

## APPENDIX 14.1: RECEIVING ENVIRONMENT

### General Archaeological and Historical Background

County Offaly features over 4000 known and legally protected archaeological sites contained in the Record of Monuments and Places (RMP). The Record of Protected Structures (RPS) for County Offaly contains 884 entries for structures that are protected under the Planning and Development Act 2002.

The known archaeological sites provide evidence of human activity in County Offaly spanning over 8000 years. Offaly shares boundaries with counties Galway, Kildare, Laois, Meath, Roscommon, Tipperary and Westmeath. It measures approximately 493,985 acres (199,981 hectares) and is primarily a flat and gently undulating county. Approximately one fifth of the county comprises peatlands, with the majority of the remainder of the land in agricultural/forestry use. The Slieve Bloom Mountains are an exception to Offaly's predominantly level topography, and are situated in the southwest of the county. A comprehensive system of eskers also exists in Offaly, mainly concentrated in the northwest and centre of the county.

During the Mesolithic period (c. 7,000-4,000 BC) people existed as hunters/gatherers, living on the coastline, along rivers and lakesides. They used flint and other stones to manufacture sharp tools, and locating scatters of discarded stone tools and debris from their manufacture can sometimes identify settlements. The earliest evidence of settlement in County Offaly dates to this period and is represented by an Early Mesolithic summer shoreline camp at Lough Boora, which was supported by salmon and eel fishing and pig hunting. This site is located approximately 30 km southwest of the proposed development area.

During the Neolithic period (c. 4,000-2,400 BC) the population became more settled with a subsistence economy based on crop growing and stock-raising. This period also saw changes in burial practices, and a tradition of burying the dead collectively and carrying out of cremations emerged. The tombs are generally divided into four distinct groups, identified on the basis of their architecture, distribution, date range and associated architecture: portal tombs, passage tombs, wedge tombs and court tombs, none of which have been recorded within County Offaly ([www.archaeology.ie](http://www.archaeology.ie)). There are three unclassified megalithic tombs recorded in County Offaly ([www.archaeology.ie](http://www.archaeology.ie)).

The closest Recorded Monument (RMP OF019-094) to Derryarkin is located approximately 500 m northeast in Derrygreenagh townland, and takes the form of a class 1 togher (road). It measures 68.5m long minimum x 2.95m wide x 0.26m deep and is orientated north/south. It consists of morticed planks, roundwoods and brushwood. It varies in surviving width (2.7-3.25m wide) and depth (0.08-0.26m deep) along its length. At the north extent, it is constructed of two layers with a basal layer of predominantly longitudinal brushwood with some transverses and fragments of split timbers. Above this is a morticed plank, secured by a peg. The upper surface is formed of longitudinal planks (0.06-0.22m wide; 0.01-0.048m deep), roundwoods (diameter. 0.065-0.09m) and brushwood. The larger elements are concentrated on the west side of the site and a deposit of lighter brushwood elements is present at the east extent. Three pegs (diameter. 0.055m) are set at 75-90° angles securing the larger elements in place. Woodworking is evidenced by the seven, very thin, radially split planks, by stone toolmarks on the end of one of the pegs and by the D-shaped mortice. This portion of the site is in moderately humified fen peat with Sphagnum and a very high proportion of unidentified reeds. Beyond this, to the south, there is no discernible structure evident, although there is brushwood on the field surface, along the line of the site. The south extent consists of a transverse plank, brushwood, roundwoods and some possible pegs. A chert scraper (02E0942:2) was recovered from the field surface 1.4m to the north of this sighting. This site was dendrochronologically dated to 3643±9 BC or later (Queens University Belfast 10345), which places this activity in the Neolithic Period.

The above-mentioned togher was discovered by the Irish Archaeological Wetland Unit during survey work carried out in 2002 for Bord na Móna ([www.excavations.ie](http://www.excavations.ie)).

Toghers are monument types typically found in peat bogs of the Midlands, and comprised a means of crossing a bog in ancient times. A peatland trackway/causeway constructed of wood and intended to traverse a bog: these have a known orientation. In most instances they comprise substantial timber planks and have good structural definition. They may have several phases of construction indicative of long-term use and reuse. These may date from the Neolithic (c. 4000-2400 BC) to the medieval period (5th-16th centuries AD).

