Screening Report for Appropriate Assessment of residential development in Athgarvan, 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 recent 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 the Local Authority 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 in Athgarvan, 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, the Local Authority cannot grant planning permission where significant effects may arise to a Natura 2000 area. In order to make that decision the development must be screened for AA. This report provides the necessary information to allow Kildare County Council to carry out this screening.

The proposed scheme will comprise the construction of 28 dwellings along with all related infrastructure.

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 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 along or in combination with other projects or plans.

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

Step 4: Assessment of Significance
Assessing whether an effect is significant must be measured against the conservation objectives of the Natura area in question.

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 site location is shown in figures 1 and 2 while the proposed layout is given in figure 3.

It is planned to construct a residential development on the site in Athgarvan as previously described. This will include site clearance and a construction phase to include new wastewater and surface water drainage infrastructure and connection to electricity and wastewater networks.

The main phases of this project include:

- Site clearance including removal of waste material
- A construction phase using standard building materials
- Construction will include a new surface water drainage infrastructure and connection to electricity and wastewater networks.
- An operation phase to which will see the homes occupied.

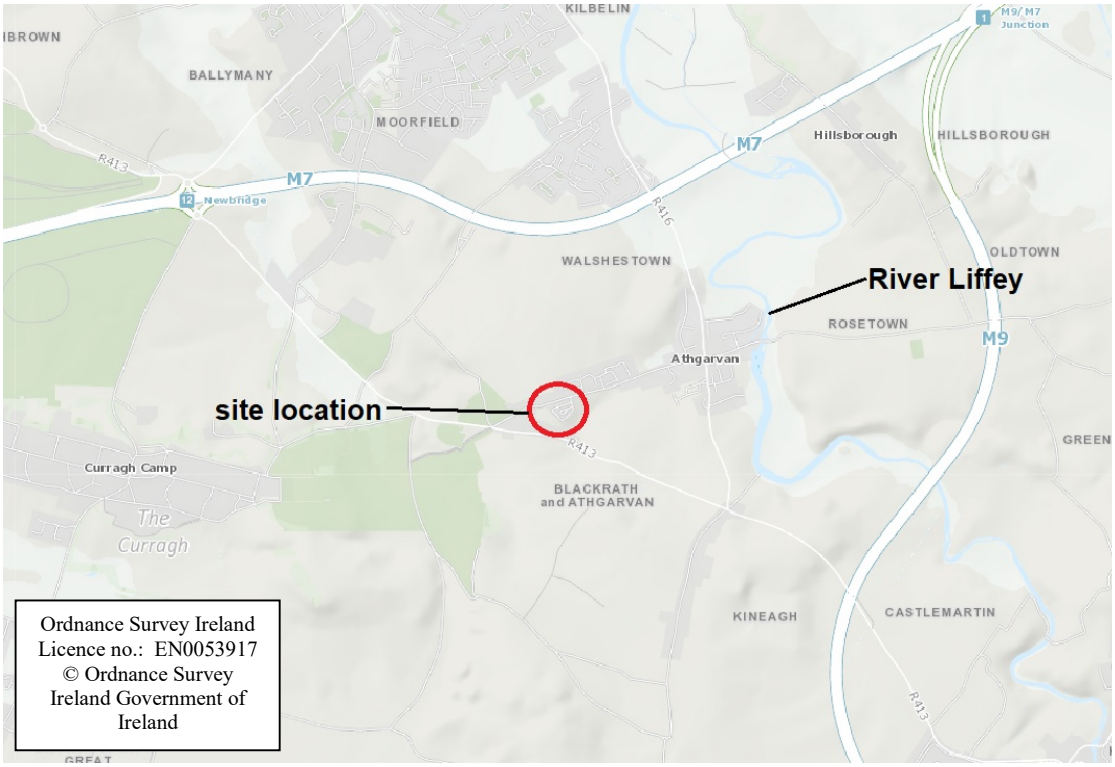

Figure 1 – Site location (red circle) (from www.npws.ie). There are no Natura 2000 areas in this view.

The site is not located within or directly adjacent to any Natura 2000 area (SAC or SPA). This part of Co. Kildare is predominantly in agricultural use although the town centre of Athgarvan is composed of land uses associated with buildings, roads and other built development. Recent and historic aerial photography shows that the site itself has been in agricultural use for at least 100 years. It is located south of the L2032 tertiary road and close to existing residential developments.

