12. ARCHAEOLOGY AND CULTURAL HERITAGE

12.1 Introduction

This archaeological, architectural, and cultural heritage chapter was prepared by Tobar Archaeological Services. It presents the results of an archaeological, architectural and cultural heritage impact assessment for a proposed wind farm at Ballivor, Co. Meath and Westmeath. The development area predominantly comprises a previously worked raised peat bog.

The purpose of this chapter is to identify, describe and assess the potential direct and indirect effects of the Proposed Development on the surrounding archaeological, architectural and cultural heritage landscape. The assessment is based on both a desktop review of the available cultural heritage and archaeological data and a comprehensive programme of field walking of the study area. The report amalgamates desk-based research and the results of field walking to identify areas of archaeological/architectural/ cultural significance or potential, likely to be impacted either directly or indirectly by the Proposed Development. An assessment of potential effects, including cumulative effects, is presented, and a number of mitigation measures are recommended where appropriate. The visual effect of the Proposed Development on any newly discovered monuments/sites of significance as well as known recorded monuments is also assessed.

12.1.1 Proposed Development

The Proposed Development will include 26 No. wind turbines, two meteorological masts, a 110kV substation and all associated infrastructure and site works as described in Chapter 4: Description of the Proposed Development. All elements of the Proposed Development are assessed in this chapter.

12.1.2 Statement of Authority

This chapter of the EIAR has been prepared by Miriam Carroll and Annette Quinn of Tobar Archaeological Services.

Annette Quinn

Annette Quinn is a partner of Tobar Archaeological Services which was established in 2003. Prior to that Annette worked in the field of commercial archaeology for five years in University College Cork where she completed her primary and Masters degrees in Geography and Archaeology and Medieval Archaeology, respectively. Annette has over 24 years of experience in the field of archaeology, with 19 of those as partner of Tobar Archaeological Services. She is a full member of the Institute of Archaeologists of Ireland (IAI) and is licensed by the National Monuments Service to carry out excavations in Ireland. Annette is also experienced in GIS (ArcGIS) and GPS survey as well as viewshed analysis. EIARs are currently the largest part of Annette's work brief mainly for wind and solar farms as well as 110kV and 400kV Overhead lines projects. Annette has also presented evidence at Oral Hearings for such projects in the past.

Miriam Carroll

Miriam Carroll is a partner of Tobar Archaeological Services which was established in 2003. Prior to that Miriam worked in the field of commercial archaeology for five years in University College Cork where she completed her primary and Masters degrees in archaeology. Miriam has over 24 years of experience in the field of archaeology, with 19 of those as partner of Tobar Archaeological Services. She is a full member of the Institute of Archaeologists of Ireland (IAI) and is licensed by the National Monuments

Service to carry out excavations in Ireland. Miriam undertook her primary degree in Archaeology (major) and English (minor) between 1993 and 1996. Her Masters degree was also undertaken in University College Cork. She is a full member of the Institute of Archaeologists of Ireland (IAI) and is licensed by the National Monuments Service to carry out excavations in Ireland. Miriam has overseen numerous commercial projects in Ireland including wind, solar and overhead line projects. Miriam was the project archaeologist for the Bandon Sewerage Scheme which lasted a number of years. This required a high-level of experience and organization as well as the resolution of parts of the 17th century town wall and other additional significant finds in a timely and efficient manner. Miriam also successfully managed a major excavation in Buttevant, Co. Cork for the Cork Education and Training board as well as being the project archaeologist for Fota Wildlife park extension from 2014. This involved project management of a large team of archaeologists on a medieval settlement site. Miriam has also undertaken numerous EIARs and has presented evidence at numerous Oral Hearings for bodies such as Eirgrid.

12.1.3 Legislation and Guidelines

The chapter has been prepared in compliance with all relevant EIA legislation including Annex (IV) 4 of the EIA Directive which outlines the items that should be included in an EIAR.

12.1.3.1 Current Legislation

Archaeological monuments are safeguarded through national and international policy, which is designed to secure the protection of the cultural heritage resource. This is undertaken in accordance with the provisions of the European Convention on the Protection of the Archaeological Heritage (Valletta Convention). This was ratified by Ireland in 1997.

Both the National Monuments Acts 1930 to 2004 and relevant provisions of the Cultural Institutions Act 1997 are the primary means of ensuring protection of archaeological monuments, the latter of which includes all man-made structures of whatever form or date. There are a number of provisions under the National Monuments Acts which ensure protection of the archaeological resource. These include the Register of Historic Monuments (1997 Act) which means that any interference to a monument is illegal under that Act. All registered monuments are included on the Record of Monuments and Places (RMP).

The Record of Monuments and Places (RMP) was established under Section 12 (1) of the National Monuments (Amendment) Act 1994 and consists of a list of known archaeological monuments and accompanying maps. The Record of Monuments and Places affords some protection to the monuments entered therein. Section 12 (3) of the 1994 Amendment Act states that any person proposing to carry out work at or in relation to a recorded monument must give notice in writing to the Minister (Environment, Heritage and Local Government) and shall not commence the work for a period of two months after having given the notice. All proposed works, therefore, within or around any archaeological monument are subject to statutory protection and legislation (National Monuments Acts 1930-2004).

The term 'national monument' as defined in Section 2 of the National Monuments Act 1930 means a monument *'the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto'*. National monuments in State care include those which are in the ownership or guardianship of the Minister for Arts, Heritage and the Gaeltacht. Section 5 of the National Monuments Act (1930) allows owners of other national monuments to appoint the Minister for the Arts, Heritage and the Gaeltacht or the relevant local authority as guardian of such monuments, subject to their consent. This means in effect that while the property of such a monument remains vested in the owner, its maintenance and upkeep are the responsibility of the State. Some monuments are also protected by Preservation Orders and are also regarded as National Monuments. National Monuments also includes (but not so as to limit, extend or otherwise influence the construction of the foregoing general definition) every monument in Saorstát Éireann to which the Ancient Monuments Protection Act, 1882, applied immediately before the passing of this Act, and the

said expression shall be construed as including, in addition to the monument itself, the site of the monument and the means of access thereto and also such portion of land adjoining such site as may be required to fence, cover in, or otherwise preserve from injury the monument or to preserve the amenities thereof.

Under the Heritage Act (1995) architectural heritage is defined to include *'all structures, buildings, traditional and designed, and groups of buildings including street-scapes and urban vistas, which are of historical, archaeological, artistic, engineering, scientific, social or technical interest, together with their setting, attendant grounds, fixtures, fittings and contents...'*. A heritage building is also defined to include *'any building, or part thereof, which is of significance because of its intrinsic architectural or artistic quality or its setting or because of its association with the commercial, cultural, economic, industrial, military, political, social or religious history of the place where it is situated or of the country or generally'.*

12.1.3.1.1 Granada Convention

The Council of Europe, in Article 2 of the 1985 Convention for the Protection of the Architectural Heritage of Europe (Granada Convention), states that *'for the purpose of precise identification of the monuments, groups of structures and sites to be protected, each member State will undertake to maintain inventories of that architectural heritage'*. The Granada Convention emphasises the importance of inventories in underpinning conservation policies.

The National Inventory of Architectural Heritage (thereafter NIAH) was established in 1990 to fulfil Ireland's obligations under the Granada Convention, through the establishment and maintenance of a central record, documenting and evaluating the architectural heritage of Ireland. Article 1 of the Granada Convention establishes the parameters of this work by defining 'architectural heritage' under three broad categories of Monument, Groups of Buildings, and Sites:

- Monument: all buildings and structures of conspicuous historical, archaeological, artistic, scientific, social or technical interest, including their fixtures and fittings;
- Group of buildings: homogeneous groups of urban or rural buildings conspicuous for their historical, archaeological, artistic, scientific, social or technical interest, which are sufficiently coherent to form topographically definable units;
- Sites: the combined works of man and nature, being areas which are partially built upon and sufficiently distinctive and homogenous to be topographically definable, and are of conspicuous historical, archaeological, artistic, scientific, social or technical interest.

The Council of Europe's definition of architectural heritage allows for the inclusion of structures, groups of structures and sites which are considered to be of significance in their own right, or which are of significance in their local context and environment. The NIAH believes it is important to consider the architectural heritage as encompassing a wide variety of structures and sites as diverse as post boxes, grand country houses, mill complexes and vernacular farmhouses.

12.1.3.2 County Development Plans

Policies and objectives pertaining to archaeology, cultural and architectural heritage and Protected Structures for both Westmeath County Development Plan 2021-2027 and Meath County Development Plan 2021 – 2027 can be found in Appendix 12-4.

12.1.3.3 Statutory Consultations

A scoping request was issued to the Development Applications Unit (DAU) by MKO on the 7th of May 2020 requesting feedback or commentary on the Proposed Development. A response pertaining to natural heritage only was returned. A follow up email was sent to the DAU on the 11th May 2021 requesting commentary on the final layout. No response was received prior to the submission of this planning application. A scoping request was issued to the Heritage Council on the 8th of May 2020 and again on the 2nd of February 2021. No response was received prior to the submission of this planning application.

12.1.4 Site Location and Description

The Proposed Development, known as Ballivor Wind Farm, will be located on Ballivor, Carranstown, Bracklin and Lisclogher Bogs located at the Bord na Móna Ballivor Bog Group on the border of Meath and Westmeath. The landcover is a mixture of bare cutaway peat, re-vegetated bare peat, degraded blanket bog, scrub, low woodland and remnants of high bog. Bord na Móna permanent fixed gauge rail lines can be found running through Ballivor, Bracklin and Carranstown Bogs. Current activities onsite include site management and environmental monitoring, wind measurement and the removal of existing peat stockpiles. Please see Chapter 1 Introduction for further details on the site location and description.

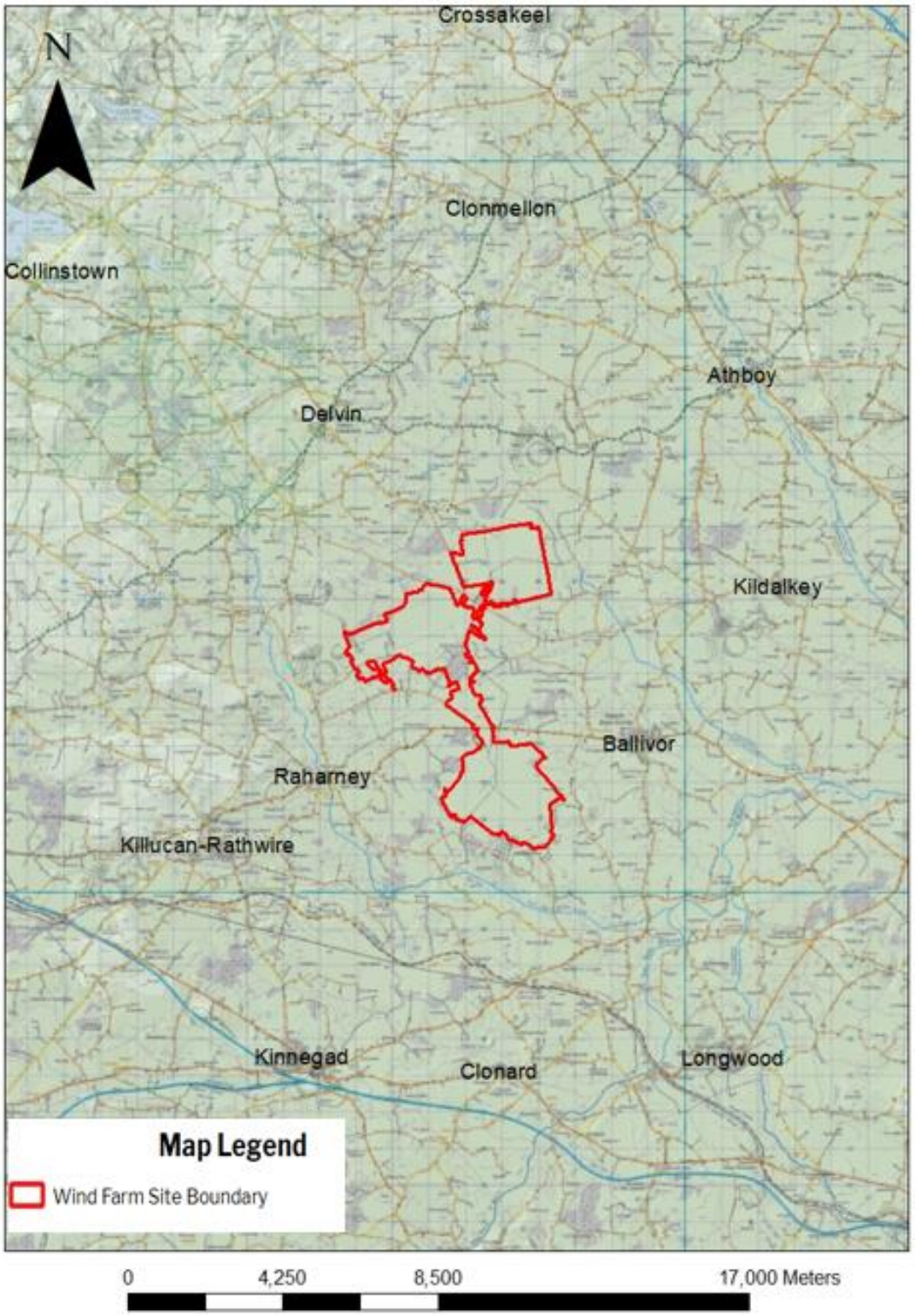

Figure 12-1: Site Location map

12.2 Assessment Methodology

The assessment of the archaeology, architecture and cultural heritage of the Proposed Development area included GIS mapping and desk-based research followed by field inspection. A desk-based study of the Wind Farm Site Boundary was initially undertaken in order to assess the archaeological, architectural and cultural heritage potential of the area and to identify constraints or features of archaeological/cultural heritage significance within or near to the Proposed Wind Farm Site Boundary.

12.2.1 Geographical Information Systems

GIS is a computer database which captures, stores, analyses, manages and presents data that is linked to location. GIS is geographic information systems which includes mapping software and its application with remote sensing, land surveying, aerial photography, mathematics, photogrammetry, geography and tools that can be implemented with GIS software. A geographic information system (GIS) was used to manage the datasets relevant to the archaeological and architectural heritage assessment and for the creation of all the maps in this section of the report. This involved the overlaying of the relevant archaeological and architectural datasets on georeferenced aerial photographs and road maps (ESRI), where available. The integration of this spatial information allows for the accurate measurement of distances of a development from archaeological and cultural heritage sites and the extraction of information on 'monument types' from the datasets. Areas of archaeological or architectural sensitivity may then be highlighted in order to mitigate the potential negative effects of a development on archaeological, architectural and cultural heritage.

ArcGIS online viewshed analysis was also used to assess effects on setting of archaeological and architectural heritage monuments. The Viewshed tool uses the ESRI Elevation Analysis service to determine which areas are visible from specified observer points (the observer points being the monuments). Visibility settings are used to set the height of the observer (1.75m standard), the height, for example of the observed features (e.g. turbines, meteorological masts), and the maximum viewing distance of the observer. This tool was utilised to ascertain the potential/theoretical visual effects on Cultural Heritage Assets. The results show the worst-case scenario since the model does not take trees or vegetation into consideration. The results are detailed in Section 12.3.

12.2.2 Desktop Assessment

The following sources were consulted as part of the desktop assessment for the Proposed Development:

- The Record of Monuments and Places (RMP)
- The Sites and Monuments Record (SMR)
- National Monuments in State Care Counties Meath and Westmeath
- The Topographical Files of the National Museum of Ireland
- First edition Ordnance Survey maps (OSI)
- Second edition Ordnance Survey maps (OSI)
- Third edition Ordnance Survey Map (Record of Monuments and Places)
- Down Survey maps (www.downsurvey.tcd.ie)
- Aerial photographs (copyright of Ordnance Survey Ireland (OSI)
- Excavations Database
- National Inventory of Architectural Heritage (NIAH)
- Record of Protected Structures (Meath and Westmeath County Development Plans)
- Previous archaeological surveys and assessments carried out on or near to the proposed development site (various)
- Archaeological inventory of County Meath and Westmeath

Each of these are discussed in the following sections.

12.2.2.1 Record of Monuments and Places, Sites and Monuments Record and National Monuments

A primary cartographic source and base-line data for the assessment was the consultation of the Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) for Counties Meath and Westmeath. All known recorded archaeological monuments are indicated on 6-inch Ordnance Survey (OS) maps and are listed in these records. The SMR/RMP is not a complete record of all monuments as newly discovered sites may not appear in the list or accompanying maps. In conjunction with the consultation of the SMR and RMP the electronic database of recorded monuments and SMRs which may be accessed at www.webgis.archaeology.ie/historicenvironment.

A review of all National Monuments in state care was undertaken as part of the assessment in order to ascertain any potential impacts on their setting as a result of the Proposed Development.

12.2.2.2 Cartographic Sources and Aerial Photography

The 1st (1840s) and 2nd (1900s) edition OS maps for the area were consulted, where available, as was OSI aerial photography.

12.2.2.3 Topographical Files - National Museum of Ireland

Details relating to finds of archaeological material and monuments in numerous townlands in the country are contained in the topographical files held in the National Museum of Ireland. In order to establish if any new or previously unrecorded finds had been recovered from the study area these files were consulted for every townland within and adjacent to the same. The bogs database, also held in the National Museum of Ireland was also consulted for finds or items recovered from the Proposed Development site.

12.2.2.4 Archaeological Inventory Series

Further information on archaeological sites may be obtained in the published County Archaeological Inventory series prepared by the Department of Housing, Local Government and Heritage. The archaeological inventories present summarised information on sites listed in the SMR/RMP and include detail such as the size and location of particular monuments as well as any associated folklore or local information pertaining to each site. The inventories, however, do not account for all sites or items of cultural heritage interest which are undiscovered at the time of their publication. Many sites have been discovered since the publication of the Inventory Series which have now been added to the Sites and Monuments Record.

12.2.2.5 Record of Protected Structures

The Record of Protected Structures for Counties Meath and Westmeath was consulted for the schedule of buildings and items of cultural, historical or archaeological interest which may be affected by the Proposed Development. The development plan also outlines policies and objectives relating to the protection of the archaeological, historical and architectural heritage landscape of both Counties. The digital dataset for Protected Structures was downloaded from ArcGIS online for Meath County Council and the dataset for Westmeath was obtained from Westmeath County Council. Both datasets were added to the project GIS mapping (Section 12.2.1 above) used for the creation of Figures in this chapter.

12.2.2.6 Excavations Database

The Excavations Database is an annual account of all excavations carried out under license. The database is available online at www.excavations.ie and includes excavations from 1985 to 2020. This database was consulted as part of the desktop research for this assessment to establish if any archaeological excavations had been carried out within or near to the Proposed Development area.

12.2.2.7 National Inventory of Architectural Heritage (NIAH)

This source lists some of the architecturally significant buildings and items of cultural heritage and is compiled on a county by county basis by the Department of Housing, Local Government and Heritage. The NIAH database was consulted for all townlands within and adjacent to the study area. The NIAH survey for Meath / Westmeath has been published and was downloaded on to the base mapping for the Proposed Development (www.buildingsofireland.ie). The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of Housing, Local Government and Heritage and established on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999.

The purpose of the NIAH is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the Minister for Housing, Local Government and Heritage to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS). The published surveys are a source of information on the selected structures for relevant planning authorities. They are also a research and educational resource. It is hoped that the work of the NIAH will increase public awareness and appreciation of Ireland's architectural heritage.

12.2.2.8 Previous Surveys and Assessments

A number of archaeological surveys were previously carried out within these bogs during the lifetime of production works by Bord na Móna. A summary of the available results of such surveys and/or any reassessment surveys is presented below. The previous surveys are presented in full in Appendix 12.2 and Appendix 12.3.

12.2.3 Field Inspection

An intensive programme of field inspection was undertaken over a number of days in May, June, July and September 2021. The inspection was undertaken by Miriam Carroll, Annette Quinn and Paul Fingleton. The inspection consisted of a walk-over examination of the Proposed Development site, the identification, description and assessment of any cultural heritage items within the site and an assessment of the potential direct and indirect impacts on those monuments. Any newly discovered archaeological monuments, items of built heritage or cultural heritage value within the study area were also recorded during the field inspection. A full photographic record of the site was made and is attached in Appendix 12-1.

Furthermore, 98 site investigation trial pits were monitored under excavation licence 20E0224 from the National Monuments Service within an area of predominantly cut over bog, some parts of which are colonised with vegetation. Where such vegetation was present it largely took the form of heather and grasses, however, some areas were also under tree cover. A number of trial pits were excavated in green areas to the south of Bracklin bog and some on top of gravel ridges. The stratigraphy noted within the trial pits varied throughout the site but typically consisted of an upper layer of loose, soft rooty peat or milled peat overlying layers of fibrous peat. The underlying natural subsoil comprised a grey / blue silt or gravelly silt. In some areas only shallow peat cover was apparent where the pits were located on esker gravel ridges.

12.2.3.1 Limitations Associated with Fieldwork

Where dense vegetation was present, this limited the ability to inspect the field surface for any potential features that may exist. The monitoring of the site investigation trial pits did however provide an opportunity to assess many areas within the bog for the presence of any sub-surface features. Inspection of all drains was carried out aside from those that were flooded or overgrown. To alleviate potential impacts and to address the limitations with the assessment (due to vegetation, overgrowth and flooding) detailed mitigation measures are presented in Section 12.4.

This limitation is dealt with by the implementation of appropriate mitigation measures (Pre-construction and construction stage).

12.2.4 Assessment of Likely Significant Effects

The likely effects on the existing archaeological, architectural and cultural heritage environment are assessed using the criteria as set out in the draft *Guidelines on the Information to be contained in Environmental Impact Assessment Reports* (EPA, 2022) and as outlined in Chapter 1. The following terminology is used when describing the likely effects of the Proposed Development from a Cultural Heritage perspective.

12.2.4.1 Types of Impact

- Direct impacts arise where an archaeological, architectural or cultural heritage feature or site is physically located within the footprint of the development whereby the removal of part, or all of the feature or site is thus required.
- Indirect impacts may arise as a result of subsurface works undertaken outside the footprint of the development, secondary environmental change such as a reduction in water levels and visual impacts.
- Cumulative Impacts arise when the addition of many impacts create a larger, more significant impact.
- Residual Impacts are the degree of environmental changes that will occur after the proposed mitigation measures have been implemented.

12.2.4.1.1 *Magnitude of Effects (Significance)*

- Profound: Applies where mitigation would be unlikely to remove adverse effects. Reserved for adverse, negative effects only. These effects arise where an archaeological, architectural or cultural heritage feature or site is completely and irreversibly destroyed.
- Very Significant: An effect which by its character, magnitude, duration or intensity significantly alters most of the sensitive aspect of the environment.
- Significant: An effect which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment. An effect like this would be where part of a site would be permanently impacted upon, leading to a loss of character, integrity and data about an archaeological, architectural or cultural heritage feature or site. .
- Moderate: A moderate effect arises where a change to an archaeological, architectural or cultural heritage feature or site is proposed which though noticeable, is not such that the integrity of the site is compromised and which is reversible. This arises where an archaeological, architectural or cultural heritage feature or site can be incorporated into a modern day development without damage and that all procedures used to facilitate this are reversible.

- Slight: An effect which causes changes in the character of the environment which are not high or very high and do not directly impact or affect an archaeological, architectural or cultural heritage feature or site.
- Not Significant: An effect which causes noticeable changes in the character of the environment but without significant consequences. Imperceptible: An effect on an archaeological, architectural or cultural heritage feature or site capable of measurement but without noticeable consequences.
- Imperceptible: An effect on an archaeological, architectural or cultural heritage feature or site capable of measurement but without noticeable consequences.

12.2.5 Methodology for the assessment of impacts on visual setting (indirect effects)

A standardised approach was utilised for the assessment of impacts of visual setting (indirect effects) according to types of monuments and cultural heritage assets which may have varying degrees of sensitivity.. The assessment of impacts on visual setting was undertaken using both the Zone of Theoretical Visibility (ZTV) map in the Landscape and Visual Impact Assessment (LVIA), as presented in Chapter 13 of this EIAR, and also viewshed analysis from specific cultural heritage assets (viewshed analysis is described above). In the absence of guidance and based on professional judgment, the study area of 10km was used for the viewshed analysis. The viewshed analysis used in the assessment of potential impacts on the visual setting of cultural heritage assets in the wider landscape of 10km considers the effects of the proposed turbines only. As detailed in Chapter 13 LVIA, the tall, vertical nature of the proposed turbines make them the most prominent elements of the Proposed Development from a landscape and visual perspective and have the most potential to give rise to significant landscape and visual effects.

Other components of the Proposed Developments are not deemed to be as visually prominent as the proposed turbines. Other lower visibility infrastructure such as roads, , substation, met masts etc. are not included in the viewshed analysis but are assessed without the use of viewshed analysis.

While direct physical impacts to a site or monument can easily be assessed in quantitative terms, the assessment of impacts on setting can be subjective and as such is a matter of qualitative, professional judgement and experience. Due to the absence of policy on the assessment of visual impacts on cultural heritage, the distances below used in the assessment of impacts on setting are regarded as appropriate and are based on professional judgement and experience.

Table 12.1: Cultural Heritage Assets considered according to sensitivity and distance to turbines

Cultural Heritage Asset	Distance Considered
UNESCO World Heritage Sites (including tentative sites)	20km
National Monuments (State Ownership and Preservation Order Sites)	10km
Recorded Monuments, RPS	5km
NIAH structures	5km
Undesignated sites, if relevant	Within the EIAR boundary

12.3 Existing Environment

12.3.1 Archaeological, Architectural and Cultural Heritage

Archaeological Heritage includes World Heritage Sites, National Monuments, sites which are subject to a preservation order, sites listed in the RMP/SMR and newly discovered archaeological sites. Architectural heritage includes Protected Structures, features listed in the National Inventory of Architectural Heritage (NIAH) and any other features previously not recorded. Whilst Cultural Heritage includes all of the above, only those aspects of the existing environment which are capable of being impacted by the Proposed Development are included and mainly refer to tangible assets. Intangible assets such as history and folklore are considered to be intangible and for this Proposed Development are not capable of being impacted and so are scoped out of the assessment.

12.3.1.1 UNESCO World Heritage Sites (and those on tentative List)

No world heritage sites or those on a tentative list are located within 20km of the proposed windfarm site. Bru na Boinne is situated 39km to the northeast of T25 turbine. Durrow Abbey is located 38.6km to T10 turbine and Clonmacnoise is located 66.5km to the southwest of T10 turbine. Tara is located 25.8km to T25. The latter distances are such that no significant effects on the setting of the monuments would occur. This is mainly due to intervening / separation distances.

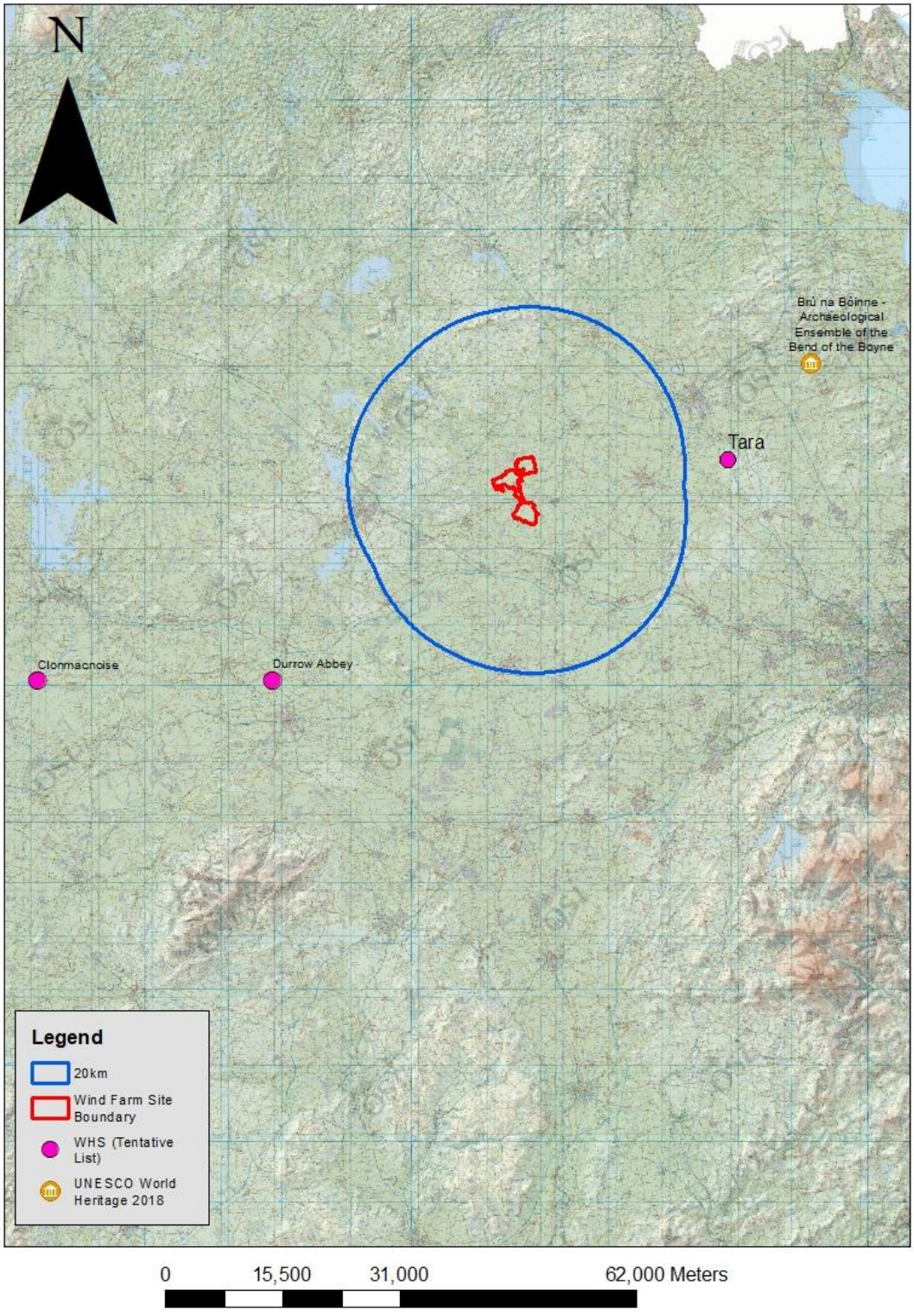

Figure 12-2: World Heritage Sites and Those on Tentative list

12.3.1.2 Trim Castle and Frewin Hill

An assessment of potential impacts on both Frewin Hill and Trim Castle were requested by Meath County Council. Both monuments are located outside the 10km area within which National Monuments in State Care are assessed in this chapter however a viewshed analysis was undertaken to provide detail on the potential effects.

