Chapter 20
Archaeology and Cultural Heritage

CONTENTS

20. ARCHAEOLOGY & CULTURAL HERITAGE

20.1 Introduction

This chapter has assessed the potential effects on Archaeology and Cultural Heritage arising from the Proposed Development during the Construction and Operational Phases based on the draft Railway Order, Chapter 4 (Description of Proposed Development) and Chapter 5 (Construction Strategy).

The assessment of Architectural Heritage (including industrial heritage) is covered in Chapter 21 (Architectural Heritage) in Volume 2 of this EIAR.

20.1.1 Decommissioning

The DART+ Coastal North project is providing rail infrastructure which will enable an increase in frequency and capacity on the Northern Line and the Howth Branch in the coming years. It is not intended that this infrastructure will be decommissioned, but rather, as the infrastructure reaches the end of its design life, it will likely be refurbished or renewed to enable continued operation of the railway. Any such future renewal or refurbishment may require additional construction works, which would be similar to, but of a much lesser impact (in terms of extent and duration) than, the Construction Phase associated with the DART+ Coastal North project.

20.2 Legislation, Policy and Guidance

The Transport (Railway Infrastructure) Act 2001 (as amended) ("the 2001 Act") provides for the making of a Railway Order application by Córas Iompair Éireann ("CIÉ") to An Bord Pleanála. The European Union (Railway Orders) (Environmental Impact Assessment) (Amendment) Regulations 2021 (S.I. No. 743 of 2021) gives further effect to the transposition of the Directive 2011/92/EU on the assessment of the effects of certain public private projects on the environment (as amended by Directive 2014/52/EU) (the "EIA Directive") by amending the 2001 Act. An examination, analysis and evaluation is carried out by An Bord Pleanála in order to identify, describe and assess, in the light of each individual case, the direct and indirect significant effects of the proposed railway works, including significant effects derived from the vulnerability of the activity to risks of major accidents and disasters relevant to it, on: population and human health; biodiversity, with particular attention to species and habitats protected under Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the "Habitats Directive") and Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (the "Birds Directive"); land, soil, water, air and climate; material assets, cultural heritage and the landscape, and the interaction between the above factors. In carrying out an EIA in respect of an application made under section 37 of the 2001 Act, An Bord Pleanála is required, where appropriate, to co-ordinate the assessment with any assessment under the Habitats Directive or the Birds Directive.

The key legislation and guidance referenced in the preparation of the EIAR is outlined in Chapter 1 (Introduction) and specific to Archaeology and Cultural Heritage, the following legislation, policy and guidance documents has informed the assessment as also outlined in Sections 20.2.1 to 20.2.3.

The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023 was enacted in October 2023 and while this Act is now law, most of the provisions which are relevant for the purposes of this chapter will not enter into force until the Minister for Housing, Local Government and Heritage has made one or more Commencement Orders. This means that at the time of writing this Chapter, the National Monuments Acts have not yet been repealed and remain in force.

20.2.1 Legislation

Relevant European and National legislation that has informed the assessment includes:

European

- Directive 2011/92/EU on the assessment of the effects of certain public private projects on the environment (as amended by Directive 2014/52/EU) (the "EIA Directive");
- The European Union (Railway Orders) (Environmental Impact Assessment) (Amendment) Regulations 2021 (S.I. No. 743 of 2021) gives further effect to the transposition of the EIA Directive by amending the Transport (Railway Infrastructure) Act 2001 ('the 2001 Act';
- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, ("the Habitats Directive");
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, (he "the Birds Directive"), provides legal protection for habitats and species of European importance.
- Ireland has given effect to the Habitats and Birds Directives through Part XAB of the Planning and Development Act 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) as amended;
- Charter for the Conservation and Restoration of Monuments and Sites (Venice 1964);
- European Convention on the Protection of the Archaeological Heritage (the 'Valletta Convention'), ratified by Ireland in 1997;
- Council of Europe Convention for the Protection of the Architectural Heritage of Europe (Granada) 1985, ratified by Ireland in 1991;
- The UNESCO World Heritage Convention, 1972;
- Council of Europe Framework Convention on the Value of Cultural Heritage for Society, ('Faro Convention)' (2005);
- Circular Letter: PL 05/2018 Transposition into Planning Law of Directive 2014/52/EU; and
- The European Landscape Convention (ELC), ratified by Ireland 2002 European Landscapes Convention 2010. (The Department of the Environment, Heritage and Local Government 'Landscape and Landscape Assessment Guidelines' have been in draft form since 2000, however the National Landscape Strategy (NLS) was launched in July 2014).

National

- National Monuments (Amendments) Acts, 1930-2014, as amended;
- The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023;
- Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 2000 and the Planning and Development Act 2000 (as amended);
- Heritage Act, 1995 (as amended);
- Planning and Development (Strategic Infrastructure) Act 2006 (as amended);

- The 2001 Act (as amended, including as amended by the European Union (Railway Orders) (Environmental Impact Assessment) (Amendment) Regulations 2021 (S.I. No. 743 of 2021); and
- Part IV of the Planning and Development Act 2000 (as amended) (which addresses protected structures) are disapplied where the works involved are authorised by a Railway Order by virtue of section 38 of the 2001 Act and the development is also deemed to be "exempted development".

20.2.2 Policy

Relevant policy documents that have informed the assessment include:

- Dublin City Development Plan 2022-2028;
- Fingal County Development Plan 2023-2029;
- Louth County Development Plan 2021-2027; and
- Meath County Development Plan 2021-2027.

20.2.3 Guidance

Relevant guidance documents that have informed the assessment include:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022).
- Code of Practice for Archaeology agreed between the Minister of Arts, Heritage and the Gaeltacht (DAGH) and Iarnród Éireann (IÉ) 2012.
- Code of Practice for Archaeology agreed between the Minister for Arts, Heritage, Regional, Rural and Gaeltacht Affairs and Transport Infrastructure Ireland 2017.
- The Setting of Heritage Assets, Historic Environment Good Practice Advice in Planning Note 3 (Second Edition). (Historic England, 2017).
- National Landscape Strategy for Ireland 2015-2025, Department of Arts, Heritage and the Gaeltacht (DAHG, 2015).
- Guidance on Heritage Impact Assessments for Cultural World Heritage Properties – A publication of the International Council on Monuments and Sites, January 2011 (ICOMOS, 2011).
- Proposals for Irelands Landscapes. (The Heritage Council, 2010);
- Managing Change in the Historic Environment. (Historic Scotland, 2010);
- Guidelines for the Assessment of Architectural Heritage Impact of National Road Schemes, (NRA, 2006).
- Guidelines for the Testing and Mitigation of the Wetland Archaeological Heritage for National Road Schemes, (NRA, 2006).
- Guidelines for the Assessment of Archaeological Heritage Impact of National Road Schemes, (NRA, 2005).
- Frameworks and Principles for the Protection of the Archaeological Heritage, (Department of Arts, Heritage, Gaeltacht and Islands, 1999).
- ICOMOS International Charters including:
  - Historic Gardens (Florence Charter) 1981.
  - Charter for the Conservation of Historic Towns and Urban Areas (Washington Charter) 1987.

- Charter for the Protection and Management of Archaeological Heritage 1990.
- International Cultural Tourism Charter – Managing Tourism at Places of Heritage Significance 1999.
- Charter on the Built Vernacular Heritage 1999.
- ICOMOS Xi'an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas, 2005.
- ICOMOS Charter on Cultural Routes 2008.
- ICOMOS Charter for the Interpretation and Presentation of Cultural Heritage Sites (also known as the 'Ename Charter') 2008.
- Joint ICOMOS – TICCIH Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes 2011.
- The Valletta Principles for the Safeguarding and Management of Historic Cities, Towns and Urban Areas 2011.
- ICOMOS Charter for Places of Cultural Significance (The Burra Charter) 2013.
- Salalah guidelines for the management of public archaeological sites – 2017.

20.3 Methodology

The methodology was designed to provide a full understanding of the potential impact on archaeological and cultural heritage assets and on the character of the historic urban and residential streetscape and landscape. In so doing, it described and facilitated the identification of individual heritage assets and locations where there is the potential to reveal subsurface archaeological features.

20.3.1 Defining Archaeology and Cultural Heritage

For the purpose of this Chapter the following definition from the Department of Arts, Heritage, Gaeltacht and the Islands (DAHGI) (now Department of Housing, Local Government and Heritage (DHLGH)) Framework and Principles for the Protection of the Archaeological Heritage is applied for archaeology (DAHGI 1999):

> '*the study of past societies through material remains left by those societies and the evidence of their environment. The 'archaeological heritage' consists of such material remains (whether in the form of sites and monuments or artefacts in the sense of moveable objects) and environmental evidence*'.

Cultural heritage as set out in the Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA, 2022) includes archaeology, architectural heritage, folklore and history. It is a broad term that includes a wide range of tangible and intangible cultural considerations. Cultural heritage can relate to settlements, former designed landscapes, buildings and structures, folklore, townland and place names, and historical events, as well as traditions (e.g., mass paths and pilgrim ways) and traditional practices (e.g., saints' pattern days).

Cultural heritage is part of our cultural identity and contributes to defining a sense of place. The value of a strong sense of place is likely to become more important as the world grows increasingly homogenised. Recognising the unique sense of place in our towns, villages and city, whilst also respecting the individual heritage assets, is critical.

Cultural heritage assets are valued for the important contribution they make to the understanding of the history of a place, an event or people. Sites of cultural heritage interest are often afforded protection either as recorded archaeological monuments (on the Record of Monuments and Places (RMP) / Sites and Monuments Record (SMR)), as protected structures (on the Record of Protected Structures (RPS) in the relevant City or County Development Plan), or as structures within the National Inventory of Architectural Heritage (NIAH).

Each of these provides a unique cultural record and acts as a carrier of memory, meaning and cultural value. When considered in its wider context, they can form an essential component in the mechanism for analysing the broader cultural character and context of an area. Together, these can assist in mapping the changes that have led to the development of the modern environment. Such analysis provides insight into the communication, trade, transport, growth and associations of past societies.

There are numerous cultural heritage features that contribute to the character, identity, and authenticity of Dublin City and its wider environs including Fingal, Meath and Louth. These include the street plan, local architectural and archaeological monuments, the form of buildings and spaces, industrial heritage such as railway infrastructure and crossings etc. This unique historic character was identified and recorded throughout the EIA process by the relevant specialists in the EIA team. By identifying, recording and articulating these sensitive cultural heritage values, they can be considered, respected and protected in the context of change in the future. Figure 20.1, Sheets 1-18 depicts the archaeological and cultural heritage sites in the wider receiving environment and along the rail corridor.

Remnants of Dublin's industrial heritage can be found throughout Dublin City and its wider environs (e.g., the train infrastructure, signal buildings, stations, road and pedestrian bridge structures), some of it upstanding, the rest possibly surviving below-ground. These features all contribute to the present-day character and uniqueness of an area by reflecting its historic past and are assessed as part of the historic street scape within Chapter 21 (Architectural Heritage).

The evaluation of the archaeological resource was based on a desk study of published and unpublished documentary, aerial photography and cartographic sources. By using different information sources and data sets, an understanding of the historic landscape character that surrounds and is part of the Project has been developed. The modern landscape is a result of numerous modifications over time. Understanding how these processes occur, and how they are represented in today's urban and suburban landscape, is critical in providing an insight into the layering and development of the cultural heritage environment. It also facilitates an appreciation of an area's unique character. The process is concerned with identifying the dominant historic influences which have formed and define the present landscape. By using existing heritage data sets such as the RPS, RMP, NIAH for example, through the use of GIS and CAD, dominant clusters of monuments, buildings and cultural heritage features begin to emerge.

Architectural Heritage and Industrial Heritage is being examined in Chapter 21 (Architectural Heritage).

Appendices associated with this chapter are detailed in Volume 4 of this EIAR, and contain the following information:

- Appendix A20.1 – National Monuments Legislation;

- Appendix A20.2 – Archaeological Designations;
- Appendix A20.3 – Archaeological Geophysical Survey and
- Appendix A20.3 – Causeway Geotech Ltd (2023). DART+ North Stage A Ground Investigation (2023) Report No.21-1711, November 2023, Revision A01 (Appendix U - Report on Archaeological Monitoring - Shanarc Archaeology, 2023).

20.3.2 Study Area

The area examined for this study includes the full extent of the Proposed Development corridor. In order to inform the likely significant impacts from an archaeological and cultural heritage perspective, a 250m assessment study area was established on either side of the existing railway line. This corridor is the predicted extent of likely impact of the Proposed Development. Relevant excavations, monuments, stray topographical finds and historical references from outside of the study area corridor are also discussed where they have informed the development of the study area or where they may provide information on the archaeological potential of the study area itself.

Professional judgement was used to determine where the assessment study area should be extended to consider archaeological sites / monuments or historic structures that lie beyond 250m. As required and where appropriate, the relationship of structures, sites, monuments, and complexes that fall outside this study area were considered and evaluated to examine whether their setting or physical extent (above or below ground) might extend into the study area.

The study area is set within a coastal context from Dublin to Drogheda, with a number of inlets and rivers punctuating the coastline requiring bridges and viaducts for the railway line to cross. The Proposed Development has been designed so there are no inwater works (river or estuarine) required during the enabling or construction stages of development on a temporary or permanent basis. The construction design has clearly screened out any affect occurring within rivers or estuaries and as a result of this deliberate design strategy, no underwater affects are anticipated (Figure 20.1, Sheets 1-18).

20.3.3 Desktop Survey Methodology

The assessment of the archaeological and cultural heritage of the Proposed Development is based on a desk study of published and unpublished documentary and cartographic sources. A review of existing documentation and supplementary research and field surveys has taken place where necessary in order to evaluate the archaeological and cultural heritage constraints in terms of avoidance and mitigation measures.

The desk study availed of the following sources:

- United Nations Educational, Scientific and Cultural Organization (UNESCO): properties inscribed on the World Heritage List and those nominated for inclusion on the tentative list;
- The National Monuments, Preservation Orders and Register of Historic Monuments lists were sourced directly from the Department of Housing, Local Government and Heritage (DHLGH);
- Record of Monuments and Places (RMP) and Sites and Monuments Record (SMR): The SMR, as revised in the light of fieldwork, formed the basis for the establishment of the statutory RMP (pursuant to Section 12 of the National Monuments (Amendment) Act, 1994). The RMP records known upstanding archaeological monuments, their original location (in cases of destroyed monuments) and the position of possible sites identified as cropmarks on

vertical aerial photographs. The information held in the RMP files is read in conjunction with published constraint maps. Archaeological sites identified since 1994 have been added to the non-statutory SMR database of the Archaeological Survey of Ireland (National Monuments Service, DHLGH), which is available online at www.archaeology.ie and includes both RMP and SMR sites. Those sites designated as SMR sites have not yet been added to the statutory record, but are scheduled for inclusion in the next revision of the RMP;

- Dublin City Council's (DCC) Dublin City Development Plan (2022-2028), Fingal County Development Plan (2023-2029); Meath County Council Development Plan (2021-2027) and Louth County Council Development Plan (2021-2027);
- The topographical files of the National Museum of Ireland (NMI); identify recorded stray finds held in the archive of the museum. The finds, which have been donated to the state in accordance with national monuments legislation, are provenanced to townland, and the files sometimes include reports on excavations undertaken by NMI archaeologists earlier in the 20th century. The exact findspot of the stray finds are not always known or recorded. These stray finds indicate the general archaeological potential for stray finds in the study area which may be an indicator of activity which may date to any period.
- Excavations Bulletins and Excavations Database (1970-2020); and Dublin County Archaeology GIS, online (The Heritage Council).
- A review of historical maps was also undertaken to identify any features of cultural heritage significance within the proposed study area, including: Speed (1610), De Gomme (1673), Phillip (1685), Brooking (1728), Rocque (1756 and 1757), Scalé (1773) and the first edition and later (1838-1847) Ordnance Survey Mapping; available online on the Ordnance Survey of Ireland's website (www.osi-maps.ie);
- Place names; Townland names and toponomy (https://www.logainm.ie/en/). The toponomy of an area can be a valuable indicator of the type of cultural heritage within it. Place-names are an invaluable source of information not only on the topography, land ownership, and land use within the landscape, but also on the history, archaeological monuments and folklore associated with a place. Sources examined for place-name meanings include Logainm.ie, the Placenames Database of Ireland, and the Ordnance Survey Name Books and Letters which were published between 1824 and 1842 as part of the first complete mapping survey of Ireland.
- The project and existing railway line runs through 66 townlands within the study area, in the counties of Dublin, (including Fingal), Meath and Louth. Townlands are land divisions that form a unique feature in the Irish landscape; their origins can be of great antiquity and many are of pre-Norman date. They existed well before the establishment of parishes or counties.
- Dublin City Industrial Heritage Record (DCIHR) (DCC 2003-2009)
- Aerial imagery (Google Earth 2001–2020, Bing 2013; OSi 1995, 2000, 2006).
- Other sources of information of documentation and research are included in Section 20.10.

Documentary and literary sources were consulted, and a number of other published and unpublished documentary sources as contained in Section 20.9.

20.3.4 Field Inspection

Whist trackside access was not required for the archaeological survey, field walkover surveys were carried out in the areas for proposed substations, attenuation areas, utility diversions and Construction Compounds. A survey of the route and existing crossings was carried out to review the landscape through which the railway corridor runs.

20.3.5 Geophysical Survey

A geophysical survey took place in order to assist with the assessment of the below ground archaeological potential of greenfield lands associated with the Proposed Development. The objectives of the survey were to:

- Identify any geophysical anomalies of possible and definite archaeological origin within the specified survey areas,
- Accurately locate these anomalies and present the findings in a map format,
- Describe the anomalies and discuss their likely provenance.

Given the arable nature of the majority of fields to be surveyed and the presence of crops, the survey took place in November 2023 after harvesting. However, due to a number of storm fronts and wet weather conditions a number of crops were left in the ground and field conditions were challenging with standing pools of water in the fields. Given the deterioration in site conditions, a number of areas were unavailable for survey.

A detailed gradiometer survey was undertaken by J. M Leigh Survey Ltd. This was designed to detect subtle variations in the local magnetic field. For example, some archaeological features such as ditches, large pits and fired features have an enhanced magnetic signal that can be detected and plotted through recorded survey. The Geophysical Report is included in Appendix A20.3 in Volume 4 of this EIAR. Figure 20.2 Geophysical Surveys, depicts how the surveys relate to the Proposed Development.

20.3.6 Methodology

Potential impact on the receiving archaeological and cultural heritage environment can be described as direct physical impacts, indirect physical impacts, and impacts on setting.

- Direct physical impacts – those development activities that directly cause damage to the fabric of a heritage asset. Typically, these activities are related to construction works; for example, excavation works associated with the Proposed Development.
- Indirect physical impacts – those processes, triggered by development activity, that lead to the degradation of heritage assets; and
- Impacts on setting – how the presence of a development changes the surroundings of a heritage asset (archaeological, architectural or cultural heritage sites) in such a way that it affects (positively or negatively) the heritage significance of that asset. Visual impacts are most commonly encountered but other environmental factors such as noise, light or air quality can be relevant in some cases. Impacts may be encountered at all stages in the life cycle of a development from construction to decommissioning but they are only likely to be considered significant during the prolonged operational life of the development.

The archaeology and cultural heritage assessment has followed the methodology set out in the EPA Guidelines (EPA, 2022) and the National Roads Authority (NRA) Guidelines for the Assessment of Archaeological Heritage Impact of National Road Schemes ("the NRA Guidelines") (NRA, 2005). It also adheres to the Code of Practice established between DAHG and IÉ in 2012 and as a mitigation measure proposes the appointment of a Project Archaeologist to develop and manage a centralised framework for tracking and managing all archaeological elements including but not limited to investigations and surveys required throughout the Construction, Operation and Maintenance Phases, should the Railway Order application be successful.

20.3.6.1 Key Parameters for Assessment

The key activities that have the potential to result in likely significant effects on archaeology and cultural heritage are outlined below.

Construction Phase

- Ground works and site clearance works including demolition leading to the removal or part removal of a heritage asset due to construction activities;
- Ground disturbance and excavation, caused by construction activities (including service connections and diversions) which may lead to the damage or destruction / removal of recorded or previously unknown (newly revealed) heritage assets; and
- The degradation of the setting and amenity of a monument or the severance / fragmentation of interrelated features.

Operation and Maintenance Phase

- Operational activities may comprise maintenance activities, though the impact risk to recorded or previously identified archaeological features or cultural heritage assets is considered to be low;
- A change that negatively impacts on a sense of place (i.e. detracts from the setting of historic features) and that cannot be mitigated has the potential to be considered a significant or profound impact throughout the operational life of the Proposed Development; and
- Potential visual impacts on archaeological and cultural heritage features during the Operational Phase may be incurred as a result of the Proposed Development and result in a change in the character of the receiving historic environment. This change may have a positive or negative affect on the heritage asset.

20.3.6.2 Assessment Criteria and Significance

Archaeological and cultural heritage sites are a non-renewable resource and cultural heritage material assets are generally considered to be location sensitive. In this context, any change to their environment, such as construction activity and ground disturbance works, could adversely affect these sites. The likely significance of all effects is determined in consideration of the magnitude of the impact and the baseline rating upon which the impact has an effect (i.e., the sensitivity or value of the cultural heritage asset). Having assessed the predicted magnitude of impact with respect to the sensitivity / value of the asset (Table 20-1, Table 20-2 and Image 20-1), the overall significance of the effect is then classified as imperceptible, not significant, slight, moderate, significant, very significant, or profound (Table 20-3).

Table 20-1 Significance / Sensitivity Criteria

Sensitivity / Significance	Criteria
High	Sites of international significance: World Heritage Sites. National Monuments. Protected Structures (assessed by the NIAH to be of international and national importance), where these are also National Monuments. Undesignated archaeological and cultural heritage sites.
Medium	Recorded Monuments (RMP sites & SMR sites scheduled for inclusion in the next revision of the RMP) Protected Structures / NIAH sites (assessed by the NIAH to be of regional importance), where these are also Recorded Monuments. Newly identified archaeological sites, confirmed through archaeological investigation, to be added to the SMR. Undesignated archaeological and cultural heritage sites.
Low	Sites listed in the Dublin City Industrial Heritage Record (DCIHR) and National Inventory of Architectural Heritage (NIAH) Building for which there are no upstanding remains. Undisturbed greenfield areas and riverine environs, which have an inherent archaeological potential. Undesignated archaeological and cultural heritage sites.
Negligible	Assets with very little or no surviving archaeological and / or cultural heritage interest.

Table 20-2 Magnitude of Impact Criteria

Impact Magnitude	Criteria
High	These impacts arise where an archaeological / cultural heritage asset is completely and irreversibly destroyed by a Proposed Development. A change such that the value of the asset is totally altered or destroyed, leading to a complete loss of character, integrity and data about the site.
Medium	An impact which, by its magnitude, duration or intensity alters an important / significant aspect of the environment. An impact like this would be where an archaeological / cultural heritage asset would be impacted upon leading to a significant loss of character, integrity and data about the site. Or an impact which by its magnitude results in the partial loss of a historic structure (including fabric loss or alteration) or grounds including the part removal of buildings or features or part removal of demesne land (e.g. severance, visual intrusion or degradation of setting and amenity). A permanent positive impact that enhances or restores the character and / or setting of a cultural heritage site or upstanding archaeological heritage site in a clearly noticeable manner.
Low	A low impact arises where a change to the site is proposed which though noticeable is not such that the archaeological / cultural heritage character / integrity of the site is significantly compromised, and where there is no significant loss of data about the site. A positive impact that results in partial enhancement of the character and / or setting of a cultural heritage site or upstanding archaeological heritage site in the medium to long-term.
Negligible	An impact which causes very minor changes in the character of the environment and does not directly impact an archaeological / cultural heritage asset or affect the appreciation or significance of the asset. There would be very minor changes to the character and integrity of the asset and no loss of data about the site.

Table 20-3 Defining Significance of Impacts

Impact	Definition
Imperceptible	An impact capable of measurement but without noticeable consequences.
Not Significant	An impact which causes noticeable changes in the character of the environment but without significant consequences.
Slight	An impact which causes minor changes in the character of the environment and does not affect an archaeological / cultural heritage asset in a moderate or significant manner.
Moderate	A moderate impact arises where a change to the site is proposed which though noticeable, does not lead to a significant loss of character, integrity and data about the archaeological / cultural heritage asset.
Significant	An impact which, by its magnitude, duration or intensity, alters an important aspect of the environment. An impact like this would be where part or all of a site would be permanently impacted upon, leading to a significant loss of character, integrity and data about the archaeological / cultural heritage asset.
Very Significant	An impact which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound	Applies where mitigation would be unlikely to remove adverse impacts. Reserved for adverse, negative impacts only. These impacts arise where an archaeological / cultural heritage asset is completely and irreversibly destroyed by a Proposed Development.

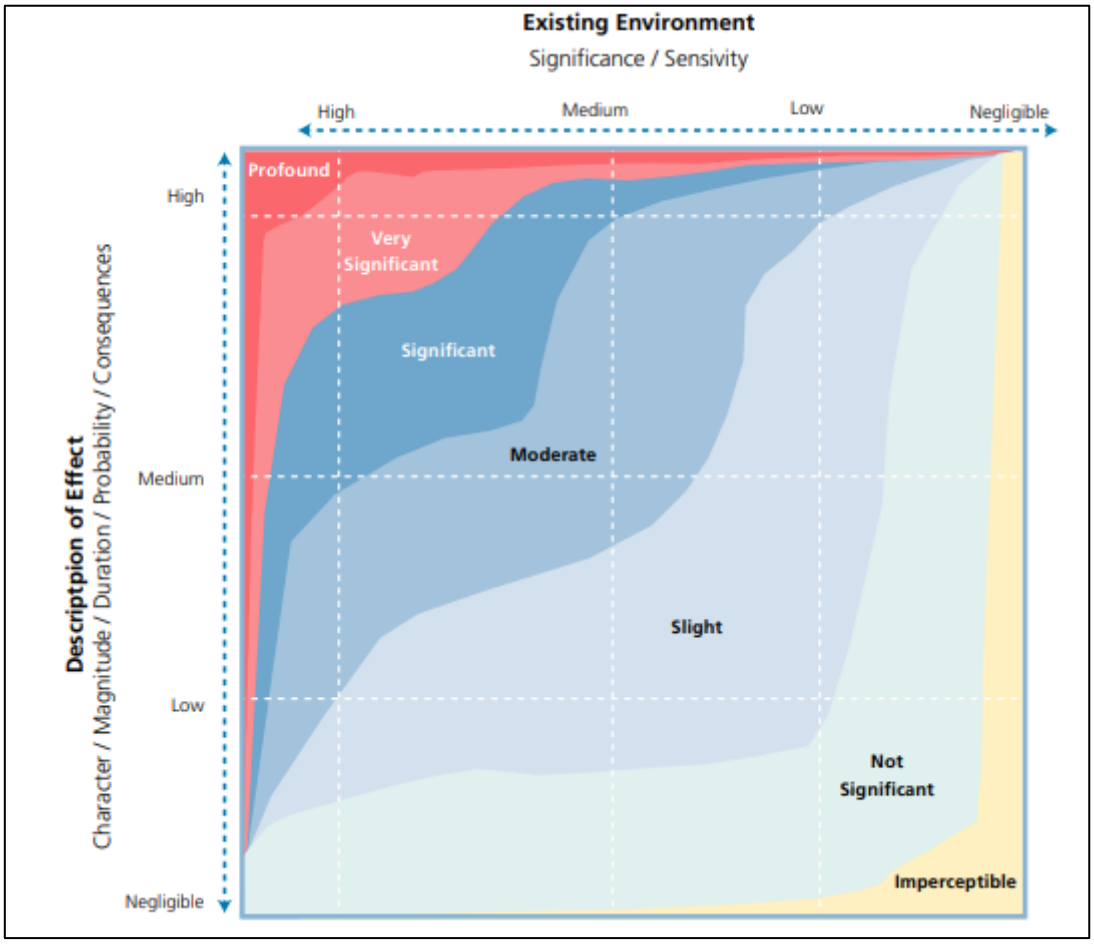

Image 20-1 Chart Showing Typical Classifications of the Significance of Effects, from the EPA Guidelines on Information to be Contained in EIAR (EPA 2022, figure 3.4)

20.3.7 Consultation

The overall project stakeholder and public consultation undertaken in respect of the Proposed Development is set out in the Chapter 1 (Introduction). All feedback was collated, including feedback specific to the EIAR topic 'Archaeology and Cultural Heritage'. This feedback has informed this chapter including the baseline and impact assessment presented.

Consultation took place with the National Monuments Service of the Department of Heritage, Local Government and Housing to provide an overview of the Proposed Development and the archaeological assessment that has taken place in terms of the research, data gathering processes and survey, all of which have informed the design development.

20.3.8 Difficulties Encountered / Limitations

No difficulties were encountered during the completion of this assessment.

20.4 Receiving Environment

The Proposed Development has been divided into five distinct geographic zones along the length of the corridor (Zones A to E) as outlined in Chapter 4 (Description of the Proposed Development) and summarised below. The Proposed Development is described from south to north along the railway corridor.

- Zone A – North of Connolly Station to Howth Junction & Donaghmede Station (including Fairview Depot (refer to Chapter 1, Section 4.6);
- Zone B – Howth Junction & Donaghmede Station (including Howth Branch) to north of Malahide Viaduct (refer to Chapter 1, Section 4.7);
- Zone C – North of Malahide Viaduct to south of Gormanston Station (Fingal boundary) (refer to Chapter 1, Section 4.8);
- Zone D – South of Gormanston Station (Fingal border) to Louth/ Meath border (refer to Chapter 1, Section 4.9); and
- Zone E – Drogheda MacBride Station and surrounds (refer to Chapter 1, Section 4.10).

Figure 20.1, Sheets 1-18 depicts the archaeological and cultural heritage sites in the wider receiving environment and along the rail corridor. For the purposes of the discussion on the archaeological and historical background, the study area has been sub-divided into five specific areas with reference to the historic context of townlands. This approach allows for a focused analysis of each area rather than a general overview of the entire study area.

20.4.1 Zone A – North of Connolly Station to Howth Junction & Donaghmede Station (including Fairview Depot)

Ireland entered the railway age in 1834 with the opening of the Dublin to Kingstown (Dún Laoghaire) line and in 1838 an act was passed enabling the building of a railway from Dublin to Drogheda. The terminus for this line at Amiens Street Station (now Connolly Station) was built between 1844 and 1846. The route that the railway line follows encompasses the following areas.

The name of the parish of Fairview is frequently associated with an earlier parish name, Clonturk, which takes its name from a townland on the road to Swords. Early forms of the place name from Latin documents suggest that the original name was Ceann Torc, 'headland of the boars'. The element cluain had replaced ceann by the middle of the 16th century, perhaps influenced by the more famous placename Cluain Tarbh / Clontarf (Logainm 2020).

The area of modern-day Fairview began to develop with the construction of Annesley Bridge in 1797. Rocque's map of 1760 clearly shows that Ballybough Bridge was previously the only means of crossing the River Tolka in this area. Rocque's map names the Tolka as the 'Ballybough River' (Ferguson 1998). The River Tolka (in Irish An Tulcha, meaning the flood) is one of Dublin's three main rivers (along with the River Liffey and the Dodder). Annesley Bridge is located at what was originally the mouth of the river, but reclamation has resulted in the Tolka flowing immediately south of Fairview Park before entering into the sea north of East Wall Road. The railway crosses here along Stoney Road on an embankment. Fairview Park was originally tidal mud flats and was used for municipal land-fill in the early 1900s. This is evidenced by the 18th and 19th century pottery revealed when groundworks in the park were monitored by Dr Ruth Johnson, Dublin City Archaeologist (Walsh 2013 pers. comm.). The park was developed in the late 1920s.

The name Clontarf derives from the Irish Cluain Tarbh, meaning 'the meadow of the Bull' (Joyce 1921). It is said to be so-called because of the rumbling noise made by the sea as it rolled over the sandbanks in Dublin Bay (now lessened by the presence of the North and South Walls). This part of coastal Dublin was within the district of Cianachta and later of Fingal. A relic of the old Cianachta remains in the name of the River Naniken (Abhainn na gCian), which flows through St Anne's Park. Around 550 AD, a church was founded by the Abbot of Bangor, St Comgall, indicating early Christian activity here. Clontarf also has a significant medieval history, with a castle at Clontarf erected by Adam de Pheope as part of the Anglo-Norman settlements in North Dublin.

The area is probably most frequently associated with the Battle of Clontarf which took place on April 23rd 1014. At the fishing weir of Clontarf, Brian Boru, High King of Ireland, and his allies engaged the armies of rebellious Leinstermen, the Hiberno-Norse of Dublin and Danish Vikings from as far afield as Orkney. The battle resulted in the defeat of the Danish Vikings and the death of Brian Boru. The battle was mainly fought along the banks of the River Tolka from Glasnevin to Ballybough. However, it was at the strand at Clontarf that the Vikings had beached their boats, and this was the location of the final confrontation.

During the 18th and 19th centuries, the main activities at Clontarf were fishing, farming, and related industry. In his evidence to a commission in 1831, John Barlow of Sybil Hill mentions that Clontarf was the property of the Vernons and that while the farmers who held land under them were nearly all Protestants, the majority of people were labourers who lived in thatched mud cabins with little or no furniture. The area referred to as 'The Sheds', adjoining which stood the old village of Clontarf, originated with some sheds or stages erected to facilitate the curing and drying of fish (Ball 1905).

As a result of the construction of the Dublin and Drogheda railway in 1844, the area underwent a period of significant growth. Even greater development followed the introduction of the horse-drawn tram service from Nelson's Pillar to Dollymount in 1880.

Housing was built to serve the new commuters, initially in the area west of Malahide Road with developments extending along (and back from) Marino Mart and Clontarf Road; this was followed by further housing on the east side of Malahide Road, north of Marino Mart, as part of the large-scale development of the 1920s and 1930s. In 1900 Clontarf was incorporated into the City Centre of Dublin. In 1931, the Dublin Port and Docks Board began a reclamation scheme which, when completed, provided an improved roadway and promenade.

