



AQUIND Limited

AQUIND INTERCONNECTOR

Environmental Statement – Volume 1 – Chapter 21 Heritage and Archaeology

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21. HERITAGE AND ARCHAEOLOGY

21.1. SCOPE OF THE ASSESSMENT

21.1.1. INTRODUCTION

- 21.1.1.1. This Chapter reports the outcome of the assessment of likely significant effects arising from the Proposed Development upon the Historic Environment. The Proposed Development that forms the basis of this assessment is described in Chapter 3 (Description of the Proposed Development) of the Environmental Statement ('ES') Volume 1 (document reference 6.1.3). The Historic Environment comprises potential Below-Ground Heritage Assets (archaeological remains and palaeoenvironmental deposits) and Above-Ground Heritage Assets (structures and landscapes of heritage interest and their setting) within or immediately around the Proposed Development. This includes Designated Heritage Assets and assets identified by Historic England ('HE') and the Local Planning Authority ('LPA') (including local listing), which are protected by law or local policy, along with Non-Designated Heritage Assets (known and possible buried archaeological remains).
- 21.1.1.2. The Historic Environment assessment will consider the potential impacts associated with the following activities:
- Partial or complete loss to buried heritage assets (known or possible archaeological remains), if present, where ground disturbance is proposed; and
 - Permanent changes to the setting of Above-Ground Heritage assets (e.g. listed buildings, conservation areas, and registered parks and gardens) within the vicinity of the Converter Station Area and the Landfall, due to the proposed construction of permanent above ground structures.
- 21.1.1.3. This Chapter (and its associated figures and appendices) is intended to be read as part of the wider ES, with particular reference to the introductory chapters (Chapters 1 – 3), Chapter 15 (Landscape and Visual Amenity) and Chapter 18 (Ground Conditions) of the ES Volume 1 (document references 6.1.1, 6.1.2, 6.1.3, 6.1.15 and 6.1.18).
- 21.1.1.4. This Chapter is supported by a Historic Environment Desk Based Assessment ('HEDBA') (Appendix 21.2) of the ES Volume 3 (document reference 6.3.21.2). The HEDBA incorporates the results of the Geophysical Magnetometry Survey, of which the report also forms a technical appendix to this Chapter (Appendix 21.3) of the ES Volume 3 (document reference 6.1.21.3). The supporting appendices comprise:
- Appendix 21.1 (Consultation Responses) of the ES Volume 3 (document reference 6.3.21.1);

- Appendix 21.2 (HEBDA);
- Appendix 21.3 (Geophysical Survey Report) for the magnetometry survey carried out within Sections 1–7;
- Appendix 21.4 (Heritage and Archaeology Impact Tables) of the ES Volume 3 (document reference 6.3.21.4);
- Appendix 21.5 (Heritage and Archaeology Residual Effects Tables) of the ES Volume 3 (document reference 6.3.21.5);
- Appendix 21.6 (Heritage and Archaeology Cumulative Effects Stage 1 & 2) of the ES Volume 3 (document reference 6.3.21.6); and
- Appendix 21.7 (Heritage and Archaeology Cumulative Effects Stage 3 & 4) of the ES Volume 3 (document reference 6.3.21.7).

21.1.1.5. This chapter assesses the impacts arising from the Proposed Development within the Onshore Components of the Order Limits and the Site only (above Mean Low Water Springs ('MLWS')). References to the Order Limits, any appendices to it and plans enclosed to it, is only in relation to the Order Limits and the Site as applicable to the Onshore Components as illustrated in Figure 3.9 of the ES Volume 2 (document reference 6.2.3.9) Figure 3.9.

21.1.2. STUDY AREA

The study area varies depending on the receptors being considered. For below-ground (archaeological) remains an area of 500 m from the Order Limits was used (at both the Converter Station Area and across the Onshore Cable Corridor). A broad range of sources were consulted to compile the baseline data, including documentary and cartographic sources and the results from past archaeological investigations (see

21.1.2.1. Table 21.2 below).

21.1.2.2. A plan showing the study area can be seen on Figure 21.1 of the ES Volume 2 (document reference 6.2.21.1). Each feature of the historic environment identified has been allocated a unique 'assessment' reference number (A1, A2, etc.), which is listed in the gazetteer within Appendix 21.2 (HEBDA).

21.1.2.3. Where appropriate, there may be reference to assets beyond the 500 m study area, e.g. where such assets are of a particularly high heritage significance and/or where they are large contributors to the understanding of the Historic Environment.

21.1.2.4. In respect of the potential impacts on Above-Ground Heritage Assets, a study area of 2 km from the proposed Converter Station Option B (i) was used for the identification of heritage assets. In conjunction with the WSP Landscape team, a Zone of Theoretical Visibility ('ZTV') was used to identify Designated Heritage Assets beyond the radial 2 km where long-distance views of the Converter Station may have

an impact on their setting (Figure 21.2 of the ES Volume 2 (document reference 6.2.21.2)).

- 21.1.2.5. Based on the proposed scale and massing of the Optical Regeneration Station(s) ('ORS') at the Landfall a 500 m radial study area was applied for the identification of heritage assets from the landfall carpark, based on professional judgement and standard guidance (Historic England, 2017).

21.2. LEGISLATION, POLICY AND GUIDANCE

- 21.2.1.1. This assessment has taken into account the current legislation, policy and guidance relevant to the Historic Environment. These are listed below.

21.2.2. LEGISLATION

Scheduled Monuments

- 21.2.2.1. Parts of the Proposed Development lie in the vicinity of a Scheduled Monument. Nationally important archaeological sites (both above and below-ground remains) may be identified and protected under the *Ancient Monuments and Archaeological Areas Act 1979*. An application to the Secretary of State ('SoS') is required for any works affecting a Scheduled Monument. Prior written permission, known as Scheduled Monument Consent ('SMC') is required from the SoS for works physically affecting a scheduled monument. SMC is separate from the statutory planning process. Impacts to the setting of Scheduled Monuments do not require SMC but are a material consideration in planning.

Listed Buildings and Conservation Areas

- 21.2.2.2. There are a number of statutorily Listed Buildings and LPA Conservation Areas within the study area. *The Planning (Listed Buildings and Conservation Areas) Act 1990* sets out the legal requirements for the control of development and alterations which affect buildings, including those which are listed or in conservation areas. Buildings which are listed or which lie within a conservation area are protected by law. Grade I are buildings of exceptional interest. Grade II* are particularly significant buildings of more than special interest. Grade II are buildings of special interest, which warrant every effort being made to preserve them.

Human Remains

- 21.2.2.3. There are no known Church of England burial grounds along the route, including consecrated ground in cemeteries. There is potential for human remains on land that is not subject to the Church of England's. Exhumations from land which is not subject to the Church of England's jurisdiction will need a licence from the SoS, under Section 25 of the *Burial Act 1857* as amended by the *Church of England (Miscellaneous Provisions) Measure 2014*. A Burial Licence is required from the SoS if the remains

are not intended for reburial in consecrated ground (or if this is to be delayed - for example where archaeological or scientific analysis takes place first).

- 21.2.2.4. Under the *Town and Country Planning (Churches, Places of Religious Worship and Burial Grounds) Regulations 1930*, the removal and re-interment of human remains should be in accordance with the direction of the local Environmental Health Officer.

Hedgerow Regulations

- 21.2.2.5. The Converter Station Area includes one possible historic hedgerow. Aside from the planning system, hedgerows are offered some protection under the Hedgerow Regulations 1997 (HM Government, 1997). Under these rules, a hedgerow is “important” if it, or the hedgerow of which it is a stretch has existed for 30 years or more; and satisfies at least one of the criteria below:

- The hedgerow marks the boundary, or part of the boundary, of at least one historic parish or township and for this purpose "historic" means existing before 1850;
- The hedgerow incorporates an archaeological feature which is: (a) included in the schedule of monuments compiled by the SoS under section 1 (schedule of monuments) of the Ancient Monuments and Archaeological Areas Act 1979(7); or (b) recorded at the relevant date in a Sites and Monuments Record (Now Historic Environment Record);
- The hedgerow is: (a) is situated wholly or partly within an archaeological site included or recorded as mentioned in paragraph 2 or on land adjacent to and associated with such a site; and (b) is associated with any monument or feature on that site;
- The hedgerow: (a) marks the boundary of a pre-1600 AD estate or manor recorded at the relevant date in a Sites and Monuments Record or in a document held at that date at a Record Office; or (b) is visibly related to any building or other feature of such an estate or manor; or
- The hedgerow is: (a) recorded in a document held at the relevant date at a Record Office as an integral part of a field system pre-dating the Inclosure Acts(8); or (b) is part of, or visibly related to, any building or other feature associated with such a system, and that system is (i) substantially complete; or (ii) is of a pattern which is recorded in a document prepared before the relevant date by a LPA, within the meaning of the 1990 Act(9), for the purposes of development control within the authority's area, as a key landscape characteristic.

21.2.3. PLANNING POLICY

National Policy

National Policy Statement

- 21.2.3.1. In the s35 Direction letter, the Secretary of State (SoS) directed that the Proposed Development was, by itself nationally significant and that the Overarching National Policy for Energy (EN-1), Department of Energy and Climate Change, published in July 2011, should apply to the application as it would to a generating station of a similar generating capacity as the capacity of the interconnector.
- 21.2.3.2. EN-1 sets out the overarching national policy for major energy infrastructure projects within England and Wales to meet future demand, deliver on obligations to reduce greenhouse gas emissions and ensure a secure energy supply through a diverse range of energy sources.
- 21.2.3.3. Section 5.8 contains the following statements which are relevant:
- *The construction, operation and decommissioning of energy infrastructure has the potential to result in adverse impacts on the historic environment (paragraph 5.8.1);*
 - *The historic environment includes all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, landscaped and planted or managed flora (paragraph 5.8.2);*
 - *The applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage assets affected can be adequately understood from the application and supporting documents (paragraph 5.8.10);*
 - *In considering the impact of a proposed development on any heritage assets, the IPC should take into the account the particular nature of the significance of the heritage assets and the value they hold for this and future generations (paragraph 5.8.12);*
 - *There should be a presumption in favour of the conservation of designated heritage assets and the more significant the designated heritage asset, the greater the presumption in favour of its conservation should be. Once lost heritage assets cannot be replaced and their loss has a cultural, environmental, economic and social impact. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. Loss affecting any designated heritage asset should require clear and convincing justification. Substantial harm to or loss of a grade II listed building park or garden should be exceptional. Substantial harm to or loss of designated assets of the highest significance, including Scheduled Monuments; registered battlefields; grade I and*

II listed buildings; grade I and II* registered parks and gardens; and World Heritage Sites, should be wholly exceptional (paragraph 5.8.14)*

- *Any harmful impact on the significance of a designated heritage asset should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset the greater the justification will be needed for any loss (paragraph 5.8.15);*
- *Where the loss of the whole or a material part of a heritage asset's significance is justified, the IPC should require the developer to record and advance understanding of the significance of the heritage asset before it is lost (paragraph 5.8.20).*

National Planning Policy Framework

21.2.3.4. The Government issued an updated version of the NPPF in February 2019 (Ministry of Housing, Communities & Local Government, 2019).

21.2.3.5. Section 16 of the NPPF deals with 'Conserving and Enhancing the Historic Environment'. The NPPF recognises that heritage assets are an irreplaceable resource which 'should be conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations' (para 184). The NPPF requires the significance of heritage assets to be considered in the planning process, whether designated or not.

Local Policy

21.2.3.6. The relevant local policies are listed below, in all cases they reflect the overarching National Planning Statement (EN-1).

Portsmouth City Council

- The southern section of the Order Limits falls within Portsmouth City. The Portsmouth Plan (Portsmouth's Core Strategy and spatial plan) was adopted in January 2012 (Portsmouth City Council, 2012). The Plan recognises the city's strong maritime heritage. Objective 1 notes that new development should protect the local architectural heritage (para 2.7), and policy PCS23 Design and Conservation provides the approach to the Historic Environment.

Havant Borough Council

- The central section of the Order Limits lies within Havant Borough. The Havant Borough Core Strategy was adopted in March 2011 (HBC, 2011). Policy CS11 Protecting and Enhancing the Special Environment and Heritage of Havant Borough relates to the Historic Environment.
- Policy CS11 states that planning permission will be granted for development that protects and where appropriate enhances the borough's statutory and non-statutory heritage designations.

Winchester City Council

- The northern section of the Order Limits lies within Winchester City. The Winchester City Council ('WCC') Local Plan Joint Core Strategy was adopted in March 2013 (WCC, 2013). Policies relevant to the Historic Environment are included as part of the 'saved policies' from the 2006 Local Plan (HE 1-8).
- The main objective of these policies is to conserve the Historic Environment by ensuring that 'the essential character and special interest of its assets are protected or enhanced whenever development takes place' (ibid).

East Hampshire District Council

- The north-east section of the Order Limits lies within East Hampshire District. The East Hampshire District Local Plan Joint Core Strategy was adopted in June 2014 (EHDC, 2014). Policy CP30 is relevant to the Historic Environment; it states that 'development proposals must conserve and, where possible, enhance the District's Historic Environment' (ibid).

21.2.4. GUIDANCE

- 21.2.4.1. The preliminary assessment undertaken in this chapter adheres to professional standards and guidance as set out in the following documents:
- *Standards and guidance for historic environment desk-based assessment* (Chartered Institute for Archaeologists (CiFA [Chartered Institute for Archaeologists], 2014);
 - *Standards and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment* (CiFA [Chartered Institute for Archaeologists], 2014);
 - *The setting of heritage assets. Historic Environment Good Practice Advice in Planning Note 3* (Historic England, 2017);
 - *Managing Significance and Decision-Taking in the Historic Environment Good Practice Advice in Planning Note 2* (Historic England, 2015)
 - *Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3)* (Landscape Institute and Institute of Environmental Management and Assessment, 2013); and
 - *Conservation principles, policies and guidance. Consultation Draft.* (Historic England, 2017).

21.3. SCOPING OPINION AND CONSULTATION

- 21.3.1.1. Appendix 21.1 (Consultation Responses) includes a summary of all consultation undertaken and outcome of discussions for this topic. Full details of consultation

undertaken to date is presented within the Consultation Report (document reference 5.1).

21.3.2. SCOPING OPINION

21.3.2.1. As detailed within Chapter 1 (Introduction), a Scoping Opinion was received by the Applicant from the Planning Inspectorate ('PINS') (on behalf of the SoS) on 7 December 2018. Appendix 21.1 (Consultation Responses) includes the responses to the Planning Inspectorate ('PINS') EIA Scoping Opinion. A summary of the key points is also provided below:

- The Planning Inspectorate agreed that the impacts on the setting of above ground Designated Heritage Assets along the Onshore Cable Corridor can be scoped out of the ES, along with impact to buried archaeological remains during the Operational Stage;
- East Hampshire District Council ('EHDC') commented that potential impact on Non-designated assets should be assessed and that the assessment study area should be the appropriate size to ensure that all heritage assets have been properly assessed;
- WCC response stated that the assessment stage should include further site surveys (i.e. Geophysical Survey) and trial trenching, for those areas of the Onshore Cable Corridor which lie outside the existing road network; and
- Portsmouth City Council ('PCC') had particular concern for potential development activities affected Fort Cumberland within Section 10 and recommended an appropriate level of engagement with the Hampshire County Archaeologist.

21.3.3. STATUTORY CONSULTATION

21.3.3.1. Consultation on the Preliminary Environmental Information Report ('PEIR') was undertaken between 27 February 2019 and 29 April 2019. Appendix 21.1 (Consultation Responses) includes the responses to the PEIR consultation in relation to this topic and how these have been addressed. A summary of the key points is provided below:

- Historic England ('HE') advised scoping in setting assessment at the Landfall, due to the presence of the nearby Fort Cumberland scheduled monument and also highlighted the potential for surviving remains relating to the fort surviving within areas within and adjacent to the Landfall car park.
- HE advised carrying out further geoarchaeological investigations along with Onshore Cable Corridor at Langstone Harbour. This was not considered warranted or appropriate given the nature of the proposed impact. Whilst the archaeological and geoarchaeological potential of this area is not well understood, the proposed Horizontal Directional Drilling ('HDD') cable routing will be bored at

depth within solid geology (Chalk), well beneath any alluvium and any deposits of archaeological and geoarchaeological interest.

- PCC's statutory response requested that a full archaeological survey along the final cable corridor through the city should be provided.
- Hampshire County Council's ('HCC's) response highlighted the potential for prehistoric remains in the area of relative high ground adjacent to St James' Hospital in Milton. HCC also stated that the Onshore Cable Corridor crosses the line of the former Portsmouth Canal (in Section 9) and that excavations for the cable may expose infilled remains of the canal basin, although based on the construction methodology, it was questioned whether interpretable section could be exposed and recorded.

