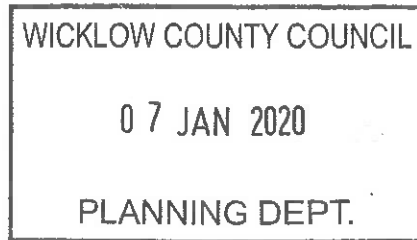


Leddy Family



Monday, January 6, 2020

Submission for Issues Paper for New County development Plan 2021-2027

To Whom it may concern,

Wicklow County Council have invited submissions, as the Issues Paper is designed to inform the consultation process, in this spirit we make this submission.

The drafting of this Wicklow plan changes from previous plans methodology, as Wicklow is required to review its plans following on from the adoption of RSES. Key new policy objectives in the RSES include - Healthy Placemaking, Climate Action and Economic Opportunity.

In the hierarchy of development plans, new national and regional policies take precedence over local development plans and place an emphasis on compact urban growth. Since An Bord Pleanála is being called upon to deal with anomalies by way of material contraventions it is sensible that Local Authorities be aligned with regional policies.

Hence, there is a general recognition that planning approach needs to change to adapt to changing circumstances, to meet the overriding challenge of climate change and increasing population. There is to be coordination between the counties in the region to better achieve these ends.

The significant shortfall in housing output to address current and projected demand is a national problem with lack of housing nationally having social and economic ramifications for sustainable national growth. 1m or so extra population must be accommodated nationally, hence Bray is considered a growth area in the Regional plan. Enniskerry is designated as a level 5 town. It is the closest town in Wicklow currently to both Luas and Dart – two major transport and economic corridors. It can access Luas without using the N11.

We submit that the area marked OS2 on The Enniskerry Town plan within the Bray LAP in the current Bray LAP be thoroughly reviewed in the forthcoming plan. We appreciate the opportunity to offer our views as the people who live there and thus are most familiar with the practical day to day status quo.

We believe that currently in the Enniskerry plan, the conservation area marked OS2, while a convenient wash-over, or desktop exercise, incorrectly implies Bog Meadow, Land at Monastery and Knocksink wood areas are a single entity. They in fact are worlds apart due to the local topography.

To borrow a phrase, because of 'the fashion of its spatial development history' Knocksink wood, Bog Meadow, and Monastery lands, for hundreds of years, under different ownerships, have developed very

separately and independently. Because of their strategic location we feel that they should be designated to provide more practical functions in order to meet level 5 town objectives.

Knocksink wood is a Natura 2000 site which is protected as such. Bog meadow and Monastery lands are not part of the Natura designation.

Although the Bog Meadow, Monastery lands and Knocksink boundaries meet on the 2D map, A cursory walk on the land can evidence much.

The boundary between Knocksink wood and Monastery is at the highest contour to the east and west of the ownership boundary. Monastery Lands to the east fall approximately 10 meters towards the R117 Road and southwards to Enniskerry town center. A detailed land survey has been carried out, based on this Aecom consulting Engineers have provided a detailed drainage study.

Knocksink wood, a valley at the boundary with Monastery, is the opposite side of this high contour, being the other side of the hill. Knocksink's watercourses are drained by its own network of streams by gravity bypass Monastery land. The R117 divides Bog Meadow from Monastery land.

Road access and egress from Knock sink wood to the R117 is next to the boundary to Monastery land, and the internal Knock sink road follows along the boundary line with Monastery land to Knocksink public carpark and interpretive center. We witness Knocksink as being one of the most popular dog walking venues in the locale.

The three distinct areas are separated by roads which do not provide suitable collective potential with Knocksink wood for a corridor for wildlife, given their existing urban uses. The lands do not share the same watercourses. Monastery Lands do not drain into Knocksink wood nor vice versa. To encourage wildlife to cross the R117 on foot would not be safe. It really can't be a safe corridor.

We suggest Recreational designation would be more appropriate for Bog meadow since it presently accommodates many activities such as football pitches, Tennis, training grounds and other sporting activities. It is substantially handed over to a Management company with a long lease for this purpose.

Bog meadow needs to develop into what the town needs from it as a level 5 settlement. Level 5 settlements should ideally be serviced by the following community infrastructure: community/parish hall, multipurpose community space and / or meeting rooms, local town park and open spaces/nature areas, outdoor multi-use games areas, playgrounds, playing pitches.

The Bog meadow is the de facto Town park for Enniskerry and should be improved as such. Bog Meadow is in the center of the town potentially better connecting all the towns amenities. There are natural pathways and linkage to the town which could be improved to significantly help to reduce car journeys and improve public safety.

- A. The residents of Monastery Estate and neighbors regularly traverse the Bog Meadow to get to the local bus stops. Local BMX and bike riders have adapted part of the area as a cycle track.
- B. There are many short-cuts to get from one end of the town to the other.
- C. People should be encouraged to bike or walk from their homes to the town and its facilities, and central to this is the bog meadow.

Conservation status overlay is not logical and is now counterproductive to supporting policies and New objectives of WCC and the RSES.

**Recent New Policy -- In deciding how the town should develop there are many options given the fashion of its spatial development history. Again, the key parameters however, must be based on environmental protection, sustainability and developing the town in a manner that would generate the minimal number of car journeys.**

**Recent New Policy - To ensure the continued vibrancy and life of these towns, the provision of a mix of residential, business, retail, leisure, entertainment and cultural uses will be encouraged. The priority shall be for the regeneration of under-utilized or derelict sites in the town core, followed by the development of new streets and squares, visually and functionally linked to the historic center.**

With the aim of 'Generating the minimum number of car journeys' consideration should be given to developing convenient alternative pedestrian and bike linkages to facilitate same.

Monastery land is within the town Boundary and has been in Agricultural use for over 300 years. Currently it is actively used as a stud farm breeding sport horses for competitions nationally and internationally. Approximately four acres of the farm around the existing residence are zoned existing residential (With two families in residence). 16 or so additional acres are in agricultural use.

The fields are post and rail stud fenced, around an internal road network with piped water to drinkers in each field for the horses and foals. There is all-weather horse jumping arena, with associated lighting. In previous development plans these lands were zoned agricultural.

To help inform the consultation process, we submit an ecological report prepared by a suitable ecological expert- Open Field Ecology recently completed GLENAMUCK DISTRICT ROADS SCHEME Environmental Impact Assessment Report for Dun Laoire County Council.

We have submitted previously an engineering feasibility report carried out by AECOM Consulting Engineers which refers to local drainage and roads considerations.

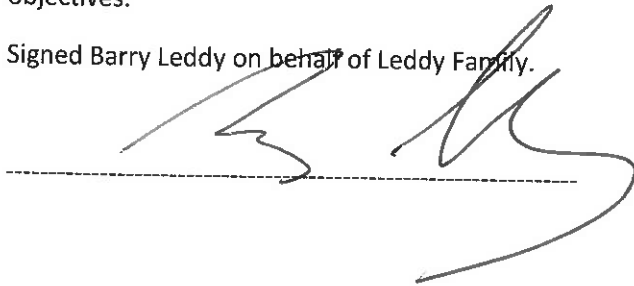
We present these at issues stage as, good plans need to be based on good data.

Ireland's development sprawl is the result of under zoning in towns. On the Mullinaveigue mile there are 22 households and only 2 are farmers who work there, the rest commute. In fact, Natura 2000 sites are affected by rainfall and precipitation absorbing carbon emissions, it bears repeating the national objective which addresses the overarching concern of climate change. Designating Green breaks within level 5 town boundaries can no longer be considered sustainable.

**Recent New Policy 2 Development should extend outwards from the town center with undeveloped land closest to the Town center and public transport routes (if available) being given preference, i.e. 'leapfrogging' to peripheral areas should be avoided; 3 A strong emphasis should be placed on encouraging infill opportunities and better use of under-utilized lands; and 4 Areas to be developed should be contiguous to existing developed areas.**

In conclusion, obviously changes will be needed in the new plan to reflect RSES and new policies. The positive thing is that there is land available within the town boundary to help facilitate new RSES objectives.

Signed Barry Leddy on behalf of Leddy Family.

A handwritten signature in black ink, appearing to be 'Barry Leddy', is written over a horizontal dashed line. The signature is stylized with a large, sweeping 'B' and a long, curved tail that extends to the right.

Appendix – Appropriate Assessment

Aecom - Land survey plus Engineering assessment

# Screening Report for Appropriate Assessment (AA) for rezoning application at Monastery, Enniskerry, Co. Wicklow

Compiled by OPENFIELD Ecological Services

Pádraic Fogarty, MSc MIEMA  
for Mr Barry Leddy



openfield

[www.openfield.ie](http://www.openfield.ie)

March 2018

## 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 assesses a proposed application to rezone lands at Monastery, Enniskerry, Co. Wicklow under the Enniskerry Local Area Plan (LAP). The lands were zoned as 'agricultural' under the 2009 LAP. The applicant wishes to change the zoning to 'residential development' within the Bray Municipal Local Area Plan 2017 (which is currently in draft). This report will assess whether this zoning is likely to have a significant effect to SACs or SPAs within the zone of influence of the project.

It will assess whether effects to the Natura 2000 network are likely to occur as a result of this rezoning in accordance with Article 6(3) of the Habitats Directive and the Planning and Development (Amendment) Act, 2010. It should be noted that any screening for appropriate assessment (AA), or full AA is undertaken by the competent authority, in this case Wicklow County Council. Under the Planning & Development Act it is prohibited to proceed with the rezoning 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 (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 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 Proposal**

This step describes the aspects of the proposed rezoning 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 measures 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.

