Screening Report for Appropriate Assessment (AA) for residential development at Farrankelly, Greystones, Co. Wicklow

Compiled by OPENFIELD Ecological Services

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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).

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.

The Purpose of this document

This document assesses a proposed residential development at Farrankelly, Greystones, Co. Wicklow. It is proposed to construct 426 new homes along with landscaped open space, road access and all associated infrastructure. It is described thus, as per the planning application:

The development will consist of the construction of a residential development of 426 no. dwellings, a creche (c. 599 sq. m), residential amenity building (c. 325 sq. m), active open space of c. 4.5 hectares, greenway of c. 2.4 hectares and open space as follows:

A) 245 no. houses comprising; 148 no. 3 bedroom houses, 93 no. 4 bedroom houses, and 4 no. 5 bedroom houses [houses are provided with two car parking spaces and solar panels – House Type E 3 storey to front – 2 storey to rear; House Types G1,G2,G3, and H dormer House Types, all other house types 2 storey];
B) 93 no. apartments with balconies in 3 no. 4 storey apartment buildings (Blocks 1 and 2 over part basement/podium – [Block 2, 4 storeys over podium on eastern elevation]) comprising 36 no. 1 bedroom apartments, 53 no. 2 bedroom apartments and 4 no. 3 bedroom apartments;
C) 44 no. 2 bedroom duplex apartments and 44 no. 3 bedroom duplex apartments in 11 no. 3 storey duplex buildings;
D) Provision of a 2 storey split level residential amenity building of c. 325 sq. m (3 no. car parking spaces and 12 no. bicycle spaces). Temporary use of the residential amenity building as a marketing suite for a period of 3 years.
E) Provision of a 2 storey creche of c. 599 sq. m (10 no. car parking & 12 no. cycle spaces), 1 no. ESB substation (beside creche) and ESB kiosks, associated single storey bicycle storage and refuse storage buildings.
F) Active Open Space of c. 4.5 hectares comprising: 1 no. playing pitch, 1 no. multi-purpose pitch, tennis courts children's play area, trim trail and parking (30 car parking spaces & 20 no. bicycle spaces),
G) Approximately 4.2 hectares of open space comprising; a greenway (and associated paths, stream crossing and lighting) along the northern boundary at "Three Trouts" stream (c. 2.4 hectares); c. 1.8 hectares of open space within the development (including playground areas); all ancillary landscape works with public lighting, planting and boundary treatments including regrading/re-profiling of site where required as well as provision of cycle paths.
H) Access to the subject site will be from a priority junction, located on the Kilcoole Road (R761). The proposal includes for vehicular/pedestrian access from Priory Road. Provision for cyclist and pedestrian access to be provided to boundary of Eden Gate development located to the south (3 no. independent vehicular access points from Priory Road to serve 9 no. dwellings), 762 no. car parking spaces and 225 no. cycle spaces.
I) Surface water and underground attenuation systems as well as all ancillary site development works (reprofiling of site as required) as well as to drainage services (including underground pumping station), all on a site of c. 21.2 hectares.

J) Temporary marketing signage for a period of 3 years (located beside the Priory Road and Kilcoole Road).
K) All associated site development and landscape works.

It will assess whether effects to the Natura 2000 network are likely to occur as a result of this project in accordance with Article 6(3) of the Habitats Directive and the Planning and Development Acts. It should be noted that any screening for appropriate assessment (AA), or full AA is undertaken by the competent authority, in this case An Bord Pleanala. Under the Planning & Development Act it is prohibited to grant permission where an AA has shown that significant effects are likely to occur to the SAC or SPA in question. In this case, under Article 6(4) of the Directive, the project can proceed only for 'Imperative Reasons of Overriding Public Interest' however this project is unlikely to meet this criterion.

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 (EcIA) in Ireland. Since its inception in 2007 OPENFIELD has carried out numerous EcIAs for Environmental Impact Assessment (EIA), Appropriate Assessment in accordance with the EU Habitats Directive, as well as individual planning applications. Pádraic is a full member of the Institute of Environmental Management and Assessment (IEMA).

Methodology

The methodology for this AA Screening 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.

Guidance from the Department of the Environment, Heritage and Local Government 'Appropriate Assessment of Plans and Projects in Ireland' (2009) is also referred to. 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 2000 Sites
This process identifies the conservation aspects of the Natura 2000 site and determines whether negative impacts can be expected as a result of the project. This is done through a literature survey and consultation with relevant stakeholders – particularly the National Parks and Wildlife Service (NPWS). All potential effects are identified including those that may act alone or in combination with other projects or plans.

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

Step 4: Assessment of Significance
Assessing whether an effect is significant or not must be measured against the conservation objectives for the Natura 2000 site in question.

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

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

Screening Template as per Annex 2 of EU methodology:

This plan is not necessary for the management of any SAC or SPA and so Step 1 as outlined above is not relevant.

Step 2: Brief description of the proposed project

The subject site is located to the south of Greystones, County Wicklow. The site is currently in agricultural use.