21.3.4. POST PEIR CONSULTATION

21.3.4.1. Appendix 21.1 (Consultation Responses) includes a summary of consultation undertaken following the commencement of consultation on the PEIR in February 2019 and outcome of discussions. A brief summary of these discussions is outlined below:

- The Archaeological Officer at WCC was contacted in February 2019 (via email). The rationale and scope for Geophysical Survey was agreed and the Written Scheme of Investigation ('WSI') for this element was approved in April 2019, prior to commencement of the survey.
- The Archaeological Officer at HCC was contacted in February 2019 (via email). The HCC Archaeology and Historic Environment team provided archaeological advice to LPAs in Hampshire, including Hampshire District Council, Havant Borough Council and PCC (excluding Winchester). The rationale and scope of the Geophysical Survey was agreed and the WSI for this element was approved in April 2019.
- Discussions (via email) with HE were carried out in March 2019. The nature of the proposals within the vicinity of Fort Cumberland Scheduled Monument were discussed and it was demonstrated that no disturbance would occur within the Scheduled Monument Constraint Area. HE highlighted the potential for late 19th century rifle range structures within the vicinity, as seen on late 19th century Ordnance Survey Mapping, and the potential for other below-ground remains relating to Fort Cumberland.
- Following completion of the Geophysical Survey carried out across the Order Limits in August 2019 (Appendix 21.3 (Geophysical Survey Report)) discussions were held with the HCC County Archaeologist, on 20 August 2019. During this meeting the results of the survey were discussed along with the proposed strategy for additional surveys and mitigation. It was agreed that Stage 2 Trial Trenching

could be carried out following submission of the ES, on the proviso that the project can demonstrate a level of flexibility in terms of design (i.e. cable trench position or sequencing of construction). The HCC County Archaeologist also indicated that further work along existing modern highways is unlikely to be required, except at the more sensitive areas along the Onshore Cable Corridor (ie verges/open fields).

- Following completion of the Geophysical Survey across the The Onshore Components of the Order Limits, a meeting (via telephone) was carried out on 6 September 2019 with the Archaeologist at WCC. The results of the Geophysics were discussed along with the proposed strategy for further evaluation and mitigation. The timing of the Stage 2 Trial trenching was discussed, and it was agreed that further archaeological surveys could be carried out following DCO consent, with adequate timings in the main construction programme. It was also agreed that in some areas of the scheme, a programme of strip, map and sample may be more suitable.

21.3.5. ELEMENTS SCOPED OUT OF THE ASSESSMENT

21.3.5.1. The elements shown in Table 21.1 were not considered to give rise to likely significant effects on the Historic Environment as a result of the Proposed Development and have therefore been scoped out of this ES Chapter:

Table 21.1 – Topics and elements scoped out of the assessment at Scoping

Element Scoped Out	Justification
<p>Operational Stage effects on Designated Heritage Assets within and along the Onshore Cable Corridor.</p>	<p>Consideration of the Operational Stage of the Onshore Cable Corridor was scoped out on the basis that the cables would be below ground. Consequently, there would be no effects to the setting of Designated Heritage Assets during the Operational Stage.</p> <p>Whilst the exact location and dimensions of any associated above ground link boxes (pillars) or cabinets is yet to be determined, it is anticipated that 5-6 link boxes/cabinets will be required along the whole route and that these will be very small structures (0.8m x 0.8 m x 0.6 m) that can be either below or above ground. As such, they would not introduce substantial built form within the existing landscape and the potential impact of these is considered an insignificant effect, i.e. not enough to require setting impacts along the proposed Onshore Cable Corridor to be scoped in.</p>

Element Scoped Out	Justification
<p>Construction Stage effects on Designated Heritage Assets within and adjacent to the Onshore Cable Corridor.</p>	<p>Temporary Construction Stage effects on Designated Heritage Assets within and outside of the Order Limits have been scoped out as these are unlikely to be significant. This is based on the short duration of the works. The rate of cable trenching is assumed to be approximately 100 m per week along roads and approximately 12 weeks for HDD-2, within the vicinity of the Milton Lock Conservation Area. For HDD compounds it is assumed these would be fenced off with hoarding which would mitigate potential temporary and short-term adverse effects that might arise relating to noise, light and dust on Designated Heritage Assets.</p> <p>Whilst it is acknowledged that parts of the Order Limits lie adjacent to Designated Heritage Assets, such as listed buildings, including curtilage structures (i.e associated assets within the property extent such as boundary walls), it is assumed for the purposes of this assessment that the trenches comprising the Onshore Cable Route will be located within the existing highway in these locations, at a sufficient distance that the potential for a physical impact is unlikely.</p>
<p>Construction Stage effects on Above Ground Heritage Assets in the vicinity of the Proposed Converter Station and at the Landfall.</p>	<p>The Construction Stage effects on Designated Heritage Assets around the Converter Station Area and at the Landfall have been assessed as insignificant. This is on the basis that all assets are at a sufficient distance that the potential for noise/dust/visual impacts on these receptors are considered negligible. It is considered that the temporary construction activities would be of significantly lower magnitude and significance than the resulting permanent (the Operational Stage) effects and on this basis, are not considered further in this assessment.</p>
<p>Operational Stage impacts on the setting of Non-Designated Above-Ground Heritage Assets which are not of high or very high significance.</p>	<p>In line with proportionality set out in the overarching National Policy Statement for Energy (EN-1) such assets are not considered significant enough to warrant a separate settings assessment and have therefore been scoped out.</p>

Element Scoped Out	Justification
Operational Stage impacts on below-ground archaeological remains	<p>The Operational Stage impacts on buried archaeological remains will not be considered on the basis that there would be no further ground disturbance following completion of the Construction Stage and no additional archaeological impact.</p>
Cumulative effects in relation to below-ground archaeological remains.	<p>Cumulative effects are effects which occur where the combined effect of the Proposed Development with other proposed schemes in the vicinity, on a discrete and significant shared asset/resource, is more severe than that reported along the Onshore Cable Corridor.</p> <p>For buried heritage assets, which are buried and therefore intangible it is not feasible to quantify accurately the nature of the resource across the whole study area and beyond, which would enable the identification of a cumulative impact and potential elevated effect.</p>
Construction Stage effects on potential agricultural medieval or post-medieval buried remains of low, very low or negligible significance (e.g. field boundary ditches).	<p>The baseline assessment suggests there is background potential for such activity across the Order Limits, where not removed by subsequent modern ploughing and development. The likely Construction Stage effect on such remains has been assessed as insignificant. Where there is evidence to suggest more significant remains, e.g. earthwork remnants of ridge and furrow cultivation this will be scoped in.</p>
Construction Stage effects on isolated prehistoric flint tools (of low significance).	<p>There is the potential for isolated finds (of low significance) throughout the Order Limits and their location/presence is not possible to predict across such a large area. The presence of known chance finds has however been used in the assessment of archaeological potential within each Section.</p>
Construction Stage effects on existing Hedgerows considered ‘important’ under the hedgerow Regulations (1997).	<p>The assessment has identified one hedgerow which could possibly be considered ‘important’ under the Hedgerow regulations. This hedgerow would not be impacted by the Proposed Development; as such the potential effect is considered insignificant.</p>

21.3.6. IMPACTS SCOPED INTO THE ASSESSMENT

Construction Stage

21.3.6.1. The following impacts are considered to have the potential to give rise to likely significant effects during construction of the Proposed Development and have therefore been considered within the ES:

- Partial or complete loss to buried heritage assets (known or possible archaeological remains), if present, where ground disturbance is proposed. Such impacts may be caused by the excavation of the trenches for the Onshore Cable Route, construction activities at the proposed Landfall along with topsoil removal within the cable trench ‘working width’. Impacts associated with the removal of topsoil are also considered for the Converter Station Area, and for temporary/permanent access roads and Works Compounds and Laydown Areas. For the Converter Station, impacts on buried heritage assets associated with the proposed landscaping, earthworks, planting, and foundations are also considered.

Operational Stage

21.3.6.2. The following impacts are considered to have the potential to give rise to likely significant effects during operation of the Proposed Development and have therefore been considered within the ES:

- Permanent changes to the setting of Above Ground Designated Assets (e.g. listed buildings, conservation areas, and registered parks and gardens) within the vicinity of the Converter Station and Landfall, due to the presence of permanent above ground structures.

Decommissioning Stage

21.3.6.3. As the majority of effects on the Historic Environment would occur during construction, excavation for the removal of the Onshore Cables or dismantling the Converter Station is not anticipated to give rise to any additional effects on the Historic Environment.

21.4. ASSESSMENT METHODOLOGY

21.4.1. ESTABLISHING THE HISTORIC ENVIRONMENT BASELINE

Site Investigations

Archaeological monitoring of geotechnical investigations (2018)

21.4.1.1. Archaeological monitoring of geotechnical trial pits was carried out in April–May 2018 (A1t). These were undertaken within the Converter Station Area, near Lovedean (Sections 1 and 2). The work consisted of monitoring the excavation of 20 geotechnical test pits, and seven California Building Ratio test pits.

Geophysical Survey (2019)

- 21.4.1.2. Following submission of the PEIR, a Geophysical survey was carried out across the suitable greenfield sections of the Onshore Cable Corridor and Converter Station Area in April–August 2019 (A1e/Appendix 21.3 (Geophysical Survey Report)). The results of this survey have been incorporated in this ES and included in the detailed baseline (see Appendix 21.4 (Heritage and Archaeology Impact Tables). The aims (or purpose) of the geophysical survey, in compliance with the ClfA' Standards and guidance for archaeological geophysical survey (ClfA 2014a), were:
- To determine, as far as is reasonably possible, the nature of the detectable archaeological resource within a specified area using appropriate methods and practices; and
 - To inform either the scope and nature of any further archaeological work that may be required; or the formation of a mitigation strategy (to offset the impact of the development on the archaeological resource); or a management strategy.
- 21.4.1.3. Prior to the survey, a scoping exercise was carried out across the Onshore Cable Corridor to determine appropriate sites for the proposed magnetometer survey. This assessed illustrative 25+ Joint Bays ('JB's) positioned at 0.6–2.0 km intervals along the route along with the proposed HDD areas. It should be noted that, final number and locations of Joint Bays will not be available until a contractor has been appointed and detailed design of the Onshore Cable Route completed.
- 21.4.1.4. Site selection was determined by a number of factors. Firstly, those areas with < 1 m of made ground (as shown by geotechnical borehole or window sample records) were not considered appropriate as the likely modern intrusions and metallic contamination would prevent the identification of archaeological features. Sites on alluvium, colluvium, blown sand or peat were also scoped out, as the geophysical survey method was not considered to be appropriate to produce useful results. Archaeological features in these types of deposits would likely be deeply buried, beyond depths of 1 m, and outside the effective detecting range of the instrument.
- 21.4.1.5. A further consideration was the extent of the site. For smaller areas, or at linear locations preliminary geophysical survey was not considered appropriate. This is because unless a wide area can be covered then the identification of features can be difficult. Professional judgement has been applied in these cases, taking into account past disturbance and likely archaeological survival, and the archaeological sensitivity of the area.
- 21.4.1.6. Potential archaeological assets identified during the survey are referred to in detail within Appendix 21.2 (HEDBA) and have been assigned unique reference numbers as defined in Appendix 21.3 (Geophysical Survey Report). The location of these assets are shown on Figures 3–24 within the Geophysical Survey report.

Historic Environment Desk Based Assessment

- 21.4.1.7. A HEDBA was compiled in 2018-19 (Appendix 21.2) in order to identify known or potential heritage assets within the Order Limits and wider study area that may potentially be impacted by the Proposed Development. A broad range of sources were consulted, including documentary and cartographic sources and the results from archaeological investigations within a 500 m archaeological assessment study area centred on the Order Limits (see paragraph 21.1.2 for study area description). This information was examined to determine the likely nature, extent, preservation and significance of any known or possible heritage assets that may be present within or adjacent to the Order Limits.
- 21.4.1.8. The table below provides a summary of the key data sources.

Table 21.2 – Key Data Sources

Source	Data	Comment
HE	National Heritage List for England ('NHLE') with information on statutorily Designated Heritage Assets	Statutory designations (scheduled monuments; statutorily listed buildings; registered parks and gardens; historic battlefields) can provide a significant constraint to development.
PCC	Historic Environment Record ('HER')	Primary repository of archaeological information. Includes information from past investigations, local knowledge, find spots, and documentary and cartographic sources.
WCC	HER	
Hampshire City Council	HER	
HE	National Record of the Historic Environment ('NRHE')	National database maintained by HE. Not as comprehensive as the HER but can occasionally contain additional information. Accessible via pastscape website. This was consulted for the Order Limits and its immediate vicinity only.
HCC	Archaeological Alert Areas ('AAA's). WCC do not hold an equivalent dataset.	Areas marked out as having potential archaeological interest,

		managed by the LPA to flag potential sites.
LPA	Locally listed buildings and Conservation Areas.	Heritage asset identified by the authority which are of local importance due to their architectural and/or historic significance and make a positive contribution to the character of an area. Whilst not statutorily protected, a building's inclusion on the list means that it is a material consideration in the planning process.
British Geological Survey ('BGS')	Solid and drift geology digital map; online BGS geological borehole record data.	Subsurface deposition, including buried geology and topography, can provide an indication of potential for early human settlement, and potential depth of archaeological remains.
Landmark Information Group	Ordnance Survey maps from the 1st edition (1860–70s) to present day, and Goad fire insurance maps from the 19th century onwards	Provides a good indication of past land use and impacts which may have compromised archaeological survival. Provides an indication of the possible date of any buildings within the Order Limits. Goad maps can indicate the presence of basements if these were surveyed.
Hampshire Record Office	Historic maps (e.g. Tithe, enclosure, estate), published journals and local history	Baseline information on the Historic Environment
Web-published local history	Archaeological Data Service, British History Online	Many key documentary sources, such as the Victoria County History, and local and specialist studies are now published on the web and can be used to inform the archaeological and historical background. The Archaeological Data Service

		includes an archive of digital fieldwork reports.
AECOM	Environmental Impact Assessment Lovedean Substation	An Environmental Impact Assessment (2010) and Written Scheme of Investigation (2013) was carried out by AECOM in advance of works which took place at Lovedean substation.
WSP Environment Teams	Ecology (Historic Hedgerows and Ancient Woodland); Landscape and Visual ('ZTV'); Ground Investigation	Liaison with other teams working on the project to ensure a joined-up approach which shares information.
AQUIND Ltd	Project acquired geotechnical data	The information can be very useful in enhancing understanding of the nature and depth of natural geology (see above) and any made ground, whether it is modern or of potential archaeological interest.
	Topographical survey data	Survey data can provide an indication of the impact of past land use, e.g. ground raising or lowering, which is useful for understanding possible truncation and likely depth of archaeological remains.
Wessex Archaeology	Geophysical Survey Data and Interpretive Report (Appendix 21.3)	Geophysical Survey data is used to determine, as far as is reasonably possible, the nature of the detectable archaeological resource to inform suitable mitigation strategy for archaeological remains.
Wessex Archaeology	Marine Archaeology Technical Report	Information on the nature, extent and significance of potential archaeological features at the adjacent marine section of the route (ie seabed prehistory or maritime sites).

- 21.4.1.9. Figure 21.1 (Sheets 1-3) shows the location of known Historic Environment features within the Study Area, as identified by the sources above, visits to the Site, and during the course of research carried out for this assessment. Each feature of the Historic Environment identified has been allocated a unique 'assessment' reference number (**A1, A2**, etc.), which is listed in the gazetteer contained in Appendix 21.2 (HEBDA).
- 21.4.1.10. AAAs are not shown on Figure 21.1 (Sheets 1-3), as these are not 'designated assets'. AAAs are used to flag sites of potential archaeological potential for LPAs or developers and are not a heritage asset. As such, they are not assessed as designated assets in their own right.

Site Visits

- 21.4.1.11. Four site visits were conducted within the Order Limits:
- A site visit to the Converter Station Area (Section 1) was carried out on the 14 May 2018 to determine the topography and existing land use, identify any visible heritage assets (e.g. structures and earthworks), and assess any possible factors which may affect the survival or condition of any known or potential heritage assets. The site visit also extended 2 km beyond the Converter Station Area for the purposes of scoping Designated Heritage Assets for an assessment of their settings, where this might be affected by the proposed development (as per HE Guidance, 2017) and for the settings assessment itself.
 - A site walkover across Sections 1-3 was conducted on the 24 April 2019 prior to the Geophysical Survey to identify suitable access and to assess suitability of the survey method. The Order Limits was also visited subsequently on 29 April 2019 on commencement of the survey.
 - A site walkover at the proposed Landfall (Section 10) was carried out on the 07 August 2019 for the purposes of assessing the potential impact to Designated Heritage Assets in the vicinity of the ORS infrastructure, including Fort Cumberland Scheduled Monument.
- 21.4.1.12. Site walkovers have not been carried out for the majority of the Onshore Cable Corridor where the route crosses brownfield/developed land (i.e. along pavements/roads/hardstanding).

21.4.2. ASSESSING HERITAGE SIGNIFICANCE

- 21.4.2.1. The Overarching National Policy Statement for Energy (EN-1) defines significance as 'The sum of the heritage interests that a heritage asset holds'. That interest may be historic, archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting.'
- 21.4.2.2. The determination of the significance is based on statutory designation and/or professional judgement against the below values, identified in HE's *Conservation Principles* (revised consultation draft Nov 2017):

- **Historic Interest:** the ways in which the asset can illustrate the story of past events, people and aspects of life (illustrative value, or interest). It can be said to hold communal value when associated with the identity of a community. Historical interest considers whether the asset is the first, only, or best surviving example of an innovation of consequence, whether related to design, artistry, technology or social organisation. It also considers an asset's integrity (completeness), current use/original purpose, significance in place making, associative value with a notable person, event, or movement.
- **Archaeological Interest:** the potential of the physical remains of an asset to yield evidence of past human activity that could be revealed through future archaeological investigation. This includes above-ground structures and landscapes, earthworks and buried or submerged remains, palaeoenvironmental deposits, and considers date, rarity, state of preservation, diversity/complexity, contribution to published priorities (research value), supporting documentation, collective value and comparative potential, and sensitivity to change.
- **Architectural and Artistic Interest:** derive from a contemporary appreciation of an asset's aesthetics. Architectural interest can include the design, construction, craftsmanship and decoration of buildings and structures. Artistic interest can include the use, representation or influence of historic places or buildings in artwork. It can also include the skill and emotional impact of works of art that are part of heritage assets or assets in their own right.

