



One Earth Solar Farm

Preliminary Environmental Information Report [EN010159]

Chapter 10: Buried Heritage

May 2024

One Earth Solar Farm Ltd

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10. Buried Heritage

Summary of Preliminary Likely Significant Effects

- 10.1. Based on the detail available at the time of writing and our current understanding of our Project, this Chapter concludes that:
- > There is the potential for unknown buried heritage assets within the Site;
 - > With the implementation of adequate mitigation measures prior to, or during the construction phase of our Project, the potential for significant effects on buried heritage assets is considered to be low;
 - > There is very low potential for adverse effects/direct impacts during the maintenance, and decommissioning phases as it is not anticipated there will be any ground works affecting undisturbed deposits during these phases of our Project;
 - > There will be no significant indirect impacts on buried heritage deposits within the Site or the wider Study Area during the operation, maintenance, and decommissioning phases.
- 10.2. The forthcoming, subsequent Desk Based Assessment (DBA) and Environmental Statement (ES), will include further modelling, design, and assessment work. This will include any further details on any mitigation strategies that will be implemented for our Project. The results will be set out in the ES chapter submitted as part of the Development Consent Order (DCO) application.

Introduction

- 10.3. This chapter of the PEIR has been prepared by Icen Projects and presents the likely significant environmental effects of our Project upon Buried Heritage, meaning below the ground heritage assets (archaeology), which are both designated and not designated. The assessment of likely significance is based on our current understanding of the archaeological baseline. The assessment provides a preliminary, high-level assessment of the potential changes and/or impacts anticipated from the construction operation, maintenance, and decommissioning phases of our Project. Our assessment considered the impact on the known (and unknown) buried heritage assets.
- 10.4. This Chapter presents our current understanding of the main receptors identified at this stage which have the potential to be impacted by our Project. Following this, potential mitigations strategies, potential for positive effects and the significance of effects are presented.
- 10.5. The assessment of potential impacts on buried heritage assets has been based on professional judgment. The experience of the consultants that have prepared this chapter, who are competent experts for the purpose of the EIA Regulations, is set out in **Appendix 1-1**. It is informed by the environmental information we have collected to date (which is detailed in this Chapter), as well as the current description of our Project, as set out in **Chapter 4: Our Project**.

- 10.6. The results of ongoing and future surveys, further assessment, consultations, archaeological evaluation, and potential mitigation measures will inform the more detailed assessment that will be included in the ES Chapter that will form part of our DCO submission. More specific mitigation measures will also be considered at the ES stage in response.
- 10.7. This Chapter is supported by the following appendices:
- > **Appendix 10-1: Legislation, Policy, and Guidance**
 - > **Appendix 10-2: Assessment Methodology**
 - > **Appendix 10-3: Preliminary Impact Assessment: Locations for Substations**
 - > **Appendix 10-4: Preliminary Impact Assessment: Options for River Crossing**
 - > **Appendix 10-5: Detailed Scope of Assessment**
 - > **Appendix 10-6: Consultation responses outlined in Scoping Opinion and actions in response**

Current Buried Heritage Baseline Conditions

- 10.8. The approach to the assessment of Buried Heritage considers the potential for likely significant environmental effects (in EIA terms) on below ground heritage assets but excludes consideration of above-ground heritage assets and their setting, which are dealt with in **Chapter 11: Cultural Heritage**.

Buried heritage aspects considered within this Chapter include:

- > Direct and indirect impacts to known archaeological remains;
- > Direct and indirect impacts to anomalies identified from the review of known satellite imagery of the topography of the Site (LIDAR imagery), as possible or probable archaeological remains;
- > Direct and indirect impact to anomalies identified during the preliminary assessment of the results of the currently ongoing geophysical surveys that have been carried out to date. The purpose of this type of survey is to identify below ground anomalies which may suggest the presence of potential buried heritage deposits; and,
- > Potential for direct and indirect impact on areas we have not yet undertaken any geophysical survey on, which may contain unknown archaeological remains.

Study Area

- 10.9. The purpose of a buried heritage study area is to provide a contextual archaeological background of the Site and its surroundings, to assess the potential effects to known buried heritage assets, and to understand the potential for unknown assets that may be affected by our Project.

As required by the relevant guidance¹ two different study areas have been identified and considered:

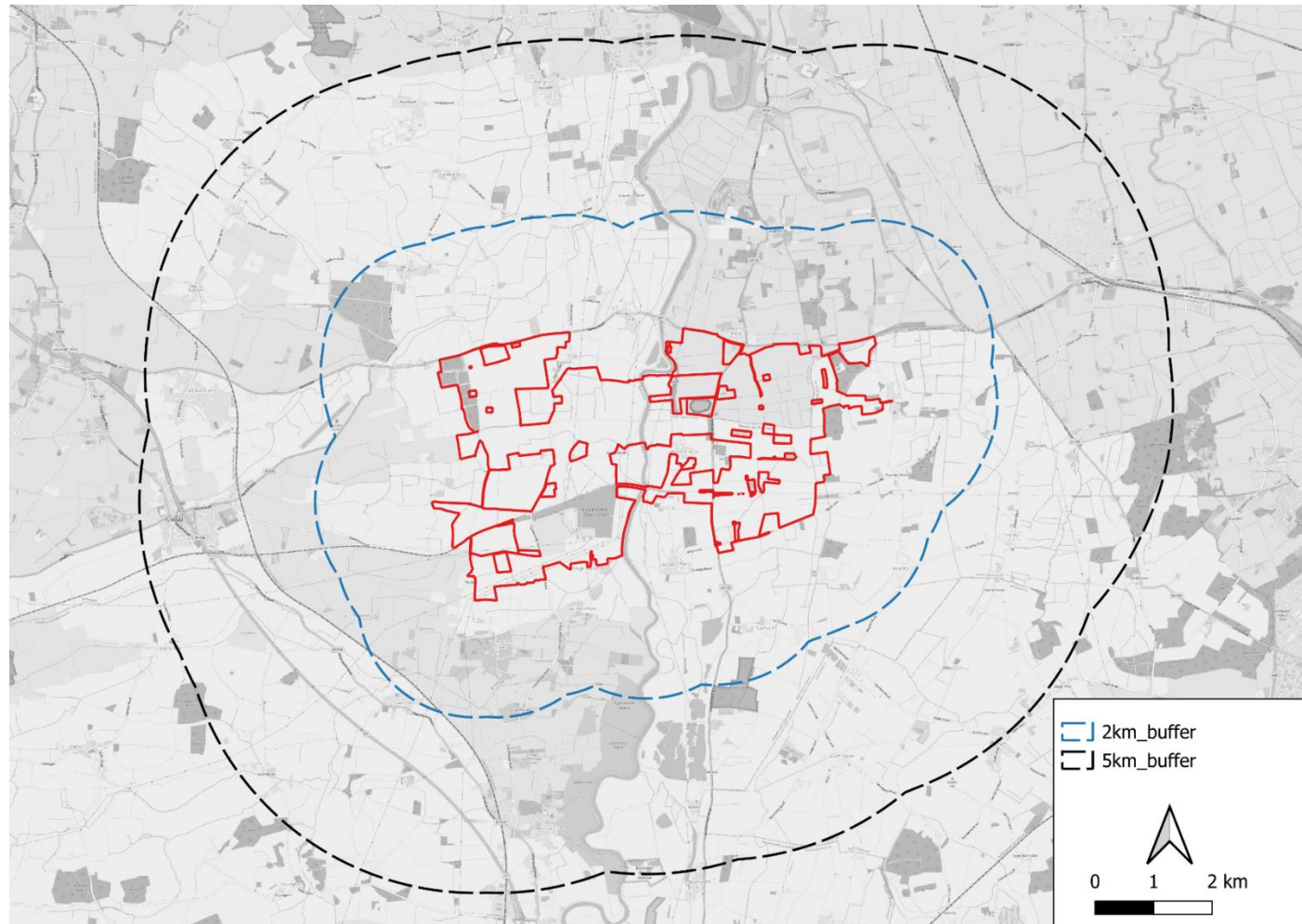
- > 2km radius from the Site and connection routes for undesignated heritage assets; and,
- > 5km radius from the Site and connection routes for Designated Heritage Assets (i.e. Scheduled Monument).

10.10. The above Study Areas are presented in **Figure 10-1**.

10.11. Any inclusion in this and future assessment of assets outside of the defined Study Areas will be based on research and professional judgment. These will be only discussed where they are considered to provide additional context information to inform the potential for unknown buried heritage assets that may be impacted by our Project.

¹ Lincolnshire County Council "Guidance for large schemes including NSIPs and EIAs, General Scoping Opinion for the Historic Environment," supplied by Matthew Adams on 09/10/2023.

Figure 10-1: Buried Heritage Study Areas



Collection of Buried Heritage Data

- 10.12. An understanding of the buried heritage context of our Project has been gained through a combination of desk-based research and analysis, and fieldwork. The following sources were consulted in the production of this assessment:
- > British Geological Survey (BGS) - Solid and Drift geology digital mapping and geological borehole data where applicable;
 - > Historic Environment Record (HER) - Data detailing the results of any previous archaeological investigations on our Site and in the surrounding Study Area. The HER Data was obtained in November 2023²;
 - > Historic England - Information on statutory designated assets data including the National Heritage List for England (NHLE), World Heritage Sites, Scheduled Monuments, Listed buildings, and any identified Heritage at Risk;
 - > LIDAR - Site Lidar imagery as available from:
<https://historicengland.maps.arcgis.com/apps/webappviewer/index.html?id=d45dabecef5541f18255e12e5cd5f85a&mobileBreakPoint=300;>
 - > Host Authority – Details within the local planning authority (LPA) Local Plan’s and other information on historic environment policies, conservation areas and locally listed buildings where published online;
 - > Geophysical Survey - A geophysical survey is currently being undertaken by Headland Archaeology with commencement in January 2024 in accordance with the Project Design and Written Scheme of Investigation (WSI, Icenl 2023)³. It is noted that the information presented in this Chapter represents our preliminary findings to date, and that the survey is still ongoing. The final report for the geophysical survey is not available at the time of the writing, and therefore has not been included in this Chapter. Relevant preliminary results are discussed in **Appendix 10-3 and Appendix 10-4** as part of the preliminary impact assessment for the construction phase of our Project; and
 - > Historic Landscape Characterisation – details from the Historic Landscape Characterisation Project for Lincolnshire (English Heritage and Lincolnshire County Council, 2011); and
 - > the Nottinghamshire Historic Landscape Characterisation Project 1998 – two thousand.

Assumptions, Limitations & Uncertainties

² Data received in November 2023, Nottingham HER data License No. 2023/10, and Lincolnshire HER data Licence No. HES000063

³ Submitted to the Nottinghamshire and Lincolnshire Archaeological Advisors on 21/12/2023. Accepted by Jan Allen on 15/03/2023 and by Matthew Adams during meeting on the 30/04/2024.

- 10.13. The HER is not a record of all surviving heritage assets, but only of all the known buried heritage assets recorded in the area so far. The HER information is not complete and does not preclude the subsequent discovery of further elements of the historic environment that are, at present, unknown.
- 10.14. This PEIR provides preliminary information based on the design of our Project to date and the data gathered at this point in time. Some of the information and conclusions reached at PEIR stage will be reviewed and supplemented in full and final form within the ES.

Current Results

- 10.15. A review of known buried heritage assets recorded in the Lincolnshire and Nottinghamshire HER, LIDAR and cropmarks imagery and preliminary results of the geophysical survey currently being undertaken, revealed a number of heritage assets demonstrating evidence of extensive human activities in the area from the early prehistoric period through to the modern period.
- 10.16. The buried heritage assets have been grouped together based on chronology, locations and if the impact upon them is equivalent, to save repetition by assessing them individually. A group number has been assigned to each one, referring to the relevant chronologic phase (PH for prehistory, RO for Roman...). A full list of the groups, along with the list of the heritage assets included and a brief description is included in **Table 10-1 to Table 10-6**. When included in groups of assets, the Scheduled Monuments, which have value that transcend the wider grouping, will be assessed separately when discussing any potential effects arising from our Project.

Historic Landscape Characterisation

- 10.17. Our Project falls within different Historic Landscape Characterisation (HLC) areas, as identified by Nottinghamshire and Lincolnshire LPAs.
- 10.18. An assessment of HLC's setting and value, and of the impact of our Project on them form part of **Chapter 11: Cultural Heritage**. There are considerations about the HLC's which are considered to be relevant for a Buried Heritage perspective.
- 10.19. Nottingham
- 10.20. The Nottinghamshire Historic Landscape Characterisation Project was carried out between 1998 and 2000 by the Environment Department of Nottinghamshire County Council, with sponsorship from English Heritage.
- 10.21. The vast majority of our Site is included in the 'Reflecting Open Fields' HLC, the southeast part of our Site on the east bank of River Trent is included in the 'Modern Modified Field' HLC, and the northern part on the west bank of the River is included in the 'Unenclosed River Valley Meadow'.
- 10.22. The 'Reflecting Open Fields' were created by enclosure mirroring between the 18th and 19th centuries mostly mirroring the 15th/16th centuries 'Fossilised Open Field Patterns', which in turn might have followed 10th/11th centuries, or earlier enclosures.
- 10.23. This shows a potential substantial continuity of land use for agricultural purposes, at least from the medieval period for the majority of our Site.

- 10.24. The 'Modern Modified Field' mostly comprises lands where the 19th century field pattern has been reorganised after World War II and it is not visible anymore, or for which only 50% of the field boundary are still visible. In some areas, this modification caused the removal of enclosure and medieval landscape assets, revealing earlier elements such as Roman and prehistoric field boundaries and settlements. Providing a suitable underlying soil and geology, cropmarks have proved to represent the main markers of pre-medieval buried heritage assets in these areas.
- 10.25. Therefore, fields included in this HLC shows a good visibility of buried heritage assets, and it is expected that the assessment of cropmarks and consequently other archaeological surveys such Geophysical Survey, to provide a reliable baseline collection methodology within Modern Modified Field patterns.
- 10.26. The 'Unenclosed River Valley Meadow' HLC mostly comprises current or former open riverside pastures, meadows or commons that retain traditional boundaries and the unenclosed character visible on the 19th century maps. The majority of meadow lands saw a continuity of use as pasture since the Roman period through the medieval ages and until the 20th century.

Lincolnshire

- 10.27. The Lincolnshire Historic Landscape Characterisation Project began in October 2008, with the aim to categorise and characterise the landscape of the county with specific reference to its development over time.
- 10.28. The Lincolnshire section of our Project falls within the 'Trent Valley' HLC, which shows evidence from excavation and aerial photography of occupation and utilisation of the landscape in this character area from the prehistoric and Roman periods. There is little surviving visible evidence of this in surviving landscape features, apart from the alignment of two Roman roads and possibly the line of the Foss Dyke canal which may be of Roman construction. The two Roman roads are the main connection route from Lincoln to Newark, and they both lie outside of the Study Area defined for our Project.
- 10.29. The organisation of the present landscape probably has its origins in the early medieval period, and it was consolidated after World War II when the use of increasingly heavy farm machinery required the removal of hedgerows and field boundaries.

Designated Heritage Assets within the Study Areas

- > There are two Scheduled Monuments ('SM') within our Site but excluded from the developable area: Roman Vexillation Fortress, Two Roman Marching Camps and a Royal Observers Corps Monitoring Post, Newton-on-Trent (NHLE: 1003608); and Whimpton Moor Medieval Village and Moated Site, Ragnall (NHLE: 1017567).
- > There are two further Scheduled Monuments within the 2km Study Area: Ringwork at Kingshaugh Farm, East Markham (NHLE: 1018619); and Cross in St Peter and St Paul's Churchyard, Kettlethorpe (NHLE: 1018289).

- > There are three further Scheduled Monuments within the 5km Study Area: Moat, three fishponds, enclosures, hollow way, and part of a road at Hall Yard (NHLE: 1008247); Moated site W of Church Road (NHLE: 1017858); and Fleet Plantation moated site (NHLE: 1008594).

Archaeological Background

- 10.30. Isolated findspots and casual, unstratified finds which are not included in the groups will not be included in this section of the PEIR, as their contribution to the understating of the wider archaeological background is negligible compared to stratified and contextualized finds. However, high concentrations of unstratified finds of a specific date within or in close proximity to our Site, which are considered to be helpful to define the buried heritage background and may represent evidence or inform for the potential of unknown archaeological remains within our Site will be included.

Geology

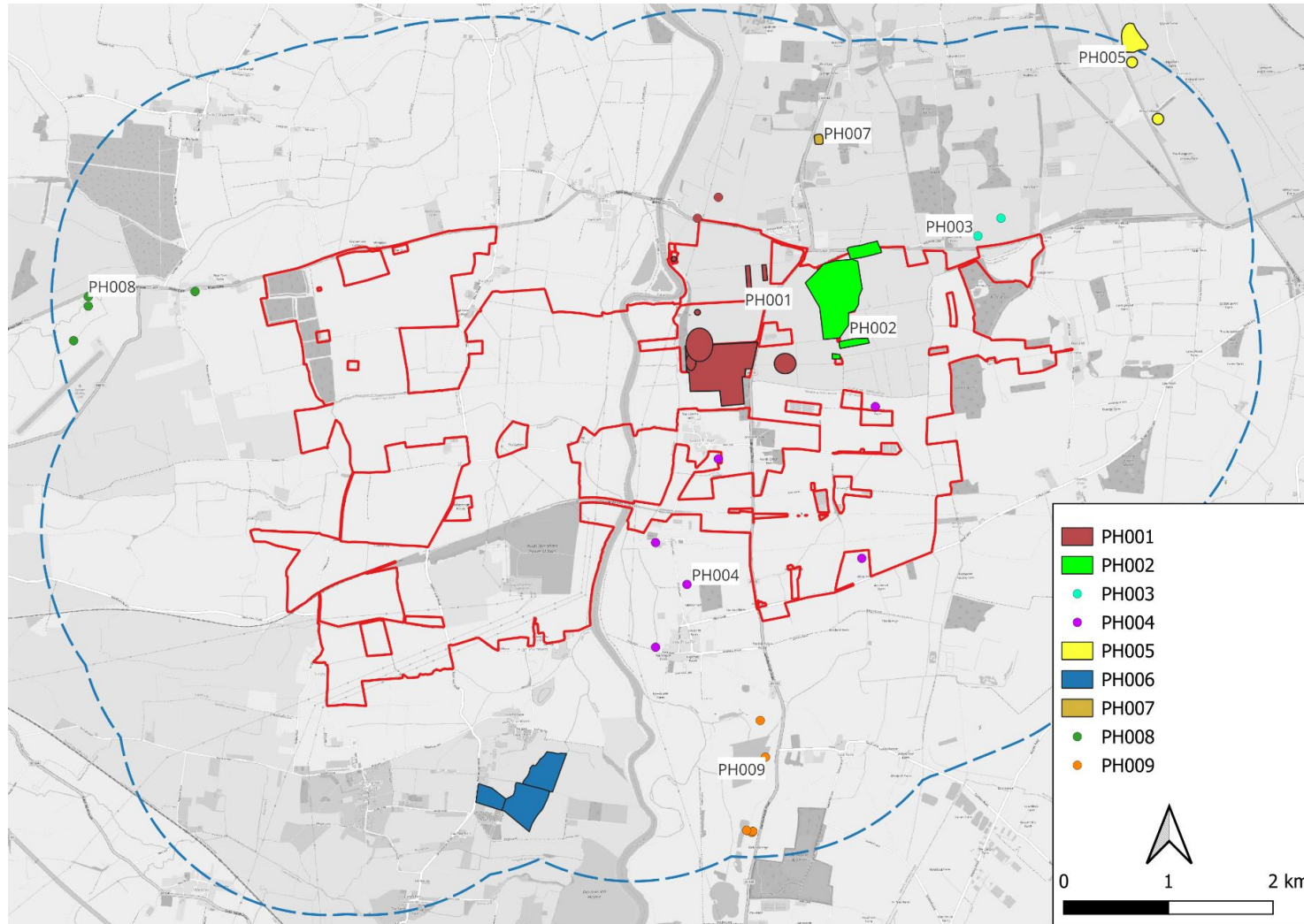
- 10.31. The underlying bedrock geology of our Site is Mercia Mudstone throughout. Superficial (upper) geology varies, however. The floodplain either side of the Trent consists of alluvial clay, silt, sand, and gravel deposits laid down up to 11.8 thousand years ago. In the areas further afar from River Trent, the superficial geology consists of Holme Pierrepont Sand and Gravel Member, laid down 2.5 million to 11.8 thousand years ago, Blown Sand deposits formed between 2.588 million years ago and the present, and further alluvial deposits alongside the Trent's tributaries, such as those along the Fledborough Beck in the western part of our Site.
- 10.32. The buried alluvial deposits along the River Trent have archaeological potential for the survival of paleoenvironmental remains dating to the prehistoric Holocene (post ice age). Such remains have the potential for environmental reconstruction via waterlogged seeds, pollen, macro fossils etc along with sedimentological examination. They may also contain indicators of human activity and early landscape management. Human activity may also be present from the terrace gravels that flank the river in the form of flint tool or tool working remains.