Raheny derives its name from Ráth Éanna or Ráth Eanaigh, which translates as Eanna's rath/ fort or the fort of the marsh. Saint Assam/ Ossam, a disciple of St Patrick established an early medieval foundation here.

There is evidence that this rath is of ancient origin as the name is recorded in official documents since the 11th century. This includes a reference to the Battle of Clontarf in 1032AD cited by Lewis (1837), where a record of grant made by Sitric to his newly founded church of the Holy Trinity which included 'all Rathenny and Baldoyle'. This is also referred to by D'Alton in 1838, 54-55. It is also noted under the name 'Rathenea' by Archdall (1786) as the birthplace or residence of a saint in about 570, at which time there was probably a religious settlement in the vicinity (Lewis 1837).

The present-day Church of Ireland church, dedicated to St. Assam, was rebuilt (1712) on the earlier site and is now roofless. It is enclosed by a stone wall which demarcates the extent of the graveyard (DU015-082002) and there is a steep fall from the interior of the site to the surrounding street level of 1.9m. The church, a recorded monument (DU015-082001) is rectangular in form (internal dimensions are 15.5m in length and 6.5m in width, the walls are approximately 0.7m thick) and built of randomly coursed, rubble masonry. It has a steeply pitched eastern gable with remnants of a tracery window of dress limestone. The structure is entered through the western gable and there is a blocked doorway at the west end of the north wall. There are windows in the north and south wall of the nave.

A ditch revealed by roadworks in 1970 was interpreted by Swan (1986) as being the outer enclosure ditch of the medieval ecclesiastical site of Raheny (DU015-082003) and he states that the remaining physical and documentary evidence of the layout of St Assam's, prior to the construction of the seventeenth century church, is indicative of an early Christian foundation. However, the area in which the ditch was found was important historically throughout the mediaeval period, and there are other boundary and defence features of which such a ditch could form a part. Both medieval and post-medieval pottery were found in disturbed layers adjacent to the feature (Carroll 1996). Associated with this foundation are two holy wells; St Assam's and St Anne's.

St. Assam's holy well was formerly in the field between the church and the railway station, but it is now built over. Swan (1986) suggests that St Anne's well in Raheny like the Randelstown Co. Meath well, of the same name, may represent the christianisation of an earlier well associated with the goddess Anu. St Anne's well was described by ODanachair (1958) as being housed under 'a rustic cupola of masonry'. Other Early Medieval foundations in the area include the church of Kilbarrack located at "The Whip of the Water,"(Joyce 1912).

After the initial Anglo-Norman conquest John de Courcey was designated Lord of Raheny and Kilbarrack. In the thirteenth century de Courcey's son was suspected of spying for King John on Hugh and Walter de Lacy. The disagreement between the two fractions resulted the intersession of the king and the banishment of the De Lacy's in 1211 (Ball 1902). The next recorded family to establish a foothold in the area was Palmer family in the fourteenth century (D'Alton 1838) and Sir John Plunkett, in 1551 was in position of a house and ten acres in the Raheny area (D'Alton 1938).

During this later period the lands held by the Lord of Howth included not only the manor of Howth but also attached lands of Kilbarrack and Killester. Christopher Lawrence succeeded his brother Richard in 1658 to the title and estate. Christopher Lawrence the 10th Baron of Howth was married to Elizabeth Plunkett, daughter of Sir John Plunkett of Beaulieu (Joyce 1912). Known as the Blind Lord, Christopher Lawrence's character and his nomination to the council on his succession to the title, in conjunction with his assistance to the government made him a key figure in the Elizabethan establishment.

The use of the windmill is bound up with the history of a famous Raheny family, the Sweetmans. They were originally a Norse or Norman family who settled in Fingal in the early medieval period and are believed to have settled in Raheny at the beginning of the eighteenth century. Patrick Sweetman was born in 1702 and had a brewery on King Street (Ó Cróinín 1971). The fertile lands of Kilbarrack and Grange Park were the great granaries that fed the breweries.

The mill itself and its complementary structures and yards occupied more than half the townland of Mount Olive (Ó Cróinín 1971). These windmill lands were identical with what became the Belmont Estate with the Capuchin Friars acquiring the site in the 1940s (Fitzpatrick 1970).

20.4.1.1 Designated Archaeological Sites

20.4.1.1.1 National Monuments

There are no national monuments (NM) within the study area. The nearest national monument is the 'Casino Marino' (DU018-144) an ornamental structure set within the garden at Marino House. The building was designed by Scottish architect Sir William Chambers for James Caulfield, the 1st Earl of Charlemont in 1759 and completed 1775. This monument lies 700m to the northwest of the existing railway line.

20.4.1.1.2 Zone of Archaeological Potential for Dublin City

Zones of archaeological potential (ZAP) can be defined as areas within the urban and rural landscape that possess the potential to contain archaeological remains due to the settlement history of a place and or to the presence of topographical features such as rivers, lakes and high, defendable ground.

The Proposed Development is located outside the known extents of the zone of archaeological potential for Dublin City.

The Dublin City Development Plan 2022-2028 requires that any development proposals within a designated ZAP must be subject to pre-planning discussion.

20.4.1.1.3 Recorded Archaeological Sites

The Record of Monuments and Places (RMP) is a statutory list of archaeological monuments provided for in the National Monuments Act (as amended). Measured from rail corridor to the zone of notification surrounding the RMP sites and historic settlements. There are 16 monuments that are located within the 250m corridor but none of these sites will be impacted by the proposed scheme. There are no RMP sites that lie within 50m of the rail corridor within Zone A.

Table 20-4 RMP /SMR within 250m of the Proposed Development

RMP/SMR	Class	Location
DU018-067	Burial	Dublin North City, Marino Crescent
DU019-037	Building	Donnycarney
DU019-01001/002	Church and Graveyard	Killester North
DU015-089	Windmill	Raheny
DU015-082001/002/003	Church, graveyard and ecclesiastical enclosure	Raheny
DU015-018	Enclosure	Baldoyle
DU015-087	Rabbit Warren	Baldoyle
DU015-022	Burial Ground	Burrow
DU015-023	Burial Ground	Burrow
DU015-020	Mound	Howth Demesne
DU015-025	Castle Tower House	Howth Demesne
DU015-042	Burial Ground	Howth Demesne
DU015-028001	Cist	Howth

20.4.1.2 Stray Finds

In the townlands that surround the railway, various archaeological finds have been recovered although the locational information for the artefacts is general rather than specific. Artefacts include a fragment of a decorated slab found in Balgriffin Park townland, within the grounds of Balgriffin House (NMI Reg. No. 1958:50), a carved stone face recovered in the vicinity of Donnycarnery / Killester (NMI Reg. No. 1993:19), and clay pipe fragments, a pot sherd and a fragment of a copper vessel (NMI Reg. No. 1970:190/197) found in Fairview Park.

Other finds include animal bones during an excavation at Raheny Motors (Museum Record IA 108/52). The bones were believed to have been those of an ox, however they have not been retained by the museum as they were not deemed to be of archaeological significance. There is also some confusion as to the exact location of the find spot. They are recorded to Raheny townland but Raheny Motors is located some distance away just off the Malahide Road.

A decorated flat, oval stone object (1959:12) was found in the topsoil of a garden on Howth Road. The stone is limestone and is 930mm long x 460mm wide and 6mm thick.

20.4.1.3 Previous Archaeological Investigations

At Fairview Park previous archaeological monitoring in advance of the Port Tunnel construction in 2002 revealed a dearth of archaeological features, with stratified deposits consistent with the use of the area as a landfill in the late 19th century (Bolger, 2004).

20.4.1.4 Townlands and Toponomy

Some names may refer to archaeological monuments, as for example the townlands that refer to the presence of ringforts: Raheny is an anglicisation of Ráth Eanaigh, meaning 'ringfort of the marsh', which suggests there was such a site present in the townland.

The English townland names, Harmonstown, Mountolive and Swans nest are named after, previous owners of the land (personal or family name) and / or previous demesnes or land-use (e.g. Glebe). There are 13 townlands located within Zone A as presented in Table 20-5.

Table 20-5 Townland Names Zone A

Project zone	Townland	Barony & Parish	Origin	Placename origin/meaning (sources)
Zone A	Clontarf	Coolock/ Clontarf	English/ Irish	Taken from the Irish, *Cluain Tarbh* meaning meadow, pasture. Also known as pasture of the bulls. This townland name can be traced to 1022 when *Cluana Tarbh* was noted in the Annals of the Kingdom of Ireland by the Four Masters (O'Donovan 1856).
Zone A	Killester	Coolock/ Killester	Irish	Taken from the Irish Cill Easra meaning the church of Easra. Noted in records dating to 1178 (Thom 1888).
Zone A	Killester North	Coolock/ Killester	Irish	As above
Zone A	Killester Demesne	Coolock/ Killester	Irish	As above
Zone A	Furry Park	Coolock/ Clontarf	English	Referring to the furze and gorse in the area of the former demesne. First noted in the Registry of Deeds in 1745.
Zone A	Harmonstown	Coolock/ Clontarf	English	Harmon is a family name, a surname that came into Ireland in the 13th or early 14th century.
Zone A	Glebe	Coolock/ Raheny	English	Land associated with a church, noted in the Book of Survey and Distribution, County Dublin *c*. 1660.
Zone A	Ballyhoy	Coolock/ Raheny	Irish	Taken from the Irish *Baile Buidhe* meaning Yellowstown.
Zone A	Edenmore	Coolock/ Raheny	Irish	Edenmore was formerly known as Violet Hill (shown on Duncan's 1821 map as the latter). Derived from the Irish *Eadan Mór* meaning 'great brow or brae'.
Zone A	Raheny	Coolock/ Raheny	Irish	Taken from the Irish *Ráth Eanaigh* meaning the ringfort of the marsh. The name is noted in historical records as far back as 1175.
Zone A	Mountolive	Coolock/ Raheny	English	English name associated with a former demesne.
Zone A	Swansnest	Coolock / Kilbarrack	English	On logainm.ie it is noted that this "is not a townland but a subdivision of Upper Kilbarrack" townland. The name is noted from the 18th century onwards on maps and surveys.
Zone A	Kilbarrack Upper	Coolock/ Kilbarrack	Irish	Derived from the Irish *Cill Bharróg* referring to St Bearach's church with historical references dating to 1185 when it appeared in the Calendar of Archbishop Alen's Register as Kylbaroc (McNeill 1950)

20.4.2 Zone B – Howth Junction & Donaghmede Station (including Howth Branch) to north of Malahide Viaduct

20.4.2.1 Prehistoric Period

Recent excavations to the south of Station Road in Portmarnock (16E0613, 16E0101 and 18E0016, McLoughlin 2019b, 2019c, 2020) have added to the evidence of prehistoric activity in coastal north county Dublin. A variety of flint artefacts and two stone axe-heads recovered during the course of the excavations attest to prehistoric activity in the area, as does burnt mound activity in the form of a large waterhole filled with burnt stone and charcoal rich soil, dated to the early Bronze Age (BC 2434-2051). This feature was discovered close to the coast road (R106) during monitoring of an east-west pipeline trench. A pit containing grinding stone fragments was dated to the late Bronze Age (BC 968-807) and a curving ditch within an early medieval enclosure was dated to the Iron Age (BC 353 – 1 AD) (McLoughlin, 2019c). Another ditched enclosure (DU015-014001) returned late Iron Age and early medieval dates and a pit within that enclosure was dated to the early Mesolithic (BC 6329-6052) (McLoughlin2019b). The flint artefacts from these recent excavations include a tiny barbed and tanged arrowhead (16E0101:198:1, Beaker), a hollow based arrowhead (16E0613:2, Neolithic/Beaker), a butt-trimmed flake (18E0016:2194, later Mesolithic) and an elongated leaf-shaped projectile form (18E0016:1809, Neolithic). A significant late Bronze Age find is a copper alloy Dowris phase knife blade (19E0303:4).

This stretch of the north Dublin coastline has a clear view of Lambay Island to the east and excavations on the island have revealed areas of Neolithic activity associated with stone axe and flint tool manufacturing (Cooney, 2000).

There is a note on RMP maps from the 1980s that there may have been a fulacht fiadh in the field to the east of the Portmarnock mound (DU015:014), although this appears to have been removed by ploughing (RMP files). Testing carried out in 2004 (Phelan, 2004) identified a burnt mound trough in the same field which could relate to this record. This feature has since been excavated (18E0016) and returned a radiocarbon date range in the Early Bronze Age (BC 2135-1920) (McLoughlin, 2020a). other monuments from the Bronze Age include ring-ditches (funery monuments) such as the newly identified ring-ditch in Drumnigh townland (DU015-119).

Given the indications of prehistoric activity in the area, it is possible that the upstanding mound at Portmarnock (DU015-014) could be prehistoric. Testing of the mound in 2007 (Moriarty 2009a) suggested a medieval date, however the mound was quite disturbed. Based on the newly revealed evidence for prehistoric activity in the surrounding area, it now seems more likely that the mound had its origins in prehistory. Morris (1939) in an examination of the Díndsheanchas (Old Irish metrical lore of place names, edited by Gwynn in the early part of the twentieth century) has associated this site with the burying place of 'Maine' 'son of Medb and Ailell'. Mayne (also known as Maine or Cichmaine), the son of Medb and Ailell of Connacht, is said to have been killed by fishermen at Inbher Cichmaine, the inlet or bay of Cichmaine and his burial ground is described as being at the northern end of Inbher Cichmaine. Morris makes the argument that Inbher Cichmaine appears to correspond with what is now known as Portmarnock Bay and the mound situated at the northern end of the bay, corresponds with the reputed burial location. It is possible that if the mound did originate in prehistory, it could have been used as the burial place of Maine.

20.4.2.2 Early Medieval Period

There are several large well-known early medieval Christian foundations in north County Dublin, including houses at Malahide, Finglas, Swords, Portmarnock, Kinsaley (Kinsealy), and Lusk. The earliest reference to the church at Portmarnock (DU015-007) dedicated to St. Marnock is AD 1185 when it was granted to St. Mary's Abbey, Dublin by Prince John (Gilbert, 1884), although its proximity to a holy well, also dedicated to St Marnock (Joyce, 1912), the former presence of an ogham stone at the site, and the dedication of the church and well to St. Marnock, who was an early religious figure, may indicate that its origins date back to the early medieval period.

At Malahide, St Sylvester's Holy Well (DU012-023:01) is located in the northeast corner of the church grounds. The well may have derived its name from the Pagan Sun-God Silvanus. Another possible derivation is from an associate of St Patrick, Bishop Silvester, however locally the well is referred to as the Sunday Well and Our Lady's Well. The patterns for this well traditionally take place on the 15th August, which is Our Lady's Feast and this is probably how the latter name came about. The Record of Protected Structures (RPS 390) describes the well as a Holy Well with an enclosed circular stone structure with a conical roof. The structure around the well is also listed in the National Inventory of Architectural Heritage as being of regional importance (Ref: 11344011). The NIAH describes the structure as a freestanding single-bay single-storey rubble stone built building, c.1900, on a circular plan over holy well with conical roof. The site of a possible mound is recorded in the RMP files (DU012:023-03) within the church grounds, where according to Flanagan (1982) there was a mound or rath (ringfort). No physical evidence for this mound survives on site today.

Three excavated enclosures at Portmarnock have been dated to the early medieval period, with elements of Iron Age activity (16E0101, 16E0613 and 19E0303). A further tested example at the subsurface enclosure (DU015-055) at Maynetown which remains in situ, was also dated to the early medieval period (AD687-887, Licence Ref. 07E0574).

The number of ringforts in the general area such as those at Grange also attest to the early medieval settlement of the area.

20.4.2.3 Viking Activity

The Fingal region, was dominated by the Vikings from the ninth century. Although defeated at Clontarf, in 1038 King Sitric maintained control of the lands in Portrane and 'all Rathenny and Baldoyle'. In 1040 Baldoyle, Portrane and Rechen (including Raheny) were granted by Sitric to the church of the Holy Trinity, and in 1171 at Falaise, Henry II granted St Mary's abbey the lands of Raheny. Henry II in 1156 also granted St Mary's itself to the abbey, the motherhouse of which was at Savigny in Normandy, and Pope Clement confirmed this in 1189. St Mary's was dissolved in 1540/41 during the suppression of the monasteries under Henry VIII.

By the early historic period shipping routes had been established along the eastern coast and the arrival of the Vikings at the end of the 8th century saw the establishment of Hiberno-Norse settlements along the coastline. Fingal was in close proximity to the Viking settlement at Dublin, and the significant Norse influence on Fingal can be seen from both Gaelic place-names, such as Fine Gall or 'territory of the strangers' and Baile Dubh Gaill (Baldoyle: 'town of the dark stranger'). Viking rule and settlement influenced the region for over two hundred and fifty years, from the ninth to the twelfth centuries.

Bradley suggests Viking Dublin should be looked at as part of 'the rurally settled area of the Dublin Scandinavians' rather than as a number of successful trading settlements strategically located along the coast (Simms and Fagan 1992, 89).

According to Hurley, a Viking harbour is recorded in the vicinity of Baldoyle, with the early Viking settlement located further inland than the present-day village, as the seashore was at a higher level than it is today (Hurley 1983). Although there has never been any definitive evidence for this, archaeological excavations undertaken at a rectangular cropmark site in Baldoyle in 2014 provided a radiocarbon date of 9th / 10th century for a charred seed retrieved from the bottom of one of the features (Duffy, 2014). This implies that there was at least some level of settlement activity there during the Viking period. There is also evidence to suggest that a Norse community lived on Lambay, at least on a temporary basis, using it as a base from which to attack the mainland (Cooney, 1993).

In May of 2023, an earthwork site in Maynetown (DU015-152) was added to the archaeological record. This site is located in rough grassland on a low lying floodplain immediately north of the Mayne River. An extensive area of earthworks was identified from Google Earth imagery immediately north of the confluence of the Mayne River and the stream running from the south from Seagrange Park through the former Baldoyle Racecourse. These earthworks may represent a previously unrecorded longphort site potentially relating to 'Port Manann' recorded in the Fragmentary Annals of Ireland s.a. 866 (Downham 2008, 62).

An Air Corps aerial image (1932 IE-MA-ACVN-P2-V7) taken in 1932, shows extensive earthworks in the area lying between the river and the Moyne Road to the north. While a large square enclosure parallel to the river is suggested (c.116m NW-SE X c.138m NE-SW) the most evident feature is a D-shaped rise defined by a broad ditch (c. 50m NE-SW X c. 45m NW-SE). Immediately west of this D-shaped enclosure and seemingly occupying part of the same rise is a sub-square enclosure divided from the large square enclosure by a large ditch. A deep oval hollow (c.25m NE-SW x c.7m NW-SE) is also present. In addition to the larger enclosures, an extensive pattern of ridge and furrow 'lazybeds' are visible cutting across the earthworks. The pattern of the lazybeds cuts across the banks and is somewhat defined by the extant ditches. Within the area enclosed by the large square enclosure, the lazybeds run northwest-southeast (i.e. parallel to the enclosing elements) while within the southern enclosures, the lazybeds run northeast-southwest (ie parallel to the enclosing elements). Some irregular shaped depressions are visible and these might be the result of gravel/sand quarrying.

Quite extensive quarrying of the ridge to the east of the large square enclosure can be seen to have occurred since 1932. The earliest historic mapping of the area in the mid-17th century shows a house at roughly the location of the earthworks. While the position at the head of the 'Moyne' River might suggest this was a mill, no millwheel is depicted, whereas the tidal mill at Portmarnock to the north is shown. In Rocque's mid-18th century map, a clear embankment defining a D-shaped area is visible. Two buildings are also depicted on the site. The eastern of these buildings is possibly the same structure as that shown on the Down Survey map. The western house is shown with two small enclosures to north and west and possibly a small area of planting on scrub to the west.

The location of the earthworks at the head of the Mayne River, an area prone to flooding and the presence of probable paleo-channels, landscaping scars from the Baldoyle Racecourse and the quarrying of sand and gravel in the area into the 20th century all serve to explain why the Mayne River earthworks have gone unremarked upon in an archaeological context.

However, analysis of the aerial photography has shown that, while some of the features, particularly to the east of the primary enclosure can be attributed to 20th century quarrying, the overall complex is clearly older than the ridge and furrow farming that pre-dates the 1930s and is likely to be 19th century in date.

These lazybeds post-date the two buildings shown on the site in the 1760s. It is proposed that the nature of the earthworks at Maynetown cannot be easily attributed to agricultural activity or paleo channels or historic quarrying. Neither are the ditches in evidence consistent with 18th century landscaping or house building, though some of the features visible may relate to these activities.

It is more likely that the earthworks visible at Maynetown relate to large scale medieval activity, distinct from the early medieval activity of Gaelic Irish character further north. In the context of the strong Scandinavian placename evidence in the immediate surrounds, it is proposed that these earthworks represent the remnants of a longphort.

The Maynetown site corresponds to these criteria as the flood mapping and local topography of the site suggest a former large pool immediately south of the site. In reviewing Kelly's plans, the Maynetown earthworks appear to correspond to some of these purported longphort sites which comprise larger outer enclosures of various shapes and more defined 'strongholds' within. The earthworks of Rathmore, Co. Kerry are also of interest given that this purported longphort also fronts a river called Maine. Given the evidence presented above, it is worth considering that the feature identified as a gravel pit but is indeed a naust. This feature appears more regular in shape than most of the other gravel pits shown in the historic mapping or aerial photography. It is oval in shape and opens onto a ditch/channel which would have connected to the river/pool c. 30m to the south. Its dimensions (25m x 7m) are a very close match to that of the Danish examples (25m x 6m) and compares well with the size of the ship Skuldelev 2 (28m x 4.5m). This site requires further investigation to determine its nature and extent (O'Brien 2023 after Duffy 2023).

20.4.2.4 Medieval and Post Medieval Period

Excavation in 2008, uncovered the remains of a medieval village containing six well defined property plots at Portmarnock townland. The area of excavation was roughly rectangular in plan and measured c. 50–70m north–south by 110m. The property plots uncovered were defined by linear ditches and separated into toft and croft areas by internal divisions. They measured between 16m and 22m wide and up to 65m long, although their true lengths could not be properly assessed as the front of the plots were truncated by a 19th-century roadway (Station Road) (Moriarty, 2009b). An easterly extension of the settlement was excavated in 2018 and a further structure, metalled surfaces and wells were identified (McLoughlin, 2020a). The site corresponds to the medieval vill of Portmarnock, a possession of St. Mary's Abbey, Dublin, which on the dissolution of the Monastery in 1539 contained ten cottages. A large assemblage of artefacts was recovered during both excavations at the site and include medieval pottery, metal objects, organic remains and plough pebbles. Finds and radiocarbon dating evidence suggest occupation at the site from the 11th/12th Century to the 17th Century (Moriarty, 2009b and McLoughlin, 2020a).

From the twelfth century, the Anglo-Normans superimposed the manorial system of landholding they had acquired from England and the Welsh borderlands onto their newly conquered territory in Fingal. The majority of Anglo-Norman manors were on, or close to, rivers, and, preferring established sites with an existing infrastructure, the new invaders also took over established ecclesiastical sites.

Portmarnock was one such pre-Norman ecclesiastical site, becoming a manorial village when taken over by the Anglo-Normans in the twelfth to fifteenth centuries.

Two tidal mills are recorded in the possession of St Mary's Abbey in an inquisition taken in 1541 (de Courcy 1996), one of which is probably represented by the remains of the old mill at Portmarnock (DU015:015). It was recorded as being in the property of the Plunkett family in 1663, but in a ruinous state after 1903 – 'unroofed and much dilapidated by the storm of 1903'. The only surviving structural remains which may represent a mill structure in the vicinity of Portmarnock Bridge consist of a grass covered rectangular platform at the edge of the estuary located at the site of the Corn Mill shown on the 1st edition OS six-inch map. According to the archaeological record (www.archaeology.ie) the remains of the mill comprises the footing of the mill building walls, the sluice gate, 19th century mill race and fragmentary remains of the walls revetting the mill pond and inlet. The Down Survey refers to a tidal mill at Malahide as 'a mill that goeth by ebb tides' (Joyce 1912, 280, 284).

At Malahide, little is known of the earliest church that occupied the site of the present St Sylvester's Church on Old Street, in Malahide village. It is recorded that a small thatched church stood here in 1808 and church structures are illustrated on the early nineteenth century maps. The present structure is a nineteenth century Catholic Church that was consecrated on 5th of July 1846. The church spire was added in 1901 and a poem called "The Church without a Steeple" refers to St Sylvester's in its non-steeple days. The spire was copied from Lord Ardilaun's church, St Anne's, in Raheny (Malahide Historical Society).

20.4.2.5 Designated Archaeological Sites

20.4.2.5.1 National Monuments

There are no national monuments (NM) within the study area in Zone B.

20.4.2.5.2 Recorded Archaeological Sites

The Record of Monuments and Places (RMP) is a statutory list of archaeological monuments provided for in the National Monuments Act (as amended). Measured from rail corridor to the zone of notification surrounding the RMP sites and historic settlements, there are seven RMP sites that lie within 50m of the rail corridor within this zone. These sites are listed below in Table 20-6 and illustrated in Figure 21.1 in Volume 3A of this EIAR. There are 16 monuments located in the wider area, within 250m on either side of the railway corridor, these are listed in Table 20-7.

The earthen monuments such as the enclosures, ring ditches and ringforts have no surface expression and have been identified by aerial photography, historic mapping, geophysical survey and in some cases through excavation. Both monuments in Drumnigh were visible as a crop marks on an aerial photography and confirmed as archaeological through geophysical survey and excavation. The ring ditch (12.5m in diameter) is to be preserved in situ and the enclosure (100m in diameter) is to be excavated in advance of development.

The ringforts in Grange townland have no visible trace and are located under glasshouses west of Grange House and shown on the 1837 OS 6-inch map as 'fort'.

St. Sylvester's Church is located immediately to the east of the carpark associated Malahide Railway Station. Testing has revealed archaeological deposits (see section 20.4.2.7) on the site.

There are no visible remains of the earthwork. The well is known as 'Sunday's Well and a plaque is inscribed 'St Sylvester's well ca. AD 430, restored 2001'.

The ZON of seven designated sites occur within 50m of the railway line along Zone B. There are no works proposed in the vicinity of any of these designated monuments and as such this project will not have an impact on the recorded monument presence in Zone B.

Table 20-6 RMP/ SMR sites within 50m of Zone B

RMP/SMR	Class	Location	ITM	Distance
DU015-117	Enclosure	Drumnigh	722873 742008	Zone of notifications is located immediately west of the railway line.
DU015-119	Ring ditch	Drumnigh	722942 741874	The site lies immediately adjacent to the west of the railway line.
DU015-005	Ringfort	Grange	722609 743742	Zone of notification is located immediately west of the railway line.
DU015-004	Ringfort	Grange	722550 743969	The eastern edge of the zone of notification is located 33m from the railway application area.
DU012-023001	Holy well	Malahide	722537 746148	The zone of notification for these sites is located within 50m of the project.
DU012-023002	Church	Malahide	722529 746124	The zone of notification for these sites is located within 50m of the project.
DU012-023 003	Earthwork	Malahide	722537 746135	The zone of notification for these sites is located within 50m of the project.

Table 20-7 RMP /SMR sites within 250m of the Railway Corridor

RMP/SMR	Class	Location
DU015-096	Burnt Mound	Grange
DU015-097	Building	Grange
DU015-064001	Enclosure (presence could not be confirmed by testing)	Grange
DU015-063	Enclosure (presence could not be confirmed by testing)	Grange
DU015-134	Enclosure	Drumnigh
DU015-135	Enclosure	Drumnigh
DU015-118	Enclosure	Drumnigh
DU015-014001	Enclosure	Portmarnock

RMP/SMR	Class	Location
DU015-014	Mound	Portmarnock
DU015-137	Road	Portmarnock
DU015-025	Castle Tower House	Howth Demesne
DU015-042	Burial Ground	Howth Demesne
DU015-129	Enclosure	Hazelbrook
DU015-003002	Ringfort	Grange
DU015-003001	Ringfort	Grange
DU012-033	Enclosure	Broomfield

20.4.2.6 Stray Finds

A flint side scraper is recorded in the National Museum files (1966:42) along the railway line Broomfield townland, a gun flint and 25 waste flint flakes (1964:29-30) are also recorded to the same townland. A number of artefacts have been revealed with the recent excavation of archaeological sites in the townland of Drimnigh, Portmarnock, Maynestown and Stapolin.

20.4.2.7 Previous Archaeological Investigations

In recent years the lands of Clongriffin, Stapolin, Maynetown, Drumnigh and Portmarmock have been subject to residential housing and mixed-use development and significant below ground archaeological sites and remains have been revealed leading to a reinterpretation as to how the coastline of north county Dublin was settled. These investigations are discussed as part of the archaeological background in section 20.4.2. Prior to the residential development in Baldoyle/ Stapolin immediately to the east of the railway line, the area was geophysically surveyed and test excavated (see image below of the geophysical findings).

Image 20-2 Geophysical Survey Baldoyle, MGL 2002

Archaeological assessment in Malahide (Ryan 2008, 08E0021) did not reveal anything of archaeological significance in association with the remains of an earlier church and or the site of the mound (DU012-023-02/03). However, testing in 2011 (Licence no.11E0326) on the site did uncover medieval structural remains, a ditch, pits and 18th/19th masonry walls.

20.4.2.8 Townlands and Toponomy

There are 11 townlands within Zone B as presented in Table 20-8.

Table 20-8 Townland Names Zone B

Project zone	Townland	Barony & Parish	Origin	Placename origin/meaning (sources:
Zone B	Grange	Coolock/ Baldoyle	English/	The name, Grange is associated with a monastic farm. Grange Abbey (DU015:069) located west of Baldoyle village, it has a long association with All Saints Priory.
Zone B	Baldoyle	Coolock/ Baldoyle	Irish	Baile Dúill, is probably derived from baile dubh ghall, the town of the dark strangers or foreigners, and appears to be an Irish language reference to the Vikings, who used the harbour here as a base. The harbour continued to be important to the

Project zone	Townland	Barony & Parish	Origin	Placename origin/meaning (sources:
				settlement and indeed fishing fleets landed here until the end of the nineteenth century (Bennett 1991).
Zone B	Stapolin	Coolock/ Baldoyle	Irish	The name Stapolin is somewhat obscure, but would appear to be of early Irish origin. The prefix 'sta' is probably a corrupted form of tigh, a house (as in Stillorgan), and the second part of the name may be a personal name such as Pól or Paul, or the feminine, Póilín.
Zone B	Maynetown	Coolock/ Baldoyle	Irish	The name Maynetown is of considerable interest. Despite the English suffix 'town,' the name is of Irish origin, as is the river that flows north of the Proposed Development site, the Mayne. Morris (1939, RMP file). Mayne (also known as Maine or Cichmaine), the son of Maedhbh and Ailill of Connacht, is said to have been killed here by fishermen. His burial ground is described as being at the northern end of Inbhearr Cichmaine, the inlet or bay of Cichmaine, where he was killed. This is where the tumulus in the townland of Portmarnock is situated, at the northern end of what is now known as Portmarnock Bay.
Zone B	Snugborough	Coolock/ Balgriffin	English	English in origin and referred to as Snug Burrow on Rocque's map of 1760.
Zone B	Drumnigh	Coolock/ Kinsaley	Irish	Drumnigh appears to be derived from drom, a back or ridge, referring to a small hillock.
Zone B	Portmarnock	Coolock/ Portmarnock	Irish	The name Portmarnock is derived from Port Mo Ernoc or Ernan, interpreted as St Mernoc's bank or landing place.
Zone B	Beechwood	Coolock/ Portmarnock	English	An English name associated with former demesne describing the woodlands.
Zone B	Grange	Coolock/ Portmarnock	English	The name is associated with a monastic farm. Grange is a very typical medieval place-name usually attached to ecclesiastical lands where there may have been some sort of administrative farm.
Zone B	Broomfield	Coolock/ Portmarnock	English	Taken from the English, describing the topography, ie a field.
Zone B	Malahide	Coolock/ Malahide	English	McTurkill, the last Danish King of Dublin, from whom the Normans took over in 1185, retired to Malahide in 1171. The modern name Malahide Mullagh h-Ide probably derives from this time, meaning the sand hills of the Hydes, a Norman family from the Donabate area (Malahide Historical Society).

20.4.3 Zone C – North of Malahide Viaduct to south of Gormanston Station (Fingal boundary)

This zone extends from north of the Malahide Viaduct, passing through Donabate and through the Rogerstown Estuary, crossing between Lusk and Rush and to the west of Skerries before entering Balbriggan and travelling along the coastline to the border with Meath at Gormanston.

Fingal emerged as a distinct cultural zone and was often referred to as 'the breadbasket of Dublin.' Its strategic importance to the new English-dominated city did not go unnoticed by Owen O'Neill, who, in 1641, ravaged the county between Castleknock and Drogheda, then containing 'the goodliest haggards of corn that ever was seen in those parts' (Smyth 1992). Richard Stanyhurst, in his Description of Ireland, refers to Fingal as an important part of the Pale, the region having the highest reputation for good husbandry. In the seventeenth century, according to the author of A Geographical Description of the Kingdom of Ireland, the name Fingal was associated with the more arable portion of the lands north of Dublin (Ball 1920).

20.4.3.1 Prehistoric Period

The earliest evidence of human activity in this area dates to the Mesolithic period. The estuaries at Malahide and Rogerstown have been identified by lithic experts and collectors as particularly rich (Stout and Stout 1992) in finds dating to the later Mesolithic period. A cursory inspection of the coastline between Bremore Head and the mouth of the river Delvin has indicated the presence of large areas of shell that may represent shell middens, layers of which could date from the Mesolithic up to recent times, similar to the sites identified in Sutton.