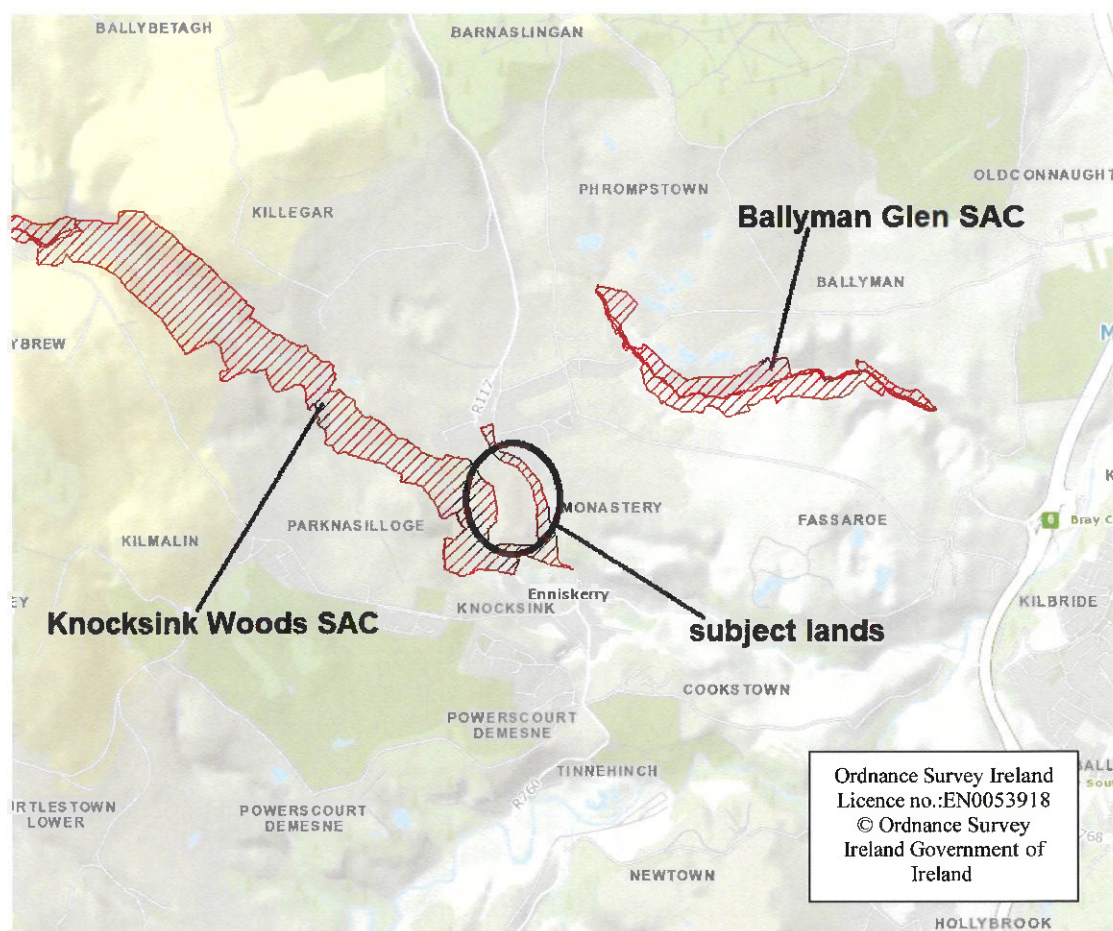
**Screening Template as per Annex 2 of EU methodology:**

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



## Brief description of the proposed project

The subject lands are located to the north of Enniskerry, County Wicklow. The site is currently in agricultural and residential use.



**Figure 1 – Site location showing its proximity to nearby Natura 2000 areas. There are no SPAs in this view (from [www.npws.ie](http://www.npws.ie) ).**

The site was visited for this study on February 27<sup>th</sup> 2018, which lies outside the optimal season for general habitat survey (Smith et al., 2010). Habitats are described here in accordance with standard classifications (Fossitt, 2000). Despite the timing all habitats were identifiable to Fossitt level 3.

The lands are a collection of fields of **improved agricultural grassland – GA1** interspersed with **buildings and artificial surfaces – BL3**, the latter category includes residential homes, driveways and an arena for training horses. There are lines of mature **treelines – WL2** along avenues and these are composed of Lime *Tilia sp.* and Horse Chestnut *Aesculus hippocastanum*. Other 'ornamental' trees are scattered and include specimens of Fir *Pseudotsuga sp.*, Oak *Quercus sp.*, Larch *Larix sp.*, and Leyland Cypress *Cuprocyparis leylandii*. In the southern half of the site there are two stretches of **hedgerow – WL1**. These are of poor quality – either with large gaps, or of recently planted origin (Foulkes et al., 2013). There are Hawthorn *Crataegus monogyna*, Brambles *Rubus fruticosus agg.*, and Ivy *Hedera helix*, along with Alder *Alnus fruticosus* and Cherry *Prunus sp.*, in younger stretches.

A hedgerow also marks the boundary of the lands to the north and this is also poor, with a large component of non-native species including Larch and Leyland Cypress, but also with occasional Ash *Fraxinus excelsior* and Elder *Sambucus nigra*.

Collectively these habitats are of negligible or low biodiversity value and are not associated with any which are listed on Annex I of the Habitats Directive.

The lands form a boundary with the Knocksink Wood SAC to the south and to the west. This is woodland with tall Scot's Pine *Pinus sylvestris*, Ash, Oak *Quercus sp.* and Sycamore *Acer pseudoplatanus*, along with Hazel *Corylus avellana* and Birch *Betula sp.* This woodland extends along the boundary to the south-east, where there is a steep embankment between the fields and the R117 road below (the SAC can also be found to the east of this road). All of this woodland can be considered an example of **oak-ash-hazel woodland – WN2** under the Fossitt scheme, and although this is considered to be a rare and valuable habitat, it is not linked with the Annex I priority habitat type 'old sessile oak woods (code: 91A0).

There are no water courses on the site or habitats which could be considered to be wetlands. There are no alien invasive plant species as listed on Schedule 3 of SI No. 477 of 2011.

The lands lie on an elevated ridge, which slopes steeply to both the east and west. Mapping from the OSI and the Environmental Protection Agency (EPA) show no water courses in this immediate vicinity. The Glencullen River (also referred to on OSI maps as the Cookstown) flows within 100m of the western boundary of the lands. This river is relatively steep and fast flowing as it passes through Enniskerry. It joins the River Dargle a short distance west of the N11 primary road, whereupon it enters the Irish Sea at Bray, not far from this location. To the east, the land drains to a small stream, identified as the 'bog meadow' on the EPA website, and this flows into the Cookstown River near the centre of Enniskerry.

The subject application is for the zoning of these lands for residential purposes. It would effectively allow for a future planning application. Any such application would likely include open space, parking areas, access from the public road and all associated infrastructure, including surface water, wastewater, electricity etc., as well as the construction of homes.





**Figure 2 – Indicative site boundary superimposed on aerial photograph from [www.epa.ie](http://www.epa.ie). The Cookstown River is shown to the south and west of the lands. The area in tan marks the boundary of the Knocksink Wood SAC.**

Wastewater from any development would be delivered via the mains network to the municipal wastewater treatment plant for Enniskerry and Environs, which discharges into the River Dargle.

Fresh water would be sourced from a mains supply, which originates in reservoirs in the Wicklow area.

This site is directly adjacent to the boundary of the Knocksink Wood SAC. The boundary of the Ballyman Glen SAC lies 500m to the north-east. 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 projects of this scale (IEA, 1995). However negative effects to sensitive areas can occur at distances greater than this depending on the zone of influence of the project. However, these are considered to be the only Natura areas within the zone of influence of the project.

The lands themselves have been found to be of low biodiversity value. The Dargle River system, of which the Cookstown River is a part, is important for its populations of Atlantic Salmon *Salmo salar* and Trout *S. trutta*. The lands are close to the centre of Enniskerry and, since they are already used for residential purposes, there is a degree of light and noise already associated with this location.

Any further development on these lands will affect the pattern of surface water run-off. However, in accordance with the Wicklow County Development Plan 2016-2022, sustainable drainage systems (SUDS) would be incorporated. These would ensure that the quantity and quality of the run-off is maintained at the 'green field' rate. There would consequently be no net effect to water quality, or run-off volumes from any discharge.

Development on the land could not result in direct interference with habitats within the Knocksink Woods SAC. Due to the close proximity, there could be indirect effects, e.g. through disturbance from noise, artificial light, or human activity.

During the construction phase, earth works would result in the exposure of soil and the loss of sediment to local water courses.

### 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 located directly adjacent to the Knocksink Woods SAC. The Ballyman Glen SAC can be found approximately 500m to the north-east. The River Glencullen joins the River Dargle which enters the Irish Sea at Bray. At this point there are no areas within the Natura 2000 network. Consequently, it is considered that these are the only Natura 2000 areas that lie within the zone of influence of this project.

#### **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.

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. The status refers to the national assessments carried out by the NPWS under Article 17 of the Habitats Directive and do not necessarily refer to the status of the SAC in question<sup>1</sup>.

**Table 1 – 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

<sup>1</sup> NPWS (2013). *The Status of Protected EU Habitats and Species in Ireland. Overview Volume 1*. Department of Arts, Heritage and the Gaeltacht.

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 2.

**Table 2 – 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.

Whether significant effects are likely to occur to an SAC must be measured against its conservation objectives. However, to-date specific conservation objectives have not been set out. Generic conservation objectives have been published by the NPWS 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, 2016a & b).

According to this generic document 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;

Specific objectives for these features may be available for SACs elsewhere and these will be referred to if relevant.

### Data collected to carry out the assessment

The site is located within the Dargle water management unit (WMU) of the Eastern River Basin District (ERBD). In 2010 more than half of the water bodies in this WMU were assessed as of 'good' status. The status of the Glencullen River for the 2010-2015 Water Framework Directive (WFD) reporting period was assessed as 'high' or 'good' as far as its confluence with the Dargle. Biological sampling is carried out by the EPA 2km upstream of Enniskerry and most recently (2015) the status was assessed as Q4 (unpolluted, but a deterioration from pristine in 2012).

A site visit showed that habitats on the site are not associated with any of those for which nearby SACs are designated.

Specific data on the status of habitats or species of conservation interest are not available for the Knocksink Woods. Information is not available on the locations of these habitats within the SAC. Summery information is available while conservation objectives have been set for these qualifying interests in SAC's elsewhere (NPWS, 2013). Both are associated with springs, floodplains or seepages of surface or groundwater.