The Bronze Age (c. 2,400-600 BC) is characterised by the introduction of metalworking technology to Ireland and coincides with many changes in the archaeological record, both in terms of material culture as well as the nature of the sites and monuments themselves. Though this activity has markedly different characteristics to that of the preceding Neolithic period, including new structural forms and new artefacts, it also reflects a degree of continuity.

Bronze Age monuments from County Offaly include standing stones, stone circles, cist burials, barrows, cairns and *fulachta fiadh* which are one of the most numerous monument types in Ireland with over 4,500 examples recorded (Waddell 2005, 174). A barrow burial (OF010-004001) that likely dates to the Bronze Age is situated at the summit of Croghan Hill, in the townland of Croghanhill, 3.5km to the south of the proposed development. This site has not been archaeologically excavated by early medieval accounts identify this site as Cruacháin Brí Éile, that was used as the inauguration site for the Gaelic Ó Conchobhair (O'Connor) dynasty of Uí Failge (Faly/Offaly), who were rulers of this region, until the later medieval period.

The Dowris Hoard, dating from the 9<sup>th</sup> to 7<sup>th</sup> century BC, was discovered in the 1820s in the townland of Whigsborough which is located approximately 35 km southwest of the proposed development area. It is the largest collection of bronze objects ever found in Ireland, and may originally have contained over 200 pieces. The find was poorly recorded, though it may have been made while potato digging in reclaimed bogland. While no precise details of the original contents exist, 110 objects are preserved in the National Museum of Ireland with a further 67 in the British Museum. Of the surviving items, the most numerous are hollow-cast bronze pendants (48), spearheads (36), socketed axes (35), cast bronze trumpets or horns (26), knives (7), swords (5), socketed gouges (5), buckets (3), cauldrons of sheet bronze (3) and razors (3). A socketed hammer and a scabbard chape were also preserved (*ibid.*, 225). It is possible, given its unusual size, that the assemblage may not have been a single deposition but rather may have accumulated over a period of time as a result of a prolonged sequence of ritual activity.

Other important hoards from County Offaly include the Frankford Hoard, found 10m deep in a bog at Kilcormac, near Birr, in 1892; a gold hoard (13<sup>th</sup> to 14<sup>th</sup> century BC) containing a gold necklet, two gold armlets and two gold rings found in Derrinboy Bog, also near Birr, in 1959; and a hoard found at Meenwaun, near Banagher, which contained an amber necklace of 125 beads along with a gold dress fastener, a bronze penannular bracelet and two bronze rings.

During the Iron Age (c. 600 BC-400 AD) new influences came into Ireland which gradually introduced the knowledge and use of iron, although for several centuries bronze continued to be widely used. The Iron Age in Ireland however is problematic for archaeologists as few artefacts dating exclusively to this period have been found, and without extensive excavation it cannot be determined whether several monument types, such as ring-barrows or standing stones, date to the Bronze Age or Iron Age.

The Early Medieval period (c. 400-1169 AD) is depicted in the surviving sources as entirely rural, characterised by the basic territorial unit known as *túath*. Walsh (2000, 30) estimates that there were at least 100, and perhaps as many as 150, kings in Ireland at any given time during this period, each ruling over his own *túath*.

During this turbulent period roughly circular defensive enclosures known as ringforts were constructed to protect farmsteads. They were enclosed by an earthen bank and exterior ditch, and ranged from approximately 25 m to 50 m in diameter. The smaller sized and single banked type (univallate) was more than likely home to the lower ranks of society, while larger examples with more than one bank (bivallate/trivallate) housed the more powerful kings and lords. They are regarded as defended family homesteads, and the extant dating evidence suggests they were primarily built between the 7<sup>th</sup> and 9<sup>th</sup> centuries AD (Stout 1997, 22-31).

Ringforts are considered to be the most common indicator of settlement during the Early Medieval period. The most recent detailed study (*ibid.*, 53) has suggested that there is an approximate total of 45,119 potential ringforts or enclosure sites throughout Ireland.

Enclosures belong to a classification of monument whose precise nature is unclear. Often, they may represent ringforts, which have either been damaged to a point where they cannot be positively recognised, or are smaller or more irregular in plan than the accepted range for a ringfort. An Early Medieval date is in general likely for this site type, though not a certainty. An enclosure (OF003-003) of unknown date is situated in Ballyfore townland 0.9km to the south of the proposed development.