12.3.1.2.1 *Trim Castle*

Trim Castle is located 14.5km to the east of the nearest proposed turbine (T20). It is situated on a hillock on the SW bank of a NW-SE run of the River Boyne and probably at the limit of that river's navigation. Like the whole town of Trim the castle was on land that seems to have always been Church land (Duffy 2011, 8-9). In 1172 Henry II granted Meath to Hugh de Lacy 'as Murrough O'Maelaghlin best held it' (Otway-Ruthven 1967, 52-3). This king of Meath died in 1153 before the province was dismembered, so in theory de Lacy's fief, if he could secure it by settling suitable territories with his liegemen, was as extensive as the modern counties of Meath, Westmeath, Longford, and a large part of NW Offaly. Hugh decided that Trim would be the caput or centre of this vast estate and commenced planning a suitable headquarters for it in a castle that would be defensively strong as well as visually impressive and capable of administering a wide area. Because one of the first accounts of the castle in the 1830s by Richard Butler (1861, 25) suggests that the castle was built in 1220 this date has been followed by some later writers. However, excavation (95E0077) by Hayden (2011), together with historical research (Duffy 2011), the conservation (Cummins 2011) and recording (O'Brien and Fenlon 2002) of the masonry structures, and a re-interpretation of an earlier excavation (E00094) by Sweetman (1978), elucidates its entire structural history.

Trim Castle is a National Monument in state ownership and is open to the public all year round.

Viewshed Analysis

Because Trim castle is accessible to the public, viewshed analysis was undertaken representing an observer standing both on the top floor (25m high) and on grounds of the castle on the western side.

Viewshed from the grounds of Trim Castle

The results of the viewshed from ground-level outside the castle looking in the direction of the turbines show the following:

Theoretically 21 turbines would be visible from mid shaft to blade tip. The remaining 5 (T21, T04, T07-T09) would only be visible from approximately hub height to blade tip and there are theoretically no instances where any of the turbines would be visible in full (i.e. from base upwards). This is a conservative scenario and is based on a flat open bare landscape with no buildings or screening. In reality a person standing on the ground of Trim castle looking in the direction of Ballivor Wind Farm will not have any visibility of the proposed turbines due to intervening buildings and topography. .

The results of the viewshed from the top floor of the castle (25 metres above the ground) looking in the direction of the turbines show the following: Theoretically all of the turbines may be visible from a height approximately midway between the nacelle and the blade tip (e.g. mid-shaft). None of the turbines would be visible from their base up however. Due to this potential theoretical visibility, a Photomontage (Viewpoint 19 as presented in the Appendix 13-4) was prepared. It shows full visibility and therefore confirms the viewshed analysis. All of the Ballivor turbines will be visible from the upper floor of the castle.

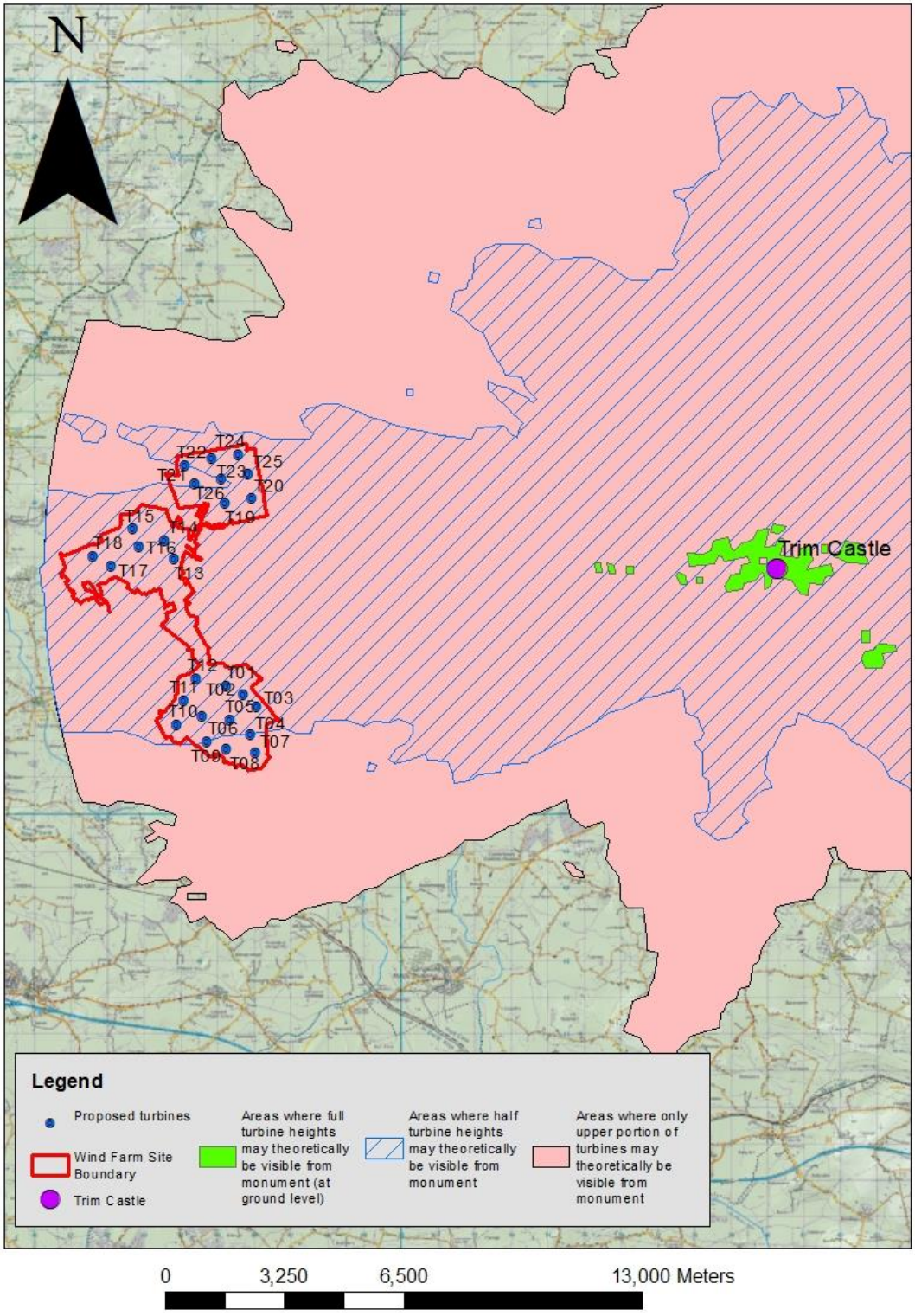

Figure 12-3: Viewshed analysis from Trim Castle (grounds to west of Castle).

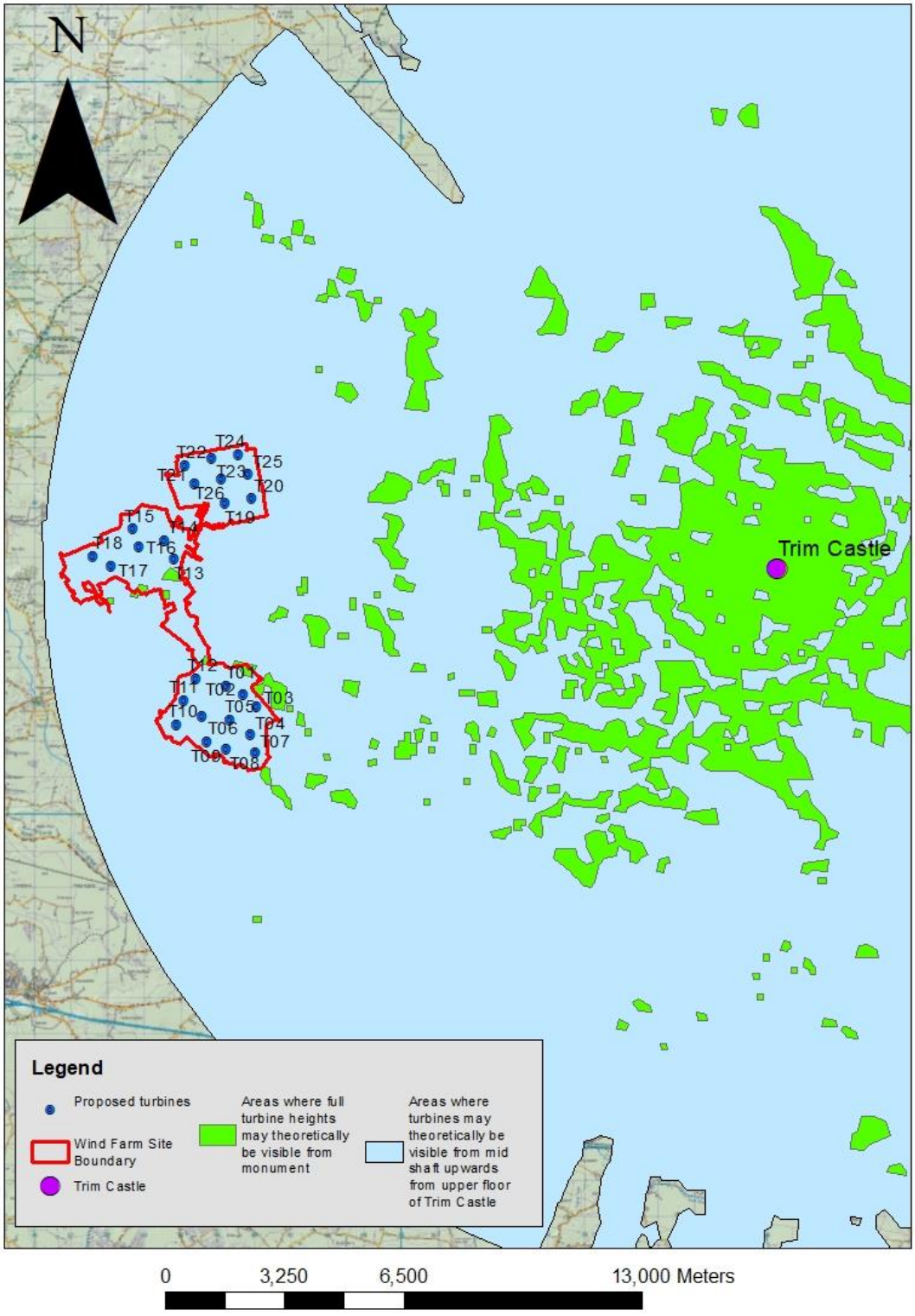

Figure 12-4: Viewshed analysis results from Upper floor of Trim Castle.

12.3.1.2.2 *Frewin Hill (Wattstown)*

Frewin Hill (Wattstown) is located 23km to the west of the nearest proposed turbine (T18). Frewin Hill has been identified in the annals and other medieval literature as the ancient Frémainn or Frému. It is reputedly the location of a palace, Dún Frémann, built by seven divisions of the men of Ireland for the legendary high king Eochaidh Aireamh to descend to his own family independently of Tara. It is also referred to in Sluaghid Dathi co Sliabh n-Ealpa, a tale written in the Book of Leinster and in other early sources (McGuinness 2012, 21). There are references within the annals describing the site as being an important battlefield which an Uí Néill prince Ailill and his brother Congal was defeated by the Leinstermen at the Battle of Loch Trethin in AD 509 (ibid.). They belong to the Bronze/Iron Age burial tradition (c. 2400 BC - AD 400) and many different types of barrow have been identified, such as bowl barrows, ring barrows, mound barrows, etc. A recent study of prehistoric burial mounds in County Westmeath undertaken by Dr. David McGuinness (2012 and 2014) has added significantly to the understanding of these monuments and their potential inter-visibility with and relationship to other important ritual sites such as the Hill of Uisneach and the passage tombs of Loughcrew.

The monuments on Frewin Hill were included in his 2012 study, The Prehistoric Burial Mounds and Related Monuments of County Westmeath, I. Preliminary Account of the Monuments in the Lough Owel Area. The inter-visibility of the monuments on Frewin Hill to those on surrounding hills and the distant hills of Loughcrew has been much discussed by McGuinness (2012). This inter-visibility may be regarded as an important aspect of these monuments and their relationship with similar monuments and sites in the surrounding landscape.

Viewshed analysis

Viewshed analysis from Frewin Hill shows the following:

Theoretically only three turbines will be visible from approximately mid shaft upwards (T01 and T11-T12). Only the upper portions of the remaining turbines may be visible from the top of Frewin Hill. There are no instances where full turbine heights (base to blade tip) will be visible. The Photomontage (View point 08 as presented in Appendix 13-4) also shows that all turbines will be visible at a distance at various turbine heights. Clear weather conditions would be required to see the turbines however.

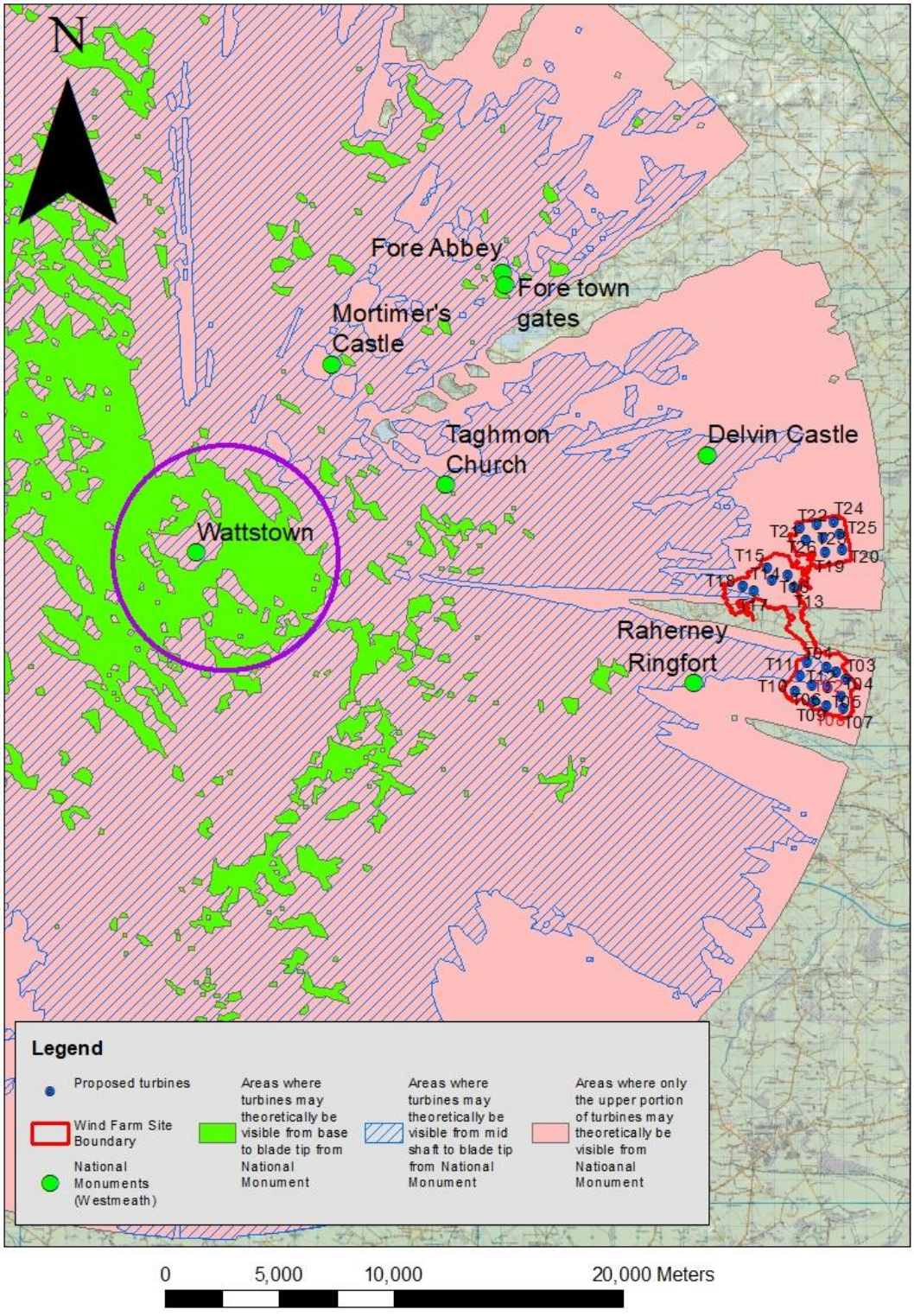

Figure 12-5: Viewshed results from Frewin Hill.

12.3.1.3 National Monuments

National Monuments are those recorded monuments which are in the ownership / guardianship of the Minister for Housing, Local Government and Heritage. They are frequently referred to as being in 'State Care'. An assessment of all National Monuments in State Care within 10km of the proposed turbines was undertaken to ascertain any potential impacts on their visual setting (See Section 12.2.5 for methodology of assessment). No National Monuments are located within the Proposed Development site and none are located within close proximity to same. Monuments located within 10km of the proposed turbines are detailed in Table 12.2 and Figure 12.4.

Table 12.2: National Monuments and those subject to Preservation Orders within 10km of nearest proposed turbine

NM No.	ITM E	ITM N	NAME	STRUCTURE	NAME	SMR REF.	T No.	DISTANCE (M)
481	659978	762760	Delvin Castle	Castle	Delvin	WM014-002	T22	5000
572	659398	752785	Raharney Ringfort	Ringfort	Raharney	WM020-131	T10	4300
232	670207	749812	Donore Castle	Castle	Donore	ME041-008	T07	4600

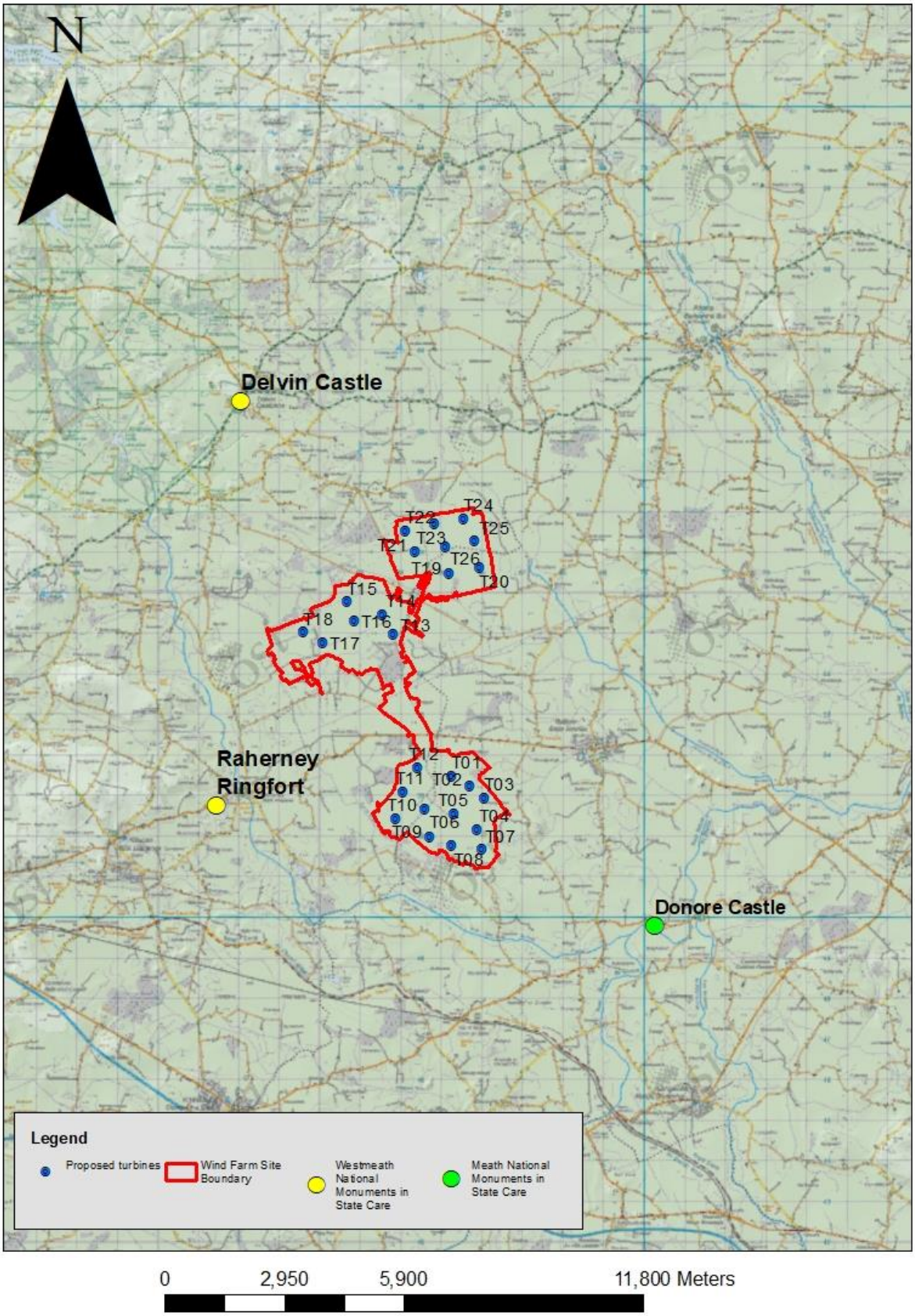

Figure 12-6: National Monuments within 10km of the nearest proposed turbine.

12.3.1.3.1 National Monument No. 481 Delvin Castle

Description

The following is an extract from the Historic Environment Viewer description of the monument:

'*National Monument in State Ownership No. 481. Standing in the town of Delvin on the SE side of the main street with Anglo-Norman motte and bailey castle (WM014-004—) 60m to ESE, church (WM014-003—) 50m to SSW and graveyard (WM014-003001-) 17m to SSW. Sweetman (1999, 95, 99) classified this castle as a hall-house type fortification. McNeill (1997, 150) suggested that the corner towers on Delvin castle could be seen 'as indicating a link to tower-houses in date' while he suggested that the second floor may have been added (Ibid., 151). O'Keeffe (2000, 39) considered Delvin Castle to have been constructed in the 15th century / late medieval period. Castle described in the terrier of the 1659 Down Survey map of Castletown parish as a 'Greate Castle only the walls thereof standing; a ruined church [WM014-003] a small castle [WM014-005] in repaire with diverse small cabbins, this was formerly a market town & the Earle of Westmeaths cheife seate' (NLI, MS 723-4).In 1682 Sir Henry Piers recorded that 'Delvin in the Barony for it named, a large oblong square castle high raised having at each corner a large round tower which equalleth, if not surmounteth the castle a structure speaking ancient magnificence. It is now wholly waste, without roof or inhabitants. It giveth the title of a Lord Baron to the Right Hon. Richard Nugent, Earl of Westmeath, of an antient illustrious family descended from Baron Jones, who (without the title of Lord) was of the first English conquerors and seated here' (Vallancey 1786, 62).*

Viewshed Analysis Results

The viewshed results show that theoretically, T20 could be seen in full (from base to tip height from Delvin Castle with the remainder visible approximately from mid-shaft upwards. This assumes no vegetation, buildings, natural screening such as field boundaries and therefore is a worst case scenario. The Zone of Theoretical Visibility (thereafter ZTV) utilised in the LVIA shows full visibility of 21-26 of the turbines and accords with the viewshed analysis.

Potential impacts are discussed in Section 12.3.1.14.

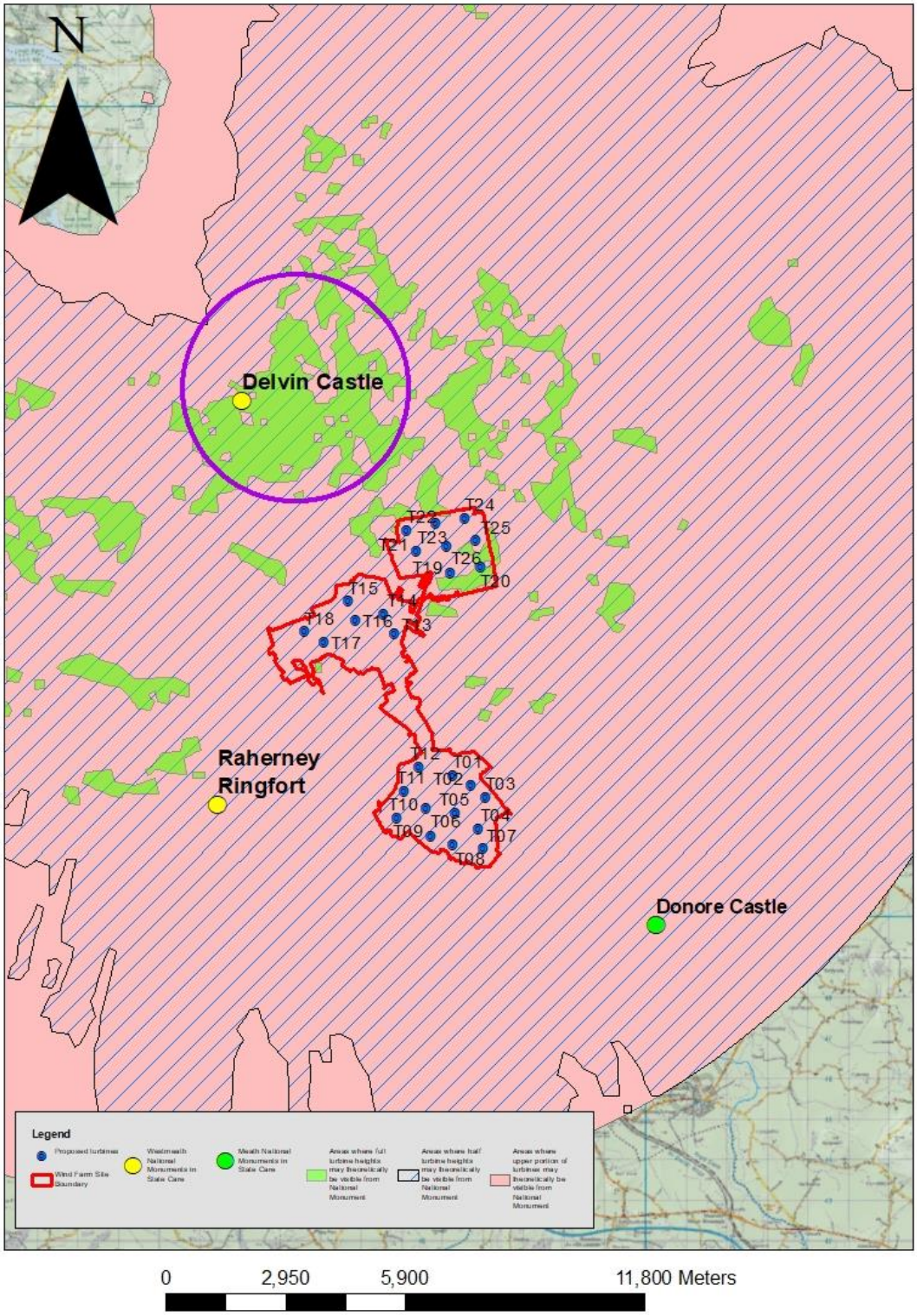

Figure 12-7: Viewshed analysis results from National Monument No. 481 Delvin Castle showing varying degrees of visibility depending on height of structures in the landscape (such as turbines).