Site visits were carried out on the 28th of November 2013, the 26th of May 2015 and the 28th of April 2017 and again on September 25th 2018 and June 28th 2019. Data was gathered within the optimal period for general habitat survey and habitats were identified in accordance with standard classifications (Fossitt, 2000). Habitats in relation to the site boundary are shown in figure 2.

The site consists of a series of agricultural fields, bounded to the north by the Three Trouts Stream. These fields are either **arable crops – BC1** or **improved agricultural grassland – GA1**. In either case they are considered to be habitats of negligible biodiversity value as few species of plant or animal are supported.

Boundary features consist of either **treelines – WL2** or **hedgerows – WL1**. These are frequently associated with earth banks and can be of some

antiquity. While the species can be similar in both habitats treelines are dominated by trees over 5m in height.

Figure 1 – Site location showing local water courses and proximity to nearby Natura 2000 areas. SACs are shown in tan (from www.epa.ie). There are no SPAs in this view.

Species composition is typical of the region and includes Brambles *Rubus fruticosus agg.,* Hawthorn *Crataegus monogyna,* Bracken *Pteridium aquilinum* and Ash *Fraxinus excelsior.* These hedgerows have few emerging or tall trees although there are a number of tall Scot's Pine *Pinus sylvestris.* These are distinctive in themselves. Field boundaries are divided into higher significance and lower significance based on evaluation criteria from the Heritage Council (Foulkes et al., 2013). Higher significance hedgerows have a larger proportion of trees with more developed structure and diversity of species. Additional species include Holly *Ilex aquifolium* and Elder *Sambucus nigra.* Lower significance hedgerows have poor structure with low species diversity, albeit individual trees are of value. Treelines meanwhile have dominant areas of mature Sycamore *Acer pseudoplatanus* or Beech *Fagus sylvatica* with smaller numbers of Ash and Elm *Ulmus sp.* The treeline along the stream also has Alder *Alnus glutinosa* and Goat Willow *Salix caprea.* Boundary features such as these are recognised for their importance in providing habitat for a wide range of plants and animals at a landscape scale. Field boundaries are shown

on OSI from the original 6" series, meaning they are at least 180 years old. They also provide 'eco-system services' in flood control, pollution attenuation and countryside aesthetic.

The Three Trouts Stream is an example of an **eroding stream – FW1** and is known from previous studies published by Wicklow County Council as being of salmonid status. In particular it has a population of Brown Trout *Salmo trutta.* Along this stretch it varies from narrow and shallow with a substrate of silt and small stones in the west, broadening as it moves eastward and the substrate developing to cleaner, larger stones. This is recognised as suitable trout spawning habitat. There is no obvious evidence of pollution from nutrient sources (i.e. excessive growths of green alga *Cladophora sp.* or in-stream macrophytes) although bank erosion is obvious on the north bank in places. Associated river plants include Pendulous Sedge *Carex pendula,* Common Figwort *Scrophularia nodosa* and Hemlock Water-dropwort *Oenanthe crocata.* There is a single stand of the alien invasive Giant Rhubarb *Gunnera tinctoria* to the east of the site. It is not currently affecting the natural vegetation in this area however it may present a threat in the future.

The stream is associated with a number of riparian habitats and particularly is banded by **broadleaved woodland – WD1** and **scrub – WS1** as far as the cluster of buildings in the east. These are broad-scale classifications and mask considerable variations in the habitats and species to be found in this area. On sloping ground the woodland floor is dry and species include Beech, Holly, Ash and occasional Elm. Ramsons *Allium ursinum*, Bluebells *Hyacinthoides non-scripta* and Wood Anemone *Anemone nemorosa* are to be found on the woodland floor. As the ground levels off the influence of seasonal flooding becomes apparent and the ground is wet. Here there are River Horsetails *Equisetum fluviatile,* Enchanter's Nightshade *Circaea lutetiana,* Opposite-leaved Golden Saxifrage *Chrysosplenium oppositifolium,* Creeping Buttercup *Ranunculus repens* and Water Mint *Mentha aquatica.* There is a good diversity of ferns and bryophtyes including Soft-shield Fern *Polystichum setiferum,* Black Spleenwort *Asplenium adiantum-nigrum,* Broad Buckler-fern *Dryopteris dilatata* and Male Fern *D. felix-mas.* The canopy also changes in character and, moving eastward, becomes increasingly dominated by scrub, especially Brambles but also Gorse *Ulex europaeus* and, on drier ground, Blackthorn *Prunus spinosa.* Some of these areas were inaccessible for detailed survey. This is not a native, or semi-natural woodland type as it does not conform to any of the species assemblages described in Fossitt, the EU Habitats Directive or other relevant publications (i.e. Cross et al., 2010). However, given the very low cover of native woodland remaining in Ireland, any naturalised, broadleaved woodland can be considered to be of high biodiversity value. To the east of the site the woodland thins out and the stream's floodplain is replaced with **wet grassland – GS4**. There is a sward of Creeping Buttercup, Meadow Buttercup *R. acris,* Cow Parsley *Anthriscus sylvestris,* Angelica *Angelica sylvestris* and Yellow Iris *Iris pseudacorus.* This is an important area in maintaining the function and structure of the stream, as well as preventing flooding downstream. These areas are close to, but outside, the site boundary.