The Early Medieval period is characterised by the foundation of a large number of ecclesiastical sites throughout Ireland in the centuries following the introduction of Christianity in the 5<sup>th</sup> century AD. The early churches tended to be constructed of wood or post-and-wattle, although between the late 8<sup>th</sup> and 10<sup>th</sup> centuries mortared stone churches gradually replaced the earlier structures. Many of the sites, some of which were monastic foundations, were probably originally defined by an enclosing wall or bank similar to that found at coeval secular sites. This enclosing feature was possibly built more to define the sacred character of the area of the church than as a defence against aggression. An inner and outer enclosure can be seen at some of the more important sites; the inner enclosure surrounding the sacred area of church and burial ground and the outer enclosure providing a boundary around living quarters and craft areas. Where remains of an enclosure survive it is often the only evidence that the site was an early Christian foundation. An early Christian church (OF010-004002) and graveyard (OF010-004003) is situated on the eastern slope of Croghan Hill, in Croghanhill townland, 3.5km to the south of the proposed development. Although the graveyard dates to the nineteenth century, the church is believed to have been founded by Bishop Mac Caille in the fifth century. Bishop Mac Caille was reputedly son of Darerca, who was sister of St. Patrick. Local tradition holds that Bishop Mac Caille presented the veil to St. Brigid of Kildare on her ordination.

The commencement of Viking raids at the end of the 8<sup>th</sup> century and their subsequent settlement during the following two centuries marked the first ever foreign invasion of Ireland. Viking settlement evidence is scarce and has been found in Cork, Dublin and Waterford, however excavations there have revealed extensive remains of the Viking towns. Outside these towns, understanding of Viking settlement is largely drawn from documentary and place-name evidence. In addition to Cork, Dublin and Waterford, documentary sources provide evidence for the Viking foundation of the coastal towns of Limerick and Wexford (Edwards 2006, 179). Other indirect evidence which suggests Viking settlement, or at least a Norse influence in Ireland, is represented by upwards of 120 Viking-age coin hoards, possible votive offerings of Viking style objects and the assimilation of Scandinavian art styles into Irish designs. While the initial Viking raids would have been traumatic, the wealth and urban expansion brought into the country as a result of Viking trading would have benefited the Gaelic Irish and cultural assimilation in some parts would have been significant.

The arrival of Anglo-Normans in Ireland towards the end of the 12<sup>th</sup> century resulted in great changes during the following century. Large numbers of colonists arrived from England and Wales and established towns and villages. They brought with them new methods of agriculture which facilitated an intensification of production.

Surplus foods were exported to markets all along Atlantic Europe which created great wealth and economic growth. Results of this wealth can be seen in the landscape in the form of stone castles, churches and monasteries.

The political structure of Anglo-Normans centered around the establishment of shires, manors, castles, villages and churches. In the initial decades after the Anglo-Norman invasion a distinctive type of earth and timber fortification was constructed- the motte and bailey. Mottes were raised mounds of earth topped with a wooden or stone tower, while the bailey was an enclosure surrounded by an earthen ditch with a timber palisade used to house ancillary structures, horses and livestock. There are six motte and baileys recorded in County Offaly ([www.archaeology.ie](http://www.archaeology.ie)).

In certain areas of Ireland Anglo-Norman settlers constructed square or rectangular enclosures, now termed moated sites. Their main defensive feature was a wide, often water-filled, fosse with an internal bank. As in the case of ringforts, these enclosures protected a house and outbuildings usually built of wood. They appear to have been constructed in the latter part of the 13<sup>th</sup> century, though little precise information is available. There are 16 moated sites recorded in County Offaly ([www.archaeology.ie](http://www.archaeology.ie)).

