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# STAGE 1 SCREENING EXERCISE

# PROPOSED DEVELOPMENT

# BEAUPARC

# COUNTY MEATH



**Prepared For: -**

Panda Waste Service
Rathdrinagh
Beauparc
Co. Meath

**Prepared By: -**

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**May 2012**

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# 1 INTRODUCTION

PANDA submitted an application to the Environmental Protection Agency (the Agency) to revise the Waste Licence at its existing Materials Recovery Facility at Beauparc, Navan, County Meath. The application relates to the development of a new building to accommodate a processing system comprising dry fermentation and composting and the manufacture of refuse derived fuel in an existing building.

The Agency requested that a Screening for Appropriate Assessment be completed in accordance with the European Communities (Birds and Natural Habitats Directive) Regulations 2011. The objective was to determine if the proposed changes are or are not likely to have any significant direct, indirect or cumulative significant effects on a Natura 2000 site.



## 1.1 Methodology

The Stage 1 screening exercise was undertaken in accordance with the Department of the Environment, Heritage and Local Government Guidelines 2009/2010, Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities. It is based on the information on the proposed changes to waste activities presented in the Licence Review application.

# 2 PROJECT DESCRIPTION

## 2.1 Site Location & Surrounding Landuse

The facility is located in Rathdrinagh, Beauparc, Navan, County Meath. It is approximately 4km south of Slane, County Meath. The facility is bordered to the west by the N2 National Primary Route and to the north by a third class road, the Knockcommon Road. Surrounding activity is predominantly agriculture, however there are some commercial units adjacent the site to the west and residential dwellings along the N2 and Knockcommon Road

## 2.2 Geology & Hydrogeology

The site is underlain by the Balrickard Formation, which is a coarse sandstone, shale. The overlying subsoils are tills, which are at least 10m thick. The Balrickard Formation is classified as a bedrock aquifer that is generally unproductive except for local zones (Pl ). The aquifer vulnerability rating is Low.



## 2.3 Surface Water Drainage

The site is in the catchment of the River Boyne. A drain that runs along the southern boundary connects to an unnamed tributary of the Roughgrange River. The Roughgrange is a tributary of the River Boyne, which it joins approximately 3km downstream from the site. There are no known direct wastewater discharges to the Roughgrange.

## 2.4 Nature of the Facility

The facility only accepts non-hazardous wastes, which are processed to recover wastes that are suitable for recycling and to reduce the amount sent to landfill. At present there are three main buildings (Building 1, 2 and 3) used for waste processing. The current Waste Licence specifies the design and operational conditions that are required to ensure the facility activities neither cause pollution or gives rise to environmental impairment outset the facility boundaries

The objectives of the licence review are: -

- To extend the licence area to include a new building (Building 4), which will house a biological treatment system. The system, which is a combination of anaerobic digestion and composting, will treat organic waste to produce compost. Gases produced during the digestion stage will be used as a fuel to generate electricity and heat, which will be used at the facility and sold to electricity supply companies;

- To allow the processing of household and commercial waste to recover materials, for example paper and plastic, that are can be used as a fuel, for example in cement manufacturing. These materials are called Refuse Derived Fuel (RDF);

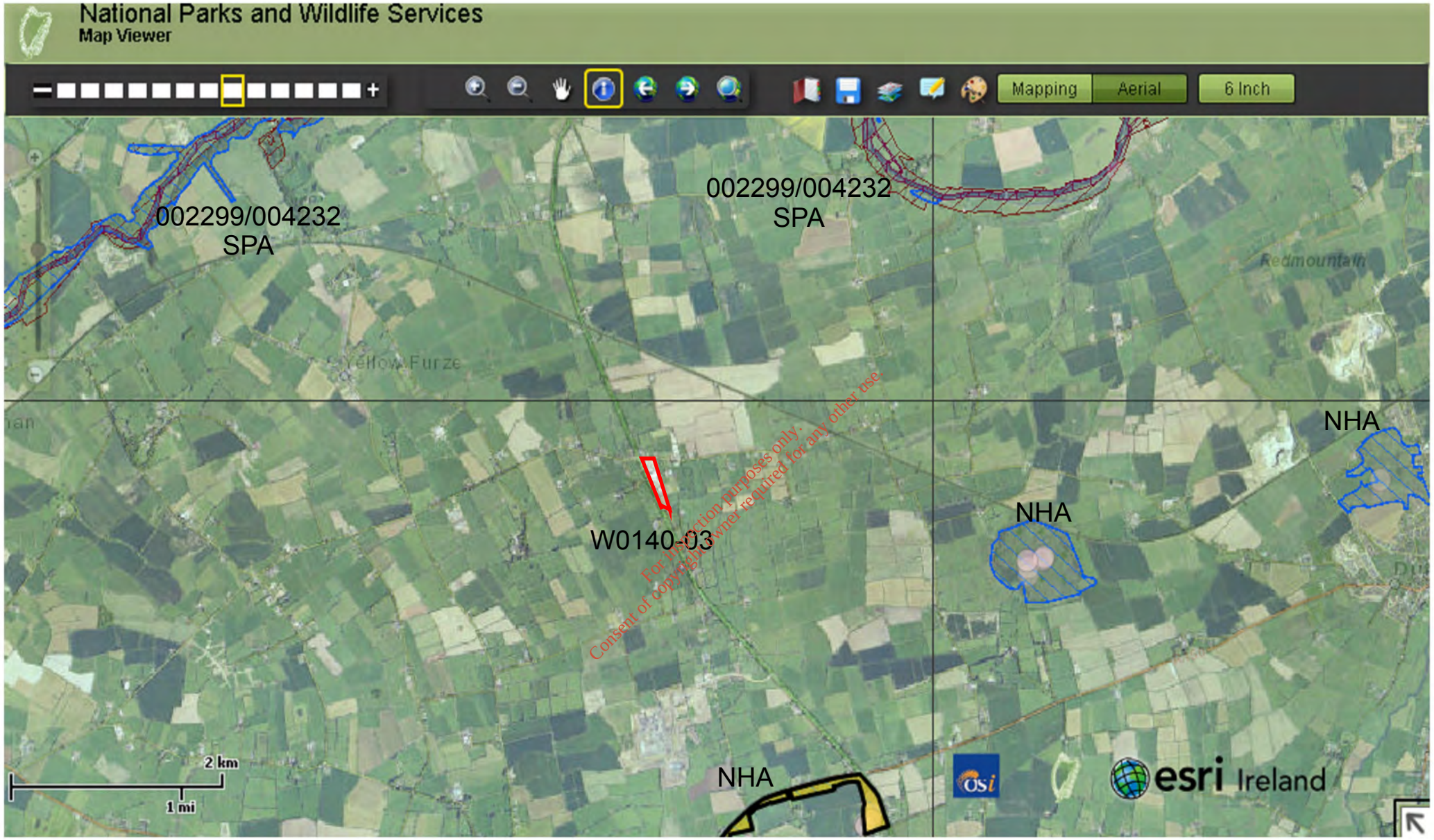
- To amend Condition 1.5.3 of the current licence to allow the continuous operation of the biological treatment and RDF manufacturing systems;

- To amend Condition 8.6 to allow the continued operation of the construction and demolition waste processing plant in a dedicated open area.