***Petrifying Springs with Tufa Formation*** are defined as springs and seepages where tufa is actively deposited and where characteristic species of bryophytes are dominant or abundant. Characteristic bryophyte species are *Palustriella commutata*, *P. falcata*, *Eucladium verticillatum*, *Pellia endiviifolia*, *Cratoneuron filicinum*, *Bryum pseudotriquetrum* and *Didymodon tophaceus*. Characteristic vascular plants are red fescue (*Festuca rubra*), carnation sedge (*Carex panacea*) and great horsetail (*Equisetum telmateia*). Petrifying springs may occur as clearly defined spring heads with consolidated tufa; spring heads with an associated tufaceous flush; or seepage areas with tufa formation. The last-named type often occurs within alkaline fens and the vegetation forms a continuum between the two habitat types so that petrifying springs are not clearly demarcated from the surrounding fen vegetation. Three subtypes of petrifying spring vegetation can be distinguished depending on the setting of the spring: Woodland springs; Coastal springs; and Springs of inland, open habitats. Springs occurring on the Ben Bulbin Range constitute a distinct group of high conservation value.

*The Overall Status is assessed Inadequate due to drainage land reclamation, unsuitable grazing levels, pollution and water abstraction as well as more isolated instances of road drainage and outdoor leisure pursuits. Differences between the present assessment and the 2007 submission are due to improved knowledge of the habitat rather than a real change in its conservation status.*

Specific conservation objectives for the priority Petrifying Springs habitat have been set within the Black Head-Poulsallagh SAC (NPWS, 2014). These relate to habitat area, habitat distribution, maintenance of the local hydrological regime (height of water table and flow), water quality (specifically maintaining



oligotrophic and calcareous conditions), and vegetation composition. These are given in greater detail in the box below.

- Habitat area: Area stable or increasing, subject to natural processes
- Habitat distribution: No decline
- Hydrological regime: height of water table; water flow. Maintain appropriate hydrological regimes.
- Water quality: Maintain oligotrophic and calcareous conditions.
- Vegetation composition: typical species. Maintain typical species.

**Alluvial woodlands.** Riparian forests of ash (*Fraxinus excelsior*) and alder (*Alnus glutinosa*) occurs on heavy soils which are periodically inundated by the annual rise of river levels, but which are otherwise well drained and aerated during low water. The herbaceous layer includes many tall species such as remote sedge (*Carex remota*), gypsywort (*Lycopus europaeus*), common nettle (*Urtica dioica*) and water avens (*Geum rivale*).

In addition there are gallery forests of tall willows alongside river channels and occasionally on river islands, where the tree roots are almost continuously submerged. They are dominated by white willow (*Salix alba*), common osier (*S. viminalis*) and almond willow (*S. triandra*), sometimes with grey willow (*S. cinerea*) but alder is relatively rare.

This habitat has suffered considerable historic losses and is highly fragmented. Non-native and invasive species especially sycamore (*Acer pseudoplatanus*) and beech (*Fagus sylvatica*), and problematic native species such as bramble (*Rubus fruticosus*) and common nettle (*Urtica dioica*) (a consequence of undergrazing) are regarded as the main pressures impacting this habitat. The Overall Status is assessed as Bad due to these ongoing pressures and highly fragmented nature of this habitat. There have been national efforts to remove non-native and invasive plant species reinstate correct hydrological regimes and generally to improve the conservation status of alluvial woodlands. Some substantial areas have been rehabilitated, and this is the main reason for the improving trend reported since the 2007 assessment.

Specific conservation objectives have been set for alluvial forests within the River Nore and River Blackwater SAC (site code: 2162) (NPWS, 2011).

#### **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.



## **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 located directly adjacent to the boundary of the Knocksink Woods SAC and 500m to the Ballyman Glen SAC.

No other SACs or SPAs are considered to be within the zone of influence of this project.

### **Habitat loss**

There can be no loss or direct disturbance of habitats or species in within the SAC.

### **Indirect habitat disturbance**

Noise and artificial light generated from this project will increase locally. However, such impacts cannot affect the qualifying interests for the SACs.

Enniskerry is a busy town, already attracting considerable day-tripper/tourist attention, including from recreational walkers and cyclists. Knocksink Wood is a popular destination for walking and is served by parking areas and woodland trails. This inevitably results in some disturbance from human activity. However, there is no evidence that this is resulting in negative effects to the ecology of the woodland, and, specifically, to the high value habitats which are qualifying interests for the SAC.

### **Pollution**

There is an indirect pathway for surface water and wastewater to reach the Glencullen River. The Glencullen joins the River Dargle before entering the town of Bray and discharging to the Irish Sea.

#### **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.

Wastewater will be treated in the municipal wastewater treatment plant for Enniskerry and Environs. This plant is operated by Irish Water under licence from the EPA (licence no.: D0088-01). The most recent Annual Environmental Report, from 2017, indicates that the plant was not compliant with emission limit values set under the Urban Wastewater Treatment Directive in that year. Two samples exceeded the prescribed limits for Ammonia. Corrective actions are detailed in the AER and include upgrade works which are currently underway (expected completion date in 2018). It has a treatment capacity of 6,000 population equivalent (P.E.) and both the mean hydraulic and organic loadings are well within this capacity. There is sufficient capacity at the plant

to accept additional flows without affecting the quality of the discharge. This plant discharges treated effluent into the Dargle River, approximately 2km east of the town. Ambient monitoring of the receiving water at points both upstream and downstream of the discharge show that "the discharge from the wastewater treatment plant may be having an observable negative impact on the water quality in terms of Ammonia and Ortho-P".

This discharge occurs downstream of the Knocksink Wood SAC and so issues at the wastewater treatment plant cannot affect qualifying interests.

#### **B. Pollution during the construction phase**

The construction phase will involve extensive earth works which can result in sediment or toxic substances such as concrete, oils, fuels etc. entering water courses. There is no link between sediment, which is a serious pollutant in river systems where it can spoil habitat for spawning fish and other aquatic life, and the qualifying interests of the SACs. Sediment cannot affect the structure or vegetation communities of petrifying springs or alluvial forest. They can be affected by nutrient pollution, however there is no pathway for these pollutants to reach the qualifying interests.

Ballyman Glen SAC is in a separate hydrological unit to the Glencullen River. The wastewater discharge point meanwhile, is downstream of Knocksink Woods SAC. There is consequently no pathway from the development to either of the SACs; therefore, effects arising from water quality cannot occur.

#### **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 Glencullen River is currently of a good standard and on-going implementation of the WFD will result in overall improvements to water quality throughout the Dargle catchment.

No negative effects have been identified between this project and any Natura 2000 area. Consequently, there are no effects which could act in combination to result in significant effects to these areas.

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#### *List of agencies consulted*

The Development Applications Unit of the Department of Arts, 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.

The proposed zoning has been screened for likely significant effects to the Natura 2000 network under the appropriate methodology. It should be noted that any future development on the site would be subject to project level AA Screening in addition to any determination regarding the zoning.

Based on the conservation objectives of the SACs within the project's zone of influence, it has found that no significant effects are likely to arise, either alone or in combination with other plans or projects to either the Knocksink Wood SAC or Ballyman Glen SAC. These are the only Natura 2000 areas considered to be within the zone of influence of this project.

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## Submission to Wicklow County Council's 'Draft Bray Municipal District Local Area Plan 2018'

<b>To</b> Sadhbh O'Connor	<b>Project number</b> 60568355	<b>Client</b> The Leddy Family Partnership	<b>Subject</b> Proposed Residential Development at Monastery, Enniskerry, Co. Wicklow
<b>Date</b> 08 March 2018	<b>Issued by</b> Clodagh Holmes	<b>Reason for issue</b> Submission to Wicklow County Council	<b>Prepared by</b> AECOM

### 1.0 Introduction

AECOM has prepared this technical note, which should be read in conjunction with the main submission, prepared by Thornton O'Connor Planning Consultants, to Wicklow County Council in relation to the 'Draft Bray Municipal District Local Area Plan 2018'.

The site is located off the R117 on the north-eastern side of Enniskerry Village, Co. Wicklow as indicated in Figure 1 below.