More substantial stone castles followed the motte and bailey and moated sites in the 13<sup>th</sup> and 14<sup>th</sup> centuries. Tower houses are regarded as a late type of castle and were erected from the 14<sup>th</sup> to early 17<sup>th</sup> centuries. Their primary function was defensive, with narrow windows and a tower often surrounded by a high stone wall (bawn). An Act of Parliament of 1429 gave a subsidy of £10 to “*liege*” men to build castles of a minimum size of 20 ft in length, 16 ft in breadth and 40 ft in height (6 m x 5 m x 12 m). By 1449 so many of these £10 castles had been built that a limit had to be placed on the number of grants being made available. The later tower houses were often smaller, with less bulky walls and no vaulting. There are 49 tower houses recorded in County Offaly ([www.archaeology.ie](http://www.archaeology.ie)).

The 14<sup>th</sup> century throughout northwest Europe is generally regarded as having been a time of crisis, and Ireland was no exception. Although the Irish economy had been growing in the late 13<sup>th</sup> century it was not growing quickly enough to support the rapidly expanding population, especially when Edward I was using the trade of Irish goods to finance his campaigns in Scotland and Wales. When the Great European Famine of 1315-1317 arrived in Ireland, brought about by lengthy periods of severe weather and climate change, its effects were exacerbated by the Bruce Invasion of 1315-1318. Manorial records which date to the early 14<sup>th</sup> century show that there was a noticeable decline in agricultural production. This economic instability and decline was further worsened with the onset of the Bubonic Plague in 1348.

Before the Tudors came to the throne the kings of England were also the kings of western France and so, during the 14<sup>th</sup> and 15<sup>th</sup> centuries, the various lords who ruled in Ireland were largely left to themselves. The Tudors however took more of an interest in the affairs of Ireland, and they wanted to put a stop to the raids of the Gaelic Irish on areas under English rule. To do this, they ruthlessly put down any rebellions and even quashed inter-tribal feuds. English settlers were then brought in to settle their lands. The first of these plantations occurred in the mid-16<sup>th</sup> century in what is now Laois and Offaly. After the Desmond rising in Munster in 1585 came another plantation, and parts of southwestern Tipperary were planted at that time.

From 1593 until 1603 there was a countrywide war between the Gaelic Irish, who were supported by the French, and the Elizabethan English. The Irish were finally defeated and with the “*Flight of the Earls*” from Rathmullan, County Donegal, in 1607 Ulster, which had previously been independent of English rule, was planted.

Expansion in the agricultural sector following a period of economic growth in Ireland from the mid-1730s led to rising prices and increase in trade. This increase in agricultural productivity led to growth in related industrial development throughout the country.

The proposed development will be within Derryarkin townland, which is in the barony of Lower Philipstown and the parish of Croghan.

Lewis (1837, Vol. 1, 435) records the parish of Croghan as:

*“containing 842 inhabitants...the surface is flat and overspread with bogs. The only eminence is Croghan Hill...The land is principally in pasture and appropriated to the feeding of store sheep and cattle...At the base of Croghan Hill are the remains of the church, which was formerly a chapel belonging to the ancestors of Lord Tullamore, on whose estate it is situated.”*

Bogs, wetlands or waterlogged areas frequently contain previously unrecorded remains and often form important archaeological landscapes. Waterlogged conditions provide an anaerobic environment which preserves organic remains and features such as wooden trackways or toghers. The practice of laying down trackways or causeways across wet areas and bogs to facilitate movement is known from as early as the 4th Millennium BC. Trackways vary in form from a localised use of brushwood to large-scale linear features substantial enough to carry wheeled vehicles. In addition, monuments such as crannogs, *fulachta fiadh* and sites of votive offering are frequently found in or near wet, waterlogged regions.

### Toponyms

Townland names are an important source in understanding the archaeology, geology, land-use, ownership and cultural heritage of an area. Derryarkin is an Anglicisation of the Gaelic placename ‘Doire Aircean’ which can be translated as ‘the oak wood of the piglets’ ([www.logainm.ie](http://www.logainm.ie)). The placename Derryarkin first appears in an Inquisition of James I in 1612 as ‘Dirryarkin’ (ibid).

**Table 14-9: Translation or Explanation of Townland Names from within the Proposed Development Area**

<b>Townland</b>	<b>Derivation / Meaning</b>
Derryarkin	<i>Doire Aircean</i> translates as <i>the oak wood of the piglets</i> .

### Summary of Previous Fieldwork in the Study Area

Reference to Summary Accounts of Archaeological Excavations in Ireland ([www.excavations.ie](http://www.excavations.ie)) has shown that three fieldwork programmes have been carried out in Derryarkin townland. Two of these programmes involved construction stage archaeological monitoring of development works (archaeological licence numbers 01E1126 and 06E1064), and one comprised an archaeological survey.

