Hampshire Water Transfer and Water Recycling Project

Environmental Statement – Chapter 7 Archaeology and cultural heritage

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7.1 Introduction

7.1.1 This chapter provides the assessment of the likely significant effects on archaeology and cultural heritage from the construction, operation and decommissioning of the Hampshire Water Transfer and Water Recycling Project (hereafter referred to as the 'Proposed Development'), which is being progressed by Southern Water Services Limited ('the Applicant').

7.1.2 This chapter details the legislation, policy and guidance that is relevant to archaeology and cultural heritage, summarises the engagement and consultation undertaken to date, sets out the scope and methodology of assessment, and describes the baseline environment. Following this, the likely significant effects of the Proposed Development on archaeology and cultural heritage are assessed taking account of embedded primary and tertiary mitigation within the design. The need for any secondary mitigation is then considered along with any proposals for monitoring and/or enhancement. The chapter concludes with a summary of residual effects.

7.1.3 Whilst this Environmental Statement (ES) presents an assessment of the effects that may occur from decommissioning activities of the Proposed Development, the Applicant is not seeking consent for decommissioning.

7.1.4 This archaeology and cultural heritage chapter for the Proposed Development considers effects on all surviving physical remains of past human activity. As is highlighted in the National Policy Statement for Water Resources Infrastructure (NPSWRI [1]) in paragraph 4.8.3, heritage assets are *"elements of the historic environment identified as having a degree of significance meriting consideration in planning decisions because of their historic interest"*. This includes *"buildings, monuments, sites, places, areas or landscapes, or any combination of these. The value of a heritage asset to this and future generations because of its heritage interest is referred to as its significance. The interest may be historic, archaeological, architectural or artistic. Significance derives not only from a heritage asset's physical presence, but also from its setting"*.

7.1.5 As such, this chapter considers heritage assets, as set out within the NPSWRI which, in this case, comprise:

1. Scheduled monuments
2. Listed buildings
3. Registered parks and gardens
4. Conservation areas
5. Non-designated heritage assets including:
    a. non-designated historic buildings
    b. known and presently unrecorded archaeological remains
    c. geoarchaeological deposits
    d. historic landscapes

7.1.6 This chapter should be read in conjunction with ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6) which describes the development parameters against which the effects considered in this chapter have been assessed.

7.1.7 All effects on the significance of heritage assets are considered within this chapter, but this chapter should be read alongside relevant parts of other chapters in Volume I which also consider effects on features and provide information that supports this assessment, namely:

1. ES Chapter 8 Terrestrial and freshwater biodiversity, Volume I (Document reference 6.1, DCO Volume 6) – considers effects on valued habitats which include historic landscape features, primarily Important Hedgerows and ancient woodland.
2. ES Chapter 13 Landscape and visual, Volume I (Document reference 6.1, DCO Volume 6) – considers effects on historic landscape features, landscape character and valued views, including those from heritage assets, although this does not deal with the setting of heritage assets, which is only considered within this chapter and in ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6). Some information generated by the landscape and visual assessment (e.g. Zone of Theoretical Visibility (ZTV) and visualisations) in ES Chapter 13 Landscape and visual, Volume I (Document reference 6.1, DCO Volume 6) has been considered in this assessment. ES Chapter 13 Landscape and visual, Volume I (Document reference 6.1, DCO Volume 6) provides an assessment of the likely significant effects on the Special Qualities of the South Downs National Park which includes Special Quality 6 relating to the rich cultural heritage.
3. ES Chapter 15 Noise and vibration, Volume I (Document reference 6.1, DCO Volume 6) – the assessment of noise and vibration effects on human receptors informs understanding of the change to the setting of heritage assets considered in this chapter.
4. ES Chapter 18 Traffic and transport, Volume I (Document reference 6.1, DCO Volume 6) – considers changes in traffic and transport and its effect on human receptors which also informs understanding of the change to the setting of heritage assets considered in this chapter.
5. ES Chapter 19 Water environment, Volume I (Document reference 6.1, DCO Volume 6) – considers hydrology, hydrogeology and flood risk which also informs understanding of indirect effects on heritage assets arising through changes to the water environment considered in this chapter.
6. ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6) – an assessment of the cumulative effects i.e. effects from the interrelationship between the Proposed Development and other developments, and an assessment of the in-combination effects, i.e. effects from the interaction between the individual effects of the Proposed Development.

7.1.8 This chapter is informed by the following appendices, all contained in ES Volume II:

1. ES Appendix 7.1 Historic environment baseline study (Document reference 6.2, DCO Volume 6)

2. ES Appendix 7.2 Historic environment gazetteer Part A and Part B (Document reference 6.2, DCO Volume 6)
3. ES Appendix 7.3 Detailed gradiometer survey report - Phase 1 (Document reference 6.2, DCO Volume 6)
4. ES Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation (Document reference 6.2, DCO Volume 6)
5. ES Appendix 7.5 Geoarchaeological monitoring reporting (Document reference 6.2, DCO Volume 6)
6. ES Appendix 7.6 Heritage assets settings scoping appraisal (Document reference 6.2, DCO Volume 6)
7. ES Appendix 7.7 Heritage assets setting assessment (Document reference 6.2, DCO Volume 6)
8. ES Appendix 7.8 Detailed gradiometer survey report - Phase 2 (Document reference 6.2, DCO Volume 6)
9. ES Appendix 7.9 Trial trenching report (Document reference 6.2, DCO Volume 6)
10. ES Appendix 7.10 World War II Crash Site Pigeon House Farm Technical Note and geophysical survey report (Document reference 6.2, DCO Volume 6)

7.2 Legislation, policy and guidance

7.2.1 This section identifies the legislation, policy and guidance and other documentation that has informed the assessment of likely significant effects on archaeology and cultural heritage.

Legislation

7.2.2 Table 7-1 lists the legislation relevant to the assessment of the likely significant effects on archaeology and cultural heritage.

Table 7-1 List of relevant legislation

Legislation	Relevance to assessment
Historic Buildings and Ancient Monuments Act (1953) [2]	Provides provision for the compilation of a register of gardens and other land, including parks and gardens, and battlefields which have been considered in this assessment.
Ancient Monuments and Archaeological Areas Act (1979) (as amended) [3]	Provides specific protection for scheduled monuments and Archaeological Areas of Importance which have been considered in this assessment.
National Heritage Act (1983) [4]	Provides powers for the Historic Buildings and Monuments Commission (Historic England (HE)) in respect of historic features, including gardens. HE has been consulted in the production of this assessment.
Protection of Military Remains Act (1986) [5]	Protects the remains of military aircraft and vessels that have crashed, sunk or been stranded and of associated human remains, from unauthorised interference which have been considered in this assessment.

Legislation	Relevance to assessment
Planning (Listed Buildings and Conservation Areas) Act (1990) [6] of particular relevance are Sections 16, 66 and 72	Provides specific protection for buildings and areas of special architectural or historic interest which have been considered in this assessment.
The Water Industry Act 1991 3(2)(b)	Requires water companies to have regard to the desirability of protecting and conserving buildings, sites and objects of archaeological, architectural or historic interest which have been considered in this assessment.
Hedgerow Regulations 1997 [7], as amended by The Hedgerows (England) (Amendment) Regulations 2002 [8]	Provides for the protection of hedgerows, which may be afforded statutory protection should they qualify as 'important', under criteria which includes historical or archaeological reasons. A plan of all hedgerows which have been identified as important under the regulations is presented at ES Appendix 8.2 Habitats, Volume II (Document reference 6.2, DCO Volume 6).
The Infrastructure Planning (Decisions) Regulations 2010 of particular relevance is Regulation 3 [9]	Requires the Secretary of State to *"have regard to the desirability of preserving"* any listed building or its setting or any features of special architectural or historic interest which it possesses, the preservation or enhancement of the character or appearance of a conservation area, and the preservation of any scheduled monument or its setting. An assessment of effects arising through change to setting is set out in this assessment.

National policy

7.2.3 The primary policy for determining the application for the Development Consent Order (DCO) for the Proposed Development is the NPSWRI. This sets out policies to guide how DCO applications for water resources infrastructure should be decided and how the effects of such infrastructure are considered.

7.2.4 Table 7-2 lists the paragraphs from the NPSWRI and other national policy that are relevant to the archaeology and cultural heritage assessment. It also sets out where these policy requirements are addressed within the chapter.

Table 7-2 List of relevant national policy

Relevant paragraph reference	Summary of policy requirement	Where addressed in chapter
National Policy Statement for Water Resources Infrastructure (2025) [1]		
4.8.1 to 4.8.6	These paragraphs define the historic environment and its component parts, known as heritage assets, identifying and confirming that both designated and non-designated heritage assets are to be considered by the Secretary of State in determining applications for development consent.	Sets the focus for this chapter which is set out at paragraph 7.1.4.
4.8.7	Applicant's Assessment: The applicant must provide an assessment of the effects of the Proposed Development on	This sets out the need for an assessment of likely significant effects which is provided in section 7.8. Cumulative impacts are

Relevant paragraph reference	Summary of policy requirement	Where addressed in chapter
	the historic environment including cumulative impacts.	assessed at ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6).
4.8.8	This sets out that an applicant's assessment must describe the significance of heritage assets affected by the Proposed Development, and the contribution of their setting to that significance, sufficient to understand the potential impacts. The evidence base should, as a minimum, include information from the relevant Historic Environment Record (HER) and National Heritage List for England (NHLE) and be assessed using appropriate expertise where necessary. Where archaeological remains are anticipated to be present, a desk-based assessment (DBA) and, where necessary, field evaluation should be carried out. The applicant will also ensure that the impact of the Proposed Development on the significance of heritage assets affected is understood from the application and supporting documents.	The methodology used to identify and assess effects is set out in section 7.5. Individual heritage assets and their significance are considered in section 7.7. Relevant supporting information including archaeological and geoarchaeological DBA and geophysical and trial trenching evaluation, is set out in ES Appendices 7.1 to 7.9, Volume II (Document reference 6.2, DCO Volume 6). The assessment of effects on identified heritage assets is set out in section 7.8.
4.8.9	This sets out that the applicant is encouraged to prepare proposals which make a positive contribution to the historic environment where the opportunity exists. Proposals should enhance heritage assets through sensitive design, include measures to address risks to heritage assets, consider how visual or noise impacts can affect heritage assets, and identify opportunities to enhance access to and understanding of affected heritage assets.	Section 7.4 sets out the measures embedded into the Proposed Development design to reduce and mitigate adverse impacts and to respond to historic landscape character to inform wider environmental and landscape mitigation proposals. This section also considers good practice construction techniques used to reduce effects during construction. Section 7.9 sets out any additional mitigation required to address adverse effects and opportunities for enhancements to heritage assets. Opportunities for potential enhancements at Fisher's Pond, Waltham Chase deer park and Wickham Park are shown in the Indicative Environmental Masterplan, appended to the Design Approach

Relevant paragraph reference	Summary of policy requirement	Where addressed in chapter
		Document (Document Reference 5.12, DCO volume 5). The Outline Written Scheme of Investigation (WSI) (Document reference 7.6, DCO Volume 7) secures proposals for community engagement and outreach.
4.8.10	In the preparation of the Proposed Development, there is a requirement to consider whether impacts on the historic environment are direct or indirect, temporary or permanent.	Section 7.8 sets out whether impacts would be direct or indirect, temporary or permanent. ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6) assesses these physical and temporal impacts in terms of the setting to heritage assets.
4.8.11 to 4.8.14	This section sets out that investigation of at-risk heritage assets, while not as valuable as the retention of that heritage asset, will be required where a heritage asset is to be lost as a result of development or where previously unrecorded remains are anticipated. Where loss of or partial loss of a heritage asset's significance is justified, the Secretary of State may impose a requirement on the DCO to ensure that unrecorded remains are investigated in accordance with a WSI that complies with the NPSWRI and is agreed in writing with the local planning authority. Where there is high probability based on assessment that the Proposed Development may contain as yet undiscovered heritage assets, the Secretary of State may require appropriate procedures in place for identification and treatment of such assets discovered during construction. Any such investigation must be carried out and disseminated in a timely fashion and are required to deposit archival material generated during the investigation in a local museum or other public repository that is willing to receive it.	This sets out the principle that mitigation intended to avoid or reduce any effect should be prioritised over mitigation intended to reduce the severity of the effect after it has happened. Primary and tertiary mitigation measures are set out in section 7.4 and secondary mitigation measures are described in section 7.9. The Outline WSI (Document reference 7.6, DCO Volume 7) sets out a staged process for the investigation of the land within the Order Limits and the development of appropriate recording mitigation and subsequent reporting, dissemination and archival of findings. It also cross-references to non-investigative mitigation set out in other documents submitted as part of the DCO application.
4.8.15 to 4.8.29	In determining applications, the Secretary of State will identify and	This sets out the requirement to identify the magnitude of any harm to

Relevant paragraph reference	Summary of policy requirement	Where addressed in chapter
	assess the particular significance of any heritage asset that may be affected by a proposed development (including affecting the setting of a heritage asset), taking account of the available evidence. This section sets out that any harm to heritage assets is a consideration in determining an application for development consent and sets out guidance for weighting that harm proportionately to its magnitude and the significance of the heritage asset affected. Regardless of the magnitude of harm, great weight is to be placed on harm to significance of designated heritage assets and substantial harm to these assets should be 'exceptional' or 'wholly exceptional' in the case of designated heritage assets of the highest significance. Harm to both designated and non-designated heritage assets and loss of significance, will be weighed against the public benefits of the Proposed Development by the Secretary of State.	heritage assets to allow any adverse effects of the Proposed Development to be balanced against its benefits. While this balancing exercise is a matter for the Planning Policy Statement (Document reference 5.6, DCO Volume 5) and the decision-maker, the assessments of harm required to support that decision-making process are set out at section 7.8.
National Planning Policy Framework (2024) (NPPF) [10]		
202-221	Section 16 of the NPPF relates to conserving and enhancing the historic environment. Paragraph 210 sets out that in determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance.	The NPPF does not contain specific policies for Nationally Significant Infrastructure Projects. However, policy in relation to the assessment of heritage significance and potential impacts is comparable between the NPPF and the NPSWRI and are addressed in the sections cross-referenced above but set in the context of The Infrastructure Planning (Decisions) Regulations 2010 which set the relevant tests for DCO.

Local policy

7.2.5 The local policies listed in Table 7-3 are considered relevant to the archaeology and cultural heritage assessment of the Proposed Development. While the Secretary of State is required to determine an application for development consent in accordance with the NPSWRI, it may be that the Secretary of State considers aspects of local policy to be matters that are important and relevant to the

determination. In the event that there is any conflict between the local policy and the NPSWRI, the NPSWRI would prevail for the purposes of decision making given the national significance of the infrastructure.

7.2.6 Adopted and emerging development plan policies have been considered. Adopted and emerging planning policies that are relevant are included in Table 7-3.

Table 7-3 List of relevant local policy

Local planning authority	Relevant local policy	Relevance to assessment
Eastleigh Borough Council (EBC)	Eastleigh Borough Local Plan (2016-2036) (Adopted April 2022) [11] Policy S8 Historic Environment Policy DM1 General criteria for new development Policy DM12 Heritage Assets	Policy S8 - Includes provisions for restricting development likely to harm heritage assets or their settings through management of development proposals (S8c) and encouraging development that enhances heritage assets (S8d). Policy DM1 – Sets out that all development should have no unacceptable impact on the significance of heritage assets. Policy DM12 - Sets out that development whereby harm to significance of heritage assets would occur, requires that recording and advance understanding of significance appropriate to their importance is undertaken and this evidence is made available to the public. This chapter sets out an assessment of heritage asset significance and the impacts of the Proposed Development, as well as outlining future survey required to mitigate any impacts and disseminate the results (sections 7.7 to 7.9).
East Hampshire District Council (EHDC)	Local Plan Joint Core Strategy Part 1 (Adopted June 2014) [12]	Policy CP30 – Requires development proposals to conserve and where possible enhance the district's historic environment. This chapter sets out an assessment (in section 7.8) that considers these factors.
EHDC	Our Local Plan 2021 – 2040 Regulation 18 [13] Policy NBE14: Historic Environment Policy DM3, DM4, DM7 and DM8	Policy NBE14 - Sets out that where there may be harm to heritage assets it is necessary for there to be balancing of benefit to the public and encourages development that enhances heritage assets. Policy NBE4.5 - Requires a statement of significance of heritage assets and their setting to be produced, along with what impacts would occur from development. This chapter sets out an assessment in section 7.8 along with statements of significance of heritage assets and the impacts of the Proposed Development upon them that facilitates this balancing exercise.

Local planning authority	Relevant local policy	Relevance to assessment
		Policy DM3 – Requires development to preserve or enhance the historic environment and conservation areas. Policy DM4 – Requires development to preserve and enhance features of special architectural or historic interest of listed buildings and protect local listed buildings and their settings from harm. This is to be balanced by public benefit. Policy DM7 – States that where archaeological heritage assets may exist, evaluation is required to characterise archaeological deposits. The impact of any development on buried archaeology should be stated and efforts to preserve archaeology in-situ should be undertaken. Where preservation in situ is not possible mitigation should be detailed and agreed with the County Council Historic Environment Team. Policy DM8 – States that the historic landscape, including parks and gardens of historic or landscape interest and archaeological features should be preserved and enhanced. These policies are addressed in section 7.4 to 7.9.
Fareham Borough Council (FBC)	Fareham Local Plan 2037, (Adopted April 2023) [14] Policies HE1 – HE6	Policy HE1 - Requires development to seek to conserve and enhance the historic environment. Policy HE2 – Requires developers to protect conservation areas and their settings. Policy HE3 – Requires developers to seek to preserve and enhance features of special architectural or historic interest of listed buildings and their settings. Policy HE4 - To only permit development that would harm the significance of scheduled monuments and other archaeological remains where the tests in the NPPF are met. Policy HE5 - To protect local listed buildings, other non-designated heritage assets and their settings from harm unless the harm is outweighed by public benefits. Policy HE6 - Sets out Heritage at Risk based on HEs national register. Sections 7.4 to 7.9 of this chapter address these issues and the Heritage at Risk register has been consulted when undertaking this assessment.

