

2.7 Ecology

2.7.1 Introduction

2.7.1.1 Background

TOBIN Consulting Engineers were commissioned by Bord na Móna to undertake the Environmental Impact Assessment for the intensification and extension to the Drehid Waste Management Facility in County Kildare. The ecological assessment, as reported herein, was carried out on the areas of lands entailing the previously permitted landfill footprint, the proposed landfill extension area, the previously permitted sand and gravel borrow area and the previously permitted clay borrow area. For the purposes of this EIS, this assessment area is referred to as the ‘development site’.

It should be noted that an ecological assessment for the EIS to accompany the original application for the facility was also undertaken. This previous assessment covered a wider study area to include all of the land owned by Bord na Móna in the southern section of the Timahoe Bog (referred to as the ‘study area’). This previous assessment has been considered in the preparation of the current EIS.

This assessment was conducted in accordance with Environmental Protection Agency (EPA) *Guidelines on the Information to be contained in Environmental Impact Statements* (EPA, 2002), *EPA Advice Notes on Current Practice (in the preparation of Environmental Impact Statements)* (EPA, 2003), and also in general accordance with the *Guidelines for Ecological Impact Assessment in the United Kingdom* (Institute of Ecology and Environmental Management, 2006).

2.7.1.2 Methodology

This ecological assessment comprised both a desktop study and field surveys. The desk study comprised the following elements:

- Identification of all sites designated for nature conservation within 10km of the development site.
- Consultation with the Development Applications Unit, Department of the Environment, Heritage and Local Government, the Southern Regional Fisheries Board (SRFB), An Taisce and the Irish Peatland Conservation Council (IPCC) Review of Ordnance Survey maps and aerial photography in order to determine broad habitats that occur within the existing site.
- Review of relevant reports and literature.

Consultation responses have been received from An Taisce, IPCC and SRFB.

TOBIN Consulting Engineers undertook site visits to carry out habitat and general mammal assessments in March, July and December 2007.

The habitat assessment was conducted in accordance with The Heritage Council's Draft methodology, *A Standard Methodology for Habitat Survey and Mapping in Ireland* (Natura Environmental Consultants, 2002) and habitats were classified according to The Heritage Council's *A Guide to Habitats in Ireland* (Fossitt, 2000). Aerial photography assisted habitat delineation and interpretation. Plant identification and nomenclature principally follows Webb *et al.* (1996). Grass and fern identification and nomenclature was further assisted by Rose (1989). The predominant plant species for each habitat type were recorded in order to accurately determine habitats present on the site. Habitats were rated according to the Site Evaluation Scheme contained in the National Roads Authority's *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (National Roads Authority, 2006). See Appendix 2.7.1 for qualifying criteria.

The general mammal survey primarily involved searching the site for evidence/signs of mammals (e.g. tracks, scats, dwellings and occasionally direct sightings). An assessment of the habitats in terms of their importance for mammals was also undertaken.

Survey Constraints

The site visit in July 2007 took place after a period of prolonged and heavy rainfall, some of the low lying areas were consequently flooded and were not accessible.

A comprehensive faunal survey was not a practical proposition due to natural mammalian behaviour. Most mammals are small and shy of human presence. The mammal assessment undertaken is considered to be sufficient to indicate whether protected species (otter, Irish hare, badger, bats) are thought to be present on this site, particularly when an assessment as to the suitability of the habitats and conditions is also taken into consideration.

2.7.2 Description of the Existing Environment

2.7.2.1 General description of the development site

The development site covers the area of the previously permitted waste management facility, the extension to the east and the permitted borrow areas where materials have been excavated for use in the construction of the facility.

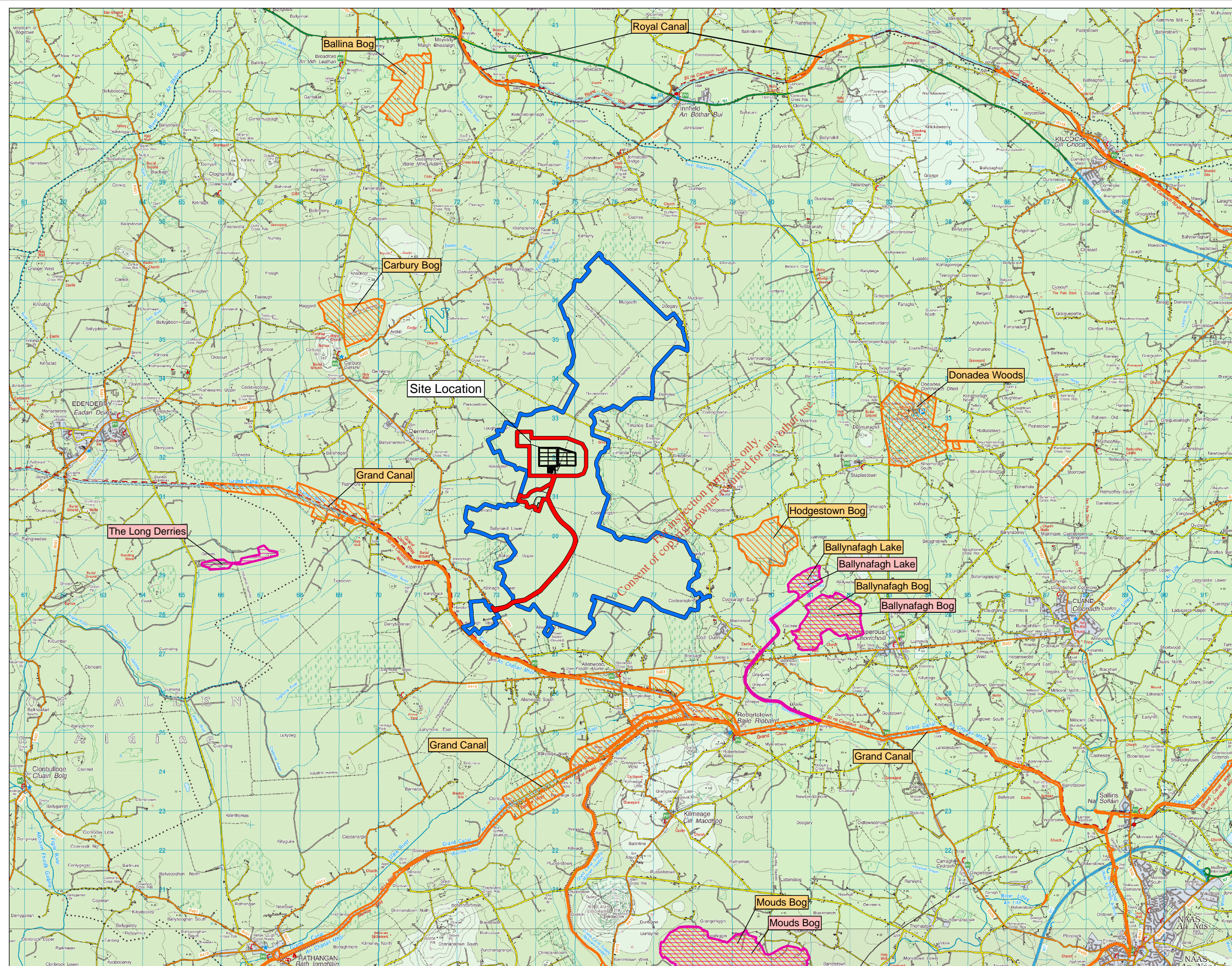
The development site forms a small part of the southern portion of Timahoe bog, which is a large area of Bord na Móna cutaway located in north-west County Kildare.

2.7.2.2 Designated areas and rare plant records

The National Parks and Wildlife Services database of designated nature conservation areas was reviewed. The database was searched for designated sites within 10km of the site. All Natural Heritage Areas or proposed Natural Heritage Areas are of national importance. Table 2.7.1 and Figure 2.7.1 present the designated areas within 10km of the site.

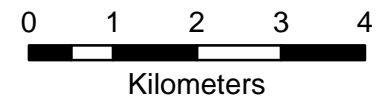
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LEGEND

- Site Activity Boundary
- Land under control of Developer
- NHA
- SAC



- NOTES**
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
 2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
 3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
 4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Issue	Date	Description	By	Chkd.
A	13-03-08	Draft Issued	A.G.	D.R.

Client: **BORD NA MONA**

Project: **DREHID EXTENSION
EIS & PA**

Title: **DESIGNATED
CONSERVATION AREAS**

Scale @ A3: **1:90,000**

Prepared by: **A. Gruschka** Checked: **D. Rees** Date: **March 2008**

Project Director: **Damien Grehan**

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Issue:
3369 Figure 2.7.1 A

Table 2.7.1: Designated conservation areas located within 10km of the site

Name	Site Code	Designation	Approximate distance from site/activity boundary	Approximate distance from landfill footprint
Ballina Bog	000390	pNHA	8.4 km,	8.9 km
Ballynafagh Bog	000391	pNHA/cSAC	5.9 km,	6.8 km
Ballynafagh Lake	001387	pNHA/cSAC	5.4 km,	6.2 km
Carbury Bog	001388	NHA	4.3 km,	5.1 km
Donadea Woods	001391	pNHA	7.7 km,	7.8 km
Grand Canal	002104	pNHA	0.9 km,	3.6 km
Hodgestown Bog	001393	NHA	4.1 km,	4.4 km
Long derries, Edenderry	000925	pNHA/cSAC	5.6 km,	6.9km
Royal Canal	000210 3	pNHA	8.8 km	9.2 km
Mouds Bog	000395	pNHA/cSAC	9.4 km	12 km

NHA = Natural Heritage Area,

pNHA = proposed Natural Heritage Area;

cSAC = candidate Special Area of Conservation.

Site synopses from the National Parks and Wildlife Services (NPWS) database for sites proposed/designated for nature conservation are contained in Appendix 2.7.2.

The development site is located in the Ordnance Survey National Grid 10km square N73. A plant species list for this 10km square was generated from the CD-Rom version of the *New Atlas of British and Irish Flora* (Preston *et al.*, 2002). This list was then compared to the list of species protected under the Flora (Protection) Order, 1999 and those that are included in the Irish Red Data Book (Curtis and McGough, 1988). Table 2.7.2 presents the protected or rare species with records occurring in this grid square.