Derryarkin Bog, which includes Bunsallagh, Derrycoffey, Derryarkin and Derrygreenagh townlands, was surveyed by the Irish Archaeological Wetland Unit in 2002 (Licence Number 02E0942). This survey identified 38 archaeological sightings, representing 29 archaeological sites and artefacts consisting of one primary togher, three secondary toghers, four tertiary toghers, 13 worked wood in situ, and four unworked wood in situ. Three lithics and two additional possible lithics were recovered during this survey. The majority of the archaeological sites identified in the survey were situated in Bunsallagh townland, approximately 1.5km to the west of the proposed Derryarkin Material Recovery Facility. None of the archaeological sites identified during this survey are located within the proposed development area.

### Topographical Files of the National Museum of Ireland

Information on artefact finds and excavations from County Offaly is recorded by the National Museum of Ireland. Location information relating to such finds is important in establishing prehistoric and historic activity within the study area and surrounding landscape.

There are three known artefacts from Derryarkin Bog recorded in the Topographical Files of the National Museum of Ireland. One of these artefacts is from Derryarkin townland; a stone adze-head (NMI Reference 1969:863). The other artefacts from Derryarkin Bog have been identified as a bronze spearhead (NMI Reference: 1937:3666) and a bronze spearhead (NMI Reference R1951:51). Also, a wooden shovel (NMI Reference 1987:40) was recovered from the field boundary between Derryarkin and Ballybeg townlands.

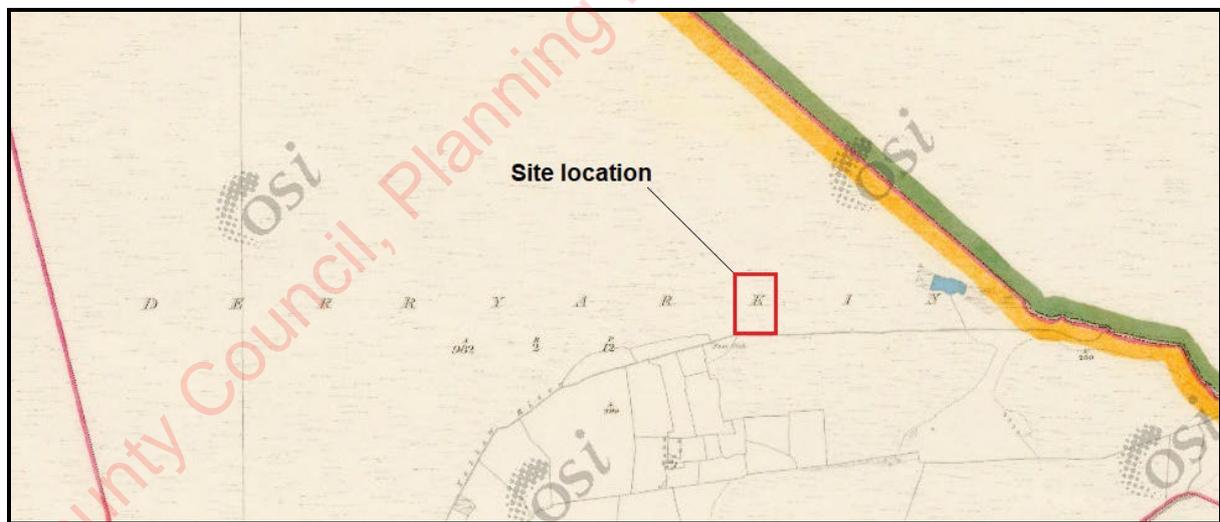
### Cartographic Analysis

**Ordnance Survey Map First Edition 1:10,560 1840** (figure 14-7), and **Ordnance Survey Map First Edition 1:2,500 1908 – 1910** (figures and 14-8).