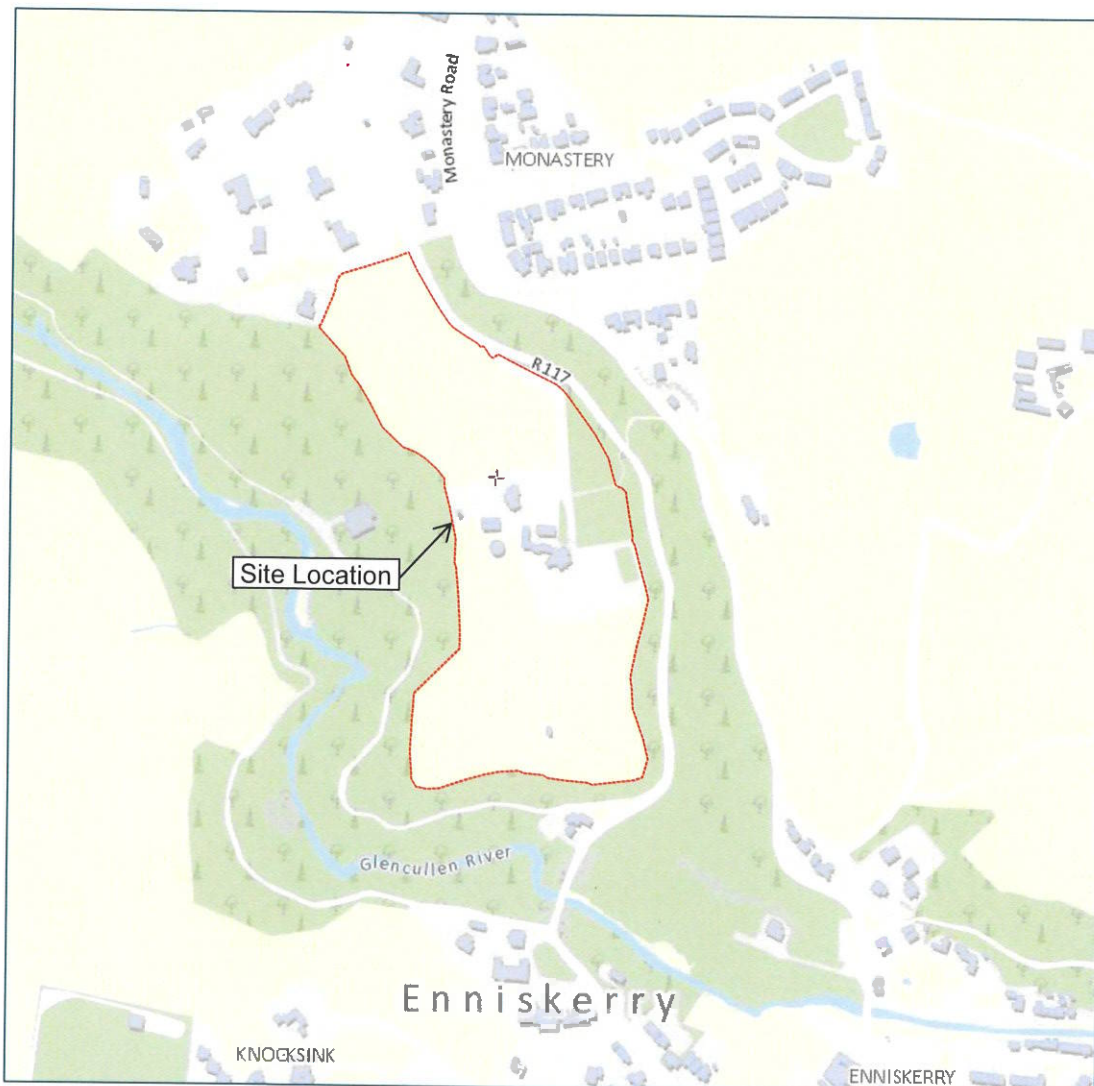


Figure 1 – Site Location – Monastery, Enniskerry, Co. Wicklow



## 2.0 Draft Bray Municipal District Local Area Plan 2018

Wicklow County Council is currently inviting submissions or observations on the proposed material alterations to the Draft Bray Municipal District Local Area Plan 2018. Once formally adopted, the LAP will present the statutory planning context for the subject site.

## 3.0 Road Access & Traffic

The subject lands area located adjacent to the R117 with significant road frontage. There is excellent accessibility to the village of Enniskerry located 400 m from the site. The N11/M11 is approx. 2.5 km from the site which provides excellent connectivity for longer journeys to Dublin City and Wicklow Town. Access to Bray Dart station is also within easy reach from the site.

The bus route No. 44 runs along the R117 in front of the site. This route travels from Enniskerry Village, via Dublin City Centre, to Dublin City University in Glasnevin.

This bus stop location located within Enniskerry Village also /operates a regular bus link, No. 185, to the Bray DART station. Figure 2 below illustrates the bus stop locations in the vicinity of the lands.



Figure 2 – Bus Stop in the vicinity of the site lands

The existing entrance to the site has significant sightlines. Figure 3 is an extract of AECOM Drawing 60568355-SKT-10-C-SK002 and indicates there are currently a 78m sightline to the north and a 69m sightline to the south available at the existing site entrance.

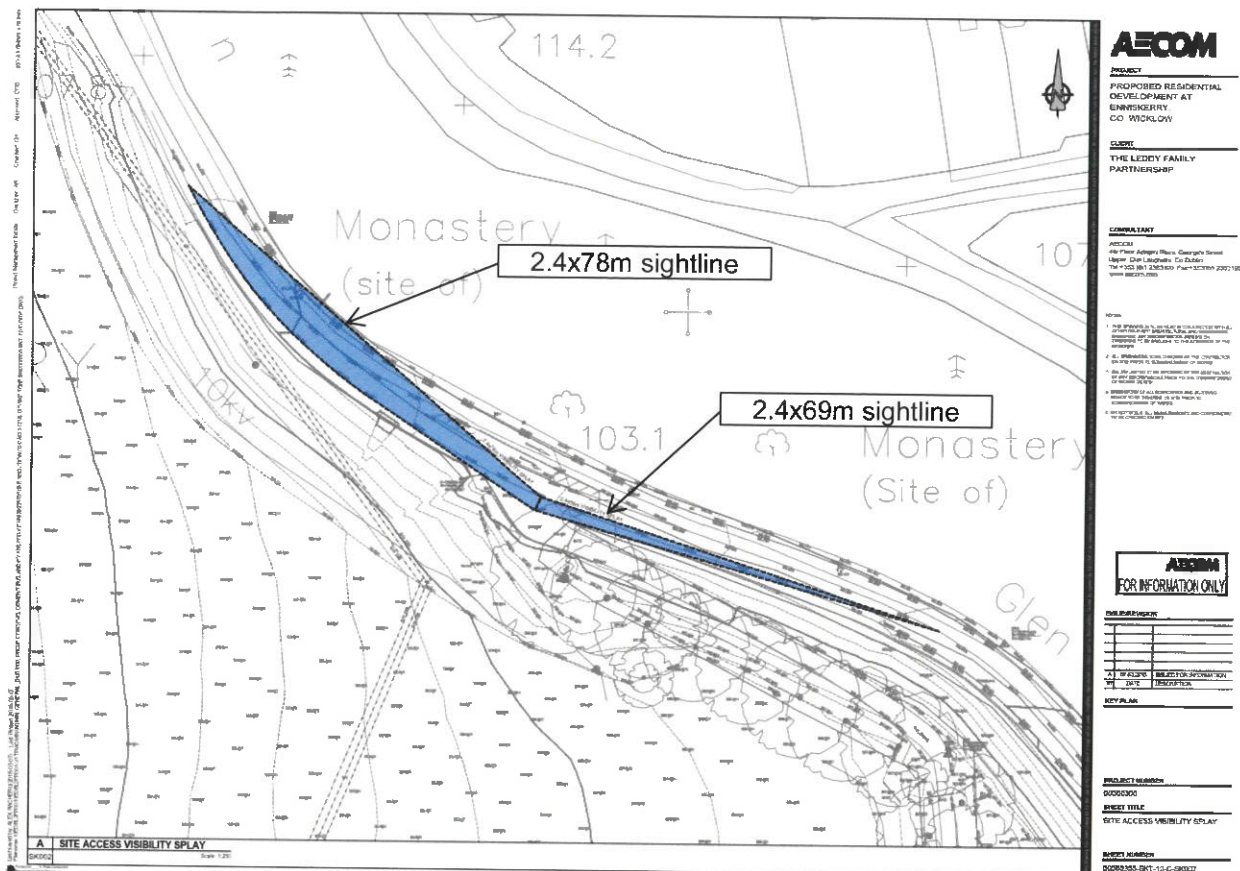


Figure 3 – Current site access visibility splay along the R117

However, as there is significant road frontage within the control of the applicant, alterations can be made either to the existing entrance to provide sufficient sightlines to comply with current development standards; or a new access can be provided as part of the future development layout.



## 4.0 Service Provision

### 4.1 Surface Water

The subject lands and their environs have been examined to assess the services provision and identify any potential shortcomings in relation to sanitary service provision.

AECOM have also engaged with Wicklow County Council regarding obtaining records and local knowledge in relation to the current surface outfall arrangements.

The Bog Meadow is located between the R117 and the Monastery Road. During resurfacing of the R117 in 2017 some localised drainage was installed by Wicklow County Council, which discharges to the stream valley at the northern end of the Bog Meadow.

Wicklow County Council has confirmed that, in line with Irish Water Code of Practice, storm water is not permitted to discharge to the foul network, in this regarding AECOM would proposed the following options:

- Discharge of surface water, via an attenuated system and appropriate flow restriction and outfall to the stream valley – similar to WCC road drainage gullies
- Discharge of surface water, via an attenuated system and appropriate flow restriction to a new surface water sewer running within the lands and outfall to the Glencullen River (same route as the proposed foul line referred to below). Please refer to Appendix A for the Windes MicroDrainage calculations indicating that the surface water runoff can be discharged by gravity.