Palaeolithic Period to Iron Age (Before AD 43)

- 10.33. Within our Site, the known main prehistoric heritage assets (PH001) have been detected through a number of surveys, cropmarks and aerial photography analysis and archaeological interventions on the area of Newton Cliff on the east bank of River Trent, between North Clifton and Newton-on-Trent, west of Thorney and encircling the Roman Vexillation Fortress and marching camps (NHLE: 1003608).
- 10.34. Within the same area on the east of River Trent, slightly North of Newton-on-Trent and outside of our Site, a possible prehistoric enclosure associated with casual unstratified flints have also been recorded (PH007).

- 10.35. Over 50,000 artefacts have been discovered within the broader Study Area. Field excavations exposed significant remains spanning the late Mesolithic to late Neolithic/early Bronze Age, such as remains of a late Mesolithic structure, waste pits and flint tool production debris, Neolithic structure and Bronze Age features and finds. This suggests a late Mesolithic to late Neolithic/early Bronze Age occupation in the area, perhaps an intermitted/seasonal one connected to the exploitation of the rich River Trent resources.
- 10.36. The scattered, unstratified nature of the finds, mostly collected via field walk survey, would suggest that any potential archaeological asset or site in this the of collection would have been severely damaged by agricultural activities, such as ploughing.
- 10.37. Further east, southeast of Newton-on-Trent, extensive cropmarks were identified, suggesting the presence of a large number of ditches, field boundaries, trackways, and linear features, along with a number of enclosures and possible pit features (PH002). Whilst the dating is unconfirmed, the features were thought likely to date to the Iron Age or Roman periods. The preliminary results of the geophysical survey confirmed the presence of potential unknown buried heritage assets southeast of Newton-on-Trent.
- 10.38. More findspots east of Newton-on-Trent (PH003), slightly outside of our Site, are further markers of the prehistoric archaeological potential within our Site and the Study Area.
- 10.39. In close proximity to our Site and suggesting the presence of further prehistoric buried heritage assets, the excavation at Andrew's Field nearby South Clifton (PH004) returned a number of neolithic to early bronze age artefacts, but no features. Similarly, the number of casual finds, mostly flints, not associated with features or clear markers of occupation were recovered between North and South Clifton, outside of our Site but within the Study Area.
- 10.40. Cropmarks associated with a number of flints are recorded approximately 1.6km northeast of our Site close to Hardwick (PH005), confirming the presence of scattered prehistoric occupation also in areas further afar from River Trent.
- 10.41. At Girton Quarry, approximately 2km south of our Site, a number of cut features (such as ditches and pits), burnt mounds and prehistoric pottery have been recorded during topsoil stripping and quarrying activities (PH009). Potentially related, sporadic unstratified casual finds and artifact scatters are recorded east of Spalford.
- 10.42. On the west bank of River Trent, around Low Marhnam approximately 1km south of the Site, a prehistoric enclosure with connected cut features and trackways has been recorded (PH006). The presence of cropmark in the same area suggests the potential for consistent prehistoric activity in the area.
- 10.43. Approximately 1.5km west of the Site in the area, in close proximity with Darlton and the Ringwork at Kingshaugh farm, a prehistoric scrape and two saddle querns have been recovered as casual finds (PH008). Despite these being unstratified, they may suggest a degree of prehistoric activities in an area showing a substantially reduced occupation markers compared to Newton-on-Trent and Low Marhnam.
- 10.44. Groups of Prehistoric assets are listed in **Table 10-1** and shown in **Figure 10-2**.

Figure 10-2: Groups of Prehistoric Assets

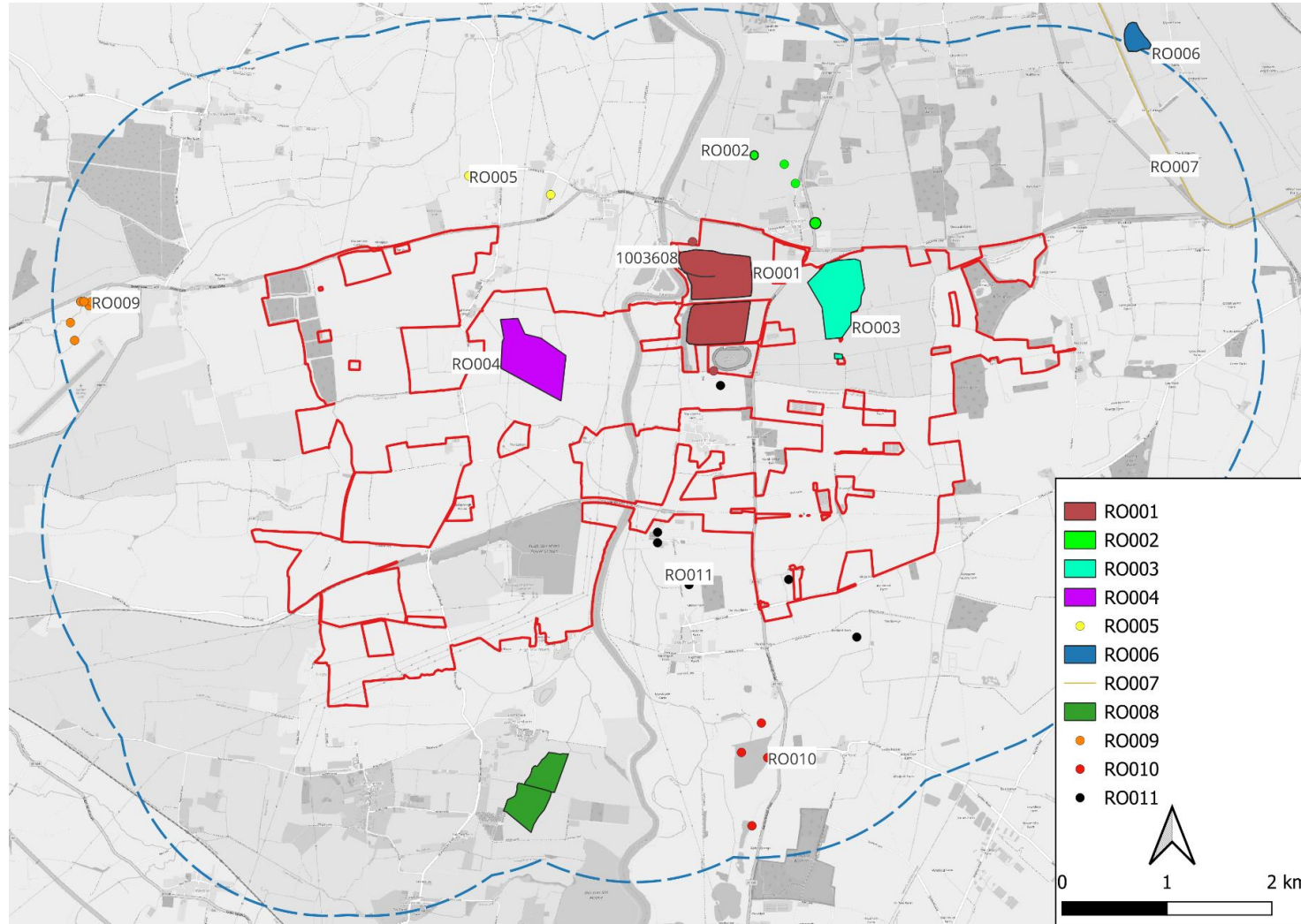


Roman Period (AD 43 – 410)

- 10.45. Consistently with the Prehistoric period, the area between North Clifton and Newton-on-Trent shows important traces of Roman occupation.
- 10.46. The most significant known Roman remains on our Site are those of the Vexillation Fortress and marching camps. This area is a protected Scheduled Monument (along with a Royal Monitoring Corps observation post, NHLE: 1003608) and is located to the southwest of Newton-on-Trent, on the eastern bank of the Trent where the river bends sharply (RO001). The fortress dates from the 1st century AD, during the military conquest of Britannia by the Roman Army and forms a rare subset of Roman defensive sites. The observation post, which forms part of the monument, was principally a Cold War era monitoring station for spotting enemy aircraft and reporting nuclear explosions and the resultant spread of radioactive fallout in the event of nuclear attack. It was in use between 1961 and 1991.
- 10.47. Excavations to the north of the fortress uncovered a number of 2nd century Romano-British kilns (RO002).
- 10.48. As discussed above about PH002, LIDAR imagery confirms the presence of features of potential Roman chronology within our Site, southeast of Newton-on-Trent (RO003)
- 10.49. On the West bank of River Trent south of Ragnall, aerial photographs, cropmarks and the preliminary results of the geophysical survey currently being undertaken, shows the presence of a number of earthworks and enclosures. These have been interpreted as a potential Roman settlement (RO004).
- 10.50. In close proximity to our Site and suggesting the presence of further Roman buried heritage assets, the archaeological monitoring on the excavations for the replacement of a water pipeline through Dunham on Trent (RO005), returned a small quantity of pottery sherds dated to the 1st century AD.
- 10.51. Cropmarks and cut features associated with a potential Roman enclosure are recorded approximately 1.6km northeast of our Site close to Hardwick (RO006), where also there were traces of prehistoric land occupation.
- 10.52. In the northeast corner of the Study Area, close to RO006 and approximately 1.5km from our Site, runs The Fosse Dyke, a potential Roman canal which has been reused also during the medieval period (RO007).
- 10.53. Again, in substantial continuity of land use, the prehistoric enclosure near Low Marhnam (PH006, as above) show potential Roman phases of enclosures, cut features and trackways which have been detected through aerial imagery (RO008).
- 10.54. Approximately 1.5km west of our Site and in close proximity to the Scheduled Monument of Ringwork at Kingshaugh Farm (ME011, below), a collection of Roman pottery and building materials recovered during field walking suggests the presence of a nearby Roman Villa (RO009).
- 10.55. In the area west of Spalford, more than 1km south of our Site a number of Roman pottery fragments and some potential cut features have been recorded during archaeological interventions (RO010).

- 10.56. A number of casual finds between North and South Clifton (RO011) confirm the presence of an extensive Roman occupation on the east bank of River Trent in proximity of our Site.
- 10.57. Groups of Roman assets are listed in **Table 10-2** and shown in **Figure 10-3**.

Figure 10-3: Groups of Roman Assets



Saxon and Medieval Period (AD 410 – 1485)

- 10.58. The main medieval buried heritage within our Site is Whimpton Moor medieval village and moated site (ME001), which is also designated as Scheduled Monument (NHLE: 1017567). The monument includes the earthwork and buried remains of Whimpton Moor medieval village and the moated site. The earthworks represent former house platforms, boundaries, ponds, a moated dwelling and remains of ridge and furrow cultivation. Potentially connected to the medieval village, northwest of the Study Area there have been found two skeletons, one in a stone coffin.
- 10.59. Similar remains of abandoned sunken villages are known within the wider Study Area, at Ragnall (ME002), Skegby (ME003), Fledborough (Deserted Village of Woodcotes, ME004) and at the Shrunken Village of Thorney (ME005). Even if they lie outside of our Site their presence suggests the potential for unknown buried heritage assets that may be affected by our Project:
- 10.60. In substantial continuity with the prehistoric and Roman period, a number of Saxon and medieval occupation markers are located between North Clifton Newton-on-Trent, within our Site. Scatters of medieval pottery collected during systematic field walk survey and remnants of ridge and furrow cultivation noted as visible crop marks variously suggest that the area was still being in use during the medieval period (ME006).
- 10.61. Outside of our Site but within the Study Area, documentary evidence and aerial photographs suggest the presence of the medieval settlement of Newton (ME007), in close proximity but outside of our Site on the north, and of a medieval field system or cultivation remains comprising ridge and furrows (ME008).
- 10.62. The Medieval Deer Park surrounding and comprising the medieval manor of Kettlethorpe (ME009) covers a portion of the northeast corner of our Site, and spans north until the end of the Study Area. This asset includes a number of heritage assets, including the Cross in St Peter and St Paul's Churchyard, Kettlethorpe (NHLE:1018289), located 1.6km north of our Site.
- 10.63. Immediately east of the Medieval Deer Park and approximately 1.5km north of our Site but within the Study Area, lies the late Anglo-Saxon and medieval Settlement of Loughterton (ME010). During an evaluation at Home Farm, the remains of medieval stone structures were recorded. These included a possible stoking hole for an oven or kiln and a base for a circular structure of unknown function. It appears to be a concentration of settlement evidence in the centre of Home Farm. The presence of 12th century flood deposits and the lack of remains in trenches the east suggests that this wetter, lower lying land was used for fields or meadows. The area of settlement recorded during the evaluation was slightly raised, and further raised areas were noted in the vicinity of the excavations.
- 10.64. Approximately 1.4km west from Whimpton Moor medieval village, outside of our Site but within the Study Area, is located the Ringwork at Kingshaugh Farm (ME011). This is a Scheduled Monument (NHLE: 1018619) comprising the earthwork and buried remains of Kingshaugh Camp, a ringwork which surrounds the 17th century Kingshaugh House.

- 10.65. Remnants of ridge and furrow cultivation have been noted as visible crop marks variously across the Study Area, such as the ones identified though aerial photograph west of Fledborough (ME012), approximately 40m far from our Site.
- 10.66. Within the village of Fledborough, the Church of St Gregory at Fledborough (ME013) lies in proximity of our Site, and whilst its setting is not discussed in this chapter, there is potential for ancillary buildings to be present within our Site.
- 10.67. Around our Site there are active settlements with known Saxon or medieval origins such as Dunham-on-Trent, Fledborough, North Clifton, South Clifton and High Marnham. Even if these are lying outside of our Site but within the Study Area, their proximity with it may suggest the presence of unknown buried heritage assets related to them and potentially affected by Our Project.
- 10.68. Excavation at Dunham, approximately 750m north of our Site and within the Study Area, recorded medieval artefacts and features related to the medieval phase of the village (ME014). Earthworks are still visible along Upper Row and slightly north of Dunham. Documentary evidence suggest the presence of the deserted village of Swainston, which location is unknown.
- 10.69. Similarly to St Gregory at Fledborough, the medieval churches of St. George at North Clifton (ME015) located south of North Clifton and outside of our Site but within the Study Area may suggest the presence of unknown buried heritage deposits in the surrounding areas.
- 10.70. Medieval field boundaries have been recorded within the Study Area approximately 1km north of our Site at Lanham (ME016) on the west bank of River Trent, and northeast of our Site on the east bank of the river, around Hardwick (ME020). The latter are part of the medieval shrunken village which pattern could reflect the presence of a monastic demesne farm within or adjacent to the current village of Hardwick.
- 10.71. Archaeological monitoring of excavation for the replacement water main through parts of Skegby, Normanton-on-Trent, Low Marnham and High Marnham returned a number of medieval and post medieval artifacts and features, mostly related to road surfaces and linear cut features, such as ditches and lanes (ME017 and ME018). This suggest that there is potential for contain further unknown medieval buried heritage assets connected to viability or field system in the part of our Site in proximity with Skegby.
- 10.72. Within the Study Area, and approximately 830m south of our Site, during archaeological monitoring of ground works in the area east of Spalford near Girton Quarry, a number of medieval cut features have been recorded along with medieval pottery collected during systematic field walk survey (ME019).

- 10.73. Within the 5km Study area, here are three further medieval Scheduled Monuments the 'Moat, three fishponds, enclosures, hollow way and part of a road at Hall Yard' (NHLE: 1008247) approximately 2.2km southwest (ME021); the 'Moated site W of Church Road. (NHLE: 1017858), approximately 3.4km east (ME022); and, the 'Fleet Plantation moated site' (NHLE: 1008594), approximately 4.2km north (ME023). While substantially far from our Site, these confirms the extensive medieval occupation within the wider Study Area, and therefore the potential for unknown buried heritage assets dated to the medieval period.
- 10.74. Saxon and Medieval groups of assets are listed in **Table 10-3** and shown in **Figure 10-4** and **Figure 10-5**.