# 3 NATURA 2000 SITES

There is no Natura 2000 site immediately adjacent to the site. The closest site identified on the National Biodiversity Database is the River Boyne and River Blackwater Special Area of Conservation (SAC) and Special Protection Area (SPA)(002299/004232), the closest stretch of which is approximately 3km to the north east (Ref Figure 1) .

The site was selected as an SAC for alkaline fen and alluvial woodlands, both habitats listed on Annex I of the E.U. Habitats Directive and also for the following species listed on Annex II of the same directive – Atlantic Salmon, Otter and River Lamprey. The site was selected as an SPA as it is a breeding ground for Kingfishers. The site synopses are included in Appendix 1.

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CLIENT
Panda Waste Services Ltd

TITLE
AA Screening Assessment
W0140-03

Details
Site Boundary

FIGURE NUMBER
1

Scale
Not To Scale

Revision
A

# 4 POTENTIAL SOURCES OF EFFECTS

## 4.1 Emissions to Air

The proposed RDF Manufacturing and Biological Treatment activities will give rise to new emission to air. These will comply with the emission limit values that are set in the revised Waste Licence and which are designed to ensure the emissions do not adversely affect the environment.

## 4.2 Emissions to Surface Water

At present rainwater run-off is collected in a holding tank and removed from the site. Rainwater from the roof of Building 4 will be collected in a tank and used at the site for spraying the yards to keep dust down.

The current licence authorises the installation of a constructed wetland into which run-off from the existing paved yards will discharge after first passing thorough silt traps and an oil interceptor. It is intended to install the constructed wetland later in 2012. The licence sets emission limit values (ELV) for the discharge from the wetlands to the drain that runs along the southern boundary. These are set out in Table 4.1 and the proposed changes to waste activities will not result in any changes to these ELV



Table 4.1 Surface Water ELVs

| Parameter | |
|---|---|
| BOD | 5 mg/l |
| Suspended Solids | 25 mg/l |
| Ammonia | 1 mg/l |

In addition, the wetland is designed to achieve the following nutrient emission levels:

Phosphorous 0.5mg/l

Nitrogen 0.25 mg/l

The drain along the southern boundary connects to an unnamed tributary of the Roughgrange River. The Roughgrange is a tributary of the River Boyne, which it joins approximately 3km from the site. At present there is no discharge to the drain.

Although not directly related to the proposed changes that are the subject of the licence review application, the constructed wetlands will, when constructed, only take rainwater run-off from paved yards that has already passed through silts traps and an oil interceptor.

Given the nature of the discharge and the distance to the River Boyne, the impact of discharge from the constructed wetlands on the SAC will be indiscernible.

### *4.2.1 Emergencies*

The new percolate storage tanks and their containment bunds will be designed and constructed in accordance with the applicable design standards. The tanks and bunds will be subject to integrity testing during the commissioning stage. When operational, the tanks, associated pipework and bunds will be subject to routine integrity testing at the frequency that will be specified in the Waste Licence.

The design, method of construction and maintenance of the tanks, pipework and secondary containment will ensure that the risk of any accidental spills or leaks are minimised and, in the unlikely event that they occur, will be contained within the site

## 4.3 Emissions to Ground

Rainfall on the new concrete yards will be collected and passed through an oil interceptor and into a soakaway. These will comply with the emission limit values set in the revised Licence. A hydrogeological assessment concluded that the proposed discharge does not present a risk to either groundwater or surface waters.

# 5 SCREENING CONCLUSION & STATEMENT

## 5.1 Conclusions

The proposed development will not give rise to any significant direct, indirect or cumulative significant effects on a Natura 2000 site. The changes will

- Not cause reduction in the area of the habitat or Natura 2000 site
- Not cause direct or indirect damage to the physical quality of the environment (e.g. water quality and supply, soil compaction) in the Natura 2000 site.
- Not cause serious or ongoing disturbance to species or habitats for which the Natura 2000 site is selected (e.g. increased noise, illumination and human activity).
- Not cause direct or indirect damage to the size, characteristics or reproductive ability of populations on the Natura 2000 site, and
- Not interfere with mitigation measures put in place for other plans or projects.



## 5.2 Statement

The screening exercise has established that the proposed changes to the current activities do not have the potential for significant effects and an Appropriate Assessment is not required.

# APPENDIX 1

# SITE SYNOPSIS

## SITE NAME: RIVER BOYNE AND RIVER BLACKWATER

## SITE CODE: 002299

This site comprises the freshwater element of the River Boyne as far as the Boyne Aqueduct, the Blackwater as far as Lough Ramor and the Boyne tributaries including the Deel, Stoneyford and Tremblestown Rivers. These riverine stretches drain a considerable area of Meath and Westmeath and smaller areas of Cavan and Louth. The underlying geology is Carboniferous Limestone for the most part with areas of Upper, Lower and Middle well represented. In the vicinity of Kells Silurian Quartzite is present while close to Trim are Carboniferous Shales and Sandstones. There are many large towns adjacent to but not within the site. Towns both small and large, include Slane, Navan, Kells, Trim, Athboy and Ballivor.

The site is a candidate SAC selected for alkaline fen and alluvial woodlands, both habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive – Atlantic Salmon, Otter and River Lamprey.



The main areas of alkaline fen are concentrated in the vicinity of Lough Shesk, Freehan Lough and Newtown Lough. The hummocky nature of the local terrain produces frequent springs and seepages which are rich in lime. A series of base-rich marshes have developed in the poorly-drained hollows, generally linked with these three lakes. Open water is usually fringed by Bulrush (*Typha latifolia*), Common Club-rush (*Scirpus lacustris*) or Common Reed (*Phragmites australis*) and this last species also extends shorewards where a dense stand of Great Fen Sedge or Saw Sedge (*Cladium mariscus*) frequently occurs. This in turn grades into a sedge and grass community (*Carex* spp., *Molinia caerulea*) or one dominated by the Black Bog-rush (*Schoenus nigricans*). An alternative direction for the aquatic/terrestrial transition to take is through a floating layer of vegetation. This is normally based on Bogbean (*Menyanthes trifoliata*) and Marsh cinquefoil (*Potentilla palustris*). Other species gradually become established on this cover, especially plants tolerant of low nutrient status e.g. bog mosses (*Sphagnum* spp.). Diversity of plant and animal life is high in the fen and the flora, includes many rarities. The plants of interest include Narrow-leaved Marsh Orchid (*Dactylorhiza traunsteineri*), Fen Bedstraw (*Galium uliginosum*), Cowbane (*Cicuta virosa*), Frogbit (*Hydrocharis morsus-ranae*) and Least Bur-reed (*Sparganium minimum*). These species tend to be restricted in their distribution in Ireland. Also notable is the abundance of aquatic Stoneworts (*Chara* spp.) which are characteristic of calcareous wetlands.