A site visit was carried out on December 4th 2017 and this showed that the site is divided in two, with a western section and an eastern section. The western section is made up of three fields of **dry meadow – GS2**. This habitat type is typical of grazing land that has not been recently grazed. It is dominated by rough grasses such as Cock's-foot *Dactylis glomerata* and Creeping Bent *Agrostis stolonifera.* Field boundaries are composed of **hedgerows – WL1** with Hawthorn *Crataegus monogyna,* Blackthorn *Prunus spinosa,* Elder *Sambucus nigra* and Brambles *Rubus fruticosus agg.* The boundary parallel with the public road is characterised by a **treeline – WL2,** which is predominantly a line of tall Beech *Fagus sylvatica.*

The eastern section is an area of **amenity grassland – GA2** with a smaller area of meadow to the south, and at lower elevation. The embankment between the two is made up of **scrub – WS1** which is mostly Brambles, along with some Hawthorn, Elder and Ivy *Hedera helix.*

There are no water courses or habitats which could be considered wetlands. There are no plants which are listed as alien invasive under Schedule 3 of SI 477 of 2011.

Habitats on the site can be broadly described as being of low value to biodiversity although the tall Beech trees, scrub and hedgerows are of local biodiversity value. There are however no habitats which are listed on Annex I of the Habitats Directive.

Inert construction and demolition waste will be removed by a licenced contractor and disposed of in accordance with the Waste Management Act.

Currently there is no attenuation of storm water and this is likely to be absorbed in soil. There are no water courses close to the site although the land is within the catchment of the River Liffey, which flows approximately 1km to the east. It is proposed to connect the development to the existing surface water sewer for the adjacent development, via suitable attenuation measures. This ultimately enters the River Liffey.

Foul and surface drainage infrastructure will be separated. Foul effluent from the proposed development will be sent to the wastewater treatment plant for Athgarvan which is licenced by the EPA (licence no.: A0128-01). This is a small treatment system and is not required to carry out routine sampling or publish an Annual Environmental Report (AER). The plant has a design capacity 150 PE (population equivalent). Treated effluent passes to a percolation area where it filters to ground. There is no point discharge from this system to the River Liffey or any other water course. The treatment plant is in the catchment of the River Liffey and the direction of groundwater flow is likely to be in that direction. Irish Water has advised that upgrade works are required to this treatment plant to facilitate further new connections. These works are within their current investment plant and are due to be completed in 2020.

Fresh water supply for the development will be via a mains supply. This originates in the Poulaphouca Reservoir.

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

Figure 2 – Site boundary (aerial photo from www.bing.com)

Figure 3 –Overview of the proposed development

Brief description of Natura 2000 sites

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

- Potential impacts arising from the project
- The location and nature of Natura 2000 sites
- Pathways between the 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. For projects of this nature an initial 2km radius is normally examined (IEA, 1995). This is an arbitrary distance however and impacts can occur at distances greater than this. There are no Natura areas within this approximate radius. The freshwater channel of the River Liffey does not fall within any Natura area however the **Poulaphouca Reservoir,** behind the Poulaphouca dam, falls within an SPA of the same name **(site code: 4063).** The boundary of the SPA can be found approximately 14km to the east of the subject lands at their closest points. This is the only Natura 2000 area which is considered to fall within the zone of influence of the development as pathways to other areas are not available.

The **Pollardstown Fen SAC** is located approximately 3.8km to the north-west. It lies within a different hydrological catchment to Athgarvan and so pathways do not exist. It is nevertheless considered here as discharges to groundwater from this development will occur.

Pollardstown Fen SAC (code: 0396)
This is an internationally important conservation area as it is the largest area of spring-fed fen in Ireland. Fen is a peat-forming habitat which has developed in waterlogged areas. It is a very rare habitat type in Ireland and Pollardstown is particularly significant as it is home to three snail species listed on Annex I of the EU Habitats Directive (see table 1). The species and habitats here are highly dependent upon the maintenance of the hydrological regime.

Table 1 – Qualifying interests for the Pollardstown Fen SAC

Code	Habitat/Species
7210	Calcareous fens with Cladium mariscus
7220	Petrifying springs with tufa formation (Cratoneurion)
7230	Alkaline fens
1016	*Vertigo moulinsiana* Desmoulin's whorl snail
1013	*Vertigo geyeri* Geyer's whorl snail
1014	*Vertigo angustior* Narrow-mouthed whorl snail

- **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.
- **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.
- **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.
- **Geyer's Whorl Snail (1013).** Like other whorl snails *V. geyeri* favours damp, wet habitats where they live on the decaying roots of sedges. It requires constant saturation in calcareous water.
- **Narrow-mouthed Whorl Snail (1014).** This whorl snail is present in a wide variety of habitats from dunes and coastal grasslands, to fens, salt-marshes and floodplains. The principle threats to its habitat derives from undergrazing and overgrazing.
- **Desmoulin's Whorl Snail (1016)** is a tiny mollusc that is particularly sensitive to changes in water level. It occurs in swamps, fens and marshes. The greatest threats have been drainage of wetlands and riparian management of canals.

