

Screening Report for Appropriate Assessment for housing project at Montpelier, O'Brien's Bridge, Co. Limerick

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 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.

The Purpose of this document

This document examines the subject lands at Montpelier, O'Brien's Bridge, Co. Limerick, with respect to a proposed residential development and the potential effects arising thereof to the Natura 2000 network. It will highlight whether a full AA will be required for the proposal, the nature of potential effects that may arise from this, and whether these effects are likely to be significant in light of the conservation objectives of the SAC or SPA in the zone of influence.

This report provides the necessary information to allow the Local Authority to screen the project for AA, or carry out the full AA, should this be necessary.

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. Since its inception in 2007 OPENFIELD has carried out numerous EclAs 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 report follows that for an AA screening statement and 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 of the Natura 2000 site in question.

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

Brief description of the proposed project

Permission is sought for a residential development comprising [details needed]. Ancillary site development works include a new connection to the public water main, foul and surface water drainage, vehicle parking, landscaping, boundary treatments and site development works above and below ground.

The site location is shown in figures 1 & 2.

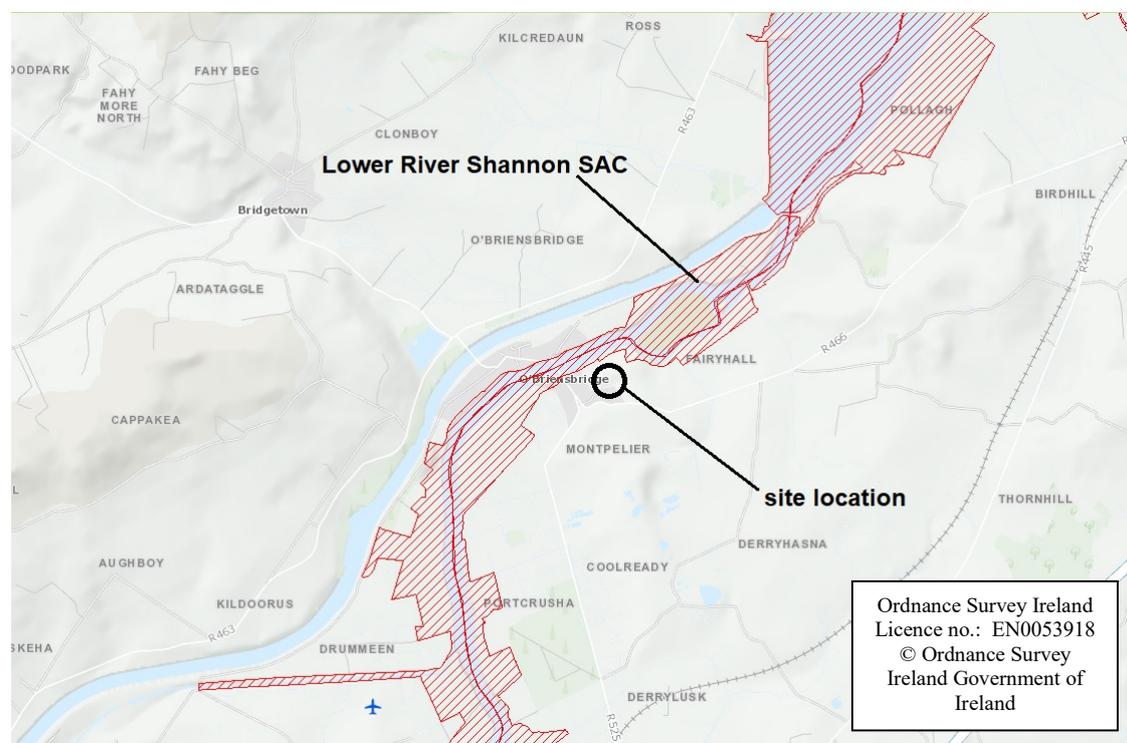


Figure 1 – Site location (black circle) (from www.npws.ie) showing the extent of the Lower River Shannon SAC (red lines) within the zone of influence of the project.

The site is not located within or directly adjacent to any Natura 2000 area. It is physically removed from the Lower River Shannon SAC and works are approximately 200m from the boundary of this area at their closest points.