The rare plant, Round-leaved Wintergreen (*Pyrola rotundifolia*) occurs around Newtown Lough. This species is listed in the Red Data Book and is protected under the Flora Protection Order, 1999, and this site is its only occurrence in Co. Meath.

Wet woodland fringes many stretches of the Boyne. The Boyne River Islands are a small chain of three islands situated 2.5 km west of Drogheda. The islands were formed by the build up of alluvial sediment in this part of the river where water movement is sluggish. All of the islands are covered by dense thickets of wet, Willow (*Salix* spp.) woodland, with the following species occurring: Osier (*S. viminalis*), Crack Willow (*S. fragilis*), White Willow (*S. alba*), Purple Willow (*Salix purpurea*) and Grey Willow (*S. cinerea*). A small area of Alder (*Alnus glutinosa*) woodland is found on soft ground at the edge of the canal in the north-western section of the islands. Along other stretches of the rivers of the site Grey Willow scrub and pockets of wet woodland dominated by Alder have become established, particularly at the river edge of mature deciduous woodland. Ash (*Fraxinus excelsior*) and Birch (*Betula pubescens*) are common in the latter and the ground flora is typical of wet woodland with Meadowsweet (*Filipendula ulmaria*), Angelica (*Angelica sylvestris*), Yellow Iris, Horsetail (*Equisetum* spp.) and occasional tussocks of Greater Tussock-sedge (*Carex paniculata*).

The dominant habitat along the edges of the river is freshwater marsh - the following plant species occur commonly here: Yellow Flag (*Iris pseudacorus*), Creeping Bent (*Agrostis stolonifera*), Canary Reed-grass (*Phalaris arundinacea*), Marsh Bedstraw (Galium palustre), Water Mint (*Mentha aquatica*) and Water Forget-me-not (*Myosotis scorpioides*). In the wetter areas of the marsh Common Meadow-rue (*Thalictrum flavum*) is found. In the vicinity of Dowth, Fen Bedstraw (*Galium uliginosum*), a scarce species mainly confined to marshy areas in the midlands, is common in this vegetation. Swamp Meadow-grass (*Poa palustris*) is an introduced plant which has spread into the wild (naturalised) along the Boyne approximately 5 km south-west of Slane. It is a rare species which is listed in the Red Data Book and has been recorded among freshwater marsh vegetation on the banks of the Boyne in this site. The only other record for this species in the Republic is from a site in Co. Monaghan.



The secondary habitat associated with the marsh is wet grassland and species such as Tall Fescue (*Festuca arundinacea*), Silverweed (*Potentilla anserina*), Creeping Buttercup (*Ranunculus repens*), Meadowsweet (*Filipendula ulmaria*) and Meadow Vetchling (*Lathyrus pratensis*) are well represented. Strawberry Clover (*Trifolium fragiferum*), a plant generally restricted to coastal locations in Ireland, has been recorded from wet grassland vegetation at Trim. At Rossnaree river bank on the River Boyne, is Round-Fruited Rush (*Juncus compressus*) found in alluvial pasture, which is generally periodically flooded during the winter months. This rare plant is only found in three counties in Ireland.

Along much of the Boyne and along tributary stretches are areas of mature deciduous woodland on the steeper slopes above the floodplain marsh or wet woodland vegetation. Many of these are planted in origin. However the steeper areas of King Williams Glen and Townley Hall wood have been left unmanaged and now have a more natural character. East of Curley Hole the woodland has a natural appearance with few conifers. Broad-leaved species include Oak (*Quercus* spp.), Ash (*Fraxinus excelsior*), Willows, Hazel (*Corylus avellana*), Sycamore (*Acer pseudoplatanus*), Holly (*Ilex aquifolium*), Horse chestnut (*Aesculus* sp.) and the shrubs Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*) and Elder (*Sambucus nigra*). South-west of Slane and in Dowth, the addition of some more exotic tree species such

as Wych Elm (*Ulmus glabra*), Beech (*Fagus sylvatica*), and occasionally Lime (*Tilia cordata*), are seen. Coniferous trees, Larch (*Larix* sp.) and Scots Pine (*Pinus sylvestris*) also occur. The woodland ground flora includes Barren Strawberry (*Potentilla sterilis*), Enchanter's Nightshade (*Circaea lutetiana*) and Ground-ivy (*Glechoma hederacea*), along with a range of ferns. Variation occurs in the composition of the canopy, for example, in wet patches alongside the river, White Willow and Alder form the canopy.

Other habitats present along the Boyne and Blackwater include lowland dry grassland, improved grassland, reedswamp, weedy wasteground areas, scrub, hedge, drainage ditches and canal. In the vicinity of Lough Shesk, the dry slopes of the morainic hummocks support grassland vegetation which, in some places, is partially colonised by Gorse (*Ulex europaeus*) scrub. Those grasslands which remain unimproved for pasture are species-rich with Common Knapweed (*Centaurea nigra*), Creeping Thistle (*Cirsium arvense*) and Ribwort Plantain (*Plantago lanceolata*) commonly present. Fringing the canal alongside the Boyne south-west of Slane, are Reed Sweet-grass (*Glyceria maxima*), Great Willowherb (*Epilobium hirsutum*) and Meadowsweet.

The Boyne and its tributaries is one of Ireland's premier game fisheries and it offers a wide range of angling from fishing for spring salmon and grilse to seatrout fishing and extensive brown trout fishing. Atlantic Salmon (*Salmo salar*) use the tributaries and headwaters as spawning grounds. Although this species is still fished commercially in Ireland, it is considered to be endangered or locally threatened elsewhere in Europe and is listed on Annex II of the Habitats Directive. Atlantic Salmon run the Boyne almost every month of the year. The Boyne is most important as it represents an eastern river which holds large three-sea-winter fish from 20 –30 lb. These fish generally arrive in February with smaller spring fish (10 lb) arriving in April/May. The grilse come in July, water permitting. The river gets a further run of fish in late August and this run would appear to last well after the fishing season. The salmon fishing season lasts from 1st March to 30th September.



The Blackwater is a medium sized limestone river which is still recovering from the effects of the arterial drainage scheme of the 70's. Salmon stocks have not recovered to the numbers pre drainage. The Deel, Riverstown, Stoneyford and Tremblestown Rivers are all spring fed with a continuous high volume of water. They are difficult to fish in that some are overgrown while others have been affected by drainage with the resulting high banks.

The site is also important for the populations of two other species listed on Annex II of the E.U. Habitats Directive, namely River Lamprey (*Lampetra fluviatilis*) which is present in the lower reaches of the Boyne River while the Otter (*Lutra lutra*) can be found throughout the site. In addition, the site also supports many more of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. Common Frog, another Red Data Book species, also occurs within the site. All of these animals with the addition of the Stoat and Red Squirrel, which also occur within the site, are protected under the Wildlife Act.