12.3.1.3.2 National Monument No. 572 Raharney Ringfort

Description

The following is an extract from the Historic Environment Viewer description of the monument:

'National Monument in State Ownership No. 572. Described in 1970 as a 'circular slightly uneven enclosure, sloping slightly from N-S bounded by a scarp with slight remains of an earthen bank on its upper edge and with remains of a fosse at its foot. The bank is best preserved from NE-E. Elsewhere it rises barely above the interior. The bank is denuded to the level of the interior from SW-S-SE and U-shaped fosse is not visible there. There is a modern bank outside the scarp on the SE. The shallow fosse is well defined from SW-W-N. From N-E-SE it is very slight. There are some modern depressions inside the bank on the N. A slight gap (Wth 5m-1.4m) on the SE may represent the entrance. No visible trace of a causeway. Situated on the S gentle slope of a natural rise of good pasture. The site is largely overgrown with blackthorn and scrub' (SMR File 14/04/1970). Compiled by: Caimin O'Brien, Date of upload: 26 January 2016.'

Viewshed Analysis Results

The viewshed results show that theoretically, 4 turbines T1- T3 and T12 may be seen in full (from base to tip height) from Raharney Ringfort with the remainder visible from approximately mid-shaft upwards. This assumes no vegetation, buildings, natural screening such as field boundaries and therefore is a worst case scenario. The Zone of Theoretical Visibility (thereafter ZTV) utilised in the LVIA shows full visibility of 21-26 of the turbines and accords with the viewshed analysis.

Potential impacts are discussed in Section 12.3.1.14.

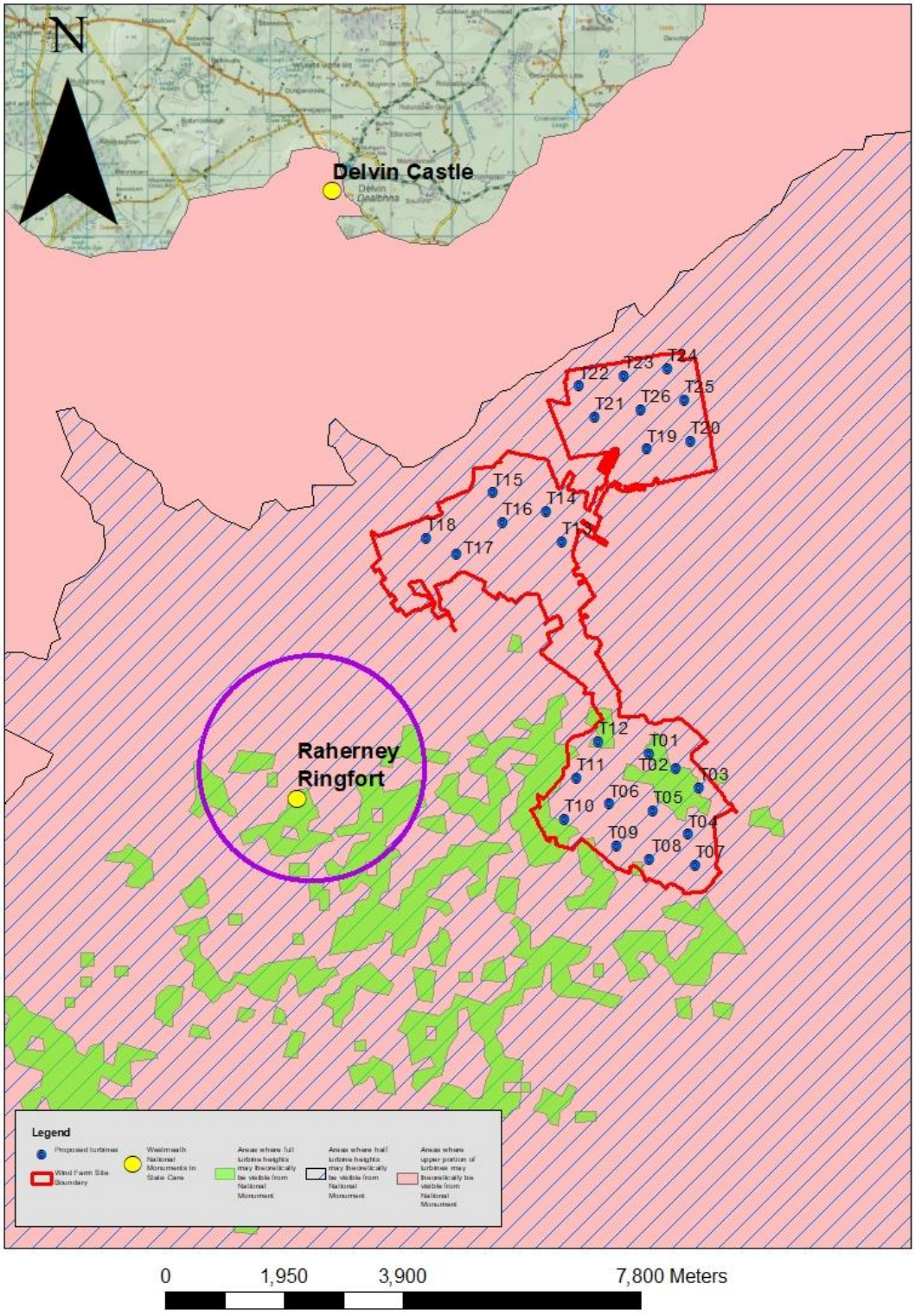

Figure 12-8: Viewshed analysis results from National Monument No. 572 Raherney Ringfort showing varying degrees of visibility depending on height of structures in the landscape (such as turbines).

12.3.1.3.3 *National Monument No. 232 Donore Castle*

Description

The following is an extract from the Historic Environment Viewer description of the monument:

'*This is a National Monument (No. 232) and its dimensions are thought to comply closely with the dimensions of castles constructed for the defence of the Pale after 1429. These were to be '20 feet long, sixteen feet wide and forty feet high (c. 6.1m x c. 4.9m; H c. 12m)' (Harbison 1970, 181) and simple structures of this size are regarded as the origin of the tower house (Leask 1949, 77; Sweetman 1999, 137). This tower house is situated on a slight rise on the N bank of a NW-SE section of the River Boyne, with the drained stream c. 40m to the SW. According to the Civil Survey (1654-6) Garrat Lench of Donowre in Killaconnigan parish owned 220 acres there in 1640, and on the property was 'a Castle and Orchard, a weare and some cottages' (Simington 1940, 200). He also owned 60 acres at Booterstowne (Batterstown), 160 acres at Cloonikinan (Cloonycavan), 170 acres at Glacke and 140 acres at Killmir in the same parish (ibid. 199-203).*

Viewshed Analysis Results

The viewshed results show that theoretically, Turbines T1 - T12 may be seen from Donore Castle from approximately mid-shaft upwards. Turbines T22-T26 may have no visibility from Donore Castle. Only the upper portion of the remainder of the turbines (T13-T21) may be seen from the monument. This assumes no vegetation, buildings, natural screening such as field boundaries and therefore is a worst case scenario. The Zone of Theoretical Visibility (thereafter ZTV) utilised in the LVIA shows that potentially 21 to 26 turbines may be seen from this location. Potential impacts are discussed in Section 12.4.

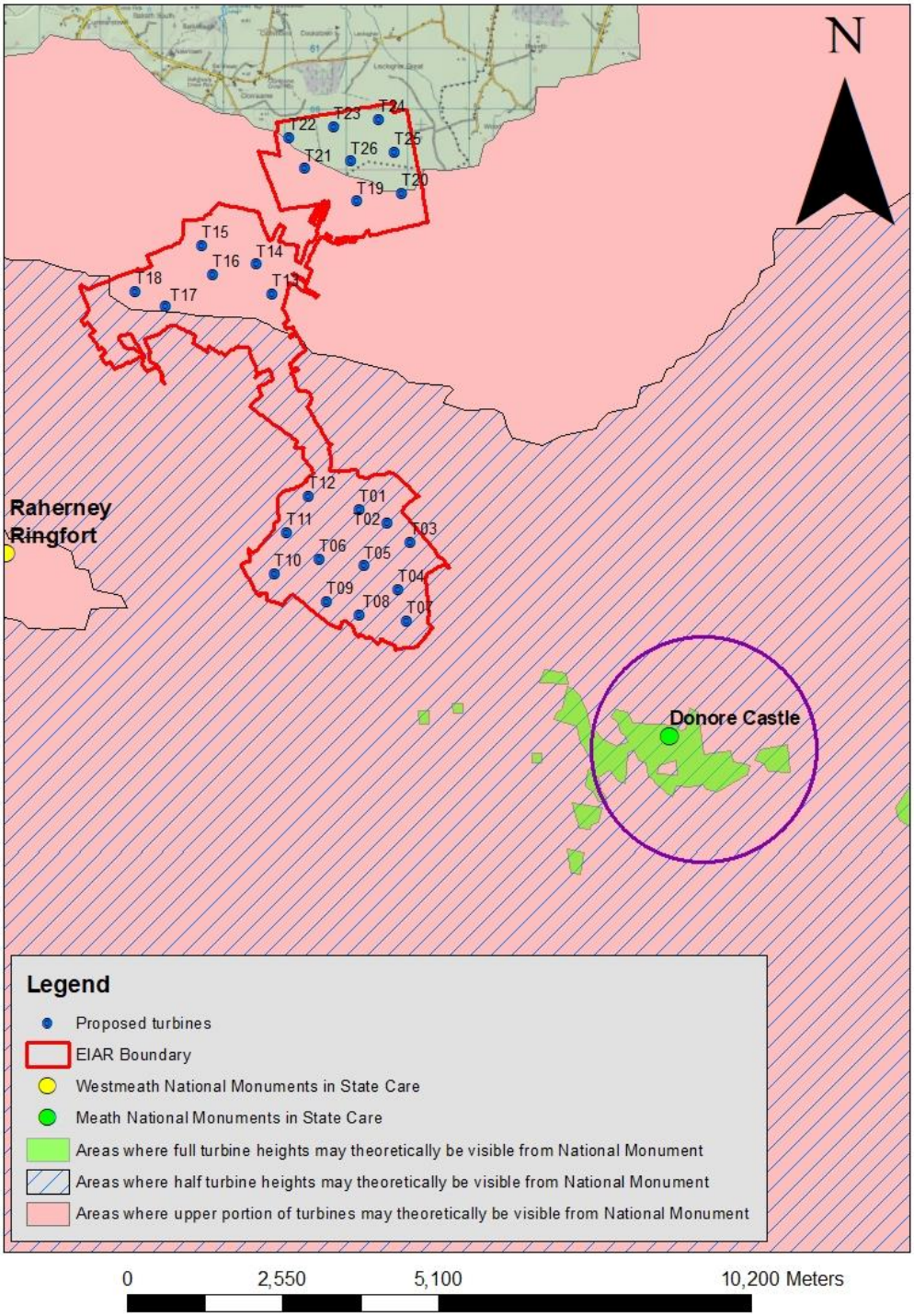

Figure 12-9: Viewshed analysis results from National Monument No. 232 Donore Castle showing varying degrees of visibility depending on height of structures in the landscape (such as turbines).

12.3.1.4 Recorded Monuments within the Wind Farm Site Boundary

No recorded monuments are located within the EIAR site boundary.

12.3.1.5 Recorded Monuments within 5km of the proposed Turbines

One hundred and forty-one (141) monuments are located within 5km of the nearest proposed turbine, and these are detailed below in Table 12.3. The study area distance (5km) is described in the methodology in Section 12.2.5. Monuments within 5km of the nearest proposed turbines are included here to assess potential effects on setting in the wider landscape setting of the Proposed Development (i.e. indirect effects). Figure 12-10 illustrates the monuments are labelled from 1-141 (Map ID) for ease of reference. Monuments within 5 kilometres of the proposed turbines are included here for purposes of assessing potential visual impacts in the wider landscape setting only. None will be directly impacted by the Proposed Development.

Only two of the 141 monuments are located within 1km of the nearest proposed turbine. Thirteen monuments are located between 1 and 2km from the nearest proposed turbine. Twenty are located between 2 and 3km of the nearest proposed turbine with 54 monuments located between 3 and 4km from the nearest proposed turbine. Fifty-two monuments are located between 4 and 5km from the nearest proposed turbine. Figure 12-11 includes the classification of monuments by type.Direct and Indirect effects are addressed below in Section 12.3.1.14 below.

The majority of monument types are ringforts (52) with 10 earthworks within 5km of the nearest turbine. Fifteen castles are located within 5km of the nearest proposed turbine with 5 burial grounds and 6 churches within 5km. The remainder of monuments occur in lower numbers (1-3).

Table 12.3: RMPs within 5km of the nearest proposed turbines

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	TOWNLAND	WTG ID	DISTANCE (M)
1	WM014-023—	661942	758024	Field system	Bracklin	T15	689
2	ME035-001—	665245	757838	Burial	Coolronan	T19	693
3	ME035-012—	666542	753912	Earthwork	Robinstown (Lune By.)	T03	1100
4	ME035-011—	666500	753960	Enclosure - large enclosure	Robinstown (Lune By.)	T03	1121
5	WM014-019—	660939	758198	Ringfort - rath	Bracklin	T18	1278
6	ME035-013—	667194	753536	Ringfort - rath	Clonygrange	T03	1339
7	WM014-016—	665583	761200	Earthwork	Lisclogher Great	T24	1355
8	ME029-025—	666915	760065	Designed landscape - tree-ring	Woodtown West	T25	1392
9	ME041-001—	664353	750624	Ringfort - rath	Bigisland	T09	1409
10	WM021-013—	662848	751341	Ringfort - rath	Riverdale	T10	1452

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	TOWNLAND	WTG ID	DISTANCE (M)
11	ME041-002—	667356	752096	Enclosure	Clonycavan	T07	1484
12	WM014-018—	660155	758271	Castle - tower house	Bracklin	T18	1820
13	ME035-005—	666778	757080	Ringfort - rath	Coolronan	T20	1824
14	ME035-002—	667664	758389	Ringfort - rath	Ballynadrimna	T20	1839
15	WM028-001—	663476	750556	Ringfort - unclassified	Riverdale	T09	1849
16	ME035-010001-	667497	754540	Graveyard	Killaconnigan	T03	2185
17	ME035-010002-	667494	754553	Cross	Killaconnigan	T03	2192
18	ME035-010—	667499	754556	Church	Killaconnigan	T03	2198
19	ME029-019—	668169	758820	Castle - tower house	Ballynadrimna	T20	2332
20	WM013-105—	659635	758557	Ringfort - rath	Bracklin	T18	2402
21	WM021-021—	660771	754612	Earthwork	Grange More	T17	2514
22	ME041-005—	666493	749217	Ringfort - rath	Clondalee Beg	T07	2540
23	ME035-006—	667848	757070	Castle - motte and bailey	Coolronan	T20	2550
24	WM020-059—	659887	755079	Ringfort - unclassified	Craddanstown	T18	2555
25	WM028-002—	662427	750284	Earthwork	Riverdale	T10	2557
26	ME035-016—	668564	753043	Earthwork	Ballivor	T03	2582
27	WM021-002—	660797	754500	Ringfort - rath	Grange More	T17	2600
28	WM013-104—	659280	758560	Ringfort - rath	Bracklin	T18	2689
29	WM014-015—	663286	762162	Ringfort - unclassified	Stonestown (Delvin By., Copperalley Ed)	T22	2711
30	WM021-001—	660187	754619	Designed landscape - tree-ring	Craddanstown	T18	2770
31	WM014-012—	665772	762638	Ringfort - unclassified	Addinstown	T24	2805
32	WM014-012001-	665782	762655	Building	Addinstown	T24	2823
33	ME029-029—	668358	760393	Concentric enclosure	Ballyboy (Lune By., Athboy Par.)	T25	2831

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	TOWNLAND	WTG ID	DISTANCE (M)
34	ME035-009001-	667563	755441	Bullaun stone	Carranstown Great	T02	2920
35	ME035-009—	667566	755450	Ringfort - rath	Carranstown Great	T02	2929
36	WM021-003—	660427	754230	Ringfort - rath	Grange More	T17	3018
37	WM013-103—	658925	758717	Ringfort - rath	Ballynacor	T18	3072
38	WM014-011—	664633	762809	Mill - corn	Crowinstown Great	T24	3074
39	WM021-015—	660810	751505	Burial	Grange Beg	T10	3120
40	ME035-008—	667546	755761	Castle - unclassified	Carranstown Great	T02	3154
41	WM020-060—	659535	754585	Enclosure	Joristown Lower	T18	3161
42	WM021-012—	660741	751524	Castle - tower house	Grange Beg	T10	3181
43	WM021-012001-	660740	751519	Dovecote	Grange Beg	T10	3183
44	WM014-010—	663989	762826	Ringfort - rath	Crowinstown Great	T23	3189
45	ME041-024—	663780	748880	Burial ground	Ballasport,Croboy	T08	3224
46	WM014-017—	660582	760398	Castle - tower house	Martinstown (Delvin By.)	T15	3282
47	ME029-011—	667660	762311	Ringfort - rath	Causestown (Lune By.)	T24	3298
48	ME041-004—	663891	748693	Barrow - mound barrow	Croboy	T08	3350
49	WM021-009—	660417	752493	Redundant record	Grange Beg	T10	3366
50	ME029-010—	667632	762441	Castle - tower house	Causestown (Lune By.)	T24	3378
51	WM020-055—	658299	755968	Building	Corbetstown	T18	3388
52	WM020-139—	659465	754316	Burial ground	Joristown Lower	T18	3416
53	WM021-008—	660346	752731	Church	Grange Beg	T10	3449
54	WM021-008001-	660337	752738	Graveyard	Grange Beg	T10	3458
55	WM021-008002-	660337	752738	Ecclesiastical enclosure	Grange Beg	T10	3458
56	ME041-006001-	668275	749097	Graveyard	Killyon	T07	3500

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	TOWNLAND	WTG ID	DISTANCE (M)
57	ME041-006—	668283	749103	Church	Killyon	T07	3501
58	ME041-006002-	668311	749115	Ritual site - holy well	Killyon	T07	3511
59	WM020-056—	658152	755923	Ritual site - holy well	Corbetstown	T18	3542
60	WM013-066—	659378	759895	Earthwork	Ballynacor	T18	3551
61	WM021-020—	660171	752142	House - indeterminate date	Cloghanstown	T10	3626
62	ME035-014—	669565	753626	Earthwork	Ballivor	T03	3642
63	WM020-095—	659057	754354	Ringfort - rath	Joristown Lower	T18	3647
64	WM021-006—	660145	752916	Barrow - unclassified	Cloghanstown	T10	3668
65	WM013-073—	659179	759890	Ringfort - rath	Ballynacor	T18	3670
66	WM020-025—	657866	757565	Church	Killagh	T18	3678
67	WM013-071—	658969	759716	Ringfort - rath	Ballynacor	T18	3679
68	WM021-010—	660132	751977	Ringfort - rath	Cloghanstown	T10	3682
69	WM020-025001-	657856	757558	Graveyard	Killagh	T18	3687
70	WM013-071001-	658959	759721	Hut site	Ballynacor	T18	3689
71	WM021-004—	660213	753426	Building	Grange More	T10	3701
72	WM020-024—	657832	757491	Castle - motte and bailey	Killagh	T18	3702
73	WM021-011—	660085	751821	Ringfort - rath	Wardenstown	T10	3752
74	WM014-009—	663812	763378	Burial ground	Crowinstown Great	T23	3768
75	WM021-019—	660100	751640	Barrow - unclassified	Wardenstown	T10	3772
76	WM014-009001-	663808	763387	Chapel	Crowinstown Great	T23	3778
77	WM013-067—	659602	760341	Ringfort - rath	Ballynacor,Martin stown (Delvin By.)	T18	3800
78	ME035-015—	669747	753516	Earthwork	Ballivor	T03	3804
79	WM021-007—	659977	752538	Ringfort - rath	Cloghanstown	T10	3807
80	WM013-122—	657731	757671	Mill - woollen	Killagh	T18	3827
81	WM013-107—	657711	757599	Castle - tower house	Killagh	T18	3836

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	TOWNLAND	WTG ID	DISTANCE (M)
82	WM014-007—	661804	762684	Barrow - bowl-barrow	Southhill	T22	3838
83	WM013-121—	657715	757680	Mill - corn	Killagh	T18	3844
84	WM013-070—	658802	759796	Ringfort - rath	Ballynacor	T18	3853
85	WM013-106—	657685	757751	Barrow - mound barrow	Killagh	T18	3886
86	WM013-065—	659153	760191	Ringfort - rath	Ballynacor	T18	3923
87	WM014-025—	660818	761864	Ringfort - rath	Balrath North (Delvin By.)	T22	3951
88	WM020-057—	657866	755517	Ringfort - rath	Corbetstown	T18	3953
89	ME029-012—	667963	762927	Moated site	Causestown (Lune By.)	T24	3964
90	ME035-021—	669290	756560	Battlefield	Rathcormick,Rathkenna,Corballis (Lune By.),Crossanstown	T20	4029
91	WM014-013—	660611	761713	Ringfort - unclassified	Balrath North (Delvin By.)	T22	4038
92	WM013-064—	659061	760341	Flat cemetery	Cartenstown	T18	4098
93	ME035-022—	669969	758486	Ringfort - rath	Rathcormick	T20	4129
94	WM020-093—	658552	754165	Ringfort - rath	Creggstown	T18	4133
95	ME040-001—	662679	748342	Ringfort - rath	Croboy	T09	4148
96	WM020-058—	658175	754563	Ringfort - unclassified	Clonreagh	T18	4161
97	WM020-049003-	657475	755909	Kiln - corn-drying	Corbetstown	T18	4192
98	WM020-049—	657475	755900	Church	Corbetstown	T18	4195
99	WM020-049002-	657468	755907	Ecclesiastical enclosure	Corbetstown	T18	4200
100	WM020-049001-	657470	755890	Graveyard	Corbetstown	T18	4203
101	WM027-075—	659858	750900	Enclosure	Brutonstown	T10	4221
102	ME035-017—	670205	752798	Ringfort - rath	Muchwood	T03	4225
103	ME035-018—	670206	752653	Burial ground	Muchwood	T03	4234
104	WM020-134—	659623	751439	Castle - unclassified	Wardenstown	T10	4282

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	TOWNLAND	WTG ID	DISTANCE (M)
105	WM020-147—	657611	755271	Enclosure	Corbetstown	T18	4286
106	WM013-068—	657889	759375	Ringfort - unclassified	Ballymaghery	T18	4299
107	WM013-101—	657622	758971	Barrow - bowl-barrow	Graffanstown	T18	4333
108	ME041-007—	669934	749900	Religious house - Dominican friars	Donore (Lune By., Killaconnigan Par.)	T07	4389
109	WM020-131—	659398	752785	Ringfort - rath	Raharney	T10	4398
110	ME035-019—	670372	752563	Earthwork	Muchwood	T03	4407
111	WM020-101—	658918	753487	Ringfort - rath	Joristown Upper	T18	4408
112	WM014-006—	660993	762803	Ringfort - rath	Southhill	T22	4444
113	ME029-030—	668328	763265	Ringfort - rath	Pluckstown	T24	4457
114	ME035-004—	670258	758003	Ringfort - rath	Rathcormick	T20	4461
115	WM020-094—	658394	753835	Ringfort - rath	Creggstown	T18	4479
116	WM013-069—	657742	759690	Ringfort - rath	Ballynacor	T18	4597
117	ME029-013—	668924	762897	Ringfort - rath	Causestown (Lune By.)	T24	4610
118	ME035-003—	670455	758609	Castle - motte and bailey	Moyrath	T20	4612
119	ME041-016—	665426	747068	Moated site	Molerick	T07	4653
120	WM013-099—	656972	758181	Castle - unclassified	Dardistown	T18	4674
121	ME041-008—	670200	749785	Castle - tower house	Donore (Lune By., Killaconnigan Par.)	T07	4679
122	WM014-020—	660335	762437	Souterrain	Castletowndelvin	T22	4682
123	WM020-100—	658387	753549	Ringfort - rath	Creggstown	T18	4693
124	WM009-040—	663305	764270	Ringfort - rath	Crowinstown Great	T23	4765
125	WM013-100—	656774	757604	Castle - unclassified	Dardistown	T18	4766
126	ME041-025—	670200	749469	Ringfort - rath	Ballymahon	T07	4817
127	WM020-102—	658971	752849	Ringfort - rath	Joristown Upper	T10	4829

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	TOWNLAND	WTG ID	DISTANCE (M)
128	WM020-102001-	658965	752852	Bullaun stone	Joristown Upper	T10	4835
129	WM013-063—	657853	760225	Bridge	Ballynacor	T18	4839
130	ME041-020—	663990	747088	Industrial site	Kilwarden	T08	4848
131	WM013-063001-	657862	760267	Armorial plaque (present location)	Ballynacor	T18	4860
132	WM013-098—	656760	758312	Church	Dardistown	T18	4912
133	WM013-115—	656823	758557	Ritual site - holy well	Dardistown	T18	4920
134	ME029-016001-	670103	761604	Souterrain	Fraine	T25	4926
135	ME029-016—	670104	761609	Ringfort - rath	Fraine	T25	4929
136	WM020-092—	657549	754117	Earthwork	Higginstown (Farbill By.)	T18	4930
137	ME029-003—	668398	763816	Ringfort - rath	Grennanstown	T24	4933
138	ME041-023—	669353	748138	Burial ground	Moyfin	T07	4937
139	WM020-141—	658045	753524	Enclosure	Creggstown	T18	4945
140	WM027-028—	659303	750302	Ringfort - rath	Hyde Park	T10	4969
141	WM013-062—	657003	759191	Castle - unclassified	Hiskinstown	T18	4986

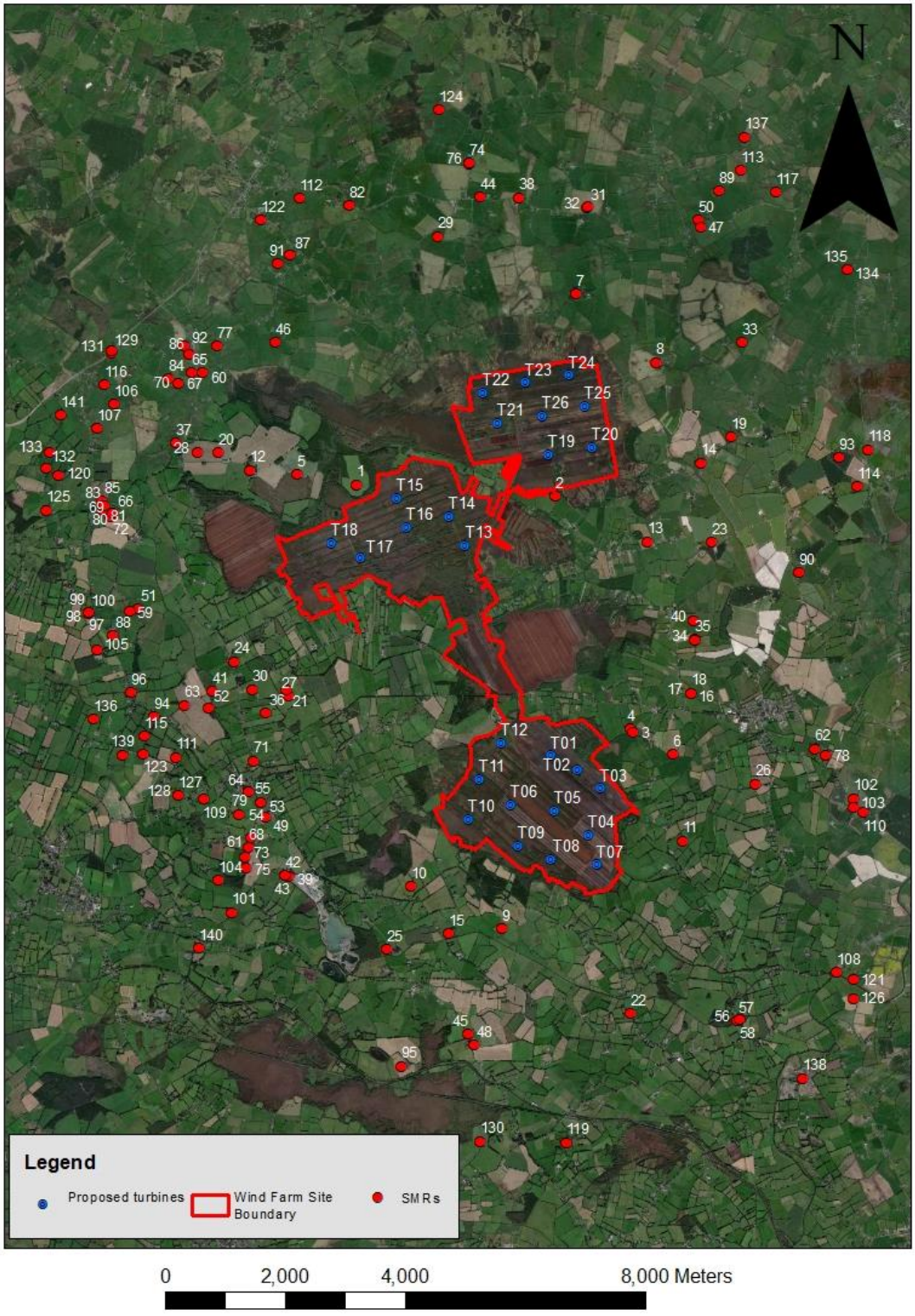

Figure 12-10: SMRs within 5km of the nearest proposed turbine.