Table 2.7.2: Protected or Rare Plants

Species	Status	Category
Bog Orchid, (<i>Hammarbya paludosa</i>)	Protected	Rare
Bog Rosemary, (<i>Andromeda polifolia</i>)		Species not Considered Threatened in the Republic of Ireland but protected in NI
Cowslip (<i>Primula veris</i>)		Species not Considered Threatened in the Republic of Ireland but protected in NI

Conditions on site are suitable for bog rosemary, but neither this nor any of the other species mentioned above were recorded during the field visits.

A previous ecological assessment of the area had recorded three clumps of alder buckthorn (*Frangula alnus*) in scrub close to the Cushaling River, in December 2002. Alder buckthorn was not previously recorded at this location. It is listed as 'rare' in the Red Data Book (Cutis & McGough, 1988) and is proposed to be included in the 'Least Concern' category when the next revision of the Red Data List takes place. Two of the three clumps were relocated again in the scrub area during the site visit in March, 2007, alongside the Cushaling river which lies just outside the development site boundary. There is no disturbance to this area so the third stand of alder buckthorn is likely to be intact. The area was again checked in December 2007. All plants lie outside the planning application boundary and works associated with the sand and gravel borrow area will not affect this area. It was noted that one of the plants is dying; this appears to be due to the plant being swamped by an encroaching growth of bracken and bramble. Other specimens of alder buckthorn are bigger and appear to be healthy.

2.7.2.3 Habitats within the development site

As mentioned previously, the development site comprises the previously permitted landfill footprint where construction is on-going, an extension to this area lying to the east and the sand and gravel borrow area where material to be used in the construction of the waste management site is excavated. It also includes the clay borrow area to the north-west.

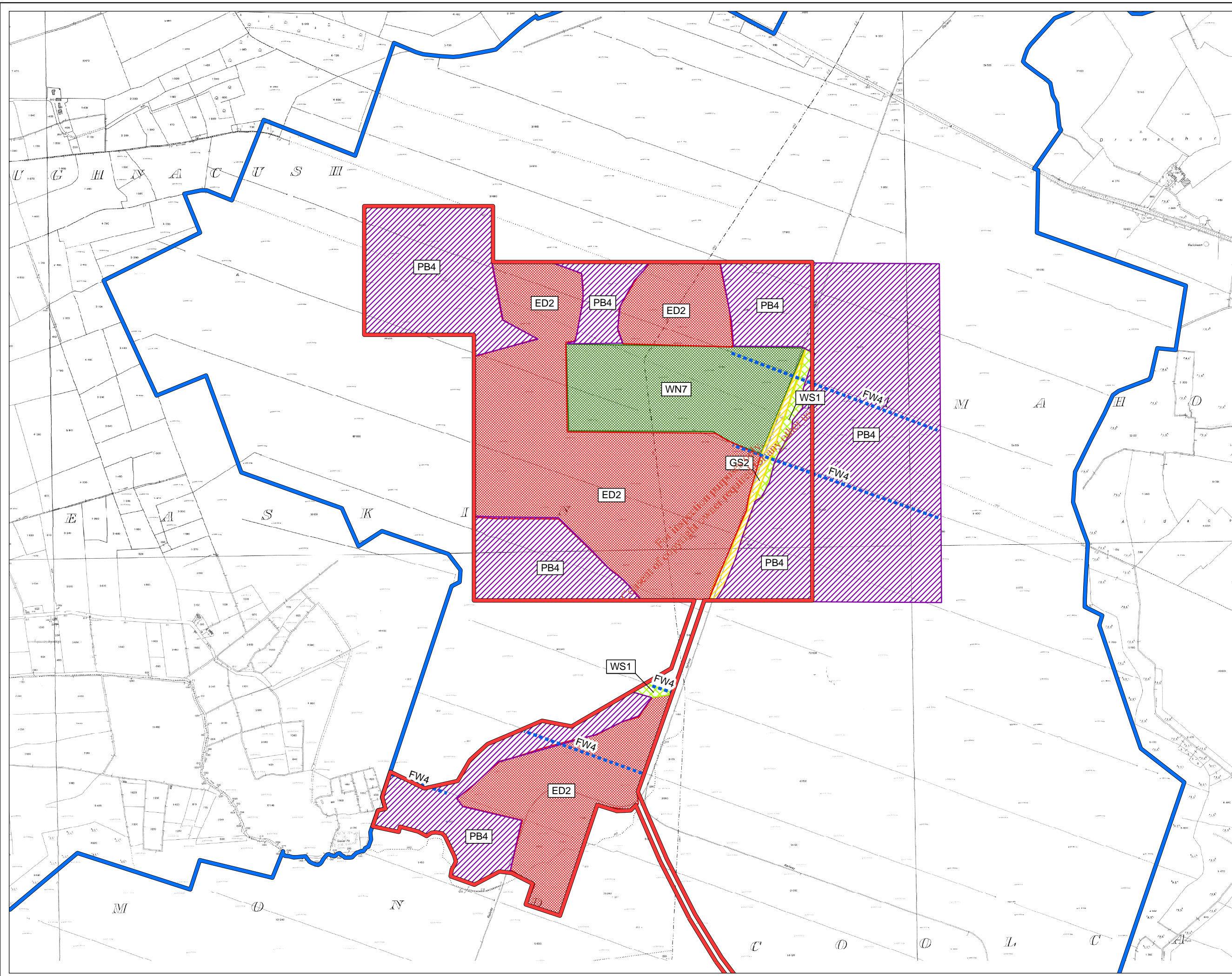
The development site lies within the Timahoe bog, an area that was previously used by Bord na Móna for commercial peat extraction. In general, the habitats present on site are typical of revegetating cutover bog, with scrub/woodland habitats plus the on-going construction site itself.

Habitats were classified in accordance with Fossitt (2000), 6 No. habitat classes occur within the site, and are as follows:

- Drainage Ditches (FW4)
- Dry Meadows and Grassy Verges (GS2)
- Cutover Bog (PB4)
- Bog Woodland (WN7)
- Scrub (WS1)
- Spoil and Bare Ground (ED2)

Habitats classes and their extents are presented in Figure 2.7.2 and described in subsequent sections.

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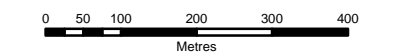


LEGEND

- Site Activity Boundary
- Land under control of Developer

Ecological Assessment

- - - FW4 Drainage ditches
- ED2 Spoil and bare ground
- GS2 Dry meadows and grassy verges
- PB4 Cutover bog
- WS1 Scrub
- WN7 Bog woodland



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Issue	Date	Description	By	Chkd.
A	13.04.08	Issued	P.K.	D.R.

Client: **BORD NA MONA**

Project: **DREHID EXTENSION
EIS & PA**

Title: **HABITATS
MAP**

Scale @ A3: **1 : 10,000**

Prepared by: **P. Kelly** Checked: **D. Rees** Date: **March 2008**

Project Director: **Damien Grehan**

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Issue: **3369 Figure 2.7.2 A**

2.7.2.3.1 Drainage Ditches (FW4)

There are five ditches within the development site; three within the area around the sand and gravel borrow area and two in the proposed extension area. The ditches close to the borrow pit are up to 8m wide and hold water. They have steep banks and little in the way of fringing vegetation, although bulrush (*Typha latifolia*) does occur at the foot of the bank at scattered locations along the ditches. The water in the ditches is highly turbid and does not allow much vegetation to grow although occasional patches of duckweed (*Lemna minor*) do occur.

The banks alongside these ditches have scrub development with the main species being hawthorn (*Crataegus monogyna*). Plants that have colonised some of the bare peat areas on the ditch banks include willowherb (*Epilobium* spp) and wild strawberry (*Fragaria vesca*).

The ditches within the extension area were full on the day of the site visit in July 2007 and water was at field level. At the western end of the ditches, close to the old railway embankment, scrub has developed on the ditch edges and causes some overshadowing of the water. Further to the east, the scrub dies out and the bankside vegetation reflects the adjoining cutover bog habitat. No aquatic vegetation was observed within the ditch and little in the way of emergent vegetation, although the unseasonally high water levels may well have been masking some of the vegetation.

These ditches are classed as being of low ecological value.

2.7.2.3.2 Dry Meadows and Grassy Verges (GS2)

This habitat type is found along the old railway line that lies to the east of the waste management facility. The banks of the old railway line are dominated by coarse vegetation, chiefly cocksfoot grass (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), sweet vernal grass (*Anthoxanthum odoratum*), nettle (*Urtica dioica*), Angelica (*Angelica sylvestris*) and bramble (*Rubus fruticosus* agg.). Plants such as hedge woundwort (*Stachys sylvatica*), selfheal (*Prunella vulgaris*), centaury (*Centaureum erythraea*) and marsh thistle (*Cirsium palustre*) are occasional. Some growth of birch (*Betula pubescens*) and sally (*Salix cinerea*) occurs from the adjoining scrub habitat.

The top of the old railway contains the same habitat type but within this are elements of vegetation that are more characteristic of open ground habitat with some areas of bare peat showing. In these patches the vegetation includes silverweed (*Potentilla anserina*), pineappleweed (*Matricaria discoidea*), black medick (*Medicago lupulina*), red bartsia (*Odontites vernus*), yellow rattle (*Rhinanthus minor*) and mayweed (*Tripleurospermum inodorum*). Perennial rye-grass (*Lolium perenne*) is also present along with the previously mentioned grass species.

This habitat type has formed on the man-made former railway line, which has subsequently been recolonised by vegetation. It adds diversity to the local area and as such is classed as being of low to moderate ecological value.

2.7.2.3.3 Cutover Bog (PB4)

This habitat has formed as a result of the previous commercial peat extraction from the original bog habitat. The surface layers of peat along with the original vegetation have been removed. Extensive drainage has altered the hydrology of the area, again influencing the vegetation type.

A mosaic of vegetation types has now developed with slight changes in surface topography producing wetter areas with some shallow pools forming. There are also sections of bare peat and some scrub/tree development.

The dominant plant species is ling heather (*Calluna vulgaris*) producing a heathland type landscape. The other heather to occur is cross-leaved heath (*Erica tetralix*). The two commoner species of cotton grass, common cotton grass (*Eriophorum angustifolium*) and hare's tail cotton grass (*E. vaginatum*), occur with common cotton grass a frequent coloniser of bare areas of peat. *Cladonia* lichens (including *Cladonia portentosa*, *C. floerkeana* and *C. uncialis*) also occur. No patches of *Sphagnum* moss were observed within the development site.

Bare areas that are also wet are being recolonised by soft rush, (*Juncus effusus*), purple moor-grass (*Molinia caerulea*) and hare's tail cotton grass.