Whooper Swans winter regularly at several locations along the Boyne and Blackwater Rivers. Parts of these areas are within the cSAC site. Known sites are at Newgrange (c. 20 in recent winters), near Slane (20+ in recent winters), Wilkinstown (several records of 100+) and River Blackwater from Kells to Navan (104 at Kells in winter 1996/97, 182 at Headfort in winter 1997/98, 200-300 in winter 1999/00). The available information indicates that there is a regular wintering population of Whooper Swans based along the Boyne and Blackwater River valleys. The birds use a range of feeding sites but roosting sites are not well known. The population is substantial, certainly of national, and at times international, importance. Numbers are probably in the low hundreds.

Intensive agriculture is the main landuse along the site. Much of the grassland is in very large fields and is improved. Silage harvesting is carried out. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the lakes. In the more extensive agricultural areas sheep grazing is carried out.

Fishing is a main tourist attraction on the Boyne and Blackwater and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. The Eastern Regional Fishery Board have erected fencing along selected stretches of the river as part of their salmonid enhancement programme. Parts of the river system have been arterially dredged. In 1969 an arterial dredging scheme commenced and disrupted angling for 18 years. The dredging altered the character of the river completely and resulted in many cases in leaving very high banks. The main channel from Drogheda upstream to Navan was left untouched, as were a few stretches on the Blackwater. Ongoing maintenance dredging is carried out along stretches of the river system where the gradient is low. This is extremely destructive to salmonid habitat in the area. Drainage of the adjacent river systems also impacts on the many small wetland areas throughout the site. The River Boyne is a designated Salmonid Water under the EU Freshwater Fish Directive.



The site supports populations of several species listed on Annex II of the EU Habitats Directive, and habitats listed on Annex I of this directive, as well as examples of other important habitats. Although the wet woodland areas appear small there are few similar examples of this type of alluvial wet woodland remaining in the country, particularly in the north-east. The semi-natural habitats, particularly the strips of woodland which extend along the river banks and the marsh and wet grasslands, increase the overall habitat diversity and add to the ecological value of the site as does the presence of a range of Red Data Book plant and animal species and the presence of nationally rare plant species.

6.10.2006

# APPENDIX 2

# SITE SYNOPSIS

## SITE NAME: RIVER BOYNE AND RIVER BLACKWATER SPA

## SITE CODE: 004232

The River Boyne and River Blackwater SPA is a long, linear site that comprises stretches of the River Boyne and several of its tributaries; most of the site is in Co. Meath, but it extends also into Cos Cavan, Louth and Westmeath. It includes the following river sections: the River Boyne from the M1 motorway bridge, west of Drogheda, to the junction with the Royal Canal, west of Longwood, Co Meath; the River Blackwater from its junction with the River Boyne in Navan to the junction with Lough Ramor in Co. Cavan; the Tremblestown River/Athboy River from the junction with the River Boyne at Kilnagross Bridge west of Trim to the bridge in Athboy, Co. Meath; the Stoneyford River from its junction with the River Boyne to Stonestown Bridge in Co. Westmeath; the River Deel from its junction with the River Boyne to Cummer Bridge, Co. Westmeath. The site includes the river channel and marginal vegetation.

Most of the site is underlain by Carboniferous limestone but Silurian quartzite also occurs in the vicinity of Kells and Carboniferous shales and sandstones close to Trim.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive of special conservation interest for the following species: Kingfisher.



A survey in 2010 recorded 19 pairs of Kingfisher (based on 15 probable and 4 possible territories) in the River Boyne and River Blackwater SPA. A survey conducted in 2008 recorded 20-22 Kingfisher territories within the SPA. Other species which occur within the site include Mute Swan (90), Teal (166), Mallard (219), Cormorant (36), Grey Heron (44), Moorhen (84), Snipe (32) and Sand Martin (553) – all figures are peak counts recorded during the 2010 survey.

The River Boyne and River Blackwater Special Protection Area is of high ornithological importance as it supports a nationally important population of Kingfisher, a species that is listed on Annex I of the E.U. Birds Directive.

25.11.2010

# Ecological Impact Assessment of a proposed development site

## Rathdrinagh, Navan, Co. Meath



**24th AUGUST 2009**

**Prepared on behalf of:**

**O'Callaghan Moran and Associates Ltd.**
**Environmental & Hydrogeological Consultants**

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# 1. INTRODUCTION

The current ecological impact assessment has been prepared for a proposed extension to the existing Panda Waste recycling facility, which is located directly adjacent to the proposed development site. The current land use of the site is characterised as improved agricultural grassland, grazed by cattle, with some wet grassland evident in the north eastern section of the site. The site boundaries are dominated by treelines and hedgerows, while the western boundary of the site, adjacent to the existing facility comprises steel fencing.

The proposed development site is not located within any nationally or internationally designated conservation site. The closest designated site to the proposed development is located approximately 2.5 kilometres to the east (Thomastown Bog NHA).

The proposed development will impact directly on the improved agricultural grassland and wet grassland habitats within the development site. These habitats will be removed to facilitate the development of buildings and artificial surfaces. This impact is assessed as being imperceptible negative. The boundaries of the site are dominated by treeline and hedgerow habitats dominated by mature native tree species. Impacts to these habitats are also assessed as being imperceptible negative, where appropriate mitigation measures identified in the current assessment are implemented.

Preparation of this section included consultation through publicly-available information with the following agencies:

- National Parks and Wildlife Service (NPWS);
- Environmental Protection Agency (EPA);
- Ordnance Survey Ireland (OSI);
- Eastern Regional Fisheries Board (ERFB).

This study was undertaken by Ecofact Environmental Consultants Ltd. during August 2009 on behalf of O'Callaghan Moran and Associates Ltd.



# 2. METHODOLOGY

## *2.1 Desktop Review*

A desktop review was carried out to identify features of ecological importance within the study area and surrounding region. A review of areas designated (or being considered) for designation for nature conservation was carried out by consulting the National Parks & Wildlife Service (NPWS). These included Special Areas of Conservation, Special Protection Areas for birds (both internationally important) and proposed Natural Heritage Areas (of national importance). Furthermore, a review of the published literature was undertaken in order to collate data on species and habitats of conservation concern on and in the immediate environs of the proposed development site.

The digital database of the '*New Atlas of the British and Irish Flora*' (Preston et *al*, 2002) was consulted to assess the presence of rare plant species recorded from the 10 km square in which the site is located. Likewise, '*Exploring Irish Mammals*' (Hayden and Harrington, 2000) was used to assess the importance of the study area for mammals.

The collation of this information, as well as examination of Ordnance Survey Map 43 and OSI aerial photographs allowed areas of potential ecological importance to be highlighted prior to the field survey.

## 2.2 Field Survey Work

A Phase 1 habitat survey of the site was conducted during August 2007 using methodology developed by the Joint Nature Conservation Committee (1993). Habitats were classified using habitat descriptions and codes published in the Heritage Council's '*A Guide to Habitats in Ireland*' (Fossitt, 2000). Plant species nomenclature follows Stace's '*New Flora of the British Isles*' (1997). Habitats recorded were identified and mapped on a habitat map following the '*Habitat Survey Guidelines (Draft)*', published by the Heritage Council (2005).