The coastal pattern of settlement continues during the Neolithic period. Artefacts dating to this period have been found along the estuaries at Malahide and Rogerstown, and a cave in the cliffs at Portraine has also yielded flint artefacts. Excavations at Lambay Island (off the coast of Portraine) have revealed many Neolithic artefacts, as well as occupation associated with the important flint stone axe production site, which gives an insight into the industrial activities of this period.

The most prominent and spectacular Neolithic monuments are megalithic tombs. They are separated into four classes namely court tombs, portal tombs, passage tombs and wedge tombs. The passage tomb cemetery at Bremore is located on a rocky promontory, it comprises five mounds, one large mound c. 30m in diameter and c. 3.3m high with some protruding kerbstones, this mound is centrally placed amongst a group of four smaller mounds ranging in size (from just 9m in diameter to 15m and from 0.5m high to 0.75m) (Herity 1974, Rynne 1960). The largest mound is depicted on the first edition OS map and on Rocque's 1760 map it is referred to as 'Knockard' meaning High Hill.

Passage tomb cemeteries can be large in scale and can also be dispersed. It is considered that the tombs in Bremore and Knocknagin are part of a larger complex which includes the tombs at Gormanston (ME028-020 and ME028-021) to the north of the river Delvin in County Meath. The location of these complex of tombs at the mouth of the river Delvin, is a significant one, according to Hartnett (1957) the Bremore/Gormanston group of tombs represent the point of entry at a 'natural landing point' of the 'Fourknocks Group' and mark the western expansion of this culture along the Delvin River. These group of passage graves originated from modified Iberian cruciform passage tomb forms and are placed relatively early among Irish Passage Graves (Rynne 1960).

These tombs can be regarded as the predecessor of the Passage Grave Culture in Ireland, the likes of which are seen in the great ritual complexes such as the Bru na Bóinne cemetery which is dominated by Newgrange, Knowth and Dowth (Ó Ríordáin 1979).

D'Alton (1844), in his 'History of Drogheda and its environs, an introductory memoir of the Dublin and Drogheda Railway', mentions that '*Knockingen projects into the sea the long secluded mount, whose sacred remains are immediately contiguous to the railway'*. It is likely that he is referring to the extant mound located on Bremore Head.

The discovery of three cist burials on the Rogerstown estuary, confirm the continuous presence of human settlement in this area during the earlier part of the Bronze Age.

Barrows are burial monuments of the Bronze Age and Iron Age and usually consist of a circular central area that may be flat or slightly dished (a ring ditch) or domed (a ring barrow). They are enclosed by a ditch and occasionally by an external bank. Barrows tend to occur in clusters. A ring ditch has been identified in aerial photography are recorded in Hampton Demesne (DU005:015). Two mound sites are recorded in Bremore (DU002-013, DU002-003) these sites demonstrate a continued focus of ritual activity of the coastal promontory area into the Bronze Age period. Fulacht fiadh (cooking places usually dated to the Bronze Age (2500-500BC)) have been identified in plough-soil in Barnageeragh (pers. Com. Baker 2008). In Bremore, a fulacht fiadh (DU001-0016) was identified as a large spread of burnt stone with charcoal and black soil near the shoreline in a field under tillage indicating that activity in this area during the Bronze Age.

20.4.3.2 Early Medieval Period

The plains of north Co. Dublin, at the dawn of the historical period (5th/6th centuries A.D.), formed part of the geographical region of Brega. As late as c.600 (Annals of the Four Masters) Brandub mac Echdach, Uí Chennselaig king of Leinster would land his "sword blows" on Brega. From the seventh until the eleventh centuries, the overkingship of Brega was dominated by Síl nÁedo Sláine, a dynasty of the Southern Uí Néill (Byrne 1973). The Cianachta Bec also known as the Tuath Turbi (possible origin for the townland name of Turvey) occupied this general area during this period (O'Brien 1976).

There are several possible ringforts and enclosures in the environs of the railway line, many enclosures have been detected by aerial photography as c cropmarks with no visible trace at ground level. It is likely that they represent ploughed out ringforts and occur at Lanestown (DU012-006), Kilcrea (DU012-017), Turvey (DU008-025) and at Lissenhall Great where an enclosure (DU012-003) and an earthwork site marked as 'site of fort' on the OS 1st edition (DU012-015) is located. The townland names of Rahillion and Ballalease may also indicate the former existence of early medieval settlement in the area.

In Knocknagin in the vicinity of the possible passage tomb (DU001-012) a subterranean structure which is described by Clinton (1998) as a potential souterrain site (underground passages, probably built for storage purposes and are often associated with ringforts) was identified during agricultural work in the area, the structure had a large cap stone and a possible passage, the feature apparently appears as a cropmark in certain conditions. It is possible, however, that Clinton may have been referring to the remnants of the passage tomb recorded at this location.

At Bremore, a significant early monastic settlement that survived into the later medieval period where it continued as a local church and burial ground even after the reformation, is located.

While no features or structures of the early monastery survive, documentary evidence such as the Martyrology of Oengus or Felire provides early references to the church and firmly dates it to the last decade of the eighth century, which lists '*Lann Bechiar I mBregaib'* in the territory of Brega. The foundation is important as it has links with other early Irish monasteries and as the 'lann' element of the placename would suggest was linked with Welsh Christianity of the period.

20.4.3.3 Medieval and Post Medieval Period

Donabate grew up around the medieval ecclesiastical foundation in Donabate townland, which includes the present church, located on the site of the medieval parish church (DU012-005/01), the graveyard (DU012-005/03), a memorial slab (DU012-005/04) and the tower house (DU012-005/02). The medieval church is mentioned in 1230 when it was granted to the monastery of Grane. In 1240, the parish was administered by Richard De St. Martin. In 1310, the king, during the vacancy of the See of Dublin, presented William de Bathe to the vicarage of Donabate. He was succeeded, as far as the records show, by Thomas Athaland in 1375, and by Henry Marleburgh in 1419. At the dissolution of the monasteries in 1541, Egidia Wale, the last prioress of Grane, was found to have been seized of the rectories of Donabate, Kilmacud, and Bray, which, with their tithes and emoluments, were, as the inquisition states, appropriated to said house (D'Alton 1838).

A late medieval church in ruins (DU002–002002) is located in a disused graveyard of the Bremore fortified house. It lies upon the reputed early monastic site of Lann Beachaire, meaning 'the church of the beekeeper'. It was founded by St Molaga in the seventh century (Walsh 1888, Gwynn and Hadcock 1988).

Bremore Castle (DU002-002001) a medieval manorial complex was a Barnewall holding from the 14th century onwards and a manorial seat of the Barnewall family in the 16th and 17th centuries. It is indicated on the Down Survey Map of 1655 as an imposing edifice surrounded by trees and is described in the Civil Survey returns (1654-6) as a burnt castle with a great barn, eight tenements, one orchard and a park owned by Matthew Barnwall.

The Civil Survey of Dublin (1654-1656) refers to the proprietor of 'Breemore and Newhaven a fishing towne on ye said land' as 'Matthew Barnewall of Breemor, Irish Papist' who was stated to hold at Bremore 300 acres, of which 150 were arable, 140 pasture, and 10 meadow. The site was said to contain 'one burnt castle with a great barne and eight tenements, one orchard & parke with some young ashtrees' while at Newhaven there were said to be ten small cottages, both of which, when combined, a jury valued at £110. The bounds of Bremore were set as: the sea on the east; the lands of Tankerdstowne on the south; the land of flemingstowne on the west; and the land of Knockhengen on the north.

Donabate is derived from the Irish *Domhnach an Bhaid* meaning Boat Sunday. On the peninsula, the arrival of the Dublin-Drogheda railway line in 1844 and the construction of St. Ita's psychiatric hospital in 1896 signalled a change to the insular character of the peninsula forever. The quiet rural predominantly fishing community was suddenly easily accessible and the large scale construction for the hospital meant an influx of labour and people from elsewhere. Change included the development of Donabate into a commercial centre which still is the focus for settlement today with modern housing estates surrounding the village. The Dublin-Drogheda railway runs through the Malahide and Rogerstown Estuaries on a viaduct, (protected structures, RPS No. 420 and 516), and resulted in land being reclaimed from estuarial waters thus increasing the value of Kilcrea House.

The building of an embankment most likely led to a silting over of historic passes in Rogerstown Estuary. The railway infrastructure is discussed in Chapter 21 Architectural Heritage.

Balbriggan was a small fishing village originally part of the united Parishes of Balrothery and Balscadden which were formed by the Synod of Kilkenny in 1618 (Walsh 1992). It derives its name from Baile Breacáin, the town of the hills and is probably the youngest town in Fingal (Donnelly 1977).

The railway line runs along the coastline in Zone C. Balbriggan railway house was designed by George Papworth and the former station masters house is a protected structure. Two impressive railway structures in Zone C are the Balbriggan Viaduct (UBB56) over four roads and a river in the town and the Knocknagin/Gormanston Viaduct (UBB65) over the River Delvin. Balbriggan Viaduct (UBB56) has eleven arches. They were both designed by Sir John MacNeill and constructed in c.1843–44 under the direction of William Dargan (Cox & Gould 2003). In addition to these imposing edifices, there are several stone rail bridges including over a laneway in Bremore, a single-arch railway, rock faced granite bridge and several pedestrian accesses beneath the line to access the coast.

20.4.3.4 Designated Archaeological Sites

20.4.3.4.1 National Monuments

There are no national monuments (NM) within the study area in Zone C.

20.4.3.4.2 Recorded Archaeological Sites

There are nine RMP sites that lie within 50m of the rail corridor within Zone C. These sites are listed below in Table 20-6 and illustrated in Figure 21.1 in Volume 3A of this EIAR. There are 39 monuments located in the wider area, within 250m on either side of the railway corridor, these are listed in Table 20-10.

In Beaverstown, an archaeological assessment in 2002 revealed a section of curvilinear ditch (L 15m, Wth 1.3m, D0.5-0.7m) which produced Beaker pottery. Three features were revealed within the confines of the enclosure including a pit 0.4m in diameter and 0.2m deep which contained a small amount of burnt bone (Hagen, 2006). This feature is recorded as an enclosure (DU012-067) and lies to the west of the railway lands, there will be no impact on this site.

To the west of the railway line, further archaeological evidence was revealed in advance of a development (now built and named as Turvey Walk).Test excavation took place and a series of pits from which medieval pottery was recovered, the site was truncated by post-medieval activity including a curvilinear ditch from which a sherd of 17th century Frechen ware was recovered (Lohan 2004) (Licence no. 04E0185). These archaeological features have been given the designation DU012-083, excavation miscellaneous.

An enclosure (DU008-011), is located in Effelstown, in a level field, immediately west of the railway. The northern field boundary is a well-established hedge line and a townland boundary. An aerial photograph taken in 1972 (FSI 578/7) shows a circular cropmark of a levelled enclosure (diam c. 35m). This site is not visible at ground level. Works have been designed to be minimised at this location and the relocation of a pole set occurs immediately inside the ZON.

A geophysical survey (Licence no. 06R0135) undertaken in advance of a proposed residential development in Townparks townland, identified strong linear and curvilinear features which were interpreted as a network of ditches or structural remains. Test-excavation (Licence no. 06E0996) confirmed the presence of an enclosure ditch, evidence of in situ burning and extensive archaeological activity interpreted as probable multi-phase occupation (Turrell 2006). The site, (DU005-151), is located in a field to the west of the railway line. An existing track will be utilized that crosses the ZON for this feature, however, no earthmoving/ excavation works will take place within this zone.

In Barnageeragh, a large quantity of flint debitage with a low density of retouched pieces, were found during a survey of seven fields in the area in 1990 (DU005-058001/002). Preliminary analysis of the lithic material collected indicates a human presence from the Mesolithic to the Bronze Age period (Guinan 1992).

In Barnageeragh, pre-development monitoring in 2004 revealed archaeological features which were excavated late in 2004 and early 2005 (04E0209Ext). This revealed a u-shaped enclosure (diam. c. 10m) (DU005-071) which enclosed a single pit and was defined by three curvilinear ditches, pits, spreads and possible slot-trenches. The main body of ditch activity was radiocarbon dated to 660-860AD while the pit was dated to the Early Bronze Age (Baker 2006). This site is now built over by the Skerries Waste-Water Treatment Plant.

A mound (DU005-017001) is located on a prominent ridge above the beach at Barnageeragh and indicated as 'site of cairn' on 1837 OS 6-inch map. The corner of a field boundary running northeast-southwest incorporates a portion of the mound (dims. L 10m NW-SE; Wth 3.5m N-S; H 1.3m). The site is heavily denuded and was probably quarried for stone during construction of railway between Dublin and Drogheda which runs by the site (Healy 1975). The poorly preserved cairn was subject to magnetometry, resistivity and ground-penetrating radar. Several pits were identified close to/inside the monument and a large anomalous feature was detected in the interior of the mound indicating the cairn is much better preserved than expected. Despite development in the vicinity, the site remains upstanding, however it is not demarcated.

As part of pre-development investigations, a fieldwalking study was undertaken in the field that contains the mound (DU005-017001). There was a relatively low lithic count from this field with undiagnostic flint being recovered (DU005-017002) (Doyle 2003). During construction, existing roads in Hamilton Hill, a residential estate, off the Barnageeragh Road that traverse the ZON for both DU005-017001 and 002 will form part of an access route to works. These monuments will not be affected by the proposed access route and no invasive works will take place in proximity to these designated sites.

The mound in Bremore (DU002-003) is situated on a slight slope at the north bank of the river near cliff edge. Pedestrian access to beach is located to the north, with a drainage ditch to the south. The site comprises an overgrown oval, flat-topped mound (basal diam.9m, top 3m E-W, 2.2m N-S, H 2.5m). No works are proposed in the vicinity of this monument.

Table 20-9 presents the RMP/SMR sites within 50m of the Proposed Development in Zone C.

Table 20-9 RMP/ SMR sites within 50m of Zone C

RMP/SMR	Class	Location	ITM	Distance
DU012-067	Enclosure	Beaverstown	722599 750048	63.7m to the west of the carpark associated with the railway. Zone of notification within 50m of the project.
DU012-083	Ex - misc	Beaverstown	722673 750145	Adjacent to the west of the existing railway track and Donabate Railway Station.
DU008-011	Enclosure	Effelstown	723254 754322	64m west of railway, however the zone of notification is located within 50m of the project.
DU005-151	Enclosure	Townparks	724650 759659	43.1m west of the railway track and the zone of notification traverses the existing railway line. No earthmoving, groundbreaking or excavation works are proposed within the ZON for this monument.
DU005-058001/ 002	Prehistoric flint scatter	Barnageeragh / Baltrasna	723211 760652	Zone of notification is located to the south within the 50m buffer zone for the project. No earthmoving, groundbreaking or excavation works are proposed within the ZON for this monument.
DU005-071	Enclosure (excavated)	Barnageeragh	723230 760796	Zone of notification traverses the existing railway line. No earthmoving, groundbreaking or excavation works are proposed within the ZON for this monument.
DU005-017001	Mound	Barnageeragh	723036 760875	Zone of notification extends to the railway line to the north-east. No earthmoving, groundbreaking or excavation works are proposed within the ZON for this monument.
DU005-017002	Prehistoric flint scatter	Barnageeragh	722973 760908	Zone of notification traverses the existing railway line. No earthmoving, groundbreaking or excavation works are proposed within the ZON for this monument.
DU002-003	Mound	Bremore	720029 764469	55m east of the existing track, however the zone of notification is located within 50m of the project.

Table 20-10 RMP / SMR sites within 250m of the Railway Corridor

RMP/SMR	Class	Location
DU012-005 /001/002/003/004	Church/ Castle-tower house/Graveyard/ Wall monument	Donabate
DU012-082001/002/003/004	Excavation – miscellaneous / structure	Donabate
DU008-107	Kiln – corn drying	Rogerstown
DU008-055	Fulacht fia	Tyrrelstown
DU008-087	Enclosure	Laytown
DU005-032	Cist	Milverton
DU005-150	Burnt Mound	Townparks
DU005-148	Burnt Mound	Townparks
DU005-149	Burnt Mound	Townparks
DU005-142	Fulacht Fia	Barnageeragh
DU005-144	Fulacht Fia	Barnageeragh
DU005-072	House - prehistoric	Barnageeragh
DU005-143001/002	Ringditch / Burial	Barnageeragh
DU005-145001/002/003	Ringfort/ Souterrain / house site	Barnageeragh
DU005-146001/ 002	Souterrains (2)	Barnageeragh
DU005-147	Enclosure	Barnageeragh
DU005-016001	Cairn	Barnageeragh
DU005-016002	Flint Scatter	Barnageeragh
DU005-056	Redundant Record	Hampton Demesne
DU002-004	Martello Tower	Tankardstown
DU002-016	Enclosure	Tankardstown
DU002-017	Mound	Tankardstown
DU002-002001	Fortified House	Bremore
DU002-002002/003/ 005/006	Church/ Graveyard/ Architectural Fragments (2)	Bremore
DU002-014	Field System	Bremore
DU002-019	Field System	Bremore
DU002-010	Megalithic Tomb – passage tomb	Knocknagin
DU001-019	Ring ditch	Knocknagin

20.4.3.5 Stray Finds

Two late Mesolithic Bann flint flakes are recorded from Kilcrea townland (NMI file no. IA/52/62). The topographical files of the National Museum record two finds from Beaverstown townland, a stone axehead (NMI ref. 1932:5626) and two flint waste flakes (NMI ref. 1978:20-21). In Portraine Demesne two flint flakes (NMI refs. 1978:20-21) and a hollow flint scraper (NMI refs. 1997:8) are recorded. Several flint flakes and artefacts are also recorded from other townlands on the peninsula, such as from Balcarrick (NMI ref. 1946:292), Ballymadrough (NMI refs. 1978:69-72), Kilcrea (NMI refs. 1965:56, 1967:180-184 and 1976:147), Lanestown (NMI refs. 1978:27-42 and 1978:73-74). Two hammer stones from Balcarrick (NMI refs. 1941:409) and Donabate (no NMI ref.) may also belong to the prehistoric period. A great many of these finds can be attributed to an intensive field walking survey carried out by Paul Gosling (Archaeological Survey of Ireland) in 1978. In addition to the above, a burial is recorded in Corballis townland (NMI refs 1950:34-35).

Within the agricultural fields of Milverton there is a tradition of burials ‘stone coffins’ being revealed, including a cist (DU005-032). A fragment of human skull (NMI 1986:140) was found as a surface find in a ploughed field in Milverton known as ‘Danes Burial Ground’. This field was incorporated into the quarry at Milverton in the 1970s and there is now no visible trace.

Barnageeragh has been the focus of much work on prehistoric artefacts, intensive collection of surface flints in the 1950’s and ’60’s (Stacpoole) and 1970’s (Walsh; material in private collection) and developed between 1990 and 1992 in a programme of systematic field-walking and collection by Bernard Guinan (DU005-061, DU005-017002 and DU005-016002). The general lithic content of the two collections of flint are comparable in terms of their technology, evidence for raw material exploitation and use (Guinan 1992).

Fifty-seven pieces of worked flint and 10 pieces of struck chert (IA/191/1998) along with a single flint (NMI 1999:216) were identified in Bremore in the environs of the passage tomb complex (DU002:001001-005). The systematic field-walking surveys by Stacpoole (1960’s), Campbell (1909’s) and Collins (1997) has demonstrated that there are substantial quantities of worked stone on the surface of the ploughed fields at Bremore which date to the Neolithic period with some Bronze Age material; providing evidence of all stages of flint tool production using locally derived flint beach nodules.

20.4.3.6 Previous Archaeological Investigations

Archaeological excavation identified previously unknown prehistoric evidence in the townland of Beaverstown, adjacent to Donabate Train Station (Hagen 2002, Licence Ref. 02E1708). The Early Neolithic period (c. 4000BC–3500BC) was represented by a pit and three postholes, while a single posthole and two pits belonged to the Beaker period (c. 2400BC–2200BC).

Bronze Age activity was revealed as a result of archaeologically testing (Baker 2006, Licence Ref. 06E0027), geophysical anomalies in the townlands of Ballymastone and Corballis. A possible hut site, dating to the middle-late Bronze Age was revealed. In Corballis, fulacht fiadh material as well as a fulacht fiadh site was identified.

At Balbriggan harbour archaeological testing (Licence no. 03E1920) revealed post medieval and modern industrial coal works.

At Bremore, archaeological investigations (Licence no. 01E0311 and 01E0370, Swan 1996; O'Carroll 2003a; 2003b) of the tower house and its environs, provided evidence of medieval field systems (RMP DU002-014,) and cultivation, large amounts of medieval pottery and a six-pound cannonball was also discovered as well as earthen post -medieval agricultural features found to the north of Bremore Castle. Two parallel ditches extending 150m east-west and 50m apart formed the borders of the field system adjacent to the castle, cultivation took place within these plots, it was concluded that the field system extended across the N1 joining Hamlet lane which ran along the same axis as the southernmost ditch (O'Carroll 2003). In total, approximately 4000 sherds of pottery was collected from the site, the majority of which was late medieval in date with a large proportion of Leinster Cooking Ware.

At Bremore, an archaeological impact assessment and a geophysical survey were undertaken at the lands proposed for a regional park development by ACS and Target Geophysical Survey in 2021. The area of the park contains ten recorded monuments listed within the RMP and SMR. As part of the study, previous excavations (Licence no. 95E0183 and 17E0302)) were examined, the first of which revealed a series of walls, two stone built drainage channels, spreads of burnt material, large quantities of whelk and limpet, some animal bone and post-medieval pottery around Bremore Castle. The latter identified a ditch close to the surviving southern wall of the castle, 17th century metalled surface, a Victorian pathway and numerous sherds of 12th-15th century pottery.

In 2020, 29.4 hectares of high-resolution magnetic gradiometer survey (Licence no. 20R0032) took place on the lands proposed for the park (ACS 2021). This identified the subsurface remains of RMP DU002-003, a mound and DU002-016, an enclosure as well as several anomalies that suggest further archaeological remains across the park, including some that may indicate additional medieval and post medieval features in the vicinity of Bremore Castle.

In 2013 and 2017 archaeological monitoring and testing took place at Bremore Regional Park (Licence no. 13E0301) and Bremore Castle (Licence no. 17E0503) but revealed nothing of an archaeological significance.

Image 20-3 Bremore Regional Park (Licence no. 20R0032) Greyscale Plan, Target Archaeological Geophysics

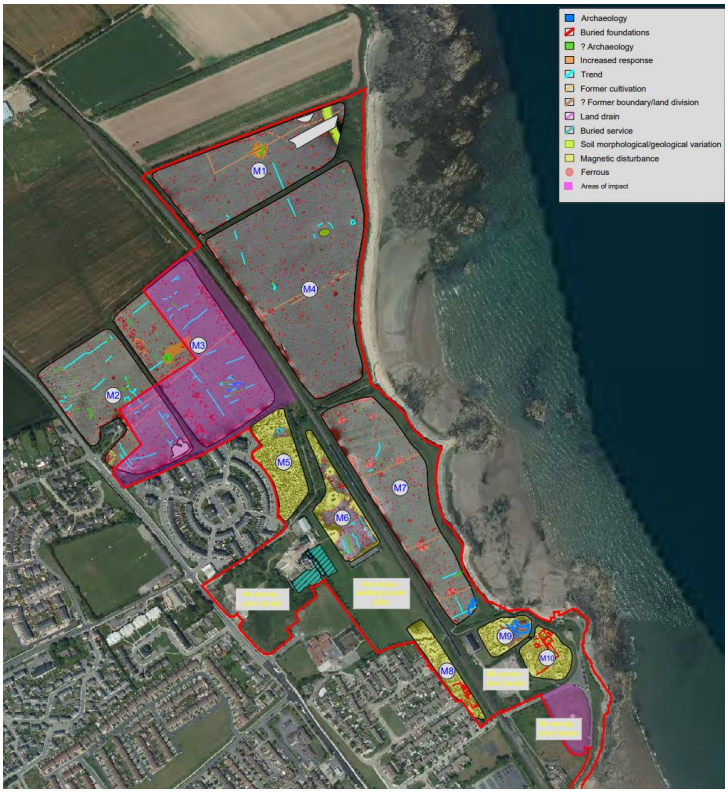

Image 20-4 Bremore Regional Park (Licence no. 20R0032) Interpretation Plan, Target Archaeological Geophysics

20.4.3.7 Townlands and Toponomy

The existing route of the railway passes through 27 townlands in Zone C as presented in Table 20-11.

Table 20-11 Townland Names Zone C

Project zone	Townland	Barony & Parish	Origin	Placename origin/meaning (sources:
Zone C	Kilcrea	Nethercross/ Donabate	Irish	Containing the Irish element *Cill* meaning church, *Cill Creidhe*. The church of Crea, incorporating the saint's name of this foundation.
Zone C	Corballis	Nethercross/ Donabate	Irish	Derives from the Irish *Corbaile*. Corr however means small round hill and hollow. May refer to a topographical feature, a gravel ridge which stretches across the townland in an east-west direction.
Zone C	Beaverstown	Nethercross/ Portraine	English	Incorporates the English element ton which is the equivalent of the Irish term *baile*. *Baile an Bhéibearaigh*. Derives its name from a tenant, to whom Benson's portion of the manorial lands of Turvey were granted in 1385.
Zone C	Ballisk Common	Nethercross/ Portraine	Irish	Derived from the Irish *baile* and *esc* or *uisce* meaning water. The town/settlement of water, possibly referring to a river or stream in the townland or to the proximity of the coast.
Zone C	Rogerstown	Balrothery East/ Lusk	English	Referred to as the port of Rogereston which is called Rogereshaven. Translated into the Irish Baile Riséir or Baile Mhic Ruairí.
Zone C	Effelstown	Balrothery East/ Lusk	English	The town of Effel (a family name).
Zone C	Kingstown	Balrothery East/ Lusk	English	Translated into Irish as Baile an Rí, the homestead of the kings.
Zone C	Horestown	Balrothery East/ Lusk	English	Hore is an Anglo-Norman name, very popular in Wexford. The name is first mentioned in the records in 1311 as 'le Horestonfelde'.
Zone C	Tyrrelstown Little	Balrothery East/ Lusk	English	The homestead of the Tyrrels.
Zone C	Tyrrelstown Big	Balrothery East/ Lusk	English	The homestead of the Tyrrels.
Zone C	Ballykea	Balrothery East/ Lusk	Irish	*Baile Caodhe*, the town of the quagmire or wetlands.
Zone C	Holmpatrick Dellabrown	Balrothery East/ Holmpatrick	Irish	Known as Inis Pádraig (the old Church), or St Patricks Island.
Zone C	Drumlattery	Balrothery East/ Lusk	Irish	Referred to as Slattery's ridge to long hill.
Zone C	Piercetown	Balrothery East/ Holmpatrick/ Lusk	English	Possibly a personal name.

Project zone	Townland	Barony & Parish	Origin	Placename origin/meaning (sources:
Zone C	Hacketstown	Balrothery East/ Lusk	English	Possibly a personal name associated with Hacketstown House and demesne
Zone C	Milverton	Balrothery East/ Baldongan/ Holmpatrick/	English	Milverton has also been known previously Milwardistowne, Melverton, and Milverstow and may be translated as the homestead by the mill. The decayed watermill mentioned in the Civil Survey of circa 1654 is most likely the mill, which gave Milverton its name.
Zone C	Townparks	Balrothery East/ Holmpatrick	English	The town park associated with Skerries
Zone C	Baltrasna	Balrothery East/ Holmpatrick	Irish	An Baile Trasna, translated as the crossing or inbetween, town, homestead.
Zone C	Barnageeragh	Balrothery East/ Holmpatrick	Irish	*Barr na gCoarach* or *Bharr na gCasrach* meaning the top of the sheep, Sheeps Point or strand.
Zone C	Kilmainham	Balrothery East/ Balrothery	Irish	Possibly referring to land owned by the Kilmainham Church in Dublin
Zone C	Ardgillan Demesne	Balrothery East/ Balrothery	English	Refers to the designed landscape and house which was created in 1738.
Zone C	Hampton Demesne	Balrothery East/ Balrothery	English	Referring to the demesne landscape.
Zone C	Balbriggan	Balrothery East/ Balrothery	Irish	*Baile Breacáin* meaning the town of the hills.
Zone C	Tankardstown	Balrothery East/ Balrothery	English	Tankard is a family name
Zone C	Bremore	Balrothery East/ Balrothery	Irish	*Bri Mór* meaning big hill (Joyce 1995, Vol I)
Zone C	Knocknagin	Balrothery East/ Balrothery	Irish	*Cnoc-na-gceann* The hill of the heads (quantities of human remains found here). DU002-010 megalithic tomb (Joyce 1995, Vol. I)
Zone C	Gormanstown	Upper Duleek / Stamullin	English	Gormanston Castle, located near the village, was formerly the seat of the Preston family. Sir Jenico Preston, 12th Viscount Gormanstown built it in 1786, on the site of a castle erected in 1372. Family name

20.4.4 Zone D – South of Gormanston Station (Fingal border) to Louth/ Meath border

20.4.4.1 Prehistoric Period

The earliest settlers in East County Meath and North County Dublin are thought to have arrived around 7000BC in a period known as the Mesolithic. As these people were hunter-gatherers the main evidence for their presence is derived from flint scatters and shell middens which have been identified at several locations along the east coast, for example the discovery of a microlith at Knocklea, near Loughshinny (Stout & Stout 1992).

While shell midden sites are not confined to any one culture or period of time and can date from the Mesolithic onwards on the east coast of Ireland, shell middens are known to have begun forming as early as 5500BC and these continued along the north east coastline until after 400BC (O'Sullivan & Downey 2005). The Mesolithic people tended to exploit the coastline and river valleys, in this case the River Delvin and River Nanny, where there was an abundance of food and shelter. Movement was also easier around the coastal fringes of the country as further inland was covered with dense, primeval forest.

As discussed previously in Section 20.4.3.1, the Neolithic period is represented by the presence of passage tombs on the Dublin Meath border in a coastal location on either side of the River Delvin. In Gormanston, there are the remains of two passage tombs (megalithic tombs) on either side of the railway line. The tomb to the east of the railway (ME028-021) was excavated by George A. Hamilton, which D'Alton (1844) in his 'History of Drogheda and its environs, an introductory memoir of the Dublin and Drogheda Railway' refers to as a 'mount' on Lord Gormanston's estate. The site is located on the edge of a sea-cliff and even in the 1840's part of this mound had already been washed away by coastal erosion and on the beach below 'a hundred yards to seaward' Hamilton noted 'a considerable number of similar stones' which could have formed 'part of two other North Houses' (passage tombs) (PRIA 1846).

Hamilton described the excavation as '*soon interrupted by a circle of huge stones, which appear to have been placed around, but at some distance from the centre of the mount, and quite covered with, or buried in shingle. Within this outer circle I found a rude platform, of apparently beaten clay, and upon this an immense heap of burned human bones. As far as could be surmised, the bones were those of human beings of every age. In the centre of this circle was discovered a chamber, constructed of huge flags, some of them more than six feet in height, and within this a rude stone basin, or rather a large stone of sandstone grit, not found in the neighbourhood, with a cavity or hollow formed in it. This stone bore evident marks of fire, and around it on all sides were remains of charcoal, or burned wood, and a quantity of semi-calcined human bones. Amongst these bones were scattered a number of beads, formed of polished stone, of a conical shape, with a hole through each, near the apex of the cone. The mass of bones was very large. The stones have, I fear been used in the railway, but the remains of the chamber and two or three of the flags may still be seen in the face of the cliff*.' The geophysical survey (Leigh 2023) conducted in the lands between the railway and the remains of this passage tomb did record numerous amorphous responses and an archaeological interpretation must be considered given the proximity of the tomb and the disturbed nature of the lands.

The other extant passage tomb at Gormanston (ME028-020) is located to the west of the railway. It presents as a large grassy mound and is currently under pasture. It has suffered damage from quarrying and from agricultural practices, however, kerbstones and structural stones have been identified in the past (Hartnett 1957). It is noted in the RMP that large flag stones used in a storage structure in an adjacent farmyard have supposedly come from the passage of the tomb.

In Ninch, late Neolithic activity in the form of pits, postholes and grooved ware were uncovered as part of excavation works in advance of a housing development located immediate to the east of the railway line (Licence Ref 98E0501 ext).

During the Early Bronze Age (2200BC-1700BC) Ireland experienced an improvement in climatic conditions and new developments in agriculture, including the introduction of tillage which led to a relatively stable environment; however the later Bronze Age is characterised by significant climatic deterioration and increased rainfall (1200BC-500BC). The Early Bronze Age economy was characterised by an increase in the use of tillage, and many habitation sites of this period are located on fertile, well-drained soils, still used for arable farming. For example, Bronze Age habitation sites are located at Gormanston, Lisdornan and Claristown (RMP ME028-051, ME028-038 and ME028-037001-002 while pit and cist burials are located along the coastline in Irishtown, Briarslease and Mosney (RMP ME028-018, ME028-008, ME028-009) townlands.

Bronze Age burials generally can be placed in cairns, tumuli, or barrows but they can be also be set within 'natural' features such as sand ridges; or they can appear in so-called flat cemeteries with no above-ground evidence at all. They are sometimes accompanied by pottery or other grave goods. Of the Bronze Age burials that have been recorded in the study area, one was a stone lined cist, and two were found in simple pits. These burials were all located along the coastal fringe of the study area in the sand hills and clay cliffs overlooking the sea. A crouched inhumation in a pit burial (1964:59-62) was recorded in Irishtown (ME028-018). A human skull and some bones were found lying on the beach while the pelvis and parts of the thigh bones were discovered in a shallow grave on the cliff-face, three medieval potsherds were found in the vicinity of the burial but are thought to be unrelated. The grave was roughly constructed, a hole had been dug on a ledge in the cliff face and the body inserted with a few large tufa-like boulders for protection. The burial is thought to be that of a male probably dating to the Bronze Age or Iron Age. Another pit burial (ME028-009) (P.1952:18) was recorded in Mosney townland. The site was discovered by quarrymen in a sandpit in 1949 and excavated at the time. A skeleton was revealed and as the bones were found close together in a small space it was assumed that the body was crouched. The quarrymen also noticed several patches of what was described as 'burnt looking gravel', upon inspection by the National Museum personnel tiny fragments of charcoal were noted. In 1950, when constructing a new road to the Mosney Holiday Camp, the National Museum of Ireland, topographical files note that 'quite a few burials were found in the adjacent townland of Keenoge at a spot almost a mile to southwest. These were not in cists and like the Mosney burial did not have grave goods' (Topographical files). A number of newly identified ring ditches have been identified through aerial photography in Knocknagin (RMP DU001-019), Gormanston (ME028-077) and Irishtown (ME028-058, ME028-100 and ME028-091002) townlands in lowlying level fields along this coastal fringe.