21.4.2.3. These values encompass the criteria that HE are obliged to consider when statutorily designating heritage assets. Each asset is evaluated against the range of criteria listed above on a case by case basis. Unless the nature and exact extent of buried archaeological remains within any given area has been determined through prior investigation, significance is often uncertain. Where the potential for remains is low or uncertain the, the level of significance has not been attributed, as there is limited information to make an accurate prediction.

21.4.2.4. In relation to Designated Heritage Assets, the assessment considers the contribution which the historic character and setting makes to the overall significance of the asset.

21.4.2.5. For Heritage Assets, the established terminology as defined by HE's Conservation Principles (Historic England, 2017) has been used (i.e. 'significance'), which is equivalent to sensitivity in EIA terms. The table below provides a guide to how heritage significance has been assigned.

Table 21.3 – Criteria for Significance of Heritage Assets

Heritage Asset Description	Heritage Significance
World Heritage Sites Scheduled Monuments Grade I and II* listed buildings Grade I and II* listed registered parks and gardens Designated historic battlefields Protected Wrecks Non-Designated Heritage Assets of high national importance	Very High
Grade II listed buildings Grade II registered parks and gardens Conservation areas Burial Grounds Protected heritage landscapes (e.g. ancient woodland or historic hedgerows) Non-Designated Heritage Assets of lower national, regional or county importance	High
Heritage assets with a district value or interest for education or cultural appreciation Locally Listed buildings	Medium
Non-Designated Heritage Assets with a local (i.e. parish) value or interest for education or cultural appreciation	Low
Item with no significant value or interest	Negligible
Heritage assets that have a clear potential, but for which current knowledge is insufficient to allow significance to be determined	Uncertain

The Setting of Designated Heritage Assets

- 21.4.2.6. In relation to heritage assets, the assessment considers the contribution that setting makes to the overall significance of the asset.
- 21.4.2.7. Setting is the way in which the asset is understood (i.e. evidential and historical values) and experienced (aesthetic and communal values). It is not an asset in itself. It differs from curtilage (historic/present property boundary); context (association with other assets irrespective of distance) and historic character (sum of all historic attributes, including setting, associations, and visual aspects).

21.4.2.8. Guidance produced by HE (Historic England, 2017) and the Landscape Institute and Institute of Environmental Management and Assessment (2013) has been used to adopt a stepped approach for settings assessment. The former sets out five steps:

- Step 1: asset identification. The NPPF requires an approach that is proportional to the significance of the asset, and for this reason only the settings of the most sensitive (i.e. designated) heritage assets are considered in this assessment. A scoping exercise filters out those assets which would be unaffected, typically where there are no views to/from the Order Limits;
- Step 2: assess the contribution of setting. This stage assesses how setting contributes to the overall significance of a designated asset;
- Step 3: assess change. This stage identifies the effects the proposals may have on setting and considers the resultant harm or benefit to the significance of the heritage asset. It is noted however that it can be difficult to quantify such change to the overall significance of a Designated Heritage Asset (for example, significance would rarely be downgraded from 'high' to 'medium' due to changes in setting). For this reason, the impact is reported in this assessment in terms of the extent to which the proposals would change how the asset is understood and experienced (in terms of no harm, less than substantial harm, substantial harm or total loss of significance);
- Step 4: mitigation. This explores the way to maximise enhancement and avoid or minimise harm. This is typically considered at the design stage (i.e. embedded design mitigation); and
- Step 5: reporting. Making and documenting decisions and outcomes. This reports the assessment of effects.

21.4.2.9. The assessment has taken into account the physical surroundings of the asset, including topography and intervening development and vegetation. It also considers how the asset is currently experienced and understood through its setting, in particular views to and from the asset and the Order Limits, along with key views, and the extent to which setting may have already been compromised.

Significance Criteria

21.4.2.10. In determining the significance of a potential effect, the magnitude of impact arising from the Proposed Development is correlated with the sensitivity of the particular environmental attribute or process under consideration.

Magnitude of change

21.4.2.11. The magnitude relates to the level at which the receptor will be impacted, using the duration of the impact, timing, scale, size and frequency to determine the magnitude of the impact to each receptor. Determination of magnitude of change upon known or potential heritage assets is based on the deviation from baseline conditions (e.g.

physical activity that would entail ground disturbance, ground reduction, etcetera, or the permanent presence of new structures etcetera. that result in changes to historic character and setting). The criteria for magnitude of change are set out in the table below.

Table 21.4 – Criteria for Magnitude of Change

Magnitude of change	Description of change
Large	Change to asset significance resulting in a fundamental change in our ability to understand and appreciate the resource and its historical context, character and setting. The transformation of an asset’s setting in a way that fundamentally compromises or enhances its ability to be understood or appreciated. The scale of change would be such that it could result in a designated asset being undesignated or having its level of designation lowered or raised.
Medium	Change to asset significance resulting in an appreciable change in our ability to understand and appreciate the asset and its historical context, character and setting. Notable alterations to the setting of an asset that affect our appreciation of it and its significance; or the unrecorded loss of archaeological interest.
Small	Change to asset significance resulting in a small change in our ability to understand and appreciate the asset and its historical context, character and setting.
Negligible	Negligible change or no material change to asset significance. No real change in our ability to understand and appreciate the asset and its historical context, character and setting.
Uncertain	Level of survival/condition of resource in specific locations is not known: magnitude of change is therefore not known.

Significance of environmental effects

- 21.4.2.12. The assessment of likely significant environmental effects as a result of the Proposed Development has been taken into account both the Construction and Operational Stages. The construction stage includes enabling works, earthworks and other construction activities. As stated above, decommissioning is not anticipated to give rise to any additional effects on the Historic Environment.
- 21.4.2.13. The significance level attributed to each effect has been assessed based on the magnitude of change due to the Proposed Development and the heritage significance of the affected receptor.

- 21.4.2.14. The matrix used to determine the significance of environmental effects within this Chapter is outlined in Table 21.5. Effects may be either adverse or positive and are defined initially without additional mitigation measures. Whilst the matrix was originally derived from the Design Manual for Roads and Bridges ('DMRB') assessment table produced in 1993, it has been modified to allow a greater scope for professional judgement and is a guide only, so that the process is transparent, and the rationale for the effect scores is provided in the relevant sections. Where the resulting effect comprises two levels (i.e. 'moderate or minor'), professional judgement has been applied to select the most appropriate significance of effect.
- 21.4.2.15. Where information is insufficient to be able to quantify either the resource significance or magnitude of change with any degree of certainty, the effect is given as 'uncertain'.

Table 21.5 – Significance of Environmental Effects Matrix

Magnitude of change	Heritage Assets (receptor) Heritage Significance					
	Very High	High	Medium	Low	Negligible	Uncertain
Large	Major	Major	Major or Moderate	Moderate or Minor	Negligible	Uncertain
Medium	Major or Moderate	Moderate	Moderate or Minor	Minor	Negligible	Uncertain
Small	Moderate or Minor	Moderate or Minor	Minor	Minor	Negligible	Uncertain
Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Uncertain

- 21.4.2.16. The following terms have been used to define the significance of the effects identified:
- **Major** effect: where the Proposed Development could be expected to have a considerable effect (either positive or adverse) on heritage assets (receptors). For the Historic Environment, in terms of the EN-1, this equates to substantial harm to, or loss of, significance of an asset of very high, high or medium heritage significance, as a result of changes to its physical form or setting;
 - **Moderate** effect: where the Proposed Development could be expected to have a noticeable effect (either positive or adverse) on heritage assets (receptors). For the Historic Environment this equates to less than substantial harm to the significance of an asset of very high, high, medium or low heritage significance, as a result of changes to its physical form or setting;
 - **Minor** effect: where the Proposed Development could be expected to result in a small, barely noticeable effect (either positive or adverse) on heritage assets (receptors). For the Historic Environment this equates to limited harm to the

significance of an asset of very high, high or medium heritage significance, as a result of changes to its physical form or setting, or substantial harm to, or the loss of, significance of an asset of low heritage significance; and

- **Negligible:** where no discernible effect is expected as a result of the Proposed Development on heritage assets (receptors).

21.4.2.17. In EIA terms, a moderate or major effect is considered ‘significant’.

21.4.2.18. Rather than apply the test of the NPS when considering the impact of the Proposed Development on designated assets, the language used in the NPS (i.e. harmful impact or substantial harm) has been correlated with the standard EIA methodology. A major effect equates to ‘substantial harm’ or ‘total loss of significance’. Whether they do so shall be determined by a qualitative analysis of the specific impact to the environment and will be based on professional judgement. If/where this is the case, the basis for any judgement will be outlined.

21.4.2.19. An appropriate mitigation strategy would aim to offset or reduce any adverse effect. Measures to mitigate effects would normally consist of design adjustments, to allow significant resources to be protected and retained (preservation in situ) or, where this is not feasible, investigation and recording in advance of development (e.g. targeted archaeological excavation) and during development for remains of lesser significance (e.g. archaeological watching brief), with dissemination at an appropriate level (preservation by record).

21.4.2.20. As Heritage Assets are an irreplaceable resource it is generally considered as standard practice within the planning system to implement mitigation measures in order to reduce or offset any level of adverse effect on a heritage asset where the proposed change would physically alter or remove the asset, including minor adverse. This is to ensure that finite and irreplaceable remains are not removed/lost without record. The level of mitigation proposed is, in each case, proportionate to the significance of the asset being affected.

21.4.3. ASSUMPTIONS AND LIMITATIONS

21.4.3.1. Data from the HER comprises secondary information derived from varied sources. It is assumed that this data, as well as that derived from other secondary sources, is reasonably accurate. HER data provides an initial indication of assets present rather than a definitive list of all potential archaeological assets. The full extent of a buried heritage resource cannot be known prior to site-specific intrusive instigation. Due to these limitations, it is possible that previously unrecorded archaeological assets will have survived within the Order Limits not yet identified by the HER.

21.4.3.2. Due to the buried and invisible nature of below-ground archaeological remains, there is an element of uncertainty regarding the survival, condition, nature and extent of the known assets identified within the Order Limits. This will be addressed by further site-based archaeological investigation where appropriate, post consent.

- 21.4.3.3. It should be noted however that the absence of features noted in geophysical survey (i.e. negative results) does not necessarily mean the absence of archaeological remains. The effectiveness of geophysical survey in identifying possible archaeological features can depend on a variety of factors such as geology, interference from nearby services, and also the nature of the archaeological remains.
- 21.4.3.4. Access to all the designated assets within the 2 km setting study area was not possible during the site walkover, especially where these are located on private land. In these cases, professional judgement has been applied and where available Google Streetview mapping has been used to assess baseline setting and the environmental effect of the Proposed Development. For example, for Scotland (Cottage) (Gazetteer Ref A117) the surveyors assessed possible views of the Proposed Development from the closest possible point which was approximately 800 m to the west.
- 21.4.3.5. Notwithstanding the limitations, the methodology is robust, utilising available information, and conforming to the requirements of local and national guidance and planning policy.

21.5. BASELINE HISTORIC ENVIRONMENT

- 21.5.1.1. The Baseline Historic Environment thematic overview (including topography and geology) is contained within Appendix 21.2 (HEBDA), along with the Historic Environment Gazetteer (which lists the detailed descriptions of all Historic Environment features referred to within this Chapter A1, A2 etc.).
- 21.5.1.2. In the HEBDA (Appendix 21.2), the Sections have been divided into three broad groups, which equate with the northern end of the Order Limits and the Converter Station Area, the main Onshore Cable Corridor, and the Onshore Cable Corridor and Landfall at Eastney, for the purposes of providing a broad archaeological and historical background narrative. This includes mention of any past archaeological investigations that have been carried out. The grouping is as follows:
- **Section 1** – Lovedean (Converter Station Area) at the northern end of the Order Limits;
 - **Sections 2–9** – the majority of the Onshore Cable Corridor from Anmore to Bransbury Road, Eastney; and
 - **Section 10** – the Onshore Cable Corridor and Landfall at Eastney, at the southern end of the Order Limits.
- 21.5.1.3. This Chapter is also supported by a number of historic maps; which include the Ordnance Survey 1": mile map of 1810 (Figure 8, Appendix 21.2 (HEBDA)) and Ordnance Survey 1st edition 6": mile maps of 1867–75 (Figures 10a-e, Appendix 21.2 (HEBDA)). These provide a general historical overview of the study area and

the main areas of settlement, and an indication of historical land use and past impact which may have affected archaeological survival.

- 21.5.1.4. A summary of the Baseline Historic Environment for each Section of the Onshore Cable Corridor is given below. This includes above ground heritage assets (comprising designated heritage assets within the Order limits, selected designated above-ground heritage assets outside the order limits (for sections 1 and 10 only), and non-designated heritage assets) and the archaeological potential for below ground heritage assets. A summary of the previous investigations is provided per Section, as this information has informed the potential for Below Ground Heritage Assets.
- 21.5.1.5. Since it is currently assumed that the Onshore Cable Corridor is entirely below-ground, only those above ground designated assets within the vicinity of the Converter Station Area (Section 1) and the Landfall (Section 10) have been assessed. The impact on the setting of above-ground heritage assets has been scoped out for Sections 2 – 9 (see 21.3.5 for further explanation).

21.5.2. SECTION 1 – LOVEDEAN (CONVERTER STATION AREA)

Past investigations

- 21.5.2.1. There have been four previous investigations the Converter Station Area. These comprise:
- Geophysical Magnetometry Survey (Appendix 21.3), conducted in 2019 across rural areas within Section 1-3 and selected sites within Section 4-7 (A1e);
 - Archaeological Monitoring of Geotechnical Investigations (AOC, 2018) (A1t);
 - Archaeological strip, map and sample and watching brief to the west of Lovedean substation in 2014 (A1d); and
- 21.5.2.2. Adjacent to the north-east an evaluation was carried out in the area of the proposed battery storage in 2018, comprising 7 x 1.8 m by 30 m trenches, of which a single trench was dug within the Order Limits (A147).

Designated Heritage Assets

- 21.5.2.3. This Section does not contain any Designated Heritage Assets such as scheduled monuments, listed buildings or conservation areas. There are several listed buildings assets within the vicinity which have been scoped in for setting assessment and are considered below (see Figure 3, Appendix 21.2 (HEBDA)).
- 21.5.2.4. Although not formally recognised, the baseline assessment has identified a hedgerow that could possibly be considered ‘important’ under the Hedgerow Regulations (1997). The north-south hedgerow is located in the north-eastern part of the Order Limits north of the existing Lovedean Substation and marks the historic parish boundary between Catherington and Hambledon. Appendix 16.2 (Phase 1 Habitat

Survey Report) notes that the hedgerow is classified as species-rich (with more than 7 species). According to the Hedgerow Regulations any such boundaries which were in existence from at least 1850 and which are more than 30 years old are considered 'important' and would be of **High** heritage significance.

- 21.5.2.5. The detailed baseline setting of the assets scoped in for settings assessment is contained in the HEDBA (Appendix 21.2). Related assets in close proximity have been grouped together for the purpose of this assessment. A list of assets which have been scoped out following Step 1 of the settings guidance can be seen in Table 4 of Appendix 21.2 (HEBDA).

Selected Designated Above-Ground Heritage Assets outside the Order Limits

Rockwood and Granary

- 21.5.2.6. The pair of buildings at Rookwood include Rookwood (listed Grade II*) (A87) and Granary 5 m west of Rookwood (listed Grade II) (A125). They are situated approximately 1.8 km to the west of the proposed Converter Station.
- 21.5.2.7. Rookwood is a Norman hall dated to approximately 1200 with later extensions from the medieval period and the 16th, 19th and 20th centuries. It is described by HE as a 'first-floor hall', and is a rare surviving building type. Originally the main living space would have been on the first-floor and would have been reached via an external staircase. The ground floor would have been used for storage.
- 21.5.2.8. The Granary at Rookwood dates to the 17th century and is of timber frame construction with a thatched roof.
- 21.5.2.9. The setting of Rookwood and The Granary contributes to their heritage significance. As a pair, they form a strong historic group and their relationship to each other is an important factor in their setting. Furthermore, the assets are still based in a rural agricultural landscape, prominent in views out from the assets towards the south, which also contributes to their significance.
- 21.5.2.10. Rookwood is an asset of **very high** significance, derived from its historical and architectural interest. The Granary at Rookwood is an asset of **high** significance, derived from its historical and architectural interest. Their Setting makes a high contribution to their significance, derived from their value as a pair of associated assets and views of the surrounding agricultural landscape.

Ludmore Cottages

- 21.5.2.11. Ludmore Cottages (A129), 970 m to the north east of the proposed Converter Station is Grade II listed and dates to the late 17th century. It was originally one dwelling which was split into two cottages in the late-20th century. It is likely to be of timber-frame construction with a later brick façade.
- 21.5.2.12. Ludmore Cottages was originally a farmhouse which is still located in a historic agricultural landscape. This contributes to its significance as a heritage asset and it helps understand its historic context.

21.5.2.13. Ludmore Cottages is an asset of **high** significance, derived from its historic and architectural interest. Its setting makes a high contribution to its significance, retained in its views of the historic agricultural landscape.

Barn Cottage

21.5.2.14. Barn Cottage (A102) is listed as Grade II and is located 1.2 km to the south of the proposed Converter Station. It is a 16th century barn constructed of timber frame and brick infill with some early 19th century weatherboarding, 20th century west extension and a hipped thatched roof. The brick walls are of Flemish bond with part exposure of the frame.