Occasional seedlings of Scot's pine (*Pinus sylvestris*) were scattered through the areas of remaining cutover bog along with seedlings of birch. There is a small area of scrub development in the southeast corner of the waste management site. The scrub species include birch, willow (*Salix* sp.), ash (*Fraxinus excelsior*) with an understorey dominated by bramble (*Rubus fruticosus* agg.) and bracken (*Pteridium aquilinum*). This patch of scrub was considered too small to be classed as a separate habitat category.

The extension area chiefly comprises cutover bog with a similar species composition, with a high cover of ling and purple moor-grass, however, this area shows higher levels of birch dominated scrub invasion. The cutover bog habitat in this area also contains small patches that are more grassland-like with Yorkshire fog and sweet vernal grass as the chief grass species and occasional patches of common spotted orchid (*Dactylorhiza maculata* subsp. *fuchsii*) and marsh thistle. These grass areas within the cutover bog habitat are not large enough to be considered as a separate habitat type.

The area of cutover bog that lies within the extension area is a lower lying area than much of the site and is consequently wetter and holds more water. In the course of the site visit in July 2007, parts of this habitat were underwater and, for the most part, were inaccessible. The edges of the water were accessible by wading and revealed that the vegetation below the water mostly comprised dead clumps of purple moor-grass. There are numerous narrow drainage channels that have been cut through this area. These drainage channels hold water through much of the year as is evident from the growth of bulrush in these channels.

This habitat type has formed on an area that was created through commercial peat extraction and the original bog habitat has been greatly modified. However, the colonising vegetation shows a great deal of semi-natural vegetation and a high degree of diversity of species and is classed as being of moderate ecological value.

2.7.2.3.4 *Bog Woodland (WN7)*

This habitat type is chiefly confined to an area that lies immediately to the north of the construction area of the previously permitted waste management facility. A second area is also present in the landfill footprint extension area, lying between the old railway embankment and the current waste management facility construction site. It has formed on an area of cutaway bog, as evidenced by the areas of bare and re-vegetating peat present on the ground beneath the trees. The tree species are dominated by birch and willow with small patches of Scot's pine. These trees reach a height of 10m or more.

The understorey is dominated by ling heather, and, as with the cutover bog habitat, there are areas of bare peat that are being recolonised chiefly by the two cotton grass species. Bramble and bracken also occur in the understorey.

This habitat type has formed on an area that has been greatly modified. The vegetation is semi-natural and shows a moderate degree of diversity, it is classed as being of moderate ecological value.

2.7.2.3.5 *Scrub (WS1)*

One area of scrub development that occurs at the northern edge of the section containing the gravel borrow pit is large enough to map as a separate habitat type. The main scrub species are birch and willow with the main understorey species being bracken and bramble. Wild raspberry (*Rubus idaeus*) is also a component of the understorey.

A second area of scrub development lies against the eastern bank of the old railway embankment. It is dominated by birch and willow with an understorey of bramble and

occasional gorse.

This habitat type has again formed on the cutover bog. It is classed as being of low to moderate ecological value.

2.7.2.3.6 Spoil and Bare Ground (ED2)

This habitat type covers a large area within the development site. It consists of the areas where construction or deposition of spoil is ongoing. The gravel borrow area is also included in this category. Due to the frequent disturbance of the ground through construction and excavation activity or through the movement of heavy vehicles, there is virtually no vegetation development, with the only plant species tending to be colonisers such as soft rush (*Juncus effusus*) and thistles (*Cirsium* spp.).

This habitat is classed as being of low ecological value.

2.7.2.4 Fauna

2.7.2.4.1 Mammals

No direct sightings of mammals were made during the field visit but evidence of mammal activity was recorded by the presence of tracks in the southwestern section of the development site. These tracks were made by fox (*Vulpes vulpes*) and by Irish hare (*Lepus timidus hibernicus*). Both sets of tracks were on the edge of the site and it is probable that the animals were foraging from the adjacent grassland areas. Irish hare is a protected species under the Irish Wildlife Acts although it can be hunted under licence issued by NPWS.

No evidence of otter spraints (droppings) or a holt (breeding site) was noted within the development site. It is possible that otters venture into the area, but they are unlikely to remain as the drainage ditches within the site do not appear to support good populations of suitable prey items for otters.

No signs of badgers were recorded during the survey visits. This is to be expected as they generally avoid wet sites.

No evidence of the occurrence of bats was found within the study area. No mature deciduous trees were found, nor any ruined or old buildings suitable as summer roosts for bats. As a result, it is unlikely that bats roost in the area. The scrub areas, particularly where they line the edges of some of the main drainage ditches do provide good feeding habitat for bats as the wet habitats are likely to provide an abundance of insect prey items for bats.

2.7.2.4.2 Birds

No breeding bird survey was undertaken. The following bird species were noted during the site visits:

- Grey heron, *Ardea cinerea*
- Mute swan, *Cygnus olor*
- Teal, *Anas crecca*
- Mallard, *Anas platyrhynchos*
- Kestrel, *Falco tinnunculus*
- Water rail, *Rallus aquaticus*
- Snipe, *Gallinago gallinago*
- Swallow, *Hirundo rustica*
- Meadow pipit, *Anthus pratensis*
- Wren, *Troglodytes troglodytes*
- Dunnock, *Prunella modularis*
- Robin, *Erithacus rebecula*
- Stonechat, *Saxicola torquata*
- Blackbird, *Turdus merula*
- Mistle thrush, *Turdus viscivorus*
- Whitethroat, *Sylvia communis*
- Long-tailed tit, *Aegithalos caudatus*
- Hooded crow, *Corvus corone corone*
- Chaffinch, *Fringilla coelebs*
- Redpoll, *Carduelis cabaret*
- Reed bunting, *Emberiza schoeniclus*

Droppings from pheasant, *Rhasianus colchicus* were also recorded.

Water rail, teal and redpoll are amber listed on 'Birds of Conservation Concern in Ireland' (Newton et al, 1999) as their breeding populations have shown a moderate decrease in the last 25 years. Redpoll nest in areas of mixed birch/conifer woodland and were observed during the July 2007 site visit in suitable habitat. Water rails are found in freshwater wetlands, often in dense vegetation. At least one bird was heard calling from the flooded areas in the eastern section of the extension area during the July site visit, indicating a possible breeding attempt. Teal were only recorded during the March site visit suggesting that they only winter on this site, there was no evidence that they breed on site.

Stonechat is amber listed as a species of European Conservation Concern, although in Ireland, this species has shown a marked increase in numbers as indicated by results from the Countryside Bird Survey, (Coombes et al, 2006)

The December 2007 visit recorded surprisingly few birds with the only wildfowl

noted being four juvenile mute swans. The area lying to the east of the proposed extension area is low lying and on the day of the site visit was flooded, it would be expected that this area would hold numbers of wildfowl.

All birds and their nesting places are protected under the Irish Wildlife Act (1976) and under the Irish Wildlife Amendment Act, (2000) (except for excluded species).

2.7.2.4.3 Other Fauna

Numerous sightings of common frog (*Rana temporaria*) were made. Conditions on site are suitable for both smooth newt (*Triturus vulgaris*) and viviparous lizard (*Lacerta vivipara*).

These species are protected under the Wildlife (Amendment) Act 2000. The frog is common and widespread in Ireland, but considered vulnerable in the rest of Europe (Whilde, 1993).

During the July site visit, several species of Odonata were recorded. These were the dragonflies, brown hawker (*Aeshna grandis*) and common darter (*Sympetrum striolatum*) along with the blue-tailed damselfly (*Isechnura elegans*). Blue damselflies were also seen but not identified to species. Brown hawkers were observed ovipositing in vegetation alongside one of the drainage ditches.

2.7.2.4 Evaluation of the site

The Grand Canal pNHA and Hedges town Bog NHA located some 3.6km and 4.4km from the development site respectively are the nearest sites designated for nature conservation.

Six No. habitat types were identified within the site. These habitats are summarised in Table 2.7.3 below together with their evaluation rating. Spoil and Bare Ground (ED2) habitat occupies the greatest area within the site and is of low local ecological value. None of the habitats recorded on site were considered to be of high ecological value.

Table 2.7.3: Habitat Ratings

Habitat Classification	Rating	Evaluation
Drainage Ditches (FW4)	E	Low Value, Locally Important
Dry Meadows and Grassy Verges (GS2)	D-E	Low to Moderate Value, Locally Important
Cutover Bog (PB4)	D	Moderate Value, Locally Important
Bog Woodland (WN7)	D	Moderate Value, Locally Important
Scrub (WS1)	D-E	Low to Moderate Value, Locally Important
Spoil and Bare Ground (ED2)	E	Low Value, Locally Important

Alder buckthorn, a plant classed as 'rare' in Curtis & McGough lies outside the site activity boundary. No rare or protected species of plant were recorded on any of the site visits.

Evidence of Irish hare and common frog using the site was found. Both species are protected under the Irish Wildlife Acts.

Redpoll and water rail were recorded on the site in suitable habitat during the breeding season. Both birds are amber listed in 'Birds of Conservation Concern Ireland' as their breeding populations have declined.

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2.8 Human Beings/Socio-Economic

2.8.1 Introduction

It is proposed to intensify and extend the previously permitted Drehid Waste Management Facility in County Kildare. Under the original planning permission and in accordance with the original Waste Licence, 120,000 tonnes per annum (TPA) of waste can be disposed of to the engineered landfill site with an additional 25,000 TPA permitted for disposal at a composting facility. The facility, which commenced accepting waste in February 2008 has a permitted lifespan of 20 years.

This proposal would enable an additional 240,000 TPA of waste (over and above that already permitted) to be disposed of for 7 years. After 7 years the development will revert back to receiving the permitted 120,000 TPA for the remaining permitted operational life of the landfill.

2.8.2 Study Methodology

A desk study was carried out in order to examine all relevant information pertaining to socio economic activity in the area. The Kildare County Development Plan 2005-2011 was examined, along with the Kildare County Council planning website and relevant census data from the Central Statistics Office (CSO).

Fáilte Ireland tourist literature for Kildare, and websites of relevant tourism sites and amenities in the area, were examined. In addition, Ordnance Survey maps were used to identify landuse and possible amenity and tourist sites located in proximity to the proposed development site. A site visit was undertaken in September 2007.