20.4.4.2 Early Medieval Period

The Early Medieval period was one of population growth and the best-known native monument of this period is the ringfort. Ringforts are among the commonest archaeological monuments in the country. They generally reveal the remains of settlement evidence, dwelling houses and outbuildings for extended families. In areas where there is little field stone, the banks are generally of earth, while in stony areas the banks may be revetted with stone or fully composed of stone, with either stone-cut ditches, or no ditch at all. Those with earthen banks are referred to as raths, while those with stone enclosures are known as cashels. Ringforts are usually situated on gentle slopes, with good views of the surrounding area. There is a ringfort in Colp East (ME021-037) and an enclosure in Ministown (ME021-032). Also of note are a number of newly detected subsurface enclosures, possible ringforts and souterrain (ME028-056, ME028-058, ME028-057/001) from aerial surveys that have been identified in Irishtown.

While these sites will not be impacted by the proposed works they serve to demonstrate the potential to reveal archaeological features within the landscape through which the railway passes.

A recurring theme from the early historical sources is that the Fingal and Meath coastline, the area known territorially as the Brega was a well-known point of entry into Ireland, particularly at the Boyne estuary, Inber Colpdai. Other recorded entry points included, notably Inber nAilbine (the estuary of the River Delvin) and Inber nAinge (the estuary of the River Nanny), while Inber nDomnann (Malahide Bay) is also cited (Bhreathnach, 2005). As indeed with the prehistoric period, this was an area subject to innovation and external influence which may explain the higher than average distribution of Romano-British finds and material along the coast. Topographically, the Brega region and its undulating nature is recognised in medieval literature, as shown in the dinnshenchas of Tara, (Gwynn, 1903-35) which speaks of Mag mBreg co n-ilar drummann 'Mag mBreg with many ridges' (Bhreathnach, 2005).

Through excavation, a number of early medieval cemetery sites have been unearthed along the coastal strip and in proximity to the line of the railway in county Meath and north county Dublin. These include Ninch (Eogan 2000), Colp (Gowen 1988), Bettystown (Buckley 2001), Donacarney Great 2 (Giacometti 2022) and Claristown.

20.4.4.3 Medieval and Post Medieval Period

During the Medieval and post medieval periods, the coastline with the provision of good natural harbours in Fingal and proximity to Dublin meant that many people from the area derived their livelihood from the sea. The movement of customs, ideas, trade and economics was influenced externally by places such as Wales, England, Scotland, the Isle of Man and also continental Europe. Therefore, controlling a port was advantageous in terms of wealth and notoriety. Richard Stanihurst writing in Holinshed's Irish Chronicle (published in 1577) recorded nine haven towns in Fingal.

St. Patrick landed at Inbher Colpa, thought to be the mouth of the River Boyne, on his return to Ireland, and the church of Rath Colpa is thought to have been founded by him, although there is no clear history of it (Cogan 1862-70, Waters 1965). Hugh de Lacy granted land at Colp to the Augustinian canons of Llanthony Prima, in Monmouthshire c. 1182. According to a cartulary of 1408 Colp seems to have functioned as a manor with four large tenants and numerous cottiers, although it need not have had a church (Brooks 1953). Nevertheless, canons are occasionally recorded and there was a curate at Colp at the time of the Suppression in 1536 (White 1943). The ruins were described by Cooper c. 1780 (Price 1942) as the side walls with 'Saxon and Gothic arches' together with the E and W windows and arches opening to transepts or side chapels to the N and S', although he may be quoting Archdall. None of this survives, and it was probably removed when the present Church of Ireland church, now closed, was built in 1806 (Lewis 1837).

A number of excavations in the vicinity of the historic settlement of Colp have shown the area was an important early medieval centre (Gowen 1989; Clarke & Murphy 2001; O'Hara 2008), while also exposing a largely previously unrecognised prehistoric heritage, particularly a hidden Bronze Age landscape (Clarke & Murphy 2001; Clarke 2001; O'Hara 2003a, 2003b). At Colp on the Down Survey (1656) two houses and a tower house are depicted as well as the walls of an old church. According to the Civil Survey (1654-6) John Draycott of Mornanstowne and John Balfe of Colpe jointly owned 480 acres at Colpe, including 'a house and some cabins' (Simington 1940).

The castle at Colpe was captured by Lord Moore of Mellifont in 1642 and it was still described as habitable in the 1650s (Waters 1965). It is described as the site of an old castle but not clearly delineated on the first edition ordnance survey six-inch map. There is no visible trace of any structure in a low-lying landscape and the precise location is not certain. (Bradley and King 1985).

Holy wells, sourced from natural springs are recorded in Irishtown (ME028-063) and Corballis (ME028-064) townlands along the railway line. The wells are associated with St Patrick and St Colmcille respectively, however it is not possible to date these monuments or the traditions associated with them.

The Irish Army now occupy the southern half of Irishtown townland.

20.4.4.4 Designated Archaeological Sites

20.4.4.4.1 National Monuments

There are no national monuments (NM) within the study area in Zone D.

20.4.4.4.2 Recorded Archaeological Sites

There are seven RMP sites that lie within 50m of the redline boundary for the Proposed Development within Zone D. These sites are listed below in Table 20-12 and illustrated in Figure 21.1 in Volume 3A of this EIAR. There are nine monuments located in the wider area, within 250m on either side of the railway corridor, these sites are listed in Table 20-13.

The megalithic passage tomb in Gormanston (ME028-021) was excavated in the 1840's by Hamilton and even then the decayed state of the monument was noted (Section 20.4.4.1) where a large portion had broken off from the sea cliff and lay on the shingle beach below.

In Irishtown, a well (ME028-063) is located on the foreshore above highwater mark and just east of the railway embankment. The well is dedicated to St. Patrick and had a pattern from Julianstown in the nineteenth century (Heritage 2001) until 1912 when the last one was held (French 2011). There is a folk tale that St Benignus was baptised by St. Patrick at this well and promptly died (IFC: vol. 685). The well is a natural spring (diam. c. 3m) with a surround of stone slabs and it is situated between two bushes, but there is no evidence of veneration.

In Corballis townland, a natural spring known as 'Colmcille's well' (ME028-064) runs out of a rocky crevice in the south bank of the river Nanny. The bank at this point is revetted by a stone masonry wall. There is evidence for veneration with coins placed in the hollow and it is reputed to cure sore eyes.

The cropmark of a subcircular enclosure (RMP ME021-037) (dims c. 38m NW-SE; c. 32m NE-SW) defined by a single ditch (Wth c. 3m) is visible only on Google Earth (21/07/2021) and described in the record as a ringfort. It was first reported by Anthony Murphy and is located at the tip of a low west-east spur in Colp East townland.

A substantial cemetery (ME21-011001) and an enclosure (ME21-011002) were partially excavated in Colp West in 1988, where the remains of over 100 individuals were buried over several generations. The presence of B-ware and E-ware pottery suggested settlement from at least the fifth to seventh century date (Gowen 1988).

Located to the southeast of this is an historic settlement cluster (ME021-012) comprising of a castle, an earthwork, cross and an earlier ringfort and possible ringditch. The zone of notification (ZON) associated with this settlement will be traversed by very localised development associated with the rail upgrade, in the form of access for the diversion of ESB pole sets.

At Colp Cross, in Painestown townland, a portion of an early medieval enclosed settlement was excavated (O'Hara 2008). Only a small portion of the original early medieval site was available for investigation but included sections of two multi-phase curvilinear ditches, two drystone souterrains, an inhumation burial, and assorted features potentially associated with the settlement. The recovered artefacts suggested wealthy and prosperous people inhabited the settlement between the sixth and tenth centuries. There was evidence for fine metalworking in its later stages in the form of crucible and mould fragments. Access to prestigious foreign goods was suggested by the recovery of imported pottery, including E-ware.

A multiperiod site was revealed at Colp West (ME020-043001-011) that was in use throughout the prehistoric and early medieval period. It was a well organised settlement site with elements of ritual and burial and comprised a large multi-phased enclosure, with associated pits, kilns and linear features, four burnt mounds spreads or fulachta fiadh, a Bronze Age round house, souterrain and multiple enclosure sites all of which formed a sizable archaeological landscape (Areas 1-4, Image 20-1). The full extent of the site was not determined through the excavation and it is likely that the site did continue southwards beyond the Colp Road (Murphy 2011) (Licence Refs. 99E0472, 99E0472 ext, 01E0931, 03E0641 and 03E0660). While these excavations are shown on the Historic Environment Viewer (HEV) as occurring on the railway line, the sites are located to the south of it (see Image 20-5).

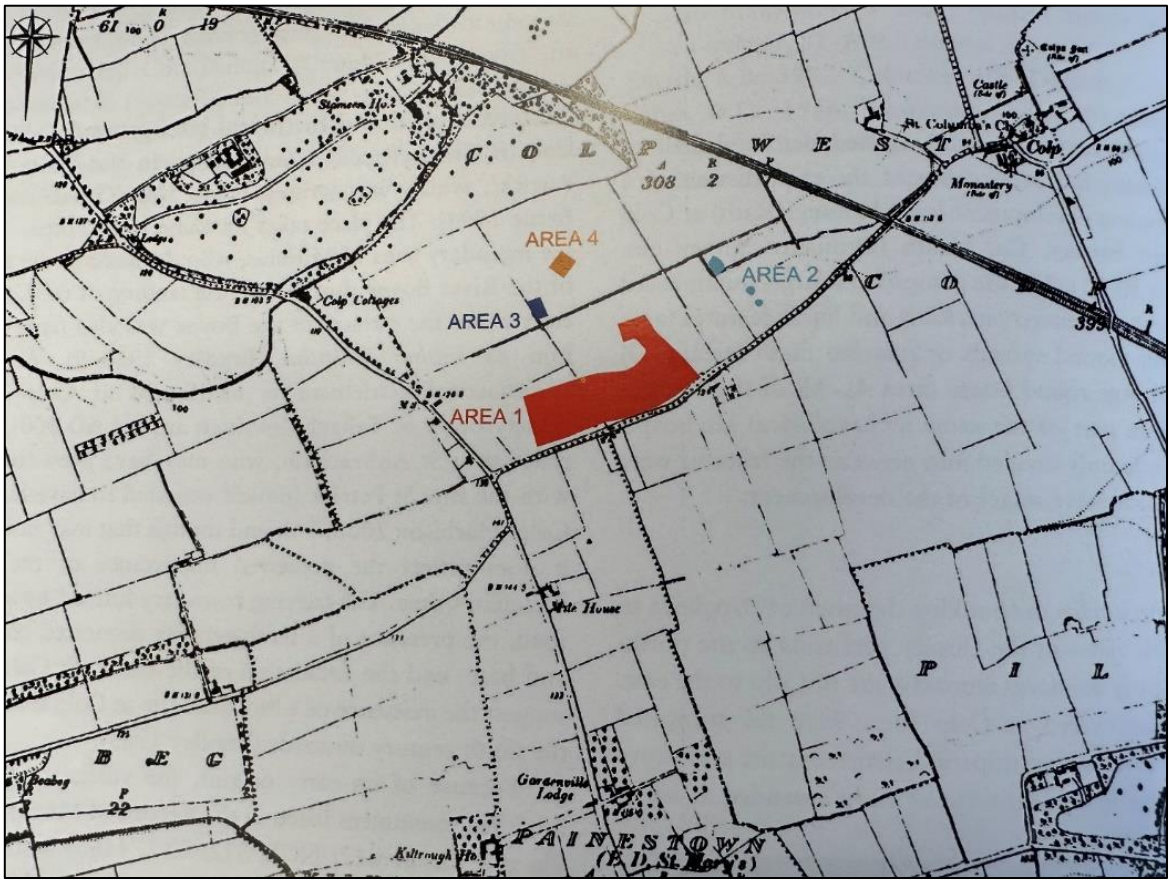

Image 20-5 Colp West Excavation Areas (1-4) (Source: Murphy, 2011)

Table 20-12 RMP/ SMR sites within 50m of Zone D

RMP/SMR	Class	Location	ITM	Distance
ME028-021	Megalithic tomb – passage tomb	Gormanston	718150 766533	The zone of notification is located 29m to the east of the railway boundary.
ME028-063	Holy Well	Irishtown	716985 769230	This site is located 14m east of the existing railway boundary.
ME028-064	Holy Well	Corballis	716178 771070	52m west of the existing railway boundary, however the zone of notification is located within 50m of the project.
ME021-032	Enclosure	Ministown	715036 772569	91m west of the existing railway boundary, however the zone of notification is located within 50m of the project.
ME021-012	Settlement Cluster	Colp East and Colp West, Mornington	712563 774438	The ZON around this historic settlement cluster is traversed by work associated with the

RMP/SMR	Class	Location	ITM	Distance
				rail upgrade with the moving of overhead poles.
ME021-037	Ringfort	Colp East	712722 773971	82m south of the existing railway boundary, however the zone of notification is located within 50m of the project.
ME020-04301-11	Enclosures (6) Ringfort, Ex misc, Burial, Souterrain & Kilns	Colp West	711911 774412	The sites are recorded in one single find spot on the railway line, however, the excavation took place to the southwest in advance of the development of the Park Estate.

Table 20-13 RMP /SMR Sites within 250m of the Railway Corridor, Zone D

RMP/SMR	Class	Location
ME028-020	Megalithic tomb – passage tomb	Gormanston
ME028-018	Pit Burial	Irishtown
ME028-057/001	Ringfort/ Souterrain	Irishtown
ME028-100	Ring ditch	Irishtown
ME028-066	Enclosure	Mosney
ME028-008	Cist	Briarleas
ME028-050	Excavation miscellaneous	Ninch

20.4.4.5 Stray Finds

A worked flint nodule (1958:148) is recorded in Gormanston townland at the site of the excavated passage tomb (ME0028-021) and to the north of the passage tomb (ME028-020), Paul Gosling found potsherds, worked flint and five waste flints (1978:62-68). Glazed potsherd from a stone-protected grave (NMI 1964:60-62) and human remains (a human skeleton from stone-protected grave) (NMI1964:54) were identified in Irishtown townland. The National Museum of Ireland visited the townland of Mosney a number of times during the construction of the holiday camp in the 1940s as items of archaeological interest were revealed by workmen (Cahill & Sikora 2011). The finds included the following:

- 1952:18 Human (skeletal) remains found in sandpit;
- 1964:137-207 Pottery (Mosney holiday camp) – Medieval potsherds;
- 1964:208-210 Tile pieces of clay floor tile;
- 1964:212 Architectural fragment (piece of stone mullion?);
- 1964:211 Stone object;
- 1964:213 Copper coin;
- 1964:214-217 Roofing slate;
- 1964:218 Whetstone (hone);

- 1964:219 Slag;
- 1964A Floor tile (clay); and
- 1965:4 Piece of stone mortar/bowl found with other medieval objects.

In Colp associated with excavation activity, many artefacts have been retrieved over the years and include E and B ware, a small tanged iron knife, decorated glass bead fragment, bronze pin and a large quantity of butchered animal bone. Similarly, in Ninch townland, excavation has revealed E-ware pottery, jet bracelets, a bronze toilet implement, a series of bone pins, a pin from a ring-pin, bone combs, blades and a barbed and tanged arrowhead as well as large quantities of animal bone.

20.4.4.6 Previous Archaeological Investigations

In Irishtown, a test excavation (98E0025) took place approx. 100m west of the church site (ME028-017) to ascertain if there was any associated material or features. No archaeological remains were revealed.

In Ninch a large number of archaeological features were identified in advance of a residential development (98E0501 ext). Several phases of activity were revealed including late Neolithic pits and postholes associated with grooved ware pottery, a ring ditch (dating to two separate phases of activity during the Iron Age), a large early medieval enclosure (c. 120m north-south by 80m east west),a souterrain, a series of sub-circular enclosures, settlement activity including a cobbled pathway and a cemetery where 80 burials were excavated from stone lined graves and two kilns. At the time, it was thought that the excavated remains were comparable to the excavated site at Colp, c. 4km north of Laytown (Excavations 1988), where part of a large, ditched enclosure (containing B and E ware) was subsequently used as a cemetery; at Colp most of the burials were found within a penannular ditched enclosure (O'Brien 1992 and 1993). At Ninch preservation in situ was adopted for some of the remains and archaeological features to this day are still preserved beneath green areas within the residential development.

In Sevitsland, a geophysical survey (Detection Device Licence 19R0166) carried out in advance of a residential development (ABP Ref PL17.304917) produced a clear response of a ditched feature possibly a small enclosure or possible barrow site. Test excavation (Licence Ref. 19E0639) by Aegis Archaeology confirmed that this was the only site of an archaeological interest within the proposed residential development area, suggesting a ring-ditch approximately 7m in diameter with an entrance to the east. Excavation by hand by in advance of a residential development was proposed as a mitigation measure, and the development is now under construction.

Image 20-6 Development at Sevitsland under construction November 2023

(Source: Google Earth Pro)

In Colp, geophysical survey (detection licence No 09R0057 and 18R0181), test excavation (Licence Ref 18E0089 and 18E0597) and excavation took place in advance of a residential housing scheme in 2019 (Licence Ref. 18E0615 ext) these surveys and investigations identified a series of ditches representing a field system associated with the early medieval enclosure and cemetery site (ME021-011001/002). Prior to this phase of investigation, archaeological excavations in Colp West have uncovered significant remains. In 1988, as part of advance works associated with the construction of the north-eastern gas pipeline project, Margaret Gowen partially excavated a multivallate enclosure and over one hundred individual burials (no licence number, excavations.ie 1988:51). In 2007, two multi-phase curvilinear ditches and two drystone souterrains were excavated (Licence Ref 07E0891).

To the north of the railway line, the area proposed for the utility crossing (UTX2 and overhead line and access route), has been subject to geophysical survey and test excavation. Testing within this area did not reveal material of an archaeological interest (Licence Refs: 18E0597 and 18E0089 (Archer) and 18R0181 (TARGET)).

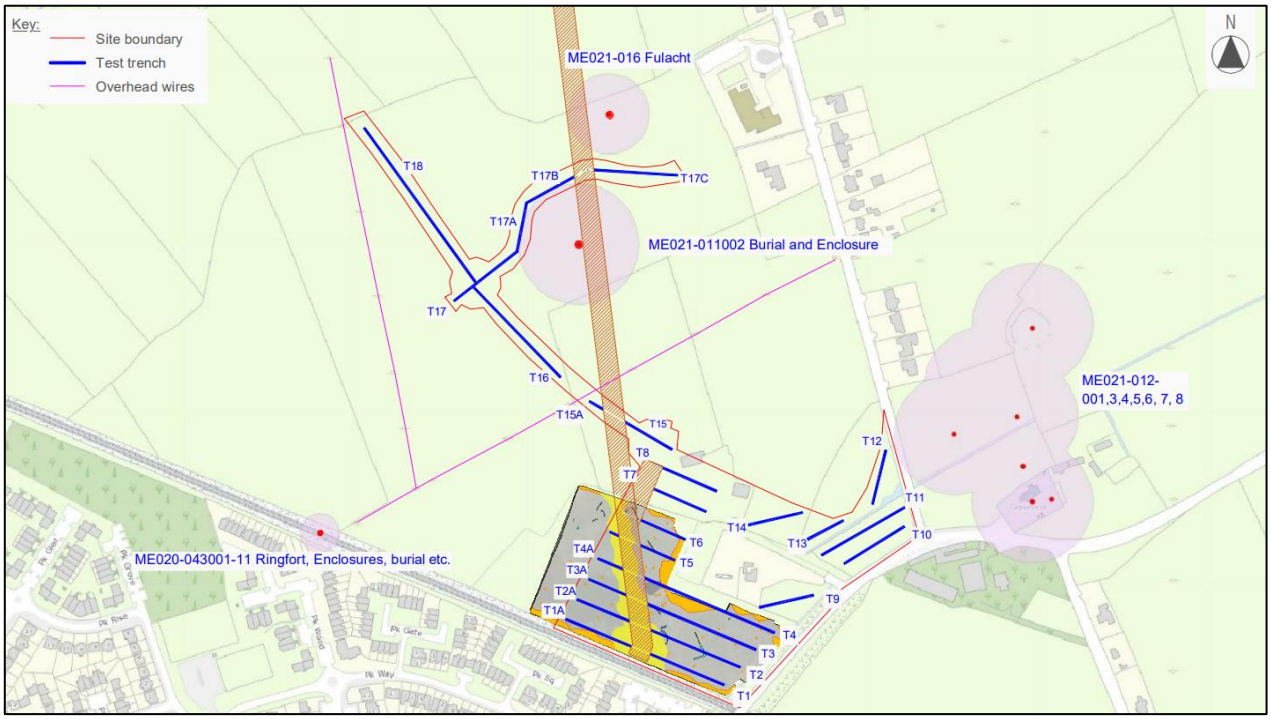

Image 20-7 Archaeological Testing, Colp Phase 1 (Archer 2018, 18E0089)

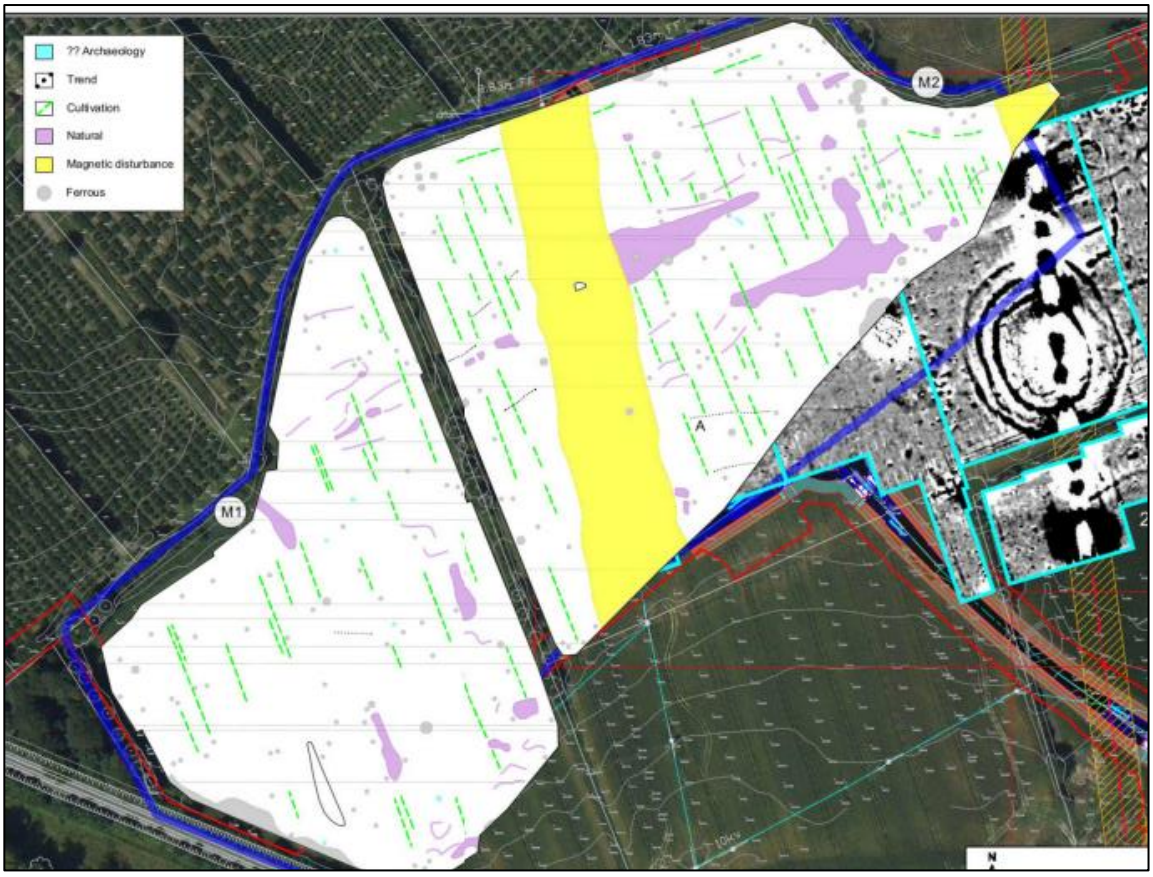

Image 20-8 Geophysical Survey, Colp (TARGET 2018, 18R0181)

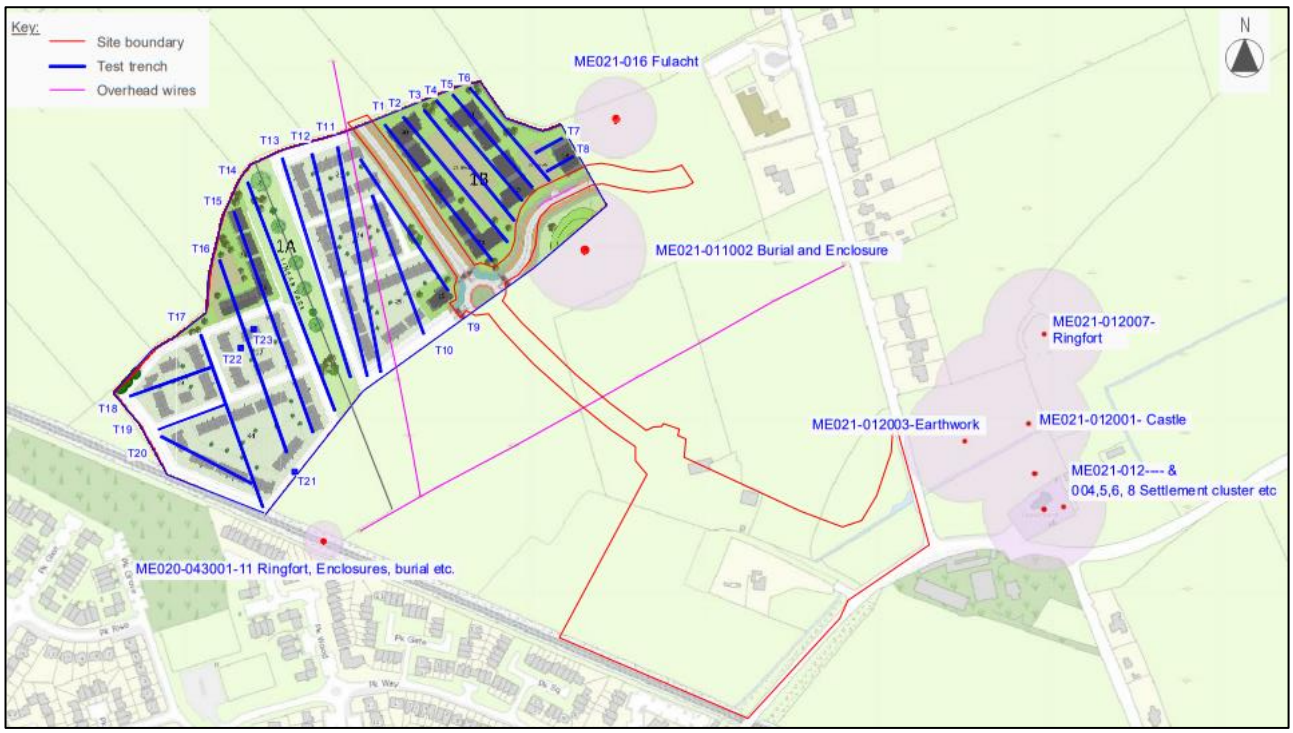

Image 20-9 Archaeological Testing, Colp Phase 2 (Archer 2018, 18E0597)

20.4.4.7 Townlands and Toponomy

The existing route of the railway passes through 13 townlands in Zone D as presented in Table 20-14.

Table 20-14 Townland Names Zone D

Project zone	Townland	Barony & Parish	Origin	Placename origin/meaning (sources:
Zone D	Irishtown	Upper Duleek/ Moorechurch	Irish	The townland is first shown on the Down Survey of 1655 as 'Irishtonne'. It may have been named as such by a later presence such as the Anglo Normans referring to where the Irish or natives if you like had a stronghold and therefore may relate to an early historical presence within the townland
Zone D	Mosney	Upper Duleek/ Moorechurch	Irish	Derived from the Irish, Maigh Muirí possibly meaning the plain of the marine, comprising maigh (magh, referring to a topographical plain) and Muirí referring to the marine or maritime.
Zone D	Briarleas	Upper Duleek/ Moorechurch	English	Leas could derive from the Irish, lios, meaning enclosed ground or space, a ringfort or fairy mound and the name could be an anglicised version of the word coupled with a description of the feature, i.e. the ringfort of the briars or it could mean the field of the briars.
Zone D	Corballis	Lower Duleek/ Duleek	Irish	Derives from the Irish Corbaile. Corr however means small round hill and hollow, or it can mean odd may refer to a topographical feature (Joyce 1995).
Zone D	Ninch	Lower Duleek/ Julianstown	Irish	Derived from the Irish An Inse meaning the island or holm
Zone D	Ministown	Lower Duleek/ Julianstown	English	Derived from a family name, Minits. (Baile Mhinit).
Zone D	Sevitsland	Lower Duleek/ Julianstown	English	An English name, Sevett's Land (a family name).
Zone D	Betaghstown	Lower Duleek/ Colp	Irish	Baile an Bhiataigh, Betagh a family name.
Zone D	Pilltown	Lower Duleek/ Colp	English	The town of the pool (tidal hole, river inlet). D'Alton (1844) suggests 'Pilton, Pilot's town derviving its name. like many localities in England and some in Ireland similarly situated, from its having been an advanced station for pilots, in the navigation of the mouth and creek of the Boyne, was, in records of the 14th century, and long afterwards, styled with an alias 'English Colpe… manor of Gerald Wellesley… Duff….estate of Thomas Brodigan, Esq.'.
Zone D	Colp East	Lower Duleek/ Colp	Irish	Grange of Colpe, anciently call Inbher Colpa – Colpa's estuary. (Colpa was one of the sons of Millesuis).

Project zone	Townland	Barony & Parish	Origin	Placename origin/meaning (sources:
Zone D	Colp West	Lower Duleek/ Colp	Irish	Grange of Colpe, anciently call Inbher Colpa – Colpa's estuary. (Colpa was one of the sons of Millesuis).
Zone D	Stameen	Lower Duleek/ Colp	Irish	Sta mín meaning smooth house, Teach mín, tigh mín.
Zone D	Newtown	Lower Duleek/ Colp	English	Baile nuadh, new town

20.4.5 Zone E - Drogheda Station and surrounds

The Irish name, Droichead Átha, which means "the bridge of the ford", was the name given to the lowest bridging point of the River Boyne. The original fording site is located 2km west of Drogheda, but the town was established further downstream to provide a transport route inland and between north and south, with a harbour to accommodate seaborne trade.

Despite the evidence for prehistoric and early medieval activity in the environs of Drogheda, and the possibility of a Viking presence in the southern part of the town, the settlement of Drogheda has been attributed to the Anglo-Normans (Thomas 1992; Bradley and King 1985).

Drogheda town was founded by Hugh de Lacey sometime before 1186 with the construction of the Millmount motte and bailey. Drogheda developed administratively and legally as two separate towns divided by the River Boyne until 1412 (Thomas 1992). A subsequent bridge, with gates, provided a physical link between the two towns (Thomas 1992). A murage was levied to wall the town from an early date in 1234 (Thomas 1992). The walls enclosed an area of 45 hectares (113 acres), with a circumference of 2.35km (1.46 miles).

The walled defences were constructed through murage grants (a toll on goods coming into the town), and Drogheda possesses one of the most extensive series of murage grants for any Irish town, with at least thirteen grants spanning the 190 years between 1234 and 1424 (Bradley 1978). Sections of the town wall survive, as do two of the gates: the 'Butter Gate' (ground-floor level survives) and St Laurence's Gate, which consists of a barbican with an arched passage flanked by two rounded bastions (Buckley & Sweetman 1991).

The arrival of the railway in the nineteenth century had a significant impact on Drogheda, due its pivotal location between Dublin and Belfast. The Boyne Viaduct is a well-known and impressive introduction to Drogheda and is a testament to the engineering achievements of the railway engineers.

Within the railway station there are a number of the railway structures including the engine shed, the station building, water tower as well as an office and a railway station building that are of an industrial heritage and architectural heritage interest.

There are no national monuments, designated recorded monuments or stray finds within Zone E lands.

20.4.5.1 Designated Archaeological Sites

20.4.5.1.1 National Monuments

There are no national monuments (NM) within the study area in this zone.

20.4.5.1.2 Recorded Archaeological Sites

There are no recorded monuments within Zone E lands.

20.4.5.2 Stray Finds

There are no stray finds recorded in the archives within Zone E lands.

20.4.5.3 Previous Archaeological Investigations

A programme of archaeological investigation, including geophysical survey (19R005) and test trenching (190017) took place in Newtown townland in advance of the construction of a residential development located to the southeast of Drogheda Station and to the south of the railway line. The development is located adjacent and to the west of the Drogheda Wastewater Treatment Plant and to the southeast of Drogheda town. A total of twenty-four test trenches were excavated across the footprint of the proposed residential development (1814m of linear trenches) (Image 20-3). Testing confirmed the presence of a sub circular enclosure (E710410 N775065) and associated features along the line of the proposed access road. The area of the enclosure was topsoil stripped and excavated by Linda Clarke of ACSU under licence 19E0433. The enclosure measured 28m in diameter and within the interior of the site, pits, a curvilinear gully and two kilns were revealed while two additional storage pits and a kiln were located outside the enclosure. To the northwest of the site, four graves with a total of six individuals were identified. Radiocarbon dating places the burials between the 5th and 7th centuries AD in the early medieval period.