Other habitats on the site include a small stretch of **drainage ditch – FW4** which is mostly associated with a treeline. Where it emerges from the shade there are dense growths of Fool's Water-cress *Apium nodiflorum.* Dense scrub is mostly associated with the exposed boundary of the woodland as previously described. However, there are other areas of dense Gorse and/or Brambles that also fall into this classification. Scrub provides cover and food for nesting birds and other species.

To the west of the buildings there is an area of formerly bare ground, but which has been overgrown by Bramble **scrub – WS1**. There are a range of plants, predominantly annual species, including Thistles *Cirsium sp.,* Willowherbs *Epilobium sp.,* Buttercups, Clovers *Trifolium sp* and others. These are reducing in extent as Brambles increase in extent. It is a habitat of low biodiversity value.

The subject proposal is for the construction and subsequent occupation of a housing estate. The proposed site layout including the drainage configuration is shown in figure 3.

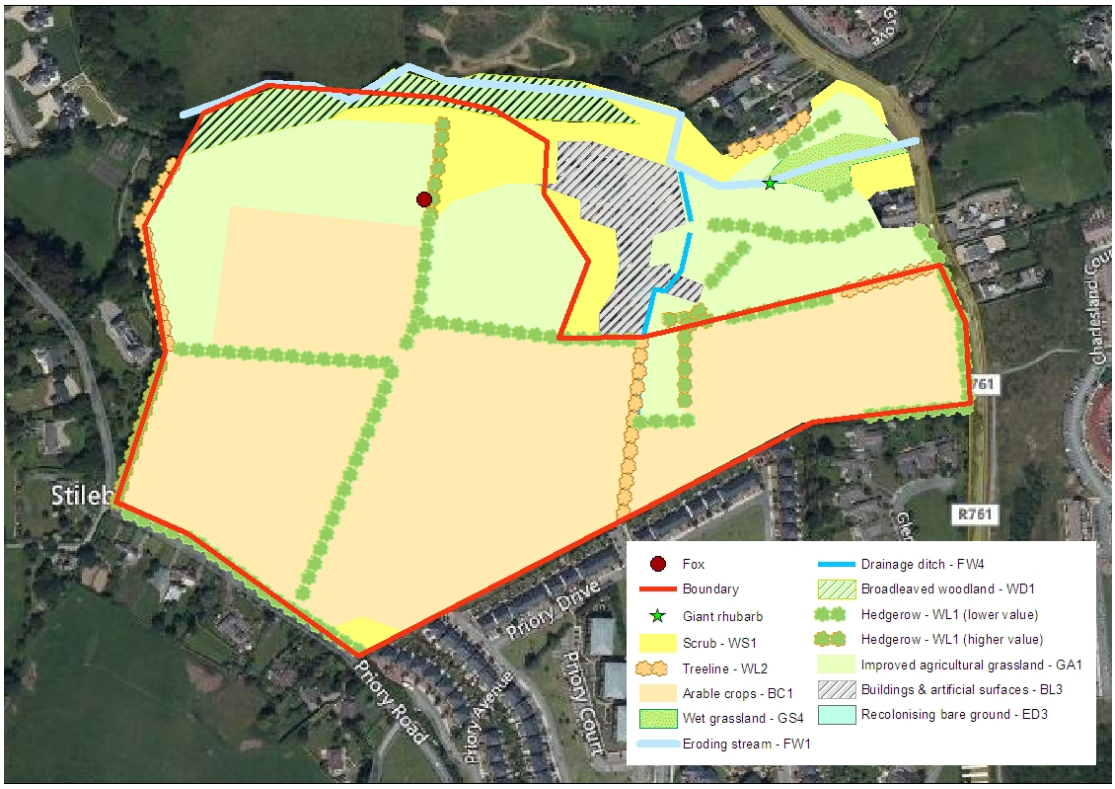

Figure 2 – Indicative site boundary showing existing habitats

Figure 3 – proposed site layout

Site clearance will see the removal of scrub, grassland, arable crops and sections of treeline/hedgerow habitats.

Wastewater will be sent to the municipal treatment plant at Greystones. This Waste Water Treatment Plant, has a capacity to treat effluent with a population equivalent (P.E.) of 40,000. It is operated by Irish Water and is licenced to discharge treated effluent to the Irish Sea by the EPA (licence no.: D0010-01). According to the Annual Environmental Report for 2017, the most recent available, the plant was in full compliance with its emission limit standards. This report also stated that the discharge was not having a perceptible impact upon the quality of the receiving waters. It's organic loading in 2017 was 24,937 population equivalent (P.E.) leaving remaining capacity of 15,063 P.E.

Fresh water is to be sourced from a mains supply, which originates in reservoirs in the Varty Reservoir in Co. Wicklow.

This site is approximately 2.5km from the boundary of the Murrough SAC and nearly 1.2km from the Glen of the Downs SAC. These areas can be seen in Figure 1. There are no other Natura 2000 areas within 2km of the site boundary. 2km is an arbitrary radius commonly used for developments of this nature (IEA, 1995) and negative effects to sensitive areas can occur at distances greater than this depending on the zone of influence of the project.