2.8.3 Existing Environment

2.8.3.1 Landuse

The site occupies a limited area within the confines of Timahoe Bog which is owned by Bord Na Móna. This property, which consists of cut-away bogland is located between the Regional Routes R403 (Lucan/Carbury) and R402 (Enfield/Tullamore) that lie to the south and west of the site, and County Roads L5025 and L1019 located to the north and east of the site.

The site is located within a mixed rural/urban setting at the northwestern extent of County Kildare. Within the extended area, farming enterprises intermingle with a multiplicity of industrial and commercial establishments as well as a number of settlements that have developed primarily along a section of the existing national road system.

2.8.3.2 Population

The site is situated within the functional area of Kildare County Council, and the statutory land use strategy of the Planning Authority is defined by its current County Development Plan (2005-2011).

The Plan identifies that the population of Kildare is growing rapidly. The total population residing within County Kildare was recorded as 186,335 at the time of the 2006 Census. Kildare is further characterised by an uneven distribution of population, with nearly one third of total population concentrated in Celbridge Rural District, containing the towns of Celbridge, Maynooth and Leixlip.

The activity site is located in part within the District Electoral Divisions of both Edenderry and of Naas Rural. Results from the 2006 Census, assessed against the population recorded at the time of the previous Census in 2002, indicate an increase of over eleven percent for Edenderry rural and eighteen percent for Naas Rural. On reviewing the figures at the more detailed and specific level of the Rural Areas, the population within Timahoe North increased (+120) and that of Timahoe South (+189) between 2002 and 2006.

Other areas located within the general vicinity of the site, include Carrick (+34), Drehid (+31), Ballynadrumny (-44), Dunfiirth (+88), Cadamstown (+345), and Windmill Cross (+219).

Those settlements immediately adjacent to the subject site, include Allenwood, Carbury, Derrinturn and Timahoe, and are categorised as *Key villages* (Allenwood and Derrinturn), a *Strengthening village* (Timahoe) and a *Revitalising village* (Carbury) in the current Kildare County Development Plan 2005-2011 and in the Regional Planning Guidelines for the Greater Dublin Area 2004-2016. These illustrate the role of each of these settlements.

A *Key Village* is considered as a 'rural service centre'. It is envisaged that the future development strategy of such villages should be to concentrate population, services and jobs in strategic village locations, which have relatively good access from nearby towns. Key Villages would be the centre of a cluster of other villages, and provide services and jobs relatively close by.

Villages described as *Strengthening* are defined as 'experiencing some growth in recent years. It is considered that they have the capacity to accommodate limited growth having regard to the availability of adequate social infrastructure.'

Villages described as *Revitalising* are defined as having ‘experienced reduced levels of growth in recent years and have limited social and community facilities. Population growth will be encouraged to ensure a critical mass to enable investment in social and physical infrastructure.’

The Kildare County Development Plan (2005-2011) estimates that a further 22,564 houses will be constructed within the County during the period 2002 -2011.

All of the existing settlements in the vicinity are a considerable distance from the subject site, the nearest being Timahoe, at approximately 2.1km kilometres from the previously permitted landfill footprint and proposed extension. Derrinturn Village is approximately 3.2km from the previously permitted landfill footprint and proposed extension, while both Allenwood and Coill Dubh are in excess of 5km.

It is also recognised in the development plan that there is a strong demand for one-off housing in rural areas by people living and working in urban areas both within and outside the county and for speculative development. The resources of the county are limited and it is considered that the capacity of the county to absorb additional one-off housing for these categories is not sustainable and is fundamentally at odds with the common good. The focus of the rural strategy is to facilitate the legitimate needs of native rural Kildare people and those who, by their occupation or employment, can make a significant contribution to community life in the county (Ref; Para 6.6).

An additional objective seeks to retain the identity of towns and rural settlements and to ensure the orderly development of newly developing areas on the edges of towns and settlements by resisting urban sprawl, haphazard and piecemeal development and ribbon development in the rural countryside (Ref; Para 6.6.1).

There are a limited number of residences likely to be affected by the development. The issues as to their relationship with the development in relation to noise, air quality, water quality and traffic impacts are dealt with in detail in other sections of this EIS. The nearest occupied residential dwelling is 980m to the northeast from the previously permitted landfill footprint and its proposed extension. A new dwelling has recently been permitted and constructed approximately 185m from the previously permitted sand & gravel borrow area.

Virtually all of those dwellings, located along the public roads that are close to the subject site, are single storey in form and have their front building line at least ten metres from the road side boundary.

The level nature of the land within which the facility is located, the mature vegetation that is generally in place along the boundaries of the surrounding fields, and the proposed perimeter embankments and associated landscaping, collectively act to

interfere significantly with views of the site that would be available from these particular dwellings.

Additionally, the forestry plantations in the townlands of Loughnacush, Kilkeaskin, Drummond and Ballynakill Upper, which are immediately adjacent to the west and south of the site, are already providing screening that is both substantial and at the same time is also in visual harmony with the surroundings. This is especially the case in relation to the stand of trees between Timahoe West and Coill Dubh.

2.8.3.3 Employment

It is an economic objective in the Kildare County Development Plan (2005-2011) to:

1. Develop a quality built environment to attract and sustain employment creation initiatives
2. Remove infrastructural blockages and build capacity for the future population and employment growth.
3. Support and develop a skilled and flexible labour force
4. Support and develop education initiatives that promote and support career choices towards the future labour market requirements (Ref, Section 2.3).

When fully operational, the previously permitted facility will provide direct employment for approximately 13 people, as well as for additional service and construction workers. The proposed intensification and extension will mean that there will be further additional employment for 2 No. permanent employees as well as for service and construction workers.

2.8.3.4 Tourism and Amenities

Kildare County Council's Development Plan, 2005-2011, recognises that tourism development can make an important contribution to the economy of the county. In particular, it is recognised that tourism provides jobs and investment in parts of the county that might not otherwise benefit from economic development. The highly attractive nature of County Kildare's natural and physical environment and the richness of its cultural heritage and archaeology and its highly accessible location close to the Dublin metropolitan area, make Kildare very appealing. (Ref; Para. 13.1).

The site is located within an area contained within the Western Boglands landscape classification. This area of the county is highly distinctive due to the existing large areas of bogland vegetation. Badly drained bogs and alluvial lands characterise the unit, which has remained unattractive to agricultural settlement. As a result, the area is thinly populated. However, small settlements such as Allenwood or Robertstown,

combined with existing clusters of scattered rural houses (e.g. Lullymore, Coill Dubh) can be found. Although there is a low population density, the recreation and tourism potential of the area is recognised (Ref; 18.4.5).

With respect to boglands, Kildare County Council recognises that cutaway boglands represent degraded landscapes and/or brownfield sites and thus are potentially robust to absorb a wide variety of sympathetic developments.(Ref; Para. 11.2.3).

2.8.3.5 Infrastructure

The council recognizes that improving the standard of transportation infrastructure is of primary importance. The standard of infrastructure within the county has improved greatly in recent years and it is the aim of Kildare County Council that accessibility will improve further throughout the life of the plan (Ref; Para 3.1.1).

It is also policy to require that a Traffic Impact Assessment that assesses the impact of new development on the operation of the national route where it is proposed to take access directly off a national route or is likely to generate traffic on a national route. (Ref; Para.3.1.4.3).

A Traffic Impact Assessment has been carried for the proposed development and is detailed in Section 4.9 of this EIS.

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2.9 Archaeology and Cultural Heritage

2.9.1 General Historical Background

Place names and townland names are often indicators of past settlement and specific monument types, with Cill (Kill) for example, referring to a church, Monastic settlement, churchyard or graveyard. Timahoe derives its name from *Tigh Mochua* or the house of Mochua, from the Monastery founded here by St. Mochua in the fifth century. The remnants of a church and a well-preserved twelfth-century round tower are all that survive of this Monastic settlement. Other townland names in the vicinity of the development refer to features of the landscape, such as Corduff, meaning the 'black round hill' (Joyce 1990).

The general area, within which the site is located, was known as Sidh Neachtain (The Fairy Hill) before the region was called Carbury (after Cairbre, a son of King Niall of the Nine Hostages). It was originally named after Nuadha Neacht of Neachtain, the fourth son of Setna Siotbhaic who was a direct descendant of Labraid Loinsech.

It was Labraid Loinsech, invading as part of the Tuatha de Danann (the people of the goddess Danu), who landing near the River Barrow colonised the land and gave the name Laighin (Leinster) to the area. Setna Siotbhaic was to build the hill fort of Dun Aillinne, which was at the time the seat of the kings of Leinster.

Neachtain, who is mentioned in The Annals of the Four Masters, was King of Ireland for only one year. He was slain at Cliach (Idrone, Co. Carlow), by Conaire Mór in 45 AD, whose father, Ederscel was slain by Nuadha Neachtain the year before. That death was commemorated in a poem in the 'Book of Leinster' by Dubhtach Mac Ui Lugain.

Approximately 4km west of the site is Trinity Well, the source of the River Boyne, a watercourse spoken of from earlier times as being sacred, with the Salmon of Knowledge in Cuchulainn's period being associated with it. It was Boin, wife of Neachtain and the ancient goddess of poetry, who in drowning in the River Boyne after attempting to taste the magical powers of the Trinity Well, gave to it its name.

The name of Sidh Neachtain was to remain for the area for over four hundred years. In 429 Laoghaire, son of Niall of the Nine Hostages was in place in Tara as the (first recorded) High King, where he reigned for thirty years. He engaged in many battles over this period with the tribes of Leinster, and it was at Sidh Neachtain where he was to meet his death.

After being defeated at the battle of Ath Dara (Mageney) in 457, the Annals of the Four Masters records that he went back to Tara, but returned the following year on

another cattle raid this time to Sidh Neachtain. However after triumphing, he succumbed to the elements and died along the banks of the Cushaling River, which flows under the R402 at Dillon's Bridge, Drummond.

The name Sidh Neachtain, does not appear in any ancient annals after 458 and from then on the area is called 'Cairbre Og Ciartha.' This Cairbre, from the tribe of O'Keary's (later called Carey's) was a brother of Laoghaire and he and his ancestors ruled the area during the next 700 years. They eventually lost out to the Normans and thereafter there is no further mention of them.

The Normans arrived in Ireland in 1169, invited by Dermot Mac Murrough (an ally of the O' Ciardha Clan), whose daughter was to marry Strongbow and who gave the lands of Carbury to Meider Fitzhenry. Strongbow died in 1176 and Fitzhenry lost his property in 1181. There is no indication thereafter, up until 1199, as to the history of the area.