Finds from the programme of testing included flint (possibly prehistoric), pottery (mostly sherds of medieval wares) and clay pipe fragments (post medieval).

The application for the development shown below took place (Case Reference TA15.305110, ABP 305110-19) under the Strategic Housing Development (SHD) and the Board's decision to grant subject to conditions was quashed by order of the High Court on 21/08/2020. Within the annulled conditions, as the development progressed, archaeological monitoring was to take place.

Image 20-10 Location of test trenches and enclosure in Newtown townland (Source: Clarke & Gallagher, 2019)

20.4.5.4 Townlands and Toponomy

Drogheda Station and the railway line is located in Newtown townland in Zone E in County Louth.

Table 20-15 Townland Names Zone D

Project zone	Townland	Barony & Parish	Origin	Placename origin/meaning (sources:
Zone E	Newtown		English	When translated into Irish *An Bhaile Nuadh* meaning 'the new town or homestead'. The townland is shown on the Down Survey of Ireland (1655) and is clearly defined on the first edition 6-inch map of 1835 and was bisected by the Dublin-Drogheda railway line prior to the creation of the OS 25 inch map of 1907-09. The train station in Drogheda opened in 1844.
Zone E	Lagavooren	Duleek Lower/ Saint Mary's	Irish	*Log an Mhúirín* shown on the Map of Liberties of Drogheda, 1778, meaning a hollow or muddy place.

20.4.6 Fieldwork, Cartographic, Aerial and Historic Map Review of the Project

20.4.6.1 General

This Section summarises the historic character and archaeological potential of the Proposed Development, based on observations made during the field survey, aerial imagery regression and cartographic sources review and previous archaeological assessments.

A survey was carried out to familiarise the author with the route and the landscape. This was followed by a site inspection in May 2023 of green and brown field areas (for substation and compound areas) and at specific key structures. The built and industrial heritage is examined in Chapter 21 (Architectural Heritage) in Volume 2 of this EIAR which examined industrial heritage features and features of cultural heritage merit.

The Proposed Development is described in project zones from south to north along the railway corridor. It focuses on proposed earthmoving works areas, as set out in Chapter 4 (Description of the Proposed Development) and Chapter 5 (Construction Strategy) in Volume 2 of this EIAR and identifies areas of archaeological potential (AAP) that might be subject to impact. AAPs are referenced in Section 20.4.8 and are shown in Figure 21.1 in Volume 3A of this EIAR.

20.4.6.2 Zone A North of Connolly Station to south of Howth Junction & Donaghmede Station (including Fairview Depot)

Zone A is the area between north of Connolly Station to the south of Howth Junction & Donaghmede Station (including Fairview Depot). The railway passes through an urban and suburban landscape with Fairview Park developed from reclaimed land.

The only works to take place in this zone are at Fairview Depot within the existing IÉ property boundary. Works include temporary Construction Compounds and the provision of new cleaning platforms on the sidings to the east of the mainline. Fairview Park was previously archaeologically assessed and determined to be of low archaeological potential, the proposed works are determined to have a low, if any, archaeological impact.

20.4.6.3 Zone B South of Howth Junction & Donaghmede Station (including Howth Branch) to north of Malahide Viaduct

There are no proposed substations within Zone B, there are proposed track works including turnback facilities and a Signalling Equipment Building as well as temporary Construction Compounds at Howth Junction & Donaghmede Station, Clongriffin Station and Malahide Station.

The railway line passes through a low-lying, level coastal environment with well-established suburbs at the southern end of Zone B in the form of Baldolye and Donaghmede and new large scale residential developments taking place throughout Clongriffin, Portmarnock, Maynetown and Drimnigh townlands. At Malahide, the golf club lands and Malahide Demesne flank the railway to the east and west before it arrives in the village at Malahide Station. Here a viaduct was constructed to take the railway line across the estuary to the Donabate peninsula.

At Howth Junction & Donaghmede Station, there are no recorded monuments in the vicinity of the proposed works, no features are noted on the historic OS maps in this area apart from the development of the railway line which began operation in 1844 (The Dublin Drogheda Railway) and the Howth Branch which opened in 1846. The Proposed Development works form part of the existing Howth junction works and an access way from Grange Way and existing carpark area. The area has been previously disturbed and is largely built over and includes one overgrown vegetated embankment to the east of the railway line. Given the level of disturbed and made ground and that there is no recorded archaeological presence, the archaeological potential as a result of these works is deemed to be low.

At Clongriffin, it is proposed to use lands to the east of the existing track with an access way from the north (Moyne Road (R123)) as part of a turnback and station works compound. The closest monument which was recently added to the SMR (May 2023) is an earthwork (DU015-0152) in Maynetown townland located approximately 260m east of the proposed access track. This feature was identified by aerial photography and is located north of the confluence of the Mayne River and the stream running from the south. It has been suggested that these earthworks may represent a previously unrecorded longphort (a Viking ship enclosure) potentially relating to 'Port Manann' recorded in the Fragmentary Annals of Ireland (Downham, 2008). There are no recorded monuments within the vicinity of the proposed compound works. Previous archaeological investigation of the area revealed three sites, now excavated and recorded as an enclosure (of which no trace could be detected) (DU015-064001 & License No 04E0342) and two burnt mounds (DU015-096/ 097 & License No 04E0367) to the west of the railway line at a distance of 180m to 225m. The historic maps show that the lands once formed part of the Stapolin House Demesne, the lands are shown as open fields lying to the south of the Mayne River.

South of the Mayne River, the proposed works area has been subject to previous archaeological investigation (geophysical survey 02R0197 and licenced archaeological testing and monitoring 04E1024). The road infrastructure including the proposed access route has been previously constructed and there is an existing bridge over the River Mayne which will be used as part of the proposed works. Part of the area proposed for the works has been previously used for the storage of construction material and has been topsoiled stripped and disturbed in the past. Given the level of disturbance and previous archaeological investigation, the potential to reveal subsurface archaeological features within the proposed works area is determined to be low.

The area to the north of the Mayne River in Maynetown townland presents as a field immediately to the east of the railway, uneven under foot and overgrown with vegetation and recently seeded with a variety of tree saplings. This area is proposed for a Construction Compound and will involve topsoil stripping (see Chapter 5 Construction Strategy, section 5.3.3 and 5.3.3.3) and as such there is the potential to reveal below ground archaeology as no previous archaeological investigations have taken place in this area.

The Mayne River Bridge will require earthworks as well as piling and insitu concrete formation to construct the new abutments. These will then have precast concrete arch sections laid between them, followed by precast parapet sections, panels, and guardrails. Finally tracks will be laid on top. No works are needed in the river and the bridge has been designed to avoid any direct impacts on the river.

Image 20-11 Area for proposed compound, Maynetown, north of the Mayne River

At Malahide Station, which was designed by George Papworth, there are no recorded monuments in the vicinity of the proposed works. The zone of notification of an early church site on the present site of St Sylvester's Roman Catholic (RC) Church (DU012-023001/002) is located to the east of the station and will not be impacted by the proposed works. The construction of a new central turnback line north of Malahide Station and south of Malahide Viaduct with a new crossover on the Up Dublin line and a new turnout on the Down Belfast Line (ie the Malahide turnback) will take place. Construction of a new reinforced earth wall alongside the proposed Broadmeadow Way Greenway and embankment widening will take place north of Malahide Station. Track modification will take place along with new electrification within the existing rail corridor.

To facilitate these works temporary Construction Compounds are proposed in five areas at Strand Court, Marina Car Park, Bissett's Strand and Caves Strand/ Sea Road (Table 5.4, Chapter 5, Construction Strategy) in Volume 2 of this EIAR, Image 5-26). Given the existing hardstanding and the fact that there are no recorded archaeological monuments in the area, the proposed impact as a result of compounds at CC 16400, CC15900 W and E and CC16250) (north and south of the waste water treatment plant) is determined to be low from an archaeological perspective.

Bissett's Strand (CC15900W) is currently being used as a Construction Compound for other works and is located to the west of the railway line. Historically, this area and the compounds at the Boat Yard and Marina are shown on the OS maps (1837 and 1870), as reclaimed from the estuary. A compound is proposed at Sea Road, to the south of Malahide Yacht Club to support Bissett's Strand for the storage of materials and will be subject to seasonal restrictions for biodiversity reasons. This area presents as a green space, bounded by a low stone wall to the east, an access track to the north, and an earthen bund overgrown with vegetation to the west and south that flanks a water channel. This channel is shown on the 1st edition six-inch OS map and no other features are shown in the area. From an analysis of aerial photographs, it appears that the area has been subject to previous disturbance in the form of earthen bunding works. As part of the works to the viaduct there are no in-water works proposed and therefore no underwater archaeological surveys are required.

Image 20-12 View toward temporary compound Sea Road (CC16100)

20.4.6.4 Zone C North of Malahide Viaduct to south of Gormanston Station

Lands to the east side of the railway tracks in Kilrea townland will be taken into procession by IÉ as the level crossing at this location which previously provided access to these lands will be closed as a result of the Proposed Development. There is no construction activity or excavation works proposed and the land parcel will be retained for biodiversity. Therefore, no further archaeological mitigation is required.

A substation and temporary Construction Compound are proposed to the north of L6165 and to the south of the R126 and west of the railway, south of Donabate Village in Corballis townland. The area is currently under crop. Underground and overground utility diversions are also planned. Along the R126, a utility trench (750m deep x 500m wide) will be placed in made ground within the footpath, this is in an area that has been previously investigated by archaeological methods and no further mitigation will be required at this location.

To the north of the R126 decommissioning of overhead polesets and above ground cabling will take place, in total this will involve the removal of 4 poles and localized disturbance of 1m x 1m to remove the pole foundations. Access will be afforded from an agricultural field to the east of the poles. This area has been previously investigated (McLoughlin 2007) (Image 20-13) and an enclosure (DU012-100) and souterrain (DU012-135) are now recorded in the Historic Environment Viewer (HEV). Access for machinery to assist with the removal of the poles will keep to the edge of the field and it has been agreed that no invasive/ excavation works will take place in this field as a result of the Proposed Development.

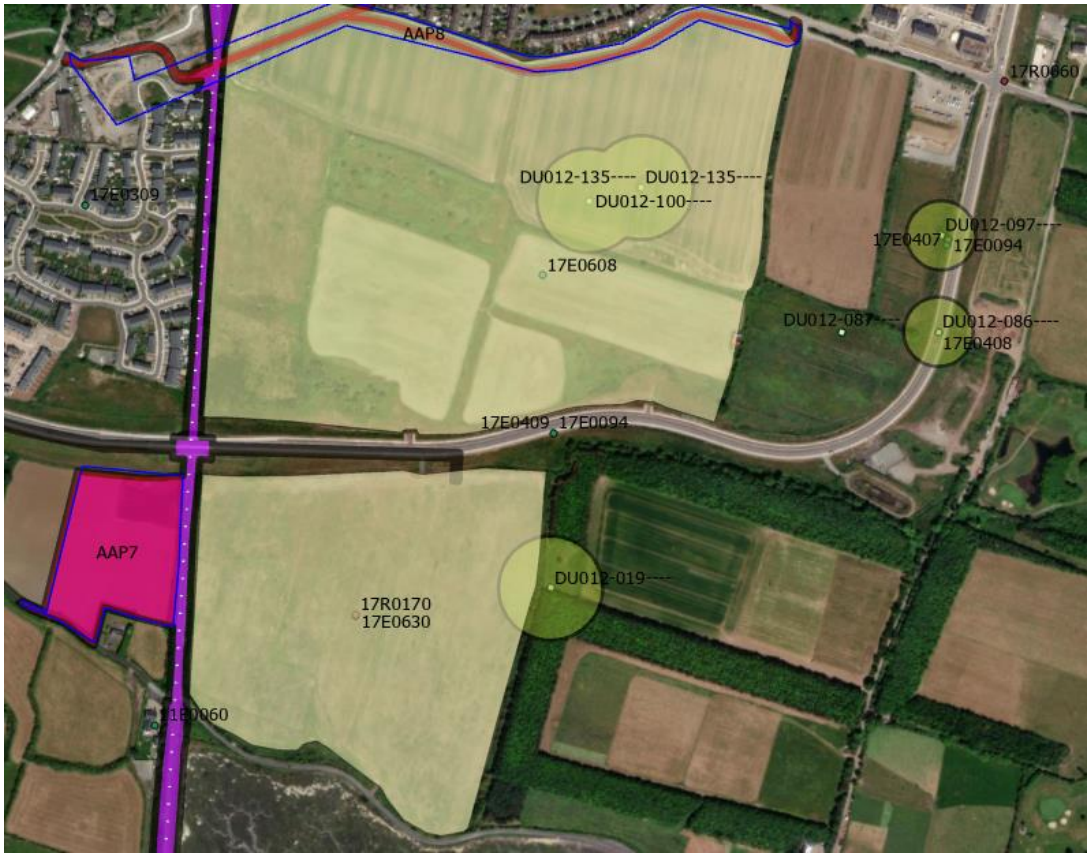

Image 20-13 showing the location of the proposed substation and compound in Corballis townland (AAP7), the location of a utility trench along the R126 and the location of the decommissioned overhead polesets north of the R126 (AAP8)

Image 20-14 Area proposed for a substation and compound (AAP7) in Corballis townland

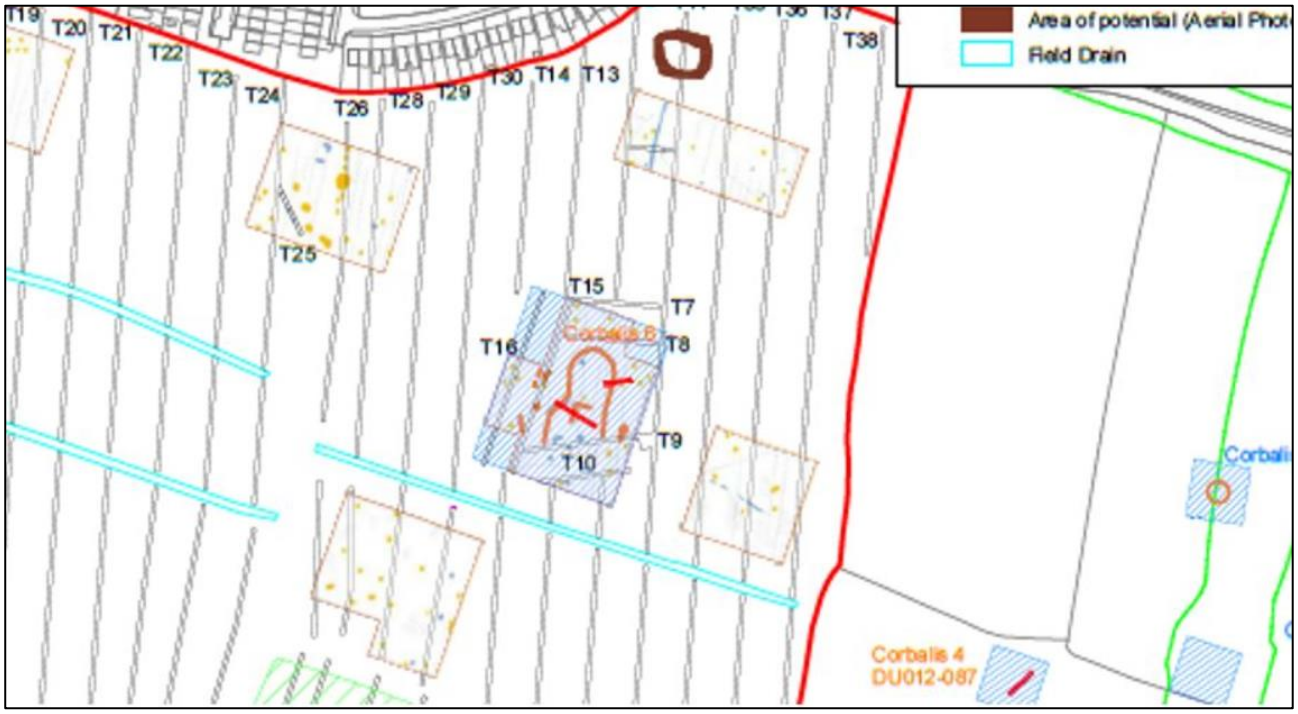

Image 20-15 Previous archaeological investigation in an agricultural field where access to decommission overhead poles will take place. The access track is proposed along the edge of the field (AAP8) and no excavation will take place (Source: McLoughlin 2007)

Geophysical survey detected remains of an archaeological settlement (a network of rectangular enclosures and linear remains) to the southwest of the survey area that may extend to the west and southwest of the site boundary. Other potential features were noted such as possible pits and areas of burning (see Image 20-16).

In 2017, an archaeological geophysical survey (Licence Ref. 17R0170) took place to the east of the railway and testing and excavation (Licence Ref. 17E0630) took place to the north (within the new Distributor Road area) (see Image 20-5) and to the east of the railway (as part of advance works associated with a sustainable drainage scheme, SUDS).

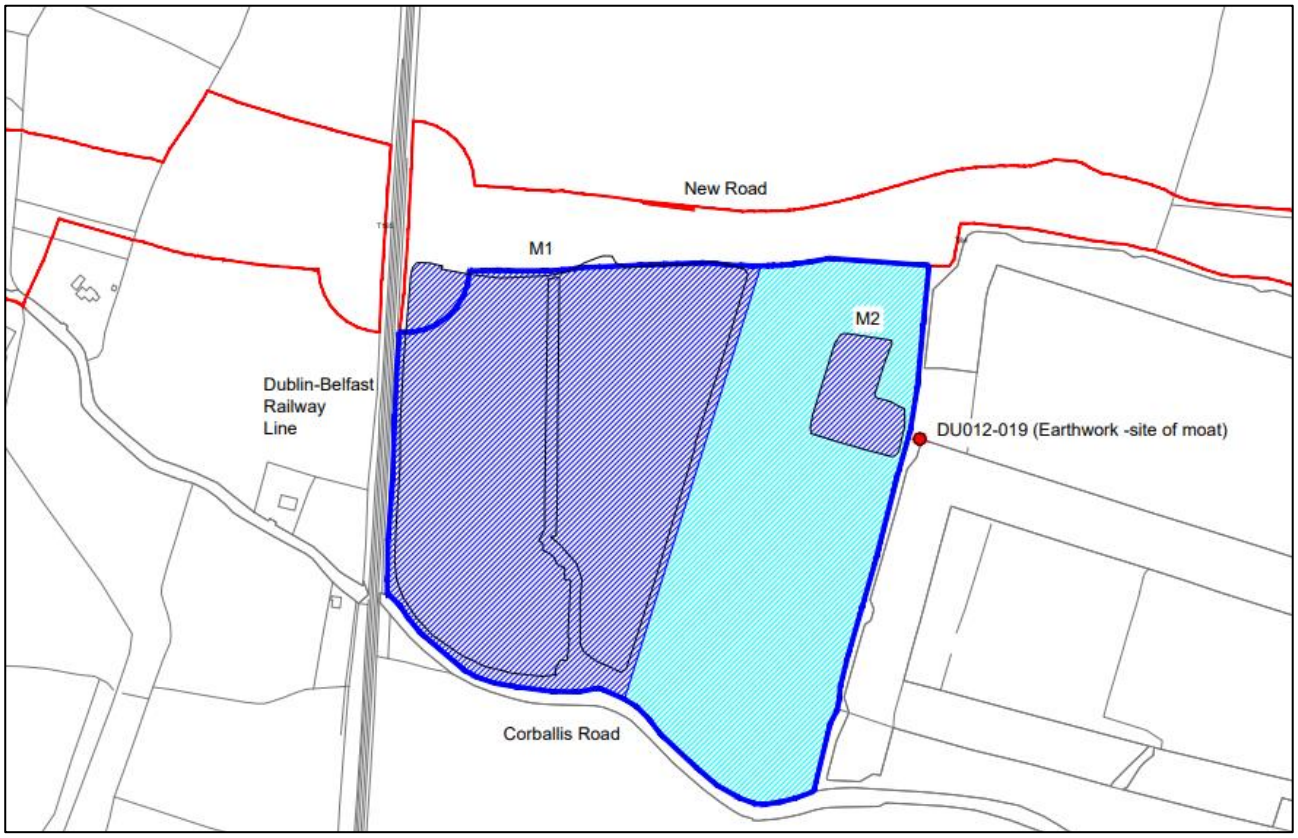

Image 20-16 Survey and excavation area (Source: Nicholls, 2017)

Excavation under licence (Licence Ref. 17E0094) of the Donabate Distributor Road revealed three sites, a ring ditch (12m wide) and two fulachta fiadh demonstrating the below ground archaeological potential (see Image 20-18).

As part of the investigation of the proposed SUDS area, two further fulachta fiadh and two areas of dispersed pits were detected. These and additional investigations in the wider Donabate area (see Image 20-19) show that there is a potential to reveal prehistoric and early medieval features.

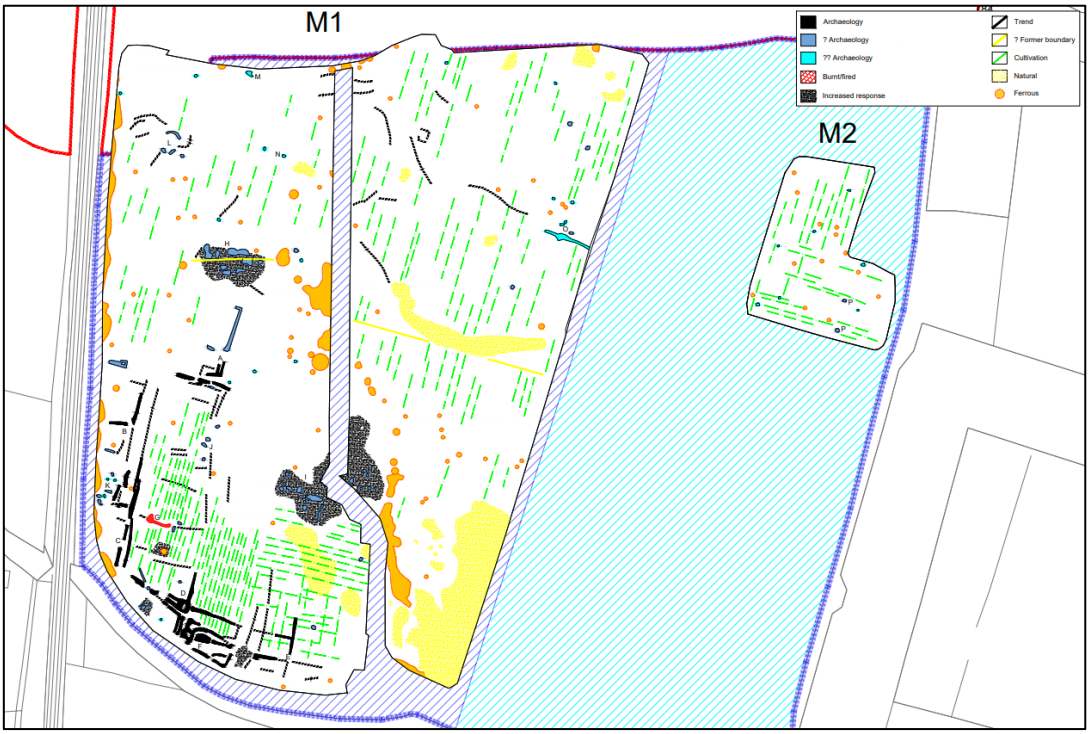

Image 20-17 Geophysical Interpretation Drawing (Source: Nicholls, 2017)

Image 20-18 Aerial Image (OSi 2018) showing the extent of excavation works

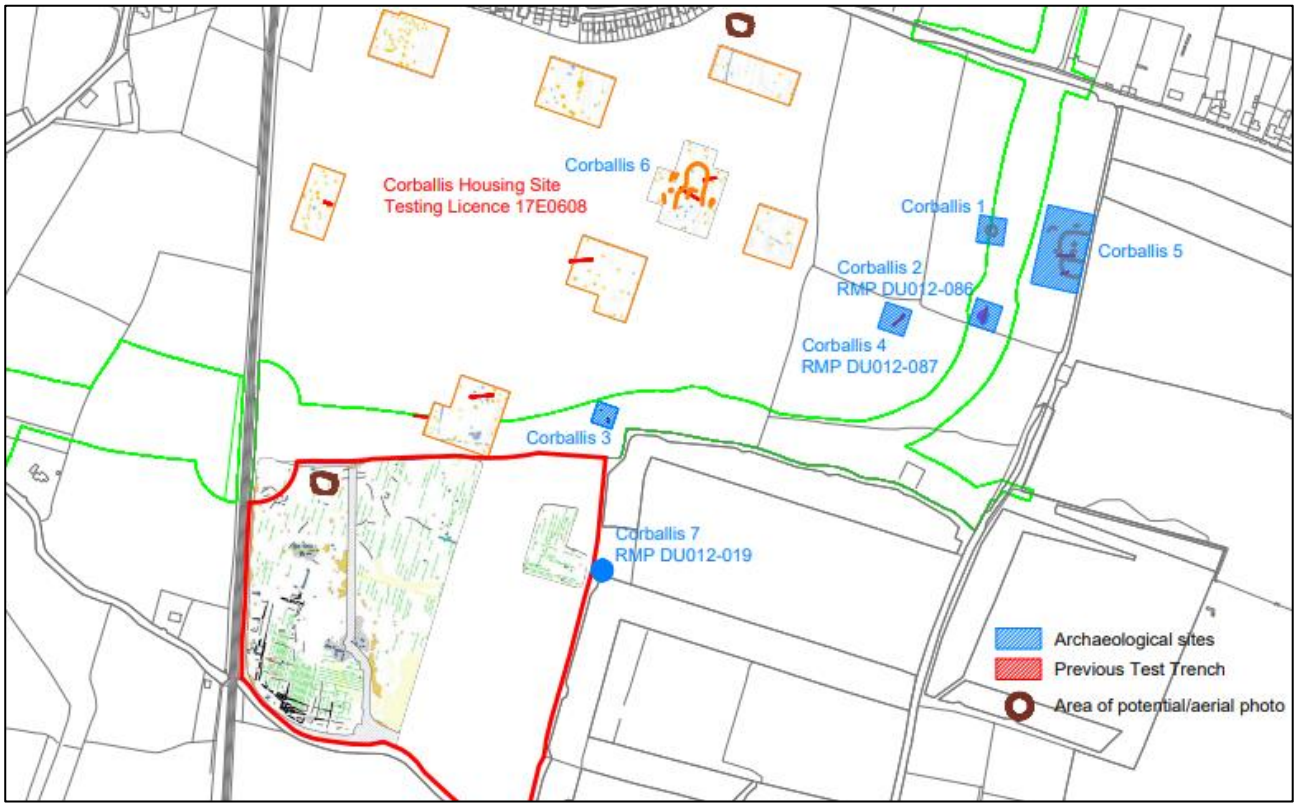

Image 20-19 Previous archaeological investigation east of the railway line, Donabate (Source: Archer, 2018b)

Given the greenfield and agricultural nature of the lands and the demonstrated below ground potential in adjacent developments, it is considered that there is an archaeological potential to reveal below ground archaeological features and sites within the lands proposed for the substation and Construction Compound at Donabate. As part of the preconstruction surveys, a geophysical survey was attempted in this area but as the soil was saturated by heavy rains in the summer, autumn and winter of 2023, the area was too wet with the crop left in the ground and it was deemed unsuitable by the surveyor. It is proposed to carry out preconstruction test excavation at this location.

At Donabate Station, a compound is proposed to the east of the platform in an area that is currently occupied by a carpark. Even though archaeological features were identified as a result of development to the west of the railway line in advance of a residential development and this excavation is recorded as SMR DU012-083 and is located adjacent to the proposed works, given the level of disturbance and limited construction activity, the potential to reveal archaeological remains is anticipated to be low to negligible.

In Rogerstown townland, the diversion of overhead single poles will take place. The only excavation will be for the removal of the poles and insertion of poles.

At Rush and Lusk Station, a substation and OHLE maintenance compound is proposed to the east of the existing station and carparking facilities. This is located in a field overgrown with vegetation and the access way passes through a field currently under crop. The nearest monument is a cist burial (DU008-035) which is located 350m to the east of the proposed works.

It was discovered during ploughing in a tillage field in 1977 and contained the cremated remains of six individuals and a plano-convex knife. There is some potential to reveal subsurface remains in the proposed works area and as such access was sought and gained for a geophysical survey to take place (Leigh 2023). No anomalies of an archaeological strength were detected as a result of the survey and no responses of interest were recorded, that data was dominated by modern magnetic disturbance. To the south of this field is an overgrown area, where dumping has occurred. Given the level of disturbance, it is proposed that monitoring is the most appropriate mitigation measure. Archaeological monitoring under licence to the Department Housing, Local Government and Heritage, will ensure the full recognition of and the proper recording of all archaeological features, finds and deposits which may be disturbed below the ground surface. If archaeological features are revealed the statutory authorities will decide on how best to proceed (ie full excavation or avoidance by design). The railway tracks are to be lowered underneath the existing bridge and the existing station access road is to be upgraded.

Image 20-20 Proposed Development lands at Rush-Lusk Station subject to geophysical survey by Leigh 2023

Image 20-21 Proposed Construction Compound at Rush-Lusk Station, previously disturbed

To the north of Station Road (R128) in Effelstown townland, utility diversions will take place on either side of the railway and will require a compound on either side of the railway and access way from Station Road R128. Directional drilling will take place and will remove the necessity for overhead cables held in place on poles. Trenching will take place within the footpath along the road side. A utility diversion compound is to be located at chainage 23,772 in Effelstown townland, south of a stream and north of Station Road, in a greenfield environment. The lands to the east of the railway are under pasture while the field to the west of the railway is ploughed. Any topsoil stripping or earthmoving activity in this area will have to be archaeologically monitored to ensure the identification of any newly revealed feature, find or deposit so preservation in situ or by record can be recommended by the adjudicating authority.

There are utility diversion works located within the zone of notification for an enclosure (DU008-011) in Effelstown north of Lusk / Rush Station. All underground diversions, in this case, a 15m long trench (750m deep x 500m wide) will be placed outside the zone of notification and only 1 pole will be erected inside this area. Works have been designed to minimise disturbance within the sensitive area.

At Tyrrelstown, a track lowering and under track crossing (UTX) Diversion Compound will be located to the west side of the railway tracks and to a limited extent on the east side of the tracks. The works are proposed in large open tillage fields (Plate 20-1) where the land gradually rises to the north with views to Baldongan Church (DU005-038). An interconnector gas pipeline project, traversed the fields in Tyrrelstown Big townland and during construction in 1994 revealed a burnt stone spread (21m x 28m) with an associated trough (RMP DU008-055, Licence Ref 93E0079). This site is located approximately 40m to the west of the proposed works and demonstrates the potential to reveal below ground archaeological remains.

Plate 20-1 Tyrellstown Big – Sloping field at the site of the compound

In Ballykea townland, underground diversions are planned, these will take the form of trenching (750mm deep x 500mm wide) in the road (Ballaghstown Lane and Feather Bed Lane) and in the fields edges that align the railway to the east and west for an approximate distance of 275m until they tie in with a proposed UTX compound and removal of overhead poles. All invasive works will be archaeologically monitored to ensure the identification of any newly revealed feature, find or deposit of archaeological interest so preservation in situ or by record can be recommended by the adjudicating authority.

Baldongan Church (a National Monument) and graveyard (RMP DU005-037001/002) is located in a prominent position uphill and 850m to the west of the proposed works. These proposed works will have no effect on this significant monument. Closer to the proposed works in Blackland townland, is a recorded field system (DU0008-052003) revealed through geophysical and survey and aerial imagery. This site contains a mosaic of rectilinear, circular and petal shaped enclosures and other features extending over an area of more than 1ha and is located approximately 140m to the southeast of the proposed works at its closest point. This type of below ground site with no surface expression, highlights the below ground potential within these agricultural lands.

Skerries South substation and Construction Compound is located to the east of Skerries Golf Club in a large undulating tillage field, full of crop (see Plate 20-2). There is a mature tree boundary and stone wall to the north of the field at Golf Links Road, these features are probably remnants of the former Hacketstown House Demesne. A gate lodge shown on the OS first edition 6 inch map, now appears in ruins in the copse of trees alongside the road. Geophysical survey was unable to take place at this location due to unsuitable ground conditions.

At the proposed compound location there is the potential to reveal subsurface archaeological finds and deposits during earthmoving and construction works.

Plate 20-2 Looking south Hacketstown Townland

In Milverton townland to the north of the road, there is a tradition of burials in ‘stone coffins’ being revealed (RMP DU005-032). Also, a fragment of human skull (NMI 1986:140) was found as a surface find in a ploughed field in Milverton known as ‘Danes Burial Ground’. In this townland to the north of the road, two utility compounds are proposed on either side (east and west) of the tracks both measuring approximately 60m x 40m where directional drilling is to take place (Chainage 29,140). Decommissioning of overhead poles will also take place along the railway line. Access tracks will be alongside the field boundaries. These works are described in Chapter 18 (Material Assets – Utilities) under UTX7. Any excavation work at this location has the potential to reveal below ground remains. As such a geophysical survey took place (Leigh 2023) and no anomalies of a clear archaeological strength and nature were detected.