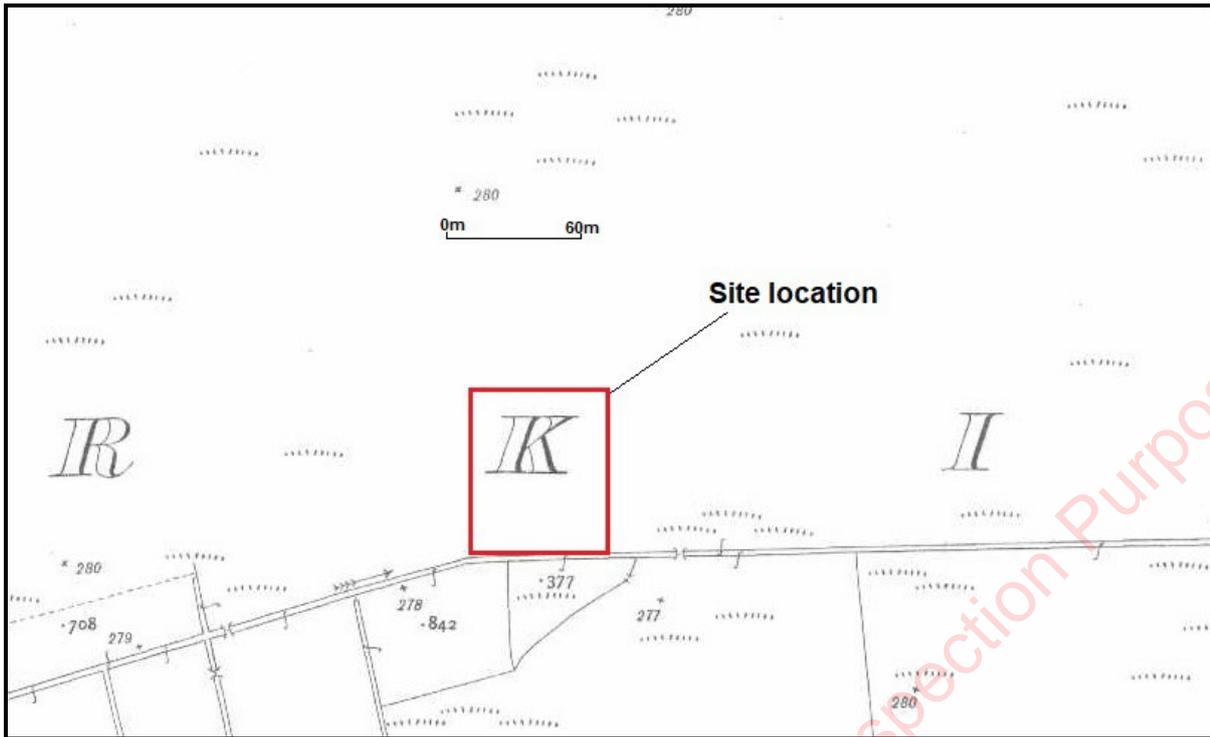
Reference to cartographic sources failed to identify any archaeological or architectural features within the proposed location of Derryarkin Material Recovery Facility. The area of proposed land take and the surrounding environment is generally recorded as rough pasture on all editions of the Ordnance Survey maps. The Yellow River forms the southern boundary of the proposed development area on the First Edition Ordnance Survey maps 1:10,560 map (1840). A fording point is depicted just to the southwest of the proposed development area and is annotated as 'Foot Sticks' on the First Edition Ordnance Survey maps 1:10,560 map (1840). An Ordnance Survey trigonometrical station is recorded a 350m southwest of the development area on the First Edition Ordnance Survey maps 1:10,560 map (1840).

The Yellow River is also recorded at the southern edge of the proposed development on the First Edition 1:2,500 map (1908 - 1910). A bridge is depicted to the southeast of the proposed development site, crossing the Yellow River.

There are no archaeological, architectural or cultural heritage features recorded on cartographic sources within the location of Derryarkin Material Recovery Facility.



**Figure 14-7: First Edition Ordnance Survey map dating to 1840, scale 1:10,560 (6" to a mile) showing the proposed location of Derryarkin Material Recovery Facility**



**Figure 14-8: First Edition Ordnance Survey map dating to 1908 – 1910, 1:2,500 scale (25” to a mile) showing the location of Derryarkin Material Recovery Facility**

### Aerial Photography

Aerial photographs held by Ordnance Survey Ireland ([www.map.geohive.ie](http://www.map.geohive.ie)) and Bing aerial photography ([www.bing.com/maps](http://www.bing.com/maps)) were consulted to look for the presence of archaeological or architectural remains within the Derryarkin Material Recovery Facility.