Local planning authority	Relevant local policy	Relevance to assessment
Havant Borough Council (HBC)	Havant Borough Core Strategy [15] Policy CS11 Protecting and Enhancing the Special Environment and Heritage of Havant Borough	Policy CS11 criterion 4 provides support for development that protects and enhances designated and non-designated heritage assets. This chapter sets out an assessment identifying where designated and non-designated heritage assets are protected, specifically in section 7.8.
HBC	Old Bedhampton Conservation Area Appraisal (Adopted September 2019) [16]	Effects on Old Bedhampton Conservation Area have been considered in line with the conservation area appraisal in section 7.8.
Portsmouth City Council (PCC)	Portsmouth Plan (The Portsmouth Core Strategy) (Adopted January 2012) [17] Policy PCS23 Design and Conservation	The Portsmouth Plan (The Portsmouth Core Strategy) policy PCS23 requires development to respond well to the city's historic townscape and heritage assets, and to protect and enhance the settings of heritage assets, particularly in views from Portsdown Hill. This chapter sets out an assessment of change to the setting of heritage assets on Portsdown Hill between paragraphs 7.8.43 and 7.8.53.
PCC	Pre-Submission Portsmouth Local Plan 'Regulation 19' documentation for consultation (Emerging July 2024) [18] Policy PLP53 Historic Environment Policy PLP54 Listed Buildings Policy PLP55 Conservation Areas Policy PLP56 Archaeology	The Pre-Submission Portsmouth Local Plan policy PLP53 states development proposals will be permitted where they conserve or enhance the city's heritage assets in a manner appropriate to their significance. Policy PLP54 states that development proposals that affect a listed building or its setting will only be permitted where they preserve or enhance the significance of the building or harm is reduced and outweighed by public benefit. Policy PLP55 states that development proposals within a conservation area, or within its setting, will be permitted where they preserve or enhance the character or appearance of the conservation area. Policy PLP56 states that development proposals will be permitted where they do not cause harm to archaeological heritage assets and/or their setting. There will be a presumption in favour of preservation in-situ or where harm to, or loss of, an archaeological heritage asset's significance is unavoidable, development will be permitted where clear justification in terms of public benefits arising from the development outweigh that harm.

Local planning authority	Relevant local policy	Relevance to assessment
		This chapter sets out an assessment in section 7.8, that considers the factors set out in these policies.
WCC	Winchester District Local Plan Part 2 Development Management and Site Allocations (Adopted April 2017) [19] Policy DM25 Historic Parks and Gardens Policy DM26 Archaeology Policy DM27 Development in Conservation Areas Policy DM29 Heritage Assets	Winchester District Local Plan Part 2 Policy DM25 – Requires development to not have a detrimental impact on the historic significance or distinctive character and appearance of a park, garden, cemetery or battlefield of special historic interest or its setting. Policy DM26 – Requires planning applications to incorporate sufficient information to define the significance and extent of above or below-ground heritage assets, as far as reasonably practicable, including investigation via DBA, field evaluation and effect of the proposal(s) on the assets or their setting. Policy DM27 - Development proposals which conserve or enhance the character, appearance or special architectural or historic interest of conservation areas will be permitted. Policy DM29 - Works which would cause an unacceptable level of harm to the special interest of heritage assets or their setting or would lead to the unsympathetic subdivision of their grounds, will only be permissible in exceptional circumstances, or in the case of higher grade heritage assets in wholly exceptional circumstances. This chapter sets out an assessment (in section 7.8) that considers these factors.
WCC	'Your Place Your Plan Winchester District Local Plan' 2020-2040 [20] Policies HE1-HE7, HE10 and HE12	Proposed Submission Local Plan (Regulation 19) Policy HE1 - Requires new development to make a positive contribution to the district's historic environment. Policy HE2 - Development should seek to conserve both designated and non-designated heritage assets in a manner appropriate to their significance. Policy HE3 - The council will apply the relevant policy (or policies) in the NPPF when assessing the magnitude of harm to the significance of a designated heritage asset. Great weight will be given to the conservation of the affected asset(s), regardless of whether the harm is considered to be less than substantial, substantial, or total loss (and the more important the asset the greater the weight should be). Policy HE4 - States that a balanced judgement should be made where a development could result in harm to non-designated heritage assets.

Local planning authority	Relevant local policy	Relevance to assessment
		Policy HE5 - Details that the local planning authority will not permit the loss of the whole or part of a heritage asset without being satisfied that the harm is unavoidable, and appropriate mitigation measures have been agreed. Policy HE6 - Development which affects, or may affect a scheduled monument, or its setting, should be supported by appropriate and proportionate evidence on the significance of the asset and the steps that would be taken to avoid and reduce harm. Policy HE7 - Development proposals should be supported by proportionate evidence describing the significance of any archaeological assets affected, including any contribution made by their settings. Where development affecting archaeological assets is permitted, developers will be required to record and advance understanding of any assets to be lost (wholly or in part) in accordance with a written programme of archaeological investigation. Policy HE10 - Development within Conservation Areas should seek to conserve or enhance the character and significance, appearance or special architectural or historic interest of the area. Policy HE12 - Proposals which accord with the Local Plan will be permitted provided they do not result in unacceptable harm to or loss of the significance or distinctive character of a Registered Historic Park and Garden identified on Local Registers. This chapter sets out embedded primary and tertiary mitigation at section 7.4, an assessment in section 7.8, and secondary mitigation at section 7.9 that considers these factors. The Outline WSI (Document reference 7.6, DCO Volume 7) sets out a staged programme of archaeological mitigation.
South Downs National Park Authority (SDNPA)	South Downs Local Plan 2014-2033 (Adopted July 2019) [21] Strategic Policy SD12 Development Management Policies SD13, SD15, SD16	Strategic Policy SD12 – Sets out the strategy for conservation and enhancement of the historic environment, including safeguarding of heritage assets. This includes developers to provide assessment on the significance of heritage assets and their setting for both designated and non-designated assets, along with details of the impacts from development. Development Management Policy SD13 – Sets out that listed buildings and their settings should be preserved and enhanced, with any harm balanced with the public benefit.

Local planning authority	Relevant local policy	Relevance to assessment
		Development Management Policy SD15 - Requires developers to protect conservation areas and their setting. Development Management Policy SD16 – States to only permit development that would harm the significance of scheduled monuments and other archaeological remains where the tests in the policy are met and in these cases, preservation by record secured through a WSI is undertaken. This chapter sets out an assessment in section 7.8, that considers these factors, with subsequent mitigation discussed in section 7.9 and in the Outline WSI (Document reference 7.6, DCO Volume 7)

Guidance, standards and advice

7.2.7 In addition, the archaeology and cultural heritage assessment has been undertaken in accordance with relevant guidance and has been compiled in accordance with professional standards. The guidance and standards which relate to this assessment are detailed in Table 7-4.

Table 7-4 List of relevant guidance and standards

Guidance	Description	Relevance to assessment
Historic England (2015) The Historic Environment in Local Plans: Historic Environment Good Practice Advice in Planning 1 [22]	Details the processes involved in the decision-making process for the historic environment at a local planning level, providing guidance in implementing the NPPF requirements.	Guidance within the document is relevant to ensuring data and documentation for the historic environment used in the assessment is of the standard required.
Historic England (2015) Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning 2 [23]	Provides advice and guidance on assessing the significance of heritage assets, and how to understand the nature, extent and level of significance. It provides guidance on how to understand the impact of a proposed development on the heritage significance of an asset and how to identify ways to avoid, reduce or mitigate that impact which meets the objectives of the NPPF.	Guidance within the document is reflected in the assessment methodology, relevant to identifying the rationale for understanding the significance of a heritage asset and how a proposed development might impact upon the significance of a heritage asset (section 7.5).
Historic England (2017) The Setting of Heritage Assets:	Provides guidance on establishing the setting of a heritage asset, how that setting	This guidance underpins the settings assessment presented within ES Appendix 7.7 Heritage assets setting

Guidance	Description	Relevance to assessment
Historic Environment Good Practice Advice in Planning 3 [24]	contributes to the asset's significance, and to what extent a proposed development might impact upon an asset's significance.	assessment, Volume II (Document reference 6.2, DCO Volume 6).
English Heritage (2008) Conservation Principles: Policy and Guidance for the Sustainable Management of the Historic Environment [25]	This document provides an overview of the principles underpinning the management of the historic environment supporting decision-making relating to the historic environment.	These conservation principles have been used as a point of reference to inform the level of significance of heritage assets and the outcomes of the impact assessment presented in section 7.8.
Chartered Institute for Archaeologists (2020) Standard and guidance for historic environment desk-based assessment [26]	This document includes guidance on what should and should not be included in a DBA, which is a compilation and assessment of baseline historic environment data.	This standard has informed the approach to the DBA work as described in paragraph 7.7.3 and presented in ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6).
Chartered Institute for Archaeologists (2022) Code of Conduct [27]	Promotes the standards of conduct and self-discipline required of a member in the interests of the public and in pursuit of the study and care of the physical evidence of the human past.	The Code of Conduct has informed the work undertaken in relation to this assessment and wider historic environment considerations within the Proposed Development.
Institute of Sustainability and Environmental Professionals (ISEP) (previously called the Institute of Environmental Management and Assessment (IEMA)) (2021) Principles of Cultural Heritage Impact Assessment in the UK [28]	This document supports the assessment of cultural heritage through a series of principles including ascribing significance and evaluating the consequences of change as well as setting out good practice to achieve this.	The principles contained within this document have supported the impact assessment specific to the historic environment. The methodology is described in section 7.5 and the assessment is presented in section 7.8.
Hampshire County Council (no date) Archaeology and Planning: Guidance for Developers [29]	This guidance provides support for developers on the historic environment in Hampshire.	This document has supported the consideration of the historic environment specifically within the portion of the Proposed Development within Hampshire.
Hampshire County Council (2012) Hampshire Archaeology Strategy [30]	The Hampshire Archaeology Strategy presents the aims and priorities for better understanding the archaeology and cultural heritage in Hampshire.	This document has helped inform the baseline for archaeology and cultural heritage within Hampshire as well as the assessment of known and potential archaeology and cultural heritage within the study areas.

Guidance	Description	Relevance to assessment
Oxford Archaeology (2014) Solent-Thames Research Framework for the Historic Environment: Resource Assessments and Research Agendas [31]	This document provides a resource for developing research frameworks within the Solent-Thames region with background on the region's known historic landscape.	This document has helped inform the baseline for archaeology and cultural heritage within Hampshire (section 7.7) as well as the assessment of known and potential archaeology and cultural heritage within the study areas (section 7.8).
Defence Business Services, Joint Casualty and Compassionate Centre (Commemorations and Licensing) (2014) Crashed military aircraft of historical interest, licensing of excavations in the UK, notes for guidance of recovery groups [32]	This document provides guidance on procedures related to crashed military aircraft of historical interest including the necessary licensing required if a crashed site is encountered.	This guidance has been referred to within the consideration of the crashed WWII Hurricane sites at Frith Farm and Pigeon House Farm at section 7.8.

7.3 Consultation, scoping and engagement

Consultation

7.3.1 Feedback received from stakeholders for each consultation relevant to archaeology and cultural heritage is summarised within the Consultation Report (Document reference 5.1, DCO Volume 5) including how the Proposed Development has had regard to the feedback. These cover the consultation responses received for the following consultations:

1. Summer 2022 Consultation
2. Summer 2024 Consultation
3. Spring 2025 Consultation
4. Autumn 2025 Consultation
5. Spring 2026 Consultation

Environmental Impact Assessment scoping

7.3.2 An Environmental Impact Assessment (EIA) Scoping Opinion was adopted by the Planning Inspectorate on behalf of the Secretary of State on 31 August 2023. A full list of the EIA Scoping Opinion comments made by the Planning Inspectorate and their respective responses are provided in ES Appendix 5.3 Response to EIA Scoping Opinion, Volume II (Document reference 6.2, DCO Volume 6).

7.3.3 Comments received in relation to archaeology and cultural heritage are set out in Table 7-5, describing how and where these are addressed in the ES.

Table 7-5 Environmental Impact Assessment Scoping Opinion - Planning Inspectorate comments

Scoping Opinion ID	Summary of Scoping Opinion comment	How the ES addresses the Scoping Opinion comment	Where addressed in the ES
ID 3.2.1	The EIA Scoping Opinion agreed that effects to heritage assets located near to Eastney Transfer Tunnel (TT) and Eastney Long Sea Outfall (LSO) could be scoped out on the basis of there being no physical works to these during construction and as such no physical disturbance to archaeological remains. The exception to this is the connection at Budds Farm Wastewater Treatment Works (WTW) which is included in the assessment. It was requested that all heritage assets scoped out of the assessment as a result of the absence of physical works to the Eastney TT and Eastney LSO be identified.	This is scoped out of the assessment. Heritage assets are scoped out on a parametric approach, defined as those within 500m of the Eastney TT and Eastney LSO, but outside the study area defined at paragraph 7.5.8.	ES Appendix 7.2 Historic environment gazetteer Part A and Part B, Volume II (Document reference 6.2, DCO Volume 6).
ID 3.2.2	The EIA Scoping Opinion agreed that effects arising from the construction of Havant Thicket Reservoir do not need to be assessed as planning permission has already been granted and any such effects are scoped out, but that the ES should also assess the cumulative construction effects of the Proposed Development and Havant Thicket Reservoir in the event that the planning permission has not been implemented.	This is scoped out of the assessment. Cumulative effects are considered in ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6).	No additional information provided in the ES.

Scoping Opinion ID	Summary of Scoping Opinion comment	How the ES addresses the Scoping Opinion comment	Where addressed in the ES
ID 3.2.3	The EIA Scoping Opinion agreed that there would be no physical works or visible change to the Eastney TT and Eastney LSO during operation and any such effects are scoped out.	This is scoped out of the assessment.	No additional information provided in the ES.
ID 3.2.4	The EIA Scoping Opinion agreed that operation of the Proposed Development would not impact any heritage assets adjacent to Havant Thicket Reservoir during operation and that any such effects can be scoped out.	This is scoped out of the assessment.	No additional information provided in the ES.
ID 3.2.5	The EIA Scoping Opinion agreed that operation of the Proposed Development would not cause direct physical effects to designated heritage assets and that any such effects can be scoped out.	This is scoped out of the assessment.	No additional information provided in the ES.
ID 3.2.6	The EIA Scoping Opinion provided confirmation that direct physical effects on non-designated heritage assets from hydrological changes, leading to inundation, dewatering or desiccation during operation should be assessed.	ES Chapter 19 Water environment, Volume I (Document reference 6.1, DCO Volume 6) has been consulted and relevant information brought through into this chapter.	Section 7.8
ID 3.2.7	The EIA Scoping Opinion agreed that operation of the Proposed Development would not result in indirect physical effects on designated or non-designated heritage assets and any such effects are scoped out.	This is scoped out of the assessment.	No additional information provided in the ES.
ID 3.2.8	The EIA Scoping Opinion agreed that temporary	This is scoped out of the assessment.	No additional information provided in the ES.

Scoping Opinion ID	Summary of Scoping Opinion comment	How the ES addresses the Scoping Opinion comment	Where addressed in the ES
	changes to the setting of heritage assets are unlikely to occur during operation and that such effects can be scoped out.		
ID 3.2.9	The EIA Scoping Opinion stated that the ES should: • clarify the relationship between the study areas proposed • explain how the 500m and 1km study areas have been selected • identify and describe any designated heritage assets located outside of the 1km study area and within 3km of the Proposed Development that are identified as potentially being affected. The EIA Scoping Opinion states that the ES should also explain how the designated heritage assets were identified, and that efforts should be made to agree the study area and heritage assets to be assessed with relevant consultation bodies.	These study areas were confirmed through the Historic Environment and Landscape EIA Working Group, detailed in paragraph 7.3.7, and the request for clarification of the rationale is addressed in this chapter from paragraph 7.5.9. This chapter sets out how designated heritage assets have been identified with reference to an extended study area of up to 1km from the Order Limits and 3km from the Above Ground Plant (AGP) and Water Recycling Plant (WRP), and by information accessed by site walkover (ES Appendices 7.6 Heritage assets settings scoping appraisal and 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6). The scope of detailed assessment is set out in Appendix 7.6 Heritage assets settings scoping appraisal, Volume II (Document reference 6.2, DCO Volume 6) and was agreed with consultees. HE subsequently	Paragraphs 7.5.6 to 7.5.11 ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6). ES Figure 7.3 Designated heritage assets within the extended study area, Volume III (Document reference 6.3, DCO Volume 6). ES Appendix 7.6 Heritage assets settings scoping appraisal, Volume II (Document reference 6.2, DCO Volume 6). ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6). ES Figure 7.5 Heritage Specific View Point from Fort Widley looking East, Volume III (Document reference 6.3, DCO Volume 6).