21.5.2.15. Originally a barn, the asset is still located in a historic agricultural landscape and has significant views of the surrounding fields. Primary views are to the north, east and south. Those to the west are screened by vegetation in the form of hedges along Edney's Lane.

21.5.2.16. Barn Cottage is an asset of **high** significance, derived from its historic and architectural interest. Its setting makes a high contribution to its significance, retained in its views of the surrounding landscape.

Denmead Farm

21.5.2.17. This group of assets which are located 890 m to the south-west of the proposed Converter Station and include Denmead Farmhouse (Grade II) (A109), the Granary (Grade II) (A109) and the Cottage at Denmead Farm (Locally Listed).

21.5.2.18. Denmead Farmhouse dates to the 18th century and is constructed of brick with flint and brick dressings. The Granary is located 20 m west of the main farmhouse. Dating from the early-19th century, it is constructed from timber frame with weatherboarding and a corrugated iron roof. The Cottage at Denmead Farm was originally a malt house of an unknown date.

21.5.2.19. Denmead Farmhouse and the Granary at Denmead Farm are assets of **high** significance, derived from their historic and architectural interest. The Cottage at Denmead farm is an asset of **medium** significance, derived from its historic and architectural interest. Their setting makes a high contribution to their significance, retained in their value as a group of associated farm buildings and in views of the surrounding agricultural landscape.

Little Denmead Farm & Bleak Cottage

21.5.2.20. This group of assets includes the Farmhouse at Little Denmead (Grade II) (A101), the Barn at Little Denmead (Grade II) (A101) and Bleak Cottage (Grade II) (A93). These assets are located approximately 1.1 km to the south-west of the proposed Converter Station.

21.5.2.21. Little Denmead Farmhouse is dated to the mid-17th century and is built of flint with red brick dressings and has a half hipped thatched roof. The Barn at Little Denmead dates to the 18th century. It is constructed of timber-frame with weatherboarding and a corrugated iron roof.

- 21.5.2.22. Located adjacent to Little Denmead Farmhouse to the south, Bleak Cottage is a 16th century timber frame farmhouse with 20th century renovations. The walls are of exposed timber framing with painted brick infill and it has a half hipped tiled roof.
- 21.5.2.23. This group of assets is situated in a rural agricultural landscape which is reflective of their historic farming associations. Views of this landscape contribute to the setting of the farm houses and associated ancillary buildings. Furthermore, their value as a group also contributes to setting, especially the relationship between the Farmhouse at Little Denmead and the Barn at Little Denmead as surviving assets belonging to the same historic farm.
- 21.5.2.24. These assets are of **high** significance, derived from their historic and architectural interest. Their setting makes a high contribution to their significance through their views of the surrounding agricultural landscape and value as a group.
- Stoneacre**
- 21.5.2.25. Stoneacre (A120) is a Grade II listed building dated to approximately 1450 and is located 1.2 km to the south-west of the proposed Converter Station. Originally a hall house, it is constructed of timber frame with a half hipped thatched roof. Historic England describes the building as a rare and an exemplary example of a medieval hall house which retains many original features.
- 21.5.2.26. Stoneacre has many views onto the surrounding agricultural landscape which is its historic setting. Once a farmhouse, these views contribute to the asset's significance as they increase historic understanding.
- 21.5.2.27. Stoneacre is an asset of **high** significance, derived from its historic and architectural interest. Its setting makes a high contribution to its significance through the views of the agricultural landscape which retain the asset's historic context.
- Scotland (Cottage)**
- 21.5.2.28. Scotland (Cottage) (A117) is a Grade II listed early-16th century timber framed hall with 18th century re-facing and a 20th century rear wing. It was later used as a farmhouse. It is located approximately 2 km to the north of the proposed Converter Station.
- 21.5.2.29. Scotland (Cottage) is still located within a rural agricultural landscape and is situated in an isolated position some distance from other properties. Its setting contributes to its significance through wide ranging views of the surrounding fields.
- 21.5.2.30. Scotland (Cottage) is an asset of **high** significance, derived from its historic and architectural interest. Its setting makes a high contribution to its significance as the historic agricultural landscape has largely been retained.
- Hinton Manor House**
- 21.5.2.31. Hinton Manor House (A141) is Grade II listed. It is an early-17th century Jacobean E-plan house with 19th and 20th century additions, situated approximately 2.3 km to the north-east of the proposed Converter Station. The house is constructed from chalkstone and faced with flints. It has a tile roof with a Victorian Tudor stack and

Victorian porch. Once a manor house, Hinton was later used as a farmhouse and remains in an isolated position enclosed within farmland.

21.5.2.32. Its views onto the surrounding farmland form its main setting and contribute to its significance.

21.5.2.33. Hinton Manor House is an asset of **high** significance, derived from its historic and architectural interest. Its setting makes a high contribution to its significance through its views of the surrounding farmland.

Catherington Conservation Area

21.5.2.34. Catherington Conservation Area (A159) was designated by EHDC in 2003. The conservation area is located 2.1 km to the east of the proposed Converter Station. The small village is situated on the top of a hill which developed over time into a linear development running parallel to the A3. It contains several listed buildings, including All Saints Church (listed at Grade II*) and several cottages and farm buildings associated with the agricultural past of the asset.

21.5.2.35. The position of the village on higher ground means that it has long views out of the surrounding countryside, of which small glimpses can be seen from the main street through the gaps between buildings contained within it. This backdrop of agricultural views contributes to the significance of the area as it frames the rural position and historic agricultural context of the asset. The buildings of the village are spread along Catherington Lane and views of this sporadic settlement along the road also contribute to the significance of the conservation area.

21.5.2.36. Catherington Conservation Area is an asset of **high** significance, derived from its historic and architectural interest. Its setting makes a high contribution to its significance through its extensive views of the surrounding countryside and through the visual and historic relationships of the designated heritage assets in the village to each other.

Known Non-Designated Heritage Assets

21.5.2.37. Probable archaeological features identified through the recent magnetometer survey across Section 1 include a network of linear anomalies within the area of the Proposed Converter Station. These are thought to represent former field boundaries or enclosures, possibly dating to the later prehistoric period. Elsewhere two chalk pits were identified, most likely representing 19th century chalk pits as seen on the Ordnance Survey historical mapping and therefore of low or negligible heritage significance.

21.5.2.38. An archaeological strip, map and sample excavation was carried out on land to the west of Lovedean substation in 2014 (within the Order Limits). Two areas were stripped and excavated during the digging of a water-pipe trench revealing two Bronze Age cremation pits, two truncated pits (one containing a Bronze Age urn) (A1d). A 4 m long linear feature was also identified which contained two flint flakes

and a single ditch or pit was seen at the north of the area with Middle to Late Bronze Age, Late Prehistoric and Romano-British pottery. These features were mitigated through a programme of archaeological excavation and as such are no longer present on the Site but their presence suggest the area has a high potential for further associated Below Ground Heritage Assets (especially for the prehistoric period).

Archaeological survival/potential/significance (Below Ground Heritage Assets)

- 21.5.2.39. A detailed description of factors affecting archaeological survival can be found in Appendix 21.2 (HEBDA). Generally, archaeological survival is anticipated to be high within this Section as the majority of the land has remained undeveloped in what is currently agricultural land. In the footprint the existing Lovedean Substation, archaeological survival is anticipated to be low, however, and within the former 19th century quarry pits within the southern part of this Section survival is considered negligible. In addition, modern cultivation may have caused shallow truncation of archaeological remains, to a depth of 0.5 meters below ground level (MBGL), as observed during investigation west of Lovedean Substation (A1d), where it was noted the state of preservation was generally poor.
- 21.5.2.40. This archaeological potential for each chronological period is outlined below. This is based on the archaeological and historical background of the area, its geology, topography and hydrology and the likelihood for evidence of past activity, taking into account past disturbance which may have affected survival.
- The potential for palaeoenvironmental remains is considered low. There are no significant watercourses suggesting the presence of alluvium, which could hold possible palaeoenvironmental information.
 - Section 1 has a high potential to contain prehistoric remains. Within the study area, recent excavation to the west of the Lovedean substation revealed evidence of Middle Bronze Age funerary activity, and a later prehistoric or Romano-British ditch or pit feature (A1d). Geophysical investigation within the Order Limits has revealed potential boundary ditches thought to relate to a possible later prehistoric enclosure along with a number of possible refuse pits throughout the area, which could potentially be prehistoric. If present, such remains would be of **Medium** or **High** significance, depending on preservation and extent of the remains, derived from archaeological interest.
 - Section 1 has a moderate to high potential to contain Roman remains. Although located at a distance from the known Roman settlements, the archaeological strip map and sample investigation within the Converter Station Area, to the west of the current substation at Lovedean (A1d), revealed evidence of a later prehistoric or Romano-British ditch or pit feature, which contained pottery from these periods within its primary fill. If present, such remains would be of **Medium** significance

(potentially **High** for evidence of Roman settlement), depending on preservation and extent, derived from archaeological interest.

- Section 1 has an uncertain, but probably low potential for early medieval remains. Whilst the nature of settlement during the early medieval period is not well understood, there are no known finds or features recorded within the assessment study area, and the survival of such is rare as the pottery is friable and the features often ephemeral.
- Section 1 has a moderate to high potential to contain later medieval or post-medieval agricultural remains. A field system thought likely to be of medieval or later origin (A146) is visible as cropmarks on aerial photography within this Section. Later medieval/post-medieval remains are likely to be restricted to landscape features such as field boundaries and drainage ditches or buried evidence of ridge and furrow cultivation (earthwork features produced as a result of historic agricultural activity), as identified throughout this Section by the Geophysical Survey. If present, remains would be of **Low** significance, possibly **Medium** if extensive and well-preserved sections of Later Medieval ridge and furrow cultivation are present (as suggested by the cropmarks), derived from archaeological and historical interest.

21.5.3. SECTION 2 – ANMORE

Past investigations

- 21.5.3.1. There has been one past investigation within this Section, consisting of the Geophysical Magnetometry Survey carried out in 2019 (Appendix 21.3). Throughout Section 2 the survey identified few definite archaeological remains. Although the results suggest limited activity across the area, due to the lack of intrusive investigation carried out, the nature of archaeological activity is not well understood

Designated Heritage Assets

- 21.5.3.2. This Section contains one designated asset, the Grade II listed Shafter Farm Barn (A1a). There are also four designated assets within 200 m of the Order Limits to the west; these include the Grade II listed mid-19th century Denmead Farmhouse with its associated barn and granary (A109), Barn Cottage (A102), a Grade II listed 16th century cottage and The Lower Gardens, a Grade II listed house dated to the 16th or 17th century (A26). There are no conservation areas within this Section.
- 21.5.3.3. The baseline assessment has not identified any known ‘important’ Historic Hedgerows within this Section as they do not meet any of the criteria listed under the regulations. Whilst there is a low potential that some of the existing hedgerows could relate to pre-enclosure boundaries, mapping evidence was not available for this area to substantiate this. In all likelihood those existing now relate to formal enclosure in the mid 19th century and would not be considered historically significant.

Known Non-Designated Heritage Assets

- 21.5.3.4. The geophysical survey identified 13 potential pits, consisting of positive anomalies generally 5 m in diameter. It is possible such features comprise refuse pits and could date to the prehistoric period. However, such features could represent post-medieval quarrying activity or alternatively could be of natural origin.
- 21.5.3.5. This Section contains three unlisted buildings of heritage interest recorded on the Winchester HER, of which one lies within the Order Limits the Homestead on Anmore Road (A1b).

Archaeological survival/potential/significance (Below Ground Heritage Assets)

- 21.5.3.6. Archaeological survival is anticipated to be high throughout this Section, as it has remained undeveloped and currently lies within agricultural fields. Modern cultivation may have caused shallow truncation of archaeological remains, to a depth of 0.5 MBGL. The archaeological potential for this Section for each chronological period is outlined below:
- The potential for palaeoenvironmental remains is considered low in this Section. Alluvium associated with any minor watercourses may contain such remains, however, as the Section lies away from known wetland areas (where peat deposits can survive) and not on any raised beach deposits (which can contain palaeoenvironmental evidence), the potential is low.
 - Section 2 has a moderate to high potential to contain prehistoric remains. Whilst there are no known prehistoric remains within this Section, chance finds in the surrounding area, and the Bronze Age remains found further north, suggest possible background activity. Geophysical survey within this Section has also identified 13 potential pits, which could potentially date to the prehistoric period and therefore be indicative of activity during this period. The significance of these features would depend on their nature and extent, but are potentially **Medium** or **High**, based on the archaeological interest of the finds.
 - Section 2 has uncertain but possibly low to moderate potential to contain Roman remains. Whilst there are no known Roman remains within this Section, this may simply reflect the relative lack of past archaeological investigation. If present, such remains would be of **Medium** or **High** significance, depending on preservation and extent, from derived from archaeological interest.
 - Section 2 has an uncertain but probably low potential for early medieval remains. Whilst the nature of settlement during the early medieval period is not well understood, there are no known finds or features recorded within the assessment study area, and the survival of such is rare as the pottery is friable and the features often ephemeral.

- Section 2 has a moderate potential to contain later medieval or post-medieval agricultural remains. Mapping evidence shows this section of the Order Limits as lying in agricultural fields. As such the potential remains from the later medieval or post-medieval period are likely to be limited to landscape features such as field boundaries and drainage ditches, as seen in the Geophysical Survey results. If present, such remains would be of **Low** significance, derived from archaeological and historical interest.

21.5.4. SECTION 3 – DENMEAD/KINGS POND MEADOW

Past investigations

- 21.5.4.1. There has been one past investigation within this Section, consisting of the Geophysical Magnetometry Survey carried out in 2019 (Appendix 21.3). This was undertaken across Kings Pond Meadows and a field south of Hambledon Road. Throughout this Section the survey produced some positive anomalies (representing possible archaeology), but overall few definitive archaeological assets. Although the results suggest limited activity across the area, due to the lack of intrusive investigation carried out, the nature of archaeological activity is not well understood.

Designated Heritage Assets

- 21.5.4.2. This Section does not contain any Designated Heritage Assets, including conservation areas. The closest designated asset is the Grade II listed Shafter Farm Barn, probably dating to the 17th century (A1a), which lies 50 m to the north east, within Section 2.

- 21.5.4.3. The baseline assessment has not identified any known ‘important’ Historic Hedgerows within this Section as they do not meet any of the criteria listed under the regulations. Whilst there is a low potential that some of the existing hedgerows could relate to pre-enclosure boundaries, mapping evidence was not available for this area to substantiate this. In all likelihood those existing now relate to formal enclosure in the mid 19th century and would not be considered historically significant.

Known Non-Designated Heritage Assets

- 21.5.4.4. This Section contains a post-medieval milestone (A1I), to the south-east of the B2150. There are no other known Non-Designated Heritage Assets within the Order Limits in this section. Within a 500 m radius, there are eight Non-Designated historic buildings, as recorded on the Winchester HER, of low significance.

Archaeological survival/potential/significance (Below Ground Heritage Assets)

21.5.4.5.

Archaeological survival is predicted to be high within this Section. There has been no historic building development within the Order Limits and the land has remained in agricultural use. The archaeological potential for this Section for each chronological period is outlined below:

- The potential for palaeoenvironmental remains is considered generally low in this Section. Alluvium associated with any minor watercourses may contain such remains, however, as the Section lies away from known wetland areas (where peat deposits can survive) and away from any raised beach deposits (which can contain palaeoenvironmental evidence), the potential is low.
- Section 3 has a moderate potential to contain prehistoric remains. Whilst there are no known prehistoric find or features recorded, the recent Geophysical survey identified some potential remains, including a weak curvilinear anomaly, which could represent an early, possibly prehistoric, boundary feature. This together with chance finds in the surrounding area, including the Bronze Age remains found further north, suggest possible background activity during this period. If present, such remains would be of **Medium** or **High** significance, depending on preservation and extent, from derived from archaeological interest.
- Section 3 has uncertain but possibly low to moderate potential to contain Roman remains. Whilst there are no known Roman remains within this Section, this may simply reflect the relative lack of past archaeological investigation. If present, such remains would be of **Medium** or **High** significance, depending on preservation and extent, from derived from archaeological interest.
- Section 3 has an uncertain, but probably low potential for early medieval remains. Whilst the nature of settlement during the early medieval period is not well understood, there are no known finds or features recording within the assessment study area, and the survival of such is rare as the pottery is friable and the features often ephemeral.
- Section 3 has a moderate potential to contain later medieval or post-medieval agricultural remains. Mapping evidence shows this section of the Order Limits as lying in agricultural fields. As such the potential remains from the later medieval or post-medieval period are likely to be limited to landscape features such as field boundaries and drainage ditches, as seen in the Geophysical Survey results. If present, such remains would be of **Low** significance, derived from archaeological and historical interest.

21.5.5. SECTION 4 – HAMBLEDON ROAD TO FARLINGTON AVENUE

Past Investigations

- 21.5.5.1. There have been four past investigations within this Section.
- 21.5.5.2. An archaeological evaluation was carried out close to The George Inn, Portsdown in 1966/67 revealing evidence of a small Iron Age occupation site. Two Anglo-Saxon inhumation burials and two parallel ditches were found, which potentially form the edge of an Anglo-Saxon cemetery located further to the west. The recent Geophysical Survey (Appendix 21.3) targeted a car park area to the east of this location due to the sensitivity of the area, however surrounding magnetic disturbance limited the effectiveness of the method and the survey produced limited results.
- 21.5.5.3. A small part of the Order Limits has previously been covered by a wider geophysical survey, carried out in 2005 in Waterlooville (A1g) and also by an evaluation carried out at Old Park Farm (A1f). These investigations mainly occurred in open land to the east of the Order Limits, with only small two small verges intersecting these areas. Features identified by the geophysical survey included enclosure ditches, ridge and furrow marks and a possible boundary ditch. At Old Park farm, the trial trench evaluation found six Romano British ditches along with undated ditches/postholes/pits, recorded at a distance from Hambledon Road with none of the trenches excavated lying within the Order Limits.