During the medieval period Timahoe lay within the territory of the Fitzgerald family who built castles at Timahoe and Coill Dubh. In 1258 Sir Gerald Fitz Maurice Fitzgerald, the fourth baron of Offaly, founded an abbey at Clane, the remains of which still survive to the south of the village. During the 1641 rebellion, the Fitzgeralds endured losses as a consequence of their involvement. Their castles changed hands and a short time later were in ruins.

In the aftermath of the Cromwellian War, Timahoe became the property of the Duke of York, brother of Charles II, who later became King of England, and who was defeated at the Battle of the Boyne in 1690. Subsequently, the property was confiscated and given to two brothers, John and Robert Curtis. They leased the property to Theobald Burke and Richard Aylmor, who in turn leased it to a group of Quakers from Northern Ireland. They built a meeting house adjacent to their own cemetery and also a windmill nearby.

During the 1798 rebellion the rebels of North Kildare, after succeeding in taking and burning the barracks at Prosperous, set up camp at Timahoe as it was a difficult area for the enemy to approach. On the 8th of June government forces failed to get through at Timahoe. Some days later the rebels attacked and burned the courthouse in Kilcock. They carried on with their campaign until the 21st July 1798 when their Commander, Col. William Aylmer signed a Treaty at Rathcoffey; this ended the rising in Kildare.

2.9.2 Archaeological Assessment Introduction

The following section of the EIS was compiled by Arch Consultancy Ltd. at the request of TOBIN Consulting Engineers on behalf of Bord na Móna. It concerns the archaeological assessment of an area under consideration for the extension of the

previously permitted Drehid Waste Management Facility, County Kildare. The archaeological assessment was initially conducted over a nine day period from the 10th of February 2003, with a further site visit on the 22nd of January 2004. Following the granting of planning permission for a waste management facility at the site archaeological monitoring of ground disturbance took place over a period of five months from August 2006 (License 06E0746). The work was undertaken by John Turrell and Rupert Flood and a report was submitted to the client in March 2007. This updated assessment was completed in April 2007 and a copy of this report is provided in Appendix 2.9.1.

Archaeological Brief

The archaeological significance of the area in general and in particular that area of land outlined above with special consideration given to the preferred footprint, situated in the northern sector of the bog are outlined herein.

The following items were addressed by the archaeological assessment:

1. The nature, extent and locations of archaeological material on the site of the development.
2. Where archaeological material is shown to be present, archaeological recommendations are included herein highlighting the potential impact of the development on the archaeology within the site.

Archaeological Survey

The survey consisted of the following three phases:

Phase One: Paper Survey

- The Topographical files of the relevant townlands in the National Museum of Ireland were examined, with particular attention to stray finds.
- Cartographic sources such as the Ordnance Survey Maps of 1837 and 1937 and earlier antiquarian maps of the area were examined.
- Consultation of the relevant aerial photographs received from TOBIN Consulting Engineers.
- Previous assessments, survey and excavation reports.

Phase Two:

The second phase consisted of a detailed field inspection of the entire area of the development. This allowed the opportunity of first hand observation of the terrain, which can often result in the discovery of hitherto unrecorded sites and finds.

Phase Three:

Phase three involved the collation and assessment of the material and reporting on the conclusions. This includes the potential impact on any archaeological features in the general environs of the development. Hitherto unrecorded sites are often discovered in

the course of fieldwalking. Archaeological monuments in the adjoining townlands of the sites were recorded so as to understand the type of archaeological landscape.

Phase Four

In addition to the desk-based research and fieldwork, a number other relevant persons and authorities were also consulted by Arch. Consultancy Ltd. and TES Consulting Engineers. Consultations included liaison with the Irish Archaeological Wetland Unit, Dúchas the Heritage Service, and Ellen O'Carroll, Archaeological Development Services Ltd. During the course of the assessment Arch. Consultancy Ltd. also spoke to Mr. Liam Hartford, who was an employee of Bord na Móna on Timahoe bog and who had a good knowledge of the bog complex.

Phase Five

Subsequent to the granting of planning permission at the site archaeological monitoring of ground disturbance took place over a period of five months from August 2006. The archaeologist monitored all ground disturbance associated with (a) the construction of a five-kilometre access road. (b) Clearance of the area of the waste management facility. (c) The opening of a borrow area in the bog to extract sand and gravel for the construction of the facility.

2.9.3 The Receiving Environment

Boglands cover one-sixth of the total landmass of Ireland extending over an approximate area of 1.34 million ha. They can be divided into two major types, raised bogs and blanket bogs, although both appear similar in character the mode of formation differs greatly. The vast majority of Irelands raised bogs occur in the central lowlands of the country unlike blanket bogs which are predominately confined to mountainous areas and some occasional lowland areas along the western seaboard. Timahoe Bog is a large raised bog separated by the county road L5025.

The anaerobic environment of bogs and wetlands helps create unique circumstances for the preservation of remains and have long been known for their rich abundance of archaeological deposits, which can range from the prehistoric to the medieval periods. One of earliest known sites from a wetland context is the Mesolithic habitation from Lough Boora in County Offaly where radiocarbon dating provided a range of dates from 7000-6500 BC.

A number of archaeological artefacts and sites have been recorded from within the development site. All the identified sites are toghers or trackways, called toghers from the Irish word *tógher* meaning causeway (Harbison 1988), they invariably transverse bogs at the narrowest crossing point. These trackways can vary significantly in size and form, from simple surface brushwood paths to larger timber planked roadways such as the Corlea trackway in Co. Longford, some gravel and flagstone examples

have also been recorded. The presence of trackways within Timahoe bog, could suggest human activity from as early as the Neolithic period (4000-2000 BC).

The cooler and wetter climatic conditions of the Bronze Age together with the impact of farming on vegetation and in particular tree regeneration, led to soils becoming wetter and drainage deteriorated. These conditions facilitated a more rapid increase in the growth and the spread of bogs. Consequently, the crossing of bogs became more difficult and problematic and the archaeological record shows a significant increase in the size and number of toghers constructed during this period.

The Bronze Age also saw the deliberate deposition of artefacts as votive offerings in water logged areas and bogs. Boglands have in the past yielded high concentrations of artefacts, particularly Bronze Age flat axes, swords and rapiers. For instance, in north Leinster 48% of Early Bronze Age flat axes have been found in bogs, while in Ireland as a whole, 51% of Late Bronze Age (Dowris Phase) hoards and 59% of later Iron Age (La Tène Phase) weapons have been recovered from bogs (Cooney and Grogan 1994). The topographical files of the National Museum of Ireland record a multi-period assemblage of finds for the Timahoe area and surrounding townlands. Some such as the bronze rapier from Allenwood Middle indicate activity for the Middle Bronze Age or Bishopsland Phase.

Human remains or 'bog bodies' have frequently been recovered from wetland sites, the most notable being the exceptionally well-preserved 'Gallagh Man', an Iron Age burial from Gallagh, near Castleblakeney in County Galway, discovered in 1821. Over eighty burials have been recovered from wetland areas the majority of which appear to be 'accidental (for example, as a result of bog slides or simply falling into a bog hole)' (Lynch 1991).

Discoveries of bog butter are frequent in Irish bogs, though not entirely an Irish phenomenon, as examples have also been found in Scotland. The practice of burying butter in bogs may possibly date to the sixth century A.D. The preservative properties of the bog would have been ideal for storage, though the desire to produce a special flavour in the butter is a possibility. Containers made from a variety of materials were used to store the butter during its time in the peat, though wooden vessels predominate with some highly decorated examples having been found. Bog butter has also been buried in bark, cloth, wickerwork and animal skin.

Areas of potential archaeological significance, in the area of the development, include rivers. The deposition of artefacts in water, particularly rivers and lakes, was widespread in Irish prehistory, with a very high proportion of Bronze Age artefacts from Irish rivers and lake-bed contexts. The Cushaling River is located on the west of the site of the development, while a second stream is situated south of it. In the south-east there is a stream which runs roughly parallel with one of the railway tracks in a

generally west-north-west/east-south-east direction.

2.9.4 Monuments encountered in the general archaeological landscape surrounding the development.

Ringforts

The construction of ringforts in Ireland dates from the early Christian/medieval period (c.500 AD to 1170 AD) and possibly continued up to the seventeenth century. Rath is the term applied to those ringforts of earthen construction, while cashel refers to those constructed from stone.

A ringfort generally consists of a circular, subcircular, oval or D-shaped area, enclosed by one or more banks of earth or stone, or a combination of both. Earthen ringforts usually have an external fosse surrounding the bank, and a causewayed entrance giving access to the interior. The bank is generally built by piling up inside the fosse, the material obtained by digging the latter. The function of ringforts was generally as enclosed homesteads, with the defences protecting the houses and outbuildings in the interior, but they may also have been used for social gatherings.

Enclosures

Enclosures are usually distinguished on the basis of their anomalous characteristics, such as their large or small size, or lack of entrance features, which sets them apart from ringforts or other classifiable enclosures. The term usually refers to a site which consists of an enclosing bank surrounding a circular or subcircular area, and with no apparent entrance. Due to the lack of diagnostic remains it is difficult to suggest a period of construction or use for the monuments. Occasionally, the enclosures are surrounded by a ring of trees. The function of these sites is indeterminable from visual inspection alone, that is, without excavation due to the lack of identifiable features. Sites which are now destroyed but which have been detected on aerial photographs, marked on various Ordnance Survey maps or locally described as circular or subcircular areas defined by banks and/or fosses are usually categorised as enclosures.

Children's burial ground

These sites are usually found either in isolation or associated with other monuments such as enclosures and are characterised by the presence of numerous small, uninscribed set stones, often arranged in rows.

Churches

Medieval churches, which often incorporate the fabric of early Christian churches, are distinguished on the basis of their ground plan and date. Nave and chancel churches are dated to the twelfth to thirteenth century, while single-celled churches are assigned a thirteenth to seventeenth century date. The single-celled churches were generally

orientated east/west and were entered at the west end of either the north or south wall. Some churches had opposing doorways at the west end of the church. These churches may also have had a subdivision at the west end of the church, in the form of a cross-wall, or the presence of corbels or beam-holes which indicate the former presence of a loft. These quarters comprised the accommodation for the parish priest.