Scoping Opinion ID	Summary of Scoping Opinion comment	How the ES addresses the Scoping Opinion comment	Where addressed in the ES
		requested that the Moated Site at Marwell Manor (NHLE 1012196) be included with the scope. It was also agreed with consultees that heritage assets that would be affected solely by the pipeline between the WRP and Havant Thicket Reservoir would be removed from scope when this element of the Proposed Development was not taken forward. This document has not been iterated subsequent to that agreement.	
ID 3.2.10	The EIA Scoping Opinion stated that the Jacobi and Wymer collections should be reviewed for relevant data for the baseline study in addition to the HER.	The Jacobi and Wymer collection along with the HER information has been reviewed and incorporated into the baseline set out at section 7.7, and are referenced where appropriate in ES Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation, Volume II (Document reference 6.2, DCO Volume 6), and the assessment in section 7.8.	Sections 7.7 and 7.8.
ID 3.2.11	The EIA Scoping Opinion advised that reference is made to the national and local Heritage at Risk registers, and the location of the Southwick Conservation Area	Southwick Conservation Area is shown on ES Figure 7.3 Designated heritage assets within the extended study area, Volume III (Document reference 6.3, DCO Volume	ES Figure 7.3 Designated heritage assets within the extended study area, Volume III (Document reference 6.3, DCO Volume 6). Sections 7.7 and 7.8

Scoping Opinion ID	Summary of Scoping Opinion comment	How the ES addresses the Scoping Opinion comment	Where addressed in the ES
	identified on a figure within the ES.	6).The baseline discussion at section 7.7 has been developed with reference to the national Heritage at Risk register, which is also referenced as appropriate in the assessment at section 7.8. No formal local Heritage at Risk registers are available for the Proposed Development area.	
ID 3.2.12	The EIA Scoping Opinion stated that the Applicant should ensure that information used to inform the assessment is robust and allows for identification of heritage assets likely to be impacted by the Proposed Development. The need for and extent of intrusive archaeological investigations should be agreed with relevant consultation bodies and undertaken and reported in the ES, where possible.	An in-principle agreement of an investigative strategy has been received from relevant consultation bodies. This is set out in the Outline WSI (Document reference 7.6, DCO Volume 7). Results of desk-based research, geophysical survey, trial trenching and archaeological monitoring of Ground Investigation (GI) works are included as appendices to this chapter.	Paragraphs 7.3.11 to 7.3.15. Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6). Appendix 7.3 Detailed gradiometer survey report - Phase 1, Volume II (Document reference 6.2, DCO Volume 6). Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation, Volume II (Document reference 6.2, DCO Volume 6). Appendix 7.5 Geoarchaeological monitoring reporting, Volume II (Document reference 6.2, DCO Volume 6). Appendix 7.8 Detailed gradiometer survey report - Phase 2, Volume II (Document reference 6.2, DCO Volume 6).

Scoping Opinion ID	Summary of Scoping Opinion comment	How the ES addresses the Scoping Opinion comment	Where addressed in the ES
			Appendix 7.9 Trial trenching report, Volume II (Document reference 6.2, DCO Volume 6). Appendix 7.10 World War II Crash Site Pigeon House Farm Technical Note and geophysical survey report, Volume II (Document reference 6.2, DCO Volume 6).
ID 3.2.13	The EIA Scoping Opinion stated that an explanation should be provided for how heritage importance will be assigned to Registered Parks and Gardens and the grade for each confirmed in the assessment.	Section 7.5 sets out how heritage importance is assigned to Registered Parks and Gardens assessed in the ES and identifies the grade for each.	Section 7.5
ID 3.2.14	The EIA Scoping Opinion set out that the ES should assess all likely significant effects to archaeology and cultural heritage and identify the mitigation required to address adverse effects. Mitigation should be secured in the DCO. Whilst some mitigation may be in draft or outline at DCO application, this should provide a clear framework through which detail can be developed.	The ES has assessed all likely significant effects within the assessment and mitigation measures, as outlined in section 7.4 and section 7.9, have been considered in that assessment and informed the Outline WSI (Document reference 7.6, DCO Volume 7) when setting out requirements for post consent specific surveys.	Sections 7.4, 7.8 and 7.9 Outline WSI (Document reference 7.6, DCO Volume 7).
ID 3.2.15	The EIA Scoping Opinion requested that areas of non-designated historic landscape character and buildings that are non-designated heritage assets (i.e. not just locally listed buildings) be considered in the assessment.	The ES has had regard to the consideration of effects and assessment on non-designated historic buildings and landscape characteristics, as well as historic parks as noted in Winchester and Hampshire HER.	Section 7.8

Engagement

7.3.4 This section provides details of the ongoing technical engagement that has been undertaken with stakeholders in relation to archaeology and cultural heritage.

EIA Working Groups

7.3.5 Five EIA Working Groups have been established as forums for ongoing engagement with statutory bodies regarding the Proposed Development. These Working Groups when combined cover all of the assessment topics considered by the EIA. A full description of each of the EIA Working Groups, the key stakeholders, and an overview of the topics presented can be found in ES Chapter 5 EIA approach and methodology, Volume I (Document reference 6.1, DCO Volume 6). This section presents a summary of the topics covered in the EIA Working Groups which are of relevance for the archaeology and cultural heritage assessment.

7.3.6 The Historic Environment and Landscape EIA Working Group, which includes archaeology and cultural heritage and landscape and visual topics, has been the main forum for engagement for archaeology and cultural heritage. There have been 12 Historic Environment and Landscape EIA Working Group meetings between Summer 2022 and DCO application. Technical officers from The Countryside Charity Hampshire (CPRE Hampshire), EBC, EHDC, FBC, Hampshire County Council (HCC), Natural England (NE), Southampton City Council (SCC), SDNPA PCC, and WCC attended the EIA Working Group meetings.

7.3.7 The following overarching themes were covered across the EIA Working Group meetings. The comprised:

1. Introduction and background to the Proposed Development.
2. Overview of the baseline environment.
3. EIA scoping which included setting out the proposed approach to EIA scoping, providing an overview of the EIA Scoping Report (Document reference 6.2, DCO Volume 6) and seeking feedback on the EIA Scoping Opinion (Document reference 6.2, DCO Volume 6).
4. An overview of the Preliminary Environmental Information (PEI) Report, including setting out the baseline and approach to mitigation, as well as providing an overview of the PEI Report findings.
5. Updates on the approach to design and the development of the design of the Proposed Development.
6. Briefings on the materials to be consulted on, including design and environmental assessment related matters, ahead of the Summer 2022, Summer 2024 and Spring 2025 Consultations.
7. Approach to mitigation, Commitments Register and associated management plans are provided with the DCO application.
8. Consultation feedback and updates on scheme development, and design principles following the Summer 2024 Consultation and PEI Report.
9. Updates on EIA progress and development of mitigation, including management plans and the Commitments Register.

10. An overview of the ES, including setting out the baseline and any updates from the PEI Report, as well as providing an overview of the findings of the EIA.

7.3.8 Comments received as part of the EIA Working Groups and matters resolved in relation to archaeology and cultural heritage included:

1. Working Group 1: Introduction to Water for Life Hampshire. This session was held on 9 June 2022 and included representatives from EBC, FBC, HCC, PCC, EHDC, WCC and NE. This session introduced an overview of the wider Hampshire Water for Life scheme and the Proposed Development, the DCO process, the approach to EIA and related consultation and subject-specific baseline overviews of archaeology and cultural heritage and landscape and visual impact assessments.
2. Working Group 2: EIA scoping. This session was held on 13 September 2022, and included representatives from EHDC, EBC, FBC, HCC, HBC, PCC, and WCC. This session set out the proposed approach to EIA scoping, providing an overview of the EIA Scoping Report and seeking feedback on the EIA Scoping Opinion.
3. Working Group 3: Design development and EIA scoping. This session was held on 7 June 2023, and included representatives from CPRE Hampshire, EHDC, EBC, SCC, FBC, HCC, HBC, HE, NE, PCC, WCC and SDNPA. This session set out design changes from earlier iterations of the Proposed Development and a refresh of the proposed approach to EIA scoping, providing an overview of the EIA Scoping Report and seeking feedback on the EIA Scoping Opinion. Actions from this meeting pertinent to the historic environment comprised a request for an update of the HER data used to develop the DBA, sharing the latest iteration of the Ground Investigation Archaeological Monitoring WSI and relevant Geographic Information System (GIS) data for the HCC and WCC archaeologists to approve. The Phase 3b Ground Investigation Archaeological Monitoring WSI and associated GIS data was issued on 30 August 2023 and approval received from WCC and HCC on 5 September 2023. Renewed HER data was received from WCC on 25 August 2023 and HCC on 27 July 2023.
4. Working Group 4: This session was held on 31 October 2023 and included representatives from EBC, FBC, HCC, HBC, HE, NE, PCC, SDNPA and WCC. This session addressed design updates, approach to control documents, and technical responses to the EIA Scoping Opinion.
5. Working Group 5: This session was held on 31 January 2024. It was attended by representatives of EBC, FBC, HCC, HE, NE, PCC, SDNPA and WCC. This session set out an overview of the PEI Report, including setting out the baseline and approach to mitigation. Actions comprised a query from the HCC Archaeologist as to whether the PEI Report referenced the Hampshire Atlas of Archaeology [33] and the Hampshire Integrated Landscape Character Analysis, which was confirmed verbally in the meeting, and that the Phase 1 Geophysical Survey report be reissued as the original issue could not be accessed. The Phase 1 geophysical survey report was reissued to HCC and WCC on 6 February 2024.
6. Working Group 6: This session was held on 16 May 2024 and was attended by representatives of EBC, FBC, HCC, HBC, HE, NE, PCC, SDNPA and WCC. This session set out the PEI Report assessment findings, significance and proposed mitigation. The WCC Archaeologist suggested that consideration

should be given to producing an updated DBA for the DCO application; this request was considered and a response provided at the following Working Group.

7. Working Group 7: This session was held on 25 September 2024. It was attended by representatives of EBC, FBC, HCC, HE, NE, PCC, SDNPA and WCC. This session provided a summary of feedback from Summer 2024 Consultation, including general EIA feedback along with scheme development and design principle updates. It was confirmed that the ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6) would not be updated, with WCC noting this approach was acceptable as long as there was a process to manage new inclusion of data into the ES. HE noted that Grade II Listed Buildings were stated as having regional importance in the historic environment baseline study, not nationally important, which was considered acceptable, but required clarification in the ES. Finally, it was agreed that there would be further discussion of the approach to the Archaeological Mitigation Strategy, which was carried out at Working Group 8.
8. Working Group 8: This session was held on 4 December 2024 and was attended by representatives of CPRE Hampshire, EBC, FBC, HCC, HBC, HE, NE, PCC, SDNP and WCC. This session focussed on progress towards the ES. Updates were given on the progress of the section headings contained within this chapter and on the preliminary results of fieldwork that was undertaken in late summer/early autumn 2024 as well as the approach to archaeological mitigation. HCC raised concerns of future monitoring and the potential need for cost recovery.
9. Working Group 9: This session was held on 9 June 2025 and was attended by representatives from EBC, FBC, HCC, NE, PCC, SDNPA and WCC. This session focused on consultation feedback and EIA progress. Updates were given on responses to consultation feedback, draft design principles, update on actions from Working Group 8, specific responses to consultation feedback, management plan updates and archaeological survey reporting.
10. Working Group 10/11: This session was held on 15 September 2025 and was attended by representatives from EBC, FBC, HCC, NE, PCC, SDNPA and WCC. This session focused on the findings of the EIA. Updates were given on responses to consultation feedback, draft design principles and update on actions from Working Group 9.
11. Working Group 12: This session was held on 29 April 2025 and provided stakeholders with a final overview of the DCO application and ES, including the suite of DCO documents, the structure and content of the ES chapters and technical appendices, updates to scheme development, management plans and assessment.

Bilateral meetings

7.3.9 The host authorities for the Proposed Development identified in ES Chapter 2 Planning legislation and policy, Volume I (Document reference 6.1, DCO Volume 6) have been consulted on a regular basis through bilateral meetings. These meetings allowed the regular communication of progress on key elements of the

route design, as well as survey elements such as described in paragraph 7.3.11 to 7.3.15.

7.3.10 Bilateral meetings with consultees to discuss specific design changes which may impact on the historic environment were held on:

1. 18 December 2023 with representatives of HCC, WCC, EBC and PCC to consider design of the pipeline route at Fisher's Pond and the pipeline route and AGP in the vicinity of the Palmerston Forts.
2. 1 February 2024 with representatives of HCC and HBC to consider design of the tunnel shaft in Staunton Country Park, which has subsequently been removed from the Proposed Development, and the pipeline and connections to Bedhampton Springs within the Old Bedhampton Conservation Area.

Survey and issue specific meetings

7.3.11 One-to-one technical engagement on the Proposed Development and matters related to archaeology and cultural heritage has been undertaken with HCC and WCC. These meetings allowed the regular communication of progress on key elements such as the geophysical survey and trial trenching.

7.3.12 Engagement with the archaeological advisors to HCC and WCC took place on 13 July 2022 to approve a WSI for Archaeological and Geoarchaeological Monitoring of Ground Investigation (GI) works at the WRP site and existing Budds Farm WTW. This WSI was then updated with further requirements for subsequent phases of GI works and issued to the archaeological advisors to HCC and WCC and was approved on 6 December 2022, 28 June 2023 and 18 March 2024.

7.3.13 A survey-specific WSI (SSWSI) for Phase 1 (priority) Geophysical Survey was issued to the archaeological advisors to HCC and WCC for their approval and was approved on 20 March 2023. A second SSWSI for Phase 2 Geophysical Survey, covering the remaining accessible areas within the Proposed Development was issued 23 May 2024 and approved on 5 June 2024.

7.3.14 As part of the engagement when drafting the Trial Trenching WSI, meetings with the Archaeological Advisors for WCC and HCC took place in order to agree the approach to the survey following the initial comments on the draft WSI submitted 27 June 2024. This included discussion on the dimensions and distribution of the trenches. It was agreed that the trenches would be a mixture of both 50m and 30m trenches. In addition, it was agreed that 30m trenches would be located on land south of Titchfield Lane to evaluate a large number of linear and discrete features highlighted as part of the Phase 1 Geophysical Survey. This was to ensure more of the archaeological/geophysical anomalies were captured by locating 30m trenches with fewer intervals between trenches. This WSI was submitted 9 August 2024 and approved 13 August 2024.

7.3.15 An on-site meeting at Fort Purbrook and Fort Widley was undertaken on 24 October 2024 with HE to discuss views from the internal banks of both forts in consideration to the setting of these assets. Two viewpoints were discussed at Fort Purbrook, the first to the south considering the views of the intermediate shaft and associated construction compound south of the B2177, the second view toward Break Pressure Tank (BPT) and Intermediate Pumping Station (IPS) E (BPT/IPS-E). In both cases intervening topography, vegetation and modern development obscured these views. At Fort Widley the key view was to the east toward BPT/IPS-

E, again the topography, vegetation and modern development between the fort and Proposed Development was considered to screen views, however further viewpoint and wireframes were requested to confirm this (addressed in paragraph 7.8.49).

7.3.16 There has been ongoing engagement with the Ministry of Defence (MoD) over the aircraft crash sites at Pigeonhouse Farm and Frith Farm. In February 2024 initial consultation was undertaken around the potential need for licensing of works at Pigeonhouse Farm, informed by the results of documentary research and geophysical survey carried out at the site and presented in the PEI Report and in the ES as ES Appendix 7.10 World War II Crash Site Pigeon House Farm Technical Note and geophysical survey report, Volume II (Document reference 6.2, DCO Volume 6). Subsequent consultation in August 2024 and November 2024 focused on the proposals to avoid the impact site of the Pigeonhouse Farm crash and seeking a licence for works within the same field, and for licencing of works at Frith Farm.

7.3.17 A meeting was held with the MoD on 1 October 2025 to discuss the licensing of works at these crash sites and the most appropriate legal vehicle for authorising works on these sites. Subsequently an outline of the contents of a Letter of No Impediment, confirming that MoD are content in principle for works to be authorised by a licence issued under Section 4 of the Protection of Military Remains Act 1986, was issued to the MoD on 10 December 2025 for consideration.

7.4 Primary and tertiary mitigation

Primary measures

7.4.1 As described in ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6) a range of measures have been embedded into the Proposed Development design to avoid or reduce environmental effects. The primary mitigation measures specific to archaeology and cultural heritage, which form part of the design that has been assessed, are:

1. Avoiding designated heritage assets where reasonably practicable.
2. Avoiding non-designated heritage assets and areas of higher archaeological potential where reasonably practicable.
3. Minimising disturbance within historic parkland, particularly of mature planting, earthwork remains and water features.
4. Using existing landform and planting to provide screening.
5. Restoring land and using appropriate planting to restore areas disturbed during pipeline construction or temporary works to pre-existing condition where possible.
6. Using screening bunding, planting, noise and light controls and other landscape treatments at AGP and the WRP site.
7. Using appropriate surface treatments and finishes on AGP and the WRP site where appropriate.
8. Keeping the Order Limits as wide as practicable at Frith Farm second world war aircraft crash site to provide flexibility to avoid the crash site.

9. Providing a buffer between the Order Limits and second world war aircraft crash site at Pigeon House Farm to avoid the crash site.

7.4.2 These are secured through the Works Plans (Document reference 2.3, DCO Volume 2) and in the Design Principles Document (Document reference 5.11, DCO Volume 5).

Tertiary measures

7.4.3 Good construction practices are set out in the Outline Construction Environmental Management Plan (CEMP) (Document reference 7.1, DCO Volume 7) which is secured by requirement in the DCO and will manage the effects of construction. The measures of particular relevance to archaeology and cultural heritage are:

1. Measures to control drainage of water into and from the site to preclude wider hydrological changes.
2. Measures to limit construction noise and vibration and emissions, including dust, which would be used to reduce perceptibility of the Proposed Development during construction to receptors such as at Little Park Mansions, Otterbourne Manor and Park Place.
3. Use of trackway/matting for access to avoid disturbance in areas of archaeological interest where practicable within the Proposed Development.

7.4.4 In addition to the Outline CEMP (Document reference 7.1, DCO Volume 7), an Outline WSI (Document reference 7.6, DCO Volume 7) is submitted alongside this ES to accompany the DCO application. The measures contained in the Outline WSI are secured by a requirement in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume 3). The measures set standards for site-specific responses, set out in Survey Specific WSIs to be produced post-consent, to identified effects and has therefore been treated as secondary mitigation for the purposes of the EIA. This mitigation is discussed further at section 7.9.