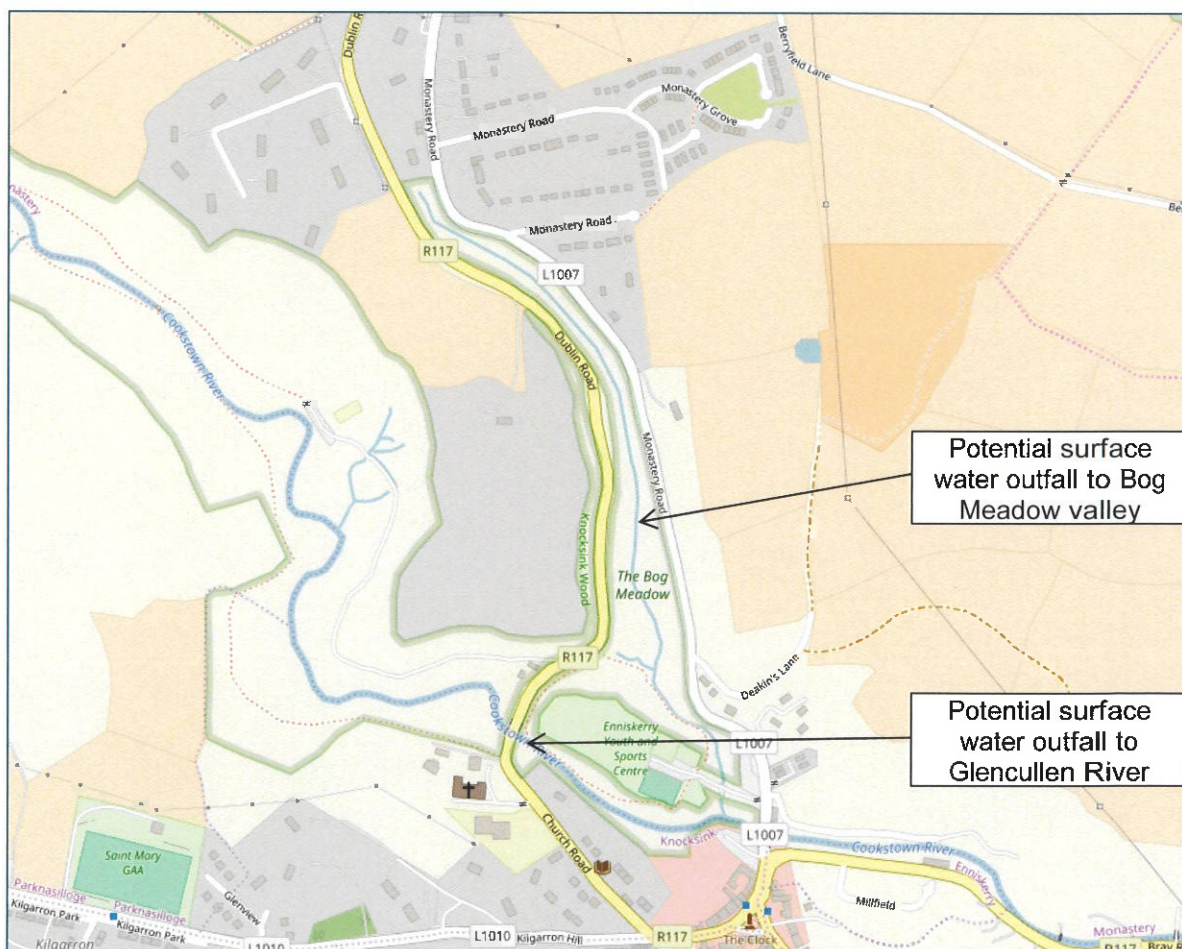


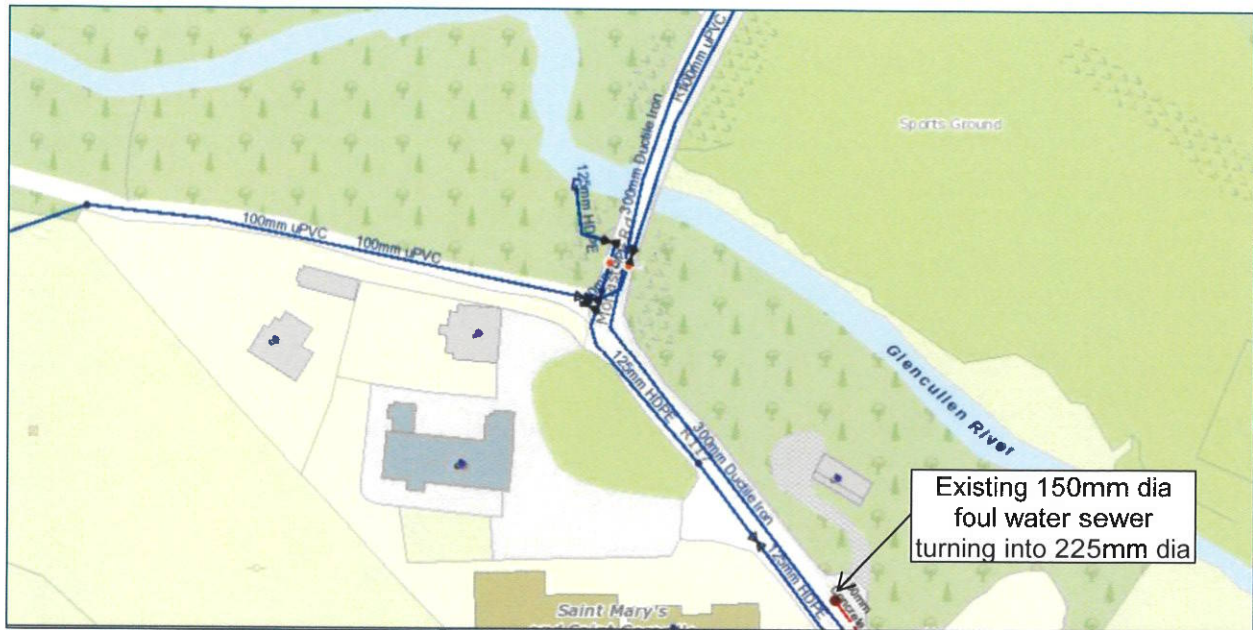
Figure 4 – Surface water outfall options (map extract of OpenStreetMap.org)

## 4.2 Foul Water Drainage

AECOM have engaged with Wicklow County Council and Irish Water regarding obtaining records and local knowledge in relation to the current foul drainage network.

The existing dwellings on the subject lands are serviced by septic tank system.

AECOM have considered the foul network in the vicinity of the site and would propose to install an approximately 1km foul pipeline within the subject site discharging to the existing 225mm diameter foul water sewer adjacent to St. Mary's & Gerard's National School (refer to Figure 5). It is proposed to relay the first section of 150mm foul water sewer as indicated in the Irish Water records.



**Figure 5 – Existing Foul Water Record Drawing**

In order to confirm viability of this foul outfall, AECOM have examined the levels associated with this and are confident that this can be achieved by gravity. Please refer to Appendix B for the Windes MicroDrainage calculations.

### 4.3 Water Supply

Records provided by Irish Water indicate that there are a number of watermains running along R117 (refer to Figure 6). These include the following:

- A 100mm diameter uPVC watermain
- A 300mm diameter Ductile Iron watermain

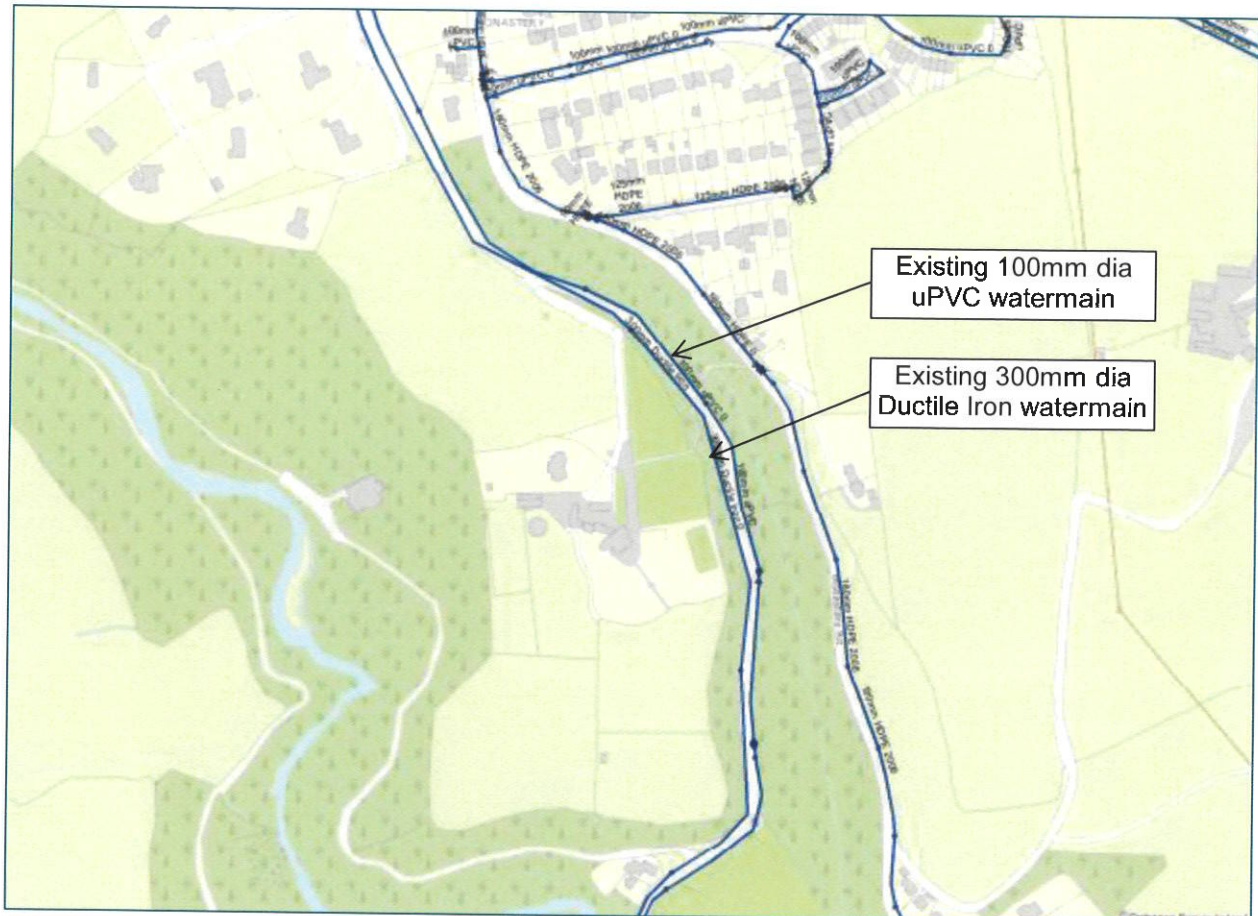


Figure 6 – Existing Watermain Record Drawing



## 5.0 Flood Risk Identification

AECOM have reviewed the flood risk mapping currently available for the subject lands:

- Coastal Flood Risks
- Fluvial Flood Risks
- Pluvial Flood Risks

### 5.1 Coastal Flood Risk

Coastal flooding results from sea levels which are higher than normal and result in sea water overflowing onto the land. Coastal flooding is influenced by the following three factors which often work in combination: high tide level, storm surges and wave action.

There is no risk associated with coastal flooding for this site as general ground levels for the site (ranging between 95mOD and 120mOD) are much higher than expected extreme coastal flood levels.

### 5.2 Fluvial Flood Risk

Fluvial flooding is the result of a river exceeding its capacity and excess water spilling out onto the adjacent floodplain.

Myplan.ie map incorporates many different sets of spatial information, including OPW Preliminary Flood Risk Assessment (PFRA) Mapping data (fluvial, pluvial, coastal flooding data and groundwater flood extents).

Figure 7 is an extract from [www.myplan.ie](http://www.myplan.ie) and illustrates areas that might be at risk of fluvial flooding in the vicinity of the site; however the subject site is not affected.