Figure 10-4: Groups of Saxon and Medieval Assets

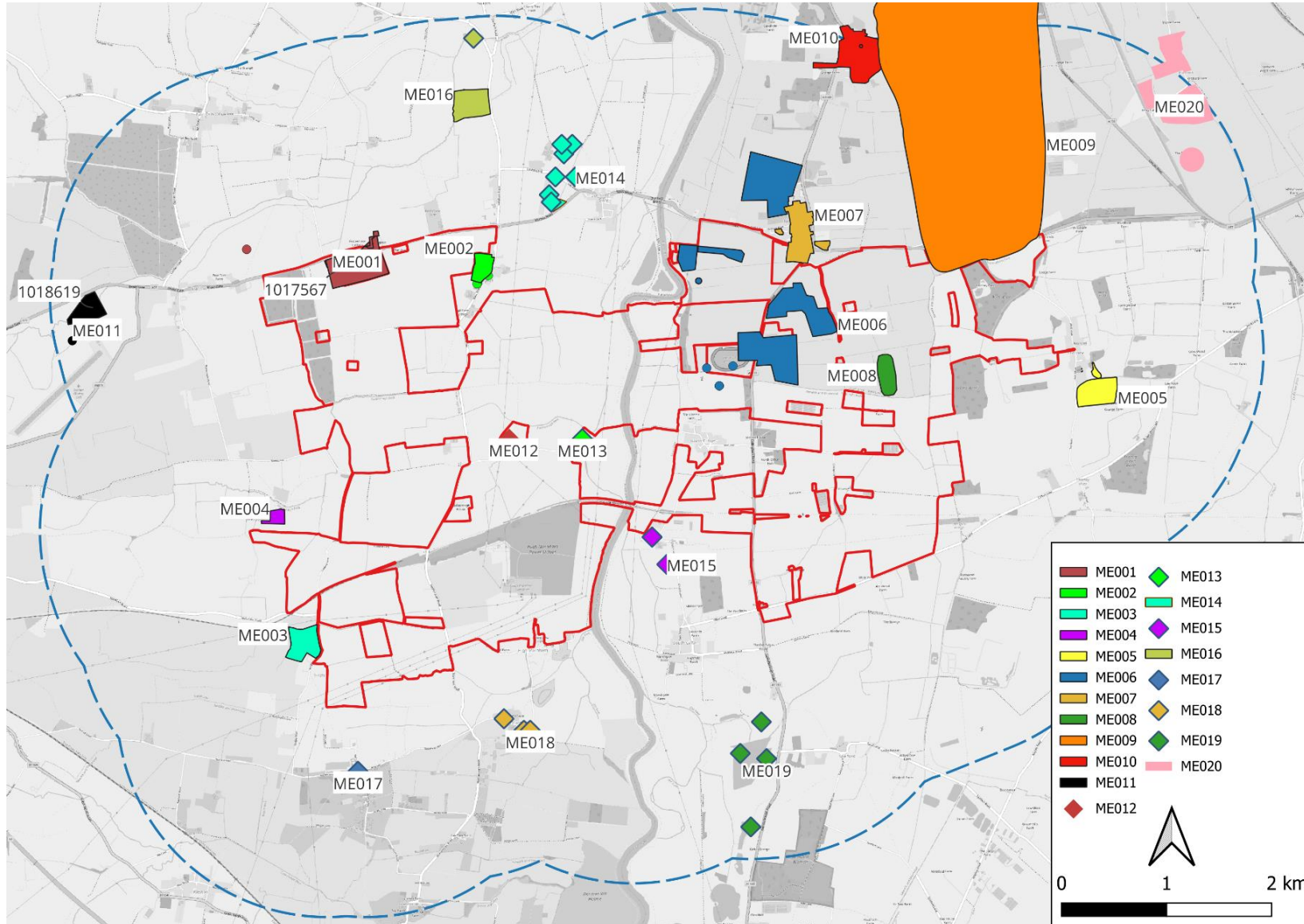
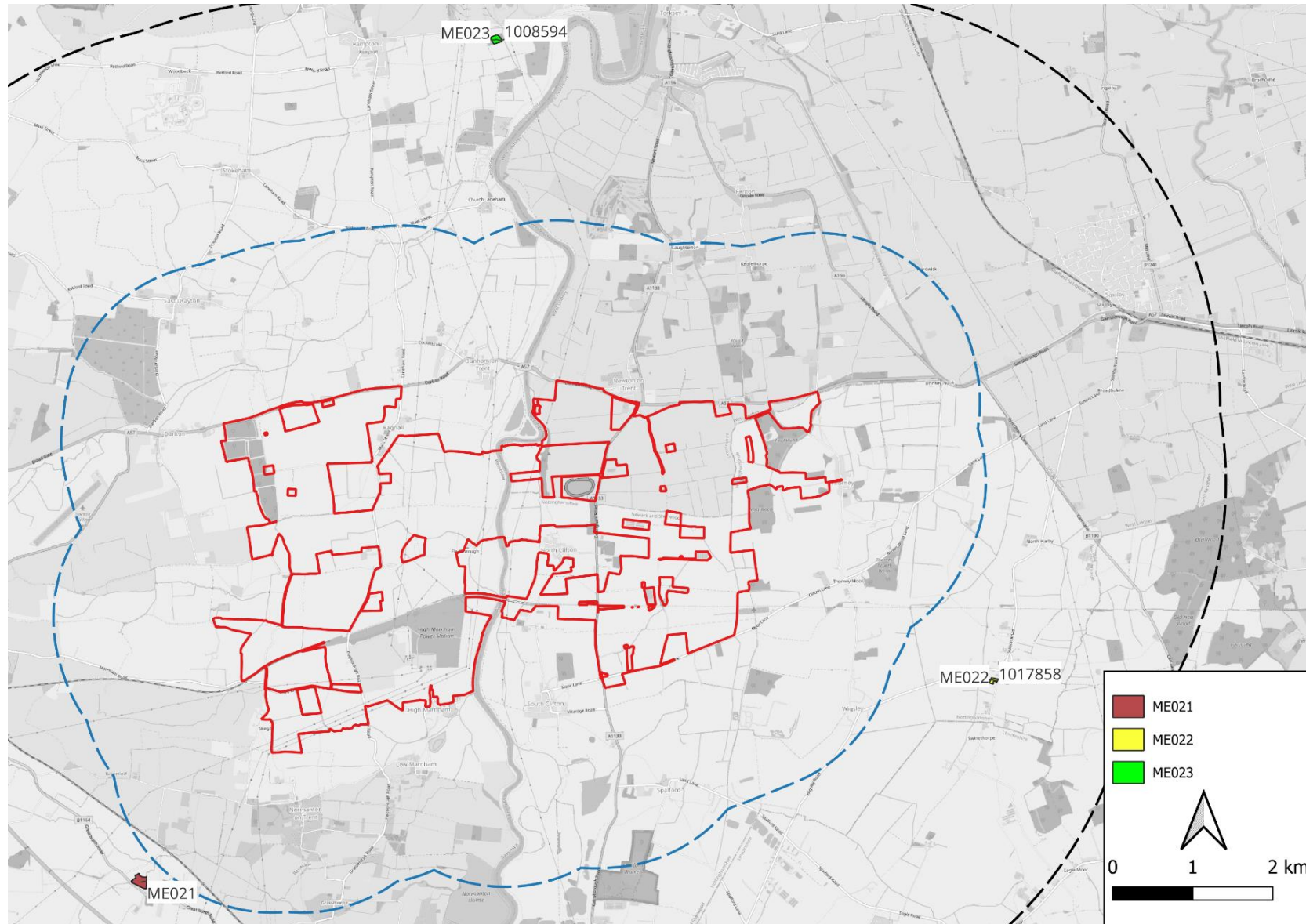


Figure 10-5: Groups of Saxon and Medieval Assets Within the 5km Study Area



Post-medieval to Modern Period (AD 1485 – present)

- 10.75. The majority of the post-medieval and modern buried heritage assets lie outside of our Site, which appears to have been predominantly under agricultural use throughout the post-medieval and modern periods.
- 10.76. Within our Site, the former Royal Observer Corps underground observation post constitute together with the Vexillation a protected Scheduled Monument (RO001, List Entry Number 1003608). The post was built during the Cold War, as part of a national system to provide civil and military authorities with essential information in the event of a nuclear attack.
- 10.77. The Medieval Deer Park of Kettlethorpe (ME008), shows also some post-medieval redevelopments such as banks, ditches, drains and the erection of walls mostly located around Kettlethorpe Hall.
- 10.78. On the west bank of River Trent, map depictions suggest the presence of two brick kilns: one nearby Ragnall (PM001) and one east of Skeby (PM002). Both are thought to be built at the end of the 18th century, but they are last recorded on the 1836. Potential buried remnants related to these kilns may still be present on Site.
- 10.79. If any unknown post-medieval and modern buried heritage assets are present outside of our Site, these are expected to be located in the proximities of the current inhabited villages, barns and farmstead - such as Dunham (PM003), Newton-on-Trent (PM004), Woodcoates (PM005), North Clifton (PM006), South Clifton (PM008), Thorney (PM008), High (PM009) and Low Marnahm (PM010), Ragnall (PM011) and Fledborough (PM012). Specifically, the vicinity of Ragnall, Fledborough, Skegby and North and South Clifton to our Site may increase the potential for unknown assets related to the post medieval and modern development of the villages to be encountered during excavations, such as the Grounds at Ragnall Hall (grouped with PM011), which extend partially within our Site.
- 10.80. Post-Medieval and Modern groups of assets are listed in 10-4 and shown in **Figure 10-6**.

Undated

- 10.81. Across our Site and in the wider Study Area there are a number of known buried heritage assets which cannot be attributed to any specific phase. These have been detected thorough past archaeological interventions, geophysical surveys, reviews of archive resources, LIDAR, or aerial imagery. Their form and morphology may lead to reasonably well-informed judgments on their likely origins and character; however, in some cases, it is only through further field evaluations (trial trenching) that a robust commentary can be provided on their nature and thus importance.
- 10.82. At this stage, only the undated buried heritage assets that are not assumed to be likely part of any of the groups previously discussed will be included. This decision is based on proximity with similar dated assets, negligible significance and professional judgement and is informed only by available information and will be reviewed at DBA and ES stage.

- 10.83. Based on the above, the undated assets included in **Table 10-5** have been grouped only based on their location and proximity to each other as their nature and chronology is still not clear. This will be reviewed if further information becomes available from the geophysics currently ongoing and included in the DBA or following the trial trenching evaluation and included in the ES.
- 10.84. **Figure 10-7** shows the location of all the undated buried heritage assets, including the ones detected during the geophysical survey, and **Appendix 10-5** presents the commentary and assessment.

Figure 10-6: Groups of Post Medieval Assets

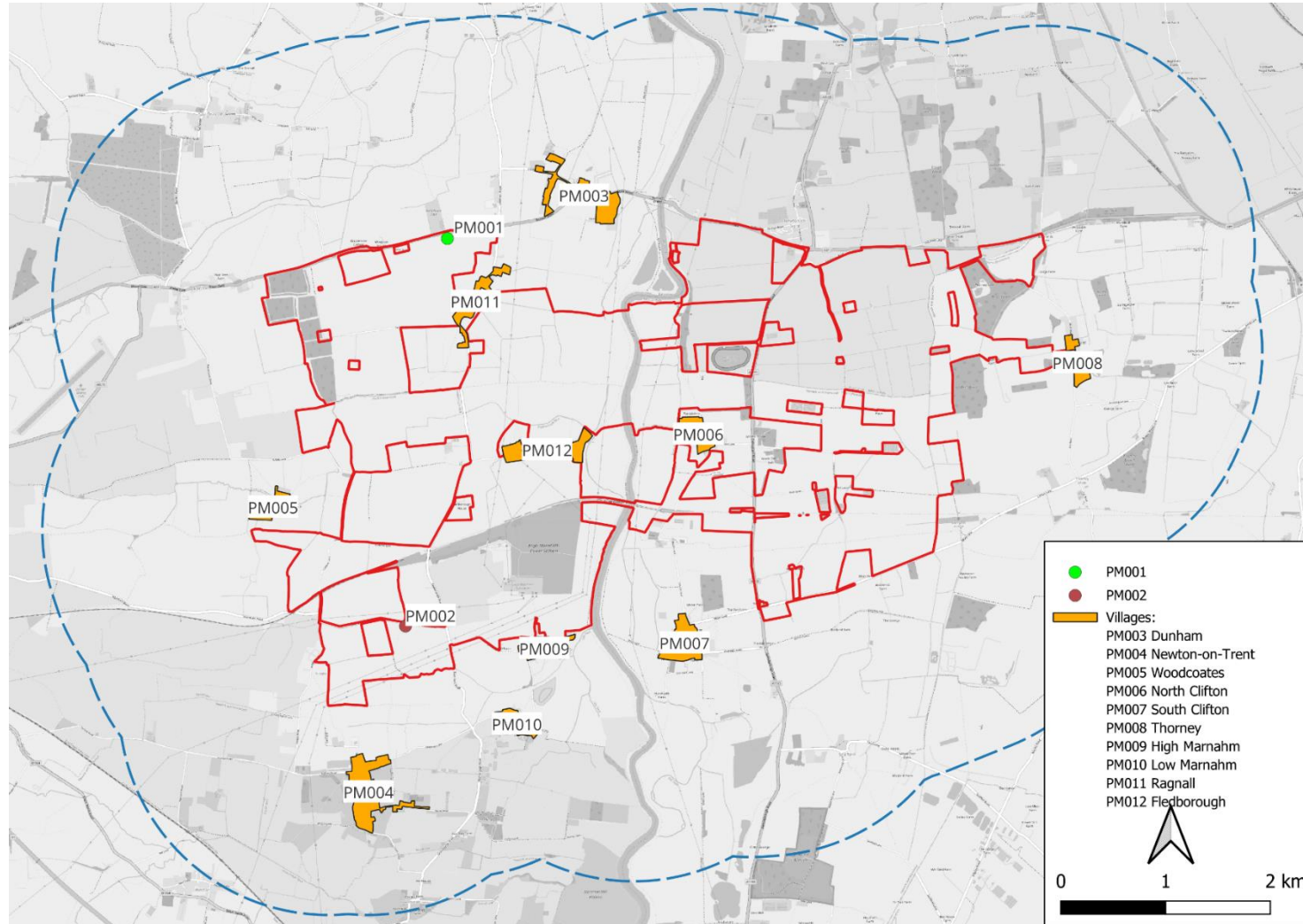


Figure 10-7: Groups of Undated Assets

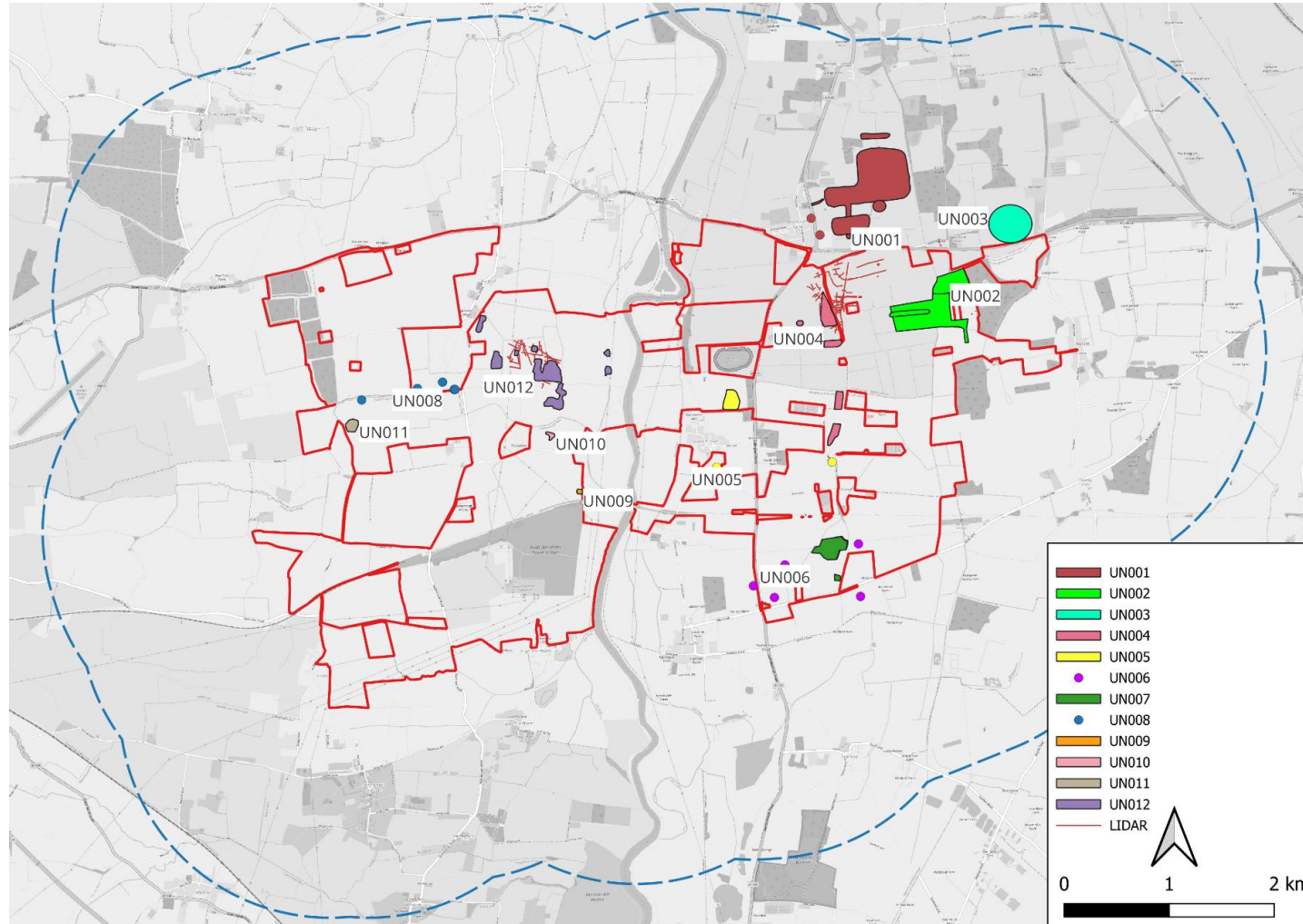


Table 10-1: List of Prehistoric Assets

Group n.	HER ref n.	Asset name
PH001	MLI50362	Linear Feature, Berkland Wood, Newton-on-Trent
	MLI52572	Prehistoric Flints
	MLI52573	Prehistoric Flints
	MLI52574	Prehistoric Flint Scrapers, Newton-on-Trent
	MLI52576	Mesolithic Occupation Site, Newton-on-Trent
	MLI52577	Neolithic Occupation Remains, Newton Cliff
	MLI52578	Early Bronze Age Occupation Remains, Newton Cliff
	MLI98341	Early Neolithic Feature and Flint Blade, Newton on Tren
	MLI98497	Mesolithic microliths, Newton-on-Trent
	MLI99021	Undated Ditches, Newton-on-Trent
	MLI99022	Parallel Ditches, Newton-on-Trent
	MLI99231	Possible Iron Age Ditched Enclosures, Newton-on-Trent
	MLI99361	Iron Age Pottery Scatter, Newton-on-Trent
	MLI99362	Late Mesolithic to Early Bronze Age Artefact Scatter
	MNT10549	Pit At Newton Cliffs, Area D
	MNT10550	Preh-Ro Finds Scatter, Newton Cliffs, Area E
	MNT4689	Mesolithic Flints from North Clifton
	MNT8643	Neolithic Finds from North Clifton
	MNT8644	Bronze Age Finds from North Clifton
	PH002	MLI52579
MLI52585		Linear Cropmarks, Newton-on-Trent
MLI99026		Multi Ditch Boundaries, Newton-on-Trent
MLI99027		Rectilinear Enclosure and Ditches, Newton-on-Trent
PH003	MLI50101	Neolithic Chalk Axe head, Kettlethorpe
	MLI50103	Stone Axe
PH004	MNT4668	Neo/BA Finds from South Clifton
PR005	MLI90943	Cropmark Prehistoric or Romano-British Enclosures, Boundaries and Ditches, Hardwick
	MLI52607	Prehistoric Flints
	MLI52608	Prehistoric Flints
PR006	MNT17120	Possible Henge at Normanton on Trent
	MNT17129	Settlement Complex at Normanton on Trent
	MNT15140	Settlement Complex at Marnham
	ENT4249	Resistivity Survey
	MNT12010	Worked Flint from Normanton on Trent
PH007	MLI500097	Neolithic Flint Scraper Found E Of River Trent
	MLI52562	Prehistoric Enclosures, Berkland Wood, Newton-on-Trent
PH008	MNT9948	Saddle Quern from Kingshaugh, Darlton
	MNT11465	Scraper From Kingshaugh, Darlton
	MNT5697	Worked Flints from Darlton
PH009	MNT26029	Burnt Mounds And "Water Pits" At Girton Quarry Northern Extension
	MNT11833	Prehistoric Pits at Girton Quarry Northern Extension
	MNT11831	Pit Alignment and Ditch at Girton Quarry Northern Extension
	MNT1830	Mounds And Pits at Girton Quarry Northern Extension

Table 10-2: List of Roman Assets

Group n	HER ref n.	Asset name
RO001	MLI54212	Roman Vexillation Fortress, Newton-on-Trent (NHLE: 1003608)

	MLI99269	Roman Oven and Ditch, Newton-on-Trent
	MLI99270	Roman Ditch, Newton-on-Trent
	MLI50546	Roman Temporary Camps, Newton Cliff
	MLI50710	Roman Finds East of the River Trent, Newton-on-Trent
	MLI99267	Roman Copper Alloy Object, Newton-on-Trent
	MNT8645	Romand Finds from North Clifton
RO002	MLI116379	Roman Pottery Sherds, Manor Farm, Newton-on-Trent
	MLI116380	Roman Pottery Sherds, Manor Farm, Newton-on-Trent
	MLI52596	Romano-British Pottery Kilns
	MLI116381	Roman Activity, Manor Farm, Newton-on-Trent
RO003	MLI52579	Linear Feature and Enclosure Cropmarks, Newton-on-Trent
	MLI99027	Rectilinear Enclosure and Ditches, Newton-on-Trent
RO004	MNT15374	Settlement Of Ragnall
RO005	MNT11393	Roman Pottery from Upper Row, Dunham on Trent
	MNT5803	Iron Age/Ro Coinf from Dunham
RO006	MLI90943	Cropmark Prehistoric or Romano-British Enclosures, Boundaries and Ditches, Hardwick
RO007	MLI52273	Fosse Dyke, West Lindsey
RO008	MNT17129	Settlement Complex at Normanton on Trent
	MNT15140	Settlement Complex at Marnham
RO009	MNT15847	Roman Villa at East Markham
	MNT8720	Roman Finds from Darlton
	MNT4593	Roman Finds from Darlton
	MNT5699	Roman Finds from Trenches, Kingshaugh, East Markham/Darlton
	MNT11467	Roman Pottery from Kingshaugh
	MNT8636	Roman Finds from Kingshaugh Camp, Darlton
RO010	MNT5778	Roman Pottery from Girton
	MNT5777	Roman Pottery from Girton
	MNT11828	Roman Pottery from Girton
	MNT11829	Roman features, Girton Quarry northern extension, South Clifton
RO011	MNT8641	Roman Pottery from North Clifton
	MNT4664	Roman Brooch from North Clifton
	MNT8727	Roman Pottery from South Clifton
	MNT4649	Roman Pottery from South Clifton
	MNT8638	Roman Finds from South Clifton