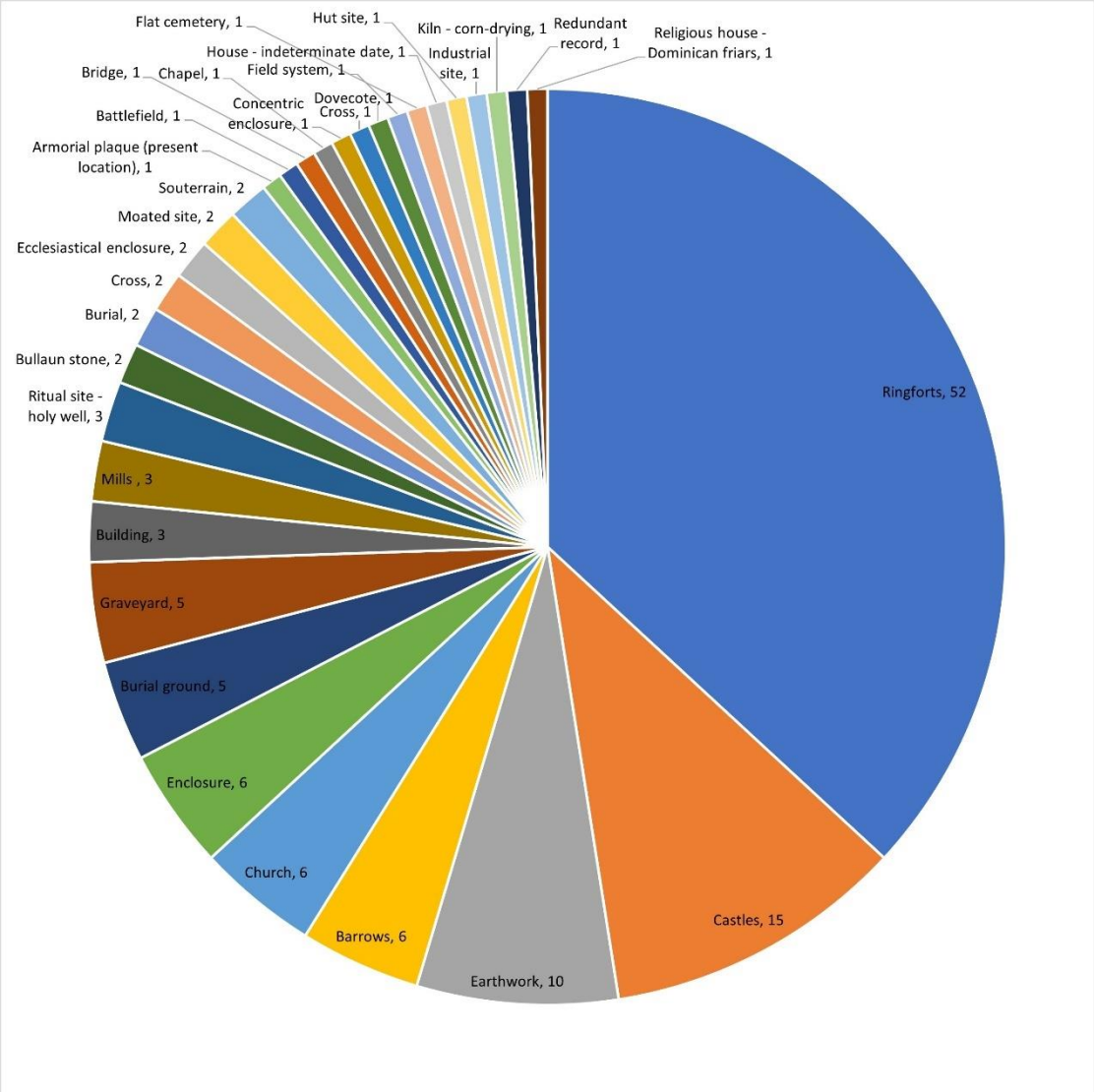

Figure 12-11: Monuments numbers within 5km of the nearest proposed turbine

12.3.1.5.1 Context of Existing Environment

The Prehistoric Period

The prehistoric period is represented only by 6 barrows and a flat cemetery. Barrows are an artificial mound of earth or earth and stone, normally constructed to contain or conceal burials. These are part of the Bronze/Iron Age burial tradition (c. 2400 BC - AD 400). Flat cemeteries consist of three or more individual burials, in pits or cists, related to one another by rite, grave goods or simply by their close proximity to one another. These are not covered by a mound and are dated to the Bronze Age (c. 2400-500 BC).

A number of other monuments may date to the prehistoric period but their dates can span from prehistory through to the Medieval period (please see Table 12-3 and Figures 12-10 and 12-11 for details). One such site type is hut sites one of which is located within 5km of the proposed turbines. The primary function and date of hut sites is slightly ambiguous. Examples of hut sites are known throughout the country, particularly in upland regions, and are frequently associated with the practice of transhumance or

booleying. Transhumance refers to the practice of the seasonal movement of people and their livestock typically to higher pastures in the summer and lower valleys in the winter. In Ireland this practice is known as booleying and is believed to date to the early medieval period, although it continued well into the nineteenth and early twentieth century.

Other uses for hillside huts have been noted at Mount Brandon, County Kerry, where it is suggested that they functioned as temporary habitations for seabourne pilgrims. It is also thought that they were used as habitation sites such as booleying huts during the year when pilgrimage was not taking place. An extensive series of pre-bog walls was also noted on the southern slopes of Mount Brandon. It is noted in that instance that although pre-dating the bog, the peat may still have been growing well into the medieval period. In this regard, such walls could be early medieval in date rather than prehistoric (Archaeology Ireland Heritage Guide No. 29). Furthermore, the potentially lengthy chronology of hut sites means that while some may be prehistoric others may date to the early or later medieval period or indeed to more modern times (ibid.).

The Early Medieval Period

The majority of monuments consist of those which may be definitively attributed to the Early Medieval period and ringforts, enclosures and souterrains dominate the archaeological landscape within the 5km study area. Ringforts comprise earthen monuments while cashels take a similar form to the latter but are constructed using stone. Enclosures may represent the remains of ringforts or cashels but may not retain enough features to classify them as such or fall outside the acceptable size range for these monuments. Ringforts consist of a circular or roughly circular area enclosed by an earthen bank formed by material thrown up from the digging of a concentric ditch on its outside. Ringforts are usually enclosed by a single bank (univallate) while bivallate or trivallate ringforts i.e. those enclosed by double or triple rings of banks are less common. The number of banks and ditches enclosing these monuments are considered to reflect the status of the site, rather than the strengthening of its defences. Archaeological excavation has shown that the majority of ringforts functioned as enclosed farmsteads, built during the Early Christian period (5th – 9th century A.D.). Excavation within the interior of the monuments has traced the remains of circular and rectangular dwelling houses as well as smaller huts probably used to stall animals. The enclosing earthworks would also have protected domestic livestock from natural predators such as wolves and foxes. Souterrains are frequently associated with ringforts, cashels and enclosures. Souterrains derive their name from the French sous terrain meaning ‘underground’ and comprise an underground structure consisting of one or more chambers connected by narrow passages or creepways, usually constructed of drystone-walling with a lintelled roof over the passages and a corbelled roof over the chambers. Most souterrains appear to have been built in the early medieval period by ringfort inhabitants (c. 500 - 1000 AD) as a defensive feature and/or for storage.

Sites with religious or ritual association

Holy Wells

Three holy wells ME041-006002, WM020-056 and WM013-115 are located at Killyon (Meath), Corbetstown and Dardistown (Westmeath). The example at Killyon is situated at the bottom of a N-facing slope with the W-E River Deel c. 35m to the N. A church at Killyon is listed in the ecclesiastical taxation (1302-06) of Pope Nicholas IV (Cal. doc. Ire., 5, 257). Ussher describes the church and chancel of Killian as ruinous (Erlington 1847-64, xcix). According to Dopping (1683-5) only the church walls were standing and it was not enclosed (Ellison 1973, 10). The parish church of Killyon is within a subrectangular graveyard (dims c. 40m N-S; c. 35m E-W) that has only modern boundaries of wooden and wire fences. The graveyard has headstones dating from 1757 to 1977. Only the E wall (T 0.95m) and parts of N (int. L 7.4m) and S (int. L 6.2m) walls survive to any extent (max. H 2.5m) of a single cell structure (int. dims 8.35m plus E-W; 5m N-S) that has a destroyed window embrasure (Wth 1.34m) in the E wall and another (Wth 1.43m) in the N wall. A headstone in the church erected in 1787 commemorates seven members of the 18th century Dominican friary at Donore (ME041-007—) c. 2km to the ENE, who are buried here, the earliest date being 1737 (Cogan 1862-70, 1, 309). The holy well (ME041-006002-) is c. 20m to the E.

The example at Corbettstown according to the terrier of 1655 Down Survey map of Farbill Barony stated that 'at Griffinstowne & Corbittstowne are two old Chappells that at Corbettstowne being called Killpatrick's Church [WM020-049—] hath some ash trees about it & near a well called Killpatrick well in great repute among the Irish Inhabitants' (NLI, MS 723-4). According to local folklore this church was known locally as Scarden or Scártán Church (The Schools' Collection, Volume 0727, Page 018). The folklore of this area known as Scarden is closely connected with St. Patrick and 'is mentioned by O'Donovan in his "Letters" as the place called Scártán - a little brake where St. Patrick stopped on his way to Clonard' (ibid.). According to the Schools' manuscripts there was 'A slab of tombstone forms a shelter over the well and on the stone is the following inscription' (The Schools' Collection, Volume 0727, Page 019). The well was described in 1938 as following; 'We have there Saint Patrick's well, where a patern or patron day used to be held in olden times on the fifteenth of August, from Sunday. previous to the Sunday afterwards. Many still go there and say cures are got there. Prayers and rosaries are said and visits made around it. Pieces of cloth are still left around the well. The well comes from a hill on its South side and track and trenches and mounds indicate remains of a building of some sort and probably a graveyard' (ibid.)

Situated on a gentle N-facing slope, in undulating pasture. St Patrick's holy well described in 1983 as a surface spring which rises on a gentle slope and flows northwards. It is defined by a loose arrangement of stones, however there is no attempt to enclose it with formal walls. The well is situated within a trapezoidal-shaped enclosure (dims. 20m N-S; min. 16m E-W) which is delineated by a low bank with a shallow fosse on the exterior. Monument is not visible on Digital Globe aerial photography due to the trapezoidal enclosure being obscured by trees and scrub.

The third example at Dardistown is described in the Archaeological Inventory as a possible holy well annotated in Gothic script as 'Tober Luibe' on the 1838 ed. OS 6-inch map.

Bullaun Stones

Two bullaun stones ME035-009001 and WM020-102001 are located At Carranstown Great and Joristown Upper respectively. The Former is located in the interior of rath (ME035-009—) there is a bullaun stone that is flush with the surface (dims 1m x c. 0.8m) with a single basin.

The second bullaun stone at Joristown Upper is situated on a steep natural rise, in gently undulating pasture, having good views in all directions. Bullaun stone described in 1970 as being within the centre of a levelled ringfort (WM020-102). Described in a later field report (undated) as the enclosure having been levelled and the bullaun stone pushed up against the field fence c. 18m to SE. It is a large conglomerate boulder with a circular-shaped, deep conical depression (diam. 0.35m; D 0.3).

The term 'bullaun' (from the Irish word 'bullán', which means a round hollow in a stone, or a bowl) is applied to boulders of stone or bedrock with hemispherical hollows or basin-like depressions, which may have functioned as mortars. They are frequently associated with ecclesiastical sites and holy wells and so may have been used for religious purposes. Other examples which do not appear to have ecclesiastical associations can be found in bedrock or outcrop in upland contexts, often under blanket bog, and are known as bedrock mortars. They date from the prehistoric period to the early medieval period (5th-12th centuries AD).

Ecclesiastical Enclosure at Grange Beg

An Ecclesiastical Enclosure is located at Grange Beg Townland. It consists of a sub-circular form of the graveyard (WM021-008002-) boundary wall which possibly indicates the presence of an Early Christian ecclesiastical enclosure (Swan 1988, 21). The church is known locally as Kilcolumb church and graveyard (WM021-008001-). No church is depicted in this townland on the 1655 Down Survey map of Farbill Barony (NLI MS 723-4). In pasture, at N end of N-S ridge in undulating countryside overlooking valley and River Deel 35m to W. Sub-rectangular shaped graveyard (WM021-008001-) with ruins of a small church standing in S quadrant of graveyard that is depicted on all editions of the OS six-inch maps. Present remains consist of a rectangular structure (int. dims. 8.6m E-W; 5.35m N-S; wall T 0.45-0.6m) with

entrance gap (Wth 1.1m) in centre of E wall that has been repointed and partially rebuilt c. 2010. This structure or church may have been built on the footprint of a medieval church although today there are no surface remains visible for the existence of a medieval church inside this graveyard. The thin walls of this structure suggest that this building dates from the post medieval period. Inside the structure are the remains of a memorial dating from the 19th century along with concrete crosses of recent date. The walls of this structure have been mainly repointed and the tops of the walls have been rebuilt with a concrete triangular headed window inserted into centre of W wall. All of these works appear to date from c. 2010 and it is not clear if any walls of this rebuilt structure belong to the medieval church that is depicted on the OS 6-inch maps. It is possible that this structure was built in the post medieval period on the site of the medieval church. The structure may have been built to serve as a post-medieval church or as a private burial area in order to enclose the 20th century memorial standing in the centre of this structure. In 2010 the walls of this building appear to have been rebuilt to form the present structure visible today. In 1980 the remains of this building depicted as a church on the OS 6-inch map was described as consisting of 'some fragments of stone walls, almost totally obscured by ivy and briars. They seem to be the remains of the SE and SW walls of a rectangular stone built structure whose long axis lay NW-SE. The walls are built of rough limestone laid in courses and bond with mortar. No dressed stone or features are visible. The original outline of the structure is not discernible, but it seems to have been quite small and probably of late date. The graveyard contains memorials dating from the post-medieval period onwards. No evidence of any earthworks or trace of an ecclesiastical enclosure in the fields surrounding the graveyard.

Medieval Period

Mottes and Baileys

Three Mottes and Baileys ME035-006 at Coolronan, WM020-024 at Killagh and ME035-003 at Moyrath. All are located in excess of 2.5km from the nearest proposed turbines. Mottes and Baileys are an early form of castle consisting of a flat-topped, steep-sided, earthen mound supporting a wooden tower, with an associated courtyard or bailey, which is often raised and enclosed by a bank and fosse. They were constructed by the Anglo-Normans in the late 12th and early 13th century AD.

The former (ME035-006) is situated on a slight SE-facing slope. This is a circular flat-topped, grass and scrub-covered mound (diam. of top 13.3m N-S; 12.6m E-W; diam. of base 30m; H c. 5m) defined by a fosse, which is slightly truncated by a N-S lane at W. A grass-covered bailey (dims c. 40m N-S; c. 20m E-W) may have been attached to the E and SE where it is defined by a slight scarp.

WM020-024 at Killagh is Situated on a slight rise, in gently undulating pasture, with excellent views from the top of the motte, in all directions. Church and graveyard (WM020-025—/-025001-) lie c. 60m to NE and Killagh tower house lies c. 135m to NW. Annotated 'Moat' on the 1837 OS Fair Plan map where it is depicted as an oval-shaped tree-planted earthwork. Depicted on the revised 1913 ed. OS 25-inch map as a roughly circular-shaped mound which is enclosed by a wide fosse from SE-S-W-NW. Monument described in 1970 as a roughly circular-shaped, high, steep-sided flat-topped earthen mound the base of which is enclosed by a fosse and the remains of an external bank. A wide, deep fosse and an outer bank are visible from SE-S-WSW. The bank has a modern gap at S and is very slight from SW-WSW. A modern bank running ESE-WNW is built against the outer face of the bank from SSE-S-SSW. The bank veers away from the fosse at SE to enclose a larger area, which may have been a bailey, although there is little evidence of such surviving. Monument is visible today as a tree-covered earthwork on Digital Globe aerial photography.

ME035-003 at Moyrath is located at the N end of a low NNW-SSE ridge. This is a flat-topped and grass-covered mound (dims of top 11m N-S; c. 30m E-W; diam. of base c. 40m N-S; H 3m at N to 4m at S) with some bushes. It is defined by a wide fosse (at S: Wth of top 10m; ext. D 1.5m), but the N part of the mound had been quarried. There is a grass-covered rectangular bailey (dims 9m N-S; c. 40m E-W) attached ESE-SSW defined by a fosse (at S: Wth of top 7m; ext. D 0.7m) and an outer bank (Wth 4m; ext. H 0.3m) with some bushes at S. There is a causeway (Wth of top 2.3m) connecting the motte and bailey at SSE, and a causeway (Wth of top 2.5m) across the fosse to the bailey at SSE.

Castles (Tower House)

Seven of the castles within 5km of the nearest proposed turbines consist of Tower Houses, WM014-018 at Bracklin, ME029-019 at Ballynadrimna, WM021-012 at Grange Beg, WM014-017 at Martinstown (Delvin By.), ME029-010 at Causestown (Lune By.), WM013-107 at Killagh, and ME041-008 at Donore.

The nearest example is located at Bracklin (WM014-018). Bracklin House may have been built on the site of the medieval castle of Bracklin belonging to the Nugent family, however there is no physical evidence to support this suggestion. The present Bracklin House is often referred to as 'Bracklyn Castle' (Burke 1833 629). This name suggests that the present house was built on or close to the site of the medieval castle. Bracklyn Castle was built as a residence for the Nugent family of Moyrath who were descended from William, 1st baron of Delvin (Brewer 1825-6, 227). In 1559-60 the Crown recorded a 'livery to Edward, son and heir of Thomas Nugent, late of [Brack]lyne' (Nicholls 1994, 22).

The castle and lands passed from the Nugent's into the possession of the Pakenham family who sold the castle and estate to the Featherston family (ibid.). A castle is depicted on the Down Survey map of Killulagh parish, and the terrier recorded that, 'In Bracklyne there is a castle in repaire with an orchard & garden & some ash trees' (NLI MS 723-4). On this map the castle stood on lands belonging in 1641 to Edward Nugent who is listed as an 'Irish Papist'. No trace of a castle or any medieval fabric visible in the present Bracklin House.

The National Inventory of Architectural Heritage described the present Bracklin House as a; 'Detached five-bay two-storey over basement neoclassical country house, built c.1790, with projecting single-bay Doric porch to the centre of entrance front (west), c.1855, and single-storey bow-ended wings to either end (north and south), built c.1910. House bounded to front by low ashlar limestone plinth wall. Set back from road in extensive landscaped grounds to the south of Delvin with gate lodge (15401322) to west, mausoleum to north (15401406) and an extensive complex of outbuildings to rear (east) and to south side, many contemporary with the house. Three-storey extension to rear of house, c.1855. Bracklyn House was built by a branch of the Fetherston-Haugh Family in the late eighteenth-century on land acquired from the Pakenham Family of Tullynally Castle, Castlepollard. The present house occupies the site of a fifteenth century tower house. It is quite likely that some of the fabric of this earlier structure may have been used in the construction of the main house or, more likely, in the construction of the complex of outbuildings to the rear' (www.buildingsofireland.ie).

Churches

Six churches are located within 5km of the nearest proposed turbine and consist of ME035-010, at Killaconnigan, WM021-008 at Grange Beg, ME041-006 Killyon, WM020-025 at Killagh, WM020-049 at Corbetstown and WM013-098 at Dardistown.

The nearest church is located at Killaconnnigan and located on a slight rise in a level landscape. A church at Killocanegan is listed in the ecclesiastical taxation (1302-06) of Pope Nicholas IV (Cal. doc. Ire., 5, 256). Ussher (1622) describes the church as in reasonable repair, but the chancel was a ruin (Erlington 1847-64, 1, lxxxiv). According to Dopping (1682-5) the church and chancel of Killshangan alias Killeconegan were ruined and it was not enclosed (Ellison 1972, 12). Cogan (1862-70, 2, 345) records that the church was dedicated to St. Kineth or Cionaodh, whose pattern was celebrated on 16th November. The co-incidence of the name and date is not known in the martyrologies, but the name is likely to be derived from Colum Cille, one of the most popular Irish saints (Ó Riain 2011, 176). The church is marked on a map (MS 5485 (47)) made in 1767, which is in the NLI.

Some small cairns are the last remnants of the parish church, but no foundations are visible. There is one loose piece of window surround (H 0.2m) with a glazing-groove and bar-holes. A small limestone cross (H 0.48m; span 0.31m) with octagonal cross-sections (dims 0.14m x 0.14m) to the stem and arms (L 8cm) is probably a finial cross and is set in the ground at the centre of the graveyard near the cairns. The graveyard is a D-shaped area (max. dims c. 60m NW-SE; c. 50m NE-SW) defined by a straight earthen

bank at NW, a low earthen bank at NE and a path E-S at the base of the slope. Headstones date from c. 1770 to the present.

Post Medieval Period

This period is represented by two Corn Mills and a Woolen mill. The precise location of the corn mill in the townland of Crowinstown Great has not been identified. In 1647 a fine of £15 was levied on a group of mills in Co. Westmeath to pay Captain Ignatius Nugent of the Irish Confederate Army. The sum of 4s 8d. was levied on 'Moore in Creniston, or same, one mill' (Cal. S.P. Ire., 624). This mill is mentioned in the terrier of the 1659 Down Survey map of Castletown parish where it states that there was 'At Cronistowne there is the walles of a Chappell of Ease (WM014-009—) wth a Corn Mill in repaire' (NLI, MS 723-4). It is possible that the Corn Mill depicted on the 1837 ed. OS 6-inch map stands on the site of the mill mentioned in the 1659 Down Survey. In 1982 the ASI recorded that there was 'no visible remains of a mill in this vicinity. The stream which is a tributary of the Stonyford River has recently been drained by the OPW' (SMR File 21/08/1982).

The second corn mill at Killagh Killagh Castle (WM013-107—) is depicted on the Down Survey map of Killagh parish where it is annotated as 'in repaire' and shown standing beside Killagh Church (WM020-025—) and Corn Mill (NLI MS 723-4). On this map the castle is depicted as standing on lands belonging to George Nugent who is listed in 1641 as an 'Irish papist'. The terrier of this map recorded that 'There is in Killagh a Corne Mill a Tuck Mill (WM013-122-) a Ruined Church and, a Castle in Repaire' (ibid.). It is possible that Corn Mill depicted on the 1838 ed. OS 6-inch map is built on the site of the mill depicted on the Down Survey map.

The present 18th/19th century corn mill was described by the National Inventory of Architectural Heritage as following; 'Former corn mill complex, built c.1800, comprising detached multi-bay two-storey corn mill and store and a detached single-bay three-storey corn kiln at right angle to the northwest. Now out of use and in use as agricultural/domestic outbuildings. Pitched natural slate roof to main structure with pitched corrugated-iron roof to former corn kiln. Constructed of coursed rubble limestone with dressed limestone quoins to corners. Square-headed doorcases and segmental-headed carriage arches with dressed limestone and brick voussoirs to main building with loop hole openings over to first floor. Square-headed carriage arch (modern) to north side of former corn kiln. Small river/mill race to south side of main building (mill wheel no longer extant). This mill was owned by a John Heggarty, c.1850, and is recorded as a corn and tuck mill (woollen processing) with a water wheel ten feet in diameter and a water power value of £6 and 15 shillings (Valuation Office Mill Book)' (www.buildingsofireland.ie Reg. No. 15401320).

The Woolen mill Killagh Castle (WM013-107—) is depicted on the Down Survey map of Killagh parish where it is annotated as 'in repaire' and shown standing beside Killagh Church (WM020-025—) and Corn Mill (NLI MS 723-4). On this map the castle is depicted as standing on lands belonging to George Nugent who is listed in 1641 as an 'Irish papist'. The terrier of this map recorded that 'There is in Killagh a Corne Mill a Tuck Mill a Ruined Church and, a Castle in Repaire' (ibid.).

It is possible that the 'Tuck Mill' depicted on the 1838 ed. OS 6-inch map is built on the site of the Tuck Mill mentioned in the terrier of the Down Survey.

12.3.1.6 Archaeological Investigations undertaken within the Wind Farm Site Boundary

A number of archaeological surveys were previously carried out within these bogs during the lifetime of production works within the now EIAR boundary and were commissioned by Bord na Móna. A summary of the available results of such surveys and/or any reassessment surveys is presented below.

12.3.1.6.1 Ballivor Bog

Partial human remains (Clonycavan Man) consisting of a torso, head and upper arms were recovered at Bord na Móna's Ballivor Works on 21st February 2003. As Ballivor Bog produced moss peat, the peat was collected and screened to ensure no foreign objects are within it. The human remains were discovered after screening and deposited with any other non peat items at the Bord na Móna works. Bord na Móna were able to identify the location of the stockpile that was being screened. This was in the townland of Clonycavan approximately 1.5km southeast of the Bord na Móna offices at Ballivor Works. Please see Figure 12-12 below. The area was inspected and systematically walked by the author (then of ADS Ltd) and Ann Lynch of the DOEHLG (now DoHLGH) during a field visit on the 28th February 2003. On the 12th August 2003 a team of one supervisor, one site assistant and two archaeologists under the direction of Eoin Corcoran, ADS Ltd (Licence Ref.: 03E1221) investigated the find spot by shovel scraping, sweeping and trowelling a 100m long area. No further remains were recovered.

Ballivor was one of 15 bogs selected for archaeological survey in 2005 as part of the Archaeological Survey of Ireland Peatland Survey. The bog was field walked by ADS Ltd at two drain intervals with the exception of the cutaway part of Ballivor, which was walked at roughly 30m intervals. **No archaeological features were recorded during this survey.**

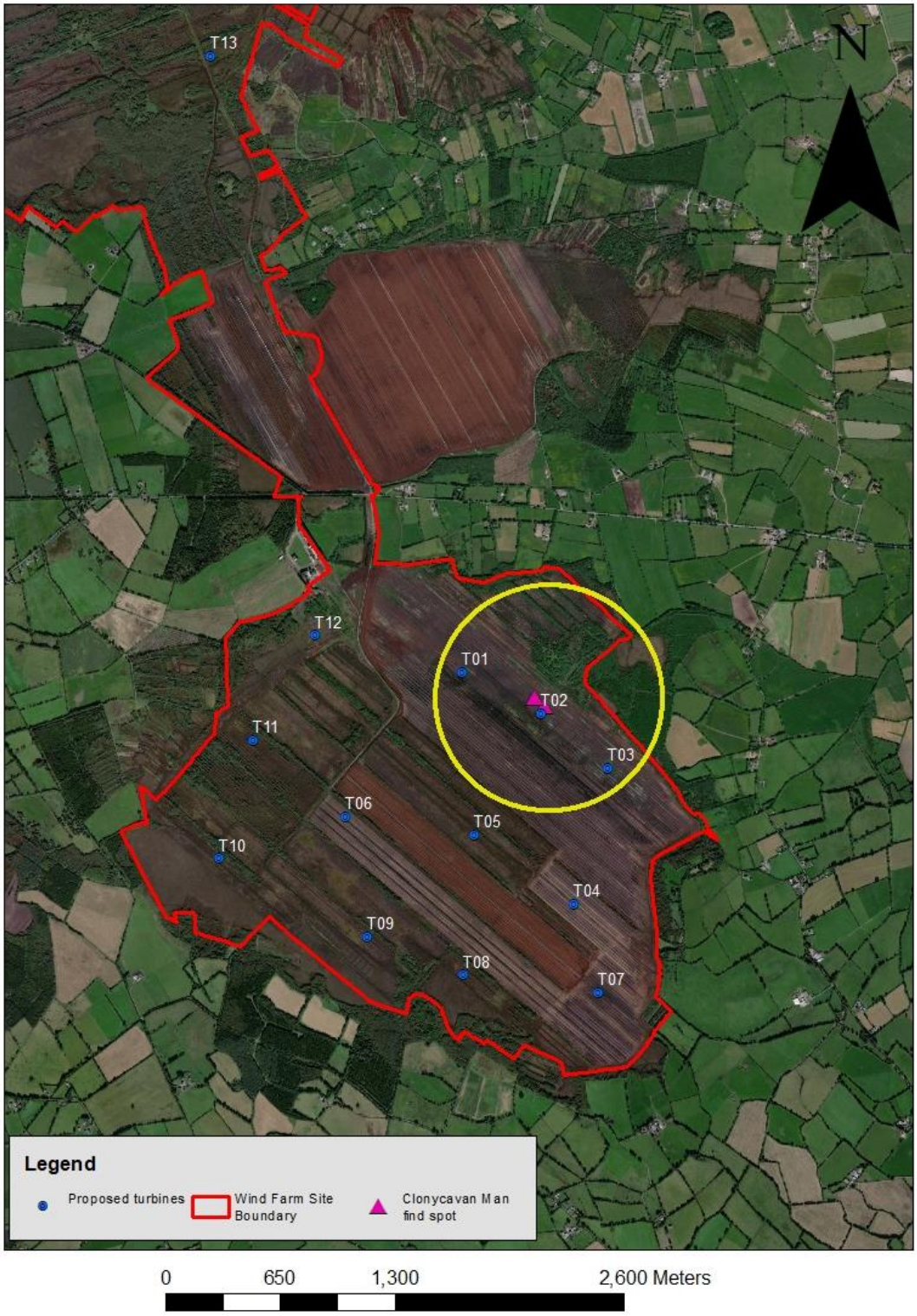

Figure 12-12: Clonycavan Man Find Spot in Ballivor Bog.