The **Poulaphouca Reservoir SPA** is located along the River Liffey behind a dam which was created in 1944. Its 'features of interest', i.e. the reasons why the reservoir warrants the SPA designation, include the Greylag Goose *Anser anser* and the Lesser Black-backed Gull *Larus fuscus*. The following descriptions are taken from the *Bird Atlas 2007-2011* (Balmer et al., 2013).

- **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.
- **Lesser Black-backed Gull.** The wintering range of this distinctive gull has expanded in Ireland by 55% since the early 1980s while breeding colonies have similarly increased.

At an all-Ireland level both the Greylag Goose and Lesser Black-backed Gull are of medium conservation concern (amber listed, Colhoun & Cummins, 2013).

Whether the SPA or SAC is likely to be affected must be measured against its 'conservation objectives'. Specific conservation objectives have yet to be set

however 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 (NPWS, 2016).

Data collected to carry out the assessment

A site visit confirmed that habitats on the site are not suitable for wetland or water birds.

The EU's Water Framework Directive (WFD) stipulates that all water bodies were to have attained 'good ecological status' by 2015. Athgarvan and the River Liffey are located within the Eastern River Basin District. In 2009 a management plan was published to address pollution issues and includes a 'programme of measures' which must be completed. This plan was approved in 2010 (ERBD, 2010).

Water quality in the River Liffey at Athgarvan was most recently assessed as 'unpolluted' while water quality in the Poulaphouca reservoir is oligotrophic/mesotrophic (also unpolluted). These data are taken from www.epa.ie . The River Liffey as far as Kilcullen is assessed as 'good' in terms of its status under the Water Framework Directive for the 2010-15 reporting period. Downstream, and including the reservoir, it deteriorates to 'moderate'. This classification indicates that ecological status is of an insufficient standard to meet the requirements of the WFD. This may be due to barriers to fish passage as well as poor water quality. Measures must therefore be taken in the coming years to address existing problems and any

new developments within the catchment must not contribute to the pollution loading.

The site synopsis report for Poulaphouca Reservoir indicated a peak mean between 1995-2000 in Greylag Goose numbers of 701 individuals (NPWS, 2014). Mean numbers have since fallen to 155 (over the seasons from 2005/06 – 2012/13; BirdWatch I-Webs counts[1]).
Data is not available for populations of Lesser Black-backed Gulls at this location.

There is no evidence that water quality is implicated in changes to bird numbers at Poulaphouca Reservoir while water quality in any case is currently unpolluted.

There is no pathway to the Pollardstown Fen SAC and so effects to this area cannot occur.

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.

The site is approximately 14km from the boundary of the Poulaphouca Reservoir SPA. Because of this significant distance separating the two areas there is no pathway for loss or disturbance of habitats or other semi-natural habitats that may act as ecological corridors for important species associated with the qualifying interests of the reservoir.

There is a pathway from the site via surface and wastewater water flows to the Poulaphouca Reservoir via groundwater and the River Liffey.

There is no evidence that discharges from the Athgarvan wastewater treatment plant is having a negative effect upon water quality in Poulaphouca Reservoir or the River Liffey in this location, which are both assessed as unpolluted. New upgrading works are planned to facilitate treatment expansion of the plant. Declines in Greylag Geese since the 1990s meanwhile may be due to “a northerly redistribution of the Icelandic wintering population” (Balmer et al., 2013).

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[1] https://f1.caspio.com/dp.asp?AppKey=f4db3000060acbd80db9403f857c

The integration of SUDS into the project design will ensure that no changes will occur to the quantity or quality of surface water run-off.

During the construction phase some sediment will enter water courses, entrained in rain run-off. However, this is not considered significant given the temporary nature of this phase and given that there are no water courses on, or near the site. Dangerous substances such as fuel and concrete will be controlled through good site management practices.

The site is considered too far from the Poulaphouca Reservoir, so that negative effects to wintering birds from disturbance cannot occur.

Are there other projects or plans that together with the project or plan being assessed could affect the site?
Eventual implementation of the WFD will result in continued improvements to water quality throughout the catchment of the River Liffey. 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.

In March 2005 the Greater Dublin Drainage Study (GDDS) was published as a policy document designed to provide for drainage infrastructure to 2030. Because this development will be fully compliant with the GDDS there will be no negative impact to surface water quality.

In 2011, as part of the licencing process for the Athgarvan wastewater treatment plant, an Appropriate Assessment was carried out. This found that negative effects from the discharge were not likely to be causing significant negative effects to any Natura 2000 area.

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

List of agencies consulted
Due to the low ecological sensitivity of this site, third party observations were not sought.

<u>Conclusion and Finding of No Significant Effects</u>

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 that will result in significant effects to any Natura 2000 area.

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