Holy wells

A holy well can be defined as any location where water is used as the focal point of supernatural divination, cure or devotion on a regular basis. The remains found at the wells vary from an unadorned natural spring, or a hollow in bedrock, to mortared stone well-chambers with steps, canopies and wall niches (Alcock 1999, 337).

The veneration of holy wells is among the oldest Christian practices in Ireland, probably having originated in pre-Christian ritual. Many of the holy wells are dedicated to local saints and are renowned for their curative properties, often for a particular ailment (O'Brien and Sweetman 1997, 115; Alcock 1999, 337). The ritual connected with holy wells can often be quite complex. Pilgrimages are often focused on a pattern day, usually the anniversary of the saint to whom the well is dedicated (Alcock 1999, 337). The wells are often found in association with ecclesiastical remains and children's burial grounds.

Tower House

The origins of the Irish tower house are unclear and in general the buildings are one of the least understood castle type structures. While Cairns (1987, 9) claims their origin is in the 14th century the fact that a grant of £10 was made available under the statute of Henry VII in 1429 to every man in the Pale who wished to build a castle within 10 years and with specific measurements, suggests a 15th century date for the construction of these buildings. It is thought that the simpler tower houses found in the east of the country are the earlier examples with the more elaborate buildings in the west being of later date. The tower house continued to be built in the 17th century in County Galway as evidenced by a construction date of 1643 for Derryhivenny and a date of 1683 associated with Castle French.

The main function of tower houses appears to have been the provision of a place of security for ones family and stock. The siting of many tower houses, their impressive bawn walls, narrow slit windows, yetts, murder-holes, bartizans and machicolations testify to the defensive aspect of the structures. Most of the defences were geared towards assaults using bows, muskets and other light weapons and it is likely that the advent of the cannon in the 16th century eventually led to the decline in tower house construction. While the historical context of Irish tower houses stress their role as defensive buildings developed as a response to political instability it should not be forgotten that these buildings also functioned as family residences, a consideration reflected in their layout and design.

Toghers

A togher or tóchar is a brushwood trackway or more usually a roadway constructed from timber beams held in place by wooden pegs, traversing bogland or wetland. Stone-built roads or tracks were also constructed, and are known in some cases to connect with wooden trackways. Both the roads of wood and stone construction have a broad date span, with some dating to the Neolithic period, while others are assigned a late medieval date. In many cases modern roads follow the line of their more ancient antecedents (O'Brien and Sweetman 1997, 51).

2.9.5 Recorded Archaeological sites in the general vicinity of the development

The following archaeological monuments in the area surrounding the development are included to highlight the type of sites which survive in the vicinity of the development. It should be stressed that none of these monuments will be directly affected by the development. The relevant OS sheets showing these features are included in Appendix 2.9.2 of the EIS.

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Table 2.9.1: Archaeological Monuments in the area surrounding the facility

TOWNLAND	ARCHAEOLOGICAL SITE TYPE	SMR NUMBER	DISTANCE FROM SITE
Collinstown	Enclosure	KD008:007	5km
Ardkill	Castle	KD008:008	4.5km
Ardkill	Church & Graveyard	KD008:009	4km
Parsonstown	Enclosure	KD008:016	2.3km
Rathmore	Enclosure	KD008:019	3.3km
Collinstown	Church site	KD008:020	3.5km
Parsonstown	Enclosure	KD008:023	2.4km
Drehid	Enclosure	KD008:024	2.8km
Drehid	Togher	KD008:025/KD009:017	2.2km
Drehid	Togher	KD008:026	1.75km
Drehid	Togher	KD008:027	1.5km
Mulgeeth	Ringfort	KD009:001	4.7km
Timahoe West	Togher	KD009:006	1km
Timahoe West	Children Burial Ground	KD009:006 (01)	1km
Coologmartin	Oval Enclosure	KD009:007	3km
Timahoe East	Church & Graveyard	KD009:008	2.2km
Timahoe West	Castle	KD009:009	2.2km
Giltown	Circular Enclosure	KD009:010	4.9km
Kilpatrick	Burial Ground	KD012:001	3km
Ticknevin	Togher	KD012:002/003/004	4.5-5km
Ticknevin	Holy Well	KD012:008	4.5km
Coolearagh	Circular Enclosure	KD013:002	4.5km

COLLINSTOWNSMR KD008:007**Location Details****Classification:** Enclosure site**OS Sheet:** 8**Plan:** 3**Trace:** 2**National Grid Ref.:** 27112/23612

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. It consists of a roughly circular earthwork set in a depression on a slight rise in good pasture land. The surrounding land is higher than the interior of the site. The ground drops to a fosse with an inner bank. The interior is very uneven and is planted with trees. The site measures 42m east/west and 26m north/south. No traces of this site exist today.

ARDKILLSMR KD008:008**Location Details**

Classification:	Castle	OS Sheet:	8
Plan:	3	Trace:	5

National Grid Ref.: 27107/23530

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. According to O'Donovans OS Letters (1838-1840) '...in the south east part of the townland of Ardkill are the ruins of an old church and of a castle'. The tower house is dated to the fifteenth/sixteenth century, with the fireplace and chimney turret added in the seventeenth century. It is located on a natural rise in undulating pasture (well drained) surrounded by an area of low earthworks (especially to south-east) towards Ardkill. Only the south wall with a turret on the south-west corner and a small fragment of the north-east wall remain. The turret was added in order to add chimneys and has red brick in the fabric and is dated to the seventeenth/eighteenth century. In the east wall, at the top of the barrel vault over the ground floor, a joint line occurs where the wall under the vault is filled in. In the south wall a band of rough stones mark the level of the barrel vault between the ground and first floor. There are two breaks in the south wall, that on the east is large and possibly marks the position of a doorway, while that on the west is where the east wall and turret abut the south wall. The turret abuts the south-east corner and contains two flues, one from the ground floor runs behind that from first floor. On the ground floor the lower part of the flue is ruined, while on the first floor it is intact and widens out where the fireplace was. To the south-east of the castle there are numerous low earthworks over an extensive area between the castle and the church. There are no traces of the west tower, though there are joint lines evident where the curtain wall joined the tower. To the south-east of the bawn there are a series of large terraces and possible trackways.

ARDKILLSMR KD008:009**Location Details**

Classification:	Church & Graveyard	OS Sheet:	8
Plan:	3	Trace:	5

National Grid Ref.: 27121/23496

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. The church is enclosed by a low stone wall, polygonal in shape. The graveyard is overgrown, but is still used for burial. The entrance gate is located in the south-west corner. The church is rectangular in plan, orientated east/west with internal dimensions of 16m east/west and 6m north/south. The church is ruinous and completely overgrown. There are no datable architectural features present. The upstanding west wall is constructed of roughly coursed limestone. Though ivy covered, there are traces of a crude round-headed window visible, but no dressed stone evident. The remains of the north and south walls are mostly grass-covered. Only the south-east portion of the south wall survives to a height of 1.2m.

The east wall is ruinous with ivy and grass covering it. There is evidence of a supporting buttress on the south-east corner with possible rubble remains of another, on the opposing north-east corner. Where the walls survive they have a maximum thickness of 0.9m. There are some late headstones in the interior, however no dates are discernible.

PARSONSTOWNSMR KD008:016**Location Details****Classification:** Ringfort site **OS Sheet:** 8**Plan:** 11 **Trace:** 3**National Grid Ref.:** 27228/23322

Site Description: This site is marked on the first and third edition of the Ordnance Survey Maps. It has been levelled and survives as a sub-circular mound with traces of a ditch encircling it, visible at the south and west. The site is clearly visible on the aerial photographs. The earthwork to the north of the site are the remains of a nineteenth-century house and farm, now abandoned.

RATHMORESMR KD008:019**Location Details****Classification:** Enclosure site **OS Sheet:** 8**Plan:** 15 **Trace:** 1**National Grid Ref.:** 27063/23112

Site description: The site is marked on both the first and third edition of the Ordnance Survey Maps. It has been destroyed and the field is now under tillage.

COLLINSTOWNSMR KD008:020**Location Details****Classification:** Church site **OS Sheet:** 8**Plan:** 3 **Trace:** 6**National Grid Ref.:** 27232/23490

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. According to O'Donovans OS Letters (1838-1840) '*Kilcooney Church is shown in the Maps from Sir William Petty's Survey and some old people call the portion of Collinstown south of Killcooney River, Killcooney townland*'. There is no trace of any structure visible. At the east angle of the field there is a shallow fosse 0.4m deep, running in a straight line north-west/south-east. The farmer put many drains down in this area and quarrying was also carried out in the east of the field.

PARSONSTOWNSMR KD008:023**Location Details****Classification:** Ringfort possible **OS Sheet:** 8**Plan:** 11 **Trace:** 3**National Grid Ref.:** 27217/23315

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. It consists of an oval enclosure, largely denuded, located 30m south of Parsonstown multivallate rath. It has an entrance causeway at the north-east and there are earthworks between it and the rath.

DREHIDSMR KD008:024**Location Details****Classification:** Enclosure **OS Sheet:** 8**Plan:** 8 **Trace:** 1**National Grid Ref.:** 27318/23449

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. There is no visible trace of this site. The present field remnants point towards a rectangular earthwork but this may be due to later disturbance. The present landholders note that the previous owners called it the 'rath'-treating it with suspicion as one of their kins hair turned white over some incident. During the Emergency the trees at centre were felled for timber. It was mentioned that they were in a circle. This area has been hollowed out for yellow clay for house buildings, leaving a water-filled pond. Later reclaimed, the pond was drained and the area levelled by a bulldozer. It is now left as a haggard.

DREHIDSMR KD008:025/009:017**Location Details****Classification:** Togher **OS Sheet:** 8**Plan:** 8 **Trace:** 3**National Grid Ref.:** 27492/23412

Site Description: This site consists of a scatter of broken and displaced timbers noted along the north-facing bank in an area of peat cutting. To the west, in an area of uncut peat, timbers were noted in the face of old cutting. It is probably the same togher, apparently running north-west/south-east across a narrow part of Timahoe bog.

