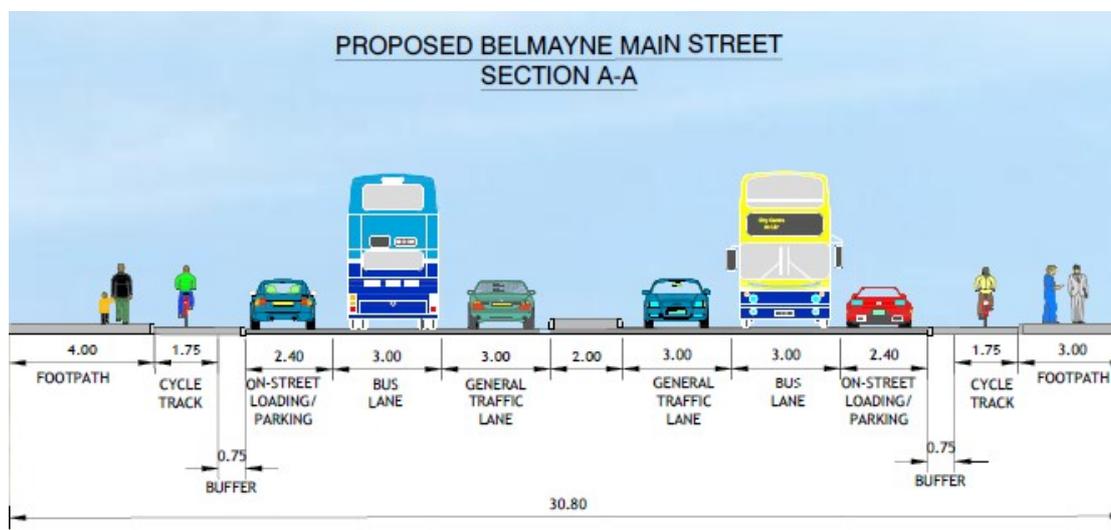


Figure 4 – Road cross section at Main Street

4.0 Step 3 – Analysis of Other Plans and Projects

Individual impacts from one-off developments or plans may not in themselves be significant. However, these may become significant when combined with similar, multiple impacts elsewhere. These are sometimes known as cumulative impacts but in AA terminology are referred to as 'in combination' effects.

In terms of the conservation objectives of the SACs and SPAs identified in section 2.2, maintaining the extent and condition of important habitats and species populations is vital.

This area of Dublin 13 has been substantially transformed in the past 15-20 years from farmland to built development. The area is currently a combination of open park spaces, with significant built development including residential and retail uses.

The cumulative effects of this type of urban growth can arise from replacing permeable ground with hard surfaces. This can result in increased risk of flooding and deterioration of water quality, primarily from the run-off of particulate matter and hydrocarbon residues (Mason, 1996). To combat this effect the Greater Dublin Strategic Drainage Study was published in 2005. This aims to ensure that new developments integrate sustainable drainage systems (SUDS) to maintain natural, or 'green field' rates of surface water run-off while also improving water quality in rivers. This development is fully compliant with these SUDS principles.

Urbanisation can also lead to increasing amenity pressure on coastal areas and this has been identified by the NPWS in a number of SPAs, including Baldoyle Bay, as being a threat to wetland and wading birds. Amenity space has been provided for under the Clongriffin-Belmayne (North Fringe) Local Area Plan (LAP), and particularly with the development of nearby Fr Collins Park. This LAP was subjected to AA which concluded that significant adverse effects would not arise to the Natura 2000 network from its implementation.

The Eastern River Basin District Management Plan was published under the EU's Water Framework Directive. This set out to attain 'good ecological status' of all water bodies by 2015, however this has not been achieved. It includes a 'programme of measures' that will address point or diffuse pressures on water quality. The Mayne River is assessed as 'poor' while Baldoyle Bay is 'eutrophic'. Under the River Basin Management Plan 2018-2021 the Mayne River is identified as an 'area for action'.

5.0 Step 4: Determination of Significance

5.1 Impact prediction

Under Article 6 of the Habitats Directive the term 'significance' is taken to mean an effect on the SAC or SPA as measured against the relevant conservation objective. Unlike Environmental Impact Assessment for instance, there are no degrees of significance and where an effect is determined to be significant mitigation or avoidance measures must be considered.

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

The subject site is not located within, or directly adjacent to any SAC or SPA. However a pathway for impacts exists via surface water to the Baldoyle Bay SAC/SPA.

The development will not result in direct impacts to habitats within any designated area, either through habitat removal or disturbance, due to the separation distances involved.

Site specific conservation objectives have been set for the SAC and SPA in Baldoyle Bay. None of these objectives relates to water quality. It is considered that current levels of pollution, via surface or wastewater flows may be impacting negatively upon the conservation objectives for certain features of interest in Baldoyle Bay SPA. Pollution is in any case undesirable and this development should not infringe upon efforts to enhance water quality under the Water Framework Directive.

Following on from steps 1 – 3 of this process a number of specific impacts are considered:

5.1.1 Habitat loss

This development is will not result in the loss of semi-natural habitats connected to Natura 2000 areas.

5.1.2 Habitat disturbance

No habitats will be disturbed within or directly connected to Natura 2000 areas.

Indirect disturbance via amenity pressures on coastal areas is unlikely to arise from this project due to the nature of the works and their distance to Natura areas.

5.1.3 Pollution during construction

The Mayne River lies approximately 100m north of the construction zone and so there may be a risk to the river during this time, especially as drainage sewers are laid or disturbed. This may result in the loss of sediment to the Mayne River. The effect of this upon the SAC and SPA is not considered to be significant as coastal estuaries are not sensitive to sediment pollution in the way that rivers are. These areas depend upon enormous quantities of silt for their functioning and the likely quantity of silt entering the Mayne cannot affect the conservation objectives for these species or habitats.

5.1.4 Pollution during normal operation

The use of accepted SUDS techniques in the design of the project will ensure that negative effects to water quality do not arise from surface water run-off when the project is established.

Discharges of wastewater from this project cannot result in significant effects to the SAC or SPA in Baldoyle Bay.

6.0 Conclusion and Finding of No Significant Effects

This proposed development is not located within or directly adjacent to any SAC or SPA but pathways do exist to a number of these areas. An assessment of the aspects of this project has shown that significant negative effects are not likely to occur to these areas either alone or in combination with other plans and projects.

7.0 REFERENCES

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