Plate 20-3 Hacketstown - Mature Field Boundary looking southwest towards the railway bridge

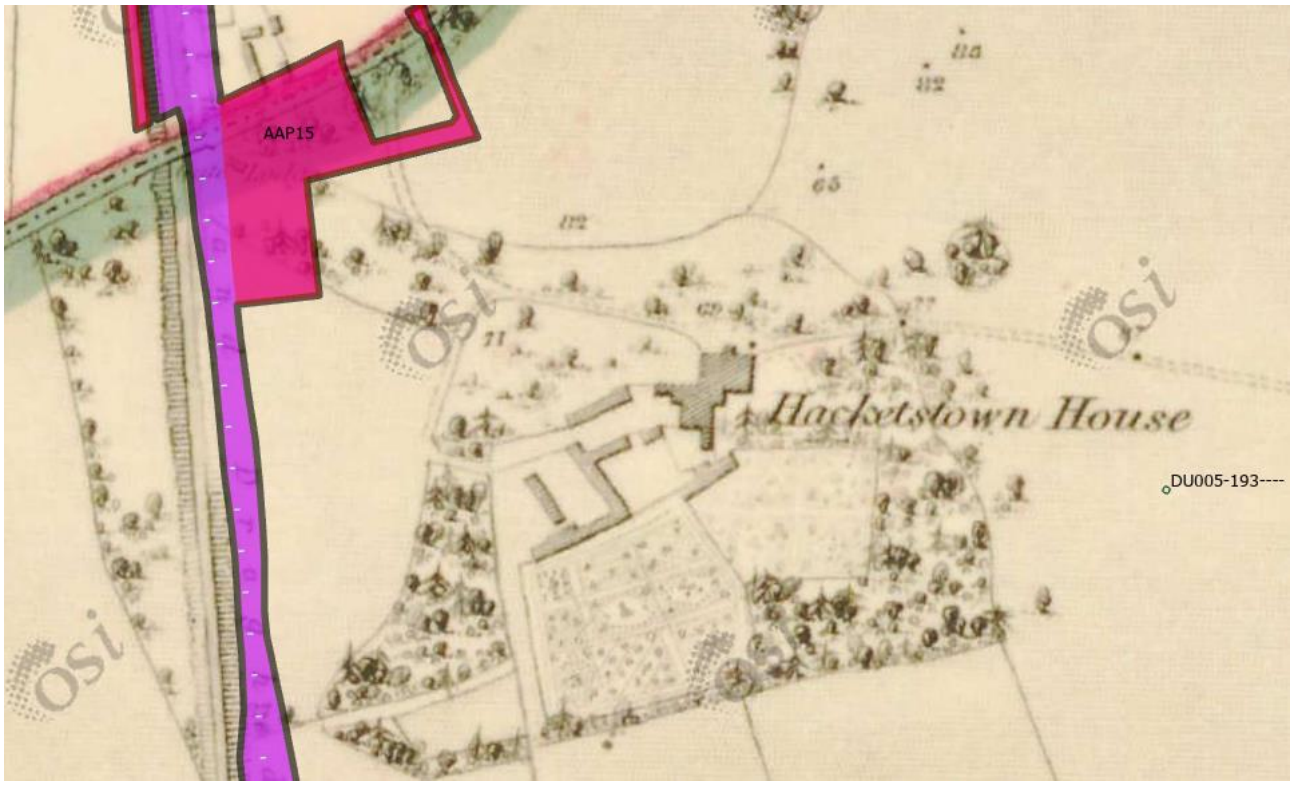

Image 20-22 1st edition six-inch OS (1837) showing the location of Skerries South Substation and Compound (approx. location)

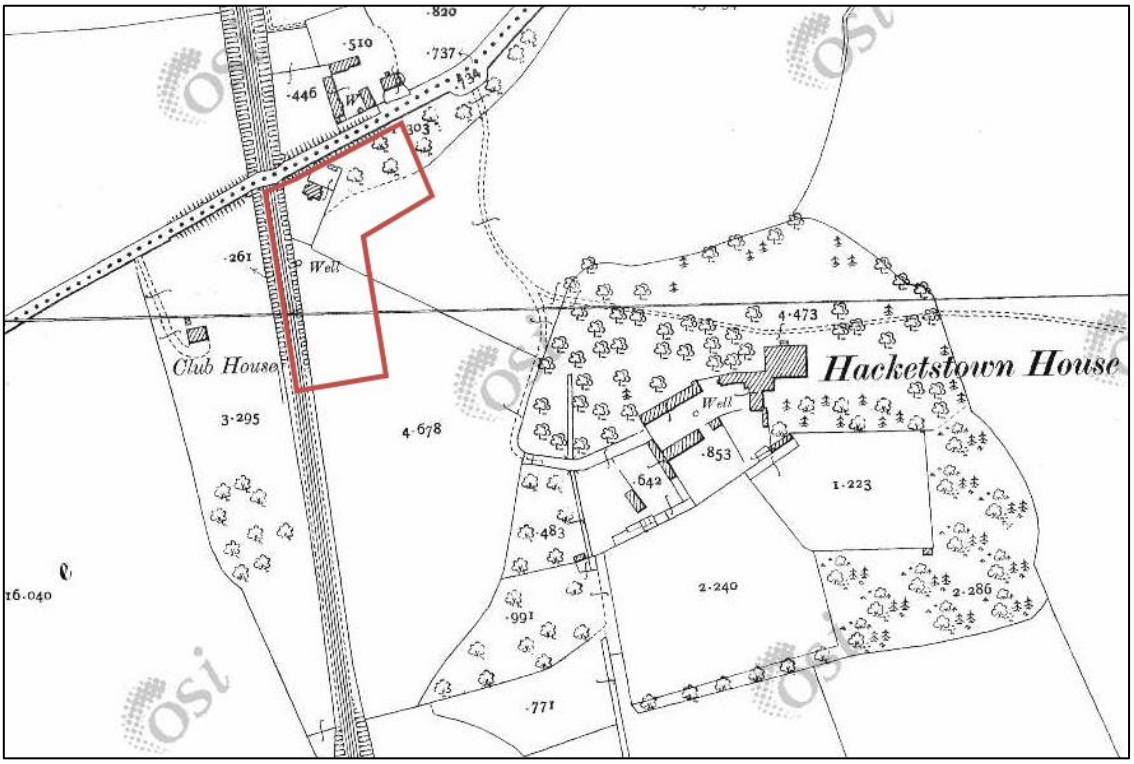

Image 20-23 Revised 25-inch OS map showing the location of Skerries South Substation and Compound (approx. location)

Line wide works are proposed at Skerries Station, but this is in the location of an old sand and gravel/ ballast pit (Revised 25-inch OS map) and is previously disturbed and now presents as rough ground covered in vegetation and scrub and a carpark area located to the east of the railway. West of the railway, an existing track will provide access to utility diversions. This track traverses the ZON for an enclosure (DU005-151) that was detected through aerial imagery and verified as archaeological in nature through test excavation. No archaeological impact is anticipated in this area.

Skerries North Substation and Construction Compound are located in Barnageeragh townland where there is a long standing tradition of revealing flint artifacts. Development to the north of the railway line revealed a prehistoric archaeological landscape (Section 20.4.3). The area proposed for works presents as a large pasture field sloping to the railway at the northeast. At the southwest end of the field there are good views to the sea. As previous findings attest to, there is a potential to reveal subsurface archaeological finds and deposits during earthmoving and construction works associated with this compound. Access to the field is afforded by the original laneway that would have provided access to the coast but was made into a cul-de-sac due to the development of the railway in the 1840's. The laneway is shown on the 1st edition OS mapping.

A geophysical survey (Leigh 2023) of the lands revealed isolated responses that may be of interest however, there is no clear pattern and these responses are more likely to result from natural variations in the topsoil. A temporary landtake will be required off the Barnageeragh Road within a constructed road and track that led to an area used to stockpile spoil for previous housing developments (Chainage 31,900-32,400). This road will provide access to the underground and overground diversions (UGD V2 and UG DV6), proposed at Balbriggan Road (R127).

The ZON of an upstanding mound (DU005-017001) maintained within a green space within a residential estate (Hamilton Hill) and a flint scatter (DU005-017002) are traversed by this road. However, as the road is constructed and no further excavation work is proposed in the vicinity of either of these archaeological features, neither monument will be affected by this proposal.

Underground and overground diversions (UG DV2 and UG DV6) will require trenching in the road. Part of the low stone wall associated with the railway bridge will have to be temporarily removed to facilitate the diversion works. The wall will be reinstated after the works are complete.

Plate 20-4 Skerries North compound, the field slopes to the railway in the east

Plate 20-5 Access route to Skerries North Compound

A memorial is located at the junction of a local road with Barnageeragh Road and Baltrasna Road (ITM 722675 760665). The memorial presents on a low white washed wall, delineated by the road's edge over a small stream. The memorial is dedicated to Thomas Hand who was shot nearby by British Forces in 1920. No works are proposed in this area. It must be ensured that construction works will not disturb this feature of cultural heritage interest and that it is protected during the course of the works.

Plate 20-6 Memorial Plaque

An UTX diversion compound is located immediately to the south of Balbriggan Town to the east and west of Skerries Road. The disturbance is to be limited to the edges of a field that currently has crop in it. There is no recorded archaeological presence in the vicinity, however a crop mark was noted from an aerial image (Digital Goble, 2012) to the south of the field. This curving arc was not detected on any other aerial image and it is likely that it corresponds with a stand of trees (a semicircular area of woodland) that is shown as part of the demesne lands associated with Hampton Demesne on the first edition six-inch Ordnance Survey map. It is located outside the redline boundary for the Proposed Development.

A geophysical survey recorded some isolated responses and although it is possible that these are of archaeological interest, they may equally represent more deeply buried ferrous. No clear archaeological pattern is evident (Leigh 2023).

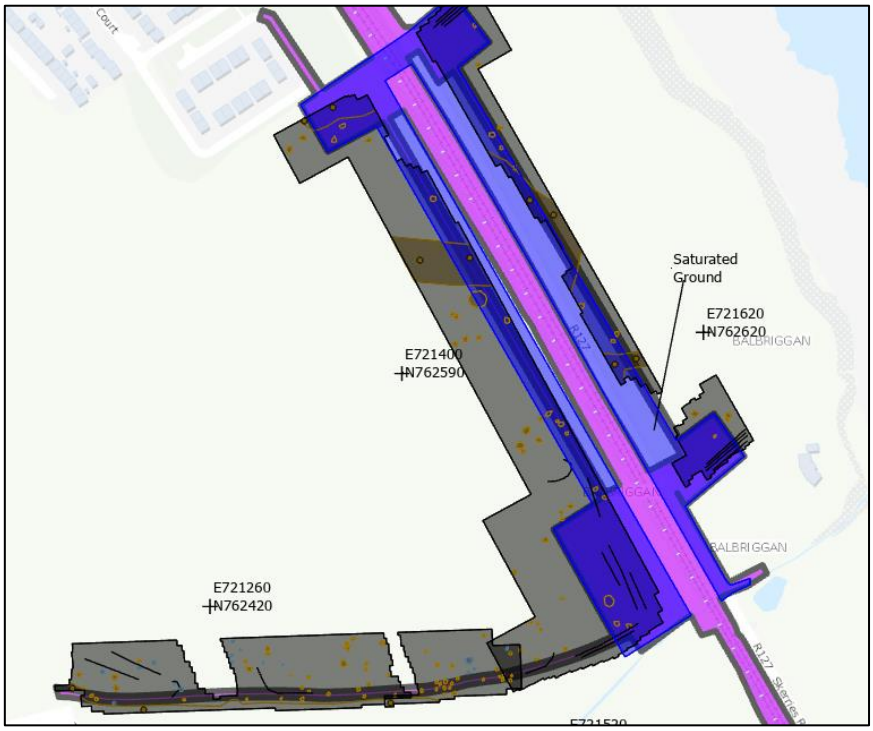

Image 20-24 Area of proposed (blue) and undertaken geophysical survey (grey)

Plate 20-7 Location of UTX Diversion Compound, south of Balbriggan

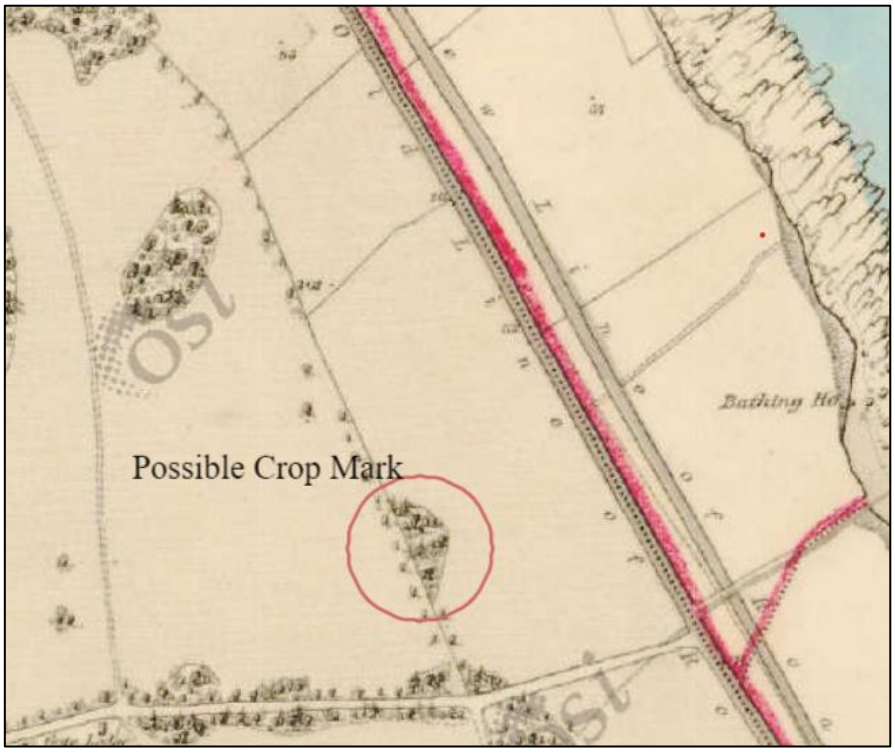

Image 20-25 Woodland feature associated with the Hampton Demesne

At Balbriggan there is a proposed viaduct works compound (Chainage 35+980 to 36+020). The area is currently occupied by a carpark and it is anticipated that there will be no below ground excavation works required. Previously, monitoring has taken place at Balbriggan Harbour (Licence Ref. 03E1920) (located to the east, northeast of the proposed works) in advance of an apartment development. The site, though a carpark was the site of a coal yard and through excavation a partition wall of the old coal yard and a cobble floor was revealed.

The proposed Balbriggan substation and linewide Construction Compound is located in Bremore townland (Chainage 37+600 to 37+735). Section 20.4.3 of this chapter sets out the significant and varied type of monuments within this townland, ranging from Bemore Castle, church and graveyard (RMP DU002-0020001-003), and the Bremore passage tombs (RMP DU002-001001-005), a barrow site, an enclosure, a quay, field systems, settlement and a fulacht fia. No features were noted from aerial photography and historic OS maps show the area as open fields. However, as the proposed works are located in an agricultural tillage field with little disturbance, there is potential to reveal subsurface features. In the lands surrounding the proposed Balbriggan substation and linewide Construction Compound, widescale geophysical survey (Licence no. 20R0032) has taken place for the proposed regional park at Bremore (Image 20-3 and Image 20-4) (ACS 2021). Lands adjacent to the south and east of the compound area have revealed limited potential. A geophysical survey of the site was proposed but access could not be secured (Leigh 2023).

The utility diversions at Knocknagin will utilise an existing track and will involve an overhead diversion where new poles will be added and existing poles will be removed.

These works will take place within the grounds of Lowther Lodge and the former entrance way will provide access over the railway line. 'Lowther Lodge' is shown on the 1st edition six-inch OS mapping (1837) and again shown as 'Lowtherstone' on the revised 25-inch OS mapping, it was the residence of Townley Pattern Filgate Esq.

Overall and as discussed, there are five proposed substations at Donabate, Rush & Lusk, South Skerries, North Skerries and Balbriggan. New electrification in the existing rail corridor will take place from the Malahide Viaduct to Drogheda MacBride Station (throughout Zone C and D and in Zone E). This will require OHLE support works. Localised track lowering works are to take place at OBB39 (Rush and Lusk Road), OBB44 (Whitestown-Haynestown Road and OBB55 (R127 Lawless Terrace, Balbriggan) as shown on mapping accompanying the draft Railway Order, utility diversion works will take place throughout.

20.4.6.5 Zone D South of Gormanston Station (Fingal border) to Louth/ Meath border

A linewide work compound (Chainage 40+070-40+220) is located in a level grass field to the northwest of Gormanston Station with scrub boundaries. In the field to the west of this, archaeological monitoring (Licence Ref. 02E0121) took place during the construction of the Gormanston Above Ground Installation (AGI) Reception Terminal. An assemblage of lithics that included struck flakes and debitage, a core and a plano-convex knife and a localized area of intense burning which may have been a hearth were revealed. There is a potential to reveal buried archaeological material during earthmoving activities in this greenfield environment. Geophysical survey (Leigh 2023) identified a circular response (6m in diameter) that is indicative of a circular ditched feature and is considered to be of clear archaeological potential – this response was identified outside and to the west of the lands proposed for the compound. Responses indicative of a wider field system, possibly associated with the circular ditched feature were also detected along with isolated pit type features that are considered to be of archaeological potential within the lands proposed for the compound.

To the south of Gormanston Station, overhead diversions are planned at Chainage 39+500-39+640 where there will be one ESB pole erected (OH-PD14), this will be carried out to the west of ME029-021. In light of the remains of a megalithic passage tomb at the cliff edge, a geophysical survey of these lands has taken place. At the south end of the survey area numerous amorphous responses were identified. Although it is possible that these responses represent more recent ground disturbance, an archaeological interpretation must be considered. They may represent fragmented remains of archaeological pits and ditches. The proposed works are taking place outside the area of interest identified by the geophysical survey and outside the ZON associated with the monument. Works have been limited in this area to take account of the archaeological potential and prior to construction, archaeological testing will take place to confirm the design approach.

At Chainage 39+720, UTX11 is proposed which will require an underground utility diversion and access routes into the Construction Compound. Geophysical survey recorded no responses of archaeological potential at this location on either side of the railway line.

Plate 20-8 Proposed location for compound at Gormanston Station

Image 20-26 Location of the Gormanston Station compound and the AGI where archaeological material was revealed through monitoring Geophysical Survey depicts a circular feature that was detected to the west of the compound.

In Irishtown townland, in lands that form part of the army camp, a substation and Construction Compound is proposed. The area is shown as open fields with a training area for the Irish army to the east of Irishtown House on the historic OS maps. Today, it presents as a level field with lush grass and there are no discernible features within the proposed works area. A railway bridge with a sentry observation cover provides local access to the coast and is a reminder of the military presence in the area. The parapet modifications are discussed in Chapter 21 (Architectural Heritage).

Plate 20-9 Gormanston (Irishtown) Substation and Construction Compound looking south

Immediately south of the River Nanny and the Laytown Viaduct there are proposed works compounds for the viaduct and UTX Diversion compound. As part of the construction works, trenching is proposed on either side of the track (UTX4) as well as directional drilling under the track. All ground breaking has the potential to reveal archaeological features. Access to the proposed works is provided along the existing road network and along the boundary of fields. The nearest monument is a holy well venerated to St Colmcille (ME028-064) in Corballis townland located 48m west of the redline boundary for the Proposed Development, this monument and its ZON will not be affected by any proposed works.

North of the River Nanny, a viaduct works compound is proposed at chainage 44+700 on disturbed land where works have created mounds of earth in places and there is evidence of abandoned burnt out vehicles. No works are proposed in the river.

Plate 20-10 View to viaduct works compound to the rear of the bottlebank, Laytown

A linewide works compound (Chainage 44+900) is proposed to the north and northwest of Laytown Station in Ninch townland, in a field of long grass that is set down from the station and falls away to mature field boundaries to the west.

This area was subject to a geophysical survey, no responses of archaeological interest were recorded, a linear trend that most likely represents a former field division was noted at the south of the survey area.

Plate 20-11 Proposed location for linewide works compound, Laytown

A UTX Diversion compound is proposed within a greenspace within a residential development known as Alverno Heights in Ninch townland to the east of the railway line. During the construction of a number of residential developments in Ninch townland, large scale and significant archaeological sites were revealed (Section 20.4.4.6). This area was subject to a geophysical survey and the area was found to be magnetically disturbed (Leigh 2023). The area is limited in extent and can be archaeologically mitigated through preservation by record or design should archaeology be revealed during construction.

Utility diversions will take place (UTX3) in Ninch townland where overhead lines will be removed and trenching will take place in agricultural fields to the northwest of the railway station and access will be provided from the R150 to the south.

At Bettystown (Sevitsland townland), access to Bettystown substation and Construction Compound has been reconfigured to avoid residential housing currently under construction and the ZON that surrounds an enclosure site that was detected through aerial imagery (ME021-031). The area for the substation and Construction Compound has been previously topsoiled stripped and disturbed during the construction for the adjacent housing development as shown on Plate 20-12.

Plate 20-12 Shows the disturbed nature of the Bettystown compound area and the proximity of recorded monuments

At Betaghstown townland, utility diversions will require the removal of poles and underground trenching will take place along the road and through the underpass (UG DV1) and in the field to the northeast of the railway. All earthmoving activities in a greenfield environment will require the presence of an archaeologist to monitor the works.

At Colp East, an oval shaped cropmark (ME021-037, a ringfort) has been identified on Google Earth aerial imagery (21/07/2021) measuring 38m north northwest and 32m northeast-southwest. The site is located to the south of the railway. Overhead diversions are proposed in the vicinity of this monument but have been designed to be located outside the zone of notification that surrounds this cropmark, the works include the removal of 1 existing pole and the erection of 4 new poles (OHDV1). This work even though localised in nature and very small in scale, is still considered to be of archaeological potential given the archaeological landscape and potential at Colp. As such a geophysical survey of this field took place and while no clear archaeological pattern was revealed, it is possible that a curvilinear trend and some isolated responses could represent plough damaged archaeology, equally though, it is possible that these responses represent natural variations in the underlying geology. Work within this field, will avoid the curvilinear trend and isolated responses as identified in the geophysical survey as well as the ZON for the ringfort site (ME021-037). An access route for these works that will traverse the ZON for the historic settlement cluster at Colp East, Colp West and Mornington (ME021-012) is proposed.

At Colp, a track lowering works Construction Compound is proposed to the east of Colpe Road in Colp East townland, it is located 130m south of the ZON for the historic settlement at Colp and south of the railway line. The area was subjected to a geophysical survey and while the ground was very wet, no responses of an archaeological interest were recorded.

Plate 20-13 An enclosure in Colp East (ME021-037) (Source: Google Earth)

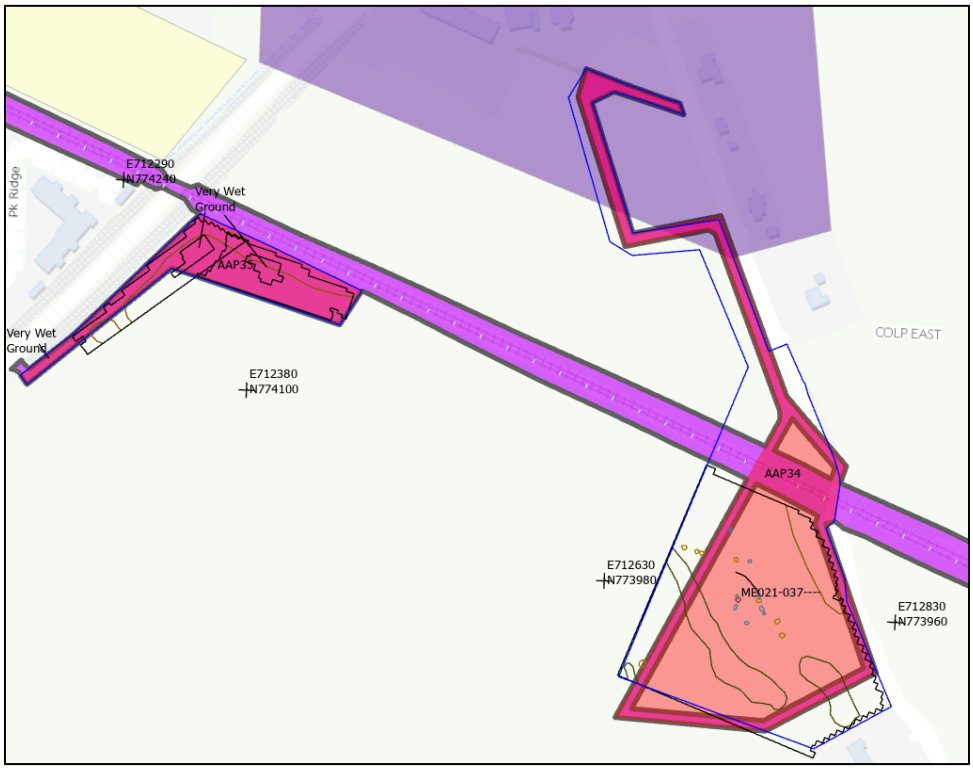

Image 20-27 Archaeological Geophysical Survey (Leigh 2023) at ME021-037 and the track lowering compound at Colp East.

Plate 20-14 The location of the track lowering works compound at Colp under crop

A UTX diversion Construction Compound is located to the north and south of the existing railway track at Chainage 50+280 in Colp West townland. To the north of the track, the area has been previously assessed through geophysical survey (18R0181, TARGET) and test excavation (18E0597, Archer) while to the south the lands now occupied by a housing development were archaeologically assessed and excavated (Licence Refs. 99E0472, 99E0472 ext, 01E0931, 03E0641 and 03E0660) and recorded as ME020-043001-011 (Image 20-5) (section 20.4.4.4.2). The area proposed for the Construction Compound located immediately south of the railway is currently under mature trees and cannot be assessed by geophysical survey or test excavation in advance of the Proposed Development.

To the north of the railway track, in the area proposed for the UTX diversion Construction Compound, no archaeological features were revealed as a result of the geophysical survey and test excavation (Images 20-7 - 20-9). Access to these works stops short of the zone of notification for the historic settlement cluster at Colp East, Colp West and Mornington (RMP ME 021-012). In the wider landscape, the recent excavations in Colp (18E0597) (section 20.4.4.6) have revealed a field system possibly associated with the early medieval enclosure (ME021-011002) and cemetery site (ME021-011001) and the wider historic settlement of Colp (ME021-012) to the north of the proposed works. Part of the UTX diversion travels in fields north of the railway, in an area that is deemed to be archaeologically sensitive (chainage 50+000-50+200) and any work within this locality has an archaeological potential.

20.4.6.6 Zone E Drogheda Station and surrounds

There are a number of works proposed in the environs of Drogheda MacBride Station including the replacement of an overbridge (OBB80/80A/80B) (shown as Newtown Bridge on the OS historic maps) and the reconstruction of underbridge UBK1 (Dublin Road Bridge). Works within the Drogheda MacBride Station include modification of the Platform Canopy and reconstruction of the bridge deck OBB81 (Drogheda Station Footbridge), these are discussed in Chapter 21 (Architectural Heritage).

Large scale earthmoving activities to the north of the railway track and station will involve a bridge works compound, a substation and Construction Compound, all located in a greenfield environment, in fields currently under crop and partly being used as a construction corridor for a residential development. These fields slope to the south overlooking the River Boyne. Archaeological geophysical survey, test trenching and excavation (19R0005, 19E0017 and 19E0433) has taken place throughout the majority of these fields.

Further compounds are proposed for hardstanding areas to the south of the station and include the station and bridge works compound and the access subway to the DMU depot and Construction Compound. Minor bridge works construction compound and a UTX Diversion compound are proposed in previously disturbed, scrub ground to the south of the existing railway track at chainages 51+700 and 51+900. Works will also include diversions to utilities including the removal of polesets and an angle-tower and the insertion of underground cables. Reprofiling of an existing earthwork bund at Drogheda Depot and track works on the Drogheda Freight Sidings and on Stabling Roads 7a and 7b will take place.

Image 20-28 McGrath's Lane Bridge – Proposed Construction Compounds

Image 20-29 Drogheda Substation - Proposed Construction Compound and Access Routes

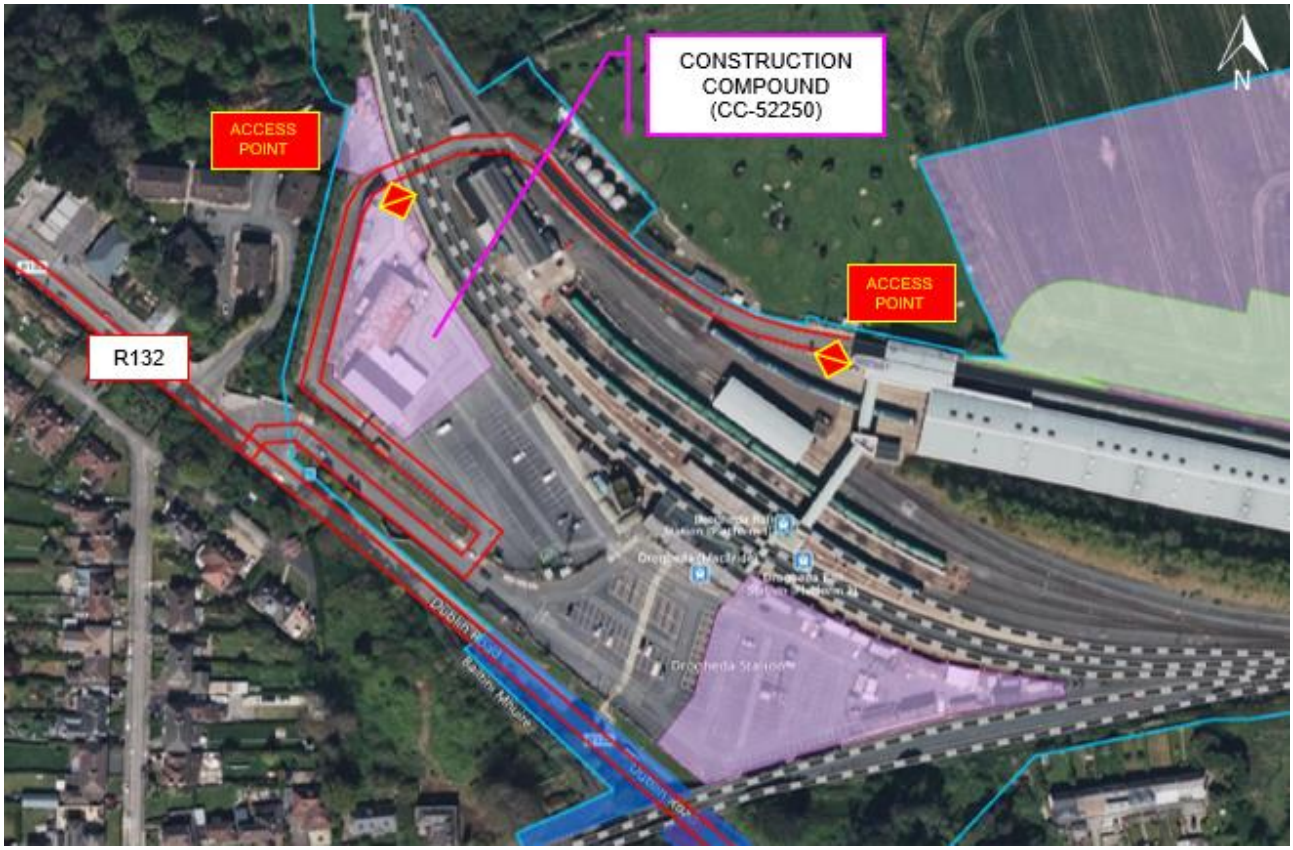

Image 20-30 Drogheda Depot – Proposed Construction Compound and Access Route

A 'Well' is shown on the 25 inch OS map in Newtown townland to the north of the avenue leading to Newtown Lodge. It is not named on any other historic map but is described as an 'open well' on the modern OSi map. This area is overgrown with scrub and lies beside power lines. During the site inspection, no superstructure could be identified within the heavy vegetation (Plate 20-16). This well is located within the linework and bridge works compound (Plate 20-17). Also, within this compound, the ground has been archaeologically assessed through a geophysical survey and test excavation, see plates 20-18 to 20-20 (Licence Ref 19E0433 and 19R005). This work revealed an enclosure and four graves that have now been excavated and dated to the early medieval period.

Aerial photography has also revealed that part of the area proposed for the Substation Compound has been previously topsoil stripped and disturbed (Plate 20-17 and 20-1821). The access, main compound and worker welfare facilities to the north of the railway Station have previously been archaeologically assessed. The only area still to be assessed is the area highlighted as the substation compound (Images 20-27 and 20-28). All greenfield areas that form part of the construction activities and require topsoil stripping/ earth moving will be archaeologically assessed.