DREHIDSMR KD008:026**Location Details****Classification:** Togher **OS Sheet:** 8**Plan:** 8 **Trace:** 6**National Grid Ref.:** 27478/23369

Site Description: In 1995 a timber structure was uncovered here during the course of bog drainage operations. In a drainage cutting, which was about 1m wide and (on average) 2m in depth, a timber structure some 5m wide, 0.17m in thickness, and 1.6m

below the present (shrunken) surface of the bog, was apparent. This togher or timber causeway was comprised (in this first cutting excavated) of light branches laid on each other, some crosswise and slanting, but not interwoven in any regular fashion. Below these branches was some 0.06m of what is locally described as ‘ciabh’ or sedge on which the timbers had been placed. There were more peat foundations below this sedge layer. In other cuttings inspected some large hewn timbers were observed. One of these measured over 1.05m in length and 0.22m in width and 0.08m in thickness. There were no traces of any work on the large beams, such as mortice and tenons etc. A portion of the togher in the first cutting was excavated and the only finds were a number of broken hazel nut shells.

DREHIDSMR KD008:027**Location Details**

Classification: Togher **OS Sheet:** 8
Plan: 8 **Trace:** 6

National Grid Ref.: 27458/23345

Site Description: Timbers of a trackway were identified at this location on several occasions lying close to the present surface and have been dated to the medieval period.

MULGEETHSMR KD009:001**Location Details**

Classification: Enclosure site **OS Sheet:** 9
Plan: 2 **Trace:** 4

National Grid Ref.: 27776/23566

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. There is no other information available for this site.

TIMAHOE WESTSMR KD009:006**Location Details**

Classification: Trackway (s) **OS Sheet:** 9
Plan: 9 **Trace:** 2

National Grid Ref.: 27592/23253

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. A trackway, 3m wide and with a fosse on either side is visible running for a short distance in a southern direction from the children’s burial ground (KD009:00601). It is cut by a cropmark of a former field boundary, probably connected although not shown on the OS first edition. A second track to the west of site is also visible.

TIMAHOE WESTSMR KD009:00601**Location Details****Classification:** Children's burial ground **OS Sheet:** 9**Plan:** 9 **Trace:** 2**National Grid Ref.:** 27592/23253

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. It is located on a small low rise on the edge of a bog. It is enclosed and overgrown (D. c. 30m). The uneven appearance of the surface is probably due to the collapse of old trees and grass-covered stumps. No headstones or indeed stones of any sort are visible.

COLLOGMARTINSMR KD009:007**Location Details****Classification:** Enclosure site **OS Sheet:** 9**Plan:** 10 **Trace:** 1**National Grid Ref.:** 27819/23270

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps and is located on Cologmartin Hill. The owner states that there was formerly a 'depression' on the hill-top, just to the north of the summit. The depression was filled in and the area levelled and re-seeded recently. The hill-top is now in meadow. There is no indication of an earthwork apart from a slight depression to the north of the summit.

TIMAHOE EASTSMR KD009:008**Location Details****Classification:** Church & Graveyard **OS Sheet:** 9**Plan:** 9 **Trace:** 6**National Grid Ref.:** 27744/23210

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. According to O'Donovan's Ordnance Survey Letters (1838-40) 'at Timahoe village, which is between the townlands of East and West Timahoe, there is an old church in ruins'. According to the field inspection carried out by the National Monuments Service the overgrown foundations of a rectangular structure are visible (c. 20m by 5m). Small portions of the wall adjacent to the south-west corner still stand but are in very poor condition, consisting chiefly of the rubble core of the wall, with a lintelled gap where a former window was. The graveyard is oval-shaped (40m by 31m) and is slightly smaller than the area enclosed by the modern wall. It is higher than the surrounding field level and contains a large number of headstones, many of eighteenth-century date.

TIMAHOE WESTSMR KD009:009**Location Details****Classification:** Castle site **OS Sheet:** 9**Plan:** 9 **Trace:** 6**National Grid Ref.:** 27739/23195

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. According to O'Donovan's Letters (1838-1840) '*in the east portion of west Timahoe townland there is a field called Castlefield, close to the village. In this field there stood formerly a castle, the walls of which were entirely cleared away more than thirty years ago*'. According to the National Monuments Service this site lies in open, in very slightly undulating pastureland. There are some lazy beds in the vicinity but not visible over the site.

GILLTOWNSMR KD009:010**Location Details****Classification:** Enclosure site **OS Sheet:** 8**Plan:** 11 **Trace:** 4**National Grid Ref.:** 28010/23225

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. The site is also indicated on Taylor's Map of 1783. There is no other information available for this site.

KILPATRICKSMR KD012:001**Location Details****Classification:** Graveyard **OS Sheet:** 12**Plan:** 3 **Trace:** 2**National Grid Ref.:** 27122/22966

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. According to O'Donovan's OS Letters (1838-1840) '*there is a graveyard in the north east part of Kilpatrick townland in which I am told there is no part of a church remaining*'. It is shown on 1909 OS 6" map as a sub rectangular area.

**TICKNEVIN/ DERRYBRENNAN/ BALLINDOOLIN/ BALLYBRACK/
LULLYMORE WEST**SMR KD012:002/003/004**Location Details****Classification:** Togher **OS Sheet:** 12**Plan:** **Trace:****National Grid Ref.:**

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. The togher ran in an approximately north-north-west/south-south-east direction across the north-east part of the bog. The total length of the togher investigated ran in a straight line aligned between the peaks of Carbury Hill, to

the north and Grange Hill to the south. During turf cutting operations in Lullymore Bog three stretches of bog road were uncovered in 1964, but were not continuous.

TICKNEVINSMR KD012:008**Location Details**

Classification: Holy well **OS Sheet:** 12
Plan: 2 **Trace:** 3
National Grid Ref.: 26956/22998

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. It is situated in the old graveyard at Ticknevin. There is no record of a pattern at this well. There is a cure for warts in the well and in order to be cured three visits have to be made to the well. On the first visit the suppliant leaves three pins at the side of the well. On the third visit the pins are gone and the warts are cured. There is a stone beside the well which reputedly retains the imprint of the Saint's foot.

COOLEARAGH WESTSMR KD013:002**Location Details**

Classification: Ringfort **OS Sheet:** 13
Plan: 6 **Trace:** 1
National Grid Ref.: 27835/22781

Site Description: This site is marked on both the first and third edition of the Ordnance Survey Maps. It consists of a circular enclosure outlined by a fosse and a bank or embankment. The fosse is much silted up and is barely traceable in some places, the bank is of earth and is low and is set on an embankment. The interior is flat and has traces of cultivation ridges. The site is on a rise in open pasture land. There are bushes and brambles growing on the bank and the interior on the eastern side of the earthwork. The diameter of the interior is 22m. There is a possible entrance at north-west. The field boundaries adjoin at the north and north-west sides.

2.9.6 Recorded Archaeological Artefacts in the vicinity of the Development

The following archaeological artefacts are included to highlight the type of archaeological activity in the area and the importance of archaeological monitoring as stray finds are frequently found in the course of monitoring of ground works. A study of the topographical files housed in the National Museum of Ireland yielded the following archaeological artefacts:

Townland Allenwood South
Registration No. 1987:72
Find Type leather shoe
Found in bog 1.25m deep

Townland	Allenwood South
Registration No.	1987:71
Find Type	Bronze Cauldron (15th /16th century)
Found	in bog 1.25m deep
Townland	Allenwood Middle
Registration No.	1942:1870
Find Type	Bronze Rapier
Found	in bog
Townland	Ardkill
Registration No.	1937:2433
Find Type	Stone Axehead
Found	
Townland	Ballybrack
Registration No.	1937:2438-44
Find Type	Stone Implement
Found	
Townland	Ballybrack
Registration No.	1937:2421
Find Type	Stone Axehead
Found	
Townland	Ballynakill Lower/Upper
Registration No.	1962:75
Find Type	Iron Axehead "bearded" type
Found	in boggy land
Townland	Ballyteague
Registration No.	-
Find Type	Designed Stone
Found	near Castle
Townland	Coolcarrig
Registration No.	1979:7
Find Type	wooden shovel blade
Found	5.5m below bog surface
Townland	Coolcarrig
Registration No.	1979:9
Find Type	wooden keg with bog butter
Found	in bog

Townland	Demense
Registration No.	1950:31
Find Type	Stone object (point)
Found	open field during ploughing
Townland	Downings
Registration No.	1945:268
Find Type	Stone Axehead
Found	
Townland	Drehid
Registration No.	1972:355 A&B
Find Type	Bent wooden stake (in two parts)
Found	4ft deep in bog cutting
Townland	Kilkeaskin
Registration No.	1937:2420
Find Type	Stone axehead
Found	
Townland	Kilkeaskin ('The River Field')
Registration No.	1968:438-439
Find Type	2 polished stone axeheads
Found	
Townland	Killinagh
Registration No.	1994:72
Find Type	wood in bog
Found	
Townland	Killinagh
Registration No.	1929:1298
Find Type	bog butter
Found	at depth of 6ft in bog
Townland	Mulgeeth
Registration No.	1980:46
Find Type	wooden object
Found	in bog of unknown depth
Townland	Mylerstown
Registration No.	1991:44

Find Type	Stone axehead
Found	Field close to bog
Townland	Ticknevin
Registration No.	1987:140
Find Type	Leather Shoe
Found	Bog
Townland	Timahoe East
Registration No.	1943:132
Find Type	Portion of solid wooden wheel
Found	Bog
Townland	Timahoe East
Registration No.	1938:8560
Find Type	Fragment of large stone axehead
Found	
Townland	Timahoe East
Registration No.	1943:286
Find Type	Silver bracelet
Found	Bog
Townland	Timahoe East
Registration No.	1943:130-131
Find Type	Wooden yoke and long perforated timber
Found	Bog
Townland	Timahoe East
Registration No.	1950:7
Find Type	Iron axe
Found	at depth of 6ft during cutting operations
Townland	Timahoe Bog
Registration No.	
Find Type	Bog body –human forearm
Found	in 1959 during hand-work operations
Townland	Timahoe
Registration No.	1950:4a, 4b, 4c
Find Type	3 portions of wooden vessel
Found	in bog at depth of 7ft.