This development occurs on a site that is of local biodiversity value and is adjacent to the Three Trouts Stream, which discharges to the Irish Sea to the south of Greystones town centre. The surrounds are agricultural in nature, although increasingly urbanised with associated levels of noise and artificial light.

There will be no loss, or direct interference with, habitats within any SAC or SPA boundary and such effects cannot occur due to the significant separation distances.

It is proposed to construct a new surface water drainage system for the development to collect runoff from roads and footpaths together with any additional runoff from other hard surfaces. It will be entirely separate from the foul system. This will be constructed in accordance with Greater Dublin Regional Code of Practice for Drainage Works and Wicklow County Council requirements. An attenuation storage tank will hold peak flows from a 1 in 100 year storm event. SUDS methods to be incorporated during the operation phase include attenuation tanks, permeable paving and soakaways. These measures will ensure that the quantity and quality of rain run-off will be maintained at the 'greenfield' rate. Discharge will be via a flow control device to the Three Trouts Stream, in turn discharging to the Irish Sea a short distance thereafter. These are standard design measures which are routinely incorporated into all new building development and are not included to reduce or avoid an effect to a Natura 2000 area. The Three Trouts Stream does not provide a pathway to any Natura 2000 area.

As a consequence of these measures no negative effect to water quality, or run-off volumes is expected from this development. During the construction phase there will be substantial earth works, however the Three Trouts Stream does not lead to any SAC or SPA.

Step 3: 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. To the north-west the Glen of the Downs SAC lies approximately 1.2km from the site boundary. The Murrough Wetlands SAC lies approximately 2.5km to the south-east. This coastal wetland is also an SPA although this boundary is further to the south. All Natura areas within 15km of the site are shown in figure 4.

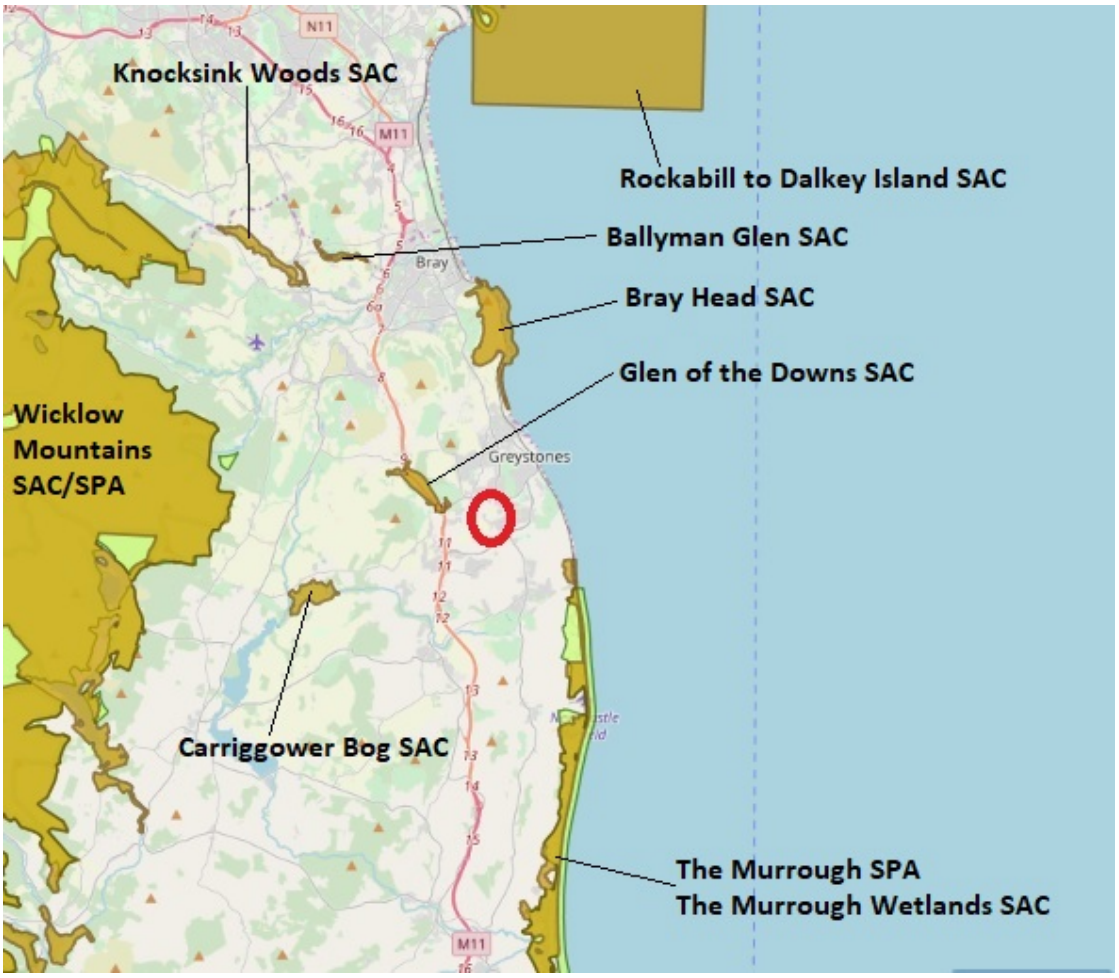

Figure 4 – Site location (red circle) showing Natura 2000 areas within an approximate 15km radius. SACs are shown in tan while SPAs are shown in

lime green (from www.epa.ie). In the case of the Murrough Wetland and the Wicklow Mountains, the SAC and SPA extents overlap.