Recent aerial photography indicates that this area is open grassland although close to built-up, residential development. The site was visited on February 23rd 2018 and this found that the subject lands are largely composed of **improved agricultural grassland – GA1** (Fossitt, 2000). This is a habitat of low biodiversity value and is not associated with any which is listed on Annex I of the Habitats Directive or species listed on its Annex II, or Annex I of the

Birds Directive. Field boundaries are composed of native **hedgerows – WL1** with Hawthorn *Crataegus monogyna*, Sycamore *Acer pseudoplatanus*, Holly *Ilex aquifolium* and Elder *Sambucus nigra* accompanying an earth bank.

There are no water courses or drainage ditches on these lands. There are no species which are listed as alien invasive under Schedule 3 of SI No. 477 of 2011.



Figure 2 – Indicative site boundary (red line) and aerial view of the subject lands showing the extent of the Lower River Shannon SAC (in tan, from www.epa.ie). [boundary needs to be updated/]

The project will see the conversion of grassland to hard surfaces so there will be some change to the pattern of surface water run-off. A new storm water drainage system is to be constructed and will deal with run-off from the residential area. This will include [details needed].

A new wastewater connection will add to the loading of the municipal wastewater treatment plant. Foul sewerage from Montpelier leads to [???] treatment plant. Construction and demolition waste will be taken off site by a contractor licenced under the Waste Management Act.

The site lies within the catchment of the River Shannon, which is near the end of its course at this location. It is close to the Parteen Weir, which diverts water from the river to the Ardnacrusha power station.

Figure 3 – Site layout

Brief description of Natura 2000 sites

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

- Potential impacts arising from the project
- The location and nature of Natura 2000 sites
- Pathways between the development and the Natura 2000 network

As can be seen in figures 1 & 2 the site is not within or directly adjacent to any Natura 2000 area. At its nearest point the River Shannon lies approximately 200m to the north. At this point the river lies within the Lower River Shannon SAC. The boundary of the River Shannon and River Fergus Estuaries SPA lies can be found well downstream of this location, approximately 14km to the west. These are the only two Natura 2000 areas considered to fall within the zone of influence of this project.

The **Lower River Shannon SAC (site code: 2165)** is a very large SAC that stretches from Killaloe to Loop head/Kerry head and is over 720 km² in area. The reasons why this area falls under the SAC designation are set out in its 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 along with the status of the feature at a national level (NPWS, 2013). This status refers to the most recent reporting period to the European Commission under Article 17 of the Habitats Directive.

Table 1 – Qualifying interests for the Lower River Shannon SAC (from NPWS)

Code	Habitats	Status
1130	Estuaries	Intermediate
1140	Mudflats and sandflats not covered by seawater at low tide	Intermediate
1150	Coastal lagoons	Bad
1230	Vegetated sea cliffs of the Atlantic and Baltic coasts	Intermediate
1310	Salicornia and other annuals colonizing mud and sand	Intermediate
1330	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>)	Intermediate
1410	Mediterranean salt meadows (<i>Juncetalia maritimi</i>)	Intermediate
3260	Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation	Intermediate
1110	Sandbanks which are slightly covered by sea water all the time	Good
1160	Large shallow inlets and bays	Intermediate
1170	Reefs	Bad
1220	Perennial vegetation of stony banks	Intermediate
6410	<i>Molinia</i> meadows on calcareous, peaty or clay-silt-laden soils (<i>Molinion caeruleae</i>)	Bad
91E0	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)	Bad
1099	<i>Lampetra fluviatilis</i> River lamprey	Good

1096	<i>Lampetra planeri</i> Brook lamprey	Good
1095	<i>Petromyzon marinus</i> Sea lamprey	Bad
1106	<i>Salmo salar</i> Atlantic salmon	Intermediate
1349	<i>Tursiops truncatus</i> Bottle-nosed dolphin	Good
1355	<i>Lutra lutra</i> Otter	Good
1029	<i>Margaritifera margaritifera</i> Freshwater pearl mussel	Bad