Table 10-3: List of Medieval Assets

Group n.	HER ref n.	Asset name
ME001	MNT15307	Deserted Village of Whimpton at Ragnall
	MNT4584	Earthwork Complex at Ragnall
	MNT15848	Cemetery At Ragnall
	MNT5700	Burial At Ragnall
	MNT4582	Earthwork Complex at Darlton
ME002	MNT4687	Church At Ragnall
	MNT15978	Shrunken Village of Ragnall
	MNT15372	Church Of St Leonard; Church of St Oswald at Ragnall
ME003	MNT25791	Shrunken Village at Skegby (Marnham)
	MNT9910	Earthwork Complex at Skegby (Marnham)
	MNT25791	Shrunken Village at Skegby (Marnham)
ME004	MNT15311	Deserted Village of Woodcotes at Fledborough
	MNT4595	Earthworks Complex at Fledborough
ME005	MNT15349	Shrunken Village of Thorney
	MNT4652	Earthworks At Thorney
	MNT4651	Moat And Pond at Thorney

	MNT15348	Moated Site and Fishponds at Thorney
	MNT5744	Site Of Thorney Hall
	MNT15869	Thorney Hall
	MNT8642	Ruins Of Church at Thorney
ME006	MLI99013	Ridge and Furrow, Newton Cliff
	MLI99012	Ridge and Furrow, Newton Cliff
	MLI99028	Ridge and Furrow, Newton Cliff
	MLI52567	Anglo-Saxon Cruciform Long Brooch, Newton-on-Trent
	MLI52569	Medieval Pottery, Newton Cliff
	MLI52589	Ridge and Furrow
	MLI52581	Ridge and Furrow Field System, Newton-on-Trent
	MLI52570	Medieval Ring (Find Spot)
	MNT8646	Early Medieval Finds from North Clifton
	MNT8647	Medieval Finds from North Clifton
ME007	MLI52590	Newton Settlement
	MLI99011	Ridge and Furrow, Newton-on-Trent
	MLI99006	Ridge and Furrow, Newton-on-Trent
ME008	MLI52588	Cultivation Remains
ME009	MLI50099	Medieval Deer Park, Kettlethorpe
	MLI50091	Kettlethorpe Hall and moated site, Kettlethorpe
	MLI50098	St Peter and St Paul's Church, Kettlethorpe
	MLI50092	'Katherine's Arch', Kettlethorpe
	MLI50640	Plot Wood, Kettlethorpe
	MLI50646	Blackthorn Wood, Kettlethorpe
	MLI53808	Medieval Settlement of Kettlethorpe
	MLI50104	Medieval Groat Found Near Park Farm.
	MLI52566	St Peter's Church, Newton-on-Trent (NHLE: 1018619)
	MLI52593	White House Farm, High Street, Newton-on-Trent
	MLI50100	Cross, St Peter, and St Paul's Churchyard, Kettlethorpe
	MLI96820	Gateway, Gate Piers, and Mounting Block, Kettlethorpe Hall, Kettlethorpe
ME010	MLI53810	Medieval Settlement of Laughterton
	MLI54278	Late Anglo-Saxon Remains on Land at Home Farm, Laughterton
ME011	MNT15306	Ringwork At Kingshaugh Farm (NHLE: 1018619)
	MNT9946	Medieval Pottery from Darlton
	MNT9914	Medieval Finds from Kingshaugh Camp
ME012	MNT10534	Fledborough ridge and furrows
ME013	MNT15371	Fledborough, The Church of St Gregory at Fledborough
ME014	MNT11394	Midland Purple From Upper Row, Dunham on Trent
	MNT5992	Earthworks At Dunham
	MNT11391	Metalling On Low Street, Dunham on Trent
	MNT4642	Documentary Reference to Swainston
	MNT11384	Medieval Pottery from Manor Croft, Dunham on Trent
	MNT15345	Medieval Village of Swainston
	MNT15346	Possible Manor House Site at Dunham
	MNT4644	Excavated Structure at Dunham
	MNT5992	Earthworks At Dunham
ME015	MNT10531	St. George At North Clifton
	MNT5802	Early Medieval Spearhead from North Clifton
ME016	MNT6165	Field Boundaries, Laneham
	MNT15363	Laneham Mills
ME017	MNT12003	Med/P Med Road Surface and Features at Normanton on Trent

ME018	MNT12013 MNT12014 MNT12011	Possible Medieval Lane or Ditch at Low Marnham Stone And? Medieval Raised Ground at Marnham Medieval Or Later Metalling at Low Marnham
ME019	ENT3796 MNT11826 ENT3801 ENT3802	Fieldwalking At Girton Quarry Northern Extension By TPAT Medieval Pottery from Girton Quarry Northern Extension, South Clifton Watching Brief at Girton Quarry Northern Extension By TPAU Watching Brief, Phase 5, Girton Quarry Northern Extension, By TPAT
ME020	MLI52614 MLI52611 MLI52617	Ridge And Furrow Field System Settlement Remains, Hardwick Settlement Or Farmstead of Drinsey
ME021		Moat, three fishponds, enclosures, hollow way and part of a road at Hall Yard (NHLE: 1008247)
ME022		Moated site W of Church Road (NHLE: 1017858)
ME023		Fleet Plantation moated site (NHLE: 1008594)

Table 10-4: List of Post Medieval and Modern Assets⁴

Group n.	HER ref n.	Asset name
PM001	MNT4611	Map Depiction of a Kiln at Ragnall
PM002	MNT15325	Brick Kiln at Marnham
PM003	N/A	Dunham
PM004	N/A	Newton-on-Trent
PM005	N/A	Woodcoates
PM006	N/A	North Clifton
PM007	N/A	South Clifton
PM008	N/A	Thorney
PM009	N/A	High Marnahm
PM010	N/A	Low Marnahm
PM011	N/A	Ragnall
PM012	N/A	Fledborough

Table 10-5: List of Undated Heritage Assets

Group n.	HER ref n.	Asset name	Source
UN001	MLI52586	Possible Settlement Features, Newton-on-Trent	HER
	MLI52587	Possible Ring Ditches	HER
	MLI80970	Undated Linear Ditch	HER
	MLI54276	Undated Features, High Street, Newton-on-Trent	HER
	MLI125797	Undated Post Holes, Newton-on-Trent	HER
	MLI99007	Broad Ditch, Newton-on-Trent	HER
	MLI50362	Linear Feature, Berkland Wood, Newton-on-Trent	HER
UN002	MNT4647	Linear Features at Thorney	HER
	MLI52595	Ditched Trackway	HER
	MNT4648	Enclosure And Linear Feature at Thorney	HER
	N/A	Potential enclosure?	LIDAR

⁴ For simplicity and due to the extensive number of assets included in villages and considering that the majority of them will be assessed and discussed as part of the Cultural Heritage PEIR, in this chapter the groups will not show the list of HER reference numbers, as provided in the previous tables.

UN003	MLI54251	Undated Cropmarks, West of Park Farm Cottages	HER
UN004	N/A	Potential Extension of RO003	Geophysical survey
UN005	N/A	North Of North Clifton	Geophysical survey
	MNT7782	Earthworks at North Clifton	HER
	MNT25856	Settlement at North Clifton	HER + Lidar
UN006	MNT4692	Enclosures at North/South Clifton	HER
	MNT10519	Field Boundary at South Clifton	HER
	MNT4667	Cropmarks at South Clifton	HER
	MNT4669	Enclosures at North/South Clifton	HER
	MNT10518	Cropmarks at South Clifton	HER
UN007	N/A	Potential enclosures related to UN006?	Geophysical survey
UN008	MNT6701	Bank At Fledborough (Earthwork)	HER
		Scarp at Ragnall	HER
		Possible Quarry at Ragnall	HER
		Hollow at Ragnall	HER
		Bank at Ragnall	HER
UN009	N/A	West of Fledborough	Geophysical survey
UN010	N/A	South of Fledborough	Geophysical survey
UN011	N/A	Potential Enclosure	Geophysical survey
UN012	N/A	Potential Extension of RO004	Geophysical survey

Potential for unknown buried heritage assets

- 10.85. Frequent, and intensive agricultural activities such as ploughing and turf farming which involves a constant land stripping, extensive field consolidation activities together with the use of heavy agricultural machinery is likely to have contributed to a partial or complete removal of any buried deposit in some areas.
- 10.86. The River Trent is tidal at this location, and the Site is located partly within Flood Zones 2 and 3 (see **Chapter 8: Hydrology and Hydrogeology**).
- 10.87. Floods, as direct impact through soil removal and the groundworks for flood defences around the villages such as High and Low Marnham and North and South Clifton, may have negatively affected buried heritage survival.
- 10.88. Nonetheless, the substantially undeveloped and rural nature of our Site suggests a low level of potential truncation coming from any other form of modern development that may have affected any surviving buried heritage deposit. The baseline assessment indicates that there is high potential for buried heritage remains of early prehistoric to post-medieval date to survive within our Site.

Further Data Collection

- 10.89. A non-exhaustive list of resources that are going to be consulted for the production of the DBA forming the technical appendix to the ES is below:
 - > Archaeological Data Service (ADS) - A comprehensive archive of published and unpublished fieldwork reports;
 - > Landmark - Ordnance Survey (OS) maps from their historic first edition through to modern OS mapping. Earlier historic maps will also be consulted where available;

- > Reports – Reports on ongoing and future archaeological investigations, such as the currently ongoing geophysical survey and forthcoming archaeological evaluations;
- > Further developed design and baseline information for our Project - Proposed parameter plans, modelling, topographical survey, contamination report, existing Site services and utilities report;
- > Aerial Photographs held by Historic England Archives, Lincolnshire HER, and Nottinghamshire HER.; and
- > Portable Antiquities Scheme database, to complement HER data.

Future Buried Heritage Conditions

Collection of Future Predicted Data

- 10.90. If our Project was not implemented, it is expected that the fields included in our Site will maintain their current use as predominantly arable land.
- 10.91. Whilst this would prevent any impact arising from our Project, changes to buried heritage assets may still occur due to the prolonged soil erosion and degradation connected to agricultural activities, such as ploughing, trenching and use of heavy machinery.
- 10.92. It is expected that in the absence of our Project, the baseline would remain as existing, and the currently ongoing detrimental effects on buried heritage assets resulting from soil erosion from agricultural activities and turf farming will continue.
- 10.93. The non implementation of our Project would also prevent further archaeological investigations in the area, thus any further beneficial input into the wider understanding of the archaeological landscape of the area.

Environmental Measures

Mitigation by Design

- 10.94. Mitigation by design (avoidance of development and preservation of archaeological assets in situ) can allow important or sensitive buried archaeological remains to be preserved completely from any disturbance.

Construction

- 10.95. An Outline Construction Environmental Management Plan (oCEMP) will be submitted as part of our DCO application (**Appendix 4-2 in Volume 2**, presents environmental measures which will be included in the oCEMP) and is anticipated that, where reasonably practicable and appropriate, buried heritage assets which could experience major or moderate adverse effects resulting from any phase of our Project, will be avoided, and preserved in situ, as per NPPF requirements and HE guidelines.

- 10.96. Where necessary and practicable, the mounting structure for solar arrays will involve micro-siting of piles⁵ in order to avoid specific archaeological features and/or it will be supported by concrete footings rather than piles, avoiding the need for ground intrusive impact⁶. The mitigation by design will follow and be informed by the results of the geophysical survey and targeted evaluation in the form of trial trenching. This will allow the design of our Project to adapt and respond to the buried heritage considerations, to assess residual effects (if any) and avoid any unnecessary loss of significant heritage assets.
- 10.97. At the time of the writing, the following design measures relevant to preservation of known and unknown buried heritage assets have been incorporated within the illustrative masterplan to mitigate potential harm:
- > No development is proposed on or directly adjacent to the two Scheduled Monuments with our Site (the Roman Vexillation Fortress Scheduled Monument; and Whimpton Moor Scheduled Monument). Substantial buffers around these designated heritage assets are incorporated into the design (see **Appendix 4-1** on our Project Design Principles);
 - > Areas of ecological mitigation and enhancement and the removal of developable land (from our first consultation) around North Clifton and South Clifton; and,
 - > Areas of ecological mitigation and enhancement incorporated to south of Newton-on-Trent.
- 10.98. Site specific mitigation measures will be discussed and implemented as part of the ES.
- Maintenance*
- 10.99. Any future maintenance and/or reinstatement works will be subject to prevailing legislation, guidance and permitting regimes at the time of the implementation.
- 10.100. The maintenance design will consider and be advised by the buried heritage ES, and any potential impact on buried heritage arising from maintenance operations will be discussed with the relevant stakeholders (including LPAs' Archaeological Advisors) and addressed by conditions. Any detrimental effect will be mitigated at design stage or by archaeological fieldwork.

⁵ EN-3, paragraph 2.10.138

⁶ As suggested by Commercial Renewable Energy Development and the Historic Environment: Historic England Advice Note 15: 'Mitigation may be possible; for example, the use of concrete bases for the panels, which entail less ground disturbance. Planning guidance published by BRE supported by Cornwall Council notes that: "Where possible Solar PV arrays should be installed using 'pile' driven or screw foundations, or pre-moulded concrete blocks (shoes), and capable of easy removal. The use of shoes may be required for archaeological sensitive areas." The vehicles and equipment used during construction can also damage archaeological remains.'

10.101. An Outline Operational Environmental Management Plan (OOEMP) will ensure that any area of heritage value will be protected during operation and maintenance, and no further ground disturbance is anticipated to occur during this stage or, where non practicable adequate mitigation measures will be implemented prior to this.

Decommissioning

10.102. The decommissioning works will be subject to prevailing legislation, guidance and permitting regimes at the time of decommissioning.

10.103. Our Project will be operational for a period of up to 60-years after the construction period ends. Ahead of decommissioning, a Decommissioning Environmental Management Plan (DEMP) will be prepared by a third party and is anticipated to include similar techniques and mitigation measures as the CEMP to protect buried heritage assets, and any specific areas mitigated through design and avoidance at design and construction phase, will be also considered and protected during decommissioning. Based on the above, it is expected that the decommissioning phase will not have any additional impacts compared to the construction phase.

10.104. The solar panels and associated infrastructure will be removed in accordance with the relevant statutory process agreed and in place at the time. Potential risks unknown at the time of the writing, if any, to buried heritage assets resulting from removal of piles (vibration, ground disturbance), and/or associated groundworks, will be discussed with the relevant stakeholders post consent, pursuant to a condition and ahead of commencement and required mitigations will be implemented.

Archaeological Mitigation

10.105. If mitigation by design cannot be applied and direct impact to buried heritage assets resulting from the construction of our Project is likely to occur, a program of physical archaeological mitigation will be implemented, and the type of mitigation would be dependent on the significance of the asset.

10.106. The archaeological mitigation scope and method statement, the Project Design and WSI will be discussed and agreed where possible with the relevant stakeholders and will be informed by ongoing consultation with the Archaeological Advisors to Lincolnshire and Nottinghamshire and Historic England, by the results of the ongoing geophysical survey, forthcoming field evaluation and by the DBA/ES Chapter.

10.107. It is expected that the following industry-wide recognised archaeological mitigation measures will be included in the program of archaeological mitigation and will be applied to as forms of control and mitigation over any potential impact on buried heritage assets, depending on their significance and the extent of our Project's impacts:

- > Archaeological Excavation or Strip, Map and Record Excavation;
- > Archaeological Watching brief; and
- > Geoarchaeological deposit modelling/profiling (coring) in areas of paleo-environmental potential.

10.108. A further review of the archaeological mitigation strategies to be implemented during the different phases of our Project, and how these will be applied to the different receptors will be included in the ES chapter, when there is more information about the actual archaeological survival on site (via field evaluation) and the extent of the impacts of our Project.

Enhancement

10.109. Further interpretation of the archaeological resource within our Site could be an enhancement opportunity by increasing understanding and public awareness of the heritage resource. Some examples of potential for new knowledge within our Site include landscape setting and context of the Scheduled Monuments at Whimpton Moor medieval village and Roman Vexillation Fortress outside of their immediate proximities.

10.110. Our Project also provides the opportunity for public engagement and outreach. The forms of engagement and outreach are numerous but may include site tours, media pieces such as news articles, local talks and online presentations, schools and college visits, site information boards, interpretive reconstruction/visualisation or app based digital and spatial information. The form of engagement/outreach will depend on the nature of the archaeological remains present, but the principal aim will be, where possible, to engage as wide and diverse a population as possible on any relevant archaeological findings.

10.111. A further review of the potential enhancement resulting from our Project will be included in the ES chapter when more information about the actual archaeological survival on site (via field evaluation) and the extent of the impacts of our Project become available.

Stakeholder Consultation

10.112. Appendix 10-6 outlines the Planning Inspectorate’s comments in the Scoping Opinion that relate to buried heritage and the consultation responses that the Planning Inspectorate received in the preparation of the Scoping Opinion. This Appendix also outlines how the Applicant has responded to these comments.

10.113. Early, non-statutory consultations have been undertaken with the relevant consultees (including Historic England, Lincolnshire County Archaeological Advisors and Nottinghamshire County Archaeological Advisor) in support of our Project to discuss the ongoing geophysical survey, the scope of the DBA and the forthcoming archaeological interventions. Further information is provided in **Table 10-6**.

Table 10-6: Overview of Stakeholder Consultation Stakeholder

Stakeholder	Date Consultation	of Relevant Considerations for the PEIR
Lincolnshire and Nottinghamshire City Councils	16/11/2023	We presented our Project and discussed the approach to DBA, PEIR, geophysical survey and trial trenching evaluation.

	01/12/2023	Draft Project Design and Written Scheme of Investigation for geophysical survey issued for consideration.
	21/12/2023	Updated WSI and Project Design for geophysical survey issued for consideration.
	01/03/2024	We discussed the PEIR structure and scope of the assessment. Expected further evaluation scope and strategies have been discussed at a high level.
	15/03/2023	Project Design for geophysical survey approved by Jan Allen (Lincolnshire by email)
	30/04/2024	Project Design for geophysical survey approved by Matthew Adams. Draft trial trenching strategy presented by Icenl, LCC, NCC and HE asked for a more information regarding trenching percentages.
Historic England	29/02/2024	We presented our Project and discussed the approach to the PEIR, to the geophysical survey work at the Scheduled Monuments at Newton-on-Trent & at Whimpton and to specific non-designated archaeological assets. Agreed that a member of Historic England will be involved in future engagement with Lincolnshire and Nottinghamshire City Councils.

Potential Likely Significant Effects Scoped Out

10.114. As advised by PINs in the Scoping Opinion and in light of the non-statutory consultations held so far, the following effects have been scoped out of the Buried Heritage Assessment:

- > Direct and indirect impacts to known and unknown archaeological remains during operation phase.

Preliminary Environmental Assessment

Approach

10.115. Any new development has the potential to result in direct and indirect impacts on buried heritage assets. Direct impacts include physical actions on surface features or buried heritage remains, such as total or partial removal of the asset; indirect impacts include those which occur not as a primary consequence of actual project actions but are still induced by our Project.

10.116. The following subheadings set out the approach to the preliminary assessment for the construction, operation, maintenance, and decommissioning phases of our Project.