The 1995 black and white aerial photographs depict a farm complex at the location of the proposed development. A rectangular farm building (surviving cowshed) is depicted at the south and centre of the development area. A concrete yard is depicted to the north of this shed. A silage pit is depicted at the northeast side of the concrete yard, at the northern end of the proposed development area, on this photograph. The farm complex that is to the northwest of the proposed development had not been constructed in 1995 and is consequently not shown. The 2000 colour aerial photographs depict the farm complex that is to the northwest of the proposed development, indicating that this was constructed since the 1995 aerial photograph. The 2005 colour aerial photographs depict the farm complex at the proposed Derryarkin Material Recovery Facility and shows a farm shed in the northeast side of the development area. This shed was not present when the site inspection for this project was carried out. There was no evidence of any archaeological, architectural or cultural heritage features recorded on aerial photographs within the proposed development area or the surrounding landscape.

### County Development Plan

*Draft Offaly County Development Plan 2021-2027*

#### Archaeological Heritage

It is the stated policy (BHP-33) of the Draft Offaly County Council Development Plan 2021-2027 to:

*“support and promote the protection and appropriate management and sympathetic enhancement of the county’s archaeological heritage within the Plan area, in particular by implementing the Planning and Development Act 2000 (as amended) and the National Monuments Act 1930 (as amended).” (Offaly County Council 2021, 301).*

It is also a stated policy (BHP 37) of the Draft Offaly County Council Development Plan 2021-2027 that:

*“any development that may, due to its size, location or nature, have implications for archaeological heritage (including both sites and areas of archaeological potential / significance) shall be subject to an archaeological assessment. When dealing with proposals for development that would impact upon archaeological sites and/or features, there will be presumption in favour of the ‘preservation in situ’ of archaeological remains and settings, in accordance with Government policy. Where permission for such proposals is granted, the Planning Authority will require the developer to have the site works supervised by a licenced archaeologist” (ibid.).*

Table 10.1 of the Draft Offaly County Development Plan 2021-2027 (ibid., 291-2) contains a list of National Monuments in State Ownership in County Offaly. There are no National Monuments in State Ownership recorded in the Offaly County Development Plan within the proposed development sites or the wider 5 km study area.

Table 10.2 of the Draft Offaly County Development Plan 2021-2027 (ibid., 292) contains a list of National Monuments in Guardianship of the State: County Offaly. There are no National Monuments in Guardianship of the State recorded in the Offaly County Development Plan within the proposed development sites or the wider 5 km study area.

Table 10.3 of the Draft Offaly County Development Plan 2021-2027 (ibid., 293) contains a list of Monuments Protected by Preservation Order County Offaly. There are no Monuments Protected by Preservation Order recorded in the Offaly County Development Plan within the proposed development sites or the wider 5 km study area.

The Draft Offaly County Development Plan 2021-2027 (ibid., 294) contains a list of Zones of Archaeological Potential within the county. There are no Zones of Archaeological Potential recorded in the Offaly County Development Plan within the proposed development site or the wider 5 km study area.

#### Architectural Heritage

It is an Objective (BH01) of Offaly County Council to:

*“It is Council policy to ensure the protection, sympathetic and sensitive modification, alteration, extension or reuse of protected structures or parts of protected structures, and the immediate surrounds included and proposed for inclusion in the Record of Protected Structures that are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest, together with the integrity of their character and setting” (ibid., 298).*

The Draft Offaly County Development Plan 2021-2027 contains the Record of Protected Structures for the county. There are no Protected Structures recorded in the Draft Offaly County Development Plan 2021-2027 within the proposed development site. There are no Protected Structure within the 1 km study area of the proposed development site

There are no Architectural Conservation Areas recorded in the Draft Offaly County Development Plan 2021-2027 within the proposed development sites or the wider 5 km study area.

Mills of Co Offaly: An Industrial Heritage Survey was published by Offaly County Council in 2009. There are no such structures within the proposed development site (Offaly County Council, 2009).

Bridges of Offaly County: An Industrial Heritage Review was published by Offaly County Council in 2005. There are no such structures within the proposed development site (Offaly County Council, 2005).