Plate 20-15 Area of the well as shown on the historic 25-inch OS map

Plate 20-16 Lands proposed for the linework and bridge works compound

Plate 20-17 Image showing the location of archaeological test trenches in Newtown townland in the area of the proposed for the main substation compound, bridge works compound and worker welfare facilities (February 2019) (Source: Google Earth Pro)

Plate 20-18 Image showing additional test excavation taking place prior to the construction of a residential development and access track (March 2020) (Source: Google Earth Pro)

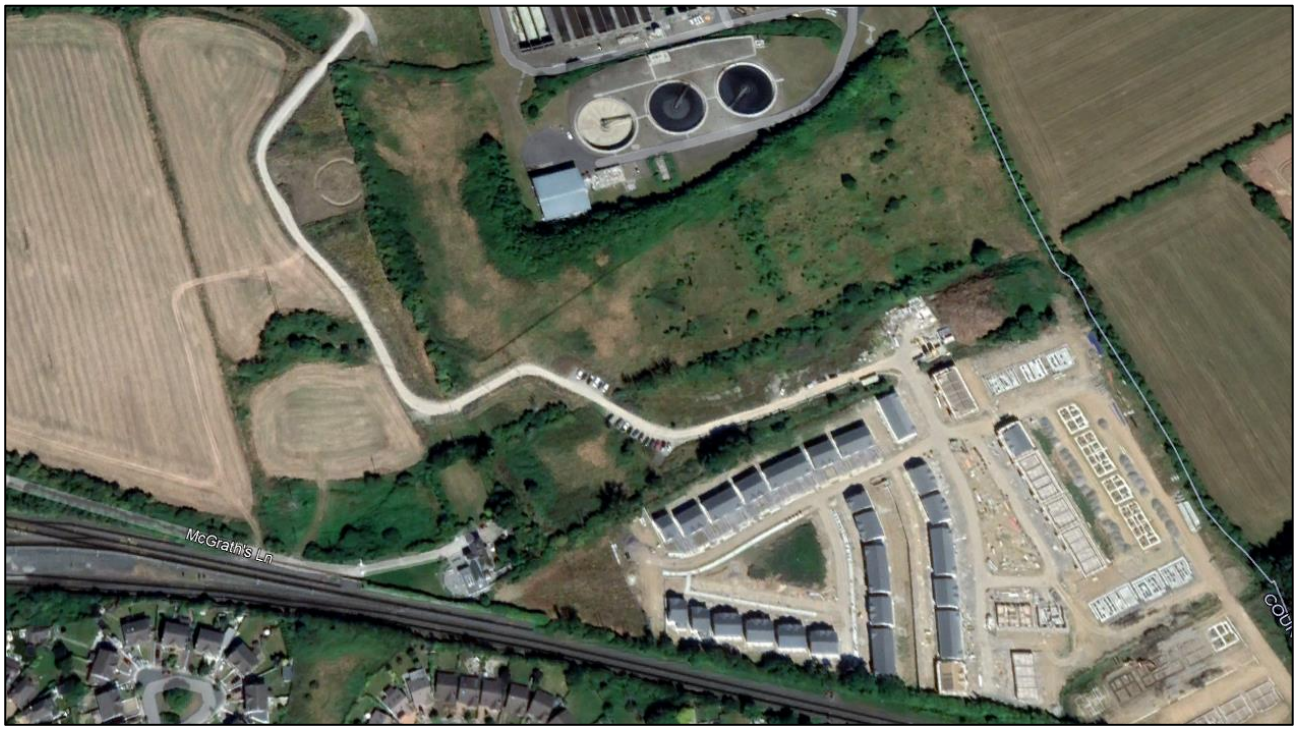

Plate 20-19 Image showing the construction of Newtown View and the completed excavation of the enclosure where the access road was deliberately placed to avoid the archaeological site (August 2022) (Source: Google Earth Pro)

Plate 20-20 Image showing the area proposed as part of the Drogheda substation was previously topsoil stripped and disturbed (May 2013) (Source: Google Earth Pro)

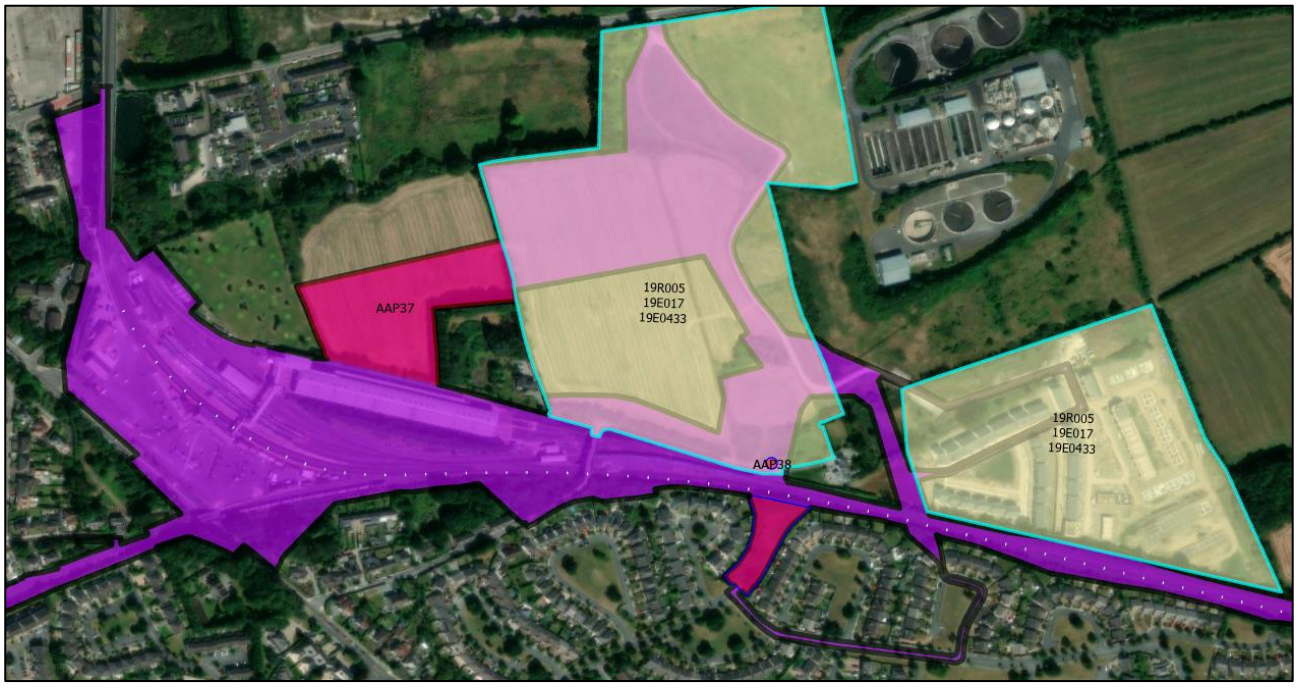

Plate 20-21 Areas previously archaeologically investigated and areas of archaeological potential (AAP)

20.4.7 Geophysical Results

A geophysical survey took place across greenfield areas throughout the Proposed Development that will be subject to construction activity and will involve ground disturbance and therefore has the potential to reveal below ground archaeology. In total 19 areas were proposed for survey, however, it was found that one of these areas had been previously subjected to a geophysical survey and test excavation in 2019 so this area was omitted and the results from this survey used to inform this project. Permission to carry out the work and access the lands was sought but not granted in a further two areas and due to challenging ground conditions, five areas were not suitable for survey.

Eleven areas were subject to survey, twelve if you include the area previously surveyed (Licence Ref 19R016). Most of the data sets are affected by modern magnetic disturbance from the rail line. Few responses of interest were recorded.

However, responses of clear archaeological potential were recorded in Gormanston 1. Responses of potential interest were also noted in Gormanston 2, although an archaeological pattern is difficult to discern., At Colp East a possible archaeological response was detected. At Hampton Demesne and Barnageeragh., while there was no clear pattern, it is possible that the anomalies could be of archaeological derivation, however, they could equally be natural or agricultural in nature. Below is a table of the results and the geophysical report forms Appendix A20.3 to this chapter. Figure 20.2 Geophysical Surveys depict the findings and how they relate to the Proposed Development.

A detailed gradiometer survey detects subtle variations in the local magnetic field and measurements are recorded in nano-Tesla (nT). Some archaeological features such as ditches, large pits and fired features have an enhanced magnetic signal and can be detected through recorded survey.

Table 20-16 Zone B Geophysical Results

Townland/ AAP	Licence	Proposed Works & Potential	Chainage	Results	Assessment Method
Maynetown, Dublin AAP4	N/A	The proposed works area for a compound is located in an area of rough ground, previously undisturbed. A newly revealed earthwork (DU015-0152) has been identified (May 2023) 260m east of the proposed works.	9+860-11+100	Not suitable for survey. Overgrown and uneven under foot.	Test Excavate

Table 20-17 Zone C Geophysical Results

Townland/ AAP	Licence	Proposed Works & Potential	Chainage	Results	Further assessment Method
Corballis, Dublin AAP7	23R0476	Demonstrated below ground potential with adjacent developments. Proposed substation and Construction Compound is located in a field currently under crop.	18+600-18+880	Not suitable for survey. Ground saturated, overgrown and crop left in the ground.	Test Excavate
Effelstown/ Rogerstown, Dublin	23R0477	At Rush and Lusk Station, an OHLE maintenance compound is proposed to the east of the existing station and carparking facilities. The railway tracks are to be lowered underneath the existing bridge.	23+300-23+620	The data is dominated by modern magnetic disturbance. No responses of interest were recorded.	No further assessment
Tyrrelstown, Dublin AAP13	23R0478	Track lowering and UTX Diversion Compound will be located to the west side of the railway tracks and to a limited extent on the east side of the tracks in large tillage fields	25+060-25+820	Not suitable for Survey. Heavy Plough	Test Excavate
Hacketstown, Dublin AAP15	23R0478	Works for Skerries South substation and Construction Compound are taking place in a large undulating tillage field within the former grounds of Hacketstown House Demesne.	28+910-29+025	Not suitable for Survey. Heavy Plough	Test Excavate
Milverton, Dublin	23R0479	Utility diversions (UTX 7) East and west in a greenfield environment	29+040-29+200	In the eastern half of the data, there are isolated responses with a linear trend. This most likely	

Townland/ AAP	Licence	Proposed Works & Potential	Chainage	Results	Further assessment Method
				represents a former field division. Further isolated responses have no clear pattern and may equally represent more deeply buried ferrous debris. In the western half, parallel linear trends result from agricultural activity. Magnetic disturbance is dominant and results from the adjacent trainline.	
Barnageeragh, Dublin AAP18	23R0480	Skerries North, substation and Construction Compound are proposed in an area where there is a long-standing tradition of revealing flint artefacts and sites.	32+100-32+220	Isolated responses may be of interest. However, there is no clear pattern, and these are more likely to result from natural variations in the topsoil. A possible pipe and cable appear to run through the dataset.	Test Excavate
Hampton Demesne, Dublin AAP20	23R0482	A UTX Diversion compound is proposed on either side of Skerries Road. Lands associated with the former Hampton Demesne.	34+100-34+580	The eastern half of the data comprises of magnetic disturbance and numerous ferrous responses. Linear trends are likely the result of agricultural activity. The western half comprises of numerous ferrous responses. Some isolated responses have been recorded. Although it is possible that these are of archaeological interest, they may equally represent more deeply buried ferrous. No clear archaeological pattern is evident.	Test Excavate
Bremore, Dublin AAP22	23R0481	Works associated with Balbriggan substation and linewide Construction Compound are located in an agricultural tillage field with little disturbance, there is potential to reveal subsurface features. Significant archaeological monuments are located in this townland.	37+600-37+730	Access Denied	Test Excavate

Table 20-18 Zone D Geophysical Results

Townland/ AAP	Licence	Proposed Works & Potential	Chainage	Results	Further Assessment Method
Gormanston1, Meath AAP26	23R0483	Proposed linewide works compound located in a level grass field.	40+070-40+220	A circular response (diam.6m) is located in the north-west of the data. This is indicative of a circular ditched feature and is considered to be of clear archaeological potential. Surrounding the probable circular ditch are a series of curvilinear responses which are indicative of ditched features. These may represent a former field system, possibly associated with the circular ditched feature. Elsewhere, isolated responses have no clear pattern. However, they may represent isolated pit-type features and are considered to be of archaeological potential.	Test Excavate & Avoidance by design
Gormanston2, Meath	23R0484	Limited works associated with an overhead diversion. The only ground works is the erection of one ESB pole. This is located outside the area of interest identified by the geophysical survey and outside the ZON associated with the monument.	39+500-39+650	In the south of the data there are numerous amorphous responses. Although it is possible that these responses represent more recent ground disturbance, an archaeological interpretation must be considered. They may represent fragmented remains of archaeological pits and ditches. This interpretation is cautious.	Avoidance by design
Gormanston3, Meath	23R056	An underground utility diversion (UTX11), access route and Construction Compound	39+700-39+840	No responses of archaeological potential were recorded.	No further assessment
Irishtown, Meath AAP27	23R0485	Gormanston substation and Construction Compound. The lands form part of the army camp.	41+280-41+420	Not suitable for Survey. Magnetically disturbed	Test Excavate
Ninch (east)	23R0486		44+860-44+980	This area is magnetically disturbed.	No further assessment

Townland/ AAP	Licence	Proposed Works & Potential	Chainage	Results	Further Assessment Method
Ninch (west)	23R0486	A linewide works compound is proposed. Utility diversion works are proposed (UTX3) – including trenching, compounds, OH poles removal and insertion, directional drilling and access ways. Located to the west of the station, in a green field that falls away to mature field boundaries to the west. Potential to reveal below ground remains.	44+860-44+980	Magnetic disturbance from the adjacent train station dominates the data. No responses of archaeological interest were recorded. A linear trend in the south of the data most likely represents a former field division.	No further assessment
Sevitsland Meath	23R0487 &19R016	Bettystown substation and Construction Compound and access track. Now under development for residential housing	46+860-46+960	Previous geophysical survey and testing took place in advance of a residential development.	No further assessment
Colp East (S) AAP34	23R0488	Overhead divisions (OHDV1). Works at this location have been minimized and moved to a location outside the zone of notification for the enclosure (ME021-037). An oval shaped cropmark (ME021-037) was identified on Google Earth aerial imagery (21/07/2021)	49+100	The data is dominated by broad amorphous responses, indicative of natural variations in the underlying geology. A curvilinear trend and some isolated responses were recorded in the north of the data. It is possible that these represent further natural variations. However, it is equally possible that plough damaged archaeology is represented here. Interpretation is tentative as there is no clear archaeological pattern.	Avoidance by design
Colp East (N)	23R0488	A track lowering compound is located to the south of the railway in Colp West townland.	49+540-49+660	Very wet ground restricted some survey. The data comprised of numerous ferrous responses and magnetic disturbance. No responses of interest were recorded.	No further assessment

Table 20-19 Zone E Geophysical Results

Townland/ AAP	Licence	Proposed Works & Potential	Chainage	Results	Further Assessment Method
Newtown, Meath AAP37	23R0489	Diversion compound is proposed in scrub ground to the south of the existing railway track	51+700 and 51+900	Not suitable for Survey. Overgrown	Test Excavate.

20.4.8 Archaeological Monitoring

Exploratory ground investigations (GI) for the Proposed Development were archaeologically monitored from 24 August 2022 to 24 January 2023 under licence 22E0623 (Shanarc Archaeology Ltd 2023). Thirty-five locations, agreed with the National Monuments Service, were monitored, between Malahide and Drogheda McBride Station.

The GI works consisted of inspection pits and test pits, with some online, i.e. on or immediately beside existing railway lines, which were excavated at night, while others were sited offline in adjacent fields on agricultural land. Online GI pits were dug with a vacuum excavation machine and deepened by hand. The stratigraphy was recorded and the sampled material checked for artefacts. The findings from the on-track GI monitoring reflect 175 years of railway construction and use. The railway is constructed on a layer of ballast, 0.30m-0.50m thick, over compacted clay.

No stratigraphy or artefacts of archaeological interest, either in the vacuum-excavated pits or in the more substantial machine excavated pits, were identified.

20.4.9 Summary of Areas of Archaeological Potential

The following tables (Table 20-20 to Table 20-24) are summaries of areas within Zone A to Zone E that were identified as having an archaeological potential from the desk-based analysis and field inspection and the type of invasive works proposed as part of the Proposed Development.

Table 20-20 Areas of Potential within Zone A

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
AAP1	Fairview Park	Greenfield archaeological potential, however the land is reclaimed and previously archaeologically assessed where stratified deposits consistent with the use of the area as a landfill in the late 19th century were revealed. The potential is determined to be low/ none.	2+445-3+280	Works to take place within the existing IÉ property boundary at Fairview Depot. Works include a temporary Construction Compound, new cleaning platforms.	Negligible

Table 20-21 Areas of Potential within Zone B

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
AAP2	Kilbarrack Upper/ Grange	The area has been previously disturbed and is largely built over and includes one overgrown vegetated embankment to the east of the railway line. There is no recorded archaeological presence.	8+900-9+100	Howth Junction and Donaghmede Station – works to take place at the junction and an access way from Grange Way and existing carpark area.	Low
AAP3	Stapolin/ Maynetown	The proposed works area has been subject to previous archaeological investigation (geophysical survey 02R0197 and licenced archaeological testing and monitoring 04E1024). The road infrastructure including the proposed access route has been previously constructed. The area has been used for the storage of construction material has been disturbed in the past.	9+860-11+100	Clongriffin Station, proposed works include track modification, a new turnout, a turnback and station works compound, a retaining wall. Given the level of disturbance and previous archaeological investigation, the potential to reveal subsurface archaeological features within the proposed works area is determined to be low.	Low
AAP4)	Maynetown (Clongriffin)	A newly revealed earthwork (DU015-0152) has been identified (May 2023) 260m east of the proposed works. The compound is located to the north of the Mayne River.	10+780-11+100	Construction Compound	Medium
AAP5	Malahide Estuary	Historically as shown on the OS maps (1837 and 1870), this area was reclaimed from the estuary. Given the existing hard standings (currently used as carparks) where the	15+865-16+480	At Malahide Station compounds are required as well as track modifications and a retaining wall.	Low

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
		compounds are proposed and that there are no recorded archaeological monuments in the area, the proposed impact as a result of the works at Malahide is determined to be low from an archaeological perspective.			
AAP6	Malahide Estuary	There are no instream works proposed and therefore no underwater archaeological surveys are required.	16+480-17+700	Malahide Viaduct	None

Table 20-22 Areas of Potential within Zone C

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
AAP7	Corballis	Given the greenfield and agricultural nature of the lands and the demonstrated below ground potential from adjacent developments (Licence Refs. 17R0170, 17E0630 and 17E0094), it is considered that there is a medium archaeological potential to reveal below ground archaeological features and sites within the lands proposed for the substation and Construction Compound at Donabate. This area was not suitable for geophysical survey.	18+600-18+880	Proposed Donabate substation and linewide works Construction Compound	Medium
AAP8	Corballis	Previous archaeological investigation has revealed archaeological sites (McLoughlin 2007) in the fields proposed for utility diversion works.	Approx. 19+400	Utility Diversions encompassing the removal of 4 poles (localised disturbance) and access way (that will require no excavation) in greenfields.	Low
AAP9	Beaverstown	Archaeological features (DU012-083) were identified to the west of the railway line in advance of a residential development and excavation works are in this vicinity. Given the level of disturbance and limited construction activity, the potential to reveal archaeological remains is anticipated to be low.	19+680-19+940	At Donabate Station a proposed linewide works compound is proposed	Low

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
AAP10	Rogerstown	Greenfield potential and minimal disturbance	22+900-23+040	Utility diversion works - removing and inserting poles for OH cables	Low
AAP11	Effelstown/ Rogerstown	This is located in agricultural fields The nearest monument is a cist burial (DU008-035) which is located 350m to the east of the proposed works. Geophysical survey was carried out and no responses of interest were recorded.	23+300 – 23+620	At Rush and Lusk Station, an OHLE maintenance compound is proposed to the east of the existing station and carparking facilities. The railway tracks are to be lowered. underneath the existing bridge.	Low
AAP11	Effelstown	Greenfield potential to the north of the Rush Lusk Railway Station	23+772	Utility diversion compound	Low
AAP12	Effelstown	Levelled enclosure (DU008-011) with NVT. Identified through an aerial photograph 1972	24+000	There will be no impact to the monument itself. Works have been designed to avoid the site and utility diversion works are located in and around the zone of notification for this enclosure. 1 pole will be inserted within the zone of notification for this enclosure site. The excavation of a 15m long trench will take place outside of it.	Medium
AAP13	Tyrrelstown	The works are proposed in large open tillage fields where the land gradually rises to the north with views to Baldongan Church. In 1994, a burnt stone spread and associated trough (RMP DU008-005, Licence Ref 93E0079) was revealed approx. 40m west from the proposed works. Area not suitable for geophysical survey.	25+060-25+820	Track lowering and UTX Diversion Compound will be located to the west side of the railway tracks and to a limited extent on the east side of the tracks	Low/ Medium
AAP14	Ballykea	Greenfield Potential. Closest recorded monument is 140m to the southeast of the proposed works.	27+000 – 27+400	Utility Diversion works including trenching and removal and insertion of poles for O/H cables	Low
AAP15	Hacketstown	Works are taking place in a large undulating tillage field, full of crop. There is a mature tree boundary and stone wall to the north of the field at Golf Links Road, these features	28+910-29+025	Skerries South Substation and Construction Compound	Medium -

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
		are probably remnants of the former Hacketstown House Demesne. At the proposed compound location there is the potential to reveal subsurface archaeological finds and deposits during earthmoving and construction works. This area was not suitable for geophysical survey.			
AAP16	Milverton	Greenfield potential, there is a tradition of burials being discovered in this townland (Cahill and Sikora 2011). No clear archaeological responses were detected with the geophysical survey.	29+040-29+200	Utility diversions are proposed (UTX 7)	Low
AAP17	Townparks	Previously this area was the location of an old sand and gravel pit (Revised 25-inch OS historic map) and has been excavated out.	29+800–30+500	An existing access track is located through the ZON for an enclosure site, DU005-151 No earthmoving is anticipated in the vicinity of the designated site.	None
AAP18	Barnageeragh	Long standing tradition of revealing flint artefacts. There is a potential to reveal subsurface archaeological finds and deposits during earthmoving and construction works associated with the compound and associated works. Isolated responses may be of interest. However, there is no clear pattern and these are more likely to result from natural variations in the topsoil. A possible pipe and cable appear to run through the dataset.	32+100-32+220	At Skerries North, a substation and Construction Compound are proposed	Medium
AAP19	Kilmainham/ Barnageeragh	Below ground potential to reveal archaeological features. Temporary removal of a section of a low stone wall associated with a railway bridge	32+100–32+600	Utility Diversions (UG DV2 and UG DV6). Trenching will be required in the road (R127)	Low
AAP20	Hampton Demesne	Former lands associated with Hampton Demesne. A cropmark, possibly a former area of woodland is located to the north and west of the	34+100-34+580	A UTX Diversion compound is proposed on either side of Skerries Road	Low

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
		proposed works. Geophysical survey detected no clear archaeological pattern although it is possible that some isolated responses may be of interest.			
AAP21	Balbriggan	The area is currently occupied by a carpark and it is anticipated that there will be no below ground excavation works required.	35+980-36+020	Viaduct works compound	None
AAP22	Bremore	The proposed works are located in an agricultural tillage field with little disturbance, there is potential to reveal subsurface features. Significant archaeological monuments are located in this townland. Access could not be gained to the lands to conduct a geophysical survey.	37+600-37+730	Works associated with Balbriggan substation and linewide Construction Compound	Medium
AAP24	Knocknagin	Greenfield potential at the historic site of a structure known as Lowther Lodge. Very limited invasive work.	38+700 - 38+800	Overhead utility diversions	Low

Table 20-23 Areas of Potential within Zone D

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
AAP25	Gormanston (South)	Greenfield potential, proposed works are located to the 140m northeast of the remains of a passage tomb (ME028-020) in small paddock fields. Geophysical survey recorded no responses of archaeological potential.	39+720-39+840	An underground utility diversion (UTX11), access route and Construction Compound are proposed.	Low
AAP24	Gormanston (South)	The remains of an excavated passage tomb (ME028-021) are located to the east at the edge of the sea cliff. In the south of the data there are numerous amorphous responses. Although it is possible that these responses represent more recent ground disturbance, an archaeological interpretation must be considered. They	39+500 – 39+650	Limited works associated with an overhead diversion (OH-PDV14). The only ground works is the erection of one ESB pole. This is located outside the area of interest identified by the geophysical survey and outside the ZON	Medium

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
		may represent fragmented remains of archaeological pits and ditches. This interpretation is cautious.		associated with the monument.	
AAP26	Gormanston (North)	Proposed compound located in a level grass field. Monitoring took place as part of the installation of an AGI located to 200m to the west and revealed an assemblage of lithics. Geophysical survey recorded a circular response (diam.6m) in the north-west of the data and to the west of the proposed compound. Possible remains of a field system detected and isolated pit type of responses.	40+070-40+220	Linewide works compound -	Medium
AAP27	Irishtown	The lands form part of the army camp. Open green field with the potential to reveal below ground archaeological features. Not suitable for geophysical survey as it is magnetically disturbed.	41+280-41+420	Gormanston substation and Construction Compound	Low
AAP28	Corballis	Ground breaking works have the potential to reveal archaeological features. The nearest monument is a holy well venerated to St Colmcille (ME028-064) in Corballis townland located 48m west of the redline boundary for the Proposed Development.	44+260-44+600	Proposed works compounds for the viaduct and UTX Diversion compound. Trenching is required on either side of the railway line (UTX4)	Low
AAP29	River Nanny/ Ninch	Located on disturbed land with existing earthworks. Located on the northern bank of the River Nanny.	44+620-44+720	Proposed viaduct works compound. No works will take place adjacent or in the River Nanny	Low
AAP30	Ninch	Located to the west of the station, in a green field that falls away to mature field boundaries to the west. Potential to reveal below ground remains. Geophysical survey recorded no responses of archaeological interest.	44+860-44+980	A linewide works compound is proposed. Utility diversion works are proposed (UTX3) – including trenching, compounds, OH poles removal and insertion, directional drilling and access ways	Low

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
AAP31	Ninch	Previously large scale and significant archaeological features have been revealed in Ninch townland prior to the construction of residential developments. Geophysical survey found this area to be magnetically disturbed.	44+920-44+940	A UTX Diversion compound is located to the east of the railway tracks at Laytown Station	Low
AAP32	Sevitsland	The compound is located in an area that has been previously disturbed by the construction of an adjacent residential housing development.	46+860-46+960	Bettystown substation and Construction Compound and access track	None
AAP33	Betaghstown	Greenfield potential	47+700	Utility Diversions (UG DV1) involving trenching	Low
AAP34	Colp East	Ringfort (ME021-037), visible only as a cropmark is located in the same field as the proposed works. The data is dominated by broad amorphous responses, indicative of natural variations in the underlying geology. A curvilinear trend and some isolated responses were recorded in the north of the data. It is possible that these represent further natural variations. However, it is equally possible that plough damaged archaeology is represented here. Interpretation is tentative as there is no clear archaeological pattern.	49+100	Overhead divisions (OHDV1). Works at this location have been minimized and moved to a location outside the zone of notification for the ringfort (ME021-037). The proposed works avoid the area where a possible curvilinear trend and isolated responses were recorded in the geophysical survey.	Medium
AAP35	Colp East	The track lowering compound is located 130m south of the zone of notification for the historic settlement at Colp.. The geophysical data comprised of numerous ferrous responses and magnetic disturbance. No responses of interest were recorded.	49+540-49+660	Compound and track lowering works.	Low
AAP36	Colp West	A UTX diversion Construction Compound is located to the north and	49+760 – 50+300	UTX diversion compound and utility diversions required	Medium-Low

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
		south of the existing railway track. To the north of the track, the area has been previously assessed through geophysical survey (18R0181, TARGET) and test excavation (18E0597, Archer) while to the south the lands now occupied by a housing development were archaeologically assessed and excavated (Licence Refs. 99E0472, 99E0472 ext, 01E0931, 03E0641 and 03E0660) and recorded as ME020-043001-011. Part of the access route to the north of the railway is in an archaeologically sensitive area (chainage 50+ooo-50+200).		(UTX2). Works include overhead diversions, directional drilling and a limited around of trenching to the south of the railway track.	

Table 20-24 Areas of Potential within Zone E

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
AAP37	Newtown	Greenfield and brownfield archaeological potential and industrial heritage potential. Located in the vicinity of newly revealed and excavated sites (Licence Ref 19E0433 and 19R005).	51+680 – 52+480	Large scale earthmoving activities to the north of the railway track and station will involve a bridge works compound, a substation and Construction Compound, all located in a greenfield environment, Further compounds are proposed for hardstanding areas to the south of the station and include the station and bridge works compound and the access subway to DMU depot and Construction Compound. Excavation works for the regrading of an existing earthwork bund. A bridge works compound and a UTX Diversion compound are proposed in scrub ground to the south of	Medium

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating
				the existing railway track at chainages 51+700 and 51+900.	
AAP38	Newtown	A 'Well' is shown on the 25 inch OS map in Newtown townland to the north of the avenue leading to Newtown Lodge. It is not named on any other historic map but is described as an 'open well' on the modern OSi map. This area is overgrown with scrub and lies beside power lines. No superstructure could be made out within the heavy vegetation. Area of archaeological potential.	51+680	Realignment of McGrath's Lane	Low

20.5 Description of Potential Impacts

The archaeological assessment of the Proposed Development has assisted in clarifying the nature, location and significance of the archaeological remains along the route, especially in areas where below ground/earthmoving works are proposed.

20.5.1 Potential Construction Impacts

20.5.1.1 Overview

The majority of the proposed permanent works and interventions are expected to be carried out within the existing railway corridor boundary, for example:

- Provision of turnback facilities at Malahide, Clongriffin and Howth Junction and Donaghmede Stations;
- Modifications to existing tracks and platforms;
- Overhead Line Equipment (OHLE) (such as wires and masts) from north of Malahide to Drogheda will require support structures that will be spaced between 40m-50m on average.

Some ground disturbance will be required outside of the existing railway boundary and there is a possibility that these works may impact on previously unknown below ground archaeology, these works include:

- Construction of substations;
- Ground works required for construction/ storage compounds and access roads;
- Bridge modifications/ improvements to facilitate extended electrification;
- Secant and cantilevered walls;
- The temporary/permanent diversion, realignment and widening of roads, junctions and pavements, and/or the provision of temporary access routes;
- Utility diversions;
- Drainage and attenuation; and

- Landscaping works.

It has been acknowledged that access for decommissioning existing utilities will not require earthmoving or excavation works. Similarly, no excavation works will be required for access work for UTX, track matting or geotextile solutions will be sought. For UTX compounds there will be no excavation or topsoil stripping of the ground surface. A geotextile solution with hardcore will be sought if required within the compound location.

Upstanding industrial heritage sites and cultural heritage sites of architectural interest that contribute to the present-day character and uniqueness of the area are assessed in Chapter 21 (Architectural Heritage).

The following describes the impacts of the Proposed Development on the archaeological heritage resource, the impacts are set out using the assessment criteria as outlined in Section 20.3.6.2 above.

No national monuments will be affected by the Proposed Development.

20.5.1.2 Zone A – North of Connolly Station to south of Howth Junction & Donaghmede Station (including Fairview Depot)

20.5.1.2.1 Recorded Archaeological Sites/ Monuments (RMP/ SMR sites)

No RMP sites will be impacted by this section of the scheme.

20.5.1.2.2 Areas of Archaeological Potential

The only works proposed in Zone A are at the Fairview Depot. At Fairview Park previous archaeological monitoring in advance of the Port Tunnel construction in 2002 revealed a dearth of archaeological features, with stratified deposits consistent with the use of the area as a landfill in the late 19th century (Bolger 2004) (the area was reclaimed and then used as a landfill before being developed as a park). The proposed works are determined to be not significant/ imperceptible.

Table 20-25 lists the potential Construction Phase effects within Zone A.

Table 20-25 Potential Construction Effects in Zone A

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating	Impact	Significance
AAP1	Fairview Park	Brownfield / Greenfield limited archaeological potential – previously reclaimed land.	2+445-3+280	Works to take place within the existing IÉ property boundary at Fairview Depot. Works include a temporary Construction Compound, new cleaning platforms	Negligible	Low	Not significant/ imperceptible.

20.5.1.3 Zone B - South of Howth Junction & Donaghmede Station (including Howth Branch) to north of Malahide Viaduct

20.5.1.3.1 Recorded Archaeological Sites/ Monuments (RMP/ SMR sites)

No RMP sites will be impacted by this section of the scheme.

20.5.1.3.2 Areas of Archaeological Potential

Five areas of archaeological potential have been identified in Zone B (AAP2- AAP6), three of which have been identified as having a general greenfield and /or brownfield archaeological potential. Earthmoving works in these areas may impact on previously unknown archaeological sites that survive below ground. Undesignated heritage assets have a low sensitivity value, and in a disturbed context a negligible sensitivity value. The magnitude of impact is considered to be Medium/Low. Therefore, the predicted effects on these areas will be negative, direct and permanent resulting in an overall effect of Slight significance.

At Clongriffin in Maynetown townland, north of the River Mayne there is an area of land, previously undisturbed, proposed for a compound. The area's potential given the new archaeological discoveries in the general area is a medium sensitivity value and The magnitude of the impact is medium Therefore, the predicted effects will be negative, direct and permanent resulting in an overall Moderate significance.

In relation to AAP6, Malahide Estuary as no in-water works are proposed, no further archaeological intervention is required.

Table 20-26 lists the potential Construction Phase effects within Zone B.

Table 20-26 Potential Construction Effects in Zone B

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating	Impact	Significance
AAP2	Kilbarrack Upper/ Grange	Greenfield and brownfield potential. There is no recorded archaeological presence.	8+900-9+100	Howth Junction and Donaghmede Station	Low	Low	Direct, Negative, Slight, Permanent
AAP3	Stapolin/ Maynetown	Greenfield and brownfield potential. Area is previously disturbed.	9+860-11+100	Clongriffin Station and associated earthmoving works	Low	Low	Direct, Negative, Slight, Permanent
AAP4 north	Maynetown (Clongriffin)	Greenfield potential	10+600	Construction compound	Medium	Medium	Direct, Negative, -Moderate Permanent
AAP5	Malahide Estuary	Historically as shown on the OS maps (1837 and 1870), this	15+865-16+480	At Malahide Construction Compounds are required as well	Low	Low	Direct, Negative,

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating	Impact	Significance
		area was reclaimed from the estuary.		as track modifications and a retaining wall.			Slight, Permanent
AAP6	Malahide Estuary	There are no in water works proposed and therefore no underwater archaeological surveys are required.	16+480-17+700	Malahide Viaduct	None	No impact	None

20.5.1.4 Zone C - North of Malahide Viaduct to south of Gormanston Station (Fingal boundary)

20.5.1.4.1 Recorded Archaeological Sites/ Monuments (RMP/ SMR sites)

No recorded monuments (RMP sites) will be impacted by this section of the scheme, as part of the utility diversion works, a single pole will be erected within the zone of notification associated with an enclosure (DU008-011) in Effelstown (AAP12). Works have been minimised in this area to take account of the recorded monument. Recorded monuments have a medium sensitivity value. The magnitude of impact is considered to be Low given the localised nature of the works. Therefore, the predicted effects on AAP12 will be negative, direct and permanent resulting in an overall effect of Slight significance.