During the walkover studies of the site the presence and utilisation of the area by mammals (i.e. badgers) and bird species was appraised and general ecological observations were also made.

## 2.3 Evaluation

The impact significance is a combined function of the value of the affected feature (its ecological importance), the type of impact and the magnitude of the impact. It is necessary to identify the value of ecological features within the study area in order to evaluate the significance and magnitude of possible impacts.

The results of the ecological survey were evaluated to determine the significance of identified features located in the study area on an importance scale ranging from international-national-county-local. The local scale is approximately equivalent to one 10 km square but can be operationally defined to reflect the character of the area of interest. Because most sites will fall within the local scale, this is sub-divided into high local importance to local importance-local value. The criteria used are shown in Table 1.



**Table 1** Criteria used in assessing the ecological importance of ecological features.

| Importance | Criteria |
|---|---|
| International | An internationally designated site or candidate site (SPA, pSPA, SAC, pSAC, Ramsar Site, Biogenetic Reserve). Also Sites which qualify for designation as SACs or SPAs – this includes sites on the NGO shadow list of SAC's. |
| National | A nationally designated site or candidate site (NHA, pNHA) (unfortunately there is no published criteria used in selecting these areas).<br>Sites which hold Red Data Book (Curtis and McGough, 1988) plant species. |
| County | Sites which hold nationally scarce plant species (recorded from less than 65 10 km squares), unless they are locally abundant.<br>Sites which hold semi-natural habitats likely to be of rare occurrence within the county.<br>Sites which hold the best examples of a semi-natural habitat type within the county. |
| High Local Importance | Sites which hold semi-natural habitats and/or species likely to be of rare occurrence within the local area.<br>Sites which hold the best examples of a high quality semi-natural habitat type within the local area. |
| Local Importance | Sites which hold high quality semi-natural habitats |
| Local Value | Any semi-natural habitat |

# 3. RECEIVING ENVIRONMENT

## 3.1 Designated Areas

### *3.1.1 Receiving environment*

The proposed development site is not situated within any area designated for nature conservation. The closest designated areas are two terrestrial Natural Heritage Areas (NHAs), located ca. 2.5 kilometres from the proposed development site.

The closest Special Area of Conservation is the River Boyne SAC, located ca. 3.6km north of the proposed development site. The land drain which is located at the southern boundary of the site discharges into an unnamed third order stream which is a tributary of the River Boyne. This stream enters the Boyne at Roughgrange, ca. four kilometres northeast of the proposed development site.

In Table 2 below, a list of designated areas within 5km of the application site is given.

**Table 2** Summary details of the Special Areas of Conservation/ National Heritage Areas (SAC's/ NHA's).

| Name | Site Code | Designation | Distance (km) | Notes |
|---|---|---|---|---|
| River Boyne and River Blackwater | 2299 | SAC | Ca. 3.6km north | This SAC is designated for alkaline fen and alluvial woodland (Annex I habitats) and is also selected for Annex II species: otter, Atlantic salmon and river lamprey.<br><br>None of the conservation features of the SAC are associated with the proposed development site. |
| Thomastown Bog | 1593 | NHA | Ca. 2.5km east | This peatland habitat is isolated from the proposed development both hydrologically and geographically |
| Balrath Woods | 1579 | NHA | Ca. 2.5km south | This woodland habitat is isolated from the proposed development both hydrologically and geographically. |



Evaluation: Sites designated as SAC's are recognised as being of international importance, designated under the Natura 2000 network, enforced by the EU Habitats Directive (1992). Sites designated as NHA's are of national importance, implemented by the Irish Wildlife Act (1976, amendment 2000). The current site is not within or connected to any important local or nationally important designated areas.

The River Boyne SAC is located to the north of the proposed development site and the proposed development is hydrologically connected to this catchment via the land drain which forms the southern boundary of the site.

### *3.1.2 Characteristics of the proposal*

It is proposed to develop a waste anaerobic digestion and composting system at a green field area located directly adjacent to the existing waste recycling facility at the Rathdrinagh crossroads. The proposed development will have associated office buildings, access roads and hardstanding, wastewater storage tanks, surface water percolation area and associated discharge.

The proposed development will be sited on an area of improved agricultural grassland. Sections of the existing hedgerow and treeline habitat on the site would also be affected by the proposed

development. Hedgerows and treelines on the eastern and southern boundary of the site will be retained during the proposed development works.

### 3.1.3 Potential Impacts

The proposed development area is located approximately 2.5km west of the nearest designated area, the Thomastown Bog NHA. The Balrath Woods NHA is located at 2.5km south of the proposed development. There are no potential impacts arising from the proposed development which may affect these designated sites.

The nearest Natura 2000 site, The River Boyne and River Blackwater SAC, is located ca. 3.6km to the north of the study area. There are no direct impacts resulting from the propose development which may affect this designated site. However, the land drain which forms the southern boundary of the proposed development site is hydrologically connected to the River Boyne via a third order tributary which joins the Boyne ca. 4 km northeast of the site at Roughgrange. There is therefore the potential for indirect water quality impacts arising from the proposed development which may affect the water quality and conservation interests of the River Boyne within the SAC. The ecological value of the land drain is assessed in the Section 3.2.1 below and is of inherently low ecological interest. The water quality of the drain will be assessed in a separate water quality report.

### 3.1.4 Remedial or reductive measures

As the development is located approximately 2.5km from either of the designated terrestrial NHA sites, no necessary remedial or reductive measures are required in this regard.

There is the potential for indirect impacts affecting the River Boyne to arise via the land drain at the south of the site during both construction and operation phases of the proposed development. Appropriate mitigation measures for the protection of water quality will be specified in the hydrology and water quality assessment report.



### 3.1.5 Predicted impact of the proposal

No negative impacts are anticipated in relation to the NHA sites within 5km of the proposed development.

Following the implementation of appropriate mitigation measures and the adequate protection of water quality within the drainage ditch during construction and operation phases; it is predicted that impacts affecting the River Boyne and River Blackwater SAC will be imperceptible negative. This impact assessment is based on the hydrology and water quality assessment carried out for the proposed development and takes into account the distance of the proposed development from the designated site and the dilution and assimilation available within the catchment of the minor watercourse, upstream of the confluence with the River Boyne.

### 3.1.6 Monitoring

There are no monitoring requirements prescribed in relation to the designated NHA sites in the vicinity of the proposed development. With respect to the River Boyne SAC it is recommended that any monitoring requirements imposed by the EPA waste licence in relation to water quality be implemented.

### 3.1.7 Reinstatement

No reinstatement will be required for any of the aforementioned designated areas.

## 3.2 Flora

### *3.2.1 Receiving environment*

The proposed development site slopes gently from the northern end of the site to the southern end. The site is dominated by improved agricultural grassland, some of which was found to be wet and waterlogged. The field boundaries on the site were dominated by ash treelines and hawthorn hedgerows, with the exception of the western boundary of the site which comprised a steel railing fence. An access road of bare earth bisected the site, this was found to be waterlogged, classified as marsh habitat, in the southern portion of the site.