The Murrough Wetlands SAC (site code: 2162)
This coastal wetland complex stretches for 15km from Ballygannon to the north of Wicklow town and inland to up to 1km in places. It is bounded to the east by the main Dublin to Wexford rail line and a stony beach forms the littoral zone throughout. Some of these maritime influenced habitats are of importance for EU designated habitats and rare plants. The landward wetlands are a complex mosaic of habitats that vary depending on the local hydrology and influence of seawater. While this area has been greatly modified over the years through human activities there remain areas of high biodiversity value in a European context (NPWS, 2014).

The reasons why the Murrough Wetlands is an SAC are set out in the site's 'qualifying interests' and these are given in table 1. Whether the integrity of the SAC is likely to be significantly affected must be measured against its conservation objectives. However, there is no management plan for the area and site specific conservation objectives have not been set. Draft, generic objectives have been published (NPWS, 2018a).

Table 1 – Qualifying interests of the Murrough SAC

Aspect	Level of Protection	NPWS Assessment
Cladium fens (code: 7210)	Priority Habitat Habitats Directive Annex I	Bad
Atlantic salt meadows (code: 1330)	Habitats Directive Annex I	Inadequate
Mediterranean salt meadows (code: 1410)		Inadequate
Annual vegetation of drift lines (code: 1210)		Inadequate
Perennial vegetation of stony banks (code: 1220)		Inadequate
Alkaline Fens (code: 7230)		Bad

- **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.
- **Perennial vegetation of stony banks (1220)** is a habitat of the high tide line characterised by loose stones and shingle. It is a highly dynamic feature, being continually reshaped by tides and waves. It can be home to very rare plants and a number of coastal nesting birds

- **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.
- **Cladium Fens (7210 – priority habitat).** This priority habitat is found in base-rich, groundwater fed fens or around the fringes of lakes or turloughs with similar water chemistry. The characteristic features is the Great Fen-sedge *Cladium mariscus.* The habitat is threatened from drainage and wetland infilling and lack of site management.
- **Alkaline Fens (7230)**: Threats of 'high importance' are groundwater abstractions, land reclamation, diffuse groundwater pollution, land abandonment/under-grazing. These fen systems are often a complex mosaic of habitats, with tall sedge beds, reedbeds, wet grasslands, springs and open-water often co-occurring at a given fen site. Their integrity is reliant upon a stable, high water table; calcareous/low-nutrient water supply; and controlled mowing and/or grazing.

The NPWS assessment refers to the status of protected habitats and species that was carried out for the European Commission in 2013 (NPWS, 2013). This gives the status of the feature at a national level and does not necessarily refer to the status of a habitat or within the Murrough SAC. South of Kilcoole the area is also a SPA (site code: 4186).

The Murrough SPA (site code: 4186)
SPAs are designated for the conservation of certain bird species listed on Annex I of the Birds Directive, for significant gatherings of birds (1% of the world population), or for wetlands which are typically used by birds. The NPWS lists 'features of interest' for SPAs and for the Murrough these are given in table 2.

Birds in the Murrough are monitored by BirdWatch Ireland as part of Irish Wetland Bird Survey that sees annual counts at important bird locations across Ireland. The latest data show that an average of 6,319 birds were present on 'North Wicklow Marshes' from the winters of 05/06 to 09/10 (Crowe et al., 2011). Species summaries below are taken from the *Bird Atlas 2007-11* (Balmer et al., 2013).

Table 2 – Features of interest for the Murrough SPA

Species		Status in Ireland[1]
Gavia stellata	Red-throated diver	Amber (breeding)
Anser anser	Greylag goose	Amber (wintering)
Branta bernicula hrota	Light-bellied brent goose	Amber (wintering)

[1] BirdWatch Ireland have published the Status of Birds of Conservation Concern in Ireland based on a traffic light system: red = high concern; amber = medium concern; green = low concern (Colhoun & Cummins, 2013)

Anas penelope	Wigeon	Red (wintering)
Anas crecca	Teal	Amber (breeding & wintering)
Larus ridibundus	Black-headed gull	Red (breeding)
Larus argentatus	Herring gull	Red (breeding)
Sterna albifrons	Little tern	Amber (breeding)
Wetlands & waterbirds		

- **Red-throated Diver.** While common around the coast in winter this diver breeds only in the far north-west of Donegal. Here they nest in bog-pools and freshwater lakes, and only in small numbers.
- **Greylag Goose.** Wintering Greylag Geese are very scattered in Ireland and occur on both coastal in inland sites. Their population has expanded greatly in their more northerly ranges (Iceland and Scotland) and this has coincided with losses elsewhere.
- **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.
- **Wigeon**. There is a small unconfirmed breeding population of this duck in Ireland but the bulk of the population arrives to winter in coastal and inland wetlands. Changes in its wintering population have been attributed to climate 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.
- **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.
- **Herring Gull.** This large gull breeds predominantly around the Irish coast and only occasionally inland. Numbers at these colonies have fallen by 60% since 1969, a decline which is attributed to a number of sources including a reduction in available food at landfill, botulism and predation.