12.3.1.6.2 *Carranstown Bog*

Carranstown Bog is located immediately north of the R156 that runs from Raharney to Ballivor. An unclassified road runs northwards along its western extent while the eastern margins are forested. To the north there are some private turbary plots leading to farmland further northwards. The main access is from the level crossing on the R156 where the rail line crosses into Ballivor Bog. The entire bog is 306ha in size and is part of the Bord na Móna Derrygreenagh Group, however just the western portion, approximately 78 hectares falls within the wind farm site boundary. The bog was in full production in 2018 when last visited by Irish Archaeological Consultancy Ltd in the Cultural Heritage Assessment of the Derrygreenagh Bog Group (IPC Licence: P0501-01, Whitaker (2014) and Jacqui Anderson (2018), apart from 11 fields along the eastern extent, which are partially overgrown. There is a rail line that runs north-south from the level crossing through the centre of the bog.

Carranstown Bog was one of 15 bogs selected for archaeological survey in 2005 as part of the Archaeological Survey of Ireland Peatland Survey (Whitaker 2005). The bog was field walked by ADS Ltd at two drain intervals with the exception of the overgrown area which was walked at roughly 30m intervals. **No archaeological features were recorded during this survey.**

12.3.1.6.3 *Bracklin Bog*

Bracklin Bog is located north of Carranstown Bog between three unclassified roads. The road from Raharney to Delvin runs along its western extent while two smaller roads that run eastwards from this road define its northern and southern extents. The entire Bracklin bog covers an area of approximately 768ha and is part of the Bord na Móna Derrygreenagh Group. Approximately 620ha falls within the Wind Farm Site. Bracklin West, adjacent to the wind farm site, was in milled peat production (approx. 200ha), until June 2020. The remainder of the bog (approx. 75%) is overgrown sod peat bog that has become forested in places. There is an industrial railway that runs along the eastern side of this bog.

12.3.1.6.4 *Lisclogher Bog*

Lisclogher Bog is at the northernmost extent of the Bog Group. The main access is from the unclassified road to the west of the bog. The bog measures 483ha of which 436ha falls within the wind farm site. this bog historically underwent sod peat production. There are several high face banks with the remainder of the bog at a lower undrained level. Some re-vegetation has taken place since sod production ceased some years ago.

Lisclogher Bog was one of 15 bogs selected for archaeological survey in 2005 as part of the Archaeological Survey of Ireland Peatland Survey (Whitaker 2005). The bog was field walked by ADS Ltd at roughly 30m intervals as there were no field drains. **No archaeological features were recorded during this survey.**

12.3.1.7 Topographical Museum Files

Some of the locational information for stray finds can be gleaned from Heritage Maps (heritage maps.ie) where the National Museum have provided such data. Some more recent finds, however, are not marked on this resource and so the Museum were contacted on the 31st March 2020 to provide any information on additional stray finds within the Ballivor group of bogs. These are as follows:

Carranstown Bog includes the townlands of Carranstown, Carranstown Little, Carranstown Great, Killaconnigan, and Grange More.

No stray finds were recovered from the aforementioned townlands.

Bracklin Bog includes the townlands of Bracklin, Craddanstown, Killagh, Mucklin and Ballynaskeagh.

Stray finds of bog butter, hair, textile and leather are recorded from Coolronan townland (IA/186/1952) found rolled together in a ball at a depth of 7-12ft in a bog. Bracklin townland spans both Bracklin and Lisclogher bogs, the exact find spot of the four finds attributed to this townland is therefore uncertain. These finds are; a wooden lid (1964:83), a bronze sword blade (1959:31), a Neolithic pottery vessel (1959:09) and a polished stone axehead (1962.243).

Lisclogher Bog includes the townlands of Lisclogher Great, Cockstown, Clonmorrill, Clonleame and Bracklin.

A bronze axehead (1954:54) found 10ft deep in the bog and 14 pieces of wood (IA/104/1982) are recorded from the townland of Lisclogher in the topographical files of the National Museum. It is not certain if these are from the Bord na Móna production bog or from private turbary plots.

12.3.1.8 Potential Subsurface Archaeology

While no archaeological monuments were recorded during the 2005 Peatland Survey the discovery of the human remains in 2003 ('Clonycavan Man') along with the recorded stray finds from the area and the recorded monuments in the dryland surrounding the bog, suggests that there is a high potential for archaeological finds and features within the peat. Impacts and mitigation measures are addressed in Section 12.3.1.14.

12.3.1.9 Excavations Database

This database contains details regarding licensed excavations undertaken both within and adjacent to the Proposed Development.

The only licensed excavations are those which took place as part of the 2005 Peatland surveys and these are described above in Section 12.3.1.6.

12.3.1.10 Description of the Proposed Development area.

The description of the Proposed Development area and photographic record is presented in Appendix 12-1.

12.3.1.11 Protected Structures within the Wind Farm Site Boundary

One structure listed in the Record of Protected Structures is located within the EIAR boundary. This consists of the RPS 021-008 Permanent narrow gauge Bord na Mona railway line. The centre point for this structure is located to the northeast of the Ballivor Works within the northern section of Ballivor Bog. Please see Figure 12-13 below for details. It is described in the National Inventory of Architectural Heritage (Reg. No. 15402102) as follows:

'*Description: Permanent narrow gauge Bord na Mona railway line, erected c.1952, for transporting turf to the Ballivor Processing Plant, Co Meath. Now only used to transport carriages brought in for servicing. Constructed of steel I beams. Railway line is three foot wide and is laid in ten yard sections. Level crossing to main road comprises concrete piers with steel cross bars. Much of the earlier permanent narrow gauge is overgrown by vegetation. Located to the east of Raharney, close to the border with County Meath.*

Appraisal: Board na Mona narrow gauge railways and ancillary structures are an important element of the twentieth century industrial and economic heritage of Ireland. They are a common feature of the landscapes of the Bog of Allen, particularly in Co Westmeath, Co. Offaly, Co. Longford and Co. Kildare

and are almost a type that is unique to the midlands of Ireland. They are important historical reminders of the attempts of the Irish Government(s) to create employment in the midlands and utilise peat as a natural resource on an industrial level in the mid twentieth-century and have a huge social and economic importance to the midlands as a result. The simple steel and concrete level gates complete this record and add incident to the bog landscape'.

These railways have been laid from the 1950s onwards and were also extended over the decades where required. They have also been re-laid and removed in some locations. The majority of rails are still visible however as is the Level crossing on the R156 between Ballivor Bog to the south and Carranstown to the north. Any movement or re-laying of railway tracks since the 1950s would be deemed to have taken place prior to their inclusion in the National Inventory of Architectural Heritage (2004) and the addition to the Record of Protected Structures. .

An examination of the extensive railway network on site, where the proposed infrastructure is proposed to interact the structure, was undertaken. Some limitations with the walkover survey were encountered which included the difficulty in ascertaining the original railway from later narrow gauge railways where overgrowth was present for example. In general the 1989 aerial photos were used to ascertain what rails were present at that time with an assumption that those that were added after this period were likely to be later than those on the Record of Protected Structures.

The walkover examination was undertaken during both 2020 and 2021 and 15 intersections with proposed road / railways were identified (14 in Westmeath and 1 in Meath). In the intervening period between the walkover survey and the writing of this report, the layout has been altered to avoid as many railway lines as possible with the 14 impacts in Westmeath now reduced to 7 crossings by the proposed roads/amenity trails. Figure 12-14 shows areas where proposed roads intersect with the railway network. Impacts and mitigation addressed in Section 12.3.1.14.

Plate 12-1: Level Crossing at R156 (Image courtesy of NIAH).

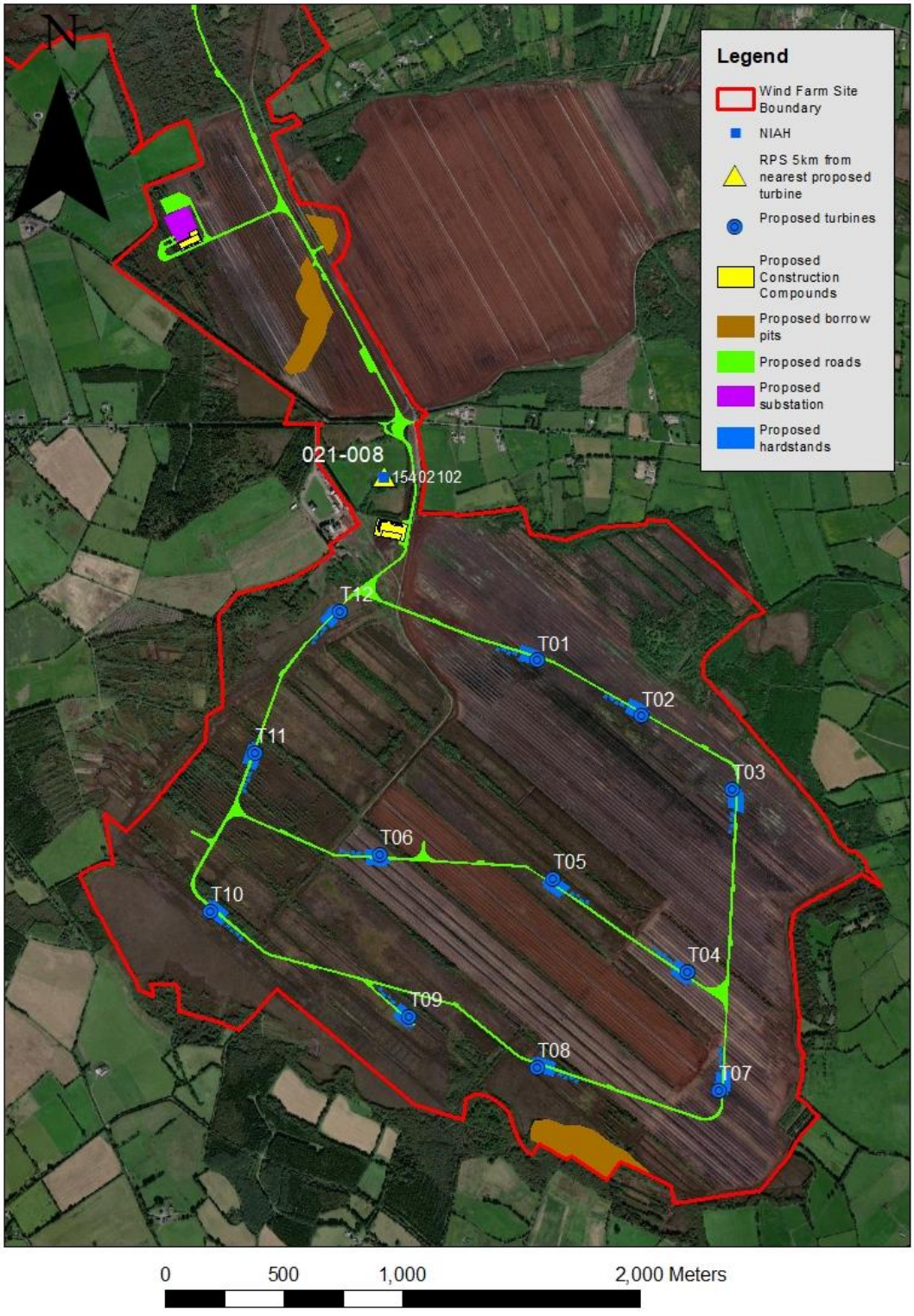

Figure 12-13: Record of Protected structures within the Wind Farm Site Boundary.

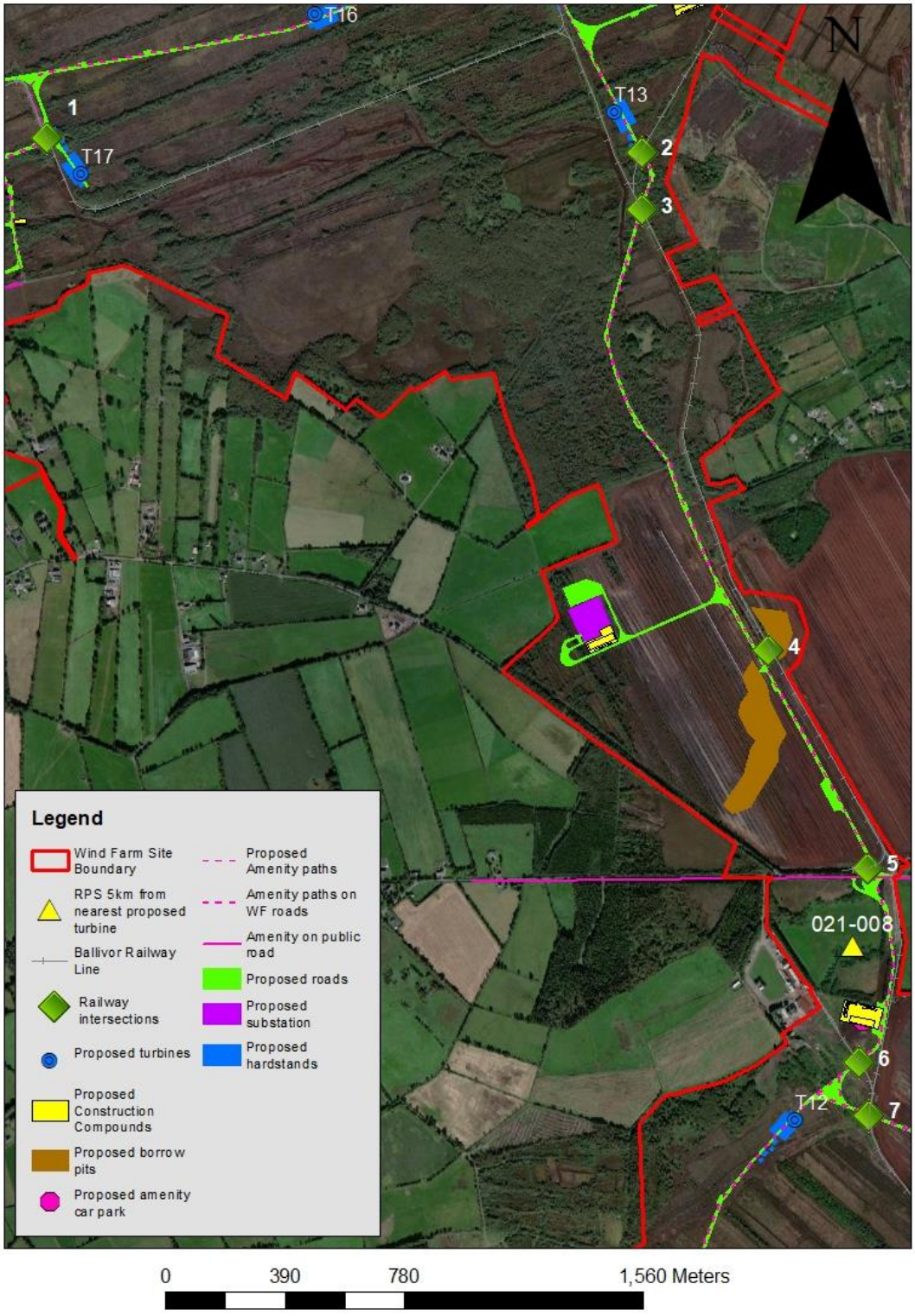

Figure 12-14: Areas (green diamond) where proposed infrastructure crosses narrow gauge railways

12.3.1.11.1 Railway Intersection 1

The proposed road crosses the existing railway line in two sections where the Proposed Meteorological Mast and Turbine 18 (on the west side of the rail) link to Turbine 17 on the east side of the rail.

Plate 12-2: North-South section of railway line where proposed road at the south crosses from Met Mast / T18 to T17 looking south.

Plate 12-3: Same section of railway on the northern intersection where the proposed road and amenity trail intersect the track, looking north.

12.3.1.11.2 Railway Intersection 2 and 3

The proposed road and amenity track cross the existing railway just south of the proposed turbine T13 and again approximately 200m further south along the proposed road from Bracklin to Carranstown.

Plate 12-4: Location (3) where proposed road and amenity trail cross the railway from Bracklin to Carrnastown bog

12.3.1.11.3 Railway Intersection 4

A short section of road will be constructed from the proposed road within Carranstown Bog at the west of the railway to the proposed borrow pit on the eastern side of the railway. The rail along Carranstown is now located on a high bank of peat with extraction having taken place on both sides of the railway.

Plate 12-5: Proposed road and amenity trail looking south in Carranstown (West) where proposed interaction will take place across the railway (indicated by arrow) in the direction of the proposed borrow pit in Carranstown (east bog).

12.3.1.11.4 Railway Intersection 5

The proposed road and separate amenity track will cross the railway at the southern end of Carranstown Bog before it crosses into Ballivor bog.

Plate 12-6: Intersection 5 of rail to be removed at the southern end of Carranstown Bog looking West.

12.3.1.11.5 Railway Intersection 6

The proposed road and amenity trail will cross the existing rail at Ballivor bog just south of the proposed construction compound within Ballivor bog.

Plate 12-7: Existing rail at Ballivor bog (Intersection 6) looking northwest where road will cross from northeast (right) to southwest (left).

12.3.1.11.6 Railway Intersection 7

Approximately 180m south of the latter intersection, the proposed road and amenity trail cross the rail (from T12 turbine to T01 turbine) within Ballivor bog.

Plate 12-8: Rail (taken further north) from where intersection 7 of rail and proposed road will occur looking south.

Plate 12-9: Proposed road and amenity trail taken from railway line where impact will occur at intersection 7 looking West

Plate 12-10: Same location as above looking southwest towards T1 turbine.

12.3.1.12 Protected Structures within 5km of the nearest proposed turbines

Structures within 5km of the nearest proposed turbine are included here in order to assess impacts on setting in the wider landscape (See Section 12.2.5 above for distance criteria). The RPS is largely based on the NIAH and therefore some repetition/overlap occurs between both datasets. Table 12-14 and Figure 12-15 shows all such RPS structures and distances from them.

Sixty-eight RPS structures are located within 5km of the nearest proposed turbine. The majority of structures are located within 'urban' settings of Delvin to the north, Raharney to the southwest and Ballivor to the southeast. The ZTV, however, shows that all of the locations where the RPS structures are located may theoretically have 21 -26 turbines visible. This, however, is a conservative scenario, and in reality, buildings (which are not taken into account in the ZTV model) may result in much fewer turbines actually being seen in reality. Structures located in open countryside, however, may have some level of visibility of all turbines. Direct and Indirect Impacts are discussed in Section 12.3.1.14 below.

Table 12.4: RPS structures within 5km of the nearest proposed turbines

RPS ID	MAP ID	NIAH	Structure	ITM_E	ITM_N	Townland	County	T. No	Distance
021-008	41	15402102	Narrow gauge Bord na Mona railway line	664516	754283	Grange More	WM	T12	594
91021	8		Woodtown House	666983	759600	Woodtown West	Meath	T25	1277
014-022	38	15401409	Lisclogher Bridge	665507	761143	Lisclogher Great	WM	T24	1294
014-023	39	15401410	Lisclogher House	665639	761345	Lisclogher Great	WM	T24	1505
014-019	35	15401405	Bracklyn House	660149	758271	Bracklin	WM	T18	1824
014-020	36	15401406	Freestanding mausoleum, Bracklyn House	660425	758847	Bracklin	WM	T18	2095
020-044	19	15402018	Craddenstown House	659681	755668	Craddanstown	WM	T18	2293
013-021	31	15401322	Gate lodge, Bracklyn House	659123	758059	Bracklin	WM	T18	2588
91152	13	14327007	Ballivor Health Centre	668295	754149	Killaconnigan	Meath	T03	2597
020-043	21	15402017	Water pump	659847	755021	Craddanstown	WM	T18	2625
028-003	45	15402801	Riverdale House	661568	751020	Riverdale	WM	T10	2638
021-009	42	15402104	Grange More House	661026	754343	Grange More	WM	T17	2648
91023	5		Balrath House	667947	760977	Balrath	Meath	T24	2727
91155	2	14327003	Saint Columbanus' Roman Catholic Church	668726	754109	Kilballivor	Meath	T03	2972
91154	1	14327004	Saint Kineth's Church of Ireland Church	668700	754199	Kilballivor	Meath	T03	2984
91156	11	14327002	Water Pump	668770	754166	Kilballivor	Meath	T03	3035
021-010	43	15402105	Grange Beg House	660850	751564	Grange Beg	WM	T10	3065
91153	12	14327006	St Columbas RC graveyard	668648	754497	Kilballivor	Meath	T03	3074

RPS ID	MAP ID	NIAH	Structure	ITM_E	ITM_N	Townland	County	T. No	Distance
014-021	37	15401407	Electricity sub-station	661388	761324	Balrath South	WM	T22	3175
021-011	40	15402106	Grange Beg House	660729	751517	Grange Beg	WM	T10	3194
91355	3		Killyon Manor	668166	749247	Killyon	Meath	T07	3316
021-005	57	15313007	Graveyard	660452	752747	Grange Beg	WM	T10	3344
91022	10		Lisclogher (Causetown)	667630	762441	Causestown	Meath	T24	3377
91352	7		Boraheen (Killyon) Church	667475	748618	Ballina	Meath	T07	3443
021-005	56	15313007	Graveyard	660344	752733	Grange Beg	WM	T10	3451
91353	16	14404104	Saint Mary's former Roman Catholic Chapel	667505	748528	Boraheen	Meath	T07	3537
014-018	34	15401403	House	661975	762617	Mitchelstown	WM	T22	3686
021-004	55	15313006	Gateway	660128	753153	Raharney Little	WM	T10	3722
021-001	50	15313002	Gateway, Grangemore House	660126	753214	Grange More	WM	T10	3736
91157	4	14327001	Parkstown	669398	754503	Parkstown	Meath	T03	3745
021-003	54	15313005	Bridge	660022	753040	Cloghanstown	WM	T10	3807
013-020	30	15401321	Killagh House	657717	757598	Killagh	WM	T18	3830
021-002	53	15313004	House	659981	753026	Cloghanstown	WM	T10	3845
021-002	52	15313004	House	659968	753028	Cloghanstown	WM	T10	3858
021-007	63	15313010	House	659950	753038	Raharney	WM	T10	3878
013-019	29	15401320	Killagh Corn Mill	657674	757673	Killagh	WM	T18	3884
021-006	62	15313009	House	659933	753114	Raharney	WM	T10	3907
020-028	51	15313003	St. Brigid's Roman Catholic chapel	659918	753045	Raharney	WM	T10	3910
020-046	22	15402020	House	657854	755629	Corbetstown	WM	T18	3922

RPS ID	MAP ID	NIAH	Structure	ITM_E	ITM_N	Townland	County	T. No	Distance
014-017	33	15401402	Outbuildings, St. Mary's Hospital	661739	762784	Southhill	WM	T22	3957
014-016	32	15401401	South Hill, (St. Mary's Hospital)	661552	762762	Southhill	WM	T22	4050
020-045	20	15402019	Corbetstown House	657689	755156	Corbetstown	WM	T18	4265
020-051	17	15402026	Water pump	658199	754329	Mylestown	WM	T18	4287
013-016	26	15401317	Rockview House and demesne	658273	759974	Ballynacor	WM	T18	4358
013-017	27	15401318	Outbuildings, Rockview House	658230	759959	Ballynacor	WM	T18	4380
020-052	23	15402027	Wardenstown House	659373	751610	Wardenstown	WM	T10	4490
014-014	68	15308016	Union Workhouse graveyard	660395	762213	Castletown-Delvin	WM	T22	4499
020-029	60	15313008	Houses	658937	753323	Joristown Upper	WM	T18	4531
020-029	61	15313008	Houses	658912	753319	Joristown Upper	WM	T18	4549
020-029	59	15313008	Houses	658899	753324	Joristown Upper	WM	T18	4552
020-029	58	15313008	Houses	658920	753306	Joristown Upper	WM	T18	4555
013-018	28	15401319	Gateway, Rockview House	658310	760347	Cartenstown	WM	T18	4590
91351	15	14404103	Mount Hevey	664637	747158	Kilnagalliagh	Meath	T08	4664
91349	14	14404102	Mount Hevey	664302	747206	Kilnagalliagh	Meath	T08	4666
91357	6		Donore Castle	670197	749784	Donore	Meath	T07	4677
91350	9	14404101	Mount Hevey	664332	747121	Kilnagalliagh	Meath	T08	4744
020-027	47	15313001	Joristown House	658786	753072	Joristown Upper	WM	T18	4823
020-027	46	15313001	Joristown House	658771	753082	Joristown Upper	WM	T18	4824

RPS ID	MAP ID	NIAH	Structure	ITM_E	ITM_N	Townland	County	T. No	Distance
014-013	66	15308015	House (former Delvin Rectory)	660201	762496	Castletown-Delvin	WM	T22	4824
020-027	49	15313001	Joristown House	658753	753082	Joristown Upper	WM	T18	4834
014-013	65	15308015	House (former Delvin Rectory)	660197	762517	Castletown-Delvin	WM	T22	4840
014-013	67	15308015	House (former Delvin Rectory)	660202	762540	Castletown-Delvin	WM	T22	4850
020-027	48	15313001	Joristown House	658739	753070	Joristown Upper	WM	T18	4852
013-015	25	15401316	Gateway, Dysart House	657733	760156	Dysart	WM	T18	4886
013-014	24	15401315	Gate lodge (roofless), Dysart House	657721	760149	Dysart	WM	T18	4891
020-042	18	15402016	Creggstown House	657942	753672	Creggstown	WM	T18	4915
027-047	44	15402736	Hyde Park	659683	749695	Hyde Park	WM	T10	4941
014-003	64	15308005	House (Athboy Road)	660419	762971	Castletown-Delvin	WM	T22	4967
021-008	41	15402102	Narrow gauge Bord na Mona railway line	664516	754283	Grange More	WM	T12	594

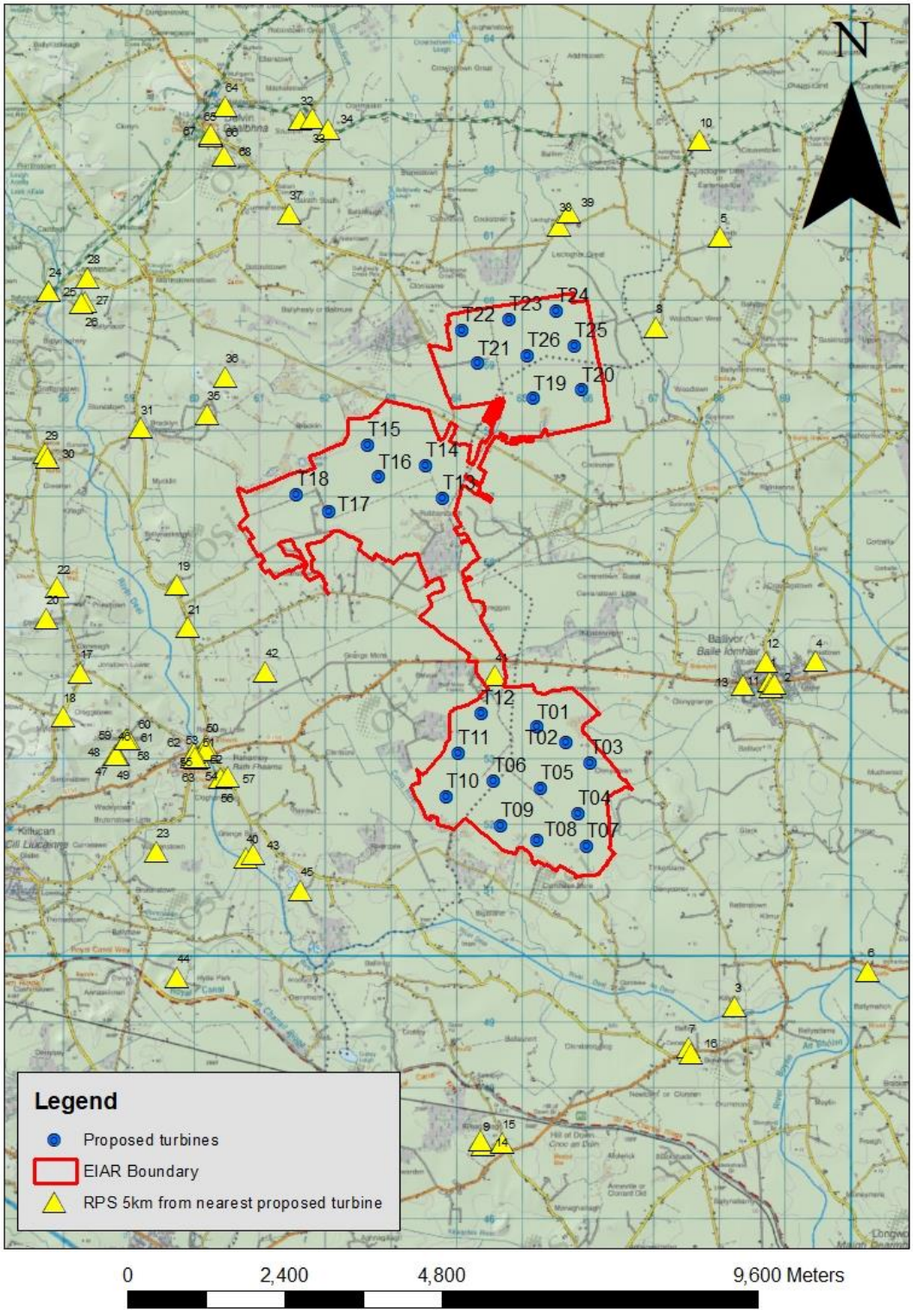

Figure 12-15: Record of Protected structures within 5km of the nearest proposed turbine.