Designated Heritage Assets

- 21.5.5.4. This Section intersects the very southern south-eastern edge of The St Johns Conservation Area (A156), which is adjacent to the west of the Order Limits to the east of London Road, Purbrook. The Conservation Area is centred on the early 19th century Parish Church of St John the Baptist.
- 21.5.5.5. Although there are none directly within the Order Limits, there are a number of Grade II listed buildings in close vicinity or for which their curtilage abuts the Order Limits, situated along the A3 (London Road). From north to south, these are:
- Purbeck House (early 19th century (A62);
 - 25–27 London Road (early 19th century (A83);
 - The Church of John, (curtilage wall abuts the Order Limits to the west) (early 19th century) (A60);
 - Purbrook First School, (curtilage wall abuts the Order Limits to the west) (mid 19th century) (A56);
 - The Old Rectory (mid 18th century) (A54);
 - Christ Church, (curtilage wall abuts the Order Limits to the west (late 19th century) (A11); and

- George Inn (late 18th century) (A110).

Known Non-Designated Heritage Assets

- 21.5.5.6. This Section is intersected by the projected route of the Chichester to Bitterne Roman Road. The road intersects the Order Limits just south of Purbrook and can be traced through Southbourne, Emsworth and Warblington to Havant, with the modern A27 following its approximate course.
- 21.5.5.7. The HER records the site of a former mid 19th century tollhouse and gate for the turnpike at Purbrook (A1m). The above ground structures are known to have been demolished in the later 19th century as they are not evident on later Ordnance Survey mapping.

Archaeological survival/potential/significance (Below Ground Heritage Assets)

- 21.5.5.8. Archaeological survival is anticipated to be predominantly low in this Section as the majority lies within modern highways or adjacent verges. There are likely areas of higher survival on the fields south of Hambledon Road (in the northern part of the Section) and possible moderate survival on the roadside verges along the proposed cable corridor. The archaeological potential for this Section for each chronological period is outlined below:
- The potential for palaeoenvironmental remains is considered low in this Section. Alluvium associated with any minor watercourses may contain such remains, however, the Section lies away from known wetland areas (where peat deposits can survive) and away from raised beach deposits (which can contain palaeoenvironmental evidence).
 - Section 4 has a localised, moderate to high potential to contain prehistoric remains, particularly for the Iron Age period. Whilst scattered remains and features have been recorded in the near vicinity from the Mesolithic through to the Bronze Age, the highest density of activity relates to the Iron Age period (A1h, A16, A1f, A142), with evidence comprising a small Middle to Late Iron Age settlement focused on the chalk ridge of Portsdown Hill and the area to the north, west of Purbrook and Waterlooville. Depending on the nature and extent of the remains, further evidence of Iron Age settlement would be of **Medium**, or **High** heritage significance, based on the historical and archaeological interest of the finds.
 - Section 4 has a moderate to high potential to contain Roman remains. The area of land to the west of Waterlooville and Purbrook (Plant Farm), adjacent to the western Onshore Cable Corridor boundary, appears to have been a focus for activity during the Romano-British period (A1f, A1g, A142). The activity is located just north of the projected route of the Chichester to Bitterne Roman Road (A1q).

It is possible that remains of this road lie preserved beneath the section of the Onshore Cable Corridor which it intersects along London Road. Depending on preservation and extent, evidence of Roman settlement or the projected road would be of **High**, or **Very high** significance, based on the historical and archaeological interest of the finds.

- Section 4 has a localised, moderate to high potential to contain early medieval (Saxon) remains in the area of the Onshore Cable Corridor which runs across Portsdown Hill. Two Anglo-Saxon inhumation burials and two parallel ditches on an east-west alignment (A1h) were observed during an archaeological evaluation carried out within the Order Limits. The two ditches were thought to be contemporary with the burials and although their function is not clear it is possible that they formed a boundary to a probable Saxon cemetery (A74) which lay further to the west. Anglo Saxon burial remains would be of **High** or **Very high** significance, based on the historical and archaeological interest of the finds.
- Section 4 has a moderate potential to contain later medieval or post-medieval agricultural remains. Mapping evidence shows this Section of the Order Limits as lying in agricultural fields. As such the potential remains from the later medieval or post-medieval period are likely to be limited to landscape features such as field boundaries and drainage ditches. If present, such remains would be of **Low** significance, derived from archaeological and historical interest.

21.5.6. SECTION 5 – FARLINGTON

Past investigations

- 21.5.6.1. There have been no past investigations within this Section. However, the recent Geophysical Magnetometry Survey (Appendix 21.3) included the open park in Drayton between Grant Road to the east and Farlington Avenue to the west. The survey identified modern services only in this area.

Designated Heritage Assets

- 21.5.6.2. This Section does not contain any Designated Heritage Assets, including conservation areas and there are none within the vicinity.

Known Non-Designated Heritage Assets

- 21.5.6.3. There are no identified Non-Designated Heritage Assets within this Section of the route. There are, however, a number of modern features recorded to the north of Portsdown Hill Road, including the remains of two WWII gun batteries, 90 m to the north and a WWII anti-tank ditch, 225 m to the north east. The HER also records the former site of an early 20th century former pumping station 130 m to the east of the Order Limits (A150), of which a small brick building survives.

Archaeological survival/potential/significance (Below Ground Heritage Assets)

21.5.6.4. Archaeological survival is predicted to be low within the footprint of this Onshore Cable Corridor Section. The main impact to archaeological survival is from the construction of modern highways. There may be additional localised impacts from early 20th century building development between Eveleigh Road in the north and Havant Road to the south. The predicted archaeological potential for this Section for each chronological period is set out below:

- The potential for palaeoenvironmental remains is considered low in this Section. Alluvium associated with any minor watercourses may contain such remains, however, the Section lies away from known wetland areas (where peat deposits can survive) and raised beach deposits (which can contain palaeoenvironmental evidence).
- Section 5 has a low potential for prehistoric remains. Whilst remains have been recorded further north at Portsdown Hill, based on the extent of modern ground disturbance in this Section, extensive remains are unlikely to survive.
- Section 5 has a low potential to contain Roman remains. This Section is at a distance from the known Roman road network and the activity recorded at Plant Farm, 1.6 km to the north-west (A1f, A1j, A142). Section 5's position on sloping ground 200 m south of Portsdown Hill may have precluded earlier settlement. In any case, extensive archaeological features are unlikely to survive in this Section due to the extent of modern ground disturbance.
- Section 5 has a low potential for early medieval remains. Whilst the nature of settlement during the early medieval period is not well understood, there are no known finds or features recorded within the assessment study area, and the survival of such is rare as the pottery is friable and the features often ephemeral.
- Section 5 has a low potential to contain later medieval or post-medieval agricultural remains. Mapping evidence shows this Section of the Order Limits as lying in agricultural fields. As such the potential remains from the later medieval or post-medieval period are likely to be limited to landscape features such as field boundaries and drainage ditches. However, extensive archaeological features are unlikely to survive in this Section due to the extent of modern ground disturbance.

21.5.7. SECTION 6 – ZETLAND FIELD AND SAINSBURY'S CAR PARK

Past investigations

21.5.7.1. There has been no past archaeological investigation within this Section. Consequently, the nature of archaeological activity in this area is not well understood, particularly for the prehistoric and Roman periods for which there is no written record.

Designated Heritage Assets

- 21.5.7.2. There are no Designated Heritage Assets or conservation areas within the Onshore Cable Corridor Section 6, nor any designated assets within the vicinity.

Known Non-Designated Heritage Assets

- 21.5.7.3. This assessment has not identified any Non-Designated Heritage Assets within this Section of the Onshore Cable Corridor and there are none recorded on the HER.

Archaeological survival/potential/significance (Below Ground Heritage Assets)

- 21.5.7.4. Whilst uncertain, archaeological survival is predicted to be low throughout this Section as the majority of the Order Limits comprises existing highways, the construction and maintenance of which is likely to have affected the survival of remains. There may be higher levels of survival on the adjacent road verges but in layers of modern made-ground are likely to be present (which may seal remains). Geotechnical investigations carried out on the open park to the east of Eastern Road recorded modern made-ground at depths of 0.8–1.2 MBGL (Geotechnics, 2019).

- 21.5.7.5. The predicted archaeological potential for this Section for each chronological period is set out below:

- This Onshore Cable Corridor Section has an uncertain, low to moderate potential for palaeoenvironmental remains. Such remains will be present in the low-lying intertidal Raised Marine deposits (if surviving beneath modern-made ground). Minerogenic deposits such as alluvial silts and clays have high potential for diatom preservation, the assessment of which can provide information on the salt or freshwater nature of deposits that would enhance interpretation of the past landscape. Such remains have evidential value for the past environment in which prehistoric and later people lived, and would be of **Low** or **Medium** heritage significance, derived from archaeological interest.
- Section 6 has an uncertain, but probably low potential for Prehistoric remains. Whilst there has been limited past investigation carried out, based on the proximity to Langstone Harbour which would have close access to wetland intertidal resources, there is a low potential for waste flint flakes or pottery sherds to survive beneath layers of made ground, as suggested by discoveries in the wider area. More extensive archaeological features (i.e. fish traps or cut features) are unlikely to be present in this Section.

- Section 6 has an uncertain, but probably low potential to contain Roman remains. This Section is at a distance from the known Roman road network and the activity recorded further north-west at Portsdown Hill. Roman finds within this area are limited to chance finds of pottery sherds discovered around Langstone Harbour to the south. Extensive archaeological features are unlikely to be present in this Section and would be likely buried beneath thick layers of modern-made ground.
- Section 6 has a low potential for early medieval remains. Whilst the nature of settlement during the early medieval period is not well understood, there are no known finds or features recorded within the assessment study area, and the survival of such is rare as the pottery is friable and the features often ephemeral.
- Section 6 has a low potential to contain later medieval or post-medieval agricultural remains. Mapping evidence shows this Section of the Order Limits as lying in agricultural fields or marshland. As such potential remains would be limited to landscape features such as field boundaries and drainage ditches. Such features are unlikely to survive in this Section based on the extent of modern disturbance.

21.5.8. SECTION 7 – FARLINGTON JUNCTION TO AIRPORT SERVICE ROAD

Past investigations

- 21.5.8.1. There have been two past investigations within this Section, including the recent Geophysical Magnetometry Survey carried out between April–August 2019 (Appendix 21.3), which focused on Farlington Playing Fields in the northernmost part of the Section. The survey did not identify any features of clear archaeological origin, but recorded a high quantity of modern services throughout the area likely comprising field drains and modern service trenches.
- 21.5.8.2. Previous investigations have taken place on the edge of the coastline south of the A27 (A1i), and just outside of the Order Limits (A1j) The work consisted of a geotechnical watching brief carried out in 2009 relating to the North Portsea Island Coastal Flood and Erosion Risk Management Scheme, although only two of the geotechnical locations were within this Section. No material of archaeological interest was recorded during the investigations.

Designated Heritage Assets

- 21.5.8.3. There are no Designated Heritage Assets within this Section, including conservation areas. The 18th-19th century Hillsea Lines (A59) are located 500 m to the west and is a scheduled monument. Pickett Hamilton Fort (A15), a further scheduled monument, is located 210 m to the west; the name refers to a type of retractable ‘pillbox’ (military guardhouse or gunpost) in use in the Second World War. The remains are assumed to be buried or covered with vegetation.

Known Non-Designated Heritage Assets

21.5.8.4. No Non-Designated Heritage Assets have been identified within this Section of the Onshore Cable Corridor.

Archaeological survival/potential/significance (Below Ground Heritage Assets)

21.5.8.5. Archaeological survival is predicted to be varied across this section (low to high). In the northern extent, at Farlington Playing Fields archaeological survival is likely to be moderate to high. Part of this area was occupied by Farlington Race Course, in the late 19th century, which may have affected the survival of remains locally. Modern services are also known to be present across this area, which may have partially truncated the archaeological horizons below, to a depth of 0.5–1.0 MBGL. Geotechnical investigations have shown modern made-ground, at variable depths (between 0.3–1.7 MBGL (Geotechnics, 2019). It is not known whether archaeological horizons survive below as modern made-ground may have sealed potential archaeological remains.

21.5.8.6. At the proposed HDD exit area west of Kendall’s Wharf on Portsea Island archaeological potential is anticipated to be low. Geotechnical investigation records up to 2.2 m thick layers of modern made-ground suggesting this area is formed of artificial ground (Geotechnics, 2019). In the southern extent of this Section undated made-ground is also recorded (at depths between 2.0–2.7 MBGL). Whilst, archaeological horizons could survive in undated made ground and the tidal deposits below, it is likely these marginal, coastal areas on the eastern edge of Portsea Island are built on artificial ground and the overall archaeological potential is considered low.

21.5.8.7. The predicted archaeological potential for this Section of the Onshore Cable Corridor for each chronological period is set out below:

- This Onshore Cable Corridor Section has a moderate potential for palaeoenvironmental remains. Such remains will be present in the low-lying intertidal Raised Marine deposits surrounding Langstone Harbour which lies to the east of Onshore Cable Corridor. Minerogenic deposits such as alluvial silts and clays have high potential for diatom preservation, the assessment of which can provide information on the salt or freshwater nature of deposits that would enhance interpretation of the past landscape. Peat deposits preserve pollen and floral and faunal microfossils such as seeds, plant fragments, molluscs and occasionally ostracods. Organic material can also be dated by radiocarbon techniques, important for establishing the chronology for the depositional sequence. In combination with geoarchaeological assessment of the sediments, examination of pollen and diatoms can provide valuable information of contemporary local environmental conditions. Such remains have evidential value

for the past environment in which prehistoric and later people lived, and would be of **Low** or **Medium** heritage significance, derived from archaeological interest.

- Section 7 has an uncertain, possibly low to moderate potential for prehistoric remains. The Section of the Onshore Cable Corridor located on Portsea Island to the west of Langstone Harbour would have been a suitable location for prehistoric settlement, being located on a natural promontory with close access to wetland intertidal resources of Langstone Harbour and the coast. Finds are likely to be limited to waste flint flakes or pottery sherds, as suggested by discoveries in the area (A1n, A1o, A27, A23), of **Low** or possibly **Medium** heritage significance. Evidence of settlement would be of **Medium** or **High** significance, depending on the nature and extent of the remains.
- Section 7 has an uncertain, probably low to moderate potential for Roman remains. During this period, rising sea-levels would have meant that the previously dry Langstone Harbour would have been marshy wetland – not suitable for settlement nor farming. Roman finds within this Section are limited to residual pottery sherds discovered in Langstone Harbour. Whilst it is possible the wetland resources were utilised at this time (i.e. fish traps, salterns) there is not currently any evidence for this within this Section, nor within the vicinity.
- Section 7 has a low potential for early Medieval remains. Whilst the nature of settlement during the early medieval period is not well understood, there are no known finds or features recording within the assessment study area, and the survival of such is rare as the pottery is friable and the features often ephemeral.
- Section 7 has a low potential to contain later medieval or post-medieval remains. Mapping evidence shows this part of the Order Limits as lying in agricultural fields. As such the potential remains from the later medieval or post-medieval period are likely to be limited to landscape features such as field boundaries and drainage ditches. However, such features are unlikely to survive based on the extent of modern development.

21.5.9. SECTION 8 – EASTERN ROAD (ADJACENT TO GREAT SALTERNS GOLF COURSE) TO MOORINGS WAY

Past investigations

- 21.5.9.1. There has been one past investigation within this Section, comprising geotechnical works for the North Portsea Island Coastal Flood and Erosion Risk Management.

Five of the geotechnical investigations occurred within the Section of which no material of archaeological interest was recorded.

Designated Heritage Assets

- 21.5.9.2. There are no Designated Heritage Assets within the boundary of this Onshore Cable Corridor Section, including conservations areas. The Order Limits does however, lie directly adjacent to a Grade II listed early 19th century house (A100), now in use as a restaurant.

Known Non-Designated Heritage Assets

- 21.5.9.3. The HER records a former WWII searchlight battery near Milton Common (A72); adjacent to the east of the Order Limits. Otherwise there are no known Non-Designated Heritage Assets identified within this Section.

- 21.5.9.4. This Section lies within a 'yellow' AAA, as mapped by HCC within Portsmouth. A yellow area refers to a 'locally important monument of known extent'. The area covers a large area on the edge of the intertidal mudflats of Langstone Harbour where former post-medieval/modern salterns were located. Saltings (or salterns) are where salt was extracted from evaporation and was a well-established industry in Portsmouth, with evidence dating back to the Iron Age.

Archaeological survival/potential/significance (Below Ground Heritage Assets)

- 21.5.9.5. The majority of this Section is within the existing road network, as such the main impact to archaeological survival within this Section is from the construction and maintenance of modern highways where survival is predicted to be low. This Section also passes through a former landfill site (Milton Common), where archaeological potential is likely to be low. Evidence of 19th century salt extraction could survive beneath overlying layers of modern made-ground although the potential is considered low.

- 21.5.9.6. The predicted archaeological potential for this Section of the Onshore Cable Corridor for each chronological period is set out below:

- Section 8 has a moderate potential for palaeoenvironmental remains. Such remains will be present in the low-lying intertidal Raised Marine deposits surrounding Langstone Harbour which lies to the east of Onshore Cable Corridor. Minerogenic deposits such as alluvial silts and clays have high potential for diatom preservation, the assessment of which can provide information on the salt or freshwater nature of deposits that would enhance interpretation of the past landscape. Such remains have evidential value for the past environment in which

prehistoric and later people lived, and would be of **Low** or **Medium** heritage significance, derived from archaeological interest.