Methodology

10.117. The process of impact assessments applied to buried heritage involves the following steps:

- > Understanding the buried heritage assets. This includes describing the asset, its surroundings and defining its significance;
- > Understanding the level and degree of impact (magnitude of change) to the significance of the buried heritage assets;
- > Assessing the potential for unknown buried heritage assets based on known baseline preliminary evidence;
- > Determining the significance of effect on buried heritage assets caused by our Project, by considering the magnitude of the impact and assessing the significance of the change.

10.118. The full assessment methodology is provided in **Appendix 10-2**.

10.119. For the purposes of this assessment, isolated findspots and casual/unstratified finds are grouped together (unless not already part of one of the groups identified in Tables 10.1 to 10-5), as their value and the magnitude of change are negligible.

Receptors and Receptor Significance⁷

10.120. At this stage, all the known buried heritage assets within our Site and within the Study Area have been considered in the assessment.

⁷ In this chapter the term significance has been used in place on sensitivity to match the assessment methodology described in Appendix 10-2.

10.121. The list of receptors along with their significance is provided in **Appendix 10-5**. This is based on the information collected so far and on professional judgment. The significance of buried heritage assets will be reviewed considering information collected during the forthcoming archaeological evaluation and presented in the ES.

Defining Effects

10.122. The potential for effects on buried heritage assets to be significant as result of groundwork activities during the construction, maintenance and decommissioning of our Project is outlined below. In EIA terms, effects classified as major or moderate are considered 'significant'. Effects classified as minor or negligible in scale are considered 'not significant'.

Construction

Effects on Identified Buried Heritage Assets (Receptors)

- 10.123. Effects during construction are typically derived from localised intrusive groundworks, which depending on extension and localisation may lead to permanent and irreversible truncation, compaction, full or partial loss of buried remains or deposits. These are considered direct impacts, and may arise during or in result of activities including but not limited to:
- > Piling associated with the solar panel mounted structures;
 - > Excavations for transformers and Battery Energy Storage Systems (BESS)
 - > Excavations for on-site substations (see also **Appendix 10-3**);
 - > Excavations for cabling, CCTV, fencing, temporary or permanent service trenches for compounds, access roads;
 - > Excavation for connection(s) to the national power grid;
 - > Excavations related to the Horizontal Directional Drilling (see also **Appendix 10-4**);
 - > Traffic of plants and machinery; and,
 - > Hard and soft landscaping.

Preliminary Assessment

10.124. Ground intrusive activities, although considered to be generally limited⁸, have the potential to result in an adverse impact on any buried heritage assets. The order and scale of effects will be determined by the type of intrusive work undertaken for which the details are currently not fixed. They may vary from displacement to a partial or full removal of any buried heritage assets. Without appropriate mitigation and depending on the significance of the assets and on the level of impact, these adverse effects may be considered significant in EIA terms.

⁸NPS EN-3, paragraph 2.10.109

- 10.125. It is not expected that our Project will permanently alter the geology or the groundwater levels within our Site or in its immediate surroundings, and any indirect effects will be temporary and reversible⁹. Therefore, at the current stage of design and based on professional opinion, it is considered there will be no significant indirect impacts on buried heritage deposits within our Site or the wider Study Area. All potential effects would have been already mitigated through the programme of embedded mitigation.
- 10.126. Direct impacts related to construction activities are not expected to have any detrimental effect on buried heritage assets outside of the footprint of these activities, as the excavations will be localised and will not exceed the parameters.
- 10.127. The excavation of cable trenches, access tracks, temporary compounds, and the foundations for the solar panels, have the potential to result in the full or partial removal of buried remains or deposits.
- 10.128. The installation of the Mounting Structures (sometimes known as piles) will involve very minimal disturbance of the subsoil through effects as truncation, displacement, and vibration.
- 10.129. Should a pile location (or even several pile locations) coincide with buried archaeological remains, the quantity of displaced archaeological remains in the case of larger features, such as the in-filled ditches described above, would be insignificant compared to that left undisturbed. For discrete or less robust buried features such as pits, post holes or stake holes, the probability that piles would be aligned in such a way that any more than a tiny percentage of the features would be affected is very low, and complete avoidance is the most likely outcome.
- 10.130. It is not considered, at the time of the writing, that traffic or access of heavy machinery (such as plants) and the associated weight loading/ vibration for the construction operations of our Project may cause impacts on buried heritage assets that are in excess of the impacts arising from the current agricultural activities on our Site, including the use of farm/agricultural machines. The use of gravel and track mats to distribute the weight of heavy machinery, will mitigate the impact arising from ground loading.
- 10.131. The embedded buffer around the Scheduled Monuments and some of the medieval villages would mitigate or remove any adverse effect on any known buried heritage assets included in the buffer areas.
- 10.132. Based on our current understanding and our professional judgment and considering the above preliminary assessment and the Environmental Measures discussed from paragraph 10-94, it is considered that with the implementation of adequate mitigation measures there will not be significant residual effects on buried heritage assets arising from our Project. The Detailed Scope of Assessment in Appendix 10-5 illustrate the preliminary Magnitude of Effects on buried heritage assets arising from the effects discussed above and the Residual Risk after the application of the mitigation measures outlined in Paragraph __.

⁹ As discussed in Chapter 8: Hydrology and Hydrogeology of this PEIR.

Maintenance

- 10.133. As per Paragraph 10.99, at the current stage it is not expected that operations relate to maintenance phases of our Project infrastructures will result in any further intrusive ground activities not already addressed for the construction phase.
- 10.134. As such, no further direct or indirect impact will be assessed in this section.

Decommissioning

- 10.135. As set out within Paragraph 10.102, as no additional intrusive works beyond the construction footprint will be required to decommission our Project, there is not expected to be further impacts to any buried heritage remains.
- 10.136. As such, no further direct or indirect impact will be assessed in this section.

Next Steps

- 10.137. An appropriate archaeological evaluation strategy, including proportionate trial trenching, field walk survey and geoarchaeological modelling, based on the potential and significance of archaeology on our Site, and with consideration of the existing and proposed impacts will be implemented and will also inform the DBA and the evolving design scheme for our Project (such as the optionality for substation and river crossing).
- 10.138. The scope, methodology and results of the archaeological evaluation (WSI), together with the DBA and ES Chapter will be discussed with the relevant stakeholders (including LPAs' Archaeological Advisors).
- 10.139. The DBA as technical appendix to the ES Chapter will also include a more detailed assessment and a review of the potential effects on buried heritage assets, supported by the results of the currently ongoing geophysical survey, the results of the forthcoming archaeological evaluations and further desk-based research, as per paragraph 10.90.
- 10.140. The ES chapter will be based on the further developed design parameters for our Project and will take into account the embedded mitigation included in the various management plans including the oCEMP, OOEMP and DEMP by third parties. These parameters will be discussed, and their potential direct and indirect impact will be assessed in greater detail, along with any enhancement that may have a beneficial effect on buried heritage deposits.
- 10.141. Where the potential for significant effects in terms of EIA have been identified in this preliminary assessment, where appropriate, further mitigation will be included and will be outlined in the ES and the management plans, including the oCEMP, OOMP and DEMP, as well as a specific Project Design for Archaeological Evaluation.

Conclusions

- 10.142. **Table 10-7** presents a summary of the preliminary likely significant effects on buried heritage assets, based on their significance and type identified during the PEIR and already considering the mitigation measures discussed from Paragraph 10.94.
- 10.143. It also includes the next steps to be undertaken as part of the Environmental Impact Assessment.

Table 10-7: Summary of Preliminary Likely Effects

Type of Asset	Significance Of Asset (Value)	Effects	Preliminary Assessment of likely significant effects, after mitigations/environmental measures	Next Steps
Prehistoric	Low	Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Excavations	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Hard and soft landscaping	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
	Medium	Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Excavations	No likely significant effects (Minor adverse)	Detailed assessment, further analysis, and evaluation work
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work

Type of Asset	Significance Of Asset (Value)	Effects	Preliminary Assessment of likely significant effects, after mitigations/environmental measures	Next Steps
		Hard and soft landscaping	No likely significant effects (Minor adverse)	Detailed assessment, further analysis, and evaluation work
Roman	Low	Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Excavations	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Hard and soft landscaping	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
	Medium	Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Excavations	No likely significant effects (Minor adverse)	Detailed assessment, further analysis, and evaluation work

Type of Asset	Significance Of Asset (Value)	Effects	Preliminary Assessment of likely significant effects, after mitigations/environmental measures	Next Steps
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Hard and soft landscaping	No likely significant effects (Minor adverse)	Detailed assessment, further analysis, and evaluation work
	Medium to High	Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Excavations	No likely significant effects (Minor adverse)	Detailed assessment, further analysis, and evaluation work
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Hard and soft landscaping	No likely significant effects (Minor adverse)	Detailed assessment, further analysis, and evaluation work
		Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
	Low	Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work

Type of Asset	Significance Of Asset (Value)	Effects	Preliminary Assessment of likely significant effects, after mitigations/environmental measures	Next Steps
Saxon and Medieval		Excavations	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Hard and soft landscaping	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
	Medium	Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Excavations	No likely significant effects (Minor adverse)	Detailed assessment, further analysis, and evaluation work
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Hard and soft landscaping	No likely significant effects (Minor adverse)	Detailed assessment, further analysis, and evaluation work

Type of Asset	Significance Of Asset (Value)	Effects	Preliminary Assessment of likely significant effects, after mitigations/environmental measures	Next Steps
	Medium to High	Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Excavations	No likely significant effects (Minor adverse)	Detailed assessment, further analysis, and evaluation work
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Hard and soft landscaping	No likely significant effects (Minor adverse)	Detailed assessment, further analysis, and evaluation work
Post Medieval	Low	Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Excavations	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work

Type of Asset	Significance Of Asset (Value)	Effects	Preliminary Assessment of likely significant effects, after mitigations/environmental measures	Next Steps
	Low to Medium	Hard and soft landscaping	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Excavations	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Hard and soft landscaping	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
Undated	Low	Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Excavations	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work

Type of Asset	Significance Of Asset (Value)	Effects	Preliminary Assessment of likely significant effects, after mitigations/environmental measures	Next Steps
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Hard and soft landscaping	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
	Low to Medium	Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Excavations	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Hard and soft landscaping	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Piling	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
	Low to High			

Type of Asset	Significance Of Asset (Value)	Effects	Preliminary Assessment of likely significant effects, after mitigations/environmental measures	Next Steps
		Excavations	No likely significant effects (Negligible to Minor adverse)	Detailed assessment, further analysis, and evaluation work
		Traffic of plants and machinery	No likely significant effects (Negligible)	Detailed assessment, further analysis, and evaluation work
		Hard and soft landscaping	No likely significant effects (Negligible to Minor adverse)	Detailed assessment, further analysis, and evaluation work

Appendices

Appendix 10-1: Buried Heritage Legislation, Policy and Guidance

Appendix 10-2: Assessment Methodology

Appendix 10-3: Preliminary Impact Assessment: Locations for Substations

Appendix 10-4: Preliminary Impact Assessment: Options for River Crossing

Appendix 10-5: Detailed Scope of Assessment

Appendix 10-6: Consultation responses outlined in Scoping Opinion and actions in response

Appendix 10-1: Buried Heritage Legislation, Policy and Guidance

Review of Policy, Legislation and Relevant Guidance

Legislation, planning policy and guidance relating to Buried Heritage, and pertinent to the Project comprises:

Legislation

Ancient Monuments and Archaeological Areas Act 1979 – Part I Ancient Monuments: Protection of Scheduled Monuments

This legislation established the protection of archaeological heritage in England, Wales and Scotland, and further introduced the legal protection of sites of national significance/archaeological importance as ‘Scheduled Monuments’. Through this Act, damage to a scheduled monument became a criminal offence.

Infrastructure Planning (Decisions) Regulations 2010 – specific reference to Regulation 3

This regulation set out the matters which the decision-maker must have regard to, for development consent order applications under the Planning Act 2008. Regulation 3 specifically outlines that if a proposal potentially affects a listed building or its setting, the decision-maker must take into account the desirability of preserving a listed building or its setting, or indeed other features of historical interest. This principle is also mirrored for development consent order applications affecting conservation areas and scheduled monuments and their settings.

National Planning Policy

Overarching National Policy Statement for Energy (EN-1) (2024)

This provides overarching government policy on energy NSIPs, and the way in which any impacts and mitigation measures will be considered. Section 5.9 of this policy statement focusses on the Historic Environment.

Paragraph 5.9.7 states that *“The Secretary of State should also consider the impacts on other non-designated heritage assets (as identified either through the development plan making process by plan-making bodies, including ‘local listing’, or through the application, examination and decision-making process). This is on the basis of clear evidence that such heritage assets have a significance that merits consideration in that process, even though those assets are of lesser significance than designated heritage assets.”*

Paragraph 5.9.9 states that *“The applicant should undertake an assessment of any likely significant heritage impacts of the proposed development as part of the EIA and describe these along with how the mitigation hierarchy has been applied in the ES (see Section 4.3). This should include consideration of heritage assets above, at, and below the surface of the ground. Consideration will also need to be given to the possible impacts, including cumulative, on the wider historic environment. The assessment should include reference to any historic landscape or seascape character assessment and associated studies as a means of assessing impacts relevant to the proposed project.”*

Paragraph 5.9.10 states that *“As part of the ES the applicant should provide a description of the significance of the heritage assets affected by the proposed development, including any contribution made by their setting. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum, the applicant should have consulted the relevant Historic Environment Record (or, where the development is in English or Welsh waters, Historic England or Cadw) and assessed the heritage assets themselves using expertise where necessary according to the proposed development’s impact.”*

Paragraph 5.9.11 states that *“Where a site on which development is proposed includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicant should carry out appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation. Where proposed development will affect the setting of a heritage asset, accurate representative visualisations may be necessary to explain the impact.”*

Paragraph 5.9.21 states that *“Where there is a high probability (based on an adequate assessment) that a development site may include, as yet undiscovered heritage assets with archaeological interest, the Secretary of State will consider requirements to ensure appropriate procedures are in place for the identification and treatment of such assets discovered during construction.”*

Paragraph 5.9.22 states that *“In determining applications, the Secretary of State should seek to identify and assess the particular significance of any heritage asset that may be affected by the proposed development, including by development affecting the setting of a heritage asset (including assets whose setting may be affected by the proposed development), taking account of:*

- *relevant information provided with the application and, where applicable, relevant information submitted during the examination of the application;*
- *designation records, including those on the National Heritage List for England;*
- *Historic Environment Records;*
- *representations made by interested parties during the examination process;*
- *and*
- *expert advice.”*

Paragraph 5.9.24 states that *“In considering the impact of a proposed development on any heritage assets, the Secretary of State should consider the particular nature of the significance of the heritage assets and the value that they hold for this and future generations. This understanding should be used to avoid or minimise conflict between their conservation and any aspect of the proposal.”*

Paragraph 5.9.27 states that *“when considering the impact of a proposed development on the significance of a designated heritage asset, the Secretary of State should give great weight to the asset’s conservation... irrespective of whether any potential harm amounts to substantial harm, total loss, or less than substantial harm to its significance.”*

Paragraph 5.9.28 states that *“The Secretary of State should give considerable importance and weight to the desirability of preserving all heritage assets. Any harm or loss of significance of a designated heritage asset (from its alteration or destruction, or from development within its setting) should require clear and convincing justification.”*

Paragraph 5.9.32 states that *“where the proposed development will lead to less than substantial harm to the significance of the designated heritage asset, this harm should be weighed against the public benefits of the proposal, including, where appropriate securing its optimum viable use.”*

Paragraph 5.9.33 states that *“In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.”*

National Policy Statement for Renewable Energy Infrastructure (EN-3) (2024)

This provides specific policy on how renewable energy NSIPs, should be assessed and determined, and the way in which any impacts and mitigation measures will be considered. Specific extracts relating to our Project are as follows:

Paragraph 2.3.8 states that *“In considering the impact on the historic environment as set out in Section 5.9 of EN-1 and whether the Secretary of State is satisfied that the substantial public benefits would outweigh any loss or harm to the significance of a designated heritage asset, the Secretary of State should take into account the positive role that large-scale renewable projects play in the mitigation of climate change, the delivery of energy security and the urgency of meeting the net zero target.”*

Paragraphs 2.10.107 to 2.10.119 state that *“The impacts of solar PV developments on the historic environment will require expert assessment in most cases and may have effect both above and below ground.*

Above ground impacts may include the effects on the setting of Listed Buildings and other designated heritage assets as well as on Historic Landscape Character.

Below ground impacts, although generally limited, may include direct impacts on archaeological deposits through ground disturbance associated with trenching, cabling, foundations, fencing, temporary haul routes etc.

Equally, solar PV developments may have a positive effect, for example archaeological assets may be protected by a solar PV farm as the site is removed from regular ploughing and shoes or low-level piling is stipulated.

Generic historic environment impacts are covered in Section 5.9 of EN-1.

Applicant assessments should be informed by information from Historic Environment Records (HERs) or the local authority.

Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, the applicant should submit an appropriate desk-based assessment and, where necessary, a field evaluation. These should be carried out using expertise where necessary and in consultation with the local planning authority, and should identify archaeological study areas and propose appropriate schemes of investigation, and design measures, to ensure the protection of relevant heritage assets.

In some instances, field studies may include investigative work (and may include trial trenching beyond the boundary of the proposed site) to assess the impacts of any ground disturbance, such as proposed cabling, substation foundations or mounting supports for solar panels on archaeological assets.

The extent of investigative work should be proportionate to the sensitivity of, and extent of, proposed ground disturbance in the associated study area.

Applicants should take account of the results of historic environment assessments in their design proposal.

Applicants should consider what steps can be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting.

As the significance of a heritage asset derives not only from its physical presence but also from its setting, careful consideration should be given to the impact of large-scale solar farms which depending on their scale, design, and prominence, may cause substantial harm to the significance of the asset.

Applicants may need to include visualisations to demonstrate the effects of a proposed solar farm on the setting of heritage assets.”

Paragraph 2.10.137 states that “The ability of the applicants to microsite specific elements of the proposed development during the construction phase should be an important consideration by the Secretary of State when assessing the risk of damage to archaeology.”

Paragraph 2.10.151 states that “The Secretary of State should consider the period of time the applicant is seeking to operate the generating station, as well as the extent to which the site will return to its original state, when assessing impacts such as landscape and visual effects and potential effects on the settings of heritage assets and nationally designated landscapes.”

Paragraph 2.10.160 states that *“Solar farms are generally consented on the basis that they will be time-limited in operation. The Secretary of State should therefore consider the length of time for which consent is sought when considering the impacts of any indirect effect on the historic environment, such as effects on the setting of designated heritage assets.”*

National Policy Statement for Electricity Networks Infrastructure (EN- 5) (2024)

This provides specific policy on electricity network NSIPs, which could also apply to the cabling and grid connection parts of our Project, including how applications will be assessed and determined, and the way in which any impacts and mitigation measures will be considered.

National Planning Policy Framework (2023)

The National Planning Policy Framework (NPPF) is an overarching document which sets out government planning policy for development outside of the NSIP regime in England, and how this is expected to be applied by local authorities and developers. The NPPF can be an important and relevant consideration for NSIPs as well, but in the event of any conflict, the NPS policy prevails. The NPPF provides a framework for local sustainable development via local plans. **Chapter 16** focusses specifically on ‘conserving and enhancing the historic environment’.