7.4.5 An Outline Landscape and Ecology Management Plan (LEMP) (Document reference 7.5, DCO Volume 7) has been prepared as part of this DCO application. Measures set out as part of this management plan include where there is existing historic wood pasture and parkland in the wider landscape, such as Wickham Park, Marwell Park, Bishop's Waltham deer park and Wintershill Park, planting will be designed with consideration to its historic character and features (though it cannot replicate their exact historic condition).

7.4.6 Decommissioning activities are expected to follow good industry practice in place at the time, anticipated to be similar in nature to measures contained in the Outline CEMP (Document reference 7.1, DCO Volume 7).

7.5 Assessment methodology

Scope of assessment

7.5.1 Likely significant effects requiring assessment may be temporary or permanent, direct, indirect, secondary, cumulative, in-combination, beneficial or adverse and may occur during construction and operation. Potential likely significant effects on archaeology and cultural heritage receptors within the scope of the assessment

are summarised in Table 7-6. The scope of the assessment has responded to feedback received as detailed in section 7.3.

7.5.2 Effects from decommissioning of the Proposed Development are considered to be no greater than those identified during the construction phase and are therefore assessed to be of the same significance as those assessed for construction. Please refer to ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6) for additional information on decommissioning.

7.5.3 Cumulative effects are those from the resulting interrelationship between the Proposed Development and other developments (inter-project). These are reported within ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6).

7.5.4 In-combination effects are those that result from the interaction of individual effects combined together on a single receptor or resource at a single point in time. Where the in-combination effects for archaeology and cultural heritage are inherently assessed (in relation to indirect effects on heritage assets), these are reported within section 7.8 of this chapter. However, a receptor may also be affected by multiple topics with the potential for significant in-combination effects to occur, these aggregated effects are reported within ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6).

7.5.5 Table 7-6 sets out the summary of the scope for the assessment in this chapter. All scoped out elements as agreed in the EIA Scoping Opinion are confirmed in ES Appendix 5.3 Response to EIA Scoping Opinion, Volume II (Document reference 6.2, DCO Volume 6).

Table 7-6 Summary of the scope for archaeology and cultural heritage assessment

Receptor	Construction	Operation	Decommissioning
Designated heritage assets			
Direct physical effects on designated heritage assets	Scoped in	Scoped out	Scoped in
Indirect physical effects on designated heritage assets	Scoped in	Scoped out	Scoped in
Temporary change to the setting of designated heritage assets	Scoped in	Scoped out	Scoped in
Permanent change to the setting of designated heritage assets	Scoped in	Scoped in	Scoped in
Non-designated heritage assets			
Direct physical effects on non-designated heritage assets	Scoped in	Scoped in where these may arise as a result of hydrological change	Scoped in
Indirect physical effects on non-designated heritage assets	Scoped in	Scoped out	Scoped in
Temporary change to the setting of non-designated heritage assets	Scoped in	Scoped out	Scoped in

Receptor	Construction	Operation	Decommissioning
Permanent change to the setting of non-designated heritage assets	Scoped in	Scoped in	Scoped in

Study area

7.5.6 This section describes the spatial scope (the area which may be impacted) for the assessment as it applies to archaeology and cultural heritage.

7.5.7 The study areas established to inform this chapter have been defined and agreed through the scoping process in consultation with the Historic Environment and Landscape EIA Working Group.

7.5.8 A study area has been defined to identify non-designated heritage assets and HER records within 500m of the Order Limits (ES Figure 7.1 Archaeology and cultural heritage study areas, Volume III (Document reference 6.3, DCO Volume 6)) as far as these Order Limits apply to the construction, operation and decommissioning of new pipelines with associated accesses and temporary construction compounds, the AGP, the WRP site and Budds Farm WTW pumping station and associated infrastructure (i.e. excluding the Eastney TT and Eastney LSO, Havant Thicket Reservoir and the Portsmouth Water Pipeline from Bedhampton Springs to Havant Thicket Reservoir where no physical works would be carried out as part of the Proposed Development (ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6)). This study area has regard to the need to develop a context to understand the potential for archaeological remains to be present within the Order Limits by allowing the wider patterns of past occupation of the study area to be understood. This study area also allows features that may extend into or have influenced past activity within the Order Limits to be identified.

7.5.9 Following comments from HE and in the EIA Scoping Opinion, the study areas that identify designated heritage assets for the assessment of effects arising through change to setting were combined to form a single extended study area. This is defined as an area within 1km of the Order Limits as far as these Order Limits apply to construction, operation and decommissioning of new pipelines with associated accesses and temporary construction compounds, the AGP, the WRP site and Budds Farm WTW pumping station and associated infrastructure, (i.e. excluding the Eastney TT and Eastney LSO, and Havant Thicket Reservoir and the Portsmouth Water Pipeline from Bedhampton Springs to Havant Thicket Reservoir where no physical works would be carried out as part of the Proposed Development), or within 3km of the AGP and WRP site (i.e. where it may be possible to perceive the AGP or WRP site with sufficient prominence to affect heritage significance; see ES Figure 7.3 Designated heritage assets within the extended study area, Volume III (Document reference 6.3, DCO Volume 6)). This extended study area has regard to:

1. The need to provide context to support an assessment of the potential for archaeological remains to be present within the Order Limits by allowing particularly important sites that may have influenced past activity over a wider catchment to be identified.
2. The high levels of significance of these heritage assets.
3. The nature of the historic landscape of the study area.

4. The nature and likely perceptibility of the Proposed Development.

7.5.10 The study areas have been defined to reflect the historic landscape within which the Proposed Development would be located, which is characterised by strong screening through historic hedgerows, woodland and buildings, meaning that extensive views are not generally available, although some areas, notably Portsdown Hill, are discernibly more open. In addition, the vast majority of heritage assets within the extended study area have settings that are defined by close views in which the Proposed Development would not intrude. Those heritage assets that do draw significance from longer views are captured within the extended study area. Construction works would generally be of limited duration and perceptibility beyond close views, with effects primarily anticipated where direct and unscreened visibility is available, or where construction noise is clearly audible. Effects arising from the WRP site and AGP have been considered for an extended study area because the increased height of these structures and their permanence means that these structures could become perceptible as modern additions to the landscape from a greater distance. The 3km distance in this instance reflects the farthest point at which these features could potentially appear with significant prominence to give rise to a significant adverse effect. The nature of any perceptual change in the setting of a heritage asset and the nature of the works that would cause that change is discussed in more detail in the narrative assessment presented in section 7.8.

7.5.11 The processes by which the study areas described above have been defined are in line with the guidance in Historic England (2017) The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning 3 [24] and CIfA (2020) Standard and guidance for historic environment desk-based assessment [26].

Assessment scenarios

7.5.12 ES Chapter 5 EIA approach and methodology, Volume I (Document reference 6.1, DCO Volume 6) provides an overview of the Proposed Development's approach to the temporal scope (the time scales over which impacts may occur) of the EIA. This section describes the temporal scope for the assessment as it applies to archaeology and cultural heritage.

7.5.13 The assessment of likely significant effects compares a scenario without the Proposed Development against one with the Proposed Development (considering construction, operation and decommissioning phases) over time.

7.5.14 In terms of temporality, direct and indirect physical effects on archaeological remains and deposits of geoarchaeological interest are considered to be permanent and irreversible. In line with the approach set out at ES Chapter 5 EIA approach and methodology, Volume I (Document reference 6.1, DCO Volume 6) further surveys would be undertaken post-consent in order to reduce loss of archaeological remains or geoarchaeological deposits and where required mitigation fieldwork would be developed. These survey and mitigation measures are discussed further at section 7.9.

7.5.15 The assessment of effects arising through change to setting considers all effects arising through construction, operation and decommissioning of the Proposed Development. These comprise temporary effects, which would occur during construction and would normally be taken as the worst case, with visibility of the

Proposed Development, construction works and the absence of any landscape mitigation. This worst case is assessed as a temporary effect, taking into consideration the duration of effects that arise during construction. This worst case effect reduces over time, as construction plant and temporary working areas are removed, and restoration and mitigation landscaping and planting matures. Consequently, and in line with the approach set out at ES Chapter 5 EIA approach and methodology, Volume I (Document reference 6.1, DCO Volume 6), the perceptibility of the completed development is considered as a permanent construction effect and is assessed with regard to any planned landscape mitigation set out in ES Chapter 13 Landscape and visual, Volume I (Document reference 6.1, DCO Volume 6). Where appropriate, the narrative assessment considers the period during which this mitigation matures and any influence it may have on the duration or magnitude of the predicted effect.

Baseline methodology

Desk study

7.5.16 Baseline data collection has been undertaken to obtain information across the study areas. This section provides the approach to collecting baseline data.

7.5.17 The following data sources have been accessed to inform the baseline with respect to archaeology and cultural heritage (see Table 7-7).

Table 7-7 Data sources used to inform the archaeology and cultural heritage assessment

Source of data	Baseline data
National Heritage List for England	Data on all designated heritage assets within England, maintained by HE. Spatial data for all scheduled monuments, listed buildings, Registered Parks and Gardens, Registered Battlefields, World Heritage Sites, conservation areas and Heritage at Risk. These are 'live' datasets that are periodically updated and searches were refreshed/reviewed in October 2025.
The Archaeology Data Service [34]	A non-exhaustive directory of archaeological research consulted to inform the wider baseline context and previous archaeological investigations in the 500m study area including Jacobi and Wymer collections considered as part of the National Rivers Project [35] and finalised as a static archive in 2014. This resource was searched in May 2023.
British Geological Survey data (surface geology) [36]	Historic borehole logs and wider geological background for the 500m study area. This chapter integrates the results of the Geoarchaeological Desk-based Assessment (GDBA) undertaken by Wessex Archaeology. The full report is included in ES Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation, Volume II (Document reference 6.2, DCO Volume 6). This resource was searched in May 2023.
Light Detection and Ranging (LiDAR) survey data [37]	Available LiDAR data for the 500m study area which was flown in December 2020.
Hampshire Historic Environment Record	Contains data on all recorded non-designated heritage assets for the County of Hampshire with the exception of Winchester City. The data includes archaeological, historic landscape character and historic

Source of data	Baseline data
	building information, and information on previous events (archaeological surveys and investigations). These are 'live' datasets which are updated on an ad-hoc basis and searches were refreshed/reviewed in May 2025.
Portsmouth Historic Environment Record	Contains data on all recorded non-designated heritage assets for Portsmouth City. The data includes archaeological, historic landscape character and historic building information, and information on previous events (archaeological surveys and investigations). These are 'live' datasets which are updated on an ad-hoc basis and searches were refreshed/reviewed in May 2025.
Winchester Historic Environment Record	Contains data on all recorded non-designated heritage assets for Winchester City. The data includes archaeological, historic landscape character and historic building information, and information on previous events (archaeological surveys and investigations). These are 'live' datasets which are updated on an ad-hoc basis and searches were refreshed/reviewed in May 2025.
Hampshire Integrated Character Assessment [38]	Landscape character areas and types. This is a static dataset and no changes are anticipated to data gathered in December 2023.
Hampshire Archaeological Atlas [33]	An analysis of the archaeology of Hampshire. This is a static dataset and no changes are anticipated to data gathered in December 2023.

7.5.18 The historic environment baseline report (ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6)) has been undertaken to establish an overview of the historic environment and identify the archaeological potential across the Order Limits at the time of writing. This report covers the area of the Order Limits set out in ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6). A summary of this work and its relevance to the ES assessment is set out in section 7.7.

7.5.19 The historic environment baseline study (ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6)) also assesses the importance of all identified designated and non-designated heritage assets which may be impacted by the Proposed Development.

7.5.20 The historic environment baseline study (ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6)) has been informed by HER and NHLE data containing information on both designated and non-designated heritage assets, alongside LiDAR and historic map reviews.

7.5.21 As part of the historic environment baseline study, a series of site visits and walkover surveys of land parcels within areas of the Order Limits were undertaken between April and May 2023 (Annex D of ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6)). These surveys were undertaken to identify current land use, confirm the presence of previously recorded heritage assets, identify any potential unrecorded built heritage or archaeology, identify areas of archaeological potential and identify priority geophysical and subsequent intrusive survey areas.

7.5.22 Subsequent to production of the historic environment baseline study (ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6)) additional NHLE and HER data has been acquired, further site visits undertaken to fill any data gaps that may have otherwise resulted from design changes, as well as referencing of the Hampshire Integrated Character Assessment [38] (last accessed December 2023) and the Hampshire Archaeological Atlas [33] (last accessed December 2023) which has been fed into this chapter's baseline.

7.5.23 A GDBA (ES Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation, Volume II [(Document reference 6.2, DCO Volume 6)) has been undertaken to identify deposits of archaeological and geoarchaeological interest within the Order Limits.

7.5.24 The results of the GDBA identified 28 Geoarchaeological Characterisation Zones (GCZ) across the Order Limits. The result of this work is summarised in section 7.7.

7.5.25 A desk study was carried out to identify hedgerows that would be considered Important under the Archaeology and History criteria set out in Schedule 1 of the Hedgerow Regulations 1997 [7]. Effects on Important Hedgerows are assessed in ES Chapter 8 Terrestrial and freshwater biodiversity, Volume I (Document reference 6.1, DCO Volume 6) and these features are illustrated in ES Figure 8.9 UK Habitat Classification for linear features including important hedgerows within the field survey area, Volume III (Document reference 6.3, DCO Volume 6).

Site surveys

7.5.26 The archaeology and cultural heritage baseline surveys undertaken were:

1. Phase 1 – 'Priority Areas' Archaeological Geophysical Survey (ES Appendix 7.3 Detailed gradiometer survey report – Phase 1, Volume II (Document reference 6.2, DCO Volume 6))
2. Phase 2 – Archaeological Geophysical Survey (ES Appendix 7.8 Detailed gradiometer survey report – Phase 2, Volume II (Document reference 6.2, DCO Volume 6))
3. Geoarchaeological Monitoring of GI work (ES Appendix 7.5 Geoarchaeological monitoring reporting, Volume II (Document reference 6.2, DCO Volume 6))
4. Settings assessment (ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6))
5. Phase 1 - 'Priority Areas' Archaeological Trial Trenching (ES Appendix 7.9 Trial trenching report, Volume II (Document reference 6.2, DCO Volume 6))

7.5.27 The aim of the archaeological geophysical survey was to locate, record and characterise any surviving sub-surface archaeological remains that would enhance current understanding of the archaeological resource within the Order Limits.

7.5.28 Two phases of archaeological geophysical survey have been undertaken, with Phase 1 targeting priority areas within the 500m study area such as those within areas of potentially high archaeological sensitivity, areas of permanent AGP and 'pinch-points' where engineering for micro-siting around archaeological deposits needed to be undertaken as early as possible.

7.5.29 A total of 33 areas, covering 275.2ha, were identified as requiring a priority (Phase 1) archaeological geophysical survey. These areas were targeted based on known locations of recorded heritage assets relating to buried archaeology within the Hampshire and Winchester HER. The result of this work is summarised within section 7.7.

7.5.30 The Phase 1 geophysical survey began in April 2023 and was completed as far as possible by September 2023. A total of 216ha was surveyed where land access and ground conditions permitted. The remainder of the Phase 1 survey areas were not accessible as a result of adverse weather conditions and/or inability to reach agreement with landowners/tenants. The full report on this survey is included in ES Appendix 7.3 Detailed gradiometer survey report – Phase 1, Volume II (Document reference 6.2, DCO Volume 6).

7.5.31 The Phase 2 geophysical survey began in June 2024 and planned to cover 132ha which represented the remainder of the Order Limits as they were designed at the time. The result of this work is summarised within section 7.7.

7.5.32 This phase of geophysical survey also included Phase 1 priority areas that could not be accessed during the initial phase. The survey was concluded on 31 October 2024 with 67.66ha covered, with access issues precluding the remaining survey areas. The full report on this survey is included in ES Appendix 7.8 Detailed gradiometer survey report – Phase 2, Volume II (Document reference 6.2, DCO Volume 6).

7.5.33 The Phase 1 trial trenching commenced in August 2024 consisting of 164 planned trenches targeting both features highlighted within the Phase 1 geophysical survey as well as areas with no highlighted archaeology. The result of this work is summarised within section 7.7.

7.5.34 A total of 67 trenches were excavated, with 19 containing archaeological deposits. Access issues precluded excavation of the remaining 97 trenches. The full report on this survey is included in ES Appendix 7.9 Trial trenching report, Volume II (Document reference 6.2, DCO Volume 6).

Assessment methodology

7.5.35 The approach to assessment is set out in ES Chapter 5 EIA approach and methodology, Volume I (Document reference 6.1, DCO Volume 6). This has informed the approach used in this archaeology and cultural heritage assessment.

7.5.36 The impact assessment methodology adopted for archaeology and cultural heritage defines heritage assets, and their settings, likely to be impacted by the Proposed Development and assesses the level of any resulting benefit, harm or loss to their cultural significance. The assessment is not limited to direct (physical) effects, but also assesses possible indirect (physical) effects upon heritage assets which may arise as a result of changes to hydrological processes, and changes to the setting of heritage assets, whether visually, or in the form of noise, dust and vibration, spatial associations and a consideration of historic relationships between places which may impact their cultural significance. These indirect effects are inherent in-combination effects assessed within this chapter.

7.5.37 As set out in Principles of Cultural Heritage Impact Assessment in the UK [28], Cultural Heritage Impact Assessment is concerned with "*understanding the*

consequences of change to cultural significance". The principles of assessment are:

1. Understanding cultural heritage assets
2. Evaluating the consequences of change

7.5.38 Understanding cultural heritage assets distinguishes between:

1. Describing the asset (what it is and what is known about it)
2. Ascribing cultural significance (a description of what is valued about it)
3. Attributing importance (a scaled measure of the degree to which the cultural significance of that asset should be protected)

7.5.39 Evaluating the consequences of change also distinguishes between three separate analytical stages:

1. Understanding change (a factual statement of how a proposal would change a cultural heritage asset or its setting, including how it is experienced)
2. Assessing impact (a scaled measure of the degree to which any change would impact on cultural significance)
3. Weighting the effect (the measure that brings together the magnitude of the impact and the cultural heritage asset's importance)

Sensitivity of receptors

7.5.40 The sensitivity of a receptor is a function of its capacity to accommodate change and reflects its ability to recover if it is affected. However, while impacts to a heritage asset's setting or character can be temporary, impacts which result in damage or destruction of the assets themselves, or their relationship with their wider environment and context, are permanent. Once destroyed, an asset cannot recover. On this basis, the assessment of the significance of effect of any identified impact is largely a product of the importance of an asset (rather than its sensitivity) and the degree to which any change would impact on cultural significance.