A total of eight habitats were identified within the proposed development area. These are discussed individually below.

3.2.1.1 Improved Agricultural Grassland (GA 1)

The dominant habitat within the site was classified as improved agricultural grassland. The grassland was found to be grazed by cattle and was dominated by an improved seed mix. Species recorded included perennial rye grass *Lolium perenne*, meadow grasses *Poa* spp., cocksfoot *Dactylis glomerata*, Common herb species included plantains *Plantago* spp., creeping buttercup *Ranunculus repens*, white clover *Trifolium repens*, dandelions *Taraxacum* spp. agg., docks *Rumex* spp., nettle *Urtica dioica*, Common mouse-ear *Cerastium fontanum,* spear thistle *Cirsium vulgare* and creeping thistle *Cirsium arvense*.

Evaluation: This managed and improved habitat is widespread throughout the Irish countryside. The species diversity within this habitat was found to be poor and the habitat is classified as being of low ecological value.



3.2.1.2 Wet grassland (GS4)

The north eastern portion of the site was found to comprise wet grassland habitat which was associated with the improved agricultural land use of the site. This portion of the site was found to be waterlogged and was poached by cattle. There were no cattle within this habitat during the time of the survey. A greater diversity of broadleaved herbs were recorded from the wet grassland habitat, although the habitat was dominated by improved agricultural grassland species. Species recorded included creeping buttercup, celery-leaved buttercup *Ranunculus sceleratus*, redshank *Persicaria maculosa* and Yorkshire fog *Holcus lanatus*.

Evaluation: This managed and improved habitat is widespread throughout the Irish countryside. The species diversity within this habitat was found to be poor and the habitat is classified as being of low ecological value.

3.2.1.3 Marsh (GM1)

The southern portion of the site was dominated by improved agricultural grassland; however, a narrow strip of marsh was recorded, considered to be associated with a recolonised section of the access track bisecting the site, portions of this marsh habitat were drier with species indicative of recent disturbance. This habitat is characterised by the presence of hydrophilous species including broadleaved herbs and grasses. Brooklime *Veronica beccabunga*, buttercup species *Ranunculus* spp., willowherb species *Epilobium* sp., broadleaved dock *Rumex obtusifolius*, redshank and knotgrass *Polygonum aviculare* were all common; with grass species including floating sweet grass *Glyceria fluitans* recorded.

Evaluation: This wetland habitat is located on an area of low topography at the southern portion of the proposed development area. Due to the small size of this habitat and its relatively low diversity it is assessed as being of low ecological value.

3.2.1.4 Hedgerows (WL1)

Hedgerow habitats were recorded from the northwestern portion of the site, forming the site boundary along this location and extending into the adjacent field in the northeastern spur of the site. This habitat was dominated by hawthorn *Crataegus monogyna* with bramble *Rubus fruiticosus* spp. agg. and ivy *Hedera helix* dominating the understory. Occasional holly *Ilex aquifolium*, honeysuckle *Lonicera periclymenum* and wild rose *Rosa* sp. were recorded from within the hedgerows on site. The ground flora of the hedgerow habitat on the site was influenced by the agricultural management of the site and was dominated by improved grassland species. Occasional ash *Fraxinus excelsior* were recorded from this hedgerow habitat. In the case of the southern and eastern portions of the site hawthorn hedgerows were also present as an understory to a well developed ash treeline. The hedgerows on the site were found to be unmanaged.

Evaluation: Hedgerows are an important aspect of the Irish landscape, as well as being of value to mammal and bird fauna as wildlife corridors. The hedgerows on site form part of a continuous network in the surrounding landscape. These hedgerow habitats in association with treelines provide a refuge and foraging habitat for small mammals and birds and are therefore considered to be of local ecological importance.

3.2.1.5 Treeline (WL2)

The southern and western boundary of the site was dominated treelines of mature ash. The northern boundary, west of the existing farm buildings also comprised a treeline of ash. All treelines on the site were characterised by an understory of hawthorn hedgerow. The treeline along the eastern boundary of the site was found to be more widely spaced and was bounded to the west by a land drain (dry).



Evaluation: Treelines comprised generally of native tree species such ash form part of the Irish agricultural landscape and are of local ecological importance, functioning as wildlife corridors and also as commuting routes for bats.

3.2.1.6 Drainage ditches (FW4)

A drainage ditch was recorded from the southern boundary of the site. The drain was flowing in a west to east directing and exited the site at the south east corner. From a visual inspection of the drain no suitable fisheries habitat was recorded; furthermore no instream flora was recorded from the drain.

Evaluation: The drainage ditch recorded at the south of the site was considered to have limited functioning capacity in terms of supporting aquatic ecological diversity. The water quality of this drain will be evaluated as part of the water quality assessment carried out for the proposed development.

3.2.1.7 Buildings and artificial surfaces (BL3)

To the north of the site a number of buildings and concrete hardstanding areas were recorded associated with the agricultural land use of the site. These buildings are located outside of the proposed development area.

Evaluation: These buildings were found to have limited potential for flora and are of low ecological value.

3.2.1.8 Bare ground (ED2)

An access track from the existing farm buildings to the north of the proposed development site crosses the site in broadly a north to south direction to the southern portion of the site. The track is not surfaced and was found to be bare earth.

Evaluation: The access track was found to be bare earth and may provide suitable habitat for recolonising species in the future. It is however assessed as being of low ecological value.

3.2.1.9 Rare plant species

From an assessment of the database '*New Atlas of the British and Irish Flora*' (Preston et *al*, 2002) two species listed on the Irish Flora Protection Order (1999), were considered to be within the study area. These were the red hemp nettle *Galeopsis angustifolia* and hairy St. John's wort *Hypericum hirsatum*. Both these species have been recorded from the locality in Co. Meath and are considered likely to occur in agricultural habitats.

The red hemp nettle is an annual of arable land, waste places and open ground on calcareous substrates, including limestone pavements and scree. It is also found on eskers and on coastal sand and shingle. This species was not recorded from the site during the current survey and is considered to be unlikely to occur given the improved nature of the dominant agricultural grassland habitat within the site.

Hairy St. John's wort is a perennial herb of well-drained, neutral to basic soils in open or partially shaded habitats including rough and ungrazed grassland, woodland rides and clearings, river banks, roadside banks and verges. It was not recorded during the current survey of the site. The majority of the site is considered to be too wet and heavy for this species, while drier habitat associated with the hedgerow habitats on the site have been affected by intensive agricultural management.



The National Parks and Wildlife online mapviewer lists two species of protected flora with a 10km radius of the proposed development. Both meadow barley *Hordeum secalinum* and meadow saxifrage *Saxifraga granulata* have been recorded to the north of the proposed development site within the OS national grid square N97. These species are both listed on the Flora Protection Order and are also listed in the Irish Red Data list as vulnerable and endangered respectively. Neither of these species were recorded from the managed agricultural grassland habitat within the proposed development site.