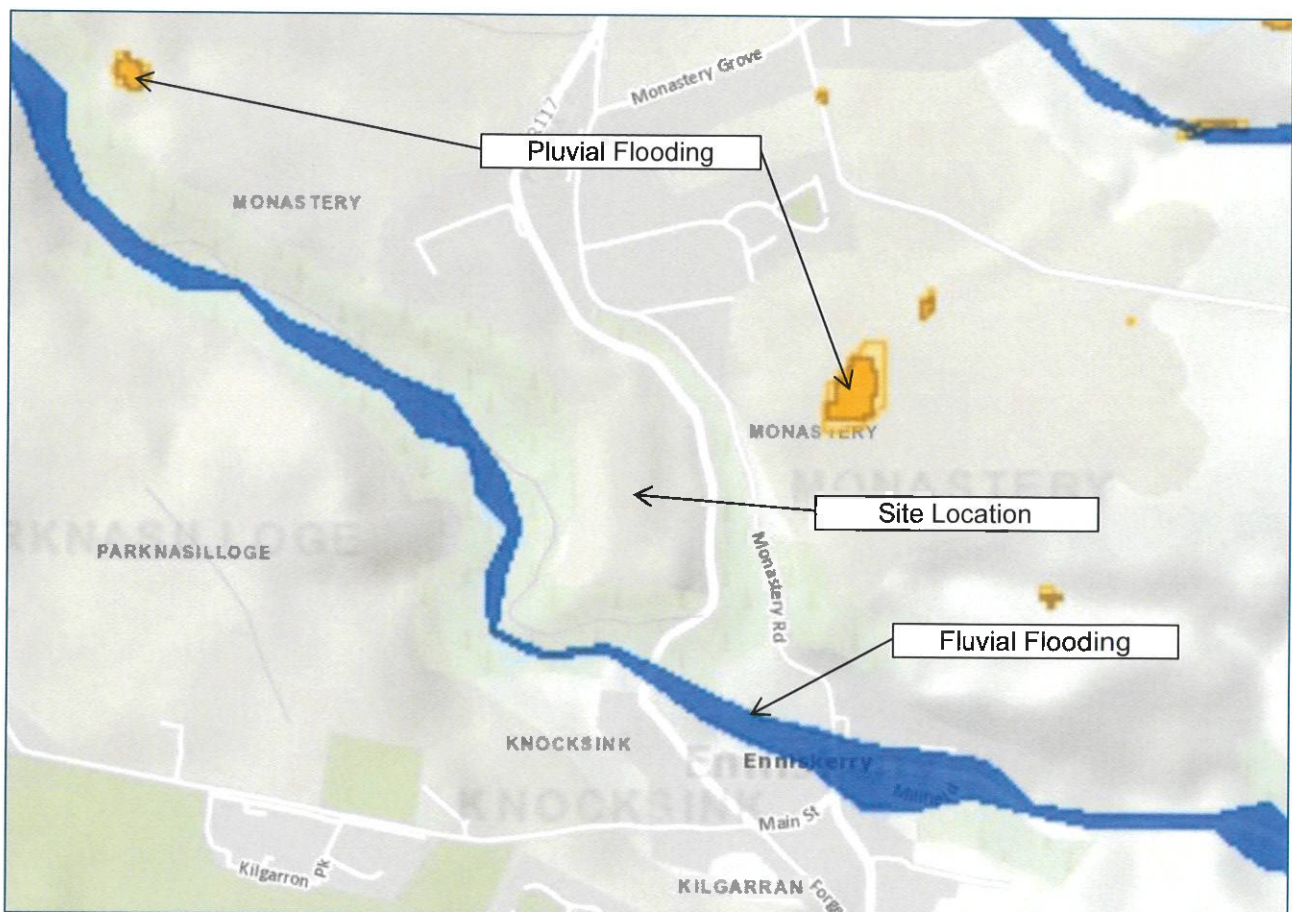


Figure 7 – Flood zones in Enniskerry as defined by OPW PFRA Maps ([www.myplan.ie](http://www.myplan.ie))

### 5.3 Pluvial Flood Risk

Pluvial flooding is a result of rainfall-generated overland flows which arise before runoff enters any watercourse or sewer.

A review of the [www.myplan.ie](http://www.myplan.ie) mapping (please refer to Figure 7) indicates that there are areas that may be at risk of pluvial flooding in the vicinity of the subject lands; however the subject site is not affected.

### 5.4 Historic Flood Events in Enniskerry

The OPW Flood Hazard Mapping Website is a record of historic flood events and this database indicates that there was a single reported incident of flooding on Forge Road, Enniskerry. However this flood event occurred further south in Enniskerry without having an adverse impact on subject site. Please refer to **Error! eference source not found.** and Appendix C for the full report.

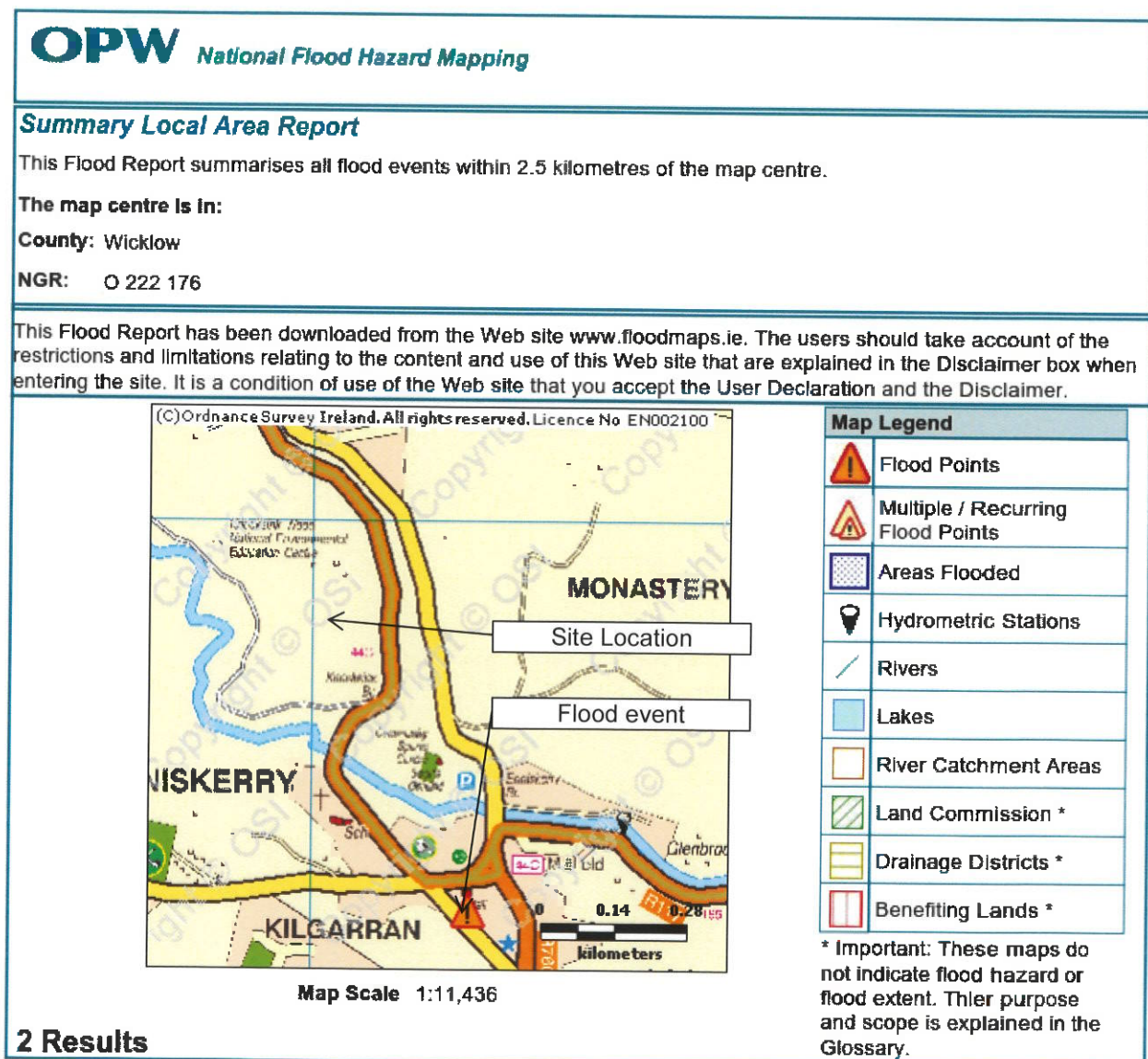



Figure 8 – Historic Flood Events in Enniskerry ([www.floodmaps.ie](http://www.floodmaps.ie))

## 6.0 Conclusion

This document should be read in conjunction with the main submission from. This technical note considers the access, servicing options and flood risk for the subject land.

It should be noted that the surface water, waste water and water supply networks are all sealed systems and therefore do not have any implications on ground water.