- Section 8 has an uncertain, possibly low to moderate potential for prehistoric remains. The Section of the Onshore Cable Corridor located on Portsea Island to the west of Langstone Harbour would have been a suitable location for prehistoric settlement, being located on a natural promontory with close access to wetland intertidal resources of Langstone Harbour and the coast.
- Section 8 has an uncertain, probably low potential for Roman remains. During this period, rising sea-levels would have meant that the previously dry Langstone Harbour would have been marshy wetland – not suitable for settlement nor farming. Roman finds within this Section are limited to residual pottery sherds discovered around Langstone Harbour. Whilst it is possible the wetland resources were utilised at this time (i.e. fish traps, salterns) there is not currently any evidence for this within this Section, nor within the vicinity.
- Section 8 has a low potential for early Medieval remains. Whilst the nature of settlement during the early medieval period is not well understood, there are no known finds or features recording within the assessment study area, and the survival of such is rare as the pottery is friable and the features often ephemeral.
- Section 8 has a low potential to contain later medieval or post-medieval remains. Mapping evidence shows this part of the Order Limits as lying in open fields. As such the potential remains from the later medieval or post-medieval period are likely to be limited to landscape features such as field boundaries and drainage ditches. However, such features are unlikely to survive due to modern disturbance.

21.5.10. SECTION 9 –MOORINGS WAY TO BRANSBURY ROAD

Past Investigations

- 21.5.10.1. There have been no past investigations within this Onshore Cable Corridor Section. Consequently, the nature of archaeological activity is uncertain, particularly for the prehistoric period for which there is no written record.
- 21.5.10.2. The HER records an archaeological trial pit 10 m to the west of the Order Limits (A1r), which was dug as part of development at 400-402 Locksway Road, Milton in 1995. There are no records of the investigation but the HER entry notes that brickwork assumed to relate to the former Portsea Canal was encountered at an unknown depth.

Designated Heritage Assets

- 21.5.10.3. This Section contains two Designated Heritage Assets, comprising the Grade II listed former Milton Lock and Basin (A1c). which is also designated as a conservation area

by PCC (See Figure 2, Appendix 21.2 (HEBDA)). The sea lock and basin date to the early 19th century and comprise the surviving north and south walls along with a 20th century iron overbridge. The lock is the only surviving section of the former early 19th century Portsea Canal and is of **High** significance.

Known Non-Designated Heritage Assets

- 21.5.10.4. This Section intersects the former route of the Portsea Canal (A1r), which runs laterally through the Order Limits at the junction of Milton Road and Goldsmith Avenue, and is marked as 'The Old Canal'. The canal opened in 1823 and was built to allow better trading connections into Portsmouth and was entered from Langstone Harbour via a sea lock at Milton. It is not currently known whether any below-ground remains (i.e. canal walls) survive below existing housing development but the former entrance of the canal can still be seen at the eastern end of Longshore Way, directly to the east of the Order Limits.
- 21.5.10.5. The Defence of Britain Project (Council for British Archaeology, 2009) notes the former presence of WW2 anti-landing cubes (tank traps) to the east of the University of Portsmouth playing fields to the west of the Order Limits (west of Longshore Way). It is not known whether these survive.

Archaeological survival/potential/significance (Below Ground Heritage Assets)

- 21.5.10.6. Generally archaeological survival is anticipated to be moderate within this Section as there has been limited building development within the footprint of the Order Limits. Archaeological survival is anticipated to be high within the open fields east and west of the University of Portsmouth buildings. Where this Section is on existing highways archaeological survival is predicted to be low as the construction and maintenance of these highways is likely to have affected the survival of remains. The predicted archaeological potential for this Section for each chronological period is set out below:

- This Section has a moderate potential for paleoenvironmental remains. Such remains will be present in the low-lying intertidal Raised Marine deposits surrounding Langstone Harbour which lies to the east of Onshore Cable Corridor. Such remains have evidential value for the past environment in which prehistoric and later people lived, and would be of **Low** or **Medium** heritage significance, derived from archaeological interest.
- This Section has an uncertain, possibly low to moderate potential to contain prehistoric remains. The area would have been a suitable location for settlement, being located on a natural promontory with close access to the wetland intertidal resources of Langstone Harbour and the coast. Mesolithic and early Neolithic flints has been recovered just beyond the Order Limits. Finds are likely to be

limited to waste flint flakes or pottery sherds, as suggested by discoveries in the area, of low or possibly medium heritage significance. Evidence of settlement or dense flint scatters would be of **Medium** or **High** significance, depending on the nature and extent of the remains

- This Section has an uncertain, but probably low potential to contain Roman remains. There are no features and only limited finds in the study area dated to the Roman period. Whilst this may be a result of limited investigations in the area, the distance from the main road network suggests the Section was not a focus of activity during this period.
- This Section has a low potential to contain early medieval remains. There are no finds relating to this period in the vicinity. Whilst this may be due in part to the lack of investigations in the area it is considered unlikely Portsea Island was densely inhabited at this time; in all likelihood the Section likely lay within open land, which may have been cleared and possibly used for pasture during this period.
- This Section has a low potential to contain later medieval remains. The foci for settlement during this period would have been within the historic core of Milton further west. There have been two previous investigations within this Section, neither of which revealed medieval remains. Modern development in the area is likely to have removed much of the earlier medieval settlement evidence.
- This Section has a high potential to contain post-medieval remains. There is a moderate potential for remains associated with the Portsmouth and Arundel Canal (A1r), which runs laterally through the Order Limits at the junction of Milton Road and Goldsmith Avenue. If present within the Order Limits, buried remains relating to the former canal would be of **Medium** or **High** heritage significance, based on the nature and extent of the remains. Archaeological investigations in the area have also recorded post-medieval agricultural remains (cultivation or dumping layers) within Milton. Such features could also survive within the Order Limits but would be of **Low** or **Negligible** heritage significance.

21.5.11. SECTION 10 – EASTNEY (LANDFALL)

Past investigations

- 21.5.11.1. There have been no past investigations within this Onshore Cable Corridor Section, and limited within the vicinity.

Designated Heritage Assets and their setting

- 21.5.11.2. This Section does not contain any Designated Heritage Assets but does lie within the vicinity of two Scheduled Monuments:
- Eastney Sewage Pumping Station (Late 19th century) (A108), adjacent to the north east of the Order Limits; and

- Fort Cumberland (A96), 17–18th century fort and perimeter defences, 85 m to the east.

21.5.11.3. In the vicinity, close to the south-western part of the Landfall, there are the remains of WWII tank traps, which are Grade II listed (A1g), 90 m to the west of the Order Limits, along with a WWII pillbox 410 m to the south west.

Fort Cumberland

21.5.11.4. Fort Cumberland is a Scheduled Monument (A96) situated 85 m to the east of the Order Limits. The Scheduled Monument area also contains one Grade II* and three Grade II listed buildings, of which three are located within the Landfall setting study area. These assets have been grouped for the purposes of this assessment and consist of:

- Grade II* listed Late 18th century Fort Cumberland (A96);
- Grade II listed mid 19th century Former Officers Quarters (A96);
- Grade II listed Late 18th century Former Hospital and Ancillary Buildings (A96); and
- Grade II listed Late 18th century Former Guard House (A96).

21.5.11.5. Fort Cumberland (A96) is a pentagonal artillery fortification which was erected to guard the entrance to Langstone Harbour. The first fort built consisted of an earthwork fortification which was completed in 1714, with an upgraded replacement completed in 1747 under the Duke of Cumberland. The first masonry fort was built in 1812, completely replacing the original on a much larger scale.

21.5.11.6. The fort continued to be used in the following centuries, with adaptations and modifications made over the years to accommodate the changing nature of weaponry and military tactics. It remained in military ownership for most of the 20th century, serving as a base for the Royal Marines who transferred ownership over to The Department of the Environment in 1975 (now English Heritage). It is now owned by HE.

21.5.11.7. The setting of the designated assets which make up Fort Cumberland contributes to their heritage significance. They form a highly significant group of structures making up Fort Cumberland, which is considered to be, ‘one of the most impressive pieces of 18th century defensive architecture remaining in England’ (HE, NHL entry 1999).

21.5.11.8. The position of the fort is crucial to understanding how it would have defended Langstone Harbour in the event of an attack. It had direct lines of sight out to sea, and was also protected by a ravelin on its western side which defended the landward approaches. These sight lines are still evident and its position significantly contributes to its significance.

21.5.11.9. The designated assets within Fort Cumberland (A96) have a strong relationship to each other as well as to the surrounding landscape of the fort, situated prominently at the entrance to Langstone Harbour. This contributes to context and understanding.

21.5.11.10. The group of assets which make up Fort Cumberland is considered to be of **Very high** significance. Their setting makes a high contribution to their significance, derived from their value as a group and the preserved surrounding landscape which contributes to their context and understanding as heritage assets. Although the presence of modern residential developments has impacted on the asset's historic setting.

Known Non-Designated Heritage Assets

21.5.11.11. The current baseline assessment has not identified any known Non-Designated Heritage Assets within this Section of the Onshore Cable Corridor.

Archaeological survival/potential/significance (Below Ground Heritage Assets)

21.5.11.12. Archaeological survival is anticipated to be low within this Section as the majority of the Order Limits comprise modern highways. Within the proposed Landfall car park survival may be higher as geotechnical investigations recorded made ground to depths between 0.3–1.2 MBGL, suggesting variable thickness of modern made-ground in this area which can in effect 'seal' potential archaeological remains below. The archaeological potential for this section for each chronological period is set out below:

- This Section has a moderate potential to contain paleoenvironmental remains. Such remains might be present in the Storm Beach Deposits at the proposed Transition Joint Bay ('TJB') and HDD entry location. Such remains have evidential value for the past environment in which prehistoric and later people lived, and would be of **Low** or **Medium** heritage significance, derived from archaeological interest.
- This Section has uncertain, possibly low to moderate potential to contain prehistoric remains. This Section is located to the west of Langstone Harbour which would have been a suitable location for prehistoric settlement, being located on a natural promontory with close access to wetland intertidal resources of Langstone Harbour and the coast. There are, however, limited known finds in the vicinity. Like the previous Sections of the Onshore Cable Corridor, remains would likely be limited to isolated finds of **Low** or **Negligible** heritage significance. Settlement remains would be of higher significance, depending on their nature and extent.
- This Section has an uncertain, probably low potential to contain Roman remains. There are no features and only limited finds in the study area dated to the Roman

period. Whilst this may be a result of limited investigations in the area, the distance from the main road network suggests this Section was not a focus of activity during this period.

- This Section has uncertain but probably low potential for early medieval remains. Whilst the nature of settlement during the early medieval period is not well understood, there are no known finds or features recorded within the assessment study area, and the survival of such is rare as the pottery is friable and the features often ephemeral.
- This Section has a moderate potential to contain later medieval agricultural remains. The potential remains from the later medieval are likely to be limited to landscape features such as field boundaries and drainage ditches or buried evidence of medieval ridge and furrow cultivation. If present, such remains would be of **Low** significance, derived from archaeological and historical interest.
- This Section has a low to moderate potential to contain post-medieval remains. The majority of the Section lies in what is currently modern highway, considered to have limited archaeological potential for this period. Within the landfall, historic Ordnance Survey Mapping shows the Landfall carpark as lying within a former late 19th century rifle range. It is considered unlikely that structural remains relating to the rifle range are present as the existing car-park lies within what was previously open land in between the firing range and the targets.

21.5.12. FUTURE BASELINE

- 21.5.12.1. For heritage assets within the Order Limits (below and above ground) and the historic landscape character of the Site, the future baseline is expected to be the same as the present. Such remains are a static resource, which have reached equilibrium with their environment and do not change (i.e., decay or grow) unless their environment changes as a result of human or natural intervention.
- 21.5.12.2. In terms of the setting of Designated Heritage Assets within the surrounding area of the indicative Converter Station location, this may change due to the presence of future developments, although such proposals (other than the Proposed Development and the committed developments identified) are not currently known. These could potentially have a detrimental or positive effect on setting, and could result in the intervening presence of buildings and/or mature vegetation.

21.6. PREDICTED IMPACTS

- 21.6.1.1. The text below sets out the predicted impacts on the Historic Environment in connection with the demolition, site preparation, construction and decommissioning stages of the Proposed Development. The environmental effect on each identified receptor (heritage asset) is presented in detail in Appendix 21.4 (Heritage and Archaeology Impact Tables), by Onshore Cable Corridor Section.

21.6.2. ELEMENTS OF THE PROPOSED DEVELOPMENT RELEVANT TO THE ASSESSMENT

21.6.2.1. The following elements are considered to have the potential to give rise to likely significant effects during construction of the Proposed Development and have therefore been considered within this ES, as outlined in Section 21.3.6.

21.6.2.2. Construction Stage effects on Above-Ground Heritage Assets in relation to the Onshore Cable Corridor, the proposed Converter Station and Landfall have been scoped out (see Table 21.1 for further explanation).

Preliminary works/enabling works/topsoil strip

21.6.2.3. It is assumed for the purposes of this assessment that topsoil would be removed in the following areas:

- Across the entire Converter Station Area as part of the preliminary site works;
- Within the Onshore Cable Corridor ‘working width’ where it crosses greenfield land. The working width would be approximately 23 m, within which topsoil would be stripped;
- Within the footprint of each JB, TJB and HDD compound; and
- Within the footprint of temporary haul roads and temporary construction compounds along the Onshore Cable Corridor.

21.6.2.4. The removal of topsoil would expose any archaeological remains that may be present immediately beneath the topsoil. These may then be affected by movement of vehicles and plant involved in demolition and construction activities, for example through rutting and compaction. In addition, it is possible that topsoil removal without archaeological supervision may result in overstripping, which would have an effect upon archaeological remains located beneath the topsoil, or understripping, where archaeological features are concealed beneath a thin layer of topsoil but are then exposed and unprotected from subsequent demolition and construction activities.

21.6.2.5. The magnitude of change for topsoil removal across the Proposed Development has been assessed as large (for buried heritage assets only).

Proposed Converter Station footprint

21.6.2.6. The indicative Converter Station locations are proposed to be adjacent to the existing Lovedean substation, connected by two underground HVAC Cable circuits. The indicative Converter Station footprint would cover an area of approximately 4 ha. The proposed Converter Station would consist of a number of steel framed buildings, including two Converter Hall buildings, measuring approximately 90 m in length and 50 m in width, with the maximum height of the building 26 m and lightning masts potentially up to 4 m taller than the buildings.

21.6.2.7. The magnitude of change on above ground built heritage has been assessed as **small** for both options and neither are considered to be of great impact in terms of impact to heritage assets.

Proposed Converter Station – Cut and Fill Earthworks

21.6.2.8. Given the topography of the area, earthworks would be required to create a level platform and construction Laydown Area to build the Converter Station, entailing major earthworks and landscaping, notably the ‘cut and fill’ required to create a level building platform for the Converter Station, potentially a major impact following topsoil removal. Given the topography, the level platform built to accommodate the Proposed Converter Station would be at approximately 84.8 m Above Ordnance Datum (‘AOD’) with an approximate depth of 85.1 m AOD for the finished floor level.

21.6.2.9. ‘Cut’ activities, involving reducing ground level locally, where they extend below modern made ground/top soil, would truncate or entirely remove any archaeological remains within the footprint of the works, the degree of impact depending on the depth of the cut. ‘Fill’ activities, which comprise raising the ground level locally, result in any archaeological remains being buried (and thus preserved) below the ground raising deposits. Soft landscaping (tree removal and planting) can entail ground disturbance up to 1.0–1.5 MBGL.

21.6.2.10. The magnitude of change on potential below-ground heritage assets for these impacts have been assessed as **large**.

Proposed Converter Station foundations

21.6.2.11. The foundations are likely to be a combination of shallow slab design (conventional ground bearing) where cut is required to achieve a level platform with shallow piles where fill is required (Chapter 3 (Description of the Proposed Development)).

21.6.2.12. Where piles are required, these would be bored to a sufficient depth to completely remove any archaeological remains within the footprint of each pile. There would be additional impact deriving from the insertion of a shallow slab. The level of impact would depend on the method used but would likely remove entirely any archaeological remains present to the depth of the works (depth not currently known).

21.6.2.13. The magnitude of change on potential below-ground heritage assets for these impacts have been assessed as **large**.

Proposed Telecommunications Building(s) and associated equipment

21.6.2.14. It is anticipated that up to two Telecommunications Building(s) (potentially one for each circuit) would be located in close proximity to the Converter Station (within the Converter Station Area) to house equipment for telecommunications purposes. It is anticipated that a Telecommunications Building would have a building footprint of approximately 8 m x 4 m x 3 m (high), would have secure fencing, access and parking for up to two vehicles for maintenance purposes. The proposed foundations are likely

to comprise standard strip trenching with preliminary design plans showing an approximate depth of 1.0 MBGL for foundation construction (including 0.6 m thick concrete slab built on 0.4 m of consolidated hardcore layer).

21.6.2.15. Based on the likely depth, the magnitude of change is considered **large** (on potential below-ground heritage assets) as the excavation for foundations is likely to remove entirely any archaeological remains present, with the exception of the bases of cut features like ditches, pits and wells.

21.6.2.16. The magnitude of change has been assessed as **negligible** in terms of impact to above-ground heritage assets. This is based on the likely distance from any designated assets and proposed height and massing of the Telecommunications Building(s).