#### Cultural Heritage

The Draft Offaly County Development Plan 2021-2027 does not contain any designated lists or sites of cultural heritage importance or significance.

#### National Inventory of Architectural Heritage

There are no entries recorded on the NIAH building survey within the proposed development site. NIAH also maintains a non-statutory register of historic gardens and designed landscapes recorded on a county basis. There are no such features recorded on the NIAH within the proposed development sites or the 1 km study areas.

#### Field Inspection Results

Field inspection is necessary to determine the extent, character and condition of archaeological, architectural and cultural heritage remains, and can also lead to the identification of previously unrecorded or suspected sites and portable finds through topographical observation and local information. The site visit took place on 16th August 2021 and weather at the time of the visit was dry and bright.

The site visit walkover survey revealed the proposed location of Derryarkin Material Recovery Facility is a disused farm complex with extant farm buildings that date to the second half of the twentieth century. The buildings include cowsheds and silage barns. There are underground tanks under the cowsheds. A concrete yard is situated to the north of the cowsheds. This concrete yard has several manholes and chambers indicating that underground services traverse the area. An earthen bank forms the northern boundary of the site and a local road forms the southern boundary. The Yellow River is situated to the south of the development site, across the local road. The Yellow River was identified as a shallow stream when the site walkover took place. A piggery farm is situated to the north of the proposed development. Pasture fields are situated to the west of the development. These fields are mostly flat with some undulations. A private laneway leading to the piggery farm is situated to the east of the proposed development. A large active quarry is situated to the east of the laneway. Several pasture fields and bogland are situated further to the south and east. Derryarkin bog is situated to the east and northeast. Croghan Hill is visible 3.5km to the south of the proposed development. No archaeological, architectural or cultural heritage features were revealed within Derryarkin Material Recovery Facility or the surrounding landscape as a result of carrying out the walkover survey.



Plate 14-1: Location of proposed Derryarkin Materials Recovery Facility, looking northeast



Plate 14-2: Existing concrete lane on western side of proposed Derryarkin Materials Recovery Facility, looking north



Plate 14-3: Existing farm sheds at location of proposed Derryarkin Materials Recovery Facility, looking north



Plate 14-4: Existing concrete yard and farm buildings at location of proposed Derryarkin Materials Recovery Facility, looking south



**Plate 14-5: View south towards Croghan Hill from location of proposed Derryarkin Materials Recovery Facility, looking south**

Offaly County Council, Planning Dept. - Inspection Purposes Only

## APPENDIX 14.2: MITIGATION MEASURES AND THE ARCHAEOLOGICAL RESOURCE

Mitigation is defined as features of the design or other measures of the proposed development that can be adopted to avoid, prevent, reduce or offset negative effects.

The best opportunities for avoiding damage to archaeological remains or intrusion on their setting and amenity arise when the site options for the development are being considered. Damage to the archaeological resource immediately adjacent to developments may be prevented by the selection of appropriate construction methods. Reducing adverse effects can be achieved by good design, for example by screening historic buildings or upstanding archaeological monuments or by burying archaeological sites undisturbed rather than destroying them. Offsetting adverse effects is probably best illustrated by the full investigation and recording of archaeological sites that cannot be preserved *in situ*.

### Definition of Mitigation Strategies

The ideal mitigation for all archaeological sites is preservation *in situ*. This however is not always a practical solution, and a series of recommendations are therefore offered to provide ameliorative measures where avoidance and preservation *in situ* are not possible.

*Archaeological excavation* involves the scientific removal and recording of all archaeological features, deposits and objects to the level of geological strata or the base level of a given development. Full archaeological excavation is recommended where initial investigation has uncovered evidence of archaeologically significant material and where avoidance of the site is not possible.

*Archaeological test trenching* is defined as:

*“that form of excavation where the purpose is to establish the nature and extent of archaeological deposits and features present in a location which it is proposed to develop (though not normally to fully investigate those deposits or features) and allow an assessment to be made of the archaeological impact of the proposed development” (DAHGI 1999a, 27).*

*Archaeological monitoring:*

*“involves an archaeologist being present in the course of the carrying out of development works (which may include conservation works), so as to identify and protect archaeological deposits, features or objects which may be uncovered or otherwise affected by the works” (ibid., 28).*