12.3.1.13 NIAH within 5km of the nearest proposed turbine

The National Inventory of Architectural Heritage (thereafter NIAH) for Counties Meath and Westmeath were downloaded from the Historic Environment Viewer on to the project GIS base mapping in 2020, 2021 and again in January 2023. All NIAH structures within 5km of the nearest proposed turbines are included here for purposes as assessing potential visual effects in the wider landscape setting of the architectural resource (See Section 12.2.5 above for distance criteria). The RPS is largely based on the NIAH and therefore the majority of NIAH structures are also RPS structures. Table 12-15 and Figure 12-16 details All NIAH structures within 5km of the nearest proposed turbines. The distances to the relevant turbines are also detailed.

As with the RPS, the majority of structures are located within the 'urban' settings of Delvin, Raharney and Ballivor. The ZTV however, as with the RPS, shows that between 21 and 26 of the turbines may theoretically be visible from the locations where the NIAH structures are located/ this is based on worst case scenario where buildings and natural screening / boundaries are not taken into consideration in the calculations for the ZTV. The majority of other outlying structures in the open landscape may have some visibility in the direction of the proposed turbines as the ZTV suggests.

Table 12.5: NIAH structures within 5km of the nearest proposed turbines

Map Id	NIAH Ref	Name	Td.	County	Structure	ITM E	ITM N	T No.	Distance (M)
1	15402102	None	Grange More	WM	rails (section of)	664517	754283	T12	594
2	15401409	Lisclogher Bridge	Lisclogher Great	WM	bridge	665507	761143	T24	1294
3	15401410	Lisclogher House	Lisclogher Great	WM	house	665639	761345	T24	1505
4	15401405	Bracklyn House	Bracklin	WM	country house	660149	758271	T18	1824
5	15401406	Bracklyn House	Bracklin	WM	mausoleum	660425	758847	T18	2095
6	15402018	Craddenstown House	Craddanstown	WM	country house	659681	755668	T18	2293
7	15401408	None	Ballinlough (Delvin By.)	WM	house	662066	760942	T22	2400
8	14327008	Scoil Cholumbain Scoil Naisiunta	Killaconnigan	ME	school	668261	754128	T03	2557
9	15401322	Bracklyn House	Bracklin	WM	gate lodge	659124	758059	T18	2587
10	14327007	Ballivor Health Centre	Killaconnigan	ME	church hall/parish hall	668309	754151	T03	2611

Map Id	NIAH Ref	Name	Td.	County	Structure	ITM E	ITM N	T No.	Distance (M)
11	15402017	None	Craddanstown	WM	water pump	659847	755021	T18	2625
12	15402801	Riverdale House	Riverdale	WM	house	661568	751020	T10	2638
13	15402104	Grange More House	Grange More	WM	country house	661026	754343	T17	2648
14	15402103	Craddenstown Lodge	Craddanstown	WM	house	659997	754766	T18	2742
15	14327003	Saint Columbanus' Roman Catholic Church	Kilballivor	ME	church/chapel	668743	754108	T03	2987
16	14327004	Saint Kineth's Church of Ireland Church	Kilballivor	ME	church/chapel	668711	754194	T03	2992
17	14327002	None	Kilballivor	ME	water pump	668774	754169	T03	3039
18	14327006	Saint Columbanus' Roman Catholic Church	Kilballivor	ME	graveyard/cemetery	668631	754480	T03	3051
19	15401411	None	Lisclogher Great	WM	post box	667421	762201	T24	3059
20	15402105	Grange Beg House	Grange Beg	WM	country house	660851	751564	T10	3064
21	15402101	None	Grange Beg	WM	house	660763	753176	T10	3106
22	15401407	None	Carrick (Fore By.)	WM	electricity substation	661388	761324	T22	3175
23	15402106	Grange Beg House	Grange Beg	WM	dovecote/pigeon house/aviary	660729	751517	T10	3194
24	15313007	None	Grange Beg	WM	graveyard/cemetery	660339	752735	T10	3456
25	14327001	Parkstown House	Parkstown	ME	country house	669246	754258	T03	3510

Map Id	NIAH Ref	Name	Td.	County	Structure	ITM E	ITM N	T No.	Distance (M)
26	14404104	Saint Mary's Roman Catholic Chapel	Kilnagallagh	ME	church/chapel	667528	748529	T07	3546
27	15401404	Clonmaskill House	Clonmaskill	WM	house	662542	762923	T22	3681
28	15401403	None	Mitchelstown	WM	worker's house	661976	762617	T22	3685
29	15313006	None	Balrath (Rathconrath By., Churchtown Ed)	WM	gates/railings/walls	660129	753150	T10	3720
30	15313002	None	Grange More	WM	gates/railings/walls	660126	753214	T10	3736
31	15313005	None	Balrath (Rathconrath By., Churchtown Ed),Cloghanstown,Raharney	WM	bridge	660022	753040	T10	3807
32	15401321	Killagh House	Killagh	WM	house	657718	757599	T18	3829
33	15313004	None	Cloghanstown	WM	house	659960	753011	T10	3864
34	15313010	None	Raharney	WM	house	659948	753040	T10	3880
35	15401320	Killagh Corn Mill	Killagh	WM	mill (water)	657674	757673	T18	3884
36	15313009	None	Raharney	WM	house	659932	753114	T10	3908
37	15313003	St. Brigid's Roman Catholic chapel	Raharney	WM	church/chapel	659910	753048	T10	3919
38	15402020	None	Corbetstown	WM	house	657854	755629	T18	3922
39	15401402	St. Mary's Hospital	Southhill	WM	stables	661740	762784	T22	3956
40	15402021	Scarden House	Corbetstown	WM	house	657503	756091	T18	4119
41	15402019	Corbetstown House	Corbetstown	WM	house	657689	755156	T18	4265

Map Id	NIAH Ref	Name	Td.	County	Structure	ITM E	ITM N	T No.	Distance (M)
42	15402026	None	Mylestown	WM	water pump	658199	754329	T18	4287
43	15401317	Rockview House	Ballynacor	WM	country house	658274	759974	T18	4357
44	15401318	Rockview House	Ballynacor	WM	stables	658230	759959	T18	4380
45	15402027	Wardenstown House	Wardenstown	WM	country house	659374	751610	T10	4489
46	15308016	None	Castletowndelvin	WM	graveyard/cemetery	660383	762206	T22	4504
47	15313008	None	Joristown Upper	WM	worker's house	658920	753305	T18	4556
48	15401319	Rockview House	Cartenstown	WM	demesne walls/gates/railings	658310	760347	T18	4590
49	14404103	Mount Hevey	Kilnagallagh	ME	farmyard complex	664639	747158	T08	4664
50	14404102	Mount Hevey	Kilnagallagh	ME	walled garden	664304	747207	T08	4665
51	14404101	Mount Hevey	Kilnagallagh	ME	country house	664715	747061	T08	4752
52	15313001	Joristown House	Joristown Upper	WM	farmyard complex; house	658786	753071	T18	4824
53	15308015	Delvin Rectory	Castletown-delvin	WM	rectory/glebe/vicarage/curate's house	660202	762540	T22	4850
54	15401316	Dysart House	Dysart (Delvin By.)	WM	demesne walls/gates/railings	657733	760156	T18	4886
55	15401315	Dysart House	Dysart (Delvin By.)	WM	gate lodge	657722	760149	T18	4890
56	15402016	Creggstown House	Creggstown	WM	house	657942	753672	T18	4915
57	15402736	Hyde Park	Hyde Park	WM	country house	659683	749695	T10	4941
58	15308005	None	Castletown-delvin	WM	house	660419	762971	T22	4967

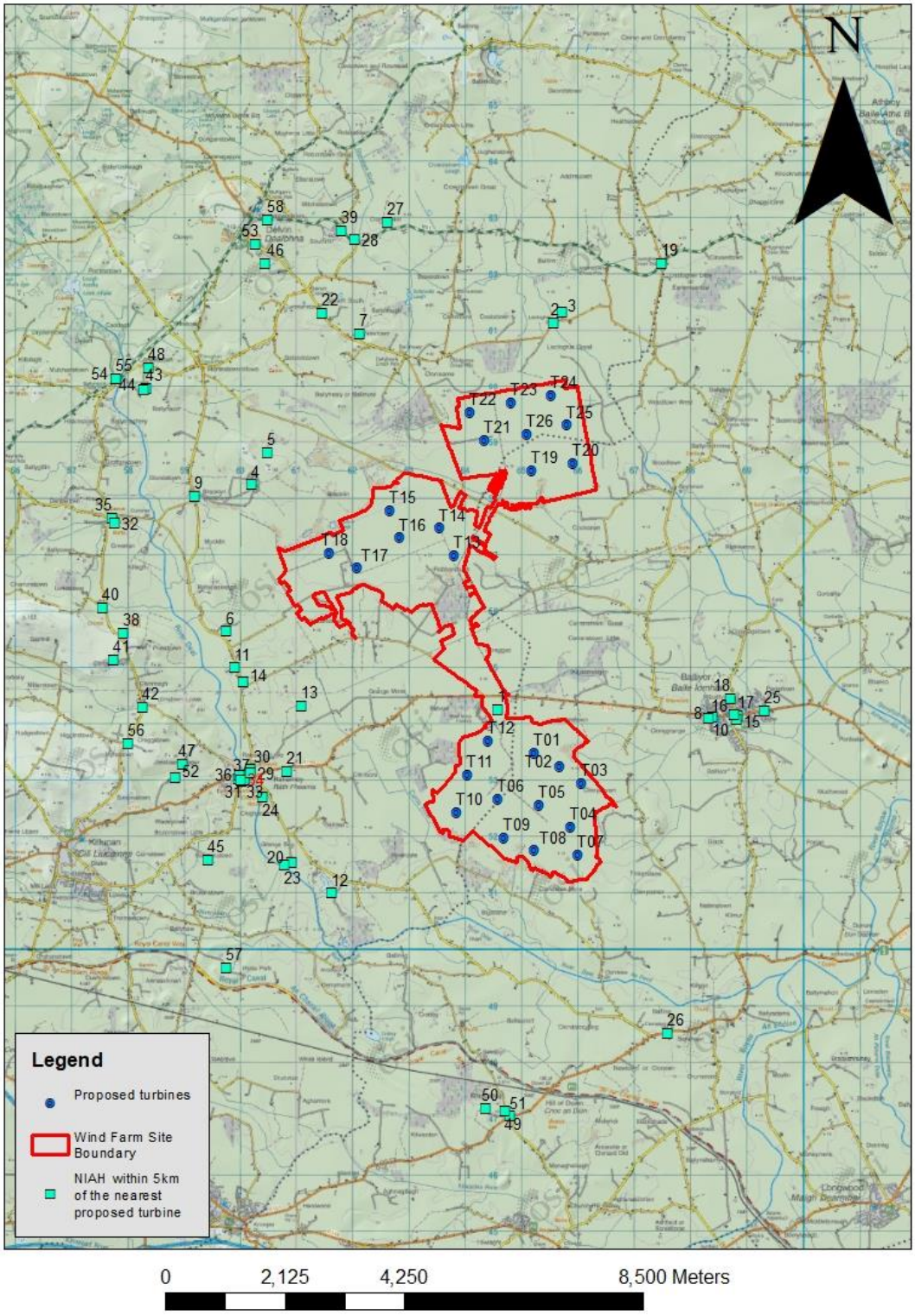

Figure 12-16: NIAH structures within 5km of the nearest proposed turbine.

12.3.1.14 Townlands and administrative boundaries

Townlands and administrative boundaries may indicate the presence of archaeological features within a development site. Administrative counties are subdivisions of pre-established counties which were formed for administrative purposes in the nineteenth and twentieth centuries. Baronies are administrative units larger than civil parishes and originally established as the primary subdivision of counties by the British administration in Ireland. Irish baronies which were formed at the time of the Norman conquest were usually named either after Irish territories, or from places which had been of importance in pre-Norman times. Irish baronies came into existence at different periods. The division of Ireland into counties and baronies was a process which continued down to the reign of James I. The original baronies in Ireland were the domains of the Norman barons; in the final stage of development they were divisions of counties created merely for greater convenience of administration. The word barony is of feudal origin, and was applied to a tenure of a baron, that is, of one who held his land by military service, either directly from the king, or from a superior feudal lord who exercised royal privileges. The origin of the Irish barony (a division of land corresponding to the English hundred) is to be found in the grants of lands which were made to the barons of Leinster and the barons of Meath (Liam Price, 'Ráith Oinn', Éigse VII, lch. 186-7). Civil parishes are administrative units larger than townlands and based on medieval ecclesiastical parishes. Civil parishes, modern Catholic parishes and Church of Ireland parishes may differ in extent and in nomenclature. Counties are administrative units larger than baronies and originally established by the British administration in Ireland between the twelfth and the seventeenth centuries. Some of these were subsequently subdivided into smaller administrative county units.

Townlands are the smallest land units which were determined and established in the Irish administrative system in the first half of the nineteenth century. Many of the townlands were in existence prior to that. Townland names are a valuable source of information, not only on the topography, land ownership and land use within the landscape, but also on its history, archaeological monuments and folklore. Logainm.ie was utilised to ascertain the origin of the townland names.

Table 12.6: Townlands in the vicinity and within the Proposed Development

Townland Name	Townland name in Irish	Logainm ID	County	Meaning
Clonycavan	Cluain Uí Chaomháin	39086	Meath	meadow, pasture
Carranstown Little	Baile Chearráin Beag	39085	Meath	townland, town, homestead beag (also: big) small
Killaconnigan	Cill Chonagáin	39091	Meath	cill church
Carranstown Great	Baile Chearráin Mór	39084	Meath	baile townland, town, homestead mór great, big
Clondalee More		39111	Meath	Not Known
Derryconor	Doire Chonchúir	39099	Meath	doire (oak-)wood, grove, thicket
Robinstown	Baile Roibín	39096	Meath	baile townland, town, homestead

Coolronan	Cúil Rónáin	38969	Meath	cúil corner, nook
Riverdale	Abhainn na Daoile	51430	Westmeath	abhainn(also: abha) river
Craddanstown		51272	Westmeath	rish name to be confirmed
Bracklin	Breaclainn	51278	Westmeath	speckled place; speckled pasture
Mucklin		51271	Westmeath	Not Known
Grange More		51428	Westmeath	Irish name to be confirmed
Clonmorrill		51301	Westmeath	Not Known
Cockstown		51302	Westmeath	Not Known
Lisclogher Great	Lios Clochair	51303	Westmeath	clochar(also: cloichear) stony place lios ring-fort, enclosure
Clonleame		51267	Westmeath	Not Known
Ballynacor		51277	Westmeath	Not Known
Killagh		51270	Westmeath	Not Known
Ballynaskeagh	Baile na Sceach	51269	Westmeath	baile townland, town, homestead sceach(also: sceich) hawthorn, thorn-bush
Ballyhealy Or Ballinure	Baile Uí Áille	51263	Westmeath	baile townland, town, homestead

12.3.1.15 Cartographic Evidence

12.3.1.15.1 *1st and 2nd Edition OS maps*

The Ordnance Survey came to Ireland in 1824 in order to carry-out a precise admeasurement of the country's 60,000 or so townlands as a preliminary to the larger task of reforming Ireland's local taxation system. The townland boundaries were demarcated by a Boundary Commission, and the Ordnance Survey had the task of measuring them. In addition to boundaries the maps are truly topographical in content. Drawn at the large scale of six inches-to-one-mile (1:10,560) it was important to mark all buildings, roads, streams, placenames, etc, that were required for valuation purposes. Ultimately the maps were used as a basis for the rateable valuation of land and buildings in what became known as Griffith's Valuation. Working from north to south, the survey began in Antrim and Derry in 1829 and was completed in Kerry in 1842. It was published as thirty-two county maps between 1832 and 1846, the number of sheets per county varied from 153 for County Cork to 28 for Dublin, each of the 1,994 sheets in the series depicting an area 21,000 by 32,000 feet on the ground. Each county was projected on a

different central meridian and so the maps of adjacent counties do not fit neatly together at the edges. Map content stops at the county lines.

The First Edition

The early Ordnance Survey maps are an unrivalled source for the period immediately before the Great Irish Famine (1847-50) when the population was at the highest level ever recorded. The maps depict an open landscape in the majority of the bog. A possible famine settlement is shown in Bracklin Bog on both the 1st Edition 6 inch map and the 25 inch 2nd Edition. The settlement is named Tonduff.

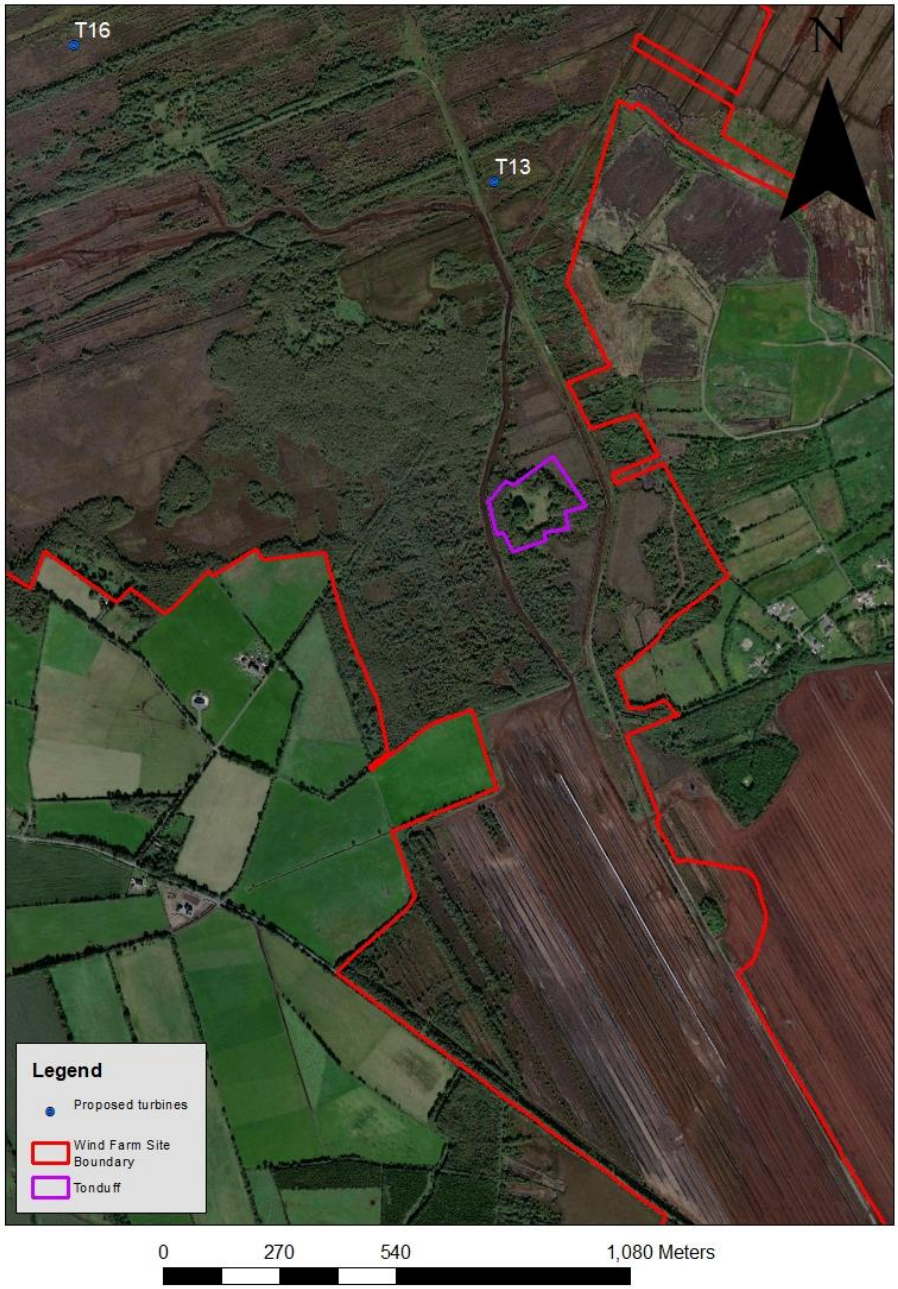

Figure 12-17: Location of famine settlement in Bracklin Bog.

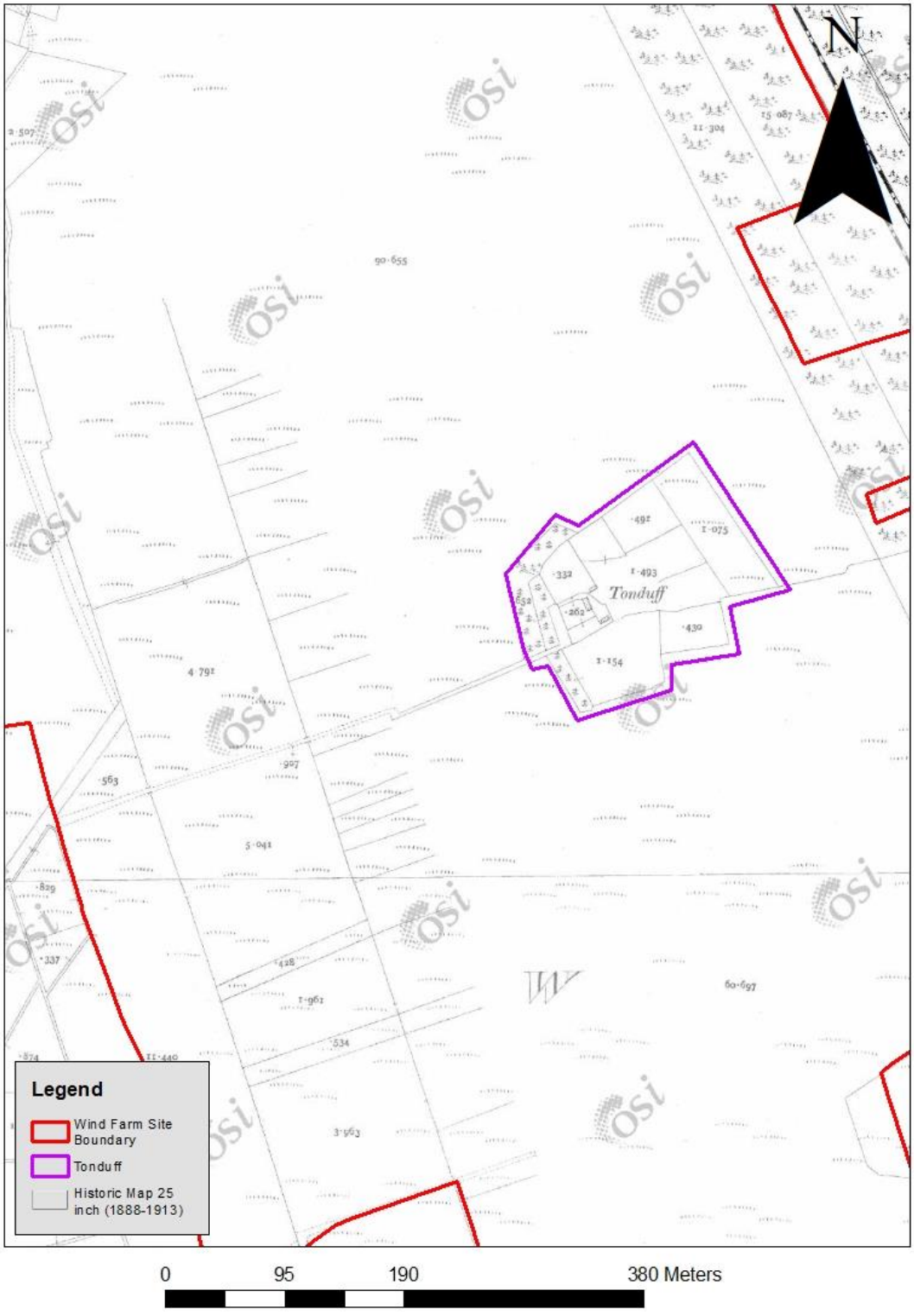

Figure 12-18: Detail of famine settlement on 25inch Historic OS.

Plate 12-11: Original entrance to Tonduff Settlement looking East.

Plate 12-12: Remains of famine house looking south – area too overgrown to measure.

12.3.2 The Proposed Grid Connection

The proposed substation at Carranstown Bog will link into an existing 110kV Overhead line and therefore no external (outside the proposed wind farm site) grid connection route is necessary. All proposed aspects of the proposed substation where it links into the OHL were examined on site.

12.3.3 Proposed Haul Route

It is proposed that the large wind turbine components will be delivered to site via the M3, exiting at Junction 6 onto the R125 before turning northwest onto the R154 Trim Road. The delivery route enters Trim town before turning south onto the R161 for approximately 7.5km where it meets the R156. The delivery route continues west for approximately 11.1km along the R156 through Ballivor Village before reaching the proposed site entrances off the R156. The proposed route is shown in detail in Chapter 4 on Figure 4-25. All deliveries of turbine components to the site will only be by way of the proposed transport route detailed in Figure 4.25, chapter 4. The SMR, NIAH and RPS was overlaid on the proposed haul route in order to ascertain what structures may be at risk from impact from the transport of large turbine components and other abnormal loads. Furthermore, some off road areas will be subject to some minor ground works for road widening and these were examined as part of the assessment. The Haul route is presented below from west to east.

12.3.3.1 Description of Junction accommodation Works

Temporary road widening works will be undertaken along the haul route at two locations to facilitate turbine component delivery and parking/storage:

Junction between the R156 and the R161 approximately 6.5km southwest of Trim: The junction accommodation works will comprise the road-widening within third-party land in order to facilitate turning of delivery vehicles carrying turbine components and other abnormal loads, from the R161 onto the R156 as well as the provision of off-road parking and storage facilities. The proposed widening will measure 3,751m2 and the area of land take for the proposed parking and storage facilities measure 5,375 m2.

East of Ballivor Village on the R156: Accommodating works will be required on the R156 approximately 3.6km east of Ballivor Village. Here, road-widening within third-party land will be required in order to facilitate turning west of delivery vehicles carrying turbine components and other abnormal loads, toward Ballivor Village on the R156. The land take will also provide off-road parking and storage facilities. The proposed accommodation works area on the road will measure 1,809m2 and the area of land take for the proposed parking and storage facilities will measure 6,770m2.

12.3.3.2 Ballivor

The haul route extends through Ballivor at the western end which contains a number of NIAH structures which are also listed in the RPS. Non-building items at the roadside may be deemed to be more at risk from damage than upstanding buildings.

One such structure in Ballivor is a Water Pump (NIAH Reg 14327002 and RPS ID 91156). It is described on the NIAH and RPS record as follows: a '*Cast-iron water pump, erected c.1870, with banded shaft, fluted neck, fluted cap with finial, spout and curved pumping handle. This cast-iron water pump makes a positive contribution to the streetscape of the Ballivor. The decorative detailing, such as the banding and fluting add artistic interest to this functional object. Water pumps played an important social and functional role in the nineteenth and twentieth centuries, by providing a communal water source'.*

Impacts and Mitigation is addressed in Section 12.4.