### *3.2.2 Characteristics of the proposal*

Refer to section 3.1.2

### *3.2.3 Potential impact of proposed works*

The proposed construction of buildings and hardstanding areas associated with the proposed development will impact directly on improved agricultural grassland and wet grassland (dominated by improved grassland species). There will be further impacts on a small area of marsh habitat in the south of the site.

Access roads entering the site will require the removal of ca. 7m of hedgerow in the northern portion of the site and ca. 25m of treelines at the northern boundary of the site. There is the potential for further impacts affecting the hedgerow and treeline habitats at the boundaries of the site during the construction phase including disturbance, damage or removal.

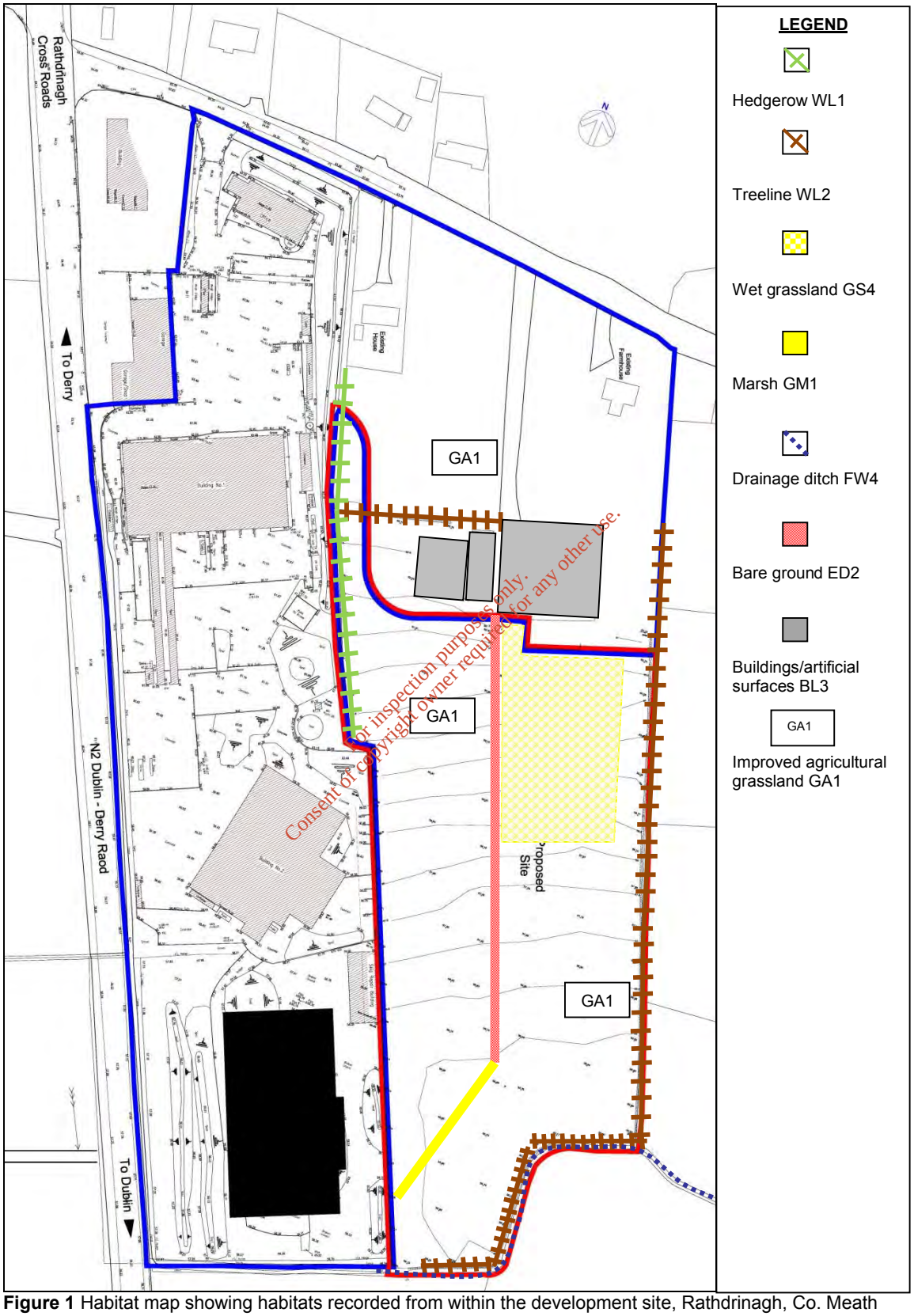




**Figure 1** Habitat map showing habitats recorded from within the development site, Rathdrinagh, Co. Meath

### 3.2.4 Remedial or reductive measures

The following mitigation measures are proposed to minimise the potential impacts caused by the loss of habitats within the proposed development site and surrounding area.

Insofar as possible all hedgerow and treeline habitats bordering the site should be retained. There is a requirement for the creation of access points through the hedgerow and treeline habitats in the northern portion of the site. These will be kept within the minimum area possible and the remaining hedgerow and treeline habitats outside of this area will be fenced off and retained.

Construction activities such as the use of heavy machinery will be restricted to within 2.5m metres of the hedgerows and to within four metres of the treelines for retention at the north of the site. A high visibility fencing shall be installed as a buffer zone around all treelines and hedgerows for retention to allow for the conservation of the root protection area (RPA) of these trees. Compaction of the soil within this buffer zone will be avoided and no heavy machinery or storage of site materials will be carried out within this area.

Refuelling of machinery will be undertaken away from all hedgerows, treelines and drains on the stie. Temporary toilet facilities will be provided for the construction stage. Site management procedures will include provisions for removing rubbish generated by on-site staff.

In order to compensate for the possible loss of the hedgerow habitats within the study area, native tree and shrub species will be planted within the proposed development site. These will include species recorded from the local area and can be incorporated into the existing treeline and hedgerow habitats that are being retained. Species suggested for replanting include ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna* blackthorn *Prunus spinosa* and holly *Ilex aquifolium*.



### 3.2.5 Predicted impact of the proposal

Imperceptible negative ecological impacts are predicted arising from the proposed development on improved agricultural grassland and marsh habitats. With the mitigation measures in place it is expected that the impact to hedgerow and treeline habitats within the site will be imperceptible negative, as a result of the proposed development.

There are no ongoing impacts affecting the terrestrial habitats within the site arising from the operational phase of the proposed development. Any discharge arising from the operational phase will be subject to the conditions of an EPA waste licence.

### 3.2.6 Monitoring

Monitoring of the proposed construction works is recommended to ensure that the sufficient protection is afforded to hedgerow and treeline habitats scheduled for retention. Monitoring is also required to ensure that compensation planting of native tree species within the site is implemented. This monitoring may be undertaken by site / project management staff.

### 3.2.7 Reinstatement

No reinstatement will be required beyond the landscaping measures which provide for the replanting of native tree species on the site.

## 3.3 Fauna

### *3.3.1 Receiving environment*

The ecological survey of the site was carried out in August 2009. The site was searched for signs of mammal activity, including trails, tracks, scats and hair. Any observations from the site were recorded.