- **Sandbanks (1110):** These are marine habitats composed of banks or ridges of soft sediment in less than 20m of water. They are highly dynamic habitats, being subject to continuous wave and tidal actions, and can be home to a diverse assemblage of marine species.
- **Estuary (1130):** This is the portion of a river that is influenced by the tide but retaining a significant freshwater influence. Substrates can range from rocks and boulders, to expanses of fine mud and sand. They are an important resource for birds and other fauna and many estuaries have twin designations (i.e. both SAC and SPA). It considered that the majority of estuary habitat is in good condition however approximately a quarter is negatively affected by excess nutrient input and damaging fishing practices.
- **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.
- **Coastal lagoons (1150)** (and a priority habitat) are brackish water bodies typically separated from the sea by a tidal barrier and with limited tidal range. In Ireland they are defined by their biological communities rather than their morphology. The greatest threat to their integrity is considered to be from nutrient pollution causing eutrophication.
- **Large shallow inlets and bays (1160):** These are marine or intertidal habitats that have reduced freshwater influence (in contrast to estuaries). They can occur in association with a number of other Annex I habitat types and are of value to marine biodiversity including mammals and seabirds.
- **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.
- **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.
- **Floating river vegetation (3260):** There is currently no satisfactory definition of this habitat type in Ireland and it is considered broad,

encompassing all rivers. The NPWS says that “the main problems for river habitats in Ireland are damage through eutrophication and other processes linked to water pollution, rather than direct habitat loss and destruction.”

- **Molinea meadows (6410)** *Molinea caerulea*, the Purple Moorgrass, is typically associated with upland peatland habitats but this habit type occurs on lowland sites associated with traditional agricultural practices. The main threats that it faces are associated with changes in land use, e.g. land abandonment or intensification.
- **Alluvial Wet Woodland (91E0)**: 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.
- **Freshwater pearl mussel (1029)** This is one of the most threatened species in Ireland and one of a small number that is listed on the International Union for the Conservation of Nature’s (IUCN) red list. Although it is long-lived, its populations have not reproduced in many years. This has been due to over-extractions for their pearls and more recently by dramatic deteriorations in water quality. Freshwater pearl mussels need exceptionally high quality water for breeding and depend upon another threatened species, the Atlantic salmon, for part of its life cycle.
- **Sea lamprey (1095)** This is an anadromous species of jawless fish. Their population densities are considered low in many catchments and are negatively affected by barriers to migration, such as weirs, dams etc. Pollution and drainage works are also identified as threats to its conservation status.
- **Brook and river lamprey (1096 & 1099)**: These species are similar to the sea lamprey although they spend their entire life cycle in freshwater and are considerably smaller. As juveniles they are indistinguishable at the species level and are only differentiated by their size at adults. Since surveys are carried out on the juvenile life stage the two species are jointly assessed. Although threatened by pollution, along with all aquatic life, they are assessed as being of ‘good’ status.
- **Atlantic salmon (1106)** This once abundant fish has suffered a dramatic decline in recent decades. On land they are threatened by pollution and barriers to migration while at sea mortality may occur through industrial fisheries, parasites from aquaculture operations and climate change. The Habitats Directive only protects the salmon in its freshwater habitat and here specific conservation objectives have been set for water quality. Salmon will only spawn in clean, sediment-free beds of gravel.
- **Otter (1355)** This aquatic mammal lives its entire life in and close to wet places, including rivers, lakes and coastal areas. They will feed on a wide variety of prey items. Despite local threats from severe pollution incidents and illegal fishing, its population is considered stable and healthy, and so is assessed as being of ‘good’ status.
- **Bottle-nosed dolphin (1349)**. These well recognised mid-sized cetaceans are found through tropical and temperate seas and are well recorded in the

waters around Ireland. They can be transient although some populations, such as that in the Shannon estuary, are considered resident.

The **River Shannon and River Fergus Estuaries SPA (site code: 4077)** collectively form the largest expanse of intertidal mudflats in Ireland. SPAs are designated for their internationally important species (listed on Annex I of the Birds Directive) or population sizes (>1% of the global population or >20,000 individuals). Most recent available data indicate that a mean of 10,235 birds utilised the area during the winters from 2006-11 (Crowe et al., 2012).