7.5.41 The criteria for determining the heritage importance of heritage assets are described in Table 7-8.

7.5.42 The categories and definitions of heritage importance do not necessarily reflect a definitive level of importance of an asset. They are intended to provide a provisional guide to the assessment of perceived heritage importance, which is to be based upon professional judgement incorporating the evidential, archaeological, historical, aesthetic, architectural and communal heritage values of the asset or assets. It is important to note that the importance and cultural significance of an asset can be amended or revised as more information comes to light (i.e. as part of further investigations planned post-consent).

7.5.43 Although Table 7-8 provides a definition for assets of an uncertain heritage importance, where uncertainty occurs, the precautionary approach is to assign the highest likely level of importance. This precautionary approach represents good practice in cultural heritage impact assessment and reduces the potential for impacts to be under-estimated.

Table 7-8 Definition of importance for cultural heritage assets

Importance	Definition
High	World Heritage Sites Scheduled monuments Grade I and II* listed buildings or structures Grade I and II* Registered Parks and Gardens Designated historic landscapes of outstanding interest Conservation areas containing buildings or structures with high heritage importance, or high concentrations of listed buildings Assets of acknowledged international/national importance Assets that can contribute significantly to acknowledged international/national research objectives
Medium	Grade II listed buildings or structures Designated special historic landscapes Other types and character of conservation areas Assets that contribute to regional research objectives Assets with regional value, educational interest or cultural appreciation
Low	'Locally Listed' and other non-designated historic buildings or structures Assets that contribute to local research objectives Assets with local value, educational interest or cultural appreciation Assets compromised by poor preservation and/or poor contextual associations
Negligible	Assets with no significant value or archaeological/historical interest
Uncertain or unknown	The importance/existence/level of survival of the asset has not been ascertained (or fully ascertained/understood) from available evidence

Magnitude of impacts and significance of effects

7.5.44 The magnitude of impact broadly equates to the degree to which cultural significance is positively or negatively changed by the Proposed Development.

7.5.45 Direct physical effects, indirect physical effects and effects from a change in setting on the significance of heritage assets are considered relevant. Effects may be adverse or beneficial. Depending on the nature of the impact and the duration of development, effects can also be temporary and/or reversible or permanent and/or irreversible.

7.5.46 Whether an effect is considered 'direct' or 'indirect' or arises by physical alteration or change in setting refers only to the effect pathway and has no necessary bearing on the potential magnitude of change, and indirect effects or those arising by change to setting may be as significant as those arising through direct physical disturbance or damage.

7.5.47 The finite nature of archaeological remains means that physical effects are almost always permanent and irreversible as the 'fabric' of the asset and, hence, its potential to inform historical understanding, would be removed. By contrast, impacts resulting from the change in the setting of heritage assets would depend upon the longevity of construction and operation of the Proposed Development and the sensitivity with which the landscape is re-instated subsequent to construction and decommissioning or demolition, if applicable.

7.5.48 The magnitude of adverse impact with respect to archaeology and cultural heritage relates to the extent of harm to, or loss of, key elements of the asset's cultural significance, which may include its setting. A statement of harm to the significance of individual designated heritage assets is set out in section 7.8 for the purposes of informing the tests set out at NPSWRI 4.8.22 and the Infrastructure Planning (Decisions) Regulations 2010 [9], which are discussed in more detail at section 7.2.

7.5.49 The magnitude of beneficial impact with respect to archaeology and cultural heritage directly relates to the level of public benefit associated with an individual impact. Benefits may correspond directly to the Proposed Development itself where it would enhance the historic environment (e.g. through measures which would improve the setting of a heritage asset or public access to it).

7.5.50 Alternatively, benefits may occur on the basis of data gathering exercises undertaken for the purpose of the Proposed Development which would enhance public understanding by adding to the archaeological record (e.g. through the accumulation of publicly available information and data). The measure of beneficial impact (high/medium/low) is, therefore, necessarily situational and specific to a given site, area or subject.

7.5.51 The criteria used for assessing the magnitude of impact with regard to archaeology and cultural heritage are presented in Table 7-9.

Table 7-9 Definition of magnitude of impact to cultural heritage assets

Magnitude of impact	Definition
Major adverse	Key elements of the asset's fabric and/or setting are lost or fundamentally altered, such that the asset's cultural significance is lost or severely compromised.
Moderate adverse	Elements of the asset's fabric and/or setting which contribute to its significance are affected, but to a more limited extent, resulting in an appreciable but partial loss of the asset's cultural significance.
Minor adverse	Elements of the asset's fabric and/or setting which contribute to its cultural significance are affected, resulting in a slight loss of cultural significance.
Negligible adverse	The asset's fabric and/or setting is changed in ways which do not materially affect its cultural significance.
No impact	No change to the assets fabric or setting which affects its cultural significance.
Negligible beneficial	The asset's fabric and/or setting is changed in ways which do not materially affect its cultural significance.
Minor beneficial	Elements of the asset's physical fabric which would otherwise be lost, leading to a slight loss of cultural significance, are preserved in situ; or Elements of the asset's setting are improved, slightly enhancing its cultural significance; or Research and recording leads to a slight enhancement to the archaeological or historical interest of the asset. This only applies in situations where the asset would not be otherwise harmed, i.e. it is not recording in advance of loss.

Magnitude of impact	Definition
Moderate beneficial	Elements of the asset's physical fabric which would otherwise be lost, leading to an appreciable but partial loss of cultural significance, are preserved in situ; or Elements of the asset's setting are considerably improved, appreciably enhancing its cultural significance; or Research and recording leads to a considerable enhancement to the archaeological or historical interest of the asset. This only applies in situations where the asset would not be otherwise harmed, i.e. it is not recording in advance of loss.
Major beneficial	Elements of the asset's physical fabric which would otherwise be lost, severely compromising its cultural significance, are preserved in situ; or Elements of the asset's setting, which were previously lost or unintelligible, are restored, greatly enhancing its cultural significance.

7.5.52 The likely significance of effect is a function of the importance of the receptor and the magnitude of the impact. As described above, for archaeology and cultural heritage this equates to the importance of a heritage asset weighed against the magnitude of change to its cultural significance.

7.5.53 The determination of significance of effect in EIA terms is guided by the use of the significance of effect matrix, as shown in Table 5-5, ES Chapter 5 EIA approach and methodology, Volume I (Document reference 6.1, DCO Volume 6). Any effect judged to be of moderate or major significance is considered to be a likely significant effect in EIA terms. Definitions of these effects as they apply to the assessment of archaeology and cultural heritage are set out at Table 7-10.

Table 7-10 Definition of effect significance

Significance	Definition
Major	Change in cultural significance, both adverse or beneficial, which are likely to be important considerations at a national or regional level because they contribute to achieving national or regional objectives. Effective/acceptable mitigation options may still be possible, to offset and/or reduce residual impacts to satisfactory levels.
Moderate	Change in cultural significance, both adverse or beneficial, which are likely to be important considerations at a local level. Effective/acceptable mitigation options may still be possible, to offset and/or reduce residual impacts to satisfactory levels.
Minor	Change in cultural significance, both adverse or beneficial, which may be raised as local issues but are unlikely to be material considerations in the decision-making process. Industry standard mitigation measures may still apply.
Neutral	No material change to cultural significance.
No effect	No impact, therefore, no change to cultural significance.

7.6 Assumptions and limitations

7.6.1 This section provides a description of the assumptions and limitations to the archaeology and cultural heritage assessment.

7.6.2 Works are assessed as being undertaken within the construction working width of the Proposed Development, including areas of reduced working width (see ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6)), resulting in removal or disturbance of near-surface archaeological remains in that area. More deeply buried remains (primarily geoarchaeological deposits) would be affected only if also within the working depth. In addition to the construction working widths, works that would have the potential to disturb archaeological remains would also be undertaken in the following areas:

1. Area required within the Order Limits for the WRP site
2. Area required within the Order Limits for AGP, comprising IPS and BPT
3. Temporary works to support construction including temporary construction compounds and water storage lagoons
4. Locations of permanent works to support operation and maintenance
5. Landscaping and environmental mitigation, enhancement, and compensation measures including Environmental Mitigation and Enhancement Areas (EMEAs)

7.6.3 The data used to compile this chapter primarily consists of desk-based information derived from a variety of sources which is of variable accuracy. All available relevant sources have been reviewed (as per Table 7-7), allowing for the accuracy of individual sources to be assessed.

7.6.4 Consultation with the relevant stakeholders has been undertaken in order to refine the understanding of the historic environment across the study areas.

7.6.5 HER records are a collation of information from various sources and while they provide a fundamental source of information for the assessment, the inclusion of a record in the HER does not equate to the identification of a heritage asset. The HER may record a feature or find that has since been removed, and suggested interpretation or historic record for which no physical evidence has been observed, or a small element of a much larger and more significant heritage asset. The amount of archaeological work and surveys undertaken in an area and whether resulting findspots have been reported can limit the level of records within the HER. Similarly, unknown heritage assets are being found regularly, as part of new developments or new local research. As such, the absence of data does not preclude the potential that further heritage assets may present and the HER is a 'live' record which is updated as new observations are made. A HER data refresh has therefore been undertaken prior to the authoring of this chapter and further survey and desk-based research has been undertaken to refine the characterisation of archaeological potential developed from the HER.

7.6.6 This assessment takes the approach of using additional baseline information, including historic mapping, aerial photography, LiDAR imagery and relevant documentary and archival sources (See Table 7-7), as well as fieldwork including walkover surveys, geophysical survey and intrusive archaeological and

geoarchaeological fieldwork discussed at paragraph 7.5.29 and following above to allow characterisation of the archaeological resource within the Order Limits, and to better understand the meaning of the records within the relevant HER databases. The archaeological baseline is therefore considered sufficiently robust to allow for an assessment to be made, and the Outline WSI (Document reference 7.6, DCO Volume 7) sets out a staged programme of archaeological mitigation to be implemented post-consent that allows for refinement of a mitigation strategy that is responsive to the emerging detailed design and an archaeological baseline that is progressively refined through the stages of survey defined in the Outline WSI (Document reference 7.6, DCO Volume 7).

7.6.7 While the DCO does not specify a maximum depth for the pipelines or foundations at the WRP site and AGP sites, the conclusions still represent a worst case assessment on the basis all archaeological and geo-archaeological deposits presented in the Order Limits are assumed to be removed by the construction activities.

7.6.8 This assessment assumes that the pipeline at Bedhampton Springs on the eastern and western sides of Old Mill Dam will be above-ground. This represents a worst case scenario for the purposes of the assessment, i.e. impacts on Old Bedhampton Conservation Area.

7.7 Baseline conditions

7.7.1 To provide an assessment of the likely significance of effects arising from the Proposed Development (in terms of archaeology and cultural heritage), it is necessary to identify and understand the baseline conditions in the study areas. This provides a reference point against which potential changes in archaeology and cultural heritage can be assessed.

7.7.2 The location of all non-designated heritage assets within the 500m study area is presented on ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6). The location of all designated heritage assets within the extended study area defined above (see paragraph 7.5.9) is presented on ES Figure 7.3 Designated heritage assets within the extended study area, Volume III (Document reference 6.3, DCO Volume 6). This section should be read with reference to these figures.

7.7.3 The baseline environment as presented below has been informed by the baseline data and information gathering exercise and assessment undertaken as part of the Heritage Baseline Report (ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6)).

7.7.4 In addition, a GDBA (ES Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation, Volume II (Document reference 6.2, DCO Volume 6)) and findings on Ground Investigation monitoring (ES Appendix 7.5 Geoarchaeological monitoring reporting, Volume II (Document reference 6.2, DCO Volume 6)) and the results of the Geophysical Survey (ES Appendix 7.3 Detailed gradiometer survey report – Phase 1, Volume II (Document reference 6.2, DCO Volume 6), ES Appendix 7.8 Detailed gradiometer survey report – Phase 2, Volume II (Document reference 6.2, DCO Volume 6)) and Trial Trenching (ES Appendix 7.9 Trial trenching report, Volume II (Document reference 6.2, DCO Volume 6)) also inform this baseline section.

7.7.5 The archaeological periods referred to in this chapter are broadly defined by the following date ranges:

1. Palaeolithic: 1,000,000 BP – 10,000 BC
2. Mesolithic: 10,000 – 4,000 BC
3. Neolithic: 4,000 – 2,500 BC
4. Bronze Age: 2,500 – 700 BC
5. Iron Age: 700 BC – AD 43
6. Romano-British: AD 43 – 410
7. Early medieval: AD 410 – 1066
8. Medieval: AD 1066 – 1540
9. Post-medieval: AD 1540 – 1901
10. Modern: AD 1901 – present day

Current baseline

7.7.6 Baseline information for each of the principal components set out in ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6) is set out below.

Water Recycling Plant site

7.7.7 The WRP site is located on ground which has previously been used for landfill (ES Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation, Volume II (Document reference 6.2, DCO Volume 6), and while there are records of potentially geoarchaeologically significant deposits within the site, these are deeply buried at a minimum of 9.65m below-ground level with significant truncation of deposits across the site area (ES Appendix 7.5 Geoarchaeological monitoring reporting, Volume II (Document reference 6.2, DCO Volume 6)).

7.7.8 Consequently, no further assessment of effects on archaeological remains arising from construction, operation and decommissioning of this Proposed Development element has been undertaken, but potential effects on deposits of geoarchaeological interest are assessed further at section 7.8.

7.7.9 All designated heritage assets within the extended study area (ES Figure 7.3 Designated heritage assets within the extended study area, Volume III (Document reference 6.3, DCO Volume 6) of the WRP site have been considered in the assessment of effects on setting set out at ES Appendix 7.6 Heritage assets settings scoping appraisal, Volume II (Document reference 6.2, DCO Volume 6). These primarily comprise post-medieval and modern listed buildings within historic settlements that now form elements of suburban residential development at Havant, Farlington, Purbrook and Widley, but also include historic quay front buildings at Langstone Harbour and Fort Purbrook and the scheduled Farlington Redoubt.

7.7.10 Those heritage assets identified as potentially affected are assessed in detail at section 7.8 and in ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6).

Pipelines between Budds Farm Wastewater Treatment Works and the Water Recycling Plant site

7.7.11 The Pipelines between Budds Farm WTW and the WRP site would be trenchless construction works (see ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6)) at depths below that at which any potential archaeological remains would be present except within the sites of the existing Budds Farm WTW and the WRP site. It is considered that any archaeological remains that may have been present within these sites have been disturbed during the construction of the existing Budds Farm WTW and the historic use of the WRP site for landfill, although the potential for the presence of deposits of geoarchaeological interest to survive at depths that may be affected by the Pipelines remains.

7.7.12 Consequently, no further assessment of effects on archaeological remains arising from construction, operation or decommissioning of this Proposed Development element has been undertaken, but potential effects on deposits of geoarchaeological interest are assessed further at section 7.8.

7.7.13 All designated heritage assets in the extended study area (ES Figure 7.3 Designated heritage assets within the extended study area, Volume III (Document reference 6.3, DCO Volume 6)) have been considered in the assessment of effects on setting set out at ES Appendix 7.6 Heritage assets settings scoping appraisal, Volume II (Document reference 6.2, DCO Volume 6). Those designated heritage assets closets to the WRP site primarily comprise post-medieval and modern listed buildings within historic settlements that now form elements of suburban residential development at Havant, Farlington, Purbrook and Widley, but also include historic quay front buildings at Langstone Harbour and Fort Purbrook and the scheduled Farlington Redoubt.

Pipelines between the Water Recycling Plant site and Bedhampton Springs

Palaeolithic 1,000,000 BP – 10,000 BC

7.7.14 Within the 500m study area there are two records comprising two chance finds of Palaeolithic material: a hand axe (23257) and worked flint (23461) (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6).

Mesolithic 10,000 – 4,000 BC

7.7.15 Similar to the Palaeolithic, records dating to the Mesolithic within the 500m study area consist of isolated findspots: two struck flints found in a residential garden (57574); a burin approximately 45mm in length (57575); and an unretouched blade identified during an archaeological evaluation, which was interpreted as representing a Mesolithic occupation site utilising a source of freshwater (33705) (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

Neolithic 4,000 – 2,500 BC

7.7.16 The only evidence dating to the Neolithic within the 500m study area consists of three isolated findspots of lithic objects: a hoard of hand axes found in Warren Park in 1976 (23472); a flint scraper thought to be of either Neolithic or Bronze Age date (23286); and a fragment of a late Neolithic flint axe alongside struck flint cores and debitage (33710; 33711) (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

Bronze Age 2,500 – 700 BC

7.7.17 Archaeological evidence of Bronze Age activity has been found along the coastline in Havant, including substantial features such as a ring ditch approximately 13m in diameter identified through aerial photography (70451) as well as linear features identified during an archaeological evaluation (71351), both located within the 500m study area north-east of the Budds Farm WTW (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

Iron Age 700 BC – AD 43

7.7.18 While there are no records of activity of this date within the study area, patterns of Iron Age evidence within the region can broadly be characterised as the continuation and intensification of occupational and agricultural activities. These are discussed more fully in the baseline for the Pipeline between the WRP site and Otterbourne Water Supply Works (WSW) below (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

Romano-British AD 43 – 410

7.7.19 A section of the long-distance Roman road connecting Bitterne (Clausentum) to Chichester (Noviomagus Regnesium) extends through the 500m study area for this section, which is outlined as Route 421 by Margary [39]. Approaching the study area from the east, the projected route of this road roughly follows the course of Emsworth Road, East Street, and West Street as it proceeds west to north-west across Havant. It continues north-west, diverting from the alignment of existing road networks as it leaves Bedhampton, and passes just to the north of Crookhorn and to the south-west of Purbrook before following the route of Purbrook Heath Road at the eastern extent of the study area. A stretch of this road to the south of Littlepark Wood is visible above-ground as slight earthworks and is part of the scheduled monument of Little Park Woods villa (NHLE 1001859) (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6).