## Appendix A – Surface Water Network Calculations

AECOM		Page 1
Midpoint Alencon Link Basingstoke	Lands at Enniskerry	
Date 05/03/2018 17:18	Designed by FL	
File Enniskerry Drainage Network.mdx	Checked by AR	
XP Solutions	Network 2015.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
S1.000	69.499	2.192	31.7	0.000	4.00	0.0	0.600	o	225	⬆
S1.001	36.635	1.440	25.4	0.000	0.00	0.0	0.600	o	225	⬆
S1.002	89.237	3.457	25.8	0.000	0.00	0.0	0.600	o	225	⬆
S1.003	22.944	0.978	23.5	0.000	0.00	0.0	0.600	o	225	⬆
S1.004	50.969	2.029	25.1	0.000	0.00	0.0	0.600	o	225	⬆
S1.005	42.264	1.477	28.6	0.000	0.00	0.0	0.600	o	225	⬆
S1.006	22.242	0.876	25.4	0.000	0.00	0.0	0.600	o	225	⬆
S1.007	55.948	2.374	23.6	0.000	0.00	0.0	0.600	o	225	⬆
S1.008	58.242	2.379	24.5	0.000	0.00	0.0	0.600	o	225	⬆
S1.009	58.242	2.027	28.7	0.000	0.00	0.0	0.600	o	225	⬆
S1.010	18.621	0.579	32.2	0.000	0.00	0.0	0.600	o	225	⬆
S1.011	77.988	3.567	21.9	0.000	0.00	0.0	0.600	o	225	⬆
S1.012	8.567	0.280	30.6	0.000	0.00	0.0	0.600	o	225	⬆
S1.013	62.655	1.683	37.2	0.000	0.00	0.0	0.600	o	225	⬆

Network Results Table


PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	50.00	4.50	101.658	0.000	0.0	0.0	0.0	2.33	92.7	0.0
S1.001	50.00	4.73	99.466	0.000	0.0	0.0	0.0	2.60	103.5	0.0
S1.002	50.00	5.31	98.027	0.000	0.0	0.0	0.0	2.59	102.8	0.0
S1.003	50.00	5.45	94.570	0.000	0.0	0.0	0.0	2.71	107.9	0.0
S1.004	50.00	5.77	93.592	0.000	0.0	0.0	0.0	2.62	104.2	0.0
S1.005	50.00	6.06	91.563	0.000	0.0	0.0	0.0	2.46	97.6	0.0
S1.006	50.00	6.20	90.086	0.000	0.0	0.0	0.0	2.61	103.6	0.0
S1.007	50.00	6.55	89.211	0.000	0.0	0.0	0.0	2.71	107.6	0.0
S1.008	50.00	6.91	86.837	0.000	0.0	0.0	0.0	2.66	105.6	0.0
S1.009	50.00	7.31	84.457	0.000	0.0	0.0	0.0	2.45	97.4	0.0
S1.010	50.00	7.44	82.431	0.000	0.0	0.0	0.0	2.31	92.0	0.0
S1.011	50.00	7.90	81.852	0.000	0.0	0.0	0.0	2.81	111.7	0.0
S1.012	50.00	7.96	78.285	0.000	0.0	0.0	0.0	2.37	94.4	0.0
S1.013	50.00	8.45	76.005	0.000	0.0	0.0	0.0	2.15	85.5	0.0





Manhole Schedules for Storm

ME Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., I*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
	1	103.083	1.425	Open Manhole	1200	S1.000	101.658	225			
	2	100.891	1.425	Open Manhole	1200	S1.001	99.466	225	S1.000	99.466	225
	3	99.452	1.425	Open Manhole	1200	S1.002	98.027	225	S1.001	98.027	225
	4	95.995	1.425	Open Manhole	1200	S1.003	94.570	225	S1.002	94.570	225
	5	95.017	1.425	Open Manhole	1200	S1.004	93.592	225	S1.003	93.592	225
	6	92.988	1.425	Open Manhole	1200	S1.005	91.563	225	S1.004	91.563	225
	7	91.511	1.425	Open Manhole	1200	S1.006	90.086	225	S1.005	90.086	225
	8	90.636	1.425	Open Manhole	1200	S1.007	89.211	225	S1.006	89.211	225
	9	88.262	1.425	Open Manhole	1200	S1.008	86.837	225	S1.007	86.837	225
	10	85.882	1.425	Open Manhole	1200	S1.009	84.457	225	S1.008	84.457	225
	10	83.856	1.425	Open Manhole	1200	S1.010	82.431	225	S1.009	82.431	225
	11	83.277	1.425	Open Manhole	1200	S1.011	81.852	225	S1.010	81.852	225
	12	79.710	1.425	Open Manhole	1200	S1.012	78.285	225	S1.011	78.285	225
	13	79.430	1.425	Open Manhole	1200	S1.013	78.005	225	S1.012	78.005	225
Glencullen River	77.748	1.425	Open Manhole	0		OUTFALL		S1.013	76.323	225	

AECOM		Page 3
Midpoint Alencon Link Basingstoke	Lands at Enniskerry	
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XP Solutions	Network 2015.1	

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	o	225	1	103.083	101.658	1.200	Open Manhole	1200
S1.001	o	225	2	100.891	99.466	1.200	Open Manhole	1200
S1.002	o	225	3	99.452	98.027	1.200	Open Manhole	1200
S1.003	o	225	4	95.995	94.570	1.200	Open Manhole	1200
S1.004	o	225	5	95.017	93.592	1.200	Open Manhole	1200
S1.005	o	225	6	92.988	91.563	1.200	Open Manhole	1200
S1.006	o	225	7	91.511	90.086	1.200	Open Manhole	1200
S1.007	o	225	8	90.636	89.211	1.200	Open Manhole	1200
S1.008	o	225	9	88.262	86.837	1.200	Open Manhole	1200
S1.009	o	225	10	85.882	84.457	1.200	Open Manhole	1200
S1.010	o	225	10	83.856	82.431	1.200	Open Manhole	1200
S1.011	o	225	11	83.277	81.852	1.200	Open Manhole	1200
S1.012	o	225	12	79.710	78.285	1.200	Open Manhole	1200
S1.013	o	225	13	79.430	78.005	1.200	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	69.499	31.7		2	100.891	99.466	1.200 Open Manhole	1200
S1.001	36.635	25.4		3	99.452	98.027	1.200 Open Manhole	1200
S1.002	89.237	25.8		4	95.995	94.570	1.200 Open Manhole	1200
S1.003	22.944	23.5		5	95.017	93.592	1.200 Open Manhole	1200
S1.004	50.969	25.1		6	92.988	91.563	1.200 Open Manhole	1200
S1.005	42.264	28.6		7	91.511	90.086	1.200 Open Manhole	1200
S1.006	22.242	25.4		8	90.636	89.211	1.200 Open Manhole	1200
S1.007	55.948	23.6		9	88.262	86.837	1.200 Open Manhole	1200
S1.008	58.242	24.5		10	85.882	84.457	1.200 Open Manhole	1200
S1.009	58.242	28.7		10	83.856	82.431	1.200 Open Manhole	1200
S1.010	18.621	32.2		11	83.277	81.852	1.200 Open Manhole	1200
S1.011	77.988	21.9		12	79.710	78.285	1.200 Open Manhole	1200
S1.012	8.567	30.6		13	79.430	78.005	1.200 Open Manhole	1200
S1.013	62.655	37.2	Glencullen River	77.748	76.323	1.200	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.013	Glencullen River	77.748	76.323	75.000	0	0

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MH Name	8	9	10	10	11	13
Hor Scale 1000 Ver Scale 200						
Datum (m) 65.000						
PN	S1.007	S1.008	S1.009	S1.010	S1.011	S1.013
Dia (mm)	225	225	225	225	225	225
Slope (1:X)	23.6	24.5	28.7	32.2	21.9	37.2
Cover Level (m)	89.780	88.262	87.428	86.607	84.457	84.431
Invert Level (m)	89.211	88.837	88.837	88.457	85.882	85.184
Length (m)	55.948	58.242	58.242	18.621	77.988	62.655

## Appendix B – Foul Water Network Calculations

AECOM		Page 1
Midpoint	Lands at Enniskerry	
Alencon Link		
Basingstoke		
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File Enniskerry Drainage Network.mdx	Checked by AR	
XP Solutions	Network 2015.1	

# FOUL SEWERAGE DESIGN

Network Design Table for Foul

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Houses	Base Flow (l/s)	k (mm)	HYD SECT (mm)	DIA (mm)	Auto Design
F1.000	69.199	2.295	30.2	0.000	0	0.0	1.500	o	225	
F1.001	35.411	1.414	25.0	0.000	0	0.0	1.500	o	225	
F1.002	89.350	3.510	25.5	0.000	0	0.0	1.500	o	225	
F1.003	22.888	0.975	23.5	0.000	0	0.0	1.500	o	225	
F1.004	50.368	1.867	27.0	0.000	0	0.0	1.500	o	225	
F1.005	42.134	1.614	26.1	0.000	0	0.0	1.500	o	225	
F1.006	21.829	0.878	24.9	0.000	0	0.0	1.500	o	225	
F1.007	55.999	2.221	25.2	0.000	0	0.0	1.500	o	225	
F1.008	58.493	2.453	23.8	0.000	0	0.0	1.500	o	225	
F1.009	57.765	2.147	26.9	0.000	0	0.0	1.500	o	225	
F1.010	17.513	0.597	29.3	0.000	0	0.0	1.500	o	225	
F1.011	36.814	1.790	20.6	0.000	0	0.0	1.500	o	225	
F1.012	33.403	1.236	27.0	0.000	0	0.0	1.500	o	225	
F1.013	22.649	0.897	25.3	0.000	0	0.0	1.500	o	225	
F1.014	80.735	1.394	57.9	0.000	0	0.0	1.500	o	225	
F1.015	16.795	0.073	231.6	0.000	0	0.0	1.500	o	225	
F1.016	23.089	0.100	231.6	0.000	0	0.0	1.500	o	225	
F1.017	94.243	1.514	62.3	0.000	0	0.0	1.500	o	225	

Network Results Table

PN	US/IL (m)	Σ Area (ha)	Σ Base Flow (l/s)	Σ Hse Add Flow (l/s)	P.Dep (mm)	P.Vel (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
F1.000	101.689	0.000	0.0	0	0.0	0	2.09	83.3	0.0
F1.001	99.394	0.000	0.0	0	0.0	0	2.30	91.4	0.0
F1.002	97.980	0.000	0.0	0	0.0	0	2.28	90.7	0.0
F1.003	94.470	0.000	0.0	0	0.0	0	2.37	94.4	0.0
F1.004	93.495	0.000	0.0	0	0.0	0	2.21	88.1	0.0
F1.005	91.629	0.000	0.0	0	0.0	0	2.25	89.5	0.0
F1.006	90.015	0.000	0.0	0	0.0	0	2.31	91.7	0.0
F1.007	89.137	0.000	0.0	0	0.0	0	2.29	91.1	0.0
F1.008	86.916	0.000	0.0	0	0.0	0	2.36	93.7	0.0
F1.009	84.463	0.000	0.0	0	0.0	0	2.22	88.2	0.0
F1.010	82.316	0.000	0.0	0	0.0	0	2.12	84.4	0.0
F1.011	81.719	0.000	0.0	0	0.0	0	2.54	100.9	0.0
F1.012	79.929	0.000	0.0	0	0.0	0	2.21	88.0	0.0
F1.013	78.692	0.000	0.0	0	0.0	0	2.29	91.0	0.0
F1.014	77.796	0.000	0.0	0	0.0	0	1.51	60.0	0.0
F1.015	76.402	0.000	0.0	0	0.0	0	0.75	29.9	0.0
F1.016	76.329	0.000	0.0	0	0.0	0	0.75	29.9	0.0
F1.017	76.229	0.000	0.0	0	0.0	0	1.46	57.9	0.0