Table 2 – Features of interest for the River Shannon and River Fergus SPA

Species	Status ¹
Light-bellied Brent Goose <i>Branta bernicla hrota</i>	Amber (Wintering)
Pintail <i>Anas acuta</i>	Red (Wintering)
Scaup <i>Aythya marila</i>	Amber (Wintering)
Shoveler <i>Anas clypeata</i>	Red (Wintering)
Ringed Plover <i>Charadrius hiaticula</i>	Green
Golden plover <i>Pluvialis apricaria</i>	Red (Breeding & Wintering)
Grey Plover <i>Pluvialis squatarola</i>	Amber (Wintering)
Lapwing <i>Vanellus vanellus</i>	Red (Breeding & Wintering)
Knot <i>Calidris canutus</i>	Amber (Wintering)
Dunlin <i>Calidris alpina</i>	Red (Breeding & Wintering)
Bar-tailed Godwit <i>Limosa lapponica</i>	Amber (Wintering)
Black-tailed Godwit <i>Limosa limosa</i>	Amber (Wintering)
Redshank <i>Tringa totanus</i>	Red (Breeding & Wintering)
Greenshank <i>T. nebularia</i>	Green
Black-headed Gull <i>Croicocephalus ridibundus</i>	Red (Breeding)
Whooper Swan <i>Cygnus cygnus</i>	Amber (Wintering)
Shelduck <i>Tadorna tadorna</i>	Amber (Breeding & Wintering)
Wigeon <i>Anas penelope</i>	Red (Wintering)
Teal <i>Anas crecca</i>	Amber (Breeding & Wintering)
Cormorant <i>Phalacrocorax carbo</i>	Amber (Breeding & Wintering)
Curlew <i>Numenius arquata</i>	Red (Breeding & Wintering)
Wetlands & Waterbirds	

This includes internationally important numbers of Mute swan *Cygnus olor* and Whooper swan *C. cygnus* and nationally important numbers of Shelduck *Tadorna tadorna*, Wigeon *Anas penelope*, Teal *A. crecca*, Cormorant *Phalacrocorax carbo*, Dunlin *Charadrius alpina*, Black-tailed godwit *Limosa limosa* and Curlew *Numenius arquata*. The SPA's features of interest (analogous to qualifying interests for SACs) are given in table 2. The status

¹ Colhoun & Cummins, 2013. *Birds of Conservation Concern in Ireland 2014-2019*

given is from a national assessment and does not infer status within the SPA itself.

Whether the SAC/SPA is likely to be significantly affected must be measured against its 'conservation objectives'. Specific conservation objectives have been set for both the SAC and SPA (NPWS, 2012a & b). In the SAC objectives relate to habitat area, community extent, community structure and community distribution within the qualifying interests for habitats. In the SPA conservation objectives for each feature of interest (i.e. species of bird) is given as:

1. Population trend: long term population trend stable or increasing
2. Distribution: no significant decrease in the range, timing or intensity of use [...] other than that occurring from natural patterns of variation.

There is no objective in relation to water quality. Water quality is an objective in relation to a number of the species for which the SAC is designated including the Freshwater Pearl Mussel and the Atlantic Salmon.

Data collected to carry out the assessment

The EU's Water Framework Directive (WFD) stipulates that all water bodies were to attain 'good ecological status' by 2015. This includes river waters and Montpelier is located within the Shannon International River Basin District. In 2010 a management plan was published to address pollution issues and includes a 'programme of measures' which must be completed (ShIRBD, 2010). The Shannon in this location has most recently (2015) been assessed by the Environmental Protection Agency (EPA) as being 'slightly polluted'. In WFD terms however the river here is of 'moderate' status.

The proposed project is located close to an area of built development and agricultural land, and so is composed of mostly of low value biodiversity habitats. Native hedgerows are of high local value. The site is physically removed from the boundary of the Lower River Shannon SAC. The subject lands drain to the River Shannon via groundwater or diffuse surface run-off and via the **wastewater treatment plant**.

The municipal wastewater treatment plant at **???** is operated by Irish Water and is licenced by the EPA (register no.: ???) to discharge treated effluent to the Shannon. **[more details needed]**

The stretch of the Shannon at this location is home to Otter, Atlantic Salmon and Lamprey species. There are no populations of the Freshwater Pearl Mussel downstream of this point. Some fragments of the priority habitat type, alluvial forests, are present downstream of Montpelier, along the old River Shannon.