No direct evidence of protected mammal species was found during the site survey. The site was found to be significantly devoid of mammal activity; limited to a single rabbit trail recorded from the treeline at the eastern boundary of the site and a single fox scat recorded from the northern side of the treeline at the northern boundary of the site.

Badgers are likely to be present in the wider landscape and may forage on the application site occasionally; however, no signs of badger activity were noted, no habitual trails or crossings, scats or 'snuffle holes' were recorded within or in the vicinity of the development site.

Mature and semi-mature ash trees border the site as continuous treelines; many of these trees had good ivy cover. These were identified as having some limited potential for roosting bats. The hedgerows of the site were found to be utilised by a variety of songbirds and passerine species common in the Irish countryside. Bird species recorded from this site during the current survey included magpie, starling, swift, woodpigeon, pied wagtail and jackdaw.

Mammal activity and potential on the site is evaluated as being of low ecological importance, while the avifauna diversity on the site was also considered to be of low ecological importance.

Protected fauna have been recorded in the vicinity of the proposed development, as listed on the NPWS 'online mapviewer'. These include the otter *Lutra lutra*, listed on Annex II of the EU Habitats Directive and recorded from the grid squares to the north and east of the proposed site. This species is associated with the River Boyne catchment. Additional protected species listed on the Irish Wildlife Act (1976, amendment 2000) have been recorded from the vicinity of the proposed development (10km grid square O07) to the north east. These include the pygmy shrew *Sorex minutus*, hedgehog *Erinaceus europaeus*, red squirrel *Sciurus vulgaris*, stoat *Mustela erminea* and brown long-eared bat *Plecotus auritus* (listed on Annex IV of the EU Habitats Directive).



No protected species were listed on the NPWS database within the 10km grid square (N96) within which the proposed site is located.

### *3.3.2 Characteristics of the proposal*

Refer to section 3.1.2.

### *3.3.3 Potential impact of proposed works*

Both mammal and bird species recorded from the site survey were found to be common in the Irish countryside and are considered to be likely to use the site following implementation of the proposed landscaping measures. The proposed development does not include impacts affecting important habitat for fauna. Impacts affecting mammals, birds and other fauna is therefore assessed as being imperceptible negative.

No protected non-volant mammals were recorded from the site and there are no impacts affecting protected non-volant mammals expected.

Although no bat roosts were identified during the current survey, common bat species could potentially use the trees along the boundary of the study area. It is considered unlikely that any significant bat roost is present within the trees identified for removal during the current development. However, as all bat species are protected under Irish legislation mitigation measures are provided to limit the significance of impacts to these species.

### 3.3.4 Remedial or reductive measures

Mitigation measures for the protection of birds on the site is limited to adherence to the Wildlife Act (1976, amendment 2000) whereby no clearance of vegetation, scrub, hedgerow or treeline is permitted during the bird nesting season, between the months of March to August, inclusive.

No mammal dwellings were recorded on the site and no mitigation measures are proposed in this regard.

Trees identified for removal will first be surveyed for the presence of bats by a qualified ecologist. All ivy-covered trees felled will be let fall gently to the ground and will be left to lie undisturbed overnight to allow any bats within cracks or crevices to escape.

During the construction phase lighting on site will be directed away from retained boundary treelines and hedgerows to avoid impacts to foraging bats. The permanent lighting associated with the operational phase of the development will take similar cognisance of bats utilising the treelines and these areas will be kept dark, with the minimum lighting necessary to satisfy safety consideration enforced.

It is recommended that bat boxes and bird nesting boxes are incorporated into the proposed landscape design for the proposed development. These features would enhance the biodiversity value of the surrounding landscape and would compensate for any potential bat roosts or bird nesting sites lost during the construction phase of the proposed development. Siting of these mitigation measures would be best located on the south eastern face of existing trees and site specific locations should be identified in consultation with a suitably qualified ecologist.



### 3.3.5 Predicted impact of the proposal

Disturbance to non-volant mammals (badger, otter, fox, rabbit) during the construction phase is considered to be imperceptible negative due to the general absence of mammal species within the development site.

Despite the required felling of mature trees within the treeline habitats on the site, this will not require the removal of the entire corridor and mature trees for removal will be handled according to the required mitigation measures. Impacts to bat species within the site are therefore considered to be imperceptible negative.

All the bird species currently using the site are expected use the site following implementation of the proposed landscaping measures. Impact on birds is therefore assessed as being imperceptible negative.

### 3.3.6 Monitoring

Provided the outlined remedial measures are adhered to it is anticipated that no further monitoring will be necessary.

### 3.3.7 Reinstatement

It is envisaged that no reinstatement will be required in addition to the landscaping measures.

## REFERENCES

*General References*

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## PLATES

**Plate 1** View south along the western boundary of the site.

**Plate 2** View west along the northern treeline, the hedgerow along the western boundary is also visible in the background.

**Plate 3** The northern spur of the proposed site with the hedgerow habitat visible along the western border.

**Plate 4** The hawthorn hedgerow which forms the western border in the northern portion of the site.

**Plate 5** View east across the wet grassland habitat in the northern portion of the site.



**Plate 6** Marsh habitat colonising a land drain in the southern portion of the site.

**Plate 7** Ash treeline along the southern boundary of the site.

**Plate 8** The land drain at the southern boundary of the site.



**Plate 9** View north along the treeline that forms the eastern boundary of the site.

## **Appendix 1** Assessment of Impacts and Impact Significance.

Criteria for assessing impact type and magnitude are presented in Tables A1.1 and A1.2, respectively.

In assessing the magnitude and significance of impacts it is important to consider the value of the affected feature, this is taken into account in Table A1.2.

**Table A1.1.** Criteria for assessing impact type

| Impact type | Criteria |
|---|---|
| Positive impact: | A change is likely to improve the ecological feature in terms of its ecological value. |
| Neutral | No effect. |
| Negative impact: | The change is likely to adversely affect the ecological value of the feature. |

**Table A1.2** Criteria for assessing impact magnitude.

| Impact magnitude | Definition |
|---|---|
| No change: | No discernible change in the ecology of the affected feature. |
| Imperceptible Impact: | A change in the ecology of the affected site, the consequences of which are strictly limited to within the development boundaries. |
| Minor Impact: | A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary, but these consequences are not considered to significantly affect the distribution or abundance of species or habitats of conservation importance. |
| Moderate Impact: | A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary. These consequences are considered to significantly affect the distribution and/or abundance of species or habitats of conservation importance. |
| Substantial Impact: | A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary. These consequences are considered to significantly affect species or habitats of high conservation importance and to potentially affect the overall viability of those species or habitats in the wider area. |
| Major Impact: | A change in the ecology of the affected site which has noticeable ecological consequences outside the development boundary. These consequences are considered to be such that the overall viability of species or habitats of high conservation importance in the wider area[2] is under a very high degree of threat (negative impact) or is likely to increase markedly (positive impact). |