Proposed HVAC Cable trenches

21.6.2.17. The HVAC Cables will be positioned within a typical 1.0 m wide trench and the approximate depth across agricultural land and open countryside is 1.3 MBGL. This would truncate or entirely remove any archaeological remains within the trench footprint.

21.6.2.18. The magnitude of change on potential below-ground heritage assets for these impacts have been assessed as **large**.

Proposed Converter Station permanent Access Road

21.6.2.19. A new permanent Access Road will be established from Broadway Lane to the proposed Converter Station, which will be utilised accordingly throughout the construction period. It will also continue to be required for maintenance staff access (Chapter 3 (Description of the Proposed Development)). The construction of this road would entail a preliminary topsoil strip, the archaeological impact of which is discussed above, and possibly additional landscaping earthworks.

21.6.2.20. This has been assessed as a **large** magnitude of change on potential below-ground heritage assets.

Proposed Onshore Cable Route within Onshore Cable Corridor

21.6.2.21. The majority of the Onshore Cable Route would consist of DC underground cables which will run from the Converter Station south to the Landfall at Eastney. There will be four HVDC Onshore Cables, laid in pairs in two separate trenches (nominally 5 m apart). The archaeological impact assessment is based on assumed depths of construction.

21.6.2.22. The HVDC Onshore Cables would be placed within a trench approximately 0.7 m wide at an approximate depth of 1.4 MBGL. Any archaeological remains within the footprint of the trench would be removed to this depth.

21.6.2.23. However, along the majority of the Onshore Cable Corridor the proposed cable trench would be dug within brownfield land within the area of an existing road or pavement

or in hardstanding. It is assumed that much of the ground beneath, including the upper levels of any archaeological remains, has already been disturbed or truncated by modern road construction and by existing services.

- 21.6.2.24. If the proposed cable installation is undertaken partly or wholly outside the existing service trenches, they would potentially have an impact on any archaeological remains located beneath the road surfaces/modern made ground. In some cases, the proposed cable installation might be carried out entirely within existing service trenches. If this is the case, it would have no archaeological impact as remains will already have been removed.
- 21.6.2.25. Considering the narrow width of the cable trench excavation, the magnitude of change on potential below-ground heritage assets has been assessed as a **small**, although in rural areas where there is a discreet known asset this might be **medium**.
- 21.6.2.26. The main impact in rural areas, where archaeological survival is likely to be higher, will be from the associated topsoil strip (see para. 21.6.2.2 above).

Proposed Joint Bays

- 21.6.2.27. Up to 25 JB's will be required along the Onshore Cable Corridor. Typically, these would be off the existing carriageway. The excavation required for each JB would be approximately 15.0 m x 3.0 m, with the permanent JB's themselves being approximately 6.0 m x 3.0 m. The proposed depth typically would be 1.7 MBGL in roads, foot paths/verges and 1.85 MBGL in open fields.
- 21.6.2.28. This has been assessed as a **large** magnitude of change in relation to below-ground heritage assets. As with the Onshore Cable Corridor, where the JB's are located within brownfield land, a layer of modern made ground might be expected. Previous disturbance may have compromised the survival of any archaeological remains to some extent, reducing the magnitude of change.

Proposed Transition Joint Bays

- 21.6.2.29. At the proposed Landfall, anticipated to be located within the car park south of Fort Cumberland Road, two TJB's will be required, one per pair of HVDC Cables. The proposed depth would typically be 1.75 MBGL.
- 21.6.2.30. Based on the likely depth of modern made ground in this area, this has been assessed as a **small** magnitude of change on potential below-ground heritage assets.

Proposed Optical Regeneration Station Building(s)

- 21.6.2.31. At the Landfall the Proposed Development would entail construction of two ORS within the north-western part of the existing car park under which the TJB's would be installed.
- 21.6.2.32. The ORS would comprise two structures along the north-western boundary of the car park within a fenced compound. Each structure would measure approximately 10 m

x 4 m x 4 m. Embedded mitigation comprises native hedgerow/tree planting along with amenity grassland.

21.6.2.33. Based on the proposed height and massing of the structures, the magnitude of change on Fort Cumberland (built heritage) has been assessed as **small**.

21.6.2.34. The proposed foundations are likely to comprise standard raft trenching with preliminary design plans showing an approximate depth of 1.0 MBGL (below walls) for foundation construction (including 0.6 m thick concrete slab built on 0.4 m of consolidated hardcore layer).

21.6.2.35. As modern-made ground is known to be present at the Landfall, the magnitude of change is considered to be **small** in relation to potential below-ground heritage assets as excavation for foundations is not likely to extent to potential archaeological horizons.

Proposed Horizontal Directional Drilling

21.6.2.36. HDD will be used to allow cables to cross under constraints along the route. The depth will typically range between 5 m and 20 m, depending upon the length of the crossing and the local ground conditions. The diameter of the bore tunnel would typically be 0.66 m and 0.71 m (HDDs 1, 2, 3, 5 and 6) and 1.2 m at HDD 4 (Farlington Railway Crossing). There are 6 locations along the Onshore Cable Corridor where the Onshore Cable Corridor ducts are proposed to be installed using HDD installation or Trenchless technique. These are:

- Section 3 – Kings Pond near Anmore (HDD-5), which may consist of standard trenching and HDD at an approximate depth of 11.3 MBGL, in bedrock deposits consisting of the Lambeth Group (clay, silts and sand);
- Section 6 – Farlington Railway Crossing (HDD-4), approximately 4 MBGL in upper chalk, meeting in 5 m deep reception pits;
- Section 7 – Portsea Island crossing (HDD-3) under Langstone Harbour and the A27, depth at approximately 15 MBGL (targeting chalk);
- Section 8 – Milton Common (HDD-6), underneath existing sea wall defences at an approximate depth of -4.9 MBGL.
- Section 9 – Milton and Eastney Allotments north-east of Bransbury Park (HDD-2);
- Section 10 – Eastney Landfall (HDD-1), at approximately -11.2 m AOD, rising to 1.5 m OD at Landfall.

21.6.2.37. The majority of the HDD cable ducts would be drilled beneath archaeological horizons. Based on the proposed depth of the HDD cable ducts, impact would only occur in the working areas for the JB's where the HDD would emerge from the excavation of localised trenches and establishment of working areas. In localised

areas the bored cable ducts will pass through upper archaeological horizons (where they emerge to reception/working areas). Based on the small areas that would be affected, the magnitude of change has been assessed as **small**, in relation to potential below-ground heritage assets.

- 21.6.2.38. The HDD works will require Works Compounds and Laydown Areas as appropriate. Where sited on open fields or agricultural land topsoil stripping is likely to be required across the full extent of the compound (see 21.6.2.3). The associated impact has been assessed as being a **large** magnitude of change in relation to potential below-ground heritage assets.

Proposed Landscaping and Drainage

- 21.6.2.39. Further additional works include new planting and attenuation ponds. An attenuation pond is proposed within the Converter Station Area, to the south of the Proposed Converter Station (i and ii) and another is considered west of the proposed Access Road. The proposed depth for the attenuation ponds is not currently known. The excavation of such drainage features is likely to entail deep excavation (<0.5 m), and would truncate or remove any archaeological remains to the footprint of the works.

- 21.6.2.40. The magnitude of change on potential below-ground heritage assets associated with the excavation of drainage features is considered **large**.

- 21.6.2.41. Ground disturbance from new planting is assumed for the purposes of this assessment to extend to a depth of 1.0–1.5 m, to take into account space for the tree bowl and root action. Any archaeological remains within this area will be disturbed. The magnitude of change is considered **small** on below-ground heritage assets.

Other relevant potential impacts

- 21.6.2.42. There may be further localised impacts from:

- Installation of site fencing/hoarding;
- Construction of site compounds and welfare facilities; and
- Ecological mitigation works (i.e. existing Badger Set Excavation).

- 21.6.2.43. It is assumed for the purposes of this assessment that these activities would cause localised ground disturbance to approximate depths of 0.5–1.0 MBGL. Impact on any below-ground heritage assets present is likely to occur where the modern made ground/topsoil is less than 0.5 m thick.

- 21.6.2.44. This is assessed as a **small** magnitude of change on potential below-ground heritage assets.

21.6.3. CONSTRUCTION STAGE EFFECTS

- 21.6.3.1. The detailed predicted Construction Stage and Operational Stage environmental effects are contained within Appendix 21.4 (Heritage and Archaeology Impact

Tables); these are assessed for each Section and by specific receptor (Heritage Asset).

21.6.3.2. Archaeological remains for particular periods which are considered to have low potential (e.g. due to significant past ground disturbance) are unlikely to be present within the Order Limits and on that basis, they not assessed or included in the summary table in Appendix 21.4 (Heritage and Archaeology Impact Tables). Only those assets which have a moderate to high potential are considered, or those for which the potential is uncertain. Due to the quantity of potential Below Ground Heritage Assets and the varying associated impacts, a summary of the predicted 'significant' effects (by chronological period) is provided below.

21.6.3.3. Construction Stage effects are only considered in relation to Below Ground Heritage Assets as temporary Construction effects on Above Ground Heritage Assets has been scoped out (see Table 21.1).

Section 1 - Lovedean (Converter Station Area)

21.6.3.4. Potential assets affected by construction activities include possible prehistoric, Roman, later-medieval and post medieval remains, of predicted low, medium or high significance (depending on location, survival and extent of remains) The likely environmental effect would be of **minor, moderate**, or possibly **major adverse** significance (for potential Prehistoric, Early Medieval or Roman remains), depending on their nature and extent (see Appendix 21.4 (Heritage and Archaeology Impact Tables) for detailed impact assessment by Section).

Section 2-9 - (Onshore Cable Corridor)

21.6.3.5. Potential assets affected by construction activities along the Onshore Cable Corridor include remains from all periods (including paleoenvironmental remains), of low to high significance. The predicted environmental effects would be of **minor, moderate**, or possibly **major adverse** significance (for potential Prehistoric, Roman or Early Medieval burial remains) depending on their nature and extent (see Appendix 21.4 for detailed impact assessment by Section).

Section 10 – Eastney (Landfall)

21.6.3.6. Potential assets affected by construction activities at Eastney include palaeoenvironmental, prehistoric and possibly Roman remains, of low, medium or high significance. The predicted environmental effects would be of **minor, moderate** or **major adverse** significance (for potential Prehistoric remains) depending on their nature and extent (see Appendix 21.4 (Heritage and Archaeology Impact Tables) for detailed impact assessment by each Section).

21.6.4. OPERATIONAL STAGE EFFECTS

- 21.6.4.1. Operational Stage effects arise from permanent changes to the setting of above ground Designated Heritage Assets due to the presence of the Converter Station and ORS at the Landfall, where the Proposed Development would entail the introduction of new built form in the landscape.
- 21.6.4.2. Since it is currently assumed that the Onshore Cable Route is otherwise entirely below-ground, only those above ground designated assets within the vicinity of the Converter Station Area (Section 1) and the Landfall (Section 10) have been assessed.
- 21.6.4.3. The sections below set out the preliminary effects on the Historic Environment in connection with the operation of the Proposed Development. The environmental effect on each identified receptor (heritage asset) is presented in detail in Appendix 21.4 (Heritage and Archaeology Impact Tables).
- 21.6.4.4. Embedded mitigation measures have been incorporated into the Proposed Development in the form of landscape planting on the northern boundary of the proposed Converter Station. The mitigation design includes proposed native woodland (up to 25 m high) along the northern edge of the Order Limits along with a line of native hedgerow approximately 80 m north of the proposed Converter Station. Mitigation planting, along with the proposed siting of the proposed Converter Station (to be cut into a natural slope) will reduce potential views of the Proposed Development from the scoped-in Heritage Assets in the vicinity of the Converter Station Area.

Section 1 - Lovedean (Converter Station Area)

Rockwood and Granary

- 21.6.4.5. This group of assets includes Rookwood (A87) and Granary 5 Metres West of Rookwood (A125).
- 21.6.4.6. The significance of these assets as a group is very high. Their setting is considered to make a moderate contribution to their significance. As a group, Rookwood exists within a property significantly sheltered by mature vegetation, as identified during the site visit. Views of the agricultural landscape are mainly to the south away from the proposed options. Due in part to distance but also to the vegetation screening there will be no views of the Proposed Development. Consequently, the magnitude of change has been assessed as negligible.
- 21.6.4.7. The heritage significance of Rookwood is very high and the significance of the Granary is high. The magnitude of change is considered to be negligible. Therefore, there is likely to be a direct, permanent, long-term effect of **negligible** significance on the assets within the Rookwood Group prior to the implementation of mitigation measures.

Ludmore Cottages

21.6.4.8. The significance of Ludmore Cottage (A129) is high and its setting makes a high contribution to its significance. Ludmore Cottages enjoys some views of the surrounding agricultural landscape which contribute to its significance. However, these views are limited by a modern barn located to the south and also dense vegetation screening along the western side of the asset. These prevent any views of the proposed Converter Station.

21.6.4.9. The heritage significance of Ludmore Cottage is high and the magnitude of change is negligible. Therefore, there is likely to be a direct, permanent, long-term effect on Ludmore Cottage of **negligible** significance prior to the implementation of mitigation measures.

Barn Cottage

21.6.4.10. The significance of Barn Cottage (A102) is high and its setting makes a moderate contribution to its significance. Barn Cottage has extensive views of the rural agricultural landscape. In the surrounding area, the hedgerows lining the roads and marking field boundaries are very dense and high which prevent many long-distance views over the landscape. It is not believed that Barn Cottage will have any views of either of the proposed Converter Station locations.

21.6.4.11. The heritage significance of Barn Cottage is high and the magnitude of change is negligible. Therefore, there is likely to be a direct, permanent, long-term effect on Barn Cottage of **negligible** significance prior to the implementation of mitigation measures.

Denmead Farm

21.6.4.12. This group of assets includes Denmead Farmhouse (A109), Granary 20 Metres West of Denmead Farmhouse (A109) and Cottage at Denmead Farm.

21.6.4.13. The significance of the group of assets at Denmead Farm (A109) is high and setting makes a high contribution to their significance. Denmead Farm is based to the south west of the proposed Converter Station locations. Vegetation screening along the roads and field boundaries in the landscape and the presence of existing modern farm buildings to the north-east prevent any views of the proposed Converter Station, as seen on the baseline ZTV. As such, the magnitude of change is considered to be negligible.

21.6.4.14. The heritage significance of the assets at Denmead Farm is high and the magnitude of change will be negligible. Therefore, there is likely to be a direct, permanent, long-term effect on the assets at Denmead Farm of **negligible** significance prior to the implementation of mitigation measures.

Little Denmead Farm & Bleak Cottage

21.6.4.15. This group of assets includes Farmhouse at Little Denmead (A101), the Barn at Little Denmead (A101) and Bleak Cottage (A93).

21.6.4.16. The significance of the group of assets at Little Denmead Farm & Bleak Cottage are of high significance and their setting makes a moderate contribution to their significance. The distance from the indicative Converter Station locations and dense vegetation screening in the form of road and field boundaries prevents any views.

21.6.4.17. The heritage significance of the assets at Little Denmead Farm & Bleak Cottage is high and the magnitude of change is negligible. Therefore, there is likely to be a direct, permanent, long-term effect on the assets of Little Denmead Farm & Bleak Cottage of **negligible** significance prior to the implementation of mitigation measures.

Stoneacre

21.6.4.18. Stoneacre (A120) is an asset of high significance and its setting makes a moderate contribution to its significance. Stoneacre is a very well sheltered property, with vegetation enclosing the asset on all sides. This prevents any extensive views of the surrounding landscape and will also therefore prevent any views of the proposed Converter Station locations.

21.6.4.19. The heritage significance of Stoneacre is high and the magnitude of change is negligible. Therefore, there is likely to be a direct, permanent, long-term effect on the assets significance of Stoneacre of **negligible** significance prior to the implementation of mitigation measures.

Scotland (Cottage)

21.6.4.20. Scotland (Cottage) (A117) is an asset of high significance and its setting makes a moderate contribution to its significance. Access directly up to Scotland (Cottage) was not possible on the day of the site visit as the road leading to the house is private and therefore assessment had to be made from further west down Dogkennel Lane. From here, views over the landscape were extensive due to the asset being based on an area of higher land. It is possible that the asset will have views of the proposed Converter Station). Despite this, the distance between the asset will mean that impacts would be minimal and most rural views from Scotland (Cottage) will be retained. The proposed Converter Station will be terraced into the existing slope on the northern side, reducing its height on the landscape. Furthermore, mitigation to the north of the proposed Converter Station locations are proposed in the form of two lines of hedges, which would also reduce possible impact.

21.6.4.21. The heritage significance of Scotland (Cottage) is high and the magnitude of change is small. Therefore, there is likely to be a direct, permanent, long-term effect on the significance of Scotland (Cottage) of **minor adverse** significance prior to the implementation of mitigation measures.

Hinton Manor House

21.6.4.22. Hinton Manor House (A141) is an asset of high significance and its setting makes a moderate contribution to its significance. Hinton Manor House is an enclosed asset, existing within its own boundary wall which has high vegetation screening. This

prevents many views out towards the surrounding landscape. Additionally, screening on the west side of Hinton Manor Lane also prevents any views.

- 21.6.4.23. The heritage significance of Hinton Manor House is high and the magnitude of change is negligible. Therefore, there is likely to be a direct, permanent, long-term effect on the significance of Hinton Manor House of **negligible** significance prior to the implementation of mitigation measures.

Catherington Conservation Area

- 21.6.4.24. Catherington Conservation Area (A159) is an asset of high significance and its setting makes a high contribution to its significance. Catherington Conservation Area is situated on top of a hill and enjoys extensive views of the surrounding countryside which define its setting and contribute to its significance. Views internally along Catherington Road also contribute to its significance.