Inland Fisheries Ireland monitors the populations of Atlantic Salmon on an annual basis. The weir at Parteen forms a significant barrier to these

migratory species. In 2016 the population of the Salmon was 0.05% of the 'conservation limit' – a figure set which would allow sustainable recreational fishing. It can be inferred from this that the status of Salmon in this SAC is therefore not satisfactory (IFI, 2017).

Relevant conservation objectives for this project therefore are:

Sea/River/Brook Lamprey

Maintain river accessibility (no artificial barriers); healthy population structure; healthy density of juveniles; no decline in extent or distribution of spawning beds; >50% of sampling sites positive.

Atlantic Salmon

Maintain river accessibility (no artificial barriers); size of stock measures as 'conservation limit' consistently exceeded; maintain abundance of salmon fry; no significant decline in out-migrating smolt abundance; no decline in the number of spawning beds (redds); water quality at least Q4 at all sites.

Otter

No significant decline in distribution; no significant decline in terrestrial/estuarine/freshwater/lake habitat; no significant decline in couching sites or holts; no decline in available fish biomass;

Alluvial forests (91E0)

Habitat area stable or increasing; no decline in habitat distribution, woodland structure maintained in terms of structure and height, vegetation community diversity and extent, level of natural regeneration, number of veteran trees and dead wood; maintain the hydrological regime; no decline in tree cover, absence of negative indicator species.

As can be seen, the only pathway from this development to the conservation objectives of the SAC is via water quality. The water quality standard set for Atlantic Salmon (unpolluted) is not currently being met along the Shannon near Montpellier. This project must not jeopardise efforts to enhance this status.

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 subject lands are not located within or directly adjacent to any Natura 2000 area.

There can be no loss of habitat inside any SAC or SPA arising from this project due to the separation distance. Only indirect impacts are therefore possible.

The construction zone is too far from the SAC to result in disturbance effects during either the construction or operation phases (e.g. through noise, human activity or artificial lighting).

There is a pathway from the site via surface and wastewater water flows to the River Shannon and, ultimately, its estuary. Water quality may be affecting the status of Atlantic Salmon in this location however this project is unlikely to impair efforts to attain 'good' status. The project is not likely to affect water quality standards and so significant effects to the status of the Salmon are not likely to arise.

The proposed new homes will increase the quantity of wastewater to be generated however there is sufficient capacity in the [???] wastewater treatment plant and there is no evidence that negative effects to water quality are arising from this discharge.

Because attenuation measures have been incorporated into the design of the surface water drainage system, there can be no impact to the quality or quantity of surface water run-off. The homes are to be designed with Sustainable Drainage Systems (SUDS) and so no changes to the quantity or quality or run-off is predicted. Effects from these sources therefore cannot occur.

During the construction phase it is unlikely that sediment-laden water will enter the River Shannon as there are no water courses in this immediate vicinity. Given that it is a temporary impact it is considered unlikely to have a negative effect on the conservation objectives of the SAC/SPA.

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

On-going implementation of the WFD will result in overall improvements to water quality throughout the Shannon catchment. Environmental water quality can be impacted by the effects of surface water run-off from areas of hard standing. These impacts are particularly pronounced in urban areas and can include pollution from particulate matter and hydrocarbon residues, and downstream erosion from accelerated flows during flood events (Mason, 1996). Because SUDS methods have been incorporated into the project design there can be no deterioration to water quality or quantity from the area.

It is not considered that there are projects that can act in combination with this proposal and which may result in significant effects to Natura 2000 areas.

List of agencies consulted

The Development Applications Unit of the Department of Culture, Heritage and the Gaeltacht [should be] contacted for nature conservation observations. A response to this was not received at the time of writing. [need clarification on site boundary]

Conclusion and Finding of No Significant Effects

This study has found that the subject lands are not within or directly adjacent to any Natura 2000 area. While they are in the hydrological catchment of the Shannon Estuary there are no impacts that can be considered significant with regard to the conservation objectives of either the Lower River Shannon SAC or the River Shannon and River Fergus Estuaries SPA.

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