Glen of the Downs SAC (site code: 0719)
This glacial valley is bisected by the N11 Dublin to Wexford road but the valley on either side is clothed in semi-natural woodland. This is the subject of the SAC's sole qualifying interest and priority habitat: old oak woodland (code: 91A0). This is a very rare habitat type in Ireland and at a national level is assessed as being in 'bad' status. The forest is also home to rare or notable fungi and invertebrates (NPWS, 2013).

Rockabill to Dalkey Island SAC (site code: 0300). This is a recently designated off-shore (i.e. marine) SAC. It has two qualifying interests which are reefs and Harbour Porpoise *Phocoena phocoena*. Conservation objectives for this SAC have been published to maintain or restore the area of habitat and status of the population to 'favourable conservation status'.

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

Knocksink Wood SAC (site code: 0725)
This important woodland site is located near Enniskerry, Co. Wicklow and is within the valley of the Glencullen River. It has mature stands of Oak forest with two important habitats at a European level: alluvial wet woodland, and petrifying springs; both listed on Annex I of the Habitats Directive. The Wood is also of note for its bird and mammal fauna and its particularly rich community of invertebrates.

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

Table 3 – Qualifying interests for the Knocksink Wood SAC (from NPWS)

Code	Habitats/Species	Status
7220	Petrifying springs	Intermediate
21E0	Alluvial forests	Bad

- **Alluvial Wet Woodland (91E0 – priority habitat)**: This is a native woodland type that occurs on heavy soils, periodically inundated by river water but which are otherwise well drained and aerated. The main pressures are identified as alien invasive species, undergrazing and overgrazing. Pollution from agricultural land may also be significant.
- **Petrifying Springs (7220 – priority habitat)**: These are very localised habitats that arise from the precipitation of excess calcium carbonate in supersaturated running water. They are associated with characteristic bryophytes. They are vulnerable to changes in water quality, flow regime and intensification of land use practices.

Ballyman Glen SAC (site code: 0713)
This internationally important site consists of wet fen vegetation with petrifying springs. These are rare habitats in Dublin and this site is noted for its particularly rich diversity of orchids and sedges. Its qualifying interests are shown in table 4.

Table 4 – Qualifying interests for the Ballyman Glen SAC (from NPWS)

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

- **Alkaline Fens (7230)**: Threats of 'high importance' are groundwater abstractions, land reclamation, diffuse groundwater pollution, land abandonment/under-grazing. These fen systems are often a complex mosaic of habitats, with tall sedge beds, reedbeds, wet grasslands, springs and open-water often co-occurring at a given fen site. Their integrity is reliant upon a stable, high water table; calcareous/low-nutrient water supply; and controlled mowing and/or grazing.

Wicklow Mountains SAC & SPA (site codes: 2122 & 4040)

Wicklow Mountains is a large area and is designated as both an SAC and SPA as well as being a National Park. It is an upland area underlain with granite and is an important amenity and recreational area, as well as being of high conservation value. Its qualifying interests are shown in table 5 while its 'features of interest' are given as Merlin *Falco columbarius* (breeding) and Peregrine *Falco peregrinus* (breeding).

Table 5 – Qualifying interests for the Wicklow Mountains SAC (site code: 4040)

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

Bray Head SAC (site code: 0714). This coastal site encompasses the high plateaux between the towns of Bray and Greystones. Much of this habitat consists of dry heath along with dry calcareous grassland, which are important for their vegetation communities. The coastal cliffs provide habitat for significant numbers of sea birds, particularly during the breeding season, as well as Peregrine *Falco peregrinus,* which is listed under Annex I of the Birds Directive. Bray Head falls within the Natura 2000 network of European sites due to two habitat types: vegetated sea cliffs (code 1230), and dry heath

(code 4030). The 'site synopsis' states "the heath and grassland habitats at this site are threatened by reclamation for agriculture and also by frequent burning. The site is a popular recreational area and is especially used by walkers".

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

Carriggower Bog SAC (Site Code: 000716).
Carriggower Bog is situated on Calary plateau at the eastern edge of the Wicklow Mountains. The site is an area of wet bog and poor fen, flanked by the Vartry River on the south-western side. It has a single qualifying interest: Transition Mires (7140). Threats of 'high importance' to this habitat are land reclamation, wrongly directed conservation measures, infilling and peat extraction. The habitat is characterised by a broad range of physically unstable peat-forming vegetation communities floating on surface water. Transition mires typically occur in the wettest parts of raised bog, blanket bog or fen or at transition areas of open water and may reflect the actual succession from fen to bog. Its continued integrity requires a permanently high water level.