- 21.6.4.25. Viewpoint 5 (Figure 15.17 of the ES Volume 2 (document reference 6.2.15.17)), taken outside of the conservation area on open land to the west, shows that the Converter Station would largely be screened by a mature vegetation belt, both in summer and in winter when the trees are not in leaf. In winter there may be glimpses of the new structure in views looking out towards the west from the conservation area but these would be slight and would not affect how the asset is experienced. Despite this, most of the views of the landscape and the internal views of the village would not be affected. The proposed Converter Station would also not impact on the relationship of the Designated Heritage Assets located within the conservation area to each other.

- 21.6.4.26. The heritage significance of Catherington Conservation Area is high and the magnitude of change is negligible. Therefore, there is likely to be a direct, permanent, long term effect on the significance of Catherington Conservation Area of **negligible** significance prior to the implementation of mitigation measures.

Section 10 – Eastney (Landfall)

Fort Cumberland

- 21.6.4.27. The significance of Fort Cumberland (A96) is very high and its setting makes a high contribution to its significance. The proposed ORS would be located within an existing car park 225 m to the west of the above ground Fort Defences (Eastney Landfall). The proposed structures would comprise two structures along the north-western boundary of the car park, each measuring 10 m x 4 m x 4 m. The buildings would be fenced off and surrounded by native hedgerow/ trees and amenity grassland.

- 21.6.4.28. The car park where the proposed ORS are to be located lies on the western side of the Fort, on an area of land which was previously used for military rifle ranges. The car park is in the historic ‘field of fire’ from the western ravelin of the fort, which was designed to defend against attack from land.

- 21.6.4.29. However, this sight line is difficult to understand in the landscape with the fencing and dense shrubs and brambles on the edge of the fort preventing direct views to

and from the asset. The shrubland between the fort and the car park is retained in its natural state as it would have been when the fort was in operation, contributing partially to the historic setting of the asset.

- 21.6.4.30. The car park does not currently contribute to the setting of the fort, but as it is still flat does allow continuation of the historic ‘fields of fire’ from the ravelin towards Fort Cumberland Road, the original defence point. The ORS will be based in the north-east corner of the car park, and will only be approximately 4.0 m high. The structures would also be fenced off and enclosed with native vegetation. As such, the majority of the flat landscape of the car park will be retained (as TJB construction will be below ground), and therefore have no impact on the continuation of historic ‘fields of fire’ from the ravelin (see Appendix 21.2 (HEBDA)).
- 21.6.4.31. The heritage significance of Fort Cumberland is very high and the magnitude of change is negligible. Therefore, there is likely to be a direct, permanent, long-term effect on Fort Cumberland of **negligible** significance prior to the implementation of mitigation measures.

Predicted Operational Stage Effects, prior to mitigation

- 21.6.4.32. The environmental effect on each identified receptor (Above Ground Heritage Assets) is presented in detail in Appendix 21.4 (Heritage and Archaeology Impact Tables), by Onshore Cable Corridor Section.
- 21.6.4.33. In conclusion, prior to mitigation, it is predicted that one asset has the potential to experience material changes to their setting through views of the proposed Converter Station. Scotland (Cottage) is an asset of high significance and the magnitude of change is small. There is likely to be a direct, permanent, long-term effect on the significance of Scotland (Cottage) of **minor adverse** significance prior to the implementation of additional mitigation measures.
- 21.6.4.34. It was concluded that all other assets assessed would experience direct, permanent, long-term effects on their significance of **negligible** significance prior to the implementation of additional mitigation.

21.6.5. DECOMMISSIONING STAGE EFFECTS

- 21.6.5.1. As the majority of effects on the Historic Environment would occur during the Construction and Operational Stages, excavation for the removal of the cable or dismantling the Converter Station is not anticipated to give rise to any additional effects on the Historic Environment.
- 21.6.5.2. The final Onshore Cable Route decommissioning plan is yet to be determined. As such there is not currently enough information to adequately assess the potential impact to Above-Ground Heritage Assets. Should the cable be removed it is assumed that the impact to potential archaeological remains would have been assessed and mitigated during the Construction Stage and that any land required from

decommissioning lies within the Order Limits. Therefore, no additional direct physical impacts on archaeological remains are likely during the Decommissioning Stage.

- 21.6.5.3. The predicted **minor adverse** effect on Scotland (Cottage) above could be reversed on decommissioning, assuming the removal of all above ground infrastructure associated with the Proposed Development and reinstatement of the Site for agricultural use.

21.7. CUMULATIVE EFFECTS ASSESSMENT

- 21.7.1.1. The Cumulative Effects Assessment for the Proposed Development follows the recommended approach as detailed by PINS in PINS Advice Note Seventeen (The Planning Inspectorate [PINS], 2019). This approach is summarised in Chapter 29 (Cumulative Effects) of the ES Volume 1 (document reference 6.1.29) and the detailed CEA Matrices for Heritage and Archaeology is contained within Appendices 21.6 (Heritage and Archaeology Cumulative Effects Stage 1 & 2) and 21.7 (Heritage and Archaeology Cumulative Effects Stage 3 & 4).
- 21.7.1.2. The cumulative effects assessment includes potential effects of the Proposed Development when combined with other major development proposals within the vicinity of the proposed Converter Station and the Landfall. HE's 'The Setting of Heritage Assets' Guidance 3 (Historic England, 2017) notes that the purpose of a cumulative effects assessment is to identify impacts that are the result of introducing new development into the view in combination with other existing and proposed developments. The combined impact may not simply be the sum of the impacts of individual developments; it may be more, or less.
- 21.7.1.3. The zone of influence ('Zoi') for Heritage and Archaeology comprises committed developments within 2 km of the proposed Converter Station footprint within East Hampshire and Winchester District authorities. This includes those that have been granted planning permission or are reasonably foreseeable and are similar in terms of use, scale and nature. For the Landfall, the scope includes committed developments within 500 m of the proposed OR).
- 21.7.1.4. The committed developments within and adjacent to the Order Limits share the same sensitive receptors and potential environmental effects as the Proposed Development, namely: permanent changes to the setting of heritage assets located in within and in the vicinity of the Order Limits.
- 21.7.1.5. Cumulative effects in relation to below-ground archaeological remains have been scoped out.

21.7.2. STAGE 1 AND 2

- 21.7.2.1. Following a review of the committed long-list of developments against the Heritage ZOI, the following four sites were selected for Stage 3 assessment:

- Land bounded by Tanners Lane (17/00335/FUL). Located to the south-east of the proposed Converter Station, to the north and south of Tanner's Lane;
- Fraser Range (19/00420/FUL). Part demolition and redevelopment of a former Rifle Range, 160 m to the south-east of the Landfall;
- Land South of Lovedean Electricity Substation (57524/001). Located within the Order Limits, directly south of the existing Lovedean Substation; and
- Lovedean Electricity Station (32624.0003), installation of a 30 m high telecommunication mast in the south-eastern part of Lovedean substation.

21.7.3. STAGE 3 AND 4 SUMMARY

21.7.3.1. In the vicinity of the proposed Converter Station Area, none of the development sites are anticipated to give rise to significant cumulative effects, as there would be no inter-visibility between the schemes and Scotland (Cottage) (A117), which is the only sensitive receptor affected by the proposed Converter Station itself.

21.7.3.2. At the Landfall, whilst it is acknowledged the Fraser Scheme would be harmful to the significance of some elements of the significance of Fort Cumberland (A96), no cumulative or in-combination effects are predicted as the contribution to that effect from the proposed ORS is negligible.

21.7.3.3. It has been concluded that there would be no Cumulative Effects in relation to the Proposed Development on identified Above Ground Heritage Assets.

21.7.4. INTRA PROJECT EFFECT

21.7.4.1. The main assessment outlined in this chapter has considered intra project effects in relation to heritage assets. The impact in relation to noise, air quality, visual intrusion, light and new built form have been considered as part of the main assessment. No further Intra Project Effects have been identified.

21.8. PROPOSED MITIGATION AND ENHANCEMENT

21.8.1. PROPOSED MITIGATION (CONSTRUCTION STAGE)

21.8.1.1. The mitigation strategy proposed to mitigate predicted construction related impacts identified in Section 21.6 is set out below. Three strategies are presented:

- Strategy 1: Greenfield areas (i.e. open rural or undeveloped land) – archaeological evaluation, followed by mitigation (targeted investigation and recording), where feasible and warranted;
- Strategy 2: Brownfield areas (i.e. JBs, TJBs and HDD entry/exit points) – archaeological evaluation (where feasible), followed by mitigation (targeted investigation and recording), where feasible and warranted; and

- Strategy 3: Brownfield area (i.e. along existing roads, pavements and hardstanding) – mitigation (targeted investigation and recording), where feasible and warranted.

Strategy 1: Greenfield area evaluation and mitigation

- 21.8.1.2. Within the greenfield areas of the Order Limits (Sections 1-3), proposed ground disturbance would be extensive due to the preliminary topsoil strip. This is assumed to be site-wide for the Converter Station Area and also within the Onshore Cable Corridor working width, along with temporary access routes and temporary compounds (up to 23.0 m wide).
- 21.8.1.3. Within these areas, the presence, nature, date, extent and significance of any archaeological remains present would need to be clarified by trial trench evaluation as the potential for such remains, as assessed by the desk-based and Stage 1 Geophysical Survey, is uncertain. These will be targeted to geophysical anomalies of potential archaeological interest, along with any remains identified by the desk-based research, but will also include sampling of 'blank areas'.
- 21.8.1.4. The results of the evaluation will enable the Applicant to formulate with the relevant statutory consultees an appropriate mitigation strategy for any significant archaeological remains that could be affected.
- 21.8.1.5. Mitigation could take the form of a targeted archaeological excavation (preservation by record) well in advance of the commencement of ground works and/or an archaeological watching brief (a programme of 'strip, map and sample) carried out alongside the preliminary topsoil removal. This would ensure that archaeological remains were not removed without record. This would need to be programmed with adequate time for the recording of archaeological remains.
- 21.8.1.6. Although rare, in the unlikely event that archaeological remains of very high (national) significance are identified, there may be a requirement, where feasible, for their preservation *in situ*, i.e. through modifications to the design, e.g. modification in design of foundations and formation levels for the Converter Station, or avoidance in the adjustment of the position of the Converter Station and/or the line of the Onshore Cable Corridor.
- 21.8.1.7. Any archaeological work would need to be undertaken in consultation with the relevant Archaeological Advisor, in accordance with an approved archaeological WSI outlining the scope and method of investigation, along with the post-excavation reporting and dissemination strategy.

Strategy 2: Brownfield area evaluation and mitigation

- 21.8.1.8. JBs, TJBs and HDD compounds in brownfield areas would entail more than the localised disturbance of the proposed cable trench, with the excavation of larger and deeper trenches, approximately 15 m x 3 m, to a typical depth of 3 m (JBs) and up to

1.7 MBGL for HDD areas. For such areas, archaeological trial trench evaluation may be appropriate and feasible, depending on the depth of modern made ground.

- 21.8.1.9. As with the greenfield evaluation, this would aim to clarify the presence, nature, date, extent and significance of any archaeological remains within the area of excavation and would enable the formulation of an appropriate mitigation strategy.
- 21.8.1.10. In areas where evaluation trial trenching is not considered feasible, the proposed strategy will revert to Strategy 3 (see below).

Strategy 3: Brownfield area mitigation of the cable trench

- 21.8.1.11. The majority of the Onshore Cable Corridor passes through urban areas along existing roads, pavement and hardstanding. For these areas, the proposed archaeological impact would be highly localised and restricted to the approximate 0.7 m wide by 1.25 m deep cable trench, with no impacts from a ‘working width’ (i.e. no topsoil strip). Modern made ground is anticipated to be present, possibly to a depth of 0.5m or greater. Archaeological remains in such areas are also likely to have been partially or wholly truncated by modern infrastructure development.
- 21.8.1.12. For this reason, the preliminary surveys proposed for the greenfield parts of the Order Limits would be neither feasible nor appropriate. In order to mitigate the localised impact of the cable trench on any potential archaeological remains, an archaeological watching brief would be required *in areas with potential for significant surviving archaeological remains*, and where the Onshore Cable Corridor would divert away from existing highways (i.e. on adjacent roadside verges/hardstanding). This would ensure that any archaeological assets were not removed without record.
- 21.8.1.13. The archaeological watching brief would be carried out during the Construction Stage during the excavation of the cable trench, with work halted to allow sufficient time to excavate, sample, and record any archaeological remains exposed.
- 21.8.1.14. The level of archaeological watching brief attendance is likely to vary depending on the predicted sensitivity along the Onshore Cable Corridor. The future WSI would present the approach, ranging from continuous attendance in sensitive areas to regular attended for areas with low to moderate potential. For areas where there would be no impact (i.e. landfill zones/modern highways), no attendance would be required.
- 21.8.1.15. The archaeological watching brief would need to be undertaken in accordance with an approved archaeological WSI outlining the scope and method of investigation, along with the post-excavation reporting and dissemination strategy.

Palaeoenvironmental sampling

- 21.8.1.16. The archaeological strategies proposed above would require an element of palaeoenvironmental sampling, where the potential for such has been identified. This might include proposed disturbance in coastal alluvial/fluvial zones adjacent to

Langstone Harbour and in areas of raised marine deposits, where they would be affected.

21.8.1.17. This would typically entail sampling during the intrusive fieldwork discussed above (and set out in the WSI), and geoarchaeological analysis in order to develop an understanding of past environmental conditions of the local area.

21.8.1.18. In light of the shallow nature of the proposed impact along the Onshore Cable Corridor, deep sampling through the use of purposive geoarchaeological boreholes, along with the creation of a geoarchaeological deposit model, is not considered appropriate.

21.8.2. PROPOSED MITIGATION AND ENHANCEMENT (OPERATIONAL STAGE)

21.8.2.1. Scotland (Cottage) was identified as having potential effects from the Converter Station of **minor adverse** significance.

21.8.2.2. Embedded mitigation includes proposed native mixed woodland (up to 25 m high) along the northern edge of the Order Limits along with a line of native hedgerow approximately 80 m north of the proposed Converter Station. Mitigation planting, along with the proposed siting of the proposed Converter Station (to be cut into a natural slope) will reduce potential views of the Proposed Development and will in effect offset the minor adverse effect. As such no additional mitigation measures are proposed.

21.9. RESIDUAL EFFECTS

21.9.1.1. The environmental residual effect on each identified receptor (Heritage Asset) by Onshore Cable Corridor Section is presented in detail in Appendix 21.5 (Heritage and Archaeology Residual Effects Tables).

21.9.1.2. In summary, all predicted Construction Stage environmental effects would be reduced to **negligible** significance following the implementation of mitigation measures outlined above.

21.9.1.3. During the Operational Stage, the only residual effect on Designated Heritage Assets is in relation to Scotland (Cottage). Following mitigation, there is likely to be a permanent, long-term **minor adverse** residual effect on Scotland (Cottage) however these effects will be offset by embedded mitigation within the design (see 21.7.2.2).

21.9.1.4. The following table provides a summary of the findings of the assessment.

Table 21.6 – Summary of Effects Table for Heritage and Archaeology

Description of Effects	Receptor	Significance and Nature of Effects Prior to mitigation	Summary of Mitigation/Enhancement	Significance and Nature of Residual Effects following Mitigation / Enhancement
Construction Stage				
<p>Partial or complete loss to buried heritage assets (known or possible archaeological remains), if present, where ground disturbance is proposed</p>	<p>Below-ground archaeological remains across Section 1-10</p> <ul style="list-style-type: none"> • <i>Palaeoenvironmental Remains;</i> • <i>Prehistoric Remains;</i> • <i>Roman Remains;</i> • <i>Later Medieval Remains;</i> • <i>Post-medieval remains.</i> <p>(Refer to Appendix 21.5 (Heritage and Archaeology Residual Effects Tables) for detailed description of residual effects per section</p>	<p>Minor, Moderate and Major Adverse - / P / D / LT</p>	<p>Strategy 1: Greenfield area evaluation and mitigation. Trial trenching to inform appropriate mitigation strategy.</p> <p>OR</p> <p>Strategy 2: Brownfield area evaluation (where feasible) and mitigation, JB and TJBs</p> <p>Strategy 3: Brownfield area mitigation (watching brief) of the cable trench excavation, where suitable.</p> <p>Paleoenvironmental sampling during watching</p>	<p>Negligible Neutral / P / D / LT</p>

	for each chronological period)		brief, where clear potential has been identified. This might include proposed disturbance in coastal alluvial/fluvial zones adjacent to Langstone Harbour and in areas of raised marine deposits, where they would be affected	
Operational Stage				
Changes to setting through the introduction of new built form in the landscape	Scotland (Cottage), 1.4 km to the north	Minor Adverse - / P / D / LT	Embedded mitigation measures have been incorporated into the Proposed Development in the form of landscape planting on the northern boundary of the Proposed Converter Station. The mitigation design includes proposed native mixed woodland (up to 25 m) along the northern edge of the Order Limits along with a line of native hedgerow approximately	Offset, but remains Minor Adverse - / P / D / LT

			<p>80 m north of the Proposed Converter Station. Mitigation planting, along with the proposed siting of the Proposed Converter Station (to be cut into a natural slope) will reduce potential views of the Proposed Development and will in effect, offset the minor adverse effect. As such no additional mitigation measures are proposed.</p>	
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Key to table:

+ / - = Beneficial or Adverse P / T = Permanent or Temporary, D / I = Direct or Indirect, ST / MT / LT = Short Term, Medium Term or Long Term, N/A = Not Applicable

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