The NPPF sets out the importance of being able to assess the significance of heritage assets that may be affected by a development. Significance is defined in Annex 2 of the NPPF as being the *“value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic, or historic”. Significance is not only derived from an asset’s physical presence, but also from its setting. The setting of a heritage asset is defined in Annex 2 as “the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve”.*

Paragraph 200 of the NPPF states that *“In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the asset’s importance and no more than is sufficient to understand the potential impact of the proposal on their significance.”*

Paragraph 201 states that *“Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this into account when considering the impact of a proposal on a heritage asset, to avoid or minimise any conflict between the heritage asset’s conservation and any aspect of the proposal.”*

Paragraph 205 states that *“when considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset’s conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.”*

Paragraph 207 states that *“where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss.”*

Paragraph 208 states that *“where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.”*

Paragraph 209 states that *“the effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.”*

Local Planning Policy

Newark and Sherwood District Council (2023) Local Development Framework, Amended Allocations and Development Management Development Plan Document (AADMDPD), Submission Version, January 2024

This amended local Development Plan Document (DPD) has been compiled to ensure that the wider development framework within Newark and Sherwood District Council sufficiently allocates land for development to meet the needs of the area, up until 2033. The document includes *“new and amended Housing and Affordable Housing Policies which replace those included in the Amended Core Strategy and new Gypsy Roma Traveller policies and allocations. The document also sets out amendments to urban boundaries and village envelopes, retail boundaries as well as sites requiring continued protection from development (open space and green infrastructure designations). It also includes a suite of Development Management policies to provide greater direction, help deliver specific allocations and assist in the day-to-day assessment of planning applications.”* This DPD is currently under examination via the Secretary of State with an independent planning inspector.

Specific policies within the AADMDPD relevant to our Project include Policy DM4 *“Renewable and Low Carbon Energy Generation”* which states that *“In order to achieve the commitment to carbon reduction set out in Core Policy 10, planning permission will be granted for renewable and low carbon energy generation development, as both standalone projects and part of other development, its associated infrastructure, and the retro-fitting of existing development, where its benefits are not outweighed by detrimental impact from the operation and maintenance of the development and through the installation process upon:*

The landscape character or urban form of the district or the purposes of including land within the Green Belt arising from the individual or cumulative impact of proposals;

Southwell Views as defined in Policy So/PV or the setting of the Thurgarton Hundred Workhouse, as defined in Policy So/Wh;

Heritage Assets and or their settings;

Amenity, including noise pollution, shadow flicker, and electromagnetic interference;

Highway safety;

The ecology of the local or wider area; or

Aviation interests of local or national importance.”

Newark and Sherwood District Council (2019), Amended Core Strategy Development Plan

The Amended Core Strategy for Newark and Sherwood District is part of the Local Development Framework for the area. This strategy outlines the overarching issues and objectives to address over a 20-year period, contextualising this into wider vision, series of objectives and core policies toward delivery.

Core Policy 14 “Historic Environment” is relevant to our Project and states that “*Newark & Sherwood has a rich and distinctive historic environment and the District Council will work with partners and developers in order to secure:*

- *The continued conservation and enhancement of the character, appearance and setting of the District’s heritage assets and historic environment, in line with their identified significance as required in national policy;*
- *Designated assets and environments comprising Listed Buildings (inclusive of the protected views of and across Southwell’s principal heritage assets), Conservation Areas, Registered Historic Parks and Gardens, and Scheduled Monuments. When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset’s conservation. The more important the asset, the greater the weight should be. Where adverse impact is identified there should be a clear and convincing justification, including where appropriate a demonstration of clear public benefits;*
- *Non-designated heritage assets including buildings of local interest, areas of archaeological interest and unregistered parks and gardens or as identified on the relevant Historic Environment Record or identified in accordance with locally agreed criteria. In weighing applications that affect directly or indirectly non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset;*
- *The preservation and enhancement of the special character of Conservation Areas including that character identified through Conservation Area Character Appraisals which will form the basis for their management. Important open spaces and features identified through the Conservation Area Appraisal process will be protected through subsequent allocation in the Allocations & Development Management DPD;*
- *Positive action for those heritage assets at risk through neglect, decay, vacancy or other threats where appropriate; and*

- *The protection of Historic Landscapes including the Historic Battlefield at Stoke Field, the Sherwood Forest Heritage Area and the Historic Landscape around Laxton. A sustainable future for Laxton will be sought, which preserves and enhances its Open Field System and culture, the built and natural environment which sustain it, including the Historic Landscape around Laxton, and the institutions which manage it. This will be achieved by working in partnership with the Court Leet, the Crown Estates and the Parish Council. Appropriate new development which facilitates these aims will be supported."*

Central Lincolnshire Local Plan (2023)

The Local Plan for the central Lincolnshire area sets out the approach to planning policy and overarching development allocations to drive growth in the area over a 20-year period. The Local Plan is contextualised into a wider vision, series of objectives and core policies toward delivery.

Specific policies detailed in the Local Plan and are relevant to our Project, as below.

Policy S57 "The Historic Environment" states that:

"Development proposals should protect, conserve and seek opportunities to enhance the historic environment of Central Lincolnshire. In instances where a development proposal would affect the significance of a heritage asset (whether designated or non-designated), including any contribution made by its setting, the applicant will be required to undertake and provide the following, in a manner proportionate to the asset's significance:

- a) describe and assess the significance of the asset, including its setting, to determine its architectural, historical or archaeological interest;*
- b) identify the impact of the proposed works on the significance and special character of the asset, including its setting;*
- c) provide a clear justification for the works, especially if these would harm the significance of the asset, including its setting, so that the harm can be weighed against public benefits.*

Development proposals will be supported where they:

- d) protect the significance of heritage assets (including where relevant their setting) by protecting and enhancing architectural and historic character, historical associations, landscape and townscape features and through consideration of scale, design, architectural detailing, materials, siting, layout, mass, use, and views and vistas both from and towards the asset;*
- e) promote opportunities to better reveal significance of heritage assets, where possible;*
- f) take into account the desirability of sustaining and enhancing non-designated heritage assets and their setting.*

Proposals to alter or to change the use of a heritage asset, will be supported provided:

g) the proposed use is compatible with the significance of the heritage asset, including its fabric, character, appearance, setting and, for listed buildings, interior;

h) such a change of use will demonstrably assist in the maintenance or enhancement of the heritage asset;

i) features essential to the special interest of the individual heritage asset are not harmed to facilitate the change of use.

Development proposals that will result in substantial harm to, or the total loss of, a designated heritage asset will only be granted permission where it is necessary to achieve substantial public benefits that outweigh the harm or loss, and the following criteria can be satisfied:

j) the nature of the heritage asset prevents all reasonable uses of the site;

k) no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation;

l) conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and

m) the harm or loss is outweighed by the benefit of bringing the site back into use.

Where a development proposal would result in less than substantial harm to a designated heritage asset, permission will only be granted where the public benefits, including, where appropriate, securing its optimum viable use, outweigh the harm.

Where a non-designated heritage asset is affected by development proposals, there will be a presumption in favour of its retention, though regard will be had to the scale of any harm or loss and the significance of the heritage asset. Any special features which contribute to an asset's significance should be retained and reinstated, where possible.

Listed Buildings

Permission to change the use of a Listed Building or to alter or extend such a building will be granted where the local planning authority is satisfied that the proposal is in the interest of the building's conservation and does not involve activities or alterations prejudicial to the special architectural or historic interest of the Listed Building or its setting.

Development proposals that affect the setting of a Listed Building will, in principle, be supported where they make a positive contribution to, or better reveal the significance of the Listed Building.

Conservation Areas

Significant weight will be given to the protection and enhancement of Conservation Areas. Development within, affecting the setting of, or affecting views into or out of, a Conservation Area should conserve, or where appropriate enhance, features that contribute positively to the area's special character, appearance and setting, including as identified in any adopted Conservation Area appraisal. Proposals should:

- n) retain buildings/groups of buildings, existing street patterns, historic building lines and ground surfaces and architectural details that contribute to the character and appearance of the area;*
- o) where relevant and practical, remove features which have a negative impact on the character and appearance of the Conservation Area;*
- p) retain and reinforce local distinctiveness with reference to height, massing, scale, form, materials and plot widths of the existing built environment;*
- q) assess, and mitigate against, any negative impact the proposal might have on the townscape, roofscape, skyline and landscape; and*
- r) aim to protect trees, or where losses are proposed, demonstrate how such losses are appropriately mitigated against.*

Archaeology

Development affecting archaeological remains, whether known or potential, designated or undesignated, should take every practical and reasonable step to protect and, where possible, enhance their significance.

Planning applications for such development should be accompanied by an appropriate and proportionate assessment to understand the potential for and significance of remains, and the impact of development upon them.

If initial assessment does not provide sufficient information, developers will be required to undertake field evaluation in advance of determination of the application. This may include a range of techniques for both intrusive and non-intrusive evaluation, as appropriate to the site.

Wherever possible and appropriate, mitigation strategies should ensure the preservation of archaeological remains in-situ. Where this is either not possible or not desirable, provision must be made for preservation by record according to an agreed written scheme of investigation submitted by the developer and approved by the planning authority.

Any work undertaken as part of the planning process must be appropriately archived in a way agreed with the local planning authority."

Bassetlaw District Council (2010) Local Development Framework, Publication Core Strategy and Development Management Policies

The Core Strategy for the Bassetlaw District sets out the overarching vision for the area up until 2026, including the policy approach to deliver this.

Policy SO9 is a strategic objective policy of Bassetlaw's Core Strategy. It states:

“protect and enhance Bassetlaw’s heritage assets, identify those of local significance, advance characterisation and understanding of heritage asset significance, reduce the number of heritage assets at risk and ensure that development is managed in a way that sustains or enhances the significance of heritage assets and their setting.”

Policy DM8 “The Historic Environment” is relevant to our Project and states that:

“Support will be given to development proposals or regeneration schemes (particularly in central Worksop, Retford, and Tuxford) that protect and enhance the historic environment and secure its long-term future, especially the District's Heritage at Risk. Such proposals must recognise the significance of heritage assets as a central part of the development. They will be expected to be in line with characterisation studies, village appraisals, conservation area appraisals (notably the site-specific development briefs that may be found within them), archaeological reports, and other relevant studies.

A. Definition of Heritage Assets

Designated heritage assets in Bassetlaw include:

- *Listed Buildings (including attached and curtilage structures);*
- *Conservation Areas;*
- *Scheduled Monuments; and*
- *Registered Parks and Gardens.*

Non-Designated assets in Bassetlaw include:

- *Buildings of Local Interest;*
- *Areas of archaeological interest;*
- *Unregistered Parks and Gardens; and*
- *Buildings, monuments, places, areas or landscapes positively identified as having significance in terms of the historic environment.*

B. Development Affecting Heritage Assets

There will be a presumption against development, alteration, advertising or demolition that will be detrimental to the significance of a heritage asset.

Proposed development affecting heritage assets, including alterations and extensions that are of an inappropriate scale, design or material, or which lead to the loss of important spaces, including infilling, will not be supported.

The setting of an asset is an important aspect of its special architectural or historic interest and proposals that fail to preserve or enhance the setting of a heritage asset will not be supported. Where appropriate, regard shall be given to any approved characterisation study or appraisal of the heritage asset. Development proposals within the setting of heritage assets will be expected to consider:

- *Scale;*
- *Design;*
- *Materials;*

- *Siting; and*
- *Views away from and towards the heritage asset.*

C. Change of Use Affecting Heritage Assets

The change of use of heritage assets, including Listed Buildings and buildings in Conservation Areas, will only be permitted where the proposed use is considered to be the optimum viable use that is compatible with the fabric, interior, and setting of the building. Evidence supporting this will be submitted with proposals. New uses that adversely affect the fabric, character, appearance, or setting of such buildings will not be permitted.

D. Shopfronts

Proposals for replacement shopfronts or alterations to shopfronts affecting heritage assets will be expected to ensure that traditional shopfronts are retained wherever possible irrespective of the use of the property. New shopfronts will be expected to utilize traditional materials such as timber and be designed to respect the special interest of the building and its setting.”

Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023

This Local Plan sets out Bassetlaw District’s planning and policy framework, development strategy and site allocations to inform effective delivery of the overall vision up until 2038.

Policies set out in the Local Plan are relevant to our Project.

Policy 43 “Designated and Non-Designated Heritage Assets” states that:

“Proposals for development, including change of use, that involve a designated heritage asset, or the setting of a designated heritage asset will be expected to:

- a) conserve, enhance or better reveal those elements which contribute to the heritage significance and/or its setting;*
- b) respect any features of special architectural or historic interest, including where relevant the historic curtilage or context, its value within a group and/or its setting, such as the importance of a street frontage, traditional roofscape, or traditional shopfronts;*
- c) be sympathetic in terms of its siting, size, scale, height, alignment, proportions, design and form, building technique(s), materials and detailing, boundary treatments and surfacing, or are of a high quality contemporary or innovative nature which complements the local vernacular, in order to retain the special interest that justifies its designation;*
- d) ensure significant views away from, through, towards and associated with the heritage asset(s) are conserved or enhanced;*
- e) in the case of a Conservation Area, to have regard to the established urban grain and ensure that spaces between and around buildings, such as paddocks, greens, gardens*

and other gaps, are preserved where they contribute to the Conservation Area's character and appearance.

Proposals that will lead to substantial harm or total loss of significance will be refused unless the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, and it can be demonstrated that:

- a) the nature of the heritage asset prevents all reasonable uses of the site;*
- b) no viable use of the heritage asset can be found in the medium term through appropriate marketing that will enable its conservation;*
- c) conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and*
- d) the harm or loss is outweighed by the benefit of bringing the site back into use.*

Proposals that would result in less than substantial harm to the significance of a designated heritage asset will only be supported where it can be demonstrated that the public benefits will outweigh any harm identified.

Non-Designated Heritage Assets

Proposals for development, including change of use, that involve a non-designated heritage asset, or the setting of a non-designated heritage asset will be expected to:

- a) have regard to the significance of the asset and its relationship with its setting; and*
- b) be sympathetic to the local vernacular in terms of siting, size, scale, height, alignment, design and form; proportions, materials.*

Proposals that will lead to harm to or loss of significance of a non-designated heritage asset will only be considered supported where it can be demonstrated that:

- a) the asset's architectural or historic significance is proven to be minimal; or*
- b) through an up-to-date structural report produced by a suitably qualified person, the asset is not capable of viable repair; or*
- c) through appropriate marketing, the asset has no viable use; or*
- d) the public benefits of the scheme outweigh the loss of significance.*

Policy ST42: The Historic Environment states that:

"The historic environment will be conserved and enhanced, sensitively managed, enjoyed and celebrated for its contribution to sustainable communities. Proposals will be supported where they:

- a) give great weight to the conservation and re-use of designated heritage assets (designated and non-designated) and their settings, including for appropriate temporary use, based on their significance in accordance with national policy;*
- b) make a positive contribution to the character and local distinctiveness of the historic environment, including through the use of innovative design;*
- c) positively conserve or enhance a historic designed landscape;*
- d) maintain, conserve, sustain or return to beneficial use designated or non-designated assets;*

- e) *capitalise in an appropriate and sensitive manner the regeneration, tourism and energy efficiency potential of heritage assets;*
- f) *positively secure the conservation and re-use of 'at risk' heritage assets;*
- g) *improve access and enjoyment of the historic environment where appropriate, particularly where they retain, create or facilitate public access to heritage assets to increase understanding of their significance.*

Applicants will be required to submit evidence in line with best practice and relevant national guidance, examining the significance of any heritage assets affected through a Heritage Statement, including any contribution made by their setting. The level of detail should be proportionate to the asset's significance, and the results submitted to the Nottinghamshire Historic Environment Record. In some circumstances, further survey, analysis and/or recording will be made a condition of consent."

Policy ST43 Designated and Non-Designated Heritage Assets states that:

"Proposals for development, including change of use, that involve a designated heritage asset, or the setting of a designated heritage asset will be expected to:

- a) *conserve, enhance or better reveal those elements which contribute to the heritage significance and/or its setting;*
- b) *respect any features of special architectural or historic interest, including where relevant the historic curtilage or context, its value within a group and/or its setting, such as the importance of a street frontage, traditional roofscape, or traditional shopfronts;*
- c) *be sympathetic in terms of its siting, size, scale, height, alignment, proportions, design and form, building technique(s), materials and detailing, boundary treatments and surfacing, or are of a high quality contemporary or innovative nature which complements the local vernacular, in order to retain the special interest that justifies its designation;*
- d) *ensure significant views away from, through, towards and associated with the heritage asset(s) are conserved or enhanced;*
- e) *in the case of a Conservation Area, to have regard to the established urban grain and ensure that spaces between and around buildings, such as paddocks, greens, gardens and other gaps, are preserved where they contribute to the Conservation Area's character and appearance.*

Proposals that will lead to substantial harm or total loss of significance will be refused unless the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, and it can be demonstrated that:

- a) *the nature of the heritage asset prevents all reasonable uses of the site;*
- b) *no viable use of the heritage asset can be found in the medium term through appropriate marketing that will enable its conservation;*
- c) *conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and*
- d) *the harm or loss is outweighed by the benefit of bringing the site back into use.*

Proposals that would result in less than substantial harm to the significance of a designated heritage asset will only be supported where it can be demonstrated that the public benefits will outweigh any harm identified.

Non-Designated Heritage Assets

Proposals for development, including change of use, that involve a non-designated heritage asset, or the setting of a non-designated heritage asset will be expected to:

- a) have regard to the significance of the asset and its relationship with its setting; and*
- b) be sympathetic to the local vernacular in terms of siting, size, scale, height, alignment, design and form; proportions, materials.*

Proposals that will lead to harm to or loss of significance of a non-designated heritage asset will only be considered supported where it can be demonstrated that:

- a) the asset's architectural or historic significance is proven to be minimal; or*
- b) through an up-to-date structural report produced by a suitably qualified person, the asset is not capable of viable repair; or*
- c) through appropriate marketing, the asset has no viable use; or*
- d) the public benefits of the scheme outweigh the loss of significance."*

Archaeological Sites

"Where evidence suggests that significant archaeological remains exist on site, proposals should be supported by an appropriate archaeological evaluation that provides an assessment of the significance of the remains and considers how the remains would be affected by the proposed development.

Where the 'in situ' preservation of archaeological remains is not possible or desirable, suitable provision shall be made by the developer for the excavation, recording, analysis, storage, relocation of assets and archiving, in accordance with a Written Scheme of Investigation that has been approved by the Local Planning Authority."

National Guidance

Planning Practice Guidance (2023) – Historic Environment (2019)

This guidance sets out the key issues on enhancing and conserving the historic environment. This guidance sets out how the historic environment should be addressed in local plans, the designation process for designated and non-designated heritage assets, the overarching heritage consent process, as well as further information on the consultation process for and other planning issues associated with heritage related proposals.

English Heritage (2008) Conservation Principles, Policies and Guidance

English Heritage, now Historic England, published guidance which aids best practice for a wide range of stakeholders in regard to the historic environment. This guidance mainly focuses on creating and implementing a management regime for its users and further defines value and significance upon heritage receptors.

Historic England (2015), Managing Significance in Decision-Taking in the Historic Environment – Historic Environment Good Practice Advice in Planning: 1. The Historic Environment in Local Plans ('GPA2')

This advice note provides information to a wide range of stakeholders in aid of implementing national historic environment policy within the NPPF and PPG. Therefore, this advice from Historic England should be utilised to support national policy implementation. This guidance further outlines that information required for planning and listed building consent should be proportionate, and any activities around conservation or investigation should again be balanced against heritage significance.

Historic England (2017) The Setting of Heritage Assets – Historic Environment Good Practice Advice in Planning: 3. Historic England and Historic Environment Forum

This advice note provides information to a wide range of stakeholders, in tandem with NPPF and PPG guidance, on managing modification to the setting of several heritage assets. This document furthermore gives practitioners advice on understanding what heritage setting is and how it contributes to the overall heritage significance.

Historic England (2020) Good Practice in Planning 4: Enabling Development and Heritage Assets

This document specifically outlines guidance regarding development to safeguard a heritage asset, which would not normally be approved through the planning system nor be in-line with national or local planning policy. Therefore, this direction from Historic England is to encourage developers and authorities to work together to ensure appropriate development and acceptability, and if required any alternative arrangements.

Historic England (2021) Historic Environment Advice Note 15. Commercial Renewable Energy Development and the Historic Environment ('HEAN15', Historic England)

This Historic England advice note is specifically aimed at developers of renewable energy projects of various sizes (including NSIP and other large proposals), to improve consideration of heritage issues within the proposal process. The overarching detail within this advice note focuses on potential impacts upon the historic environment, associated with the development of renewable energy projects.