Whether significant effects are likely to occur to an SAC or SPA must be measured against its conservation objectives. However, to-date specific conservation objectives have not been set out for many of these areas. Generic conservation objectives have been published by the NPWS and for these areas and are stated as "to maintain or restore the favourable conservation condition of the Annex I habitat or Annex II species for which the SAC has been selected" (NPWS, 2018a-g).

According to these generic documents 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;

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 objectives have been set for the Bray Head SAC, the Wicklow Mountains SAC and the Rockabill to Dalkey Islands SAC (NPWS, 2013c, 2017 a&b). It is not considered necessary to reproduce these in full, but they will be referred to later in this report where relevant.

Data collected to carry out the assessment

Water quality is monitored on an on-going basis by the Environmental Protection Agency (EPA). The Farrankelly site is partly within the catchment of the Three-Trouts Stream, which drains a small portion of County Wicklow, particularly around Greystones-Delgany and drains into the Irish Sea. It rises a short distance to the east and flows approximately 250m north of the subject lands at their nearest points. This sub-catchment is not identified on the www.wfdireland.net website is not assessed for the Water Framework Directive (WFD). This is not unusual for small coastal water courses that drain directly to the sea. As such there are no EPA monitoring points along this stream. The status of the coastal waters off this part of Wicklow was assessed by the EPA as 'good' for the 2010-2015 reporting period (see www.epa.ie). This is the most recent available water quality data.

The Three Trouts Stream does not discharge to any SAC or SPA.

The site visits showed that habitats on the site are not associated with any which are listed on Annex I of the Habitats Directive. There are no pathways from this site to any Natura 2000 area.

Step 4: 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.

There is a very weak hydrological pathway to the Murrough Wetlands SAC and the Murrough SPA. No other SACs or SPAs are considered to be within the zone of influence of this project as there are no pathways to these areas.

Habitat loss
Because the site is physically remote from the boundary of the SACs/SPA there can be no loss or direct disturbance of habitats or species in this area.

Indirect habitat disturbance
Noise and artificial light generated from this project will increase locally. The distance to any Natura 2000 area is considered too great for any negative effects to occur from these sources.

Recreational use of coastal habitats in particular has been associated with disturbance effects, especially to birds which may be breeding and/or roosting. This effect was addressed in the Greystones-Delgany and Kilcoole Local Area Plan 2013-2019. The AA screening of this plan states:

Human disturbance and recreational pressures are key management issues for this site [Murrough SAC/SPA] which is currently heavily used for recreation. The Plan strives to promote tourism and recreation in a sustainable manner at suitable locations (TOUR2) and formalise existing recreational use (TOUR3). The existence of Birdwatch Ireland's reserve is identified by NPWS as giving additional protection to the site; this too is recognised in the Plan whereby a commitment is given to increasing awareness of, and connectivity with the East Coast Nature Reserve (TOUR2). These provisions should help to address recreational issues and contribute positively to the conservation of the site.

With the implementation of this plan it is considered that disturbance effects are unlikely to occur.

Pollution
There is a direct pathway for surface water and wastewater to reach the Irish Sea. However, the pathway for pollutants to any SAC or SPA is weak while coastal water quality is assessed by the EPA as 'unpolluted'. Any pollution which may enter the Irish Sea via the Three Trouts Stream would experience dilution to such a degree that it would be imperceptible beyond the mouth of the stream. No such dilution could affect the conservation objectives of the Murrough Wetlands SAC or the Murrough SPA.

A. Pollution during the operational phase
The use of SUDS will ensure that there is no negative effect to the quality or quantity of surface water leaving the site. These measures are not introduced to avoid or reduce an effect to any Natura 2000 site and so are not considered to be mitigation in an AA context.

The development is expected to increase the loading to the Greystones WWTP by 1,272 P.E and which has an overall capacity of 40,000 P.E According to the AER for 2017 the plant is operating at 24,937 P.E. with a spare capacity of 15,063. Therefore the treatment plant has ample capacity to treat the effluent from this development to a high standard. There is no evidence meanwhile that water quality is an issue affecting birds or habitats in the Murrough wetlands.

The proposed development is unlikely to result in any impact to water quality arising from these sources and cannot affect any Natura 2000 site.

B. Pollution during the construction phase
The construction phase will involve works that can result in sediment or toxic substances such as concrete, oils, fuels etc. entering water courses. However, there is no direct pathway to any SAC or SPA, or other sensitive habitats, from this source. Due to the enormous dilution factor upon entering the Irish Sea, there can be no effect from this source to the Murrough Wetlands SAC or the Murrough SPA. Control measures will be put in place to control pollution and to protect fish spawning habitats. However, this is not considered to mitigation as no negative effects to Natura 2000 areas can arise from this source.

Abstraction
There is no evidence that municipal abstraction from reservoirs in the Wicklow area is impacting upon any area designated under the Natura 2000 network.

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

Water quality along the coastal zone is currently of a high status under the WFD and on-going implementation of this directive will result in overall improvements to water quality throughout the Eastern River Basin District.