Plate 12-13: Water pump at the roadside at Ballivor (Image courtesy of NIAH).

12.3.3.3 Junction Accommodation works at Moyfeagher Townland, Meath

Some road widening works are required at Moyfeagher townland as part of the transport delivery route on the R156 regional road. The road widening works will require topsoil removal at the roadside in an open field of pasture. No Cultural Heritage features were identified. Impacts and Mitigation is addressed in Section 12.4.

Plate 12-14: Area at Moyfeagher, Meath where road widening works will take place to north of R156.

Plate 12-15: Same field looking east with R156 to right of photo.

Plate 12-16: Landtake looking south towards regional road R156.

12.3.3.4 Junction Accommodation works at Doolystown, Co. Meath

Some road widening works are required at Doolystown townland as part of the transport delivery route on the R156 regional road. The road widening works will require topsoil removal at the roadside in an open field of pasture. No Cultural Heritage features were identified. Impacts and Mitigation are addressed in Section 12.4.

12.3.3.5 Scarriff Bridge at Moyfeagher / Ballymullmore Townland, Meath

Approximately 680m further south along the Regional road R156, the proposed haul route crosses Scarriff Bridge which is on the NIAH (Reg number 14403601) and the Record of Protected Structures (RPS ID 91254). It is described in the NIAH as follows: *'A Single-arch rock-faced limestone road bridge over river, built c.1860, with ashlar string courses, copings and plaque. The execution of the masonry of this road bridge is of particular interest. The diagonal coursing of the stone is an unusual feature of the bridge. Clearly the work of skilled craftsmen, the variation in treatment of the stonework adds textural interest to the bridge. The ashlar string courses and parapets contrast with the rock-faced voussoirs and walls. The site is of archaeological interest, due to the remains of the earlier bridge. Plaque reads: 'Drainage under the Acts 3th and 6th Vic Cap 89'.*

No works are proposed to the bridge. Impacts and Mitigation is addressed in Section 12.4.

Plate 12-17: Scarriff Bridge looking southeast along R156.

Plate 12-18: Scarriff Bridge looking southwest.

12.3.3.6 Accommodating Works at Trim- Temporary street furniture removal

The delivery route passes through Trim. No land take will be required only minor accommodation works in the form of the removal of street signage and bollards which will be re-instated after turbines have been delivered.

There are a number of archaeological and architectural constraints in the vicinity, none of which will be impacted by the works however. These are as follows:

12.3.3.6.1 *Archaeology*

ME036-101 Bridge

The remains of a bridge structure is located on the north bank of the River Boyne and described in the Archaeological Survey of Ireland as follows: 'Located on the N bank of the River Boyne at a point where it begins to change from a NW-SE direction to a WSW-ENE direction. A channel of the river (L c. 200m), no longer visible but depicted on the 1836 edition of the OS 6-inch map, cut off the bend of the river and created a little island which was accessed by this bridge. It is a single arch (Wth 4.7m; present H 2.6m; T 2.2m) of quarried limestone but neither outer face of the arch survives. The date is unknown, but the channel might have been cut to avoid weirs in the main river'. Compiled by: Michael Moore, Date of upload: 18 July 2019.

ME036-027/001 Graveyard

This is situated at the E end of a low W-E ridge or spur with a NW-SE section of the River Boyne c. 85m to the NE. The church of Mary Magdalene (ME036-027—) is within a triangular grass-covered area (dims c. 80m WNW-ESE; c. 40m NNE-SSW) defined by masonry walls with the apex at E, but only two headstones, now in the church, survive. One has the incised date 1770. Archaeological testing (13E0456) by Donal Murphy c. 200m to the SSE produced no related material (excavations.ie 2013:111). Compiled by: Michael Moore. Date of upload: 16 February, 2015 and Amended: 25 March 2021.

No impacts will occur.

12.3.3.6.2 *Architectural Heritage*

The proposed haul route runs through the Trim Core Historic Architectural Conservation Area (ACA) and the Trim Porchfield ACA. It is proposed to temporarily remove road signage, bollards and fences within these ACAs to accommodate the delivery of turbine components. After the delivery period, these items will be re-established. A number of Protected Structures are located in the vicinity but none along the roadside or area where minor works are being proposed. No direct effects to architectural heritage will occur therefore. Impacts are addressed below in section 12.4.

12.4 Likely Significant Effects and Associated Mitigation Measures

The Proposed Development is taken to include all infrastructure including turbine bases, hardstands, roads, amenity features (trails, car parks signage etc), substation, construction compounds, meteorological masts, Security features (cabins, gates etc), drainage, grid connection via loop-ins to the existing 110kV Overhead line, borrow pits, cable trenches and haul route (junction accommodation areas). A full description of the development is detailed in Chapter 4.

12.4.1 Do Nothing Scenario

If the Proposed Development were not to proceed, environmental monitoring and site management would continue, and the implementation of peatland rehabilitation plans as required under IPC License would occur. Likewise, the PCAS scheme at Bracklin West would continue to be implemented.

If the Proposed Development were not to proceed, the opportunity to capture part of Meath and Westmeath's valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. The opportunity to generate local employment and investment and to diversify the local economy would also be lost. Furthermore, the opportunity to open up the Application Site to the public and provide amenity and recreational facilities would be lost.

If the Proposed Development were not to proceed, development works within the bog could result in potential direct impacts to any sub-surface archaeological features that are present. Indirect effects to Cultural Heritage, in particular, in the wider landscape setting would not occur.

12.4.2 Construction Phase Potential Impacts (Indirect)

Indirect effects, in terms of archaeology, architectural and cultural heritage are considered to be those effects which happen away from Wind Farm Site boundary. This includes impacts on visual setting of any cultural heritage asset in the wider landscape. Since these effects are only possible once the proposed turbines are constructed, they are considered operational effects and are therefore discussed in Section 12.4.4 below. No indirect effects were identified which would occur at the construction stage.

12.4.3 Construction Phase Potential Impacts (Direct)

Direct impact refers to a 'physical impact' on a monument or site. The construction phase of the development consists largely of earthmoving activities such as peat and topsoil removal. The potential impacts on the known and potential archaeological, architectural and cultural heritage of the area are outlined below with the suggested mitigation measures. The impacts are described according to each element of the Existing Environment (National Monuments, SMRs, Sub-surface archaeology etc). Where any potential direct impacts do occur, they are negated through the use of suitable mitigation measures such as exclusions zones (buffer zones), testing, monitoring, etc. Mitigation measures are presented in each section below.

12.4.3.1 UNESCO World Heritage Sites (Direct Effects)

No world heritage sites or those on a tentative list are located within the proposed windfarm site therefore no direct effects will occur.

12.4.3.2 Trim Castle and Frewin Hill (Direct Effects)

These structures are located at a remove from the Proposed Development and will not be directly impacted. Effects on setting are addressed in Section 12.4.5.2 below.

12.4.3.3 National Monuments (Direct Effects)

No National Monuments in State Ownership/Guardianship are located within the EIAR site boundary therefore no direct impacts to these aspects of the archaeological resource are identified. Operational Effects on such monuments are addressed in Section 12.4.5.2 below.

12.4.3.4 Recorded Monuments within the Wind Farm Site Boundary

No recorded monuments are located within the Wind Farm Site Boundary and therefore no direct effects on this resource were identified.

12.4.3.5 Recorded monuments within 5km of the nearest proposed Turbine (Direct Effects)

Since these monuments are located outside the EIAR site boundary no direct effects to this Cultural Heritage resource will occur. These monuments are included in the assessment to ascertain the potential effects on setting and therefore operational effects are addressed in Section 12.4.3.2 below.

12.4.3.6 Unrecorded potential sub-surface archaeology

While no archaeological monuments were recorded during the 2005 Peatland Survey or during the walkover survey associated with this assessment, the discovery of the human remains in 2003 ('Clonycavan Man') along with the high number of recorded stray finds from the bog and the recorded monuments in the dryland surrounding the bog, suggests that there is a high potential for archaeological finds and features within the peat. The potential exists for the development area to contain as yet unrecorded sub-surface sites and artefacts. It is possible that such sites may be uncovered either within the peat/topsoil and/or at the level of the underlying natural subsoil. The excavation of peat during all elements of the Proposed Development has the potential to impact on any new sites, if present. Mitigation measures will include construction stage monitoring. All elements of the Proposed Development include turbine bases, hardstands, roads, cable trenches, amenity car park, amenity trails, construction compounds, substation site, grid connection loop-ins, angle towers, borrow pits, security cabins and gates, drainage, junction accommodation areas along the haul route and any other peat extraction activities.

Pre-Mitigation Impact

Should new sites, features or artefacts be present within the site (currently not visible on the surface) the impact is likely to be significant negative and permanent (i.e. the excavation by machinery would permanently remove the sites resulting in a significant negative impact).

Proposed Mitigation Measures

- Archaeological monitoring (under licence from the National Monuments Service) of any further geotechnical / engineering trial pits or investigations and a report detailing the results of same.
- Archaeological monitoring of ground works during construction. This will include all excavation works within the EIAR site boundary as well as any topsoil removal along the haul route. If archaeological finds, features or deposits are uncovered during archaeological monitoring, the developer will be prepared to provide resources for the

resolution of such features whether by preservation by record (excavation) or preservation in situ (avoidance).Once the project is completed, a report on the results of the monitoring will be compiled and submitted to the relevant authorities. The National Monuments Service will be informed of such findings and either preservation in situ (avoidance) or preservation by record (archaeological excavation) will be required. .

- The floating of roads, where possible (if engineering allows). This would reduce the amount of peat extraction significantly and therefore also reduce potential negative effects on sub-surface archaeology, if present.

Residual Impact

The sites/features, if detected, during monitoring will be preserved by record (archaeologically excavated) or preserved in-situ (avoidance) and therefore a full record made of same. In this regard, the potential impact after the mitigation measures is likely to be slight.

Significance of Impacts

The construction stage will have no significant effects on unrecorded potential sub-surface sites. The impacts, after the implementation of mitigation, is likely to be slight.

12.4.3.7 Protected Structures and structures listed in the NIAH within the EIAR Site Boundary (Direct Effects)

12.4.3.7.1 *Permanent narrow gauge Bord na Mona railway line*

One structure listed in the Record of Protected Structures is located within the EIAR boundary (NIAH Reg. No. 15402102 and RPS 021-008 Permanent narrow gauge Bord na Mona railway line). The centre point for this structure is located to the northeast of the Ballivor Works within the northern section of Ballivor Bog although the rail network extends through the entire EIAR boundary.

An examination of the extensive railway network, where the proposed infrastructure is proposed to cross the structure, was undertaken as part of the assessment. In general the 1989 aerial photos were used to ascertain what rails were present at that time with an assumption that those that were added after this period were likely to be later than those on the Record of Protected Structures.

The walkover examination was undertaken during both 2020 and 2021 and 15 intersections with proposed road / railways were identified (14 in Westmeath and 1 in Meath). In the intervening period between the walkover survey and the writing of this report, the layout was amended in order to avoid as many railway lines as possible with the 14 impacts in Westmeath now reduced to 7 crossings by the proposed roads/amenity trails. Figure 12-14 shows areas where proposed roads intersect with the railway network. No level crossings will be negatively impacted.

Pre-Mitigation Impact

The proposed roads will intersect with the narrow gauge railway tracks in 7 locations. In these locations it is proposed to float the roads over the tracks and therefore no impacts will occur. An extensive railway network will remain on the site for future generations. Since the roads will be built over small sections of rails in these locations, the significance of effects will be Not Significant - the roads are temporary in nature and can be removed.

Proposed Mitigation Measures

All locations where the railway tracks will be crossed by the proposed floating roads were examined and recorded on site and are included in this assessment. No further recording of the railways is required therefore. Since there will be no physical direct effects, no specific pre-construction mitigation measures are required. Mitigation measures to include the provision of information signage will be required and implemented however and will be erected at various locations along the amenity trails. The amenity aspect of the development proposal will result in a positive impact. Furthermore no level crossings will be impacted by the Proposed Development.

Residual Impact

The residual impact will remain the same as that identified above (i.e. Not Significant).

Significance of Impacts

The impact of the proposed roads on the narrow gauge railways will be Not Significant.

12.4.3.7.2 *Scarriff Bridge NIAH Reg number 14403601 RPS 91254*

Pre Mitigation Impact

Along the Regional road R156, the proposed haul route crosses Scarriff Bridge which is on the NIAH (Reg number 14403601) and the Record of Protected Structures (RPS ID 91254). No works to the bridge will occur and therefore no impacts will occur.

Proposed Mitigation Measures

No mitigation measures are proposed as no impacts were identified.

Residual Impact

There will be no residual impacts since no impacts which require mitigation measures were identified.

Significance of Impacts

–No impacts will occur.

12.4.3.7.3 *Ballivor Water Pump (NIAH Reg 14327002 and RPS ID 91156)*

The haul route extends through Ballivor at the western end which contains a number of NIAH structures which are also listed in the RPS. Non-building items such as this Water pump at the roadside may be deemed to be more at risk from damage from the movement of large abnormal loads than upstanding buildings.

Pre Mitigation Impact

A potential direct negative effect to the structure is possible although is considered to be slight.

Proposed Mitigation Measures

The structure will be fenced off temporarily with high-visibility fencing during the movement of the abnormal loads through Ballivor.

Residual Impact

Following the implementation of the mitigation measures the residual impact will be imperceptible.

Significance of Impacts

The movement of large components through Ballivor will have no significant effects on the local cultural heritage and the overall impact on the water pump (after mitigation) will be imperceptible.

12.4.3.8 Protected Structures and structures listed in the NIAH within 5km of the nearest proposed turbine (Direct Effects)

Since these structures are located outside the EIAR site boundary no direct effects to this Cultural Heritage resource will occur. These structures are included in the assessment to ascertain the potential effects on setting in the wider landscape setting and therefore operational effects are addressed in Section 12.4.5 below.

12.4.3.9 Local Cultural Heritage (Direct Effects)

Pre-Mitigation Impact

A review of the historic OS mapping and the walkover survey has shown that a derelict ruined structure is located within an overgrown section of the bog. This is a possible famine settlement and is shown within Bracklin Bog on both the 1st Edition 6 inch map and the 25 inch 2nd Edition. The settlement is named 'Tonduff' and is described in Section 12.3.1.15.1 above.

The structure now remaining (ruined stone house) will be preserved in situ and the impacts are considered to be imperceptible.

Proposed Mitigation Measures

- Licensed archaeological monitoring of the proposed road to the west will be undertaken during construction and in this regard preventing any accidental damage to the structure.

Residual Impact

The potential impact after the mitigation measures will be imperceptible.

Significance of Impacts

No significant impacts were identified and the structure will be preserved in situ. The construction of the proposed new road to the west will be monitored by an archaeologist and therefore the significance of impacts remains at imperceptible.

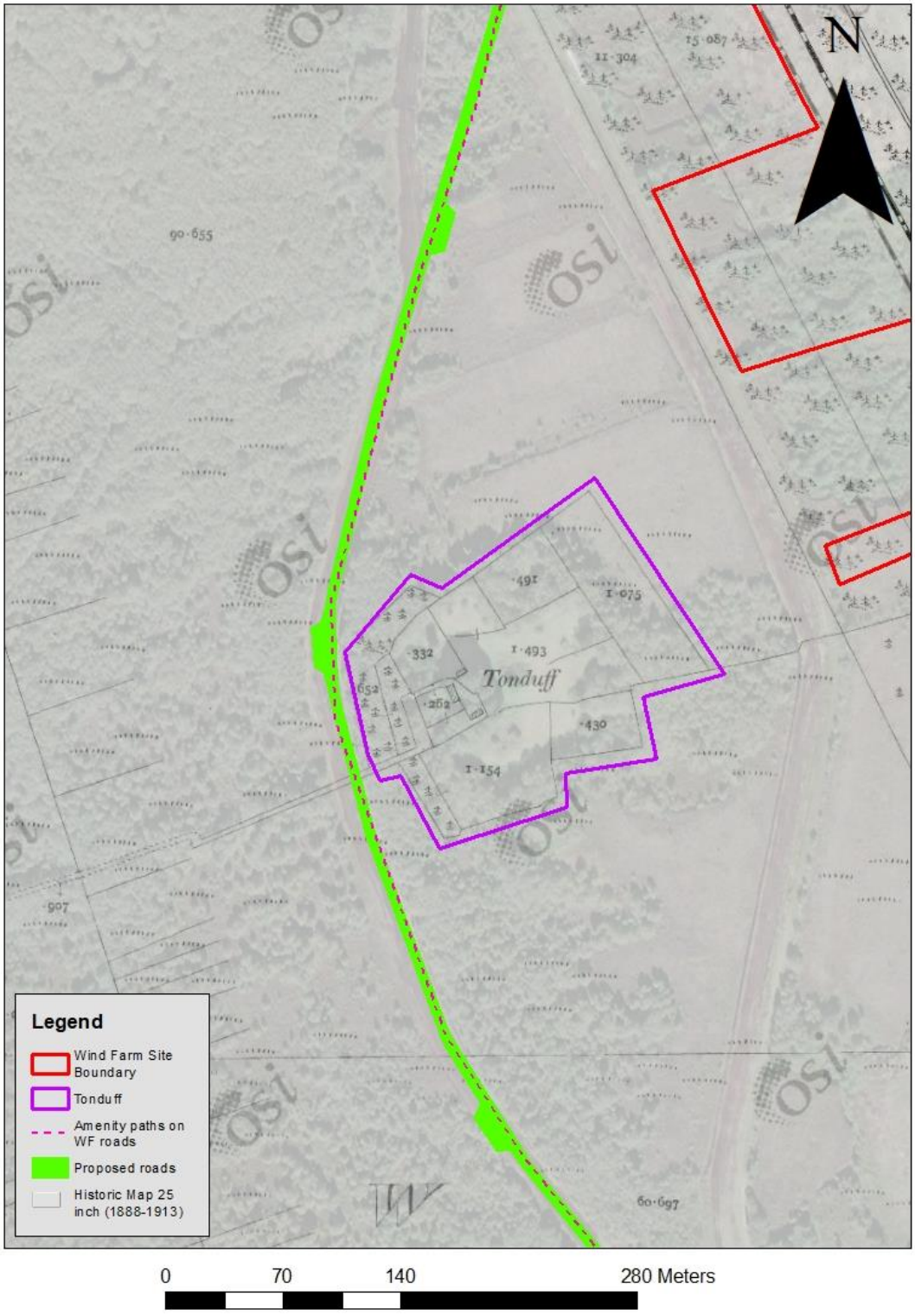

Figure 12-19: Proposed road with amenity trail skirting around original site outline at Tonduff.

12.4.4 Operational Phase Potential Impacts (Direct)

In terms of archaeology, architecture and cultural heritage, since peat removal and groundworks would be complete, it is considered that no direct effects would occur at the operational stage.

12.4.5 Operational Phase Potential Impacts (Indirect)

Indirect impacts on setting may occur where a feature or site of archaeological, architectural heritage merit or their setting is impacted by a Proposed Development. Indirect effects on the environment, which are not a direct result of the project are often produced away from the project site (EPA Guidelines 2022). While the Proposed Development may not physically impact on a site, it may alter the setting of a monument or group of monuments. There is no standardised Irish industry-wide approach in for assessing the degree of impact to the setting of a monument. The assessment is based on previous experience, Geographical Information Systems (in particular Viewshed Analysis) and the '*Guidance on Setting and the Historical Environment*' (Historic Environment Division Northern Ireland) was utilised. The methodology through which indirect impact is assessed is presented in Section 12.2.5 above. According to the aforementioned document '*A range of tools may be employed in defining and assessing changes to setting, for example historic landscape analysis using Geographical Information Systems (GIS), which may include viewshed analysis*'.

Potential impact to the visual amenity of a site or area and the significance of same is dependent on a number of factors regarding the sensitivity of the location or 'receptor' and the scale or magnitude of the Proposed Development.

Potential operational impacts are discussed below according to each cultural heritage as was presented in Section 12.4.3 above.

12.4.5.1 UNESCO World Heritage Sites (Indirect Effects on setting)

No world heritage sites or those on a tentative list are located within the proposed windfarm site or immediately adjacent to same. Bru na Boinne is located over 38km to the north-east and therefore due to the intervening distance of 38km no effects on setting will occur.

12.4.5.2 Trim Castle and Frewin Hill (Indirect Effects)

12.4.5.2.1 *Views from Trim Castle at ground level*

Pre Mitigation Impact

The results of the viewshed from **ground-level outside the castle** looking in the direction of the turbines show that theoretically 21 turbines would be visible from mid shaft to blade tip. The remaining 5 (T21, T04, T07-T09) would only be visible from approximately hub height to blade tip and there are theoretically no instances where any of the turbines would be visible in full (i.e. from turbine base upwards). This is a worst case scenario and is based on a flat open bare landscape with no buildings or screening. In reality a person standing on the grounds of Trim castle looking in the direction of Ballivor Wind Farm will not have any visibility of the proposed turbines due to intervening buildings to the west. In this regard no impacts on setting will occur (when ground views are considered).

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines on monuments there are no mitigation measures for this potential impact.

Residual Impact

Since no mitigation measures can be implemented, the residual impact will remain the same as the pre-mitigation impact which is No Impacts.

Significance of Impacts

No significant impacts will occur.

12.4.5.2.2 *Views from Trim Castle from upper floor*

Pre Mitigation Impact

The results of the viewshed from the **top floor of the castle (25 metres above the ground)** looking in the direction of the turbines show that theoretically all of the turbines may be visible from at least mid shaft to blade tip. A Photomontage prepared shows that all of the Ballivor turbines will be visible and in this regard the impact is slight-moderate. .

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines on monuments there are no mitigation measures for this potential impact.

Residual Impact

Since no mitigation measures can be implemented, the residual impact will remain the same as the pre-mitigation impact which is Slight-Moderate.

Significance of Impacts

No significant impacts will occur and in this regard the significance of impacts will be slight-moderate, negative, long-term although reversible.

12.4.5.2.3 *Views from Frewin Hill*

Pre Mitigation Impact

From the viewshed analysis, theoretically three turbines may be visible from approximately mid shaft upwards (T01 and T11-T12). The upper portions of the remaining turbines may be visible from the top of Frewin Hill. There are no instances where full turbine heights (base to blade tip) will be visible. The Photomontage (Appendix 13-4, viewpoint 8) also shows that all turbines will be visible. Clear weather conditions would be required to see the turbines however. The potential impact is considered to be slight given the separation distance between the monument and the proposed turbines.

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines on monuments there are no mitigation measures for this potential impact.

Residual Impact

Since no mitigation measures can be implemented, the residual impact will remain the same as the pre-mitigation impact which is Slight.

Significance of Impacts

No significant impacts will occur and in this regard the significance of impacts will be slight, negative, long-term although reversible.

12.4.5.3 National Monuments (Indirect Effects on setting)

12.4.5.3.1 *Delvin Castle*

Pre Mitigation Impact

The viewshed results show that theoretically, T20 could be seen in full (from base to tip height from Delvin Castle with the remainder visible approximately from mid-shaft upwards. This assumes no vegetation, buildings, natural screening such as field boundaries and therefore is a worst case scenario. The Zone of Theoretical Visibility (thereafter ZTV) utilised in the LVIA also shows full visibility of 21-26 of the turbines and accords with the viewshed analysis. Although the separation distance is only 5km the structure is located in a town where numerous buildings are located. The visual amenity of the castle is intrinsically linked to its Urban Setting in which is located and therefore potential impacts are considered to be slight.

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines on monuments there are no mitigation measures for this potential impact. Natural screening in the landscape is likely to alleviate the potential effects on setting however.

Residual Impact

Since no mitigation measures can be implemented, the residual impact will remain the same as the pre-mitigation impact which is Slight.

Significance of Impacts

No significant impacts will occur and in this regard the significance of impacts will be slight, negative, long-term although reversible.

12.4.5.3.2 *Raharney Ringfort*

Pre Mitigation Impact

The viewshed results show that theoretically, 4 turbines T1- T3 and T12 may be seen in full (from base to tip height) from Raharney Ringfort with the remainder visible from approximately mid-shaft upwards. This assumes no vegetation, buildings, natural screening such as field boundaries and therefore is a worst case scenario. The Zone of Theoretical Visibility (thereafter ZTV) utilised in the LVIA shows full visibility of 21-26 of the turbines and accords with the viewshed analysis.

The ringfort is located in flat open pastureland with good views in all directions and the separation distance is 4.3km to the nearest proposed turbine. Numerous modern houses are located on the north side of the public road and in this regard views of turbines are likely to be intermittent due to buildings and natural screening. Potential impacts on setting are considered to be slight therefore.

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines on monuments there are no mitigation measures for this potential impact.

Residual Impact

Since no mitigation measures can be implemented, the residual impact will remain the same as the per-mitigation impact which is Slight.

Significance of Impacts

No significant impacts will occur and in this regard the significance of impacts will be Slight, negative, long-term although reversible.

12.4.5.3.3 *Donore Castle*

Pre Mitigation Impact

The viewshed results show that theoretically, Turbines T1 - T12 may be seen from Donore Castle from approximately mid-shaft upwards. Turbines T22-T26 may have no visibility from Donore Castle. Only the upper portion of the remainder of the turbines (T13-T21) may be seen from the monument. This assumes no vegetation, buildings, natural screening such as field boundaries and therefore is a worst case scenario. The Zone of Theoretical Visibility (thereafter ZTV) utilised in the LVIA shows that potentially 21 to 26 turbine may be seen from this location.

The castle is located on the south side of a public road in open pastureland. Views to the north are possible although the boundaries to the north of the public road are likely to screen views of the proposed turbines, in particular during summer growth season. The separation distance of 4.6km to the nearest proposed turbine together with the natural screening along the public road is such that potential impacts on setting will be Slight.

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines on monuments there are no mitigation measures for this potential impact.

Residual Impact

Since no mitigation measures can be implemented, the residual impact will remain the same as the per-mitigation impact which is Slight.

Significance of Impacts

No significant impacts will occur and in this regard the significance of impacts will be Slight, negative, long-term although reversible.

12.4.5.4 Recorded Monuments within the Wind Farm Site Boundary

No recorded monuments are located within the Wind Farm Site Boundary and therefore no indirect effects on setting will occur as a result of the proposed turbines.

12.4.5.5 Recorded monuments within 5km of the nearest proposed Turbine (Indirect Effects on setting)

The majority of SMR sites are located in private agricultural land with no public access. These monuments are included in the assessment to ascertain the potential effects on setting in the wider landscape setting of the Proposed Development by using ZTV and GIS mapping analysis to ascertain the likely effects on setting.

The ZTV shows that monuments within the 5km study area are located in areas where 21 – 26 turbine may be visible. In reality, existing screening and buildings (which the ZTV does not take into consideration in its calculations) is likely to alleviate if not remove the potential impacts altogether. The ability to view turbines from monuments does not mean that either the monument or its immediate setting will be significantly negatively altered. Where turbines are visible, it will result in a landscape change which is considered to be slight-moderate.

12.4.5.6 Protected Structures and structures listed in the NIAH within the Wind Farm Site Boundary (Indirect Effects on setting)

12.4.5.6.1 *Permanent narrow gauge Bord na Mona railway line*

Pre Mitigation Impact

One structure listed in the Record of Protected Structures is located within the EIAR boundary (NIAH Reg. No. 15402102 and RPS 021-008 Permanent narrow gauge Bord na Mona railway line). Direct effects to the railway are addressed in Section 12.4.3.7.1 above. The landscape within which the railways are located will change and this change is acknowledged. The inclusion of the railways in the amenity trail / plan for the site is such that this will result in a positive impact however. The railways are considered to be part of the industrial heritage of the site and will continue to be appreciated by the public albeit more so due to the amenity plan and information signage proposed. It is not considered that the proposed turbines will detract significantly from the railway network or its setting and the impacts are considered to be Not Significant.

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines on the RPS structures there are no mitigation measures for this potential impact.

Residual Impact

Since no mitigation measures can be implemented, the residual impact will remain the same as the per-mitigation impact which is Not Significant.

Significance of Impacts

No significant impacts will occur and in this regard the significance of impacts will be Not Significant, positive, long-term although reversible.

12.4.5.7 Protected Structures and structures listed in the NIAH within 5km of the nearest proposed turbine (Indirect Effects on setting)

Pre-Mitigation Impact

Sixty-eight RPS structures are located within 5km of the nearest proposed turbine. The majority of structures are located within 'urban' settings of Delvin to the north, Raharney to the southwest and Ballivor to the southeast and therefore their visual settings do not extend beyond the limits of those settlements. The ZTV, however, shows that all of the locations where the RPS structures are located may theoretically have 21 -26 turbines visible. This, however, is a worst case scenario, and in reality, buildings (which are not taken into account in the ZTV model) may result in much fewer turbines actually being seen in reality. Structures located in open countryside, however, may have some level of visibility of all turbines.