This guidance note reflects the requirements of NPS EN-1 and the NPPF and that the process set out in these two documents should be followed when considering renewable energy proposals that may have a harmful impact on the significance of designated and non-designated heritage assets. This is set out in paragraphs 35 to 38. Of particular note is paragraph 36 which states that *“any harmful impact on the significance of a designated heritage asset requires a clear and convincing justification, detailing the benefits of the proposal and enabling them to be weighed against any harm that would be caused to the historic environment. In this regard, EN-3 notes the positive role that large-scale renewable projects play in the mitigation of climate change, the delivery of energy security and the urgency of meeting the national targets for renewable energy supply and emissions reductions. Determining the balance between harm and benefits is done on a case-by-case basis, informed by evidence and assessment (as described in national policy) and taking account of a range of factors and relevant policy and guidance (including other relevant advice in this advice note).”*

Historic England (2022) Planning and Archaeology: Historic England Advice Note 17

This advice note sets the context for archaeology within the planning system. The guidance produced by Historic England summarises responsibility that planning authorities and developers have regarding archaeology through a planning application, how legislation, national policy and guidance should be applied, promoting accuracy and the benefits of implementation.

Professional Regulations and Standards & Guidance

In addition to the above, the following professional regulations, standards and guidance have been considered within the PEIR:

- > Chartered Institute for Archaeologists (CIfA), 2023, Standard for archaeological excavation
- > Chartered Institute for Archaeologists (CIfA), 2023, Standard for archaeological monitoring and recording
- > Chartered Institute for Archaeologists (CIfA), 2014a, Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials (revised 2020)
- > Chartered Institute for Archaeologists (CIfA), 2014b, Standard and Guidance for Archaeological Field Evaluation (revised 2023)
- > Chartered Institute for Archaeologists (CIfA), 2014c, Code of Conduct (revised 2022)
- > Chartered Institute for Archaeologists (CIfA), 2014d, Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives (revised 2020)
- > Chartered Institute for Archaeologists (CIfA), 2014e, Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials.

Appendix 10-2: Assessment Methodology

Overview

This preliminary assessment has been undertaken following the relevant Key Policy, Guidance and Legislation set out in **Appendix 1**.

This section describes the technical methods used to determine the **significance** (value) of the buried heritage assets, the **magnitude of changes** (effects) caused by our Project and the resulting overall **significance of effects**.

Significance (value)

Significance values are guided by its designated status and its heritage interest. Each identified heritage asset can be assigned a value in accordance with the criteria set out in **Table 1** which is based on the distinctions presented in the NPS EN-1. Using professional judgement and the results of consultation with relevant stakeholders, heritage assets are also assessed on an individual basis. Regional variations and individual qualities are also considered where applicable. This includes aspects such as the regional scarcity of specific asset type, or whether assets can be considered to be of schedulable quality due to them being of national importance.

Table 1: Buried Heritage Significance

Value	Description
International / National (very high)	The highest status of asset and indicative of national importance: e.g. World Heritage Sites (WHS), Scheduled Monuments (SMs), Grade I and II* Listed Buildings (LBs), Grade I and II* Registered Parks and Gardens (RPGs), Protected Wrecks, Heritage assets of national importance, well preserved historic landscapes with exceptional coherence, time depth, or other critical factor(s).
National / Regional / County (high)	Archaeological sites that may be designated or undesignated, may contain well preserved or in situ structures, buildings of historical significance, historic landscapes with a reasonably defined extent, or reasonable evidence of occupation/settlement or activities (ritual, industrial etc.). e.g. Grade II RPGs, Conservation Areas (CAs), Designated historic battlefields, Grade II LBs, burial grounds, protected heritage landscapes such as Ancient Woodland, heritage assets of regional or county importance.
Sub-regional / District (medium)	Designated or undesignated archaeological sites with reasonable evidence of human activity. Assets may be of limited historic value but may contribute to district or local knowledge and/or research objectives. May contain structures or buildings of potential historic merit. e.g. Historic village settlements, associated historic field systems and boundaries, historic road systems.
Local Area / Parish (Low)	Heritage assets with a local level cultural or education value only e.g. Historic field systems and boundaries, agricultural features such as ridge and furrow, ephemeral archaeological evidence, artefacts of poor contextual stratigraphy.

Negligible	Historic assets with very little or no surviving archaeological interest or stratigraphic integrity. Buildings and landscapes of no historical significance. e.g. Destroyed objects, buildings of no architectural merit, relatively modern landscape features or disturbances such as quarries, field boundaries, drains etc.
Unknown	Insufficient information exists to assess the importance. Significance of below ground archaeological remains is often unknown until their nature and extent has been sufficiently determined through archaeological fieldwork.

Magnitude of Change

Impacts upon buried heritage assets can arise during the construction, operation, maintenance, and decommissioning phases of the Project; they can be positive or negative; direct or indirect; irreversible (long term) or reversible (temporary); and/or cumulative. Impacts can affect the physical fabric of the asset or their setting. Direct physical impacts are considered permanent and result in the total, or partial loss of a buried heritage asset; these impacts are not reversible. Impacts arising from changes to setting are split between those resulting from construction activities, which can be temporary, or long-term, lasting for the duration of the operational Project but reversible upon decommissioning.

The level and degree of impact (**magnitude of change**) will be assigned with reference to a five-point scale as set out in **Table 2**. The assessment of the **magnitude of change** will be made in consideration of any design mitigation (embedded mitigation), when available at the time of the writing. If no embedded mitigations are proposed at the PEIR stage, a worst-case scenario has been applied whereby all remains will be entirely removed. This will be reviewed for the submission of the ES.

Table 2: Magnitude of Change

Value	Description
High	Change such that the value of the heritage asset is totally altered or destroyed through physical impact or comprehensive alteration to its setting affecting its value, seriously impeding the ability to understand and appreciate the asset.
Medium	Change such that the heritage value of the asset is affected due to alterations to its physical form or noticeable change to its setting through alterations resulting in erosion in the ability to understand and appreciate the asset.
Low	Change such that the heritage value of the asset is slightly affected through physical alteration to its physical form or slight change to its setting affecting the ability to understand and appreciate the asset.
Very Low	Changes that barely affect the value of the asset or its setting, resulting in no real change in the ability to understand and appreciate the asset.
No Change	No alteration or change to the value of the asset or its setting.

Significance of Effect

The overall effect on the asset, caused by the impact, is determined by consideration of the significance of the asset (Table 1) and the magnitude of the impact (Table 2), with a level of professional judgement included in the determination (Table 3). This is identified by the degree of change that would be experienced by the asset and its setting if the Project were to be completed as compared with a 'do nothing' situation. Effects can be neutral, adverse, or beneficial.

Residual major or moderate effects are deemed to be 'significant' for the purposes of the EIA Regulations, in accordance with standard EIA practice. Minor and negligible effects are deemed to be 'not significant.'

Table 3: Significance of Change

Value	Magnitude of Change				No Change
	High	Medium	Low	Very Low	
Very High	Major	Major	Moderate	Moderate	Neutral
High	Major	Moderate	Minor	Minor	Neutral
Medium	Moderate	Moderate	Minor	Negligible	Neutral
Low	Moderate	Minor	Negligible	Negligible	Neutral
Very Low	Minor	Negligible	Negligible	Negligible	Neutral

Within NPS EN-1 (5.9.29 – 5.9.32) and the NPPF (paras.205-208), impacts affecting the value of heritage assets are considered in terms of 'harm' and there is a requirement to determine whether the level of harm amounts to 'substantial harm' or 'less than substantial harm'. There is no direct correlation between the significance of effect as reported in this preliminary assessment and the level of harm caused to heritage significance. A major (significant) effect on a heritage asset would, however, more often be the basis by which to determine that the level of harm to the significance of the asset would be substantial. A moderate (significant) effect is unlikely to meet the test of substantial harm and would therefore more often be the basis by which to determine that the level of harm to the significance of the asset would be less than substantial. A minor or negligible (not significant) effect would still amount to a less than substantial harm and would therefore still trigger the statutory presumptions against development; a neutral effect is classified as no harm. In all cases determining the level of harm to the significance of the asset arising from development is one of professional judgement.

Buried Heritage Potential

The **potential** for unknown buried heritage assets is assessed on known baseline evidence, but the physical nature and extent of any archaeological resource surviving within our Site cannot be fully confirmed without investigation. At this stage of the assessment, the potential is identified using professional judgement and knowledge, applying the information available in the baseline data. The Site's baseline potential is compared to the level of existing impact upon it, from modern and historic developments.

The **potential** for surviving buried heritage of various periods can be assigned a value in accordance with the criteria set out in **Table 4**:

Table 4: Buried Heritage Surviving Potential

Potential	Description of receptors
High	The available evidence suggests a high likelihood for past activity within the Site and a strong potential for archaeological evidence to survive intact or reasonably intact.
Moderate	The available evidence suggests a reasonable likelihood for past activity within the Site and a potential that archaeological evidence may survive although the nature and extent of survival is not thought to be significant.
Low	The available evidence suggests archaeological evidence of significant activity is unlikely to survive within the Site, although some minor land-use may have occurred.
Uncertain	Insufficient information to assess.

Appendix 10-3: Preliminary Impact Assessment: Locations for Substations

As per the Parameter Plans presented in Figure 4-3 of Chapter 4: Our Project this PEIR, the locations currently considered for the substations and the buried heritage assets which may be affected are shown in **Figure 1, Figure 2, and Figure 3** below.

A preliminary assessment on buried heritage assets of these locations is included in this Appendix, using the methodology discussed in **Appendix 10-2** and the baseline information discussed from paragraph 10.15.

At the time of the writing, a final design for the substations is not available. Some, but not all of the results of the geophysical survey which is currently ongoing. Therefore, in assessing the effects upon buried heritage remains, a pre-mitigation worst-case scenario has been applied whereby all remains will be at least partially truncated or up to entirely removed within the parameter area.

A full impact assessment for the construction of the substations, including related the cable trenching, will be carried out when the design is further refined, and the report of the geophysical survey is complete. In this appendix we will be highlighting the preliminary physical impact on the relevant Groups as per **Appendix 2**.

Potential Location for Substations on the West bank of River Trent

Location 1

There are no known buried heritages assets within Location 1. The preliminary results of the geophysical survey do not show any potential archaeological feature.

The closest buried heritage asset is located 56m east of Location 1 and outside of our Site, and it is interpreted in the HER record as an undated potential earthwork which has been located through documentary evidence (MNT10012).

Location 2

Within the proposed location the following known buried heritage assets may be affected by the construction of the substation:

- > UN009 – Bank at Fledborough; and,
- > UN012 – Potential Enclosure (identified during the geophysical survey)

As mentioned above, it is assumed that the construction of the substation will remove the entirety of any buried heritage assets within the area. **Table 1** below summarises the preliminary likely significant effects of these assets:

Table 1: Preliminary Likely Significant Effects (Location 2)

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Change	Applicable mitigation	Residual Risk	Monitoring Requirement
UN009	Low	Excavation	Full Removal	High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
UN012	Low to Medium	Excavation	Full Removal	High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA



Figure 1 – Locations 1 and 2 (West of River Trent)

Location 3

There are no known buried heritages assets within Location 3. The preliminary results of the geophysical survey do not show any potential archaeological features.

The closest potential buried heritage asset is located 20m south Location 3 and within Location 4 below (PM002).

Location 4

Within the proposed location the only buried heritage assets that may be affected by the construction of the substation are the potential below ground remains of the Brick Kiln at Marnham (PM002), for which only documentary evidence is known.

Table 2 summarises the preliminary likely significant effects of this asset, assuming its existence and its full removal:

Table 2: Preliminary Likely Significant Effects (Location 4)

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Change	Applicable mitigation	Residual Risk	Monitoring Requirement
PM002	Low	Excavation	Full Removal	High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA



Figure 2 – Locations 3 and 4 (West of River Trent)

Potential Location for Substations on the East bank of River Trent

The two proposed locations on the East bank of River Trent are located on adjacent fields, only one of which will be selected for the construction of the substation. Therefore, the two fields will be considered separately for the purpose of this PEIR.

Location 1 – North

Within the proposed location the following known buried heritage assets may be affected by the construction of the substation:

- > PH002; and,
- > RO003

As mentioned above, it is assumed that the construction of the substation will at least partially truncate or up to entirely remove the entirety of any buried heritage assets within the area. The table below summarises the preliminary likely significant effects of these assets:

Table 3: Preliminary Likely Significant Effects (Location 1 – North)

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Change	Applicable mitigation	Residual Risk	Monitoring Requirement
PH002	Medium	Excavations	Full removal	High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
RO003	Medium	Excavations	Full removal	High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA

Similar effects may be expected upon potential buried heritage assets related to any of the adjacent groups which may extend to Location 1 (such as PH001 and ME006). The potential impact on these unknown assets will be thoroughly assessed when a full report on the geophysical survey will be produced as part of the ES.

Location 2 - South

There are no known buried heritages assets within Location 2. The preliminary results of the geophysical survey do not show any potential archaeological feature.

Nonetheless, due to the close proximity of Location 2 to known buried heritage assets and the presence of potential buried features detected by the geophysical survey in a North-South alignment, there is potential for the presence of unknown archaeology within Location 2.

Similarly to Location 1 - North, the potential impact on these unknown assets will be thoroughly assessed when a full report on the geophysical survey will be produced as part of the DBA technical appendix to the ES.



Figure 3 – Locations 1 North and 1 South (East of River Trent)

Assessment of Potential Effects on Unknown Buried Heritage Assets

Relevant to all the locations, the direct impact on unknown buried heritage assets resulting from the construction works for the substation can be summarized as below:

Table 4: Assessment of Potential Effects on Unknown Buried Heritage Assets

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
Unknown buried heritage deposits	Low to High	Excavations	Full or partial removal	Medium to High	Minor to Major	Design/Archaeological	Negligible to Minor adverse	Construction design/EMPs / DBA

Appendix 10-4: Preliminary Impact Assessment: Options for River Crossing

As per Parameter Plan discussed in **Chapter 4** of this PEIR, there are currently two high level scenarios which are being considered for the river crossing by the design team. A preliminary assessment of the impact on buried heritage assets of these two options is included in this Appendix, using the methodology discussed in **Appendix 2** and the baseline information discussed from paragraph 10.15.

At the time of the writing, more developed parameters for these options are not available, nor are the full results of the geophysical survey which is currently ongoing. Therefore, in assessing the effects upon buried heritage remains, a pre-mitigation proportionate worst-case scenario in the context of other solar farms and national legislation which states solar farms have a 'reduced impact' has been applied whereby all remains will be partially truncated and/ or fully removed depending on the extent of the proposed works.

It is assumed that the cable trenching required for both options will utilise existing roads, therefore with limited impact on buried heritage assets. This will be reviewed once a CEMP has been prepared and any impact on buried heritage assets will be assessed at ES stage.

Option 1 – HDD (directional drilling under the river Trent)

At the time of the writing Option 1 is the preferred option

This option includes excavations on both sides of River Trent, localised as shown in **Figure 1**, to allow the installation of cables beneath the river, and a 4.38km of cable routes.

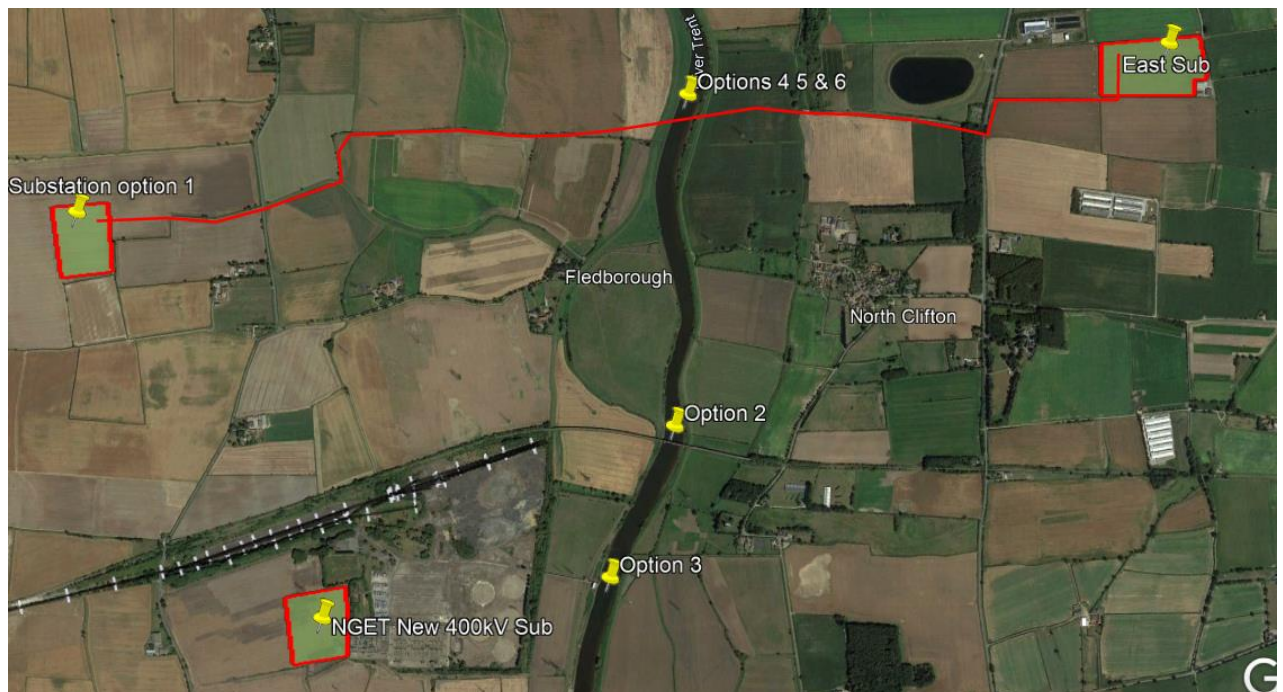
It is expected at least partial truncation, up to full removal of any archaeological and geoarchaeological deposits within the footprint of the directional drilling areas.

Table 1 summarises the preliminary likely significant effects of these assets:

Table 1: Preliminary Likely Significant Effects (Option 1)

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
PH001	Medium	Excavations	Full removal	High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
UN013	Low to High	Excavations	Full or partial removal	Medium to High	Minor to Major	Design/Archaeological	Negligible to Minor (adverse)	Construction design/EMPs / DBA

Figure 1 – Proposed cable trenching for Option 1



Similar effects may be expected upon potential buried heritage assets related to any of the adjacent groups which may extend to the HDD area (such as RO001 and RO004, in **Figure 2**). The potential impact on these unknown assets will be thoroughly assessed when a full report on the geophysical survey has been prepared and will be reported on in the ES.

The location for the cable routes shown in **Figure 1** are indicative, as at the time of the writing these are still being discussed. A thorough review of the potential impacts resulting from the cable trenching will be undertaken once more information on the location of the substations, and the final report of the geophysical survey, and will be reported on in the ES.