7.7.20 The route of another Roman road (Margary route 425 [39]), which is thought to have connected Rowlands Castle with Havant, and potentially further south with Hayling Island, lies just to the east of the 500m study area.

7.7.21 A scheduled monument at Littlepark Wood (NHLE 1001859) also covers a Roman villa compound comprising at least six to seven masonry structures representing the primary villa building as well as ancillary structures such as workshops, barns,

and potentially a bath or shrine. Studies determined there were two main phases of activity, with a structure dating to AD 150-200 being superseded by new buildings in the middle of the 3rd century before a final demolition date of the middle to late 4th century. Additional features were found during geophysical survey and evaluation in 2016-2018, including a courtyard or service yard, trackways, an entrance gate, an area of burning activity, and a number of enclosures that may represent late Iron Age to early Roman activity predating the villa complex.

7.7.22 Other potentially dateable Roman features within the 500m study area include an inhumation burial (23394) and unstratified sherds of Roman pottery (23393), of 2nd century date.

Early Medieval AD 410 – 1066

7.7.23 There are no HER records dated to this period within the Study Area, but the presence of a number of settlements noted at Domesday in this area indicates that the medieval settlement geography can be traced back into the early-medieval period.

Medieval AD 1066 – 1540

7.7.24 A number of settlements within the study area were recorded in the Domesday Book of 1086 and these areas persisted through the period. These were primarily concentrated near the coastline at Havant, Brockhampton, and Bedhampton. Most of the lands recorded here were held by the Bishop of Winchester though a small portion of the estate in Brockhampton was held by Hugh of Port [40]. The entry for Bedhampton refers to a church, archaeological evidence for which may be present in the form of a curvilinear churchyard boundary within the site of the later graveyard (23368) (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

7.7.25 Bedhampton was a centre of occupation in the 500m study area (39298), with a concentration of houses around the 12th century Church of St Thomas (NHLE 1340186), which also forms the Old Bedhampton Conservation Area (185; 198). A manor known as Belmont is also recorded, in the 14th century, just to the north-west of Bedhampton (65812).

7.7.26 Brockhampton was also recorded in the Domesday Book, although it was eventually amalgamated into the holdings of Bedhampton and Havant later in the Medieval period. A mill was referenced here in 1086, which may have been located on the same site as the later Medieval Brockhampton Mill (58104). This is in addition to the two mills recorded in the Domesday Book at Havant.

7.7.27 Additional settlements were established in the 500m study area as the Medieval period progressed. Documentary sources dating to 1186 reference a village at Farlington (MPM1836), where indications of Medieval period ridge and furrow ploughing have been identified based on historic field boundaries (MPM1837). Farlington is recorded as a deserted Medieval village by Beresford and Hurst [41] but is depicted on a later map of Hampshire and it seems most likely that the village was not completely deserted but more likely shrunken or possibly moved.

Post-Medieval AD 1540 – 1901

7.7.28 At the northern extent of the extended study area is the Sir George Staunton Conservation Area (105; 197), which covers approximately 1,000 acres (ac) of landscaped parkland and forest originally known as Leigh Park Gardens; it is now called Staunton Country Park (NHLE 1000112) (ES Figure 7.3 Designated heritage assets within the extended study area, Volume III (Document reference 6.3, DCO Volume 6)).

7.7.29 The site was sold to Sir George Staunton in 1820 who made significant changes and additions to the park including the construction of the Leigh Water Lake and a number of follies such as the fort. Following the death of Staunton in 1859, the estate was purchased by William Henry Stone in 1861 who demolished the earlier mansion and made his own additions. A number of archaeological excavations have been conducted within the boundary of the park, which have identified features relating to previous phases of its use such as earlier pathways, a possible ornamental garden, and various structural remains.

7.7.30 The Old Bedhampton Conservation Area which lies within the Order Limits contains a number of high-status houses that were built during the 18th century, in addition to the earlier historic village core. Residences built in the village at this time include The Old Rectory, the house and stable block of which are both Grade II listed buildings with a Locally Listed Garden (NHLE 1091648; 1303829; 52074), and the Grade II Listed Bidbury House (NHLE 1154418). This pattern of development continued well into the 19th century, with the additions of Spring Lawn (NHLE 1091649), Manor Cottage (NHLE 1154992), and The Towers (NHLE 1303449), as well as the Golden Lion public house (NHLE 1091646) and Bedhampton Arts Centre, which was originally a 19th century school or schoolhouse (NHLE 1393209).

7.7.31 A parallel pattern of growth is seen in the area covered by the Brockhampton Conservation Area within the eastern extent of the study area (ES Figure 7.3 Designated heritage assets within the extended study area, Volume III (Document reference 6.3, DCO Volume 6)). The economies of this town and neighbouring Havant relied on the supply of freshwater provided by the many springs and streams in the area, which led to the rise of industries such as tanning, parchment making, and leather production concentrated close to watercourses, particularly during the 19th century. Built evidence of such industrial activity is largely lacking in the present-day town centre of Brockhampton, but the resulting residential expansion is still visible in the presence of 18th and 19th century homes such as Elmsleigh House (NHLE 1154964), Westfield House (NHLE 1155670), The Old Manor House (NHLE 1154427), as well as 65, 105, and 105A West Street (NHLE 1092121; NHLE 1092122).

20th Century AD 1901 – 2000 and 21st Century AD 2001 – Present

7.7.32 The majority of the heritage assets within the study area dating to the 20th century are associated with 20th century military conflict, the earliest being a First World War memorial located in the churchyard of St Andrew's in Farlington (MPM1740) (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

7.7.33 Second World War defensive measures throughout the study area include bombing decoy lights and starfish site at Langstone Harbour (60102), a site known as Belmont Camp II (65067) and potential practice trench system in Farlington (35324), and a military site in Havant (65109).

7.7.34 Other common features associated with the Second World War are air raid shelter and allotment gardens. Three shelters are recorded in the centre of Bedhampton (65080; 65081; 54980), presumably so they could be accessed easily by the highest number of civilians. An allotment garden is also recorded further to the south in Bedhampton along the Hermitage Stream (65079).

7.7.35 Also located within the 500m study area is an underground Royal Observer Corps monitoring post (41695), located once again on Portsdown Hill between Fort Purbrook and the Farlington Redoubt, which was designed to record radioactive fallout and represents attempts at countering the threat of nuclear attack during the Cold War.

Uncertain date

7.7.36 Many of these assets pertain to results of archaeological investigations, including pits and ditches (67964), isolated finds (50281), and geoarchaeological deposits (67996), that did not produce any dateable material (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6).

Pipeline between the Water Recycling Plant site and Otterbourne Water Supply Works

7.7.37 The Pipeline between the WRP site and Otterbourne WSW is shown in ES Figure 7.1 Archaeology and cultural heritage study areas, Volume III (Document reference 6.3, DCO Volume 6), and extends from Havant in the east to Otterbourne in the west via Wickham and Bishop's Waltham. It is sub-divided into nine alphabetically assigned Sections (hereafter, Sections D – M of the Pipeline, these are outlined below.

Palaeolithic 1,000,000 BP – 10,000 BC

7.7.38 Palaeolithic archaeological evidence is limited to findspots across the 500m study area, principally hand axes (Section E: Portsdown Hill to Boarhunt (Section E) of the Pipeline – 63878; Section L: Lower Upham to Brambridge (Section L) of the Pipeline – MWC1207; MWC1228; MWC1256; MWC6111) (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6).

7.7.39 These hand axes have not been dated using chronometric techniques and have not been assigned to a more precise calendar timescale independent of artefact typology.

7.7.40 In addition to the hand axes, a scatter of residual stone cores dating to the Upper Palaeolithic was recovered during an archaeological evaluation on land at Welborne (72576), within the 500m study area west of Section F: Boarhunt to Crockerhill (Section F) of the Pipeline.

Mesolithic 10,000 – 4,000 BC

7.7.41 The most significant Mesolithic activity identified within the 500m study area is a lithic working site at Sandy Lane (MWC4052), approximately 350m west of the boundary of Section J: Shedfield to the River Hamble (Section J) of the Pipeline, which was identified and excavated in the early 1950s. The site, now removed through sand quarrying, revealed multiple flint finds, including: 19 microliths, a tranchet axe, a micro-burin, a saw, a punch, many cones and blades and a double-ended flint pick (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

7.7.42 The remaining Mesolithic activity identified within the 500m study area are limited to findspots.

7.7.43 Three Mesolithic findspots are recorded within Section E of the Pipeline. At two of these findspots, at Boarhunt Road (MWC883) and Offwell Farm (MWC4255), several Mesolithic flint flakes were found. At a third findspot, a field on Portsdown Hill, multiple implements were found, including a microlith (MWC4259).

7.7.44 Mesolithic activity in Section F of the Pipeline is limited to a small number of surface finds of Mesolithic flints, including flakes and cores (20134; 20202) in close proximity to the River Wallington.

7.7.45 Section L of the Pipeline comprises a find of one tranchet axe, several worked flints and a pick, all found at Ash Close, Colden Common (MWC1234).

7.7.46 Within Section M: Brambridge to Otterbourne WSW (Section M) of the Pipeline is a tranchet axe (MWC3878) found in the bed of a stream known as Rosemary Leet, near Kingfisher Lodge between Otterbourne and Colden Common.

Neolithic 4,000 – 2,500 BC

7.7.47 The primary evidence from the Neolithic within Section D: The Water Recycling Plant site to Portsdown Hill of the Pipeline are funerary monuments, the most prominent being the scheduled Bevis's Grave Long Barrow (NHLE 1012831), an earthwork situated on the crest of Portsdown Hill oriented east to west, with maximum dimensions of approximately 0.88m long by 25m wide by 0.5m high. The northern extent of the monument is visible above-ground but remains as a buried feature beneath a cultivated field to the south. Ditches resulting from the barrow's construction flank it to the north and south. The latter were partially excavated with finds that included a fragmented pick fashioned out of antler (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.2, DCO Volume 6)).

7.7.48 A record of a Neolithic burial (23195) is located within the Order Limits at the western end of Section D of the Pipeline.

7.7.49 A second barrow known as Gob's Barrow (MPM111) is located further to the west along Portsdown Hill (Section E) and was excavated by Lt. Col. J.H. Cooke in 1926. The barrow measured 59m by 25.5m, though its height had been significantly reduced by recent ploughing, and contained two burial chambers along with cremated remains and a crouched inhumation burial. Cooke dated the inhumation burial to 2,500-2,000BC but it was thought that the cists and cremation burials were earlier and Neolithic.

7.7.50 A Neolithic long barrow (64055), located within the 500m study area to the west of Section F has been identified through geophysical survey and evaluation. The archaeological remains of the long barrow comprise two large flanking ditches, 11m apart, with an area of possible mound material of up-cast chalk and clay between them. Prehistoric pottery and worked flint have been recovered from the upper ditch fills. Knapping debris as well as stone tools were recovered from the area around the long barrow during fieldwalking, indicative of more widely spread Prehistoric activity in the area.

7.7.51 Neolithic activity in Section E of the Pipeline is attested by a single findspot of worked flint (MWC4249), located at Portchester Lane. Neolithic funerary monuments are present in other Sections of the Pipeline, suggesting that this absence of evidence is most likely due to a combination of later agricultural activity and a lack of previous archaeological investigation in this area.

7.7.52 The remaining Neolithic records are related to findspots across the 500m study area.

7.7.53 Analysis of Neolithic sites within Hampshire show a correlation between watercourses and settlement and occupation sites [33], which may suggest the potential for findspots to be linked to as yet unidentified Neolithic archaeology.

Bronze Age 2,500 – 700 BC

7.7.54 The presence of Bronze Age bowl barrows is recorded across the 500m study area with a particular concentration along the crest of Portsdown Hill in Sections E and F of the Pipeline. Most prominent is a group of three barrows that once existed between Fort Purbrook and Crookhorn Lane (MPM112). Though they are marked on Taylors Map from 1759, at least two of the barrows have been destroyed in the intervening years, likely during the reconfiguration of Crookhorn Lane. In addition to the earlier flint cists and cremation remains, a crouched inhumation burial was found in the western-central extent of the barrow alongside a stone dagger, decorated pottery beaker, and a jet bead, all of which were dated to the early Bronze Age by the original excavation team in the 1920s (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.2, DCO Volume 6)).

7.7.55 Further possible barrows are recorded in the 500m study area: one to the immediate west of Fort Purbrook (Section D of the Pipeline) marked on the 1930 and 1951 Ordnance Survey maps (26730) and a second at the westernmost extent of the 500m study area in Section M marked on the 1952 Ordnance Survey map (MPM1695); however, the exact nature and date of these features is unconfirmed.

7.7.56 An archaeological evaluation at Farlington Reservoir identified what may have been remains of barrows that had been truncated by ploughing activity, though the interpretation and dating of these were not definitive (MPM1008). This is located within the 500m study area 40m to the south of Section D.

7.7.57 Evidence of Bronze Age activity in Section L of the Pipeline includes three urned cremations uncovered during an archaeological evaluation at Crowdhill Green (69693). The three burials were clustered together, and all three urns were inverted. Two burials were contained in bucket urns and the third in a globular urn. One individual was aged over 13 years and the other two were aged over 18 years.

7.7.58 Two middle Bronze Age hoards have been found in Section L of the Pipeline (MWC1216; MWC1226). One hoard comprised nine bronze palstaves, three of which were broken (MWC1216), the other contained a flat axe, a flanged axe and three palstaves (MWC1226). Both have been interpreted as founder's hoards. Founder's hoards are hoards which are believed to have comprised the stock of a bronze founder or smith. These could include broken or 'scrap' metal objects, as well as a complete or 'finished' object, and they were probably buried with the intention to be recovered at a later time.

7.7.59 The presence of these remains suggests that there may have been broader settlement and land use in this area near the River Itchen during the Bronze Age.

7.7.60 A rectangular pit containing a crushed food vessel (MPM1690), an Early Bronze Age (approximately 2500-1500 BC) pottery type, was discovered during roadworks at Southwick Hill Crossroads in 1948 in Section E of the Pipeline. Two other undated pits found at the same time may also date to the early Bronze Age, forming a concentration of activity at this location. One undated pit contained a cremation burial (MPM1084), while another contained numerous fire-marked flint nodules (MPM1689).

7.7.61 A pit found east of Pigeon House Lane (MPM2014), contained three fragments of later Bronze Age pottery and is evidence of activity within Section E of the Pipeline during the later Bronze Age transition; a period which saw populations move towards an enclosed landscape and the intensification of agricultural exploitation [42].

7.7.62 Several cut features identified during geophysical survey and evaluation have been assigned a Bronze Age date. These include a circular pit found on land north of Fareham (Section F), approximately 0.87m in diameter, which contained approximately 300 sherds of coarse flint tempered pottery (68983), and traces of several ditches, with one containing burnt flint (68984; 65482).

Iron Age 700 BC – AD 43

7.7.63 Section E of the Pipeline contains evidence for early farming practices associated with this period including a positive lynchet, a form of earthen terrace, which was discovered in 1969 when Southwick Road was widened (MPM114). The lynchet overlays two intersecting pits, and Iron Age pottery was found in the lynchet material and in a pit fill. Excavation at the Southwick Hill Crossroads site in 1972 found early Iron Age post holes which may represent the remains of structures associated with agricultural activity (MPM1686); most of the post holes were arranged in pairs and may have represented the remains of corn or hay drying racks (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

7.7.64 Iron Age pottery has also been found in soil during ground disturbance earthworks on the northern side and the southern sides of the Southwick Hill Crossroads in Section E of the Pipeline (MPM114; MPM2753), indicating that this area may have been a focus for Iron Age activity. Sherds of Iron Age pottery have also been found elsewhere in the Section, including south of Pigeon House Farm (MPM275), and on land at Ashley Down Farm (MWC544; MWC881; MWC6097).

7.7.65 Other evidence of Iron Age activity along the route includes an uninscribed 'southern gold quarter stater' (coin), dating to approximately 50-30/20 BC

(MPM1580), and four slingstones found near Pigeon House Farm (MPM274) in Section E of the Pipeline.

7.7.66 Evidence for Iron Age activity in Section F of the Pipeline includes a large rectangular enclosure at Downbarn Farm (30848; 30849; 30850). Possibly constructed of two phases, the enclosure has 4m wide ditches, and is recorded as containing (unspecified) archaeological features.

7.7.67 Iron Age activity in Section L of the Pipeline is demonstrated by finds of pits on Colden Common, containing charcoal inclusions and a sherd of Iron Age pottery (MWC1222; MWC1255). Two ditches of probable Iron Age date have also been found at Stubbington Copse (MWC6109).