The impacts are considered to be slight - moderate (Slight where intermittent visibility of turbines is possible and moderate where all or most of the turbines may be visible).

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines on the RPS structures there are no mitigation measures for this potential impact.

Residual Impact

Since no mitigation measures can be implemented, the residual impact will remain the same as the per-mitigation impact which is Slight-Moderate.

Significance of Impacts

No significant impacts will occur and in this regard the significance of impacts will be Slight-Moderate, negative, long-term although reversible.

12.4.5.8 Local Cultural Heritage (Direct Effects)

Pre-Mitigation Impact

The derelict structure at 'Tonduff' is described in Section 12.3.1.15.1 above. It is located in an overgrown section of the bog which is densely covered in trees and bushes. No views from the settlement are possible due to screening and in this regard impacts on setting will be Imperceptible.

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines on the structure there are no mitigation measures for this potential impact.

Residual Impact

Since no mitigation measures can be implemented, the residual impact will remain the same as the per-mitigation impact which is Imperceptible.

Significance of Impacts

No significant impacts will occur and in this regard the significance of impacts will be Imperceptible.

12.5 Cumulative Impacts

Cumulative impact is defined as 'The addition of many small impacts to create one larger, more significant, impact' (EPA 2022). Cumulative impacts encompass the combined effects of multiple developments or activities on a range of receptors. In this case, the receptors are the archaeological monuments and architectural/cultural heritage sites in the immediate vicinity of the Proposed Development. Cumulative Impacts at the Construction and Operational Stages are considered.

12.5.1 Cumulative Impacts (Direct Impacts – Construction stage)

The addition of other projects to the Proposed Development was considered in order to assess Cumulative Impacts. These included all other windfarms within 20km of the Proposed Development, peatland rehabilitation under IPC licence and predominately comprises drain blocking, the Peatland Climate Action Scheme (enhanced drainage and rehabilitation measures which will commence in Bracklin West adjacent to the Wind Farm Site Boundary in 2023), and those listed in Chapter 2 of this EIAR. Direct effects for the proposed Ballivor windfarm are considered to be confined to within the Wind Farm Site Boundary and relate to construction effects. Other projects within 20km of the Proposed Development are also deemed to have been assessed through the EIAR and planning application process with suitable mitigation measures being implemented. No direct cumulative effects will occur.

12.5.1.1 Cumulative impacts (direct) within 20km

The majority of projects (including existing, permitted and proposed developments) are located away or at a remove from the proposed Ballivor windfarm, with the exception of the consented 9 turbines at Bracklyn (PA 25M.311565) and the peatland rehabilitation plans at and adjacent to the Wind Farm Site.

12.5.1.1.1 *Cumulative impacts to Recorded Monuments, National Monuments, NIAH or RPS*

There are no National Monuments, Recorded Monuments located within the footprint of the Proposed Development and therefore no direct effects on this resource were identified. In this regard no cumulative direct impacts to the known documented cultural heritage sites will occur.

One direct effect to the Bord na Móna narrow gauge railway (RPS / NIAH) was identified. In this regard the proposed roads will have a moderate effect on this aspect of the Cultural Heritage resource. The impact is negated through mitigation and therefore cumulative effects will not occur.

12.5.1.1.2 *Cumulative impact to potential unknown sub-surface sites*

Direct effects to sub-surface archaeological features/sites can occur as a result of peat removal and groundworks. The Proposed Development in combination with other developments, could result in potential increased negative effects to sub-surface archaeological features (i.e. cumulative impacts). Since all cumulative projects have been assessed from a cultural heritage perspective through the EIAR process, all potential negative effects are deemed to have been dealt with through the use of effective mitigation measures and planning conditions issued through the Planning Authorities.

If the mitigation measures prescribed in this EIAR are implemented then cumulative direct effects to unknown sub-surface archaeology will not occur, regardless of the other projects within 20km of the Proposed Development.

12.5.2 Cumulative Impacts (Indirect Impact on Setting)

Indirect impacts on setting occur at the operational stage of the development (when turbines are operational). In this regard in order to assess overall cumulative effects on archaeology and cultural heritage, the proposed project is considered in the context of other physical developments, in particular other permitted and proposed wind farms as shown in above. This map shows the location of existing, permitted and proposed turbines within 20km of the proposed Ballivor turbines.

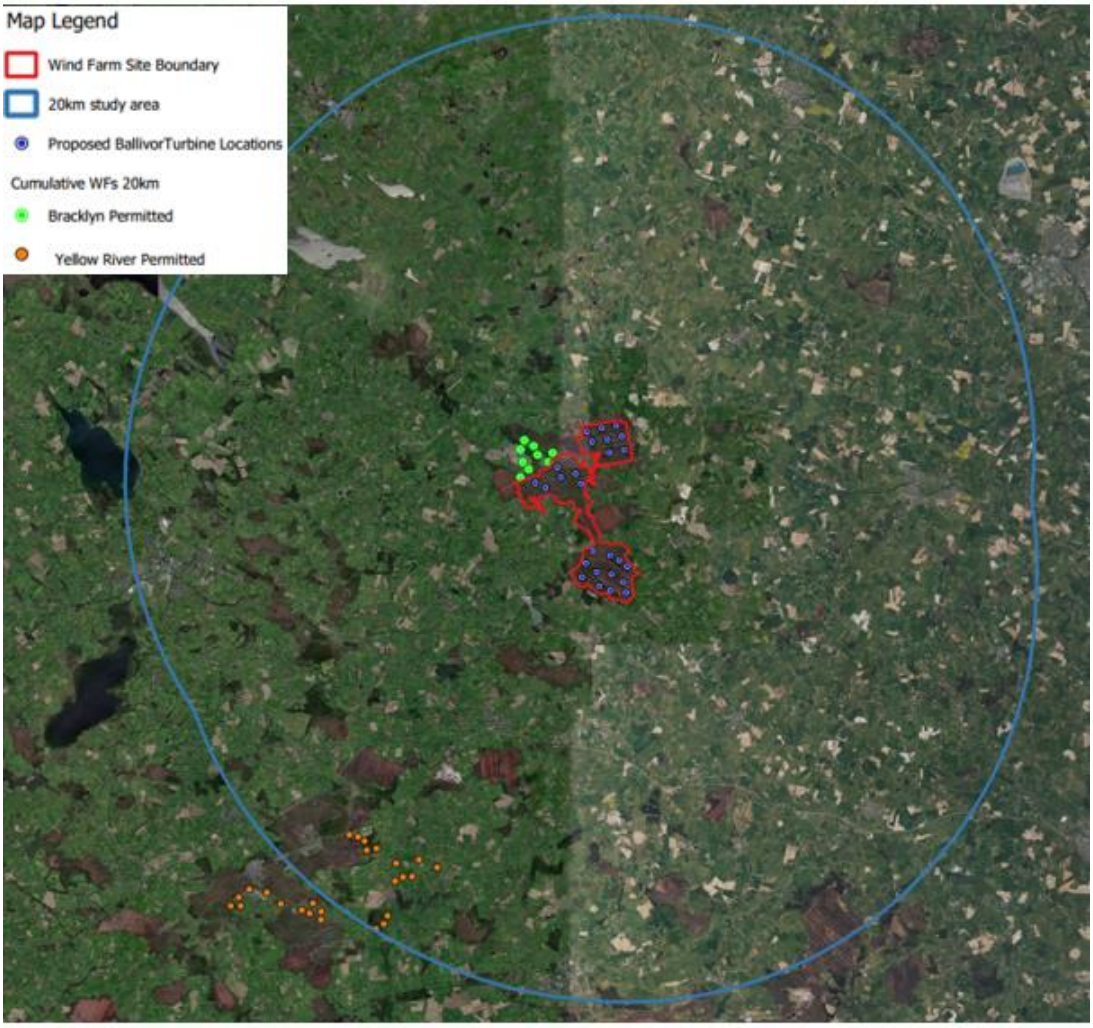

Figure 12-20: Other projects being considered for cumulative impacts within 20km of the nearest proposed Ballivor turbines

12.5.2.1 National Monuments

When considered cumulatively, the proposed Ballivor turbines along with the permitted, existing and proposed turbines within 20km will result in an increase in effects on the visual setting of the cultural heritage resource. If all of the turbines were constructed, it will result in more turbines being seen from various locations in the wider landscape setting. The individual monuments are addressed below.

12.5.2.1.1 Trim Castle

The potential effects on setting (indirect) of **Trim Castle** are Slight/Moderate if the observer is viewing from the upper floor of castle. in clear weather conditions. The photomontage prepared from the upper floor of Trim castle (Viewpoint 19 as presented Appendix 13-4) shows that the proposed Ballivor turbines will be visible along with the permitted Yellow River turbines (albeit at a distance), the proposed Milltown Pass turbines and the permitted Bracklyn turbines. This will result in cumulative effects on setting if viewed from the upper floor of the castle. The cumulative effects on setting will be Moderate (effect arises where a change to an archaeological, architectural or cultural heritage feature or site is proposed which though noticeable, is not such that the integrity of the site is compromised and which is reversible)..

12.5.2.1.2 Frewin Hill

Effects on the setting of **Frewin Hill** were also assessed. The viewshed analysis show that all turbines will have some degree of visibility from the monument (requiring clear weather conditions). The Photomontage prepared for Frewin Hill (Viewpoint 19 as presented Appendix 13-4) also shows that all turbines will be visible at a distance at various turbine heights. The potential impact is considered to be slight given the separation distance between the monument and the proposed turbines. Cumulative effects may occur (effects may increase from Slight when considering Ballivor turbine alone to Slight/moderate (when considering Ballivor and Bracklyn).

12.5.2.1.3 National Monument Raharney Ringfort

The likely impacts on this monument arising from the proposed Ballivor turbines was considered to be slight when considered alone. The permitted Bracklyn wind farm falls within visible areas (viewshed) 20km from the ringfort as well as the permitted Yellow River turbines to the south. The effects on setting will increase from Slight to Slight/Moderate when the proposed project is considered together with Bracklyn. Yellow River is located to the south in the opposite direction to the Proposed Development however.

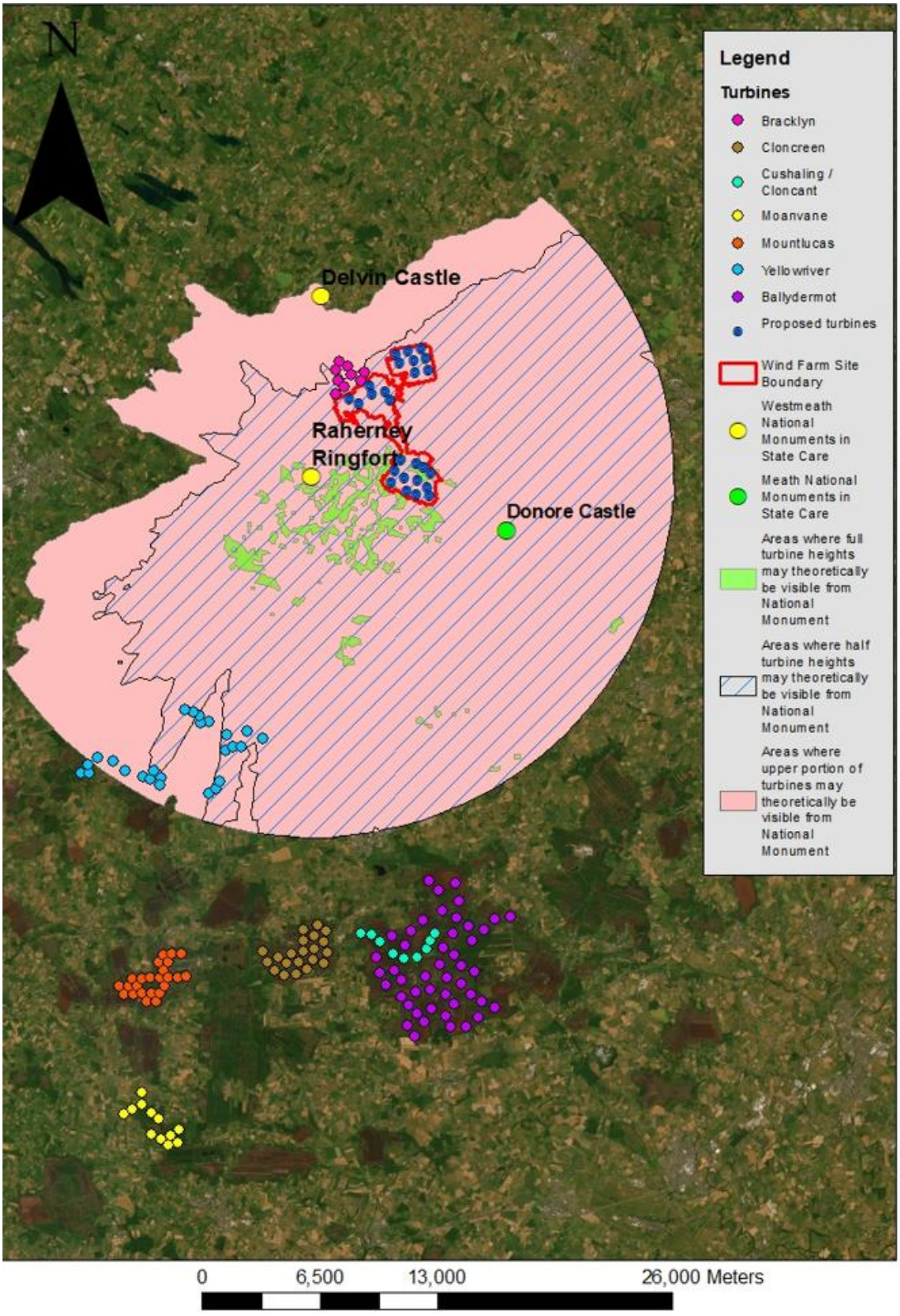

Figure 12-21: Cumulative indirect effects on Raharney ringfort.

12.5.2.1.4 *National Monument Delvin Castle*

The likely impacts on this monument arising from the proposed Ballivor turbines was considered to be slight when considered alone. The permitted Bracklyn turbines also fall within visible areas (viewshed) 20km from the ringfort. The effects on setting will increase from slight to slight/moderate when the proposed project is considered together with the Bracklyn turbines.

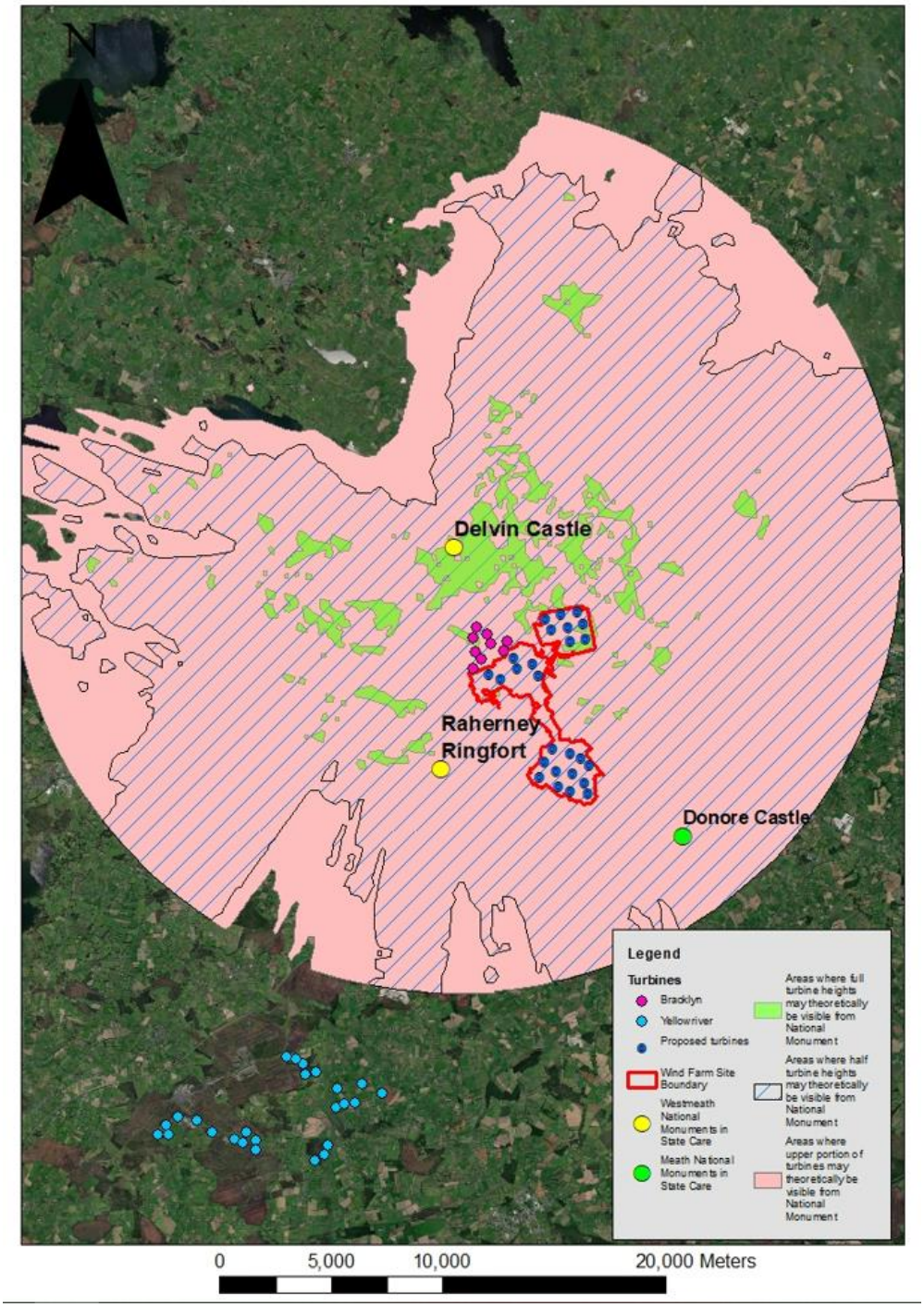

Figure 12-22: Cumulative effects on Delvin Castle.

12.5.2.1.5 National Monument State Care Donore Castle

The likely impacts on this monument arising from the proposed Ballivor turbines when considered alone are slight. The permitted Bracklyn, some Yellow river turbines and 1 proposed Ballydermot turbine also fall within the theoretical visible areas (viewshed) 20km from the monument. The effects on setting will increase from slight to slight/moderate when the proposed project is considered together with the Bracklyn turbines. This is a worst case scenario since the model doesn't not take natural screening into consideration. Both the Yellow River and Ballydermot turbine are situated in the opposite direction to the Ballivor turbines when viewed from the castle.

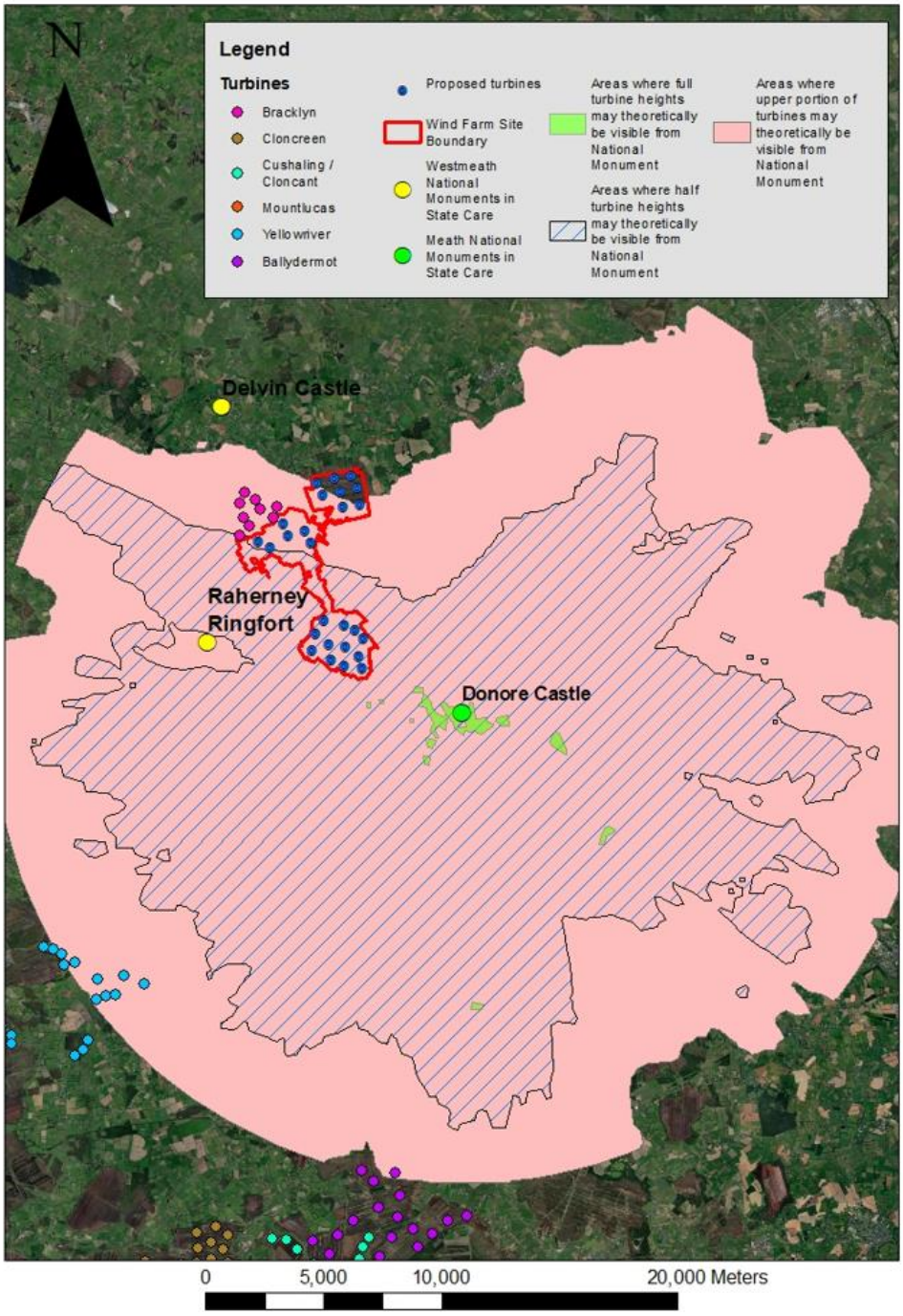

Figure 12-23: Cumulative effects on Donore Castle.

12.5.2.2 Recorded Monuments, RPS and NIAH structures (5km)

The immediate setting of the recorded monuments within 5km of the Proposed Development will not be negatively impacted although it is likely that there will be some visibility in the direction of the proposed turbines given the flat topography of the surrounding landscape. In this regard, a Slight-Moderate impact to their wider setting has been identified when the Ballivor turbines are considered alone. When considered cumulatively with other projects, in particular the permitted Bracklyn turbines situated adjacent to Ballivor, within the 5km assessment zone, this impact may increase to Moderate given that more turbines are likely to be visible from such monuments.

A similar scenario is identified for RPS and NIAH structures within 5km of the Proposed Development, in particular turbines, for which a Slight-Moderate impact to their wider setting had been identified. This may increase to Moderate when considered with the permitted Bracklyn turbines. The other projects are located outside the 5km assessment zone. The findings are a worst case scenario since viewshed analysis and ZTV does not take natural screening into consideration which in reality will alleviate and minimise the potential effects on setting.

12.6 Decommissioning Phase

There will be no significant potential impacts on the archaeological, architectural and cultural heritage environment during the short-term decommissioning of the Proposed Development. Any potential direct impacts will already have been resolved through mitigation measures during the construction phase. Any effects on setting in the wider landscape will have been reversed.

12.7 Conclusion

This chapter comprises an assessment of the potential impact of the Proposed Development on the Cultural Heritage resource. Cultural heritage includes archaeology, architectural heritage and other detailed tangible assets. The assessment was based on GIS based mapping, ZTV and Viewshed analysis to assist with the assessment of impacts on setting followed by a desktop analysis of all baseline data and a comprehensive programme of field inspection of the proposed infrastructure within the wind farm site boundary.

No direct Effects to Trim Castle will occur. No effects on setting from the grounds of Trim castle will occur. The potential effects on setting of **Trim Castle** when viewed from the upper floor are Slight/Moderate. Cumulative effects will occur and will be moderate when considering Ballivor, Yellow River, Milltown Pass and Bracklyn together).

Effects on the setting of **Frewin Hill** were also assessed. The theoretical viewshed analysis show that all turbines have some potential degree of visibility from the monument (requiring clear weather conditions). The Photomontage (Appendix 13-4, Viewpoint 08) also shows that all turbines will be visible at a distance at various turbine heights. The potential impact is considered to be Slight given the separation distance between the monument and the proposed turbines. Cumulative effects may occur (effects may increase from Slight when considering Ballivor turbine alone to Slight/Moderate (when considering Ballivor and Bracklyn together).

National Monuments within 10km of the nearest proposed turbine were assessed. The effects on setting will be slight (from viewshed analysis and ZTV analysis).

No **recorded monuments** are located within the Wind Farm Site Boundary. No direct impacts to this resource will take place, therefore. Indirect effects on SMRs / RMPs within 5km of the nearest proposed turbine were assessed. Effects are considered to be slight-Moderate since the ZTV shows that 21-26 turbines may be visible from all locations where the SMRs are located. This is a worst case scenario however since natural screening is not taken into consideration in this ZTV model and in reality natural

screening may reduce the effects on setting considerably. Cumulative effects may occur and the effect on setting may increase from Slight/Moderate when considering Ballivor turbine alone to moderate when considering both Ballivor and Bracklyn turbines (located adjacent to the Proposed Development).

One structure listed in the **Record of Protected Structures** is located within the EIAR boundary (NIAH Reg. No. 15402102 and RPS 021-008 Permanent narrow gauge Bord na Mona railway line). The proposed roads will interact the rails at 7 locations. Since the roads will be floated, there is no requirement to remove any of the tracks and in this regard no direct effects will occur. Furthermore, no level crossings will be negatively impacted. An extensive railway network will remain on the site however for future generations. Mitigation measures to include the provision of information signage will be required and implemented and will be erected at various locations along the amenity trails. This will result in a positive impact.

Two structures listed in the Record of Protected Structures are located along the Haul Route including Scarriff Bridge NIAH Reg number 14403601 RPS 91254 and Ballivor Water Pump (NIAH Reg 14327002 and RPS ID 91156).

The haul route extends through Ballivor at the western end which contains a number of NIAH structures which are also listed in the RPS. The water pump at the roadside may be deemed to be more at risk from damage from the movement of large abnormal loads and a potential direct negative effect to the structure is possible although is considered to be slight. The structure will be fenced off temporarily with high-visibility fencing during the movement of the abnormal loads through Ballivor.

The **sub-surface archaeological potential** of the bog is considered to be high taking into consideration the RMPs in the surrounding landscape, the presence of a bog-body (Clonycavan Man) discovered in the peat sorting plant (excavated by machines on a peat-field) as well as the numerous stray finds detected within the Wind Farm Site Boundary (now housed in the National Museum of Ireland). The excavation of peat during all elements of the Proposed Development has the potential to impact on any new sites, if present. All elements of the Proposed Development include turbine and meteorological mast bases, hardstands, roads, cable trenches, amenity car park, amenity trails, construction compounds, substation site, grid connection loop-ins, angle towers, borrow pits, security cabins and gates, drainage, junction accommodation areas along the haul route and any other peat extraction activities. Mitigation measures will include construction stage monitoring. Should new sites, features or artefacts be present within the site (currently not visible on the surface) the impact is likely to be significant negative and permanent (i.e. the excavation by machinery would permanently remove the sites resulting in a significant negative impact). The sites/features, if detected, during monitoring will be preserved by record (archaeologically excavated) or preserved in-situ (avoidance) and therefore a full record made of same. In this regard, the potential impact after the mitigation measures is likely to be Slight. In terms of cumulative effects, since all projects have been assessed from a cultural heritage perspective through the EIAR process, all potential negative effects are deemed to have been dealt with through the use of effective mitigation measures and planning conditions issued through the Planning Authorities. If the mitigation measures prescribed in this EIAR are implemented then cumulative direct effects to unknown sub-surface archaeology will not occur, regardless of the other projects within 20km of the Proposed Development.

A review of the historic OS mapping and the walkover survey has shown that a derelict ruined structure ('Tonduff') is located within an overgrown section of the bog. This is a possible famine settlement and is shown within Bracklin Bog on both the 1st Edition 6 inch map and the 25 inch 2nd Edition. The remains of the structure will be preserved in situ and the impacts are considered to be Imperceptible. Licensed archaeological monitoring of the proposed road to the west will be undertaken during construction and in this regard preventing any accidental damage to the structure.