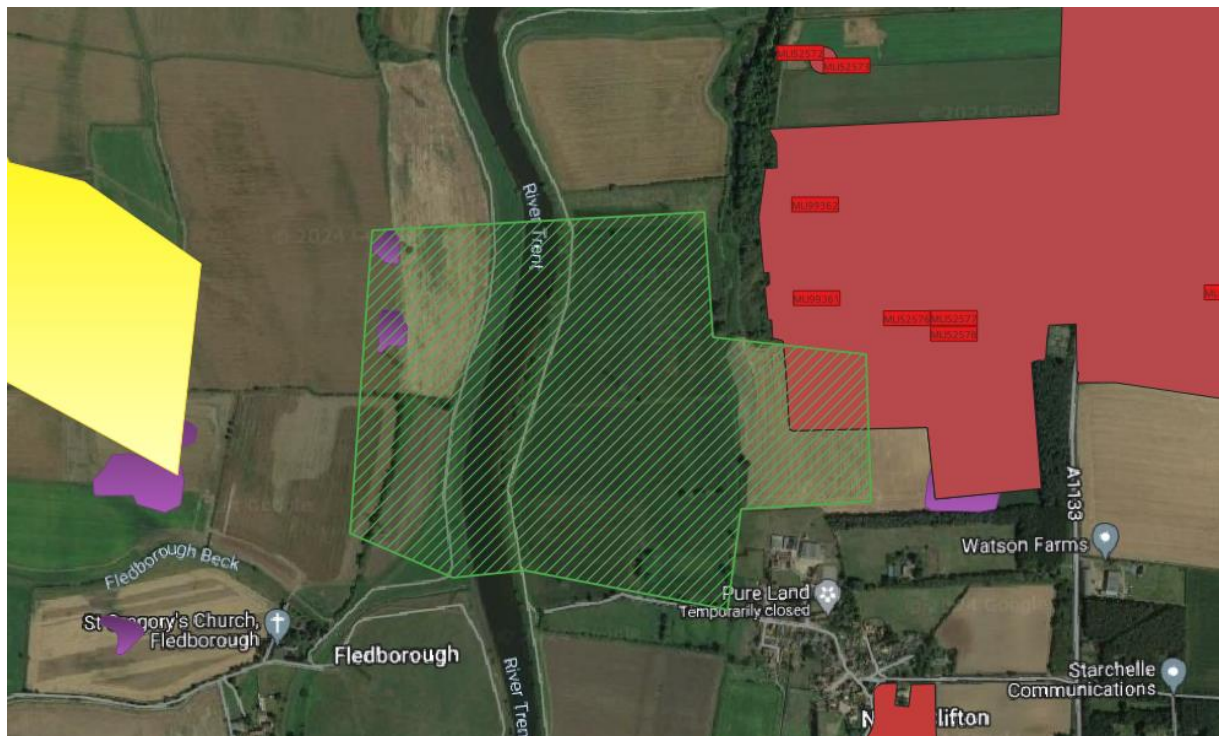


Figure 2 – Location for HDD

Option 2 - Existing Fledborough Viaduct

The only intrusive groundworks expected for Option 2 relate to the cable route connecting the substation on the West bank of River Trent with the one on the East bank.

The total length of the cable route for Option 2 is approximately 6.42km.

At least partial truncation, up to full removal of any buried heritage assets is expected in any part of the cable route not within the existing road surfaces, and therefore impacting open fields.



Figure 3 – Proposed cable trenching for Option 2

A thorough review of the potential impacts resulting from the cable trenching will be undertaken once more information on the location of the substations, and the final report of the geophysical survey, are available, and will be reported in the ES.

Assessment of Potential Effects on Unknown Buried Heritage Assets

Relevant to both options, the direct impact on unknown buried heritage assets resulting from the construction works can be summarised as below:

Table 2: Assessment of Potential Effects on Unknown Buried Heritage Assets

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
Unknown buried heritage deposits	Low to High	Excavations	Full or partial removal	Medium to High	Minor to Major	Design/Archaeological	Negligible to Minor adverse	Construction design/EMPs / DBA

Appendix 10-5: Detailed Scope of Assessment

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
PH001	Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
PH002	Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
PH003	Low	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
PH004	Low	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
PH005	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
PH006	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
PH007	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
PH008	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
PH009	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
RO001	These assets lie within the buffer for MLI54212 and therefore no physical impacts are expected to be affecting the group.							
MLI54212 (NHLE: 1003608)	No development is planned within the Schedule Monument Area and therefore no physical impacts are expected to be affecting the group.							
RO002	Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA



Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Excavations	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
RO003	Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
RO004	Medium to high	Piling	Displacement and vibration	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
RO005	Low	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
RO006	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
RO007	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
RO008	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
RO009	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
RO010	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
RO011	These assets lie outside of the Site and/or have been physically removed from the Site and therefore no physical impacts are expected to be affecting the group.							
ME001	These assets lie within the buffer for MNT4584 and therefore no physical impacts are expected to be affecting the group.							
MNT4584 (NHLE: 1017567)	No development is planned within the Schedule Monument Area and therefore no physical impacts are expected to be affecting the group.							
ME002	Medium to High	Piling	Displacement and vibration	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
ME003*	Medium to High	Piling	Displacement and vibration	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
ME004*	Medium to High	Piling	Displacement and vibration	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
ME005*	Moderate to High	Piling	Displacement and vibration	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Excavations	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
ME006	Medium to High	Piling	Displacement and vibration	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
ME007*	Medium to High	Piling	Displacement and vibration	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
ME008*	Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
ME009	Medium to High	Piling	Displacement and vibration	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
ME010*	Medium to High	Piling	Displacement and vibration	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate to Major	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
ME011*	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
MNT15306 (NHLE: 1018619)	No development is planned within the Schedule Monument Area and therefore no physical impacts are expected to be affecting the group.							
ME012*	Low	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
ME013*	Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
ME014*	Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
ME015*	Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Moderate	Design/Archaeological	Minor (adverse)	Construction design/EMPs / DBA
ME016	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
ME017*	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
ME018	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
ME019*	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
ME020*	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
ME021 (NHLE: 1008247)	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
ME022 (NHLE: 1017858)	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
ME023 (NHLE: 1008594)	These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group.							
PM001	Low	Piling	Displacement and vibration/Vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
PM002	Low	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA

Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
PM003		These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group						
PM004		These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group						
PM005		These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group						
PM006		These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group						
PM007		These assets lie outside of the Site and therefore no physical impacts are expected to be affecting the group						
PM008*	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
PM009*	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA



Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
PM010								
PM011*	Low to Medium							
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
PM012*	Low to Medium							
		Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA



Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
UN001	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
UN002	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA



Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
UN003	Low	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
UN004	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
UN005	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA



Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
UN006	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
UN007	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
UN008	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA



Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
UN009	Low	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
UN010	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA



Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
UN011	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
UN012	Low to Medium	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Moderate	Design/Archaeological	Negligible (minor adverse)	Construction design/EMPs / DBA
UN013	Low to High (depending on relation with RO004)	Piling	Displacement and vibration	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Major	Design/Archaeological	Negligible to Minor (adverse)	Construction design/EMPs / DBA



Groups	Significance	Effects	Type of risk on buried heritage assets	Magnitude of Change	Significance of Effect	Applicable mitigation	Residual Risk	Monitoring Requirement
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Major	Design/Archaeological	Negligible to Minor (adverse)	Construction design/EMPs / DBA
Unknown buried heritage deposits	Low to High	Piling	Displacement and vibration	Very low	Negligible	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Excavations	Full or partial removal	Medium to High	Minor to Major	Design/Archaeological	Negligible to Minor (adverse)	Construction design/EMPs / DBA
		Traffic of plants and machinery	Compression or partial removal	Very low	Negligible to Minor	Design/Archaeological	Negligible	Construction design/EMPs / DBA
		Hard and soft landscaping	Full or partial removal	Medium to High	Minor to Major	Design/Archaeological	Negligible to Minor (adverse)	Construction design/EMPs / DBA
Isolated findspots and casual/unstratified finds	As findspots, these have been physically removed from the Site and the heritage significance of their former locations will not be harmed by Our Project.							

Appendix 10-6: Consultation responses outlined in Scoping Opinion and actions in response

Consultee	Key matters raised	Actions in response
Planning Inspectorate	Agreed to scope out an assessment of impacts during the operational phase of our Project.	None required.
Planning Inspectorate	Potential for decommissioning stage effects should be assessed. An outline DEMP should be submitted with the DCO application.	<p>A preliminary review of the potential for harm resulting from decommissioning has been undertaken in this chapter.</p> <p>A thorough assessment of the likely significant effects during the decommissioning phase will be carried out in the ES Chapter and DBA. The mitigation measures will be included in the outline DEMP, which will be submitted with the DCO application.</p>
Planning Inspectorate	Applicant to consult and seek to reach agreement with the relevant consultation bodies regarding extent, nature, and timing of field investigations and provide evidence of this within the application documents.	Consultation with Lincolnshire Historic Environment (infrastructure) Office, Lincolnshire Senior Historic Environment Officer, and Nottinghamshire Senior Practitioner Archaeology is ongoing and is being coordinated with consultation with the Historic England Inspectors of Ancient Monuments.
City of Lincolnshire Council	Ground-penetrating radar should be used across the site rather than relying only on LIDAR data.	A geophysical survey is currently ongoing on the Site, including the Scheduled Monument areas, access routes and mitigation areas.
City of Lincolnshire Council	The applicant has only listed designated monuments individually as buried heritage assets, rather than listing those known across the site.	<p>HER data has been requested and received from the Lincolnshire and Nottinghamshire HER</p> <p>A list of the relevant designated and undesignated buried heritage assets has been included in the assessment contained in the PEIR stage.</p>

<p>City of Lincolnshire Council</p>	<p>The proposed development is within the vicinity of the deserted village of Woodcotes. (Nottinghamshire HER monument record M4652) The applicant has not identified this site as buried heritage. The applicant must scope this into their assessment, along with mitigations.</p>	<p>The PEIR, ES and DBA will assess all designated and non-designated heritage assets.</p>
<p>City of Lincolnshire Council</p>	<p>The proposed development includes the potential Roman settlement at Ragnall (Nottinghamshire HER monument record M478) and includes this site as a potential area for solar and associated infrastructure in Appendix A of their Scoping Report. This area requires surveying, excluding from the development area, and must be scoped into their assessment</p>	<p>The PEIR, ES and DBA will assess all designated and non-designated heritage assets.</p>
<p>City of Lincolnshire Council</p>	<p>The sunken village of Ragnall (Nottinghamshire HER monument records 6210) and Grounds at Ragnall Hall (Nottinghamshire HER monument record MNT26615) are in close proximity to the development area and must be scoped into the assessment.</p>	<p>The PEIR, ES and DBA will assess all designated and non-designated heritage assets.</p>

<p>Historic England</p>	<p>Where important archaeology is known or suspected to exist, and it is planned to preserve it in situ (paragraph 9.22) there is a need to consider more than construction related impacts. Any changes to the burial environment that the development introduces could lead to the degradation of materials and the loss of information beyond the development boundary (particularly if there are any remains dependent on a stable water environment). To ensure that such impacts (if present) are properly accounted for we would recommend ensuring that opportunities are taken to seek synergies with other topic areas, such as hydrology and hydrogeology. Integrating models from this with an understanding of any potential water dependent heritage assets identified in desk-based work will enable effective early identification of, and engagement with, any sites or areas that may need greater consideration of preservation approaches.</p>	<p>Preservation is Situ, and the potential effect of hydrology and hydrogeology and other relevant disciplines to buried heritage preservation will be discussed at in the ES, once the buried heritage baseline is updated with the results of the trial trenching survey and any other agreed survey methodology.</p>
<p>Historic England</p>	<p>Historic England welcomes the recognition given to the earlier prehistoric material (Mesolithic and Neolithic) in paragraphs 9.7 and 9.8. Much of this activity was discovered through fieldwalking and, as the project moves forwards, it should be borne in mind that standard archaeological methodologies (such as trial trenching currently proposed in paragraph 9.21) may not be sufficient to ensure the effective identification and characterisation of any similar lithic scatters elsewhere within the landscape.</p>	<p>The requirement and strategy for fieldwalking survey will be discussed during the archaeological evaluation phase and a methodology agreed with Historic England the relevant LPA's archaeological advisors if required.</p>
<p>Historic England</p>	<p>Further Baseline Data (9.19) should also include existing borehole data, and the applicants should seek to construct desk-based deposit model as part of the DBA.</p>	<p>The requirement for a geoarchaeological deposit model will be discussed with Historic England the relevant LPA's archaeological advisors and included in the DBA if required.</p>

	<p>A deposit modelling led approach will help delimit the presence / absence and nature of Pleistocene and Holocene deposits within different areas the site. Through this process, it may be possible to divide the site into landscape zones according to variations in the depositional sequence which will help in identifying areas of risk for unknown archaeology and where different types of activity may be expected.</p>	
<p>Historic England</p>	<p>Although Palaeolithic activity is not currently known within the study area, the potential for there to be some presence should not be completely ignored. Creating a preliminary deposit model will help develop an understanding and model risk in this regard and will be particularly relevant for areas of deeper disturbance such as cable routes etc.</p>	<p>See above.</p>
<p>Historic England</p>	<p>The presence of scheduled Roman military sites (a vexillation fortress and two marching camps) in the immediate vicinity of the scheme indicates the high archaeological potential of the area around the proposal, and there is high potential to harm buried archaeological remains associated with the Scheduled Monument. It should be noted that the area of the Scheduled Monument represents only what was visible from aerial photos at the point in time that the scheduling decision was made, and not the actual extent of the camps or the surviving archaeology.</p>	<p>The preliminary assessment of the potential impact on the Roman vexillation fortress and two marching camps has been carried out in the PEIR.</p> <p>A thorough review of the impact on the Vexillation Fortress and Two Marching Camps will be included in the Buried Heritage ES Chapter and DBA.</p>

	<p>The southern area of protection at Newton-on-Trent (Roman Vexillation Fortress, two Roman Marching Camps, and a Royal Observer Corps monitoring post), appears to comprise the northern part of second camp. This potential for nationally significant remains at the site has previously been demonstrated during a 2011-12 program of evaluation for Anglian Water's Hall Reservoir (Gilmour 2012), which discovered a Roman oven containing the remains of Roman bread.</p> <p>It will also be very important to develop an understanding of movement along and across this part of the Trent from the Roman through the Early Medieval periods (including Viking).</p>	
<p>Historic England</p>	<p>Particular consideration should be given to the landscape setting and context of the</p> <p>scheduled monuments at Whimpton Moor medieval village and moated site and the</p> <p>Ringwork at Kingshaugh Farm, in the latter instance a close understanding of how/if</p> <p>the ringwork articulated to the topography, roads and river will be important</p>	<p>The archaeological assessment of the of the scheduled monuments at Whimpton Moor medieval village and moated site and the Ringwork at Kingshaugh Farm will be part of the DBA.</p> <p>The setting of the scheduled monuments at Whimpton Moor medieval village and moated site and the Ringwork at Kingshaugh Farm will be assessed as part of the Cultural Heritage chapter in the ES, with cross referencing with the Buried Heritage Chapter in the ES, where appropriate. to facilitate a rounded interpretation.</p>
<p>Lincolnshire City Council</p>	<p>The full suite of available desk-based information needs to be competently assessed including all available records, air photos, LiDAR assessments and local sources. This understanding and the geophysical survey results will inform a robust programme of trial trenching to provide evidence for the site-specific archaeological potential of the development and provide the basis for an effective mitigation strategy to deal with the archaeological impact.</p>	<p>The Desk Based Assessment will be undertaken in line with the legislation and guidance which regulates the production of these documents.</p>

<p>Lincolnshire City Council</p>	<p>The proposed lack of evaluation (geophysics and evaluation trenching) is of very significant concern to the Council. Failure to undertake sufficient evaluation now while there's time, pushing evaluation and subsequent agreement of the mitigation strategy to post consent is a high-risk strategy which can easily lead to significant construction delays and escalating costs as well as unnecessary destruction of heritage assets. It may also lead to consent for a scheme which is subsequently found to be undeliverable in terms of the information submitted with the application.</p>	<p>Consultation has commenced regarding the potential forthcoming scope of evaluation, based on the results of the geophysical survey as they come in.</p> <p>A preliminary impact assessment has been carried out in the PEIR and further assessment will be carried out for the ES Chapter.</p>
<p>Lincolnshire City Council</p>	<p>The full extent of the proposed impact area including the connector route corridors must be included in the evaluation process.</p>	<p>In line with the applicable legislation and guidance, the design and construction impacts will be assessed in response to the design detailed submitted as part of the DCO application.</p>
<p>Lincolnshire City Council</p>	<p>the Scoping Report makes it clear that the ES Chapter will be based entirely on the DBA without the support of further non-intrusive or intrusive fieldwork. This is wholly insufficient to assess the archaeological potential of the site, nor will it be sufficient to inform an appropriate mitigation strategy.</p>	<p>The ES chapter will be supported by the DBA and will be informed by the results of the geophysical survey, trial trenching and any further survey agreed with Historic England the relevant LPA's archaeological advisors.</p>
<p>Lincolnshire City Council</p>	<p>Non-intrusive survey (ie. geophysics and fieldwalking) must be tested with site wide evaluation trenching as a minimum requirement to properly understand the archaeological potential within the developmental impact area.</p>	<p>Any non-intrusive survey will inform and be tested by proportionate program of trial trenching.</p>
<p>Lincolnshire City Council</p>	<p>We would expect the DBA to be complete and the field evaluation to be well underway by the time the PEIR is produced.</p>	<p>At the present stage, the work on the Desk Based Assessment is ongoing.</p> <p>This Preliminary Environmental Impact Report has been produced to assess the potential impacts on the buried heritage assets identified so far.</p>

The DBA and the subsequent ES will review the conclusions of the PEIR and expand on them with more design information and an updated baseline. The assessments will be based on the results of the geophysics, trial trenching and any further evaluation methodology agreed with the LPA's Archaeological Advisors.

<p>Lincolnshire City Council</p>	<p>The Scoping Report anticipates undertaking a limited programme of field evaluation prior to construction. Again, we strongly disagree that post-consent is the correct time to undertake investigative work that should be informing the application</p>	<p>It is expected that the field evaluation will be carried out prior to consent. Further evaluation may be carried out post-consent if required to advise on archaeological constraints and mitigation on specific areas.</p>
<p>Lincolnshire City Council</p>	<p>We would further raise the issue of only targeting areas identified in the DBA which is necessarily limited to known data. This approach is flawed and would lead to a limited understanding of the archaeological resource based on confirmation bias rather than a genuine programme of investigation.</p>	<p>The DBA will inform the trial trenching strategy which will be targeting potential archaeology across the full impact zone which will be identified in the DBA, aerial and LiDAR assessment, and geophysical survey results.</p> <p>A proportionate trial trenching evaluation will also be performed in blank areas within the Site.</p>
<p>Lincolnshire City Council</p>	<p>We do not accept that there will be no impact from maintenance of the site. Many older solar farms are undergoing significant redevelopment during their mid-life, including complete removal of panel infrastructure and highly intrusive groundworks. For areas where preservation in-situ is preferred, measures will need to be implemented in the OEMP to ensure there is no impact to the archaeological resource.</p>	<p>The Planning Inspectorate has agreed to scope out the operational impacts of our Project.</p>

<p>Lincolnshire City Council</p>	<p>We do not agree with the applicant's belief that decommissioning will result in no impact to the archaeological resource. The removal of infrastructure can be more damaging in many circumstances than the initial installation. Decommissioning impacts will need to be considered at the application stage and appropriate mitigation secured as part of the DCO requirements.</p>	<p>A preliminary review of the potential for harm resulting from decommissioning has been undertaken in this chapter.</p> <p>A thorough assessment of the of the potential for effects during the decommissioning phase will be carried out in the ES Chapter and DBA. The mitigation measures will be included in the outline DEMP, which will be submitted with the DCO application.</p>
<p>Nottinghamshire City Council</p>	<p>Consideration should be given to undertaking fieldwalking and metal detecting survey to locate the very many types of sites which are not conducive to being discovered through the standard evaluation techniques I have just noted, and which are the only ones currently proposed for this site. A reasonable rationale will be expected for not undertaking such surveys, which on current evidence would be difficult to sustain.</p>	<p>The requirement and strategy for fieldwalking survey and metal detecting survey will be discussed and the Applicant will seek to agree on a methodology with the relevant LPA's archaeological advisors if required.</p>
<p>Nottinghamshire City Council</p>	<p>Consideration of Lidar data is noted. For a scheme of such a scale it might be worth commissioning new, high accuracy Lidar</p>	<p>A programme of geophysical survey is ongoing on Site which utilises the existing lidar data. As such, the geophysical survey detail should supersede the requirement for any further Lidar surveys.</p>

Contact

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