Townland	Timahoe (Derrymahon Bog)
Registration No.	1942:409
Find Type	Wooden object
Found	3 ft. below bog
Townland	Timahoe East or West
Registration No.	1978:3
Find Type	Leather shoe
Found	
Townland	Timahoe
Registration No.	1941:1120
Find Type	Bronze spearhead
Found	
Townland	Timahoe Bog, Timahoe West
Registration No.	1966:2
Find Type	Flint arrowhead (barbed)
Found	
Townland	Timahoe West
Registration No.	1970:139
Find Type	Rough out for two handled wooden vessels
Found	
Townland	Timahoe Bog
Registration No.	-
Find Type	Human skeletal remains
Found	in area of Drummond or Ballynakill Lower Townland
Townland	Robertstown
Registration No.	1994:62
Find Type	bronze socketed axehead
Found	in bog

2.9.7 Archaeological Assessment

The archaeological assessment was conducted in order to identify the known monuments and to determine if any other previously unrecorded sites exist. The assessment involved a walkover survey of the site, concentrating on the areas of cutover bog, drain faces and remaining high peat banks, where it would be possible to identify archaeological features more readily. Special consideration was given to the footprint for the waste management facility, situated in the northern sector of the

southern bog. The stretch of the access roadway for the landfill was also assessed. While most of the roadway travels through bogland, a stretch at the south-west travels through undulating grassland. No archaeological features were noted above ground along this access route.

The bog is under the ownership of Bord na Móna, and was used primarily for the industrial exploitation of peat. Industrial production ceased *c.* 1990. Small scale production for domestic purposes continues at the margins of the commercially cut away bog. The peat was removed from the bog via a railway system, with many of the tracks, or sections of them still in place (Plate 1, Appendix 2.9.2).

The cutover boglands are divided into extremely long turf plots orientated north-west/south-east and separated by deep wide drains. These turf plots measure approximately 20 metres in width and span the length of the bog, and in some areas have been exploited to a depth of 0.5m-1m above the natural mineral soil. The surface areas consist of large tracts of flat low-lying bog with varying densities of vegetation cover. The walk over survey was restricted to areas where over-growth was sparse or non-existent (Plates 2-3, Appendix 2.9.2).

Much of the southern sector of the bog, which has not been actively used for some time, could not be effectively surveyed due to dense vegetation cover. Investigation of drain section faces, high turf bank faces and a limited walkover (40% of the 1,580 ha) of the northern sector of the southern bog (limited due to the density of the vegetation cover) yielded nothing of archaeological interest. It would seem unlikely that this section of bog would contain toghers as it represents the widest crossing point within the bog complex and would not favour their construction.

Peripheral areas in the townlands of Ballynakill Upper and Coolcarrigan retain sections of intact raised bog surface. Exposed peat faces in these areas measure 2.60m in maximum depth indicating the depth of peat, which has been removed. Some areas of bog on the edges the southern sector in the townlands of Corduff, Drummond and Ballynakill Lower which are still actively cut for 'hopper' turf for domestic use were adequately surveyed and fresh section faces investigated. No archaeological material was noted.

The northern sector of the development site which contains the footprint again consists of cutover bogland divided into long turf plots with surface areas consisting of large tracts of flat low-lying bog with varying densities of vegetation cover (Plate 2, Appendix 2.9.2). A walkover survey (70%) was conducted in the northern section of the bog. The turf plots in this zone are sub-divided into narrow long fields measuring approximately 15m wide and bordered by shallow drains 1m in depth (Plate 5, Appendix 2.9.2).

Occasional sections of brushwood and wood planks were encountered but showed no evidence of having being worked, i.e. having no visible tool markings, and were probably deposited on the bog surface during drainage works or peat production (Plate 4, Appendix 2.9.2).

The northernmost section of the bog is relatively free of vegetation and would appear to have been worked up to quite recently (Plate 6, Appendix 2.9.2). The section face of a prominent high peat bank in the eastern sector measuring approximately 400m in length and 1.5m in height was also investigated but no archaeological features were noted (Plates 7-8, Appendix 2.9.2). Other minor high bank faces were also walked, yielding the same results. Two archaeological monuments are recorded from this area of bog.

The two togher sites SMR KD008:030/KD009:018 and KD008:29/KD009:019 traverse this area. In addition the Irish Archaeological Wetland Unit has identified a further 10 sites in the vicinity of the recorded sites, two of which were destroyed before they were plotted (from correspondence with the Irish Archaeological Wetland Unit). A walkover survey of the surface area, section faces and drain edges revealed no evidence for these trackways, though sub-surface remains may exist. The only feature of archaeological significance identified during the assessment was a retouched white flint blade, discovered in the eastern sector close to the location of a togher site SMR KD009:019.

The following descriptions of the two recorded toghers are from the Archaeological Survey of Ireland files. The sites were examined in advance of work by Bord na Móna who agreed to fund a rescue excavation in 1986. Rynne had previously investigated the sites in the 1960s. Munro notes that both toghers lie within or below a thin layer of biophorum peat and conjectures that they must be almost contemporary, but that the area where they intersected has been cut away.

PARSONSTOWN/TIMAHOE WEST TOGHER

SMR KD008:029/KD009:019

Locational details

Classification Togher

Plan

Trace

Nat. Grid Ref. 27429/23247

Site description This site is located in an area of a large bog where only a few narrow banks of raised bog peat survive after many years cutting by Bord na Móna. It was discovered by D. Cummins, an amateur fieldwalker.

Site A (Trackway A)

According to Mr. Cummins it was 'located last year by myself'. It is reputedly the road investigated in the 1930s. This does not seem to be the trackway recorded in the

National Monuments of Ireland (NMI) topographical files; where according to a map this trackway was located south of the present day road running through the bog. Several pieces of timber are visible in a cutting face, about 40cm below the present bog surface. This cutting is being worked at present by hand and is known locally as Quinns bank.

Site B (Trackway B)

According to Mr. Cummins it was 'encountered by local machine bog cutting last year'.

Site C (Trackway C)

Section of timber road exposed by Bord na Móna in preparation of bog. Some of the timber was worked, but most of it was quite rough. The site was located but no timbers were found *in situ*. There were broken planks in debris along the side of the cutting face, but there was no indication of its source in the present bog face, which was 2.5m high at time of visit. According to Mr. Cummins, some timbers had been visible at the end of the cutting, close to the surface of the bog.

Site Ci

This site is located 40m north-west of the end of the cutting mentioned above; some timbers are visible in old and eroded cuttings. They are situated *c.* 40cm below the surface of the bog and probably represent a continuation of Trackway C.

Site D (Structure)

Discovered while looking at new Bord na Móna development. It consists of wattle with some pieces of worked timber. The site is located in a drain, *c.* 1.5m below the present surface of the bog. Stakes were visible over a distance of about 2.5m but the section face could not be closely examined due to the unstable nature of the drain bottom.

Site E (Trackway E)

It is visible over a long distance in the south face of the third turf bank south of the present day road (Drehid-Timahoe Cross). Portions of it were located east of the rail line, but it is also visible further west. It lies *c.* 1.7m below the present surface of the bog and is visible in discontinuous portions, running parallel to the cutting face.

The site was investigated by Munro in 1986 at the point where it ran over another trackway, in an area of bog where only a few narrow banks of raised peat survive after many years of cutting by Bord na Móna. There were two distinct tracks in one of these banks: a flimsy path made of birch, and a substantial track built mainly of oak planks (part of which was excavated by Rynne in the 1960s). The birch track ran almost exactly parallel to the bank, which was just 10m wide. The excavation exposed two areas of the togher, one 35m long, the other 6m long, revealing that it was built of logs laid end to end in an irregular pattern with, at most, four logs in any

section of the track. The logs were under 2m long and 0.1m in diameter, without any signs of carpentry beyond a rough trimming of their ends. The oak track cut across the bank obliquely, with just 25m of it surviving (although another fragment is preserved in a peat bank 200m away).

Tree-ring dating showed that there were two phases: one at 1483 BC associated with the thin longitudinal planks and possibly the lower part of a layer of roundwood 0.15m thick, the other at 1378 BC associated with the upper part of the roundwood layer, transversely laid logs and planks, and an upper covering of massive longitudinal oak planks and a yew log. Several planks had morticed ends, but there are no stakes in the holes. (Munro, www.excavations.ie). Dúchas the Heritage Service have stated that this monument is not subject to a preservation order.

TIMAHOE WEST TOGHER

SMR KD009:018

Locational details

Classification Togher

Plan

Trace

Nat. Grid Ref. 27527/23265

Site description This site was examined by Ryne (1966) and Munroe (1986). The site is badly damaged and appears to have consisted of large planks laid across runners and may have had a hand rail. The structure appears to have been bedded in brushwood. It was badly damaged at the time of the investigation. A very small portion, probably belonging to the trackway was investigated in 1986, at the point where it ran under another trackway (KD008:029). The track runs across Timahoe Bog at what is now a wide crossing point.

The trackway in Leneghan and Leabeg townlands was inspected in 1986. From a subsequent examination of maps and aerial photographs, it is clear that this forms part of a much larger track visible on these sources for at least two miles and possibly further. The trackway is associated with the Early Christian Churches at Lemanaghan (St. Managhans Church and St. Mella's Cell). The trackway (from parts C-D) consists of fairly light, unworked timbers (average diam. 10cm) covered by a layer of brushwood and paved with large, fairly thin sandstone flags. The length of this section of the trackway is c. ½ mile, the width 2-3m. It is visible as a slightly raised ridge c. 4m wide running across the bog in a north-north-east/south-south-west direction. A number of drains were examined which now cut across this area.

Although the cutting of the drains has damaged the edges of the track so that its precise width could not be established, it is estimated to be c. 3m in width. It rests close to the base of the bog, c. 1.2m below the present surface (the bog has not been cut according to Bord na Móna). The track leads directly to the two Lemanaghan churches. This together with dated, stoneflagged parallels (Bloomhill, Co. Laois,

Timoney, Co. Tipperary) suggests that it dates to before 500-1200 AD.

The investigation recommended that this site be scientifically examined due to the relationship to the Early Christian churches at Lemanaghan and that a preservation order be placed on the portion of trackway A - C. The trackway is an integral part of the church settlement. Dúchas have stated that the togher is not listed on the monuments subject to a preservation order.

PARSONSTOWN/TIMAHOE WEST TOGHER

SMR KD008:030

Locational details

Classification Togher

Plan Trace

Nat. Grid Ref. 27420/23238

Site description No information could be found for this site from Dúchas, but it is connected to KD009:018.

2.9.8 Archaeological Assessment

Subsequent to the granting of permission for the waste management facility archaeological monitoring of ground disturbance took place at the site over a period of five months from August 2006 (License 06E0746). The archaeological monitoring was undertaken by Rupert Flood and John Turrell and a report on the findings was submitted in March 2007 (Appendix 2.9.1). The archaeologists monitored the reduction of ground levels and the removal of all peat layers from the access road, landfill footprint and the sand and gravel borrow area. No features or artefacts of archaeological significance were encountered in the course of monitoring.