Midpoint

Alencon Link

Basingstoke

Date 05/03/2018 17:19

File Enniskerry Drainage Network.mdx

XP Solutions

Lands at Enniskerry

Designed by FL


Checked by AR

Network 2015.1



Manhole Schedules for Foul

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
F1	103.114	1.425	Open Manhole	1200	F1.000	101.689	225				
F2	100.819	1.425	Open Manhole	1200	F1.001	99.394	225	F1.000	99.394	225	
F3	99.405	1.425	Open Manhole	1200	F1.002	97.980	225	F1.001	97.980	225	
F4	95.895	1.425	Open Manhole	1200	F1.003	94.470	225	F1.002	94.470	225	
F5	94.920	1.425	Open Manhole	1200	F1.004	93.495	225	F1.003	93.495	225	
F6	93.054	1.425	Open Manhole	1200	F1.005	91.629	225	F1.004	91.629	225	
F7	91.440	1.425	Open Manhole	1200	F1.006	90.015	225	F1.005	90.015	225	
F8	90.562	1.425	Open Manhole	1200	F1.007	89.137	225	F1.006	89.137	225	
F9	88.341	1.425	Open Manhole	1200	F1.008	86.916	225	F1.007	86.916	225	
F10	85.888	1.425	Open Manhole	1200	F1.009	84.463	225	F1.008	84.463	225	
F11	83.741	1.425	Open Manhole	1200	F1.010	82.316	225	F1.009	82.316	225	
F12	83.144	1.425	Open Manhole	1200	F1.011	81.719	225	F1.010	81.719	225	
F13	81.354	1.425	Open Manhole	1200	F1.012	79.929	225	F1.011	79.929	225	
F14	80.117	1.425	Open Manhole	1200	F1.013	78.692	225	F1.012	78.692	225	
F15	79.221	1.425	Open Manhole	1200	F1.014	77.796	225	F1.013	77.796	225	
F16	77.827	1.425	Open Manhole	1200	F1.015	76.402	225	F1.014	76.402	225	
F17	77.909	1.580	Open Manhole	1200	F1.016	76.329	225	F1.015	76.329	225	
F18	77.711	1.482	Open Manhole	1200	F1.017	76.229	225	F1.016	76.229	225	
EX FMH	76.128	1.412	Open Manhole	1200		OUTFALL		F1.017	74.716	225	

AECOM		Page 3
Midpoint	Lands at Enniskerry	
Alencon Link		
Basingstoke		
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PIPELINE SCHEDULES for Foul

Upstream Manhole

PN	Hyd	Diam	MH	C.Level	I.Level	D.Depth	MH	MH DIAM., L*W
Sect	(mm)	Name	(m)	(m)	(m)	Connection	(mm)	
F1.000	o	225	F1	103.114	101.689	1.200	Open Manhole	1200
F1.001	o	225	F2	100.819	99.394	1.200	Open Manhole	1200
F1.002	o	225	F3	99.405	97.980	1.200	Open Manhole	1200
F1.003	o	225	F4	95.895	94.470	1.200	Open Manhole	1200
F1.004	o	225	F5	94.920	93.495	1.200	Open Manhole	1200
F1.005	o	225	F6	93.054	91.629	1.200	Open Manhole	1200
F1.006	o	225	F7	91.440	90.015	1.200	Open Manhole	1200
F1.007	o	225	F8	90.562	89.137	1.200	Open Manhole	1200
F1.008	o	225	F9	88.341	86.916	1.200	Open Manhole	1200
F1.009	o	225	F10	85.888	84.463	1.200	Open Manhole	1200
F1.010	o	225	F11	83.741	82.316	1.200	Open Manhole	1200
F1.011	o	225	F12	83.144	81.719	1.200	Open Manhole	1200
F1.012	o	225	F13	81.354	79.929	1.200	Open Manhole	1200
F1.013	o	225	F14	80.117	78.692	1.200	Open Manhole	1200
F1.014	o	225	F15	79.221	77.796	1.200	Open Manhole	1200
F1.015	o	225	F16	77.827	76.402	1.200	Open Manhole	1200
F1.016	o	225	F17	77.909	76.329	1.355	Open Manhole	1200
F1.017	o	225	F18	77.711	76.229	1.257	Open Manhole	1200

Downstream Manhole

PN	Length	Slope	MH	C.Level	I.Level	D.Depth	MH	MH DIAM., L*W
	(m)	(1:X)	Name	(m)	(m)	(m)	Connection	(mm)
F1.000	69.199	30.2	F2	100.819	99.394	1.200	Open Manhole	1200
F1.001	35.411	25.0	F3	99.405	97.980	1.200	Open Manhole	1200
F1.002	89.350	25.5	F4	95.895	94.470	1.200	Open Manhole	1200
F1.003	22.888	23.5	F5	94.920	93.495	1.200	Open Manhole	1200
F1.004	50.368	27.0	F6	93.054	91.629	1.200	Open Manhole	1200
F1.005	42.134	26.1	F7	91.440	90.015	1.200	Open Manhole	1200
F1.006	21.829	24.9	F8	90.562	89.137	1.200	Open Manhole	1200
F1.007	55.999	25.2	F9	88.341	86.916	1.200	Open Manhole	1200
F1.008	58.493	23.8	F10	85.888	84.463	1.200	Open Manhole	1200
F1.009	57.765	26.9	F11	83.741	82.316	1.200	Open Manhole	1200
F1.010	17.513	29.3	F12	83.144	81.719	1.200	Open Manhole	1200
F1.011	36.814	20.6	F13	81.354	79.929	1.200	Open Manhole	1200
F1.012	33.403	27.0	F14	80.117	78.692	1.200	Open Manhole	1200
F1.013	22.649	25.3	F15	79.221	77.796	1.200	Open Manhole	1200
F1.014	80.735	57.9	F16	77.827	76.402	1.200	Open Manhole	1200
F1.015	16.795	231.6	F17	77.909	76.329	1.355	Open Manhole	1200
F1.016	23.089	231.6	F18	77.711	76.229	1.257	Open Manhole	1200
F1.017	94.243	62.3	EX FMH	76.128	74.716	1.187	Open Manhole	1200

Free Flowing Outfall Details for Foul

Outfall	Outfall	C. Level	I. Level	Min	D,L	W
Pipe Number	Name	(m)	(m)	I. Level (mm)	(mm)	(mm)
				(m)		
F1.017	EX FMH	76.128	74.716	74.941	1200	0





Checked by AR	Noted by AR
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Checked by AR	Noted by AR
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[illegible]



## Summary Local Area Report

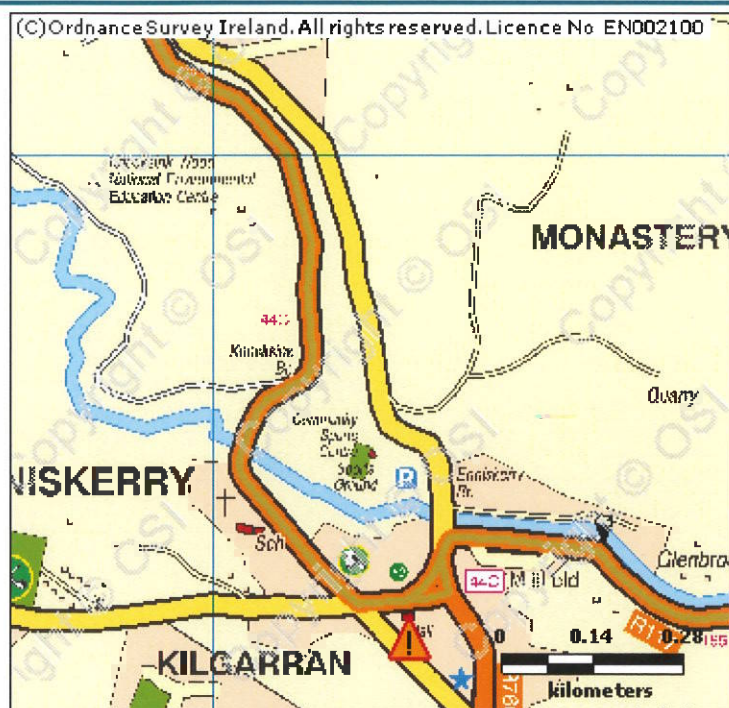
This Flood Report summarises all flood events within 2.5 kilometres of the map centre.

The map centre is in:

County: Wicklow

NGR: O 222 176

This Flood Report has been downloaded from the Web site [www.floodmaps.ie](http://www.floodmaps.ie). The users should take account of the restrictions and limitations relating to the content and use of this Web site that are explained in the Disclaimer box when entering the site. It is a condition of use of the Web site that you accept the User Declaration and the Disclaimer.



Map Scale 1:11,436

### Map Legend

	Flood Points
	Multiple / Recurring Flood Points
	Areas Flooded
	Hydrometric Stations
	Rivers
	Lakes
	River Catchment Areas
	Land Commission *
	Drainage Districts *
	Benefiting Lands *

\* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained in the Glossary.

## 2 Results



1. The Scalp Wicklow Recurring

County: Wicklow

Additional Information: Reports (1) More Mapped Information

Start Date:

Flood Quality Code:4



2. Forge Road Enniskerry Undated

County: Wicklow

Additional Information: Reports (1) More Mapped Information

Start Date:

Flood Quality Code:4