Romano-British AD 43 – 410

7.7.68 Artefactual evidence dating to the Roman period is also interspersed across the 500m study area. In Section E of the Pipeline, this includes a coin hoard found north of Drayton Lane in 1976 containing nine coins dating to the middle of the 3rd century AD (MPM151). Other finds include additional coins found near Drayton Lane and Gobs Barrow (MPM124; MPM135); a number of pottery sherds from Portsdown Hill, Langstone Shore in Havant, and Camp Hill in Crookhorn (MPM133; 23502; 33708); a silver ring found by a metal detectorist on Portsdown Hill (MPM1883); as well as brick fragments and tesserae (33709; 62022). Excavations in Section E of the Pipeline by the South Hampshire Archaeological Rescue Group in 1979, revealed nine postholes arranged in a square, which, while undated, were interpreted as a Roman look-out post or signalling station, due to its proximity to the Roman fort at Porchester, and the fact that the site overlooks the sea on its south side, with a view up to 40km inland to the north (MPM1213) (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

7.7.69 In 1969 and 1976, a number of pieces of Roman ceramic were found in Section E of the Pipeline at Southwick Hill Crossroads, including roof and flue tiles, New Forest ware, finger-tip storage jar sherds, and a sherd of Samian ware (MPM246). Roman pottery and tegula have also been found elsewhere on Portsdown Hill (MPM1216), while Roman pottery sherds dating to the 2nd century have been found near Pigeon House Farm (MPM1216), an apparent focal point of activity from the Iron Age onwards. A 3rd century base-silver Roman radiate coin of Gallienus (AD 257-258) was also recovered on Portsdown Hill (MPM1581).

7.7.70 The Romans developed a system of roads to link urban centres to each other and to coastal ports across Britain, playing a strategic role in provincial life. It is likely that Wickham acted as a supply route for the Roman troops until the Roman system of government and infrastructure collapsed and the occupation of Britain ended in the 5th century.

7.7.71 Wickham was the point where two Roman roads crossed (Section G: Crockerhill to Wickham (Section G) of the Pipeline), both extending within the 500m study area. This includes a section of the long-distance Roman road from Bitterne (Clausentum) to Chichester (Noviomagus Regnensium) (MWC4357; 12), outlined as Route 421 by Margary [39], which is essentially aligned east to west and continues in this alignment towards the River Meon. The actual position and nature of the river crossing is still poorly understood. This long-distance road appears to

join a second Roman road connecting Winchester to Wickham (MWC3913; 20), outlined as Route 420 by Margary [39]. This road leaves Winchester at the East Gate turning south-east and following Chesil Street and Bar End Road until it takes a sharp turn to the south at Deacon Hill, continuing south-east towards Wickham. Finds have been identified along these roads within the other Sections, suggesting a strong and established Roman presence in the area. Possible evidence of activity near this road has been identified during priority geophysics (see paragraph 7.8.146).

7.7.72 Archaeological evaluation, carried out in 1990-1992 by the Archaeological section of Winchester Museum Service on behalf of the Applicant in relation to new sewage works, revealed that the Roman road had multiple layers, indicating a sequence of repair to the road from the 1st century AD.

Early Medieval AD 410 – 1066

7.7.73 Within the 500m study area to the east of Section D of the Pipeline is an Early Medieval cemetery adjacent to the Bevis's Grave Long Barrow (NHLE 1012831). Partial excavation within the southern ditch of the Neolithic long barrow uncovered over 80 graves dating to the 8th to 9th century. The discovery of this quantity of graves during a period where local villages comprised of around 20 households indicates some longevity of use and inter-generational significance for this site (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

7.7.74 Two skeletons attributed to this period were discovered in 1966-1967 during the redevelopment of the A3 approximately 70m apart, aligned east-west. This has been noted as a possible cemetery site in the HER record. One burial contained several grave goods such as iron knives and a wooden bucket while the second was found decapitated with the skull placed upon the shoulders (MPM126).

7.7.75 An Early Medieval cemetery was identified during roadworks, resulting in rescue excavations at Southwick Hill Crossroads (Section E) in 1948 and 1956 (MPM2017). The cemetery contained around 20 inhumation burials, which were interred on an east-west alignment. The siting of the cemetery on the hill may have been influenced by the presence of earlier Bronze Age funerary monuments. The siting of Early Medieval burials close to earlier funeral monuments is a commonly observed phenomenon within Hampshire, and in other parts of England.

7.7.76 The settlement of Boarhunt (north of Section E) was probably founded in the Early Medieval period. It is mentioned in Domesday as Borehunt (MWC89). According to Domesday, the settlement once contained three mills and two salterns (an installation or area used for making salt) along with the Church of St Nicholas (NHLE 1350613), which was probably built in approximately 1064, at the very end of the Early Medieval period [43].

7.7.77 The north of Section J of the Pipeline, and associated land to the south and east, includes the Bishop's Waltham deer park and boundary, known as 'the lug' which consisted of a ditch and a bank, approximately 5m in width. The northern and north-western boundary of Section J of the Pipeline follows 'the lug', which would have held a position of prominence in the landscape.

7.7.78 The Bishop's Waltham deer park (NHLE1016169) (Section J into Section K: The River Hamble to Lower Upham (Section K)) is one the earliest of its kind in

Hampshire and is mentioned in the 1086 Domesday Survey as a 'Park for wild beasts', or *parcus bestiarum*, which likely included native red and roe deer [44]. As the deer park was included in the 1086 Domesday Survey, it was likely already an established feature in the landscape by the time of the survey. Its origins may be as early as the foundation of the monastery at Waltham from AD 670, after the widespread adoption of Christianity by local communities.

7.7.79 The park lug originally featured a large bank and ditch, along with a fence on top and accompanied by an oak fence, large enough to keep any deer inside the park. Although the lug is still a feature of the landscape, the banks have eroded over time and the ditch has silted up. It is worth noting that archaeological excavations of the lug, conducted by the Departments of Archaeology and Geography of the University of Southampton as an attempt to date the feature to the land grant of AD 904, produced no useful datable material. However, analysis of the park lug's hedgerows, presented in the same study, suggested that the main enclosure dates to the Early Medieval period.

7.7.80 Evidence for Early Medieval activity in the 500m study area for Section K of the Pipeline is primarily concentrated in its south-eastern extent, where the manor that became known as Bishop's Waltham was centred. It is known that this manor existed from before AD 904, when it formed part of an exchange of land from King Edward the Elder to Denewulf, Bishop of Winchester.

7.7.81 Marwell Manor Farm (NHLE 1012196), a moated site, was a major rural manor of the Bishops of Winchester from the middle of the 10th century onwards and was probably built shortly after the bishop was granted land in the area by King Eadgar. This site is north of Section L.

7.7.82 Study of Early Medieval charters suggests that a road crossed the valley near or on the site of the Medieval dam between Eleven Acre Pond and the Great Pond in the Early Medieval period (Section L) [45].

Medieval AD 1066 – 1540

7.7.83 Pinsely Motte, a motte and bailey castle (MWC4329), (Section E) dates either to the 11th century Norman conquest, or to the 12th century period known as 'The Anarchy', which also saw an upturn in the construction of fortified settlements between 1138 and 1153. Two Medieval pits have been identified within the area probably encompassed by the bailey (MWC5830). One pit was excavated and was found to be roughly square and 1.7m across which contained sherds of Medieval pottery (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

7.7.84 Southwick Priory (NHLE 1001902), (approximately 755m north of Section E) was established in approximately 1145-1153 as a priory of Augustinian canons, with its associated land extending into the 500m study area.

7.7.85 The settlement of Boarhunt (MWC89), north of Section E, continued to be occupied throughout the Medieval period. The Church of St Nicholas (NHLE 1350613), approximately 215m north of Section E was reworked with 13th century additions to its earlier core. The site of Manor Farm (NHLE 1350614) was occupied by the manor house of West Boarhunt during this period [43], although the present Grade II Listed farmhouse dates to the 17th century.

7.7.86 A number of villages within the 500m study area were deserted or shrunken during the Medieval period. This migration was likely to have been influenced by a range of factors including climate change, successive waves of the plague and other infectious diseases, and systematic eviction of the inhabitants by landlords who found it more profitable to convert ploughed fields into pastures for sheep to produce valuable wool. There are two known deserted Medieval settlements within Section E of the Pipeline, two within Section F of the Pipeline, and one within Section M of the Pipeline, however it is also possible that other settlements also contracted during this period. These are Widley, at Mill Farm (MWC4361), Wallsworth, which is west of Pigeon House Farm (MWC4342), Totsham (37314), a potential village (65078) north of Fareham and the shrunken village of Otterbourne (MWC3863).

7.7.87 Further evidence of Medieval activity in Section E of the Pipeline is provided by finds at Purbrook Park of 13th century to 14th century pottery, as well as tile, brick, and burnt flint, in a field with a disused clay pit (MWC4366). This may indicate a Medieval kiln site (MWC4367).

7.7.88 Medieval farming across the 500m study area may be attested by several areas of cropmarks visible on aerial photographs, although these may also be post-medieval in date. There are 16 possible Medieval banked field systems (63878; 58986; 58985; 59009; 58978; MWC7764; MWC7768; MWC7772; MWC7780; MWC7727; MWC7730; MWC7751; MWC7729; MWC7720; MWC7719; MWC7721).

7.7.89 Wickham (Section G) is mentioned in the Domesday book as having a recorded population of 26 households in 1086 [40]. Hugh of Port was the first Norman Lord to acquire the Manor of Wickham, becoming the tenant in chief of the land and responding directly to the crown.

7.7.90 By the 13th century, Wickham experienced growth and likely developed into a trading community, where brewing and tanning were important industries [46].

7.7.91 Foundations consisting of flint (MWC4055; MWC4056; MWC6383), dating to the 13th to 14th century from associated pottery finds, were recorded approximately 250m west of the southern boundary of Section J of the Pipeline, east of Sandy Lane, within the 20th century Shedfield Golf Course. The golf course was constructed over several phases between 1975 and 1989 [47], which may have disturbed Medieval archaeological evidence relating to the Medieval foundations (MWC4055; MWC4056; MWC6383).

7.7.92 The Bishop's Waltham deer park (MWC651; MWC45) (Section J and Section K) continued to be significant to Waltham Palace throughout the Medieval period and the Bishops of Winchester also were served by deer parks at Marwell Park (NHLE 1012194; NHLE 101298; NHLE 1012308; NHLE 1012309; MWC1242) and Stoke Park (also known as Bishopstoke Park; 1180).

7.7.93 The bishop's residence at Marwell (NHLE 1012196; MWC3880) was built in the middle of the 10th century and was a major rural manor of the Bishops of Winchester [48]. Section L of the Pipeline runs through Marwell Park and immediately to the north of, and outside the boundary of, Stoke Park. The two deer parks continue to influence boundaries and land use within the landscape, and understanding these two deer parks is important to understanding the historical

development, landscape, and land use within Section L of the Pipeline from the Medieval period onwards.

7.7.94 A series of large fishponds were also constructed at Marwell (Section L). The fishpond complex at Marwell was constructed as a chain of ponds, separated by earthen dams, along the floor of a well-defined valley, taking advantage of the natural topography [45]. The chain comprised at least four fishponds, and possibly six [45]. The ponds were constructed along the line of what is now Bow Lake stream [45]. These fishponds included the Great Pond, which was probably over 50ac in size, and Eleven Acre Pond (MWC4121), which was 10.6ac in size, and which lay to the west of the Great Pond [45]. These two fishponds were separated by a large earthen dam (NHLE 1012309). This dam, at over 260m in length, 32m in width, and 3m in height was one of the largest Medieval fishpond dams in England.

Post-Medieval AD 1540 – 1901

7.7.95 Following the seizure of Southwick Priory lands during the Reformation a manor house and associated parkland was created, however land within the 500m study area continued to be used for agriculture. The western and eastern boundaries of the estate correspond neatly with the western and eastern limits of Section E of the Pipeline.

7.7.96 Whilst briefly losing its episcopal residential status following the Reformation, by 1558 the bishop's palace at Bishop's Waltham (east of Section K) had been restored. The palace was subsequently damaged during the Civil War and remained abandoned.

7.7.97 Enclosure of open fields and Common Land increased between the middle of the 17th century and late 19th century which led to an increase in agricultural production in Britain.

7.7.98 Evidence of enclosure is also evident in the areas of Medieval deer parks. The 1841 tithe map of Bishop's Waltham indicates that the deer park (Section J and Section K) was divided into enclosures for farming. The 1660 lease also gives light to the intense farming which took place within the park during this period. Therefore, from at least 1660, the land was likely divided and farmed, however large swathes did remain in use for the ranging and feeding of deer across the 18th and 19th Centuries, with the park persisting as distinctive area of grassland and wood within the 500m study area.

7.7.99 In addition to the enclosure, new farming techniques resulted in the better control and management of available landscape resources, including an improvement in the structural farming landscape elements, such as the numerous copses shown in the historic maps, a drainage system (MWC5373) and a series of water meadows (WM_263, WM_264, WM_265, WM_266) recorded within the 500m study area, particularly in lands along the River Meon (Section G). Water meadows originated in the 16th century as a method to control an irrigation system, by implementing the irrigation of flat valley bottoms using a complex system of channels. This system provided a valuable economic resource, allowing a better use of land continuously throughout the year. Water meadows began to decline in the early 19th century, and by the middle of the 1930s the system was mostly no

longer in use (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

7.7.100 Following the Reformation, Marwell manor (north of Section L of the Pipeline) was passed to the Seymour family. By 1615, the site of Eleven Acre Pond (MWC4121), which was outside and to the immediate west of Marwell Park, seems to have passed to Corpus Christi College [45]. By 1615, both Eleven Acre Pond (L_MAP_003; MWC4121) and the Great Pond (FishersPond_0004) were laid dry and were converted to meadow pasture. This took place at a time when the value of meadow pasture was high, and when there was a wider decline in the maintenance of fishponds following the dissolution [45]. Taylor's County map of 1759 does not show the ponds, confirming that they were dry, and managed as meadow pasture. These two ponds remain as meadow pasture into the present.

7.7.101 Relatively little formalised Parliamentary enclosure is recorded across the area, with enclosure within the wider Marwell Estate undertaken privately prior to 1700, and probably in the 16th and 17th century.

7.7.102 Medieval fishponds were often reused after the dissolution as ornamental ponds in landscaped parks and gardens, and it is possible that this also occurred to a degree to the fishponds at Marwell. The 1860 sales map of the Marwell estate calls Fisher's Pond (MWC4121), 'an ornamental sheet of water', suggesting that it was appreciated for its aesthetic qualities. By 1860, the fishpond complex within Marwell Park had become a stream, which is still extant as Bow Lake stream.

7.7.103 Chalk mining was particularly common on Portsdown Hill in the post-medieval period. A series of large pits identified on LiDAR imagery within Sections E, F and G of the Pipeline may represent chalk extraction pits (58984; 58975; 58977; 58967; 59001; MWC7769; MWC7771; MWC7776; MWC7784). These run in an east to west alignment along the ridge, and they may have supplied chalk for grinding into agricultural lime for local soil conditioning, with pits dug where accessible for farms. Alternately, it is possible that some pits may have formed as natural sinkholes in the chalk.

7.7.104 Wickham (Section G) continued its expansion with the increased trade and production of this period, as demonstrated by historic maps as well as extant surviving buildings within The Square and Bridge Street.

7.7.105 In the 1860s and 1870s, a system of forts and associated structures, known as the Palmerston Forts, were constructed to defend Portsmouth and its naval base.

7.7.106 As part of the 'northern line' of this network of new defences, intended to defend Portsmouth from attack overland from the north, four forts were built. These are located in the 500m study area in Section E. Land was purchased from the Southwick Estate to construct the forts, and a firing line and clearance line were established to the north of the forts to enable their effective operation.

7.7.107 The forts within the 500m study area are, Fort Purbrook (scheduled monument and Grade II* Listed NHLE 1092134/1387127), Fort Nelson (scheduled monument and Grade I Listed; NHLE 1001860; NHLE 1350616), Fort Southwick (scheduled monument and Grade I Listed; NHLE 1001808; NHLE 1003802; NHLE 1167213; NHLE 1104368), and Fort Widley (scheduled monument and Grade II* Listed; NHLE 1001862; NHLE 1350616; NHLE 1387129). A small earthwork known as the Farlington Redoubt was added in 1868-1870 to the east of Fort Purbrook, which most likely served as a prepared location for moveable armament rather

than for permanent mounting of guns. The fort was fully armed by 1876 and upgraded in 1888.

20th Century AD 1901 – 2000 and 21st Century AD 2001 – Present

7.7.108 In 1907, Edward Christian bought Otterbourne House (NHLE 1350540), and it is likely that he introduced the Arts and Crafts garden (Section M). The 3rd edition 25 inch Map of 1909 shows the central path leading directly from the rear of the house, and a pergola walk, a sunken garden with half-rounded stone underneath a sundial, as well as a summer house and deep flowerbeds by yew hedges [49].

7.7.109 During the First World War, several zig-zag trenches were dug across Portsdown Hill (MPM2016, MPM2017, MPM1969) (Section E). These have been interpreted either as practice trenches for training soldiers, or as defensive trenches to defend/control access to key roads and to the approaches to the forts. Wintershill Hall (MWC5039; 1589) (Section K) was used by the Hampshire Ambulance Service as a base during the war. After the end of the First World War, war memorials were erected in Otterbourne (NHLE1466999) (Section M), Wickham (NHLE 1452782) (Section G) and Portsdown, along with a military cemetery at the latter (MPM1723; MPM1735) (Section E). The memorials and the military cemetery were added to after the Second World War (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

7.7.110 The boundaries of Portsmouth were extended after the First World War, and areas of council housing were built in the 1920s and 1930s, including at Wymering, to the west of Cosham. These areas grew rapidly and soon became suburbs of the city.

7.7.111 Consistent with military patterns in the post-medieval period, the defence of Portsmouth Dockyard and the neighbouring harbours was of paramount importance during the Second World War. To this end, an interdiction battery (MPM1645) (Section E) was constructed on Portsdown Hill to protect east Portsmouth, Langston Harbour, Hayling Island and Chichester Harbour from a land-based invasion. The battery consisted of two concrete bearing and range finding plinths, one west of Fort Widley, the other east of Fort Purbrook, and two concrete casements to the west of Fort Purbrook housing guns and magazines. An Anti-Aircraft (AA) battery was also located to the north in Purbrook (37738) (Section D), and a spigot mortar gun emplacement was located to the south in Farlington (65065).