The site is within the Greystones-Delgany and Kilcoole Local Area Plan 2013-2019 and the subject lands are primarily zoned for residential development. This is shown in figure 5 along with similarly zoned land in the vicinity. It is evidence that significant urban expansion can be expected in the short to medium term. These can bring cumulative impacts to water quality, fragmentation or loss of habitats, or recreational disturbance at sensitive sites. Maintaining water quality is achieved through the implementation of SUDS in new developments, as well as ensuring that the WWTP operates to the required standard. The plant is believed to have capacity to accommodate the planned future development of this area. Direct habitat loss and fragmentation meanwhile is not considered to be a threat to the SACs or SPAs within the zone of influence of this project.

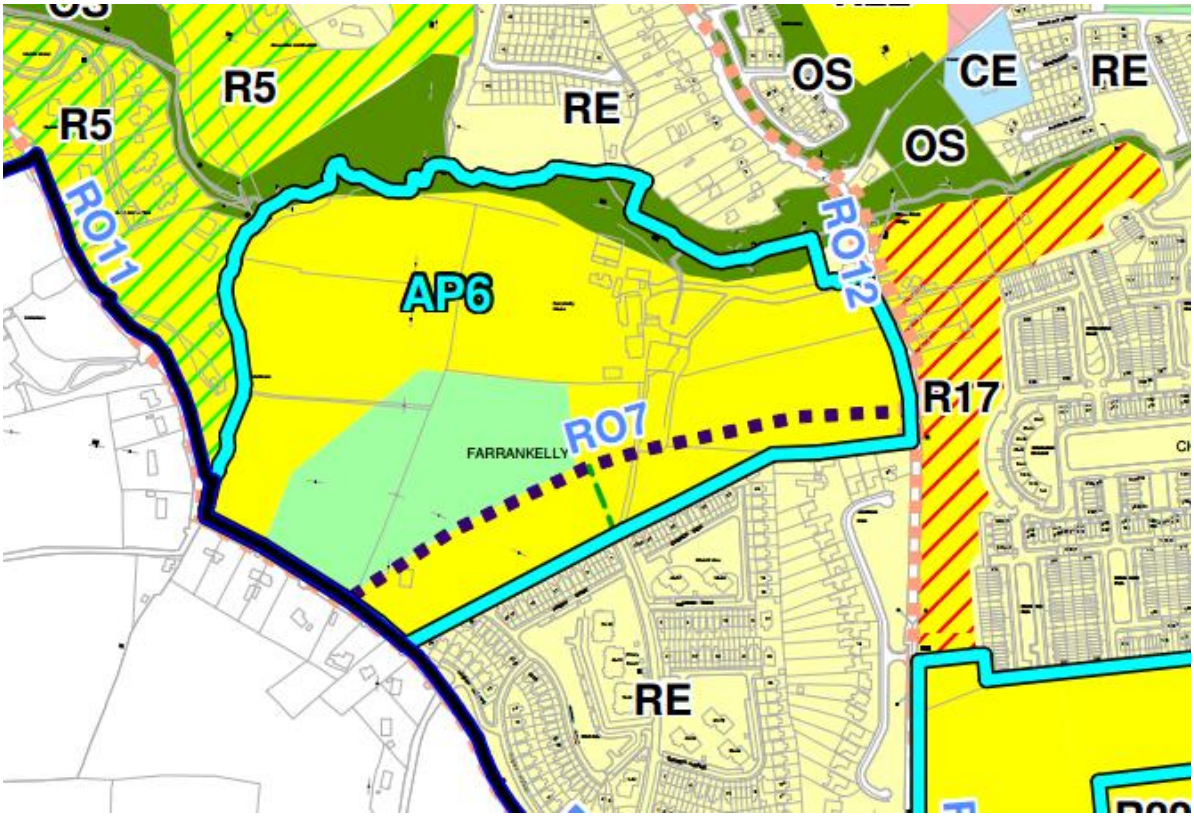

Figure 5 – Land use zoning of the subject lands at Farrankelly showing 'residential' (yellow), and 'amenity open space' (mint green).

This LAP was subject to a Screening for AA which concluded that significant effects to Natura 2000 areas were not likely to arise from its implementation. Specifically, with regard to the potential for recreational disturbance it states:

Objectives for the promotion of tourism and recreation activities in the Plan area are primarily based upon consolidating and improving the existing tourism assets in the Plan area, improving recreational connectivity in the Plan area, and improving management of existing recreational trails and activities to help alleviate existing threats and pressures. This approach should bring positive benefits for the conservation objectives of those sites within or close to the Plan area.

The possibility of any other impacts from the proposed development, whether considered on its own or in combination with other plans and/or projects, which would be capable of having a significant effect on any European site, can be excluded.

List of agencies consulted

The Development Applications Unit of the Department of Culture, Heritage and the Gaeltacht was contacted for nature conservation observations. A response to this was not received at the time of completing this report.

Conclusion and Finding of No Significant Effects.

This project has been screened for likely significant effects to the Natura 2000 network under the appropriate methodology.

It is concluded that the possibility of any significant effect on any European Sites arising from the proposed development, whether considered alone or in combination with the effects of other plans or projects, can be excluded beyond a reasonable scientific doubt.

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