20.5.1.4.2 Areas of Archaeological Potential

Seventeen areas of archaeological potential have been identified in Zone C (AAP7-AAP11 and AAP13 - AAP23), two of which have been determined to have no impact as AAP17 is located in an area that has experienced significant disturbance and engineering works that severely curtail the ability to reveal below ground remains, as the area has effectively been excavated out in the past. At Balbriggan (AAP21) given that there will be no ground reduction works and the existing hard standing will be used to form the base level of the proposed compound, no impact is anticipated.

Geophysical survey was proposed in eight areas to assist with the assessment of the below ground potential. Given the challenging ground conditions and access issues, the survey took place in four areas (AAP11, AAP16, AAP18 and AAP20).

At Corballis Compound (AAP7), a geophysical survey could not take place due to ground conditions, the area is considered to have a medium sensitivity value and the magnitude of impact is considered to be Medium. The predicted effects on this area will be negative, direct and permanent resulting in an overall effect of Moderate significance.

At AAP8 (Corballis), AAP10 (Rogerstown) and AAP23 (Knocknagin) where limited utility diversions are proposed within greenfield environments, the areas have a low sensitivity value and the magnitude of impact is considered to be low. The predicted effect on these areas will be negative, direct and permanent resulting in an overall effect of Slight significance.

At Donabate Station in Beaverstown townland (AAP9) works are to take place to the east of the rail line and a compound is proposed in an area of hardstanding and an overgrown, previously disturbed, vegetated area (a brownfield area). Earthmoving works in these areas may impact on previously unknown archaeological sites that survive below ground. Undesignated heritage assets have a Low sensitivity value, and the magnitude of impact is considered to be Medium. Therefore, the predicted effects on these areas will be negative, direct and permanent resulting in an overall effect of Slight significance.

At Effelstown to the east of the Lusk /Rush railway station (AAP11), a geophysical survey did not detect any features of an archaeological significance. The greenfield to the north where a utility diversion compound is proposed has a low sensitivity value. The area is considered to have a low sensitivity value and the magnitude of impact is considered to be Low. The predicted effects on this area will be negative, direct and permanent resulting in an overall effect of Slight significance.

At Tyrrelstown (AAP13), a geophysical survey could not take place due to ground conditions, the area is considered to have a low/medium sensitivity value and the magnitude of impact is considered to be low. The predicted effects on this area will be negative, direct and permanent resulting in an overall effect of Slight significance.

Utilities Diversion works are proposed at Ballykea (AAP14), the area is considered to have a low sensitivity value and the magnitude of impact is low. The predicted effects on this area will be negative, direct and permanent resulting in an overall effect of Slight significance.

At Hacketstown (AAP15), a geophysical survey could not take place due to ground conditions, the area is considered to have a medium sensitivity value and the magnitude of impact is considered to be medium. The predicted effects on this area will be negative, direct and permanent resulting in an overall effect of Moderate significance.

At Milverton, (AAP16) utility diversions (UTX 7) are proposed in a townland, geophysical survey did not detect any anomalies of archaeological interest. . As such while a greenfield below ground potential has a Low sensitivity value the magnitude of impact is considered to be Low, given the localised area proposed for excavation works. The predicted effects in this area will be negative, direct and permanent resulting in an overall effect of Slight significance.

Works will take place within the road (R127) as a result of utility diversions (UG DV2 and UG DV6) This area of potential (AAP19) has a Low sensitivity value, and the magnitude of impact is considered to be Low. Therefore, the predicted effects on these areas will be negative, direct and permanent resulting in an overall effect of Slight significance.

At Hampton Demesne (AAP20), a geophysical survey detected no clear archaeological patterns, the area is considered to have a low sensitivity value and the magnitude of impact is considered to be medium. The predicted effects on this area will be negative, direct and permanent resulting in an overall effect of Slight significance. Two proposed substations and compound areas are located in Barnageeragh and Bremore (AAP18 and AAP22) and while there are no recorded monuments within the proposed construction areas, there have been considerable archaeological finds from both these townlands. As such while a greenfield potential has a Low sensitivity value and the geophysical survey at Barnageeragh did not detect a clear pattern in the isolated anomalies that were identified.

The magnitude of impact is considered to be Medium, the predicted effects on these areas will be negative, direct and permanent resulting in an overall effect of Moderate significance.

Table 20-27 lists the potential Construction Phase effects within Zone C.

Table 20-27 Potential Construction Effects in Zone C

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating	Impact	Significance
AAP7	Corballis	Greenfield site, below ground archaeological potential.	18+600-18+880	Proposed Donabate substation and linewide works Construction Compound	Medium	Medium	Direct, Negative, Slight-Moderate, Permanent
AAP8	Corballis	Previous archaeological investigation has revealed archaeological sites (McLoughlin 2007) in the fields proposed for utility diversion works.	Approx 19+400	Utility Diversions encompassing the removal of 4 poles (localised disturbance) and access way (that will require no excavation) in greenfields	Low	Low	Direct, Negative, Slight, Permanent
AAP9	Beaverstown	Previously disturbed lands with limited archaeological potential and limited construction activity.	19+680-19+940	At Donabate Station a proposed linewide works compound is proposed	Low	Medium	Direct, Negative, Slight, Permanent
AAP10	Rogerstown	Greenfield potential	22+900 – 2+040	Utility diversion works - removing and inserting poles for OH cables	Low	Low	Direct, Negative, Slight, Permanent
AAP11	Effelstown/ Rogerstown	Greenfield potential	23+300 – 23+620	Works at Rush and Lusk Station	Low	Medium	Direct, Negative, Slight, Permanent
AAP12	Effelstown	Enclosure (DU008-011)	24+000	Utility diversion works	Medium	Low	Direct, Negative, Slight, Permanent
AAP13	Tyrrelstown	Greenfield potential.	25+060-25+820	Track lowering and	Low	Medium	Direct, Negative, Slight/

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating	Impact	Significance
				UTX Diversion Compound			Moderate, Permanent
AAP14	Ballykea	Greenfield potential	27+000 – 27+400	Utility diversion works	Low	Low	Direct, Negative, Slight, Permanent
AAP15	Hacketstown	Greenfield potential.	28+910-29+025	Skerries South Substation and Construction Compound	Medium	Medium	Direct, Negative, Slight-Moderate, Permanent
AAP16	Milverton	Greenfield potential	29+040-29+200	Utility diversions are proposed (UTX 7)	Low	Low	Direct, Negative, Slight, Permanent
AAP17	Townparks	Area previously excavated recorded as a gravel pit on the historic mapping.	30+180 – 30+500	At Skerries Station a linewide works compound is proposed.	None	No impact	Not Significant
AAP18	Barnageeragh	Greenfield potential. Geophysical survey revealed isolated responses of no archaeological pattern but could be of interest.	32+100-32+220	At Skerries North, a substation and Construction Compound are proposed	Low	Medium	Direct, Negative, Moderate, Permanent
AAP19	Kilmainham/ Barnageeragh	Below ground potential to reveal archaeological features with trenching in the road	32+400 – 32+600	Utility Diversions (UG DV2 and UG DV6).	Low	Low	Direct, Negative, Slight, Permanent
AAP20	Hampton Demesne	Former lands associated with Hampton Demesne, greenfield potential.	34+100-34+580	A UTX Diversion compound is proposed on either side of Skerries Road	Low	Medium	Direct, Negative, Slight, Permanent
AAP21	Balbriggan	The area is currently occupied by a carpark and it is anticipated that the will be no	35+980-36+020	Viaduct works compound	None	No impact	Not Significant

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating	Impact	Significance
		below ground excavation works required.					
AAP22	Bremore	Significant monuments in the surrounding environment, greenfield potential.	37+600-37+730	Works associated with Balbriggan substation and linewide Construction Compound	Low	Medium	Direct, Negative, Moderate, Permanent
AAP23	Knocknagin	Greenfield potential	38+800	Overhead utility diversions	Low	Low	Direct, Negative, Slight, Permanent

20.5.1.5 Zone D - South of Gormanston Station (Fingal border) to County Meath/County Louth border

20.5.1.5.1 Recorded Archaeological Sites/ Monuments (RMP/ SMR sites)

In Colp, a newly revealed cropmark by aerial imagery (ME021-037) is located in the same field as proposed utility diversion works (OHDV1). The works have been designed to avoid any impact on the below ground ringfort site but are still in proximity to it. Geophysical survey did not identify anomalies of a definite archaeological interest. Being in the vicinity of a ringfort, a recorded monument, the sensitivity value is medium and the magnitude of the impact is considered to be Low. Therefore, the predicted effect on AAP34 is negative, direct and permanent resulting in an overall effect of Slight significance.

A UTX diversion compound and works including a limited amount of trenching is located in proximity to excavations that revealed archaeological features (ME020-04300-0011). These excavations are identified on the historic viewer as a dot on the existing railway tracks but in reality, the excavations took place to the south of this.

Given the location of excavated archaeological sites, and the archaeological potential of the general area, the sensitivity value is Medium and the magnitude of the impact is considered to be Medium. Therefore the predicted effect on AAP36 is negative, direct and permanent resulting in an overall effect of Moderate significance.

20.5.1.5.2 Area of Archaeological Potential

Eleven areas of archaeological potential (AAP24, AAP33 and AAP35) have been identified in Zone D. New electrification and track lowering works will take place within the existing rail corridor with compound and substation works taking place outside this corridor in a largely greenfield, rural and agricultural environment.

Eight areas (AAP24, AAP25, AAP26, AAP30, AAP31, AAP32, AAP34 and AAP35) were subject to geophysical survey to assist with the assessment of the below ground potential of these areas. Previous surveys and investigations were also examined in determining the potential of the lands.

At Gormanston (AAP24), a geophysical survey detected no clear archaeological patterns although given the proximity of ME028-021, an excavated passage tomb, the area is considered to have a medium sensitivity value and the magnitude of impact is considered to be low given the limited works. The predicted effects on this area will be negative, direct and permanent resulting in an overall effect of Slight significance.

At Gormanston (AAP26), a geophysical survey detected definite archaeological anomalies, the area is considered to have a medium sensitivity value and the magnitude of impact is considered to be medium. The predicted effects on this area will be negative, direct and permanent resulting in an overall effect of Moderate significance.

Six areas (4, AP25, AAP27, AAP28, AAP29, AAP30 and AAP33) all of which have been identified as having a general greenfield and/ or brownfield archaeological potential. Earthmoving works in these areas may impact on previously unknown archaeological sites that survive below ground. Undesignated heritage assets have a Low sensitivity value, and the magnitude of impact is considered to be Low. Therefore, the predicted effects on these areas will be negative, direct and permanent resulting in an overall effect of Slight significance.

AAP32 located in Sevitsland is the proposed location for the Bettystown Substation. This area has been previously disturbed by the construction of an adjacent residential development and is not of significance.

Two areas (AAP31) and (AAP35) are located in Ninch and Colp East respectively, in areas that have a considerable and significant archaeological record, where numerous and significant sites have been revealed as a result of archaeological investigations taking place prior to development. Earthmoving works in these areas may impact on previously unknown archaeological sites that survive below ground. Undesignated heritage assets have a Low sensitivity value, and the magnitude of impact is considered to be Low given the results of the geophysical survey where at Ninch the area was shown to be disturbed and at Colp the limited works are outside any anomaly of possible archaeological interest. Therefore, the predicted effects on these areas of potential archaeological interest (AAP31 and AAP35) will be negative, direct and permanent resulting in an overall effect of Slight significance.

Table 20-28 lists the potential Construction Phase effects within Zone D.

Table 20-28 Potential Construction Effects in Zone D

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating	Impact	Significance
AAP24	Gormanston	Greenfield potential, geophysical did not detect any archaeological features.	39+700-39+840	Underground utility diversion (UTX11)	Low	Low	Direct, Negative, Slight, Permanent
AAP25	Gormanston	Proximity of ME028-021		Overhead diversions	Medium	Low	Direct, Negative, Slight, Permanent

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating	Impact	Significance
AAP26	Gormanston	Proposed compound located in a level grass field. Greenfield potential. Archaeological Responses	40+070-40+220	Linewide works compound - All earthmoving works in this area	Medium	Medium	Direct, Negative, Moderate, Permanent
AAP27	Irishtown	Open green field with the potential to reveal below ground archaeological features.	41+280-41+420	Gormanston substation and Construction Compound	Low	Low	Direct, Negative, Slight, Permanent
AAP28	Corballis	Greenfield and brownfield potential.	44+260-44+600	Proposed works compounds for the viaduct and UTX Diversion compound	Low	Low	Direct, Negative, Slight, Permanent
AAP29	River Nanny/ Ninch	Disturbed brownfield and located on the northern bank of the River Nanny.	44+620-44+720	Proposed viaduct works compound	Low/ Negligible	Low	Direct, Negative, Slight, Permanent
AAP30	Ninch	Greenfield environment. Potential to reveal below ground remains.	44+860-44+980	A linewide works compound is proposed	Low	Low	Direct, Negative, Slight, Permanent
AAP31	Ninch	Demonstrated greenfield potential.	44+920-44+940	A UTX Diversion compound is located to the east of the railway tracks at Laytown Station	Low	Low	Direct, Negative, Slight, Permanent
AAP32	Sevitsland	Limited potential as the area has been previously disturbed by construction.	46+860-46+960	Bettystown substation and Construction Compound and access track	Low	Previously excavated Negligible	Not Significant
AAP33	Betaghstown	Greenfield potential	47+700	Utility Diversions (UG DV1) involving trenching	Low	Low	Direct, Negative, Slight, Permanent
AAP34	Colp East	Proximity to a recorded monument	49+100	Overhead divisions (OHDV1).	Medium	Low	Direct, Negative,

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating	Impact	Significance
							Slight, Permanent
AAP35	Colp East	Greenfield potential. No responses of interest were recorded in the geophysical survey.	49+540-49+660	Track lowering works compound and track lowering works.	Low	Low	Direct, Negative, Slight, Permanent
AAP36	Colp West	Demonstrated greenfield potential. Previous geophysical survey and testing revealed no archaeological features within the works area	49+760 – 50+300	UTX diversion compound	Medium/ Low	Medium	Direct, Negative, Moderate/ Slight, Permanent

20.5.1.6 Zone E - Drogheda MacBride Station and surrounds

20.5.1.6.1 Recorded Archaeological Sites/ Monuments (RMP/ SMR sites)

No RMP sites will be impacted by this section of the scheme.

20.5.1.6.2 Area of Archaeological Potential

The proposed compounds, substations and works to the existing infrastructure at Drogheda MacBride Station (AAP37) are largely located in previously disturbed areas although there are areas of undisturbed soils, some of which have been developed or previously archaeologically assessed by geophysical survey and archaeological test trenching. The previous archaeological testing and monitoring revealed an enclosure site and four burials dating to the early medieval period. In additional to this a cartographic review and a site visit has shown that the archaeological potential for Zone E is considered medium. No further below ground archaeological sites have been detected through previous surveys and investigations (Licence Ref 19E0433 and 19R005) but given the green field location on the southern slopes of the River Boyne there is a potential to reveal discreet sites or finds of an archaeological nature. Undesignated heritage assets generally have a Low sensitivity value however, given the fact that newly revealed archaeological sites have been identified and excavated in Newtown townland overlooking the River Boyne and undisturbed soils are present within the proposed works footprint within Lagavooren townland, the area has a Medium sensitivity rating. The magnitude of impact is considered to be Medium. Therefore, the predicted effects on these areas will be negative, direct and permanent resulting in an overall effect of Moderate significance.

AAP38 is the site of a well noted on the 25 inch OS map (1910), should in-situ archaeological features or sites be identified during earthmoving works in this area, there would be a negative, direct and permanent impact on them. Undisturbed areas of archaeological potential have a low sensitivity

value. The magnitude of impact on the feature/site would be considered to be medium, whereby a direct impact on the newly discovered archaeological feature/site leading to a loss of character, integrity and data about the feature/site. Overall, the magnitude of the impact is Medium and the sensitivity of the impact if identified is Low, leading to an overall effect of Slight significance.

Therefore, the predicted effects on AAP38 will be negative, direct and permanent resulting in an overall effect of Slight significance.

Table 20-29 lists the potential Construction Phase effects within Zone E.

Table 20-29 Potential Construction Effects in Zone E

AAP Ref.	Townland	Potential	Chainage	Construction Ref:	Sensitivity Rating	Impact	Significance
AAP37	Newtown, Lagavooren	Greenfield and brownfield archaeological potential and industrial heritage potential.	51+680 – 52+480	Drogheda Station - Large scale earthmoving activities compound, bridge workstation works	Medium	Medium	Direct, Negative, Moderate, Permanent
AAP38	Newtown	A 'Well' is shown on the 25 inch OS map in Newtown townland to the north of the avenue leading to Newtown Lodge. Area of archaeological potential.	51+680	Realignment of McGrath's Lane	Low	Medium	Direct, Negative, Slight, Permanent

20.5.2 Potential Operational Impacts

No operational impacts are envisioned in relation to archaeology during the Operational Phase of the Project.

20.6 Mitigation Measures

As part of the Code of Practice agreed between the Department of Arts, Heritage and the Gaeltacht (AHG) (now the Department of Housing, Local Government and Heritage) and Iarnród Éireann the role of the Project Archaeologist on Major Projects is outlined and detailed below in the context of this Proposed Development. The relationship between the Project Archaeologist and the Consultant Archaeologist(s) (Licence Holder/s) is also detailed in Appendix II of the Code of Practice (NMS 2012).

20.6.1 Project Archaeologist

A Project Archaeologist with a detailed knowledge of the Proposed Development will be appointed to develop and manage a centralised framework for tracking and managing all archaeological considerations. The Project Archaeologist will oversee the implementation and reporting of all archaeological and cultural heritage mitigation measures.

The role of the Project Archaeologist is to provide a consistent and independent approach throughout the duration of the Proposed Development.

In addition to making consistent recommendations and approving mitigation strategies and ensuring open lines of communication, a Project Archaeologist will provide archaeological training to operators and contractors and provide an advisory role offering practical advice on specific archaeological issues encountered in the field while promoting awareness of archaeological assets.

The effective management of the archaeological component of the project will be achieved through communication and a milestone driven contract process.

The appointment of a Project Archaeologist can ensure the smooth running of a scheme while providing controls on budgets and streamlining the point of communication for all heritage matters. In addition to this, a Project Archaeologist will:

- Review and agree details of the archaeological monitoring and investigation.
- Review and agree the details of method statements, license applications and Ministerial Consents.
- Manage the archaeological contract and specifically the work of the archaeological contractors.
- Oversee the conduct of the archaeological excavations/ investigations.
- Review the archaeological requirements as the works proceed. Implement any required changes to the methodology as construction work proceeds.
- Certify all archaeological costs.
- Oversee all post excavation works and certify all post excavation costs.
- Review the content of reports prepared by the Archaeological Contractors and ensure that all the archaeological contractors provide all appropriate reports on their work in accordance with the contract conditions.
- Ongoing consultation with the heritage authorities and statutory authorities.
- Ensure all work is proceeding according to archaeological licensing or consent requirements.
- Identify the requirement for additional investigation, including where necessary recording, survey, testing or excavation works.
- Where possible implement time and cost-effective strategies that are in line with best practice guidelines and statutory authority approvals.
- Provide advice to Iarnród Éireann.
- Provide advice to the design, construction team and relevant contractors.

20.6.2 Consultant Archaeologist

Experienced and competent licence-eligible archaeologist (s) will be employed by the appointed contractor to carry out the archaeological work and to advise on archaeological heritage matters during construction, to communicate all findings in a timely manner to the Project Archaeologist and Iarnród Éireann, to acquire any licenses/ consents required to conduct the work, and to supervise and direct the archaeological measures associated with the Proposed Development.

Iarnród Éireann will make provision to allow for, and to fund, the necessary archaeological monitoring, inspection, test excavation and excavation works that will be needed on-site during and prior to construction, either directly or indirectly via the appointed contractor.

During the Construction Phase all mitigation measures will be undertaken in compliance with national policy guidelines and statutory provisions for the protection of the archaeological heritage.

All methodologies will have to be agreed in advance with the National Monuments Section of the Department of Housing, Local Government and Heritage (DHLGH).

Archaeological mitigation measures can avoid, prevent, reduce or offset negative effects and these are achieved by preservation in-situ (avoidance), by design and / or by record.

Mitigation measures shall be undertaken as directed by the Minister of the DHLGH in compliance with the code of practice, national policy guidelines and statutory provisions for the protection of archaeology and cultural heritage. It is proposed that the following measures will take place as a minimum.

20.6.2.1 Archaeological Test Excavation

Archaeological testing will be guided by the results of the geophysical survey. In areas where geophysical survey could not take place due to unsuitable ground conditions and access issues, archaeological testing will take place in advance of construction, to confirm the design approach.

While there are no recorded monuments within these areas, and field inspection or an analysis of historic maps and aerial photography did not reveal any newly identified sites, these areas were put forward for assessment as they were considered to be of an archaeological potential given their greenfield nature, previously undisturbed soils and/ or proximity to designated monuments. Testing will also take place to verify the results of the geophysical survey. The purpose of testing is to determine the location, date, nature and extent of any previously unknown archaeological site. As such, it is proposed to test excavate the following areas:

• Zone B	Maynetown, County Dublin	AAP4
• Zone C	Corballis County Dublin	AAP7
• Zone C	Tyrrelstown, County Dublin	AAP13
• Zone C	Hacketstown, County Dublin	AAP15
• Zone C	Barnageeragh, County Dublin	AAP18
• Zone C	Hampton Demesne, County Dublin	AAP20
• Zone C	Bremore, County Dublin	AAP22
• Zone D	Gormanston 1, County Meath	AAP26
• Zone D	Irishtown, County Meath	AAP27
• Zone D	Colp East (S), County Meath	AAP34
• Zone E	Newtown/ Lagavooren, County Meath/ County Louth	AAP37

The archaeological test trenching strategy shall entail mechanical excavation of a 2m wide (or at least a 1.8m wide) trench (es) within the above specified areas. The frequency and pattern of the trenching layout is not prescribed and the testing array may vary from one area to another, with the agreement of the Project Archaeologist and the DHLGH, to take account of local topographic factors.

It is proposed that any archaeological features revealed by the test trenching, which will be directly impacted by the proposed works, will be mitigated prior to and during the construction of the Proposed Development in agreement with the DHLGH. On the basis of the geophysical survey and test excavation results, the National Monuments Service may require preservation in the form of in situ (by avoidance or design) or resolution by archaeological excavation. All mitigation practices will be carried out in accordance with the requirements of the statutory authorities.

The process of archaeological excavation, recording and publication of results ensures that all the features are recorded and excavated in advance of development. Excavation results in the removal of archaeological remains from their natural environment. Archaeological excavation ensures that this removal is systematically and accurately recorded, drawn and photographed, providing a paper and digital archive and adding to the archaeological knowledge of a specified area. The detailed technical reports arising from this will form part of the national archive of archaeological data in the Sites and Monuments record curated by the DHLGH.

20.6.2.2 Protection of newly revealed archaeological remains

Measures will be put in place to protect all archaeological features that are revealed prior to backfilling. This generally involves placing a geotextile protective membrane over any archaeological features identified during the test excavation exercise. Other measures such as the provision of hardboard over fragile remains must be used where appropriate.

This is in accordance with the Code of Practice between the IÉ and the Minister for AHG, 2012 (NMS).

20.6.2.3 Archaeological Monitoring

Archaeological monitoring will be undertaken in order to establish the presence or absence, as well as the nature and extent, of any archaeological deposits, features or sites that may be present within the land-take of the Project. If archaeological features are identified, provision (time and funding) will be made available for the full recording and, if necessary, excavation of the archaeological material in compliance with any measures that the DHLGH and the relevant local authority deem appropriate.

All construction work such as the clearance of land, new drainage track storage, the widening of culverts, the placement of maintenance tracks and topsoil stripping within the permanent and temporary land-take will be monitored. All other activities such as drainage, landscaping, access and maintenance roads and the provision of services, the diversion of utilities and placement of compounds associated with the improvement of the railway will also have to be monitored by a licensed archaeologist.

Monitoring includes all groundwork associated with the development including the placement of Construction Compounds, access and maintenance roads, landscaping, drainage and topsoil stripping within the permanent and temporary land-take to ensure that no previously unknown and buried archaeological features are damaged or removed without proper recording.

Archaeological monitoring will be carried out under licence to the Department of Housing, Local Government and Heritage (DHLGH) and the NMI, and will ensure the full recognition of, and the proper excavation and recording of, all archaeological soils, features, finds and deposits which may be disturbed below the ground surface.

The licensed archaeologist will have provision to inspect all excavation to the formation level for the proposed works and to temporarily halt the excavation work, if and as necessary. They will be given provision to ensure the temporary protection of any features of archaeological importance identified until a decision has been made by the statutory authorities as to whether or not avoidance and preservation in situ can be achieved or if preservation by record (ie excavation) is warranted.

The archaeologist will be afforded sufficient time and resources to record and remove any such features identified.

Archaeological excavation ensures that the removal of any archaeological soils, features, finds and deposits is systematically and accurately recorded, drawn and photographed, providing a paper and digital archive and adding to the archaeological knowledge of a specified area (i.e. preservation by record). As archaeological excavation involves the removal of the archaeological soils, features, finds and deposits, following this mitigation measure there is no further impact on the archaeological heritage.

20.6.3 Construction Phase

20.6.3.1 Zone A – North of Connolly Station to Howth Junction & Donaghmede Station

There is only one area of archaeological potential identified within Zone A (AAP1 Fairview Park) and the proposed works are determined to be not significant and imperceptible as works are proposed in made ground within the depot and railway line. No further mitigation is required.

20.6.3.2 Zone B – Howth Junction & Donaghmede Station to Malahide Viaduct

Five areas of archaeological potential have been identified in Zone B (AAP2-AAP6), four of which have been identified as having a general greenfield and /or brownfield archaeological potential. Full time licenced archaeological monitoring will take place during earthmoving works located in AAP2-AAP5 where there is a general below ground archaeological potential.

Due to challenging ground conditions, it was not possible to carry out the geophysical survey at AAP4 in Maynetown. It is proposed to carry out test excavation in this area. If features are detected, a decision will be made as to whether or not preservation by record or insitu will be required. This assessment is to take place prior to construction within the footprint of the proposed ground breaking works.

No mitigation measures are necessary at AAP6, Malahide Viaduct where there will be no impact to the estuarian soils as there are no in water works anticipated.

20.6.3.3 Zone C – Malahide Viaduct to south of Gormanston Station (Fingal County Council Administrative boundary)

No mitigation measures are required for AAP17 (Townparks) and AAP22 (Balbriggan) as no impact is anticipated.

At Donabate Station in Beaverstown townland (AAP9) works are to take place to the east of the rail line and a Construction Compound is proposed in an area of hardstanding and an overgrown, previously disturbed vegetated area (a brownfield area). Full time licenced archaeological monitoring of all earthmoving works will be carried out.

At AAP8 in Corballis townland, AAP10 in Rogerstown, AAP14 in Ballykea, AAP19 in Kilmainham/ Barnageeragh and AAP23 in Knocknagin townlands, utility diversions are proposed in greenfield and roadside environments. Full time licenced archaeological monitoring will take place for all earthmoving and or excavation associated with these activities to ensure the identification of discrete archaeological features (if present).

Seven areas occur in greenfield environments, (AAP7, AAP11, AAP13, AAP15, AAP20, AAP18 and AAP22). Geophysical survey took place at AAP11, AAP18, AAP20. Due to challenging ground conditions and issues with access, it was not possible to carry out the survey in all the proposed areas. It is proposed to carry out test excavation at Corballis (AAP7), Tyrrelstown (AAP13), Hacketstown (AAP15), Barnageeragh (AAP18) and at Hampton Demesne (AAP20) and Bremore (AAP22). A programme of archaeological test trenching will be designed in order to establish the presence or absence, as well as the nature and extent, of any archaeological deposits that may be present within the landtake of these areas of archaeological potential (AAPs).

Should any subsurface archaeological stratigraphy associated with this constraint be encountered, an appropriate ameliorative strategy will be implemented. This will entail avoidance by design or licensed archaeological excavation in full or part of any identified archaeological remains (preservation by record).

This assessment will take place prior to construction within the footprint of the proposed ground breaking works, for example, the construction of a Construction Compound, substation and permanent access tracks etc.

Utility diversions are proposed at AAP12 in proximity to an enclosure (DU008-011) and at AAP16 in Milverton townland where burials have been revealed in the same townland. Works have been minimised in both these areas. At AAP12 in Effelstown, full time licenced archaeological monitoring will take place for the installation of the single ESB pole and to ensure the identification of discrete archaeological features (if present). At Milverton, geophysical survey took place at AAP16 and no clear archaeological responses were detected. Archaeological monitoring will take place during the construction works to ensure the identification of discrete archaeological features (if present).

20.6.3.4 Zone D – South of Gormanston Station (Fingal border) to Louth/ Meath border

Thirteen areas of archaeological potential (AAP24, AAP36) have been identified in Zone D, as listed in Table 20-23.

Nine areas (AAP24, AAP25, AAP26 - Gormanston, AAP27 - Irishtown, AAP30, AAP31 – Ninch, AAP32 – Sevitsland (area has been topsoil stripped and is disturbed) and AAP34 and AAP35 Colp East) have been identified as having a general greenfield archaeological potential. It was proposed that a non-invasive geophysical survey take place within these areas. This was carried out, apart from Irishtown, where it was determined that the area was not suitable due to magnetic disturbance. Geophysical anomalies of probable archaeological derivation were detected at Gormanston (AAP26) and this area will be subject to test excavation to verify the nature and extent of the subsurface features.

It is proposed to carry out test excavation at Gormanston (AAP26), Irishtown (AAP27), Colp East (AAP34), A programme of archaeological test trenching will be designed in order to establish the presence or absence, as well as the nature and extent, of any archaeological deposits that may be present within the landtake of these areas of archaeological potential (AAPs).

Should any subsurface archaeological stratigraphy associated with this constraint be encountered, an appropriate ameliorative strategy will be implemented. This will entail avoidance by design or licensed archaeological excavation in full or part of any identified archaeological remains (preservation by record).

At AAP224 (Gormanston) anomalies were detected but this area of interest will not be impacted by the proposed localised works and it is proposed to condition any future works in this area) to take place under archaeological supervision.

Archaeological monitoring will take place at AAP25, AAP27, AAP28, AAP29, AAP30, AAP31, AAP, 32, AAP33, AAP34, AAP35 and AAP36).

For overhead diversions that will require the relocation of poles with overhead cables which will result in localised disturbance and for underground diversions involving trench excavation at AAP25, AAP30, AAP33 archaeological monitoring will take place of any earthmoving works as a result of this Proposed Development.

At Colp West (AAP36), the lands to the north of the railway have largely been previously archaeologically investigated and as a result of this, it is now proposed to apply a mitigation measure of full time licenced archaeological monitoring for any earthmoving activities within these lands. The lands to the south of the railway, will require tree clearance before any archaeological investigation can take place. Tree clearance and the removal of tree roots will be carried out under archaeological supervision.

Two areas have experienced previous disturbance, AAP28 – Corballis, AAP29 River Nanny/ Ninch as such full time licenced archaeological monitoring will take place during earthmoving works associated with these areas of archaeological limited potential. At Corballis (AAP28) trenching is required on either side of the existing railway track and this will be archaeologically monitored.

20.6.3.5 Zone E - Drogheda Station and surrounds

Large scale earthmoving activities are to take place around Drogheda Station in greenfield and brownfield environments and throughout the existing infrastructure and railway lands. Archaeological geophysical survey and test excavation has taken place throughout the agricultural fields to the north of the station where Construction Compounds are proposed. As a result of these surveys, archaeological excavation took place of a newly revealed archaeological site that included an enclosure and four graves located to the east of the proposed Construction Compound along the tree lined boundary with the wastewater treatment plant. No sites were revealed within the proposed Construction Compound areas. In greenfield and brownfield areas within and surrounding Drogheda MacBride Station that have not been previously disturbed or investigated, the appropriate level of archaeological investigation will take place in order to identify and provide certainty as to the below ground potential in advance of construction. Full time licenced archaeological monitoring will take place during earthmoving and excavation works associated with works at McBride Station.

At Newtown, Co Meath and Lagavooren Co Louth (AAP37), a geophysical survey could not take place due to the overgrown nature of the site. Archaeological test excavation is proposed to assess the below ground archaeological potential of these greenfield areas. There are no recorded monuments in the immediate vicinity.

AAP38 is the site of a well, annotated on the 25-inch OS map (1910) in Newtown townland, overhead wires are located adjacent to this area. Once these wires have been diverted, the area can be cleared from the existing vegetation under archaeological supervision. Archaeological monitoring prior to construction, can then take place to examine if the site of the well exists within this area. If it does exist, it will be archaeologically examined, recorded (drawn and photographed) and digitally located.

20.6.4 Operational Phase

No operational mitigation measures are envisioned in relation to archaeology during the Operational Phase of the Proposed Development.

20.7 Monitoring

A suitably qualified archaeologist will monitor the areas outlined above during the Construction Phase and all areas requiring excavation works to ensure that all archaeological heritage remains are identified and recorded.

20.8 Residual Effects

20.8.1 Construction Phase

All archaeological and cultural heritage issues will be resolved by mitigation during the pre-Construction Phase or Construction Phase, in advance of the Operational Phase, therefore there will be no significant residual effects upon the archaeological and cultural heritage resource.

20.8.2 Operational Phase

No significant residual impacts have been identified either in the Construction or Operational Stage of the Proposed Development, whilst meeting the scheme objectives.

20.9 Cumulative Effects

The cumulative assessment of relevant plans and projects is undertaken separately in Chapter 26 (Cumulative Effects) in Volume 2 of this EIAR.

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