7.7.112 During the Second World War, Portsmouth and its naval base were a major target of the German aerial bombing raids. Underground air raid shelters were constructed within the 500m study area, including two large, deep, public shelters built into Portsdown Hill; London Road Shelter and Wymering Shelter (MPM1647; MPM1009). Portsmouth was defended by a substantial network of defensive sites. This included a chain of heavy AA batteries, of which a gun-site (NHLE 1020960) survives on Portsdown Hill (Section E), along with other defences (MWC5834; 37738, MPM1630, MPM1645) (Section E).

7.7.113 During the Second World War, a secure base, the Underground Headquarters, was constructed under Fort Southwick on Portsdown Hill. It was served by a secure underground radio station (MPM1868) (Section E). The Underground

Headquarters was the operations centre which co-ordinated Operation Overlord, the Allied operation launched on 'D-Day' which led to the successful invasion of German-occupied Western Europe during the Second World War.

7.7.114 During the Second World War, country houses were requisitioned, and military camps were built across the region. Wintershill Hall (MWC5039; 1589) (Section K) was used from 1939 to 1941 as a school for children evacuated from Gosport, and later as accommodation for Jewish children who had survived Belsen concentration camp. Roche Court (NHLE 1233653) was used for assembly camp A16 shortly before D-Day.

7.7.115 Within Section E of the Pipeline between the WRP site and Otterbourne WSW is a small concrete memorial with a plaque (MPM1374) to Sergeant Hubert Hastings (Paddy) Adair of the Royal Air Force, who died when his Hurricane fighter aircraft AK-D-V7602 was shot down and crashed at a site approximately one mile away to the north-east, in a field to the south of Pigeon House Farm, on 6 November 1940. During the 1970s, an attempt was made to excavate the crash site, with wreckage and a small amount of human remains identified. Not enough human remains or identifying features of the pilot were identified and the coroner was not able to rule on the identity on the pilot. The memorial plaque is located relatively far from the crash site, as the precise location of the site had not yet been found when the memorial was erected, and probably also to allow the memorial to be publicly accessible. The field immediately to the south of Pigeon House Farm was subject to priority geophysical survey, however there were no anomalies identified which would suggest elements of aircraft, in situ burning, or modern disturbance caused by the 1979 excavation. The lack of identified anomaly may be a result of ineffectiveness of the gradiometer survey to identify this type of feature, along with a significant amount of ploughing in this field which had scattered ferrous debris and caused interference.

7.7.116 Following further documentary work and in consultation with Wessex Archaeology and the archaeological advisor to WCC, a second phase of geophysical survey was undertaken. A combination of additional gradiometer survey was undertaken in the expanded area to the south, alongside Ground Penetrating Radar survey across the original and expanded area. This work identified the likely crash site and the likely excavation area from 1979 and is detailed in ES Appendix 7.10 World War II Crash Site Pigeon House Farm Technical Note and geophysical survey report, Volume II (Document reference 6.2, DCO Volume 6) and Sheet 3 of ES Figure 7.4 Coverage of archaeological surveys undertaken, Volume III (Document reference 6.3, DCO Volume 6).

7.7.117 A second crash site, again of a 213 Squadron Hawker Hurricane, was partially excavated at Frith Farm, Shirrell Heath in 2018 by a team from Winchester University (Section H: Wickham to Shedfield (Section H)). The pilot, Hugh Clark, had bailed out before the crash and survived the War, and while the crash site had been subject to a salvage operation by the Royal Air Force (RAF) at the time, a substantial impact crater was observed, and wreckage was found across the field.

7.7.118 In 1940, a Hawker Hurricane Mk.1 crashed in Spurlings Road, killing the 22-year-old pilot, James Tillet (6937), after being shot down by an Me109, probably piloted by Major Helmut Wick. The plane made a wheels-up landing at White Dell Farm, Fareham (Section F). Tillet's body was retrieved from the plane, and he was buried at Ann's Hill Cemetery, Gosport.

7.7.119 During the Cold War, the Underground Headquarters at Fort Southwick saw active reuse as a Communication Centre, and it formed part of the Royal Navy's North Atlantic Treaty Organization communications network. Stations established as a part of Britain's Nuclear monitoring program were established on Portsdown Hill (MPM1649;41695) (Section E).

7.7.120 Much of Portsmouth's housing stock was damaged during the Second World War and the demand for housing grew rapidly after the end of the Second World War. In 1944 PCC bought the Leigh Park Estate near Havant to build a large new housing development. Building commenced in 1947, and Leigh Park House itself was demolished in 1959. The defence industries and the navy still maintain a strong presence in the region.

Uncertain date

7.7.121 A number of heritage resources of an unknown date have been identified throughout the 500m study area. Although it is not possible to confirm a period for these resources without further detailed archaeological investigation, it is possible to ascribe possible periods based on the interpretation of the available evidence.

7.7.122 There are historic records of discoveries in Section E that were found outside of archaeological observation, such as flint foundations uncovered in 1920 near Fort Widley (MPM123) and a human skeleton found beneath a residence on Portsdown Hill (MPM131) (ES Figure 7.2 Non-designated heritage assets within the study area, Volume III (Document reference 6.3, DCO Volume 6)).

7.7.123 The remains of some field systems in Pipeline Sections E (MWC4355) and F (58983) have been ascribed an uncertain date and may be Medieval or Post-Medieval in date, based on their form and layout.

7.7.124 A series of seven extraction pits identified on LiDAR data in Section L probably represent chalk extraction for the production of agricultural lime.

7.7.125 A denehole (an underground structure consisting of a number of small chalk caves entered by a vertical shaft) was encountered at Oakwood (MWC3876) in Section M near Otterbourne, as mentioned in a 1920s report [50]. The tunnel, found approximately 19 feet below-ground level, was filled with large blocks of chalk mingled with clay. The walls and roof were covered in a black soot-like deposit, with visible tool marks. Medieval chalk extraction pits were very common in Hampshire.

Above Ground Plant

7.7.126 The AGP sites are located within Section E (BPT/IPS-E), Section F (IPS-F), Section G (IPS-G) and Section K (BPT-K) of the Pipeline. The archaeological and geoarchaeological baseline for these sites is discussed in ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6), ES Appendix 7.3 Detailed gradiometer survey report – Phase 1, Volume II (Document reference 6.2, DCO Volume 6), ES Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation, Volume II (Document reference 6.2, DCO Volume 6), ES Appendix 7.5 Geoarchaeological monitoring reporting, Volume II (Document reference 6.2, DCO Volume 6), ES Appendix 7.8 Detailed gradiometer survey report – Phase 2, Volume II (Document reference 6.2,

DCO Volume 6) and ES Appendix 7.9 Trial trenching report, Volume II (Document reference 6.2, DCO Volume 6).

7.7.127 As these Proposed Development elements have the potential to affect heritage assets at greater distances than the pipeline construction works, searches of the NHLE were undertaken to a distance of 3km (ES Figure 7.3 Designated heritage assets within the extended study area, Volume III (Document reference 6.3, DCO Volume 6)) identify heritage assets which would potentially be subject to adverse effects arising through change in their settings, which is detailed further in ES Appendix 7.6 Heritage assets settings scoping appraisal, Volume II (Document reference 6.2, DCO Volume 6) and assessed in ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6).

7.7.128 BPT/IPS-E:

1. While there are no recorded heritage HER features within the site, the large number of modern records relating to military use of the ridge to the north of Portsmouth between the 19th and 20th centuries (see paragraph 7.7.105) are of particular relevance, primarily Fort Widley and Fort Purbrook.
2. A single ditch was identified during the trial trenching evaluation which is discussed further at paragraphs 7.8.141 and 7.8.142.

7.7.129 Within 3km of BPT/IPS-E are conservation areas and associated Grade II listed buildings at Old Wymering and Purbrook, as well as at Hillsea Lines, which is also a scheduled monument (NHLE 1001861). There are also individual Grade II listed buildings at Purbrook, Cosham and Broomfield House (ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6)).

7.7.130 IPS-F:

1. While there are no recorded heritage assets within the site, there are cropmarks of undated field systems (58983) observed on the north facing slopes of Portsdown Hill in close proximity and a post medieval chalk extraction pit (58984), which was identified during the geophysical survey (ES Appendix 7.3 Detailed gradiometer survey report – Phase 1, Volume II (Document reference 6.2, DCO Volume 6)).
2. Designated heritage assets within 3km of this site include the scheduled Heavy AA Gun battery P12 (NHLE 102096; 2.1km east of the site) and Fort Nelson (NHLE 1001860/1350616; 2.8km east of the site), as well as conservation areas and associated listed buildings at Wallington (Fareham), 1.9km south of the site and Wickham (Winchester), 2.4km north-west of the site, groups of Grade I and Grade II listed buildings at Boarhunt and Fareham and a number of isolated Grade II listed buildings (ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6)).

7.7.131 IPS-G:

1. IPS-G is located within GCZ 15 (ES Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation, Volume II (Document reference 6.2, DCO Volume 6)) which is within the valley of the River Meon and has potential for Pleistocene deposits within the River terraces. These gravel terraces were confirmed during the GI works, specifically Terraces 1, 2, 4 and 6/7 along with slope deposits and Holocene alluvium. These deposits were given paleoenvironmental potentials of high to low (see Table 42 in ES

Appendix 7.5 Geoarchaeological monitoring reporting, Volume II (Document reference 6.2, DCO Volume 6)).

2. IPS-G is also located within the former deer park at Wickham Park and the geophysical survey results in this area identified possible settlement activity along the projected route of the Roman road between Winchester and Wickham (ES Appendix 7.3 Detailed gradiometer survey report – Phase 1, Volume II (Document reference 6.2, DCO Volume 6)).
3. There are relatively few designated heritage assets within 3km of IPS-G, principally comprising the Wickham Conservation area (700m south-east of the site) and associated listed buildings, as well as individual listed buildings, most notably at the Grade II* listed Park Place (NHLE 1095586; 500m south of IPS-G) and the Grade II listed Little Park Mansions (NHLE 1350591; 250m south-east of IPS-G).

7.7.132 BPT-K:

1. This BPT is located adjacent to non-designated parkland at Wintershill Hall.
2. Designated heritage assets within 3km of BPT-K include the scheduled monument Bishops Palace and associated fishponds (NHLE 1016169), conservation area and associated Grade II* and Grade II listed buildings at Bishop's Waltham, 2.4km east of the site, as well as the large concentration of Grade II listed buildings at Upham, 2.3km north of the site.
3. The results of the geophysical survey identified likely post-medieval ridge and furrow cultivation within the BPT footprint.

Invasive Non-Native Species Treatment at Otterbourne Water Supply Works

7.7.133 In 2021 a scheme of archaeological strip, map and sample was carried out within the site of the Invasive Non-Native Species Treatment at Otterbourne WSW (71561) [51]. This identified a singular sub-circular pit containing a fragment of a brick dating to the Romano-British period, a sherd of medieval pottery and two fragments of animal bone.

7.7.134 Due to the low number of archaeological features observed during the excavation conducted in 2021 and the disturbance to archaeology caused by the construction of the waterworks which are currently located at the site of this element of the Proposed Development, there is low potential for archaeology to be present at the site of the Invasive Non-Native Species Treatment at Otterbourne WSW.

Archaeological survey

Geoarchaeological desk-based assessment and character zones

7.7.135 ES Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation, Volume II (Document reference 6.2, DCO Volume 6) identified deposits of archaeological and geoarchaeological interest across the Order Limits.

7.7.136 Within the Order Limits these include:

1. Old stage Pleistocene freshwater deposits in the south of the coastal plain at Budds Farm WTW.

2. Pleistocene Head-Brickearth deposits which overlay Pleistocene River Terrace Deposits at the Wallington River and Rivers Meon, Hamble and Itchen.
3. Localised capture points for Pleistocene and Holocene sediments in solution features were identified within the chalk on Portsdown Hill and the edge of the South Downs.
4. Pleistocene and Holocene slope deposits on valley margins.
5. Holocene alluvial sequences that in places contain peats and tufas.

7.7.137 Deposit modelling has divided the study area used in the GDBA into 25 GCZs within the Order Limits based on variations in quaternary deposits present and has provided deposit depths where available.

Priority (Phase 1) geophysical results

7.7.138 Priority geophysical survey (see ES Appendix 7.3 Detailed gradiometer survey report – Phase 1, Volume II (Document reference 6.2, DCO Volume 6)) was undertaken on land parcels within Sections D, E, F, G, J, K, L of the Pipeline between the WRP site and Otterbourne WSW. The extents of this survey can also be viewed in ES Figure 7.4 Coverage of archaeological surveys undertaken, Volume III (Document reference 6.3, DCO Volume 6).

7.7.139 Geophysical survey was only undertaken on two small land parcels within Section D of the Pipeline ahead of GI works as the majority of this Section is to be tunnelled.

7.7.140 Survey within Section D of the Pipeline, to the north of Portchester Road did not identify any geophysical anomalies.

7.7.141 Survey within Section D of the Pipeline identified a series of weak positive linear anomalies, aligned north-east to south-west, 36m long and 10m wide, in the northern portion of this area. These were interpreted as medieval to post medieval ridge and furrow.

7.7.142 Survey within Sections E and F of the Pipeline identified the most numerous archaeological and suspected archaeological anomalies. These have initially been interpreted as former field boundaries, potential extraction pitting, potential sub-circular and rectilinear enclosures, ridge and furrow cultivation and historical landscape features. The clearest evidence of archaeological activity is that of a ring ditch within Section F of the Pipeline. No potential remains of the shrunken or deserted medieval villages within this area were noted in any surveys.

7.7.143 Survey within Section G of the Pipeline has identified multiple linear and discreet archaeological features to the north and south of Titchfield Lane. On both sides of Titchfield Lane, a number of linear anomalies have been interpreted as a possible enclosure ditch system, with a number of sub-circular anomalies representative of extraction or refuse pits. It is possible these pertain to a ladder settlement, or routeway between field systems of Romano-British or medieval date. This is supported by the presence of a known intersection of two Roman Roads within this area.

7.7.144 Survey within Section J of the Pipeline has identified a series of former field boundaries and amorphous disturbance interpreted as probable tree throws to the north of Woodman's Farm, which align with field boundaries on 1888-1912 Ordnance Survey Six Inch mapping.

7.7.145 Survey within Section K of the Pipeline identified weak positive parallel linear anomalies noted in the north-west of the Wintershill Hall Park. The relatively equal spacing and respect to the southern field boundary indicate that it is likely that these relate to post-medieval ridge and furrow cultivation, however modern ploughing or land drains may equally be the cause of these features.

7.7.146 Survey within Section L of the Pipeline identified several positive linear anomalies to the west of the Park Pale at Marwell Park and on the western side of Winchester Road across Fisher's Pond.

7.7.147 These have been initially interpreted as possible archaeological ditch boundary or enclosure features of unknown date. The features may be older field boundaries given their alignment to current and known former field boundaries.

7.7.148 The gradiometer survey did not positively identify any features that may be interpreted as part of the postulated complex of ponds at Fisher's Pond.

Phase 2 geophysical results

7.7.149 The Phase 2 geophysical survey was undertaken between June 2024 and October 2024 and targeted areas within the Order Limits that were not included as part of the Phase 1 survey. In total 67.66ha were covered in this second phase (ES Appendix 7.8 Detailed gradiometer survey report – Phase 2, Volume II (Document reference 6.2, DCO Volume 6)) the survey extents of can be viewed in ES Figure 7.4 Coverage of archaeological surveys undertaken, Volume III (Document reference 6.3, DCO Volume 6).

7.7.150 Within Section E, alongside observations of several positive linear anomalies attributed to ditches and field boundaries, the survey identified features corresponding to a possible agricultural enclosure. This is attributed to having a likely prehistoric date due to the known Mesolithic and Bronze Age funerary and settlement activity 500m to the south-east of the Order Limits.

7.7.151 Survey within Section F identified possible pitting and postholes pertaining to possible prehistoric settlement, as well as field boundaries and small enclosures of uncertain date.

7.7.152 Survey in Section G identified several fragmented linear anomalies, all aligned orthogonally, indicative of ditches forming field systems of an uncertain date. A 4m-by-4m pit like feature was also identified within the Order Limits at Frith Farm, which was a result of the 2019 excavation of the Hawker Hurricane WWII plane crash (see paragraph 7.7.117).

7.7.153 A weak penannular anomaly was identified in the eastern part of Section H, possibly indicating the presence of a prehistoric roundhouse based on its size and form. Section H of the Pipeline also contained a series of linear anomalies indicative of ridge and furrow field systems.

7.7.154 Similarly to the priority geophysical survey, Section J identified a series of field boundaries which have been identified on the Six Inch Ordnance Survey (OS) County map from Hampshire and the Isle of Wight Sheet LVIII from 1871. Additionally, indications of modern ploughing and drains were identified.

7.7.155 Sections K, L and M all contained former field boundaries which were identified on historic OS mapping, areas of modern made ground and underground utilities.

Trial trenching results

7.7.156 A scheme of targeted archaeological trial trenching based on the Phase 1 geophysical survey was carried out between August 2024 and October 2024. A total of 67 trenches were excavated with the majority (64 of 67 trenches) located on the eastern side of Portsdown Hill (Section E). The remaining three trenches were excavated at Fisher's Pond (Section L) (ES Appendix 7.9, Trial trenching report, Volume II (Document reference 6.2, DCO Volume 6)). The excavated trial trench locations can be viewed in ES Figure 7.4 Coverage of archaeological surveys undertaken, Volume III (Document reference 6.3, DCO Volume 6).

7.7.157 Of the 67 trenches excavated, 19 trenches contained observable archaeological features and deposits. Consisting of ditches, postholes and pits, these features indicated three main phases of activity: Iron Age, Romano-British and post-medieval/Modern.

7.7.158 The majority of Romano-British activity observed during the trial trenching was located within New Barns Farm, an area incorporating land extending eastwards from Crooked Walk Lane situated within Section E. Most features dated to this period comprised of ditches, the majority of which dating to the early-mid Romano-British period with one example (Trench 9.02) dating to the late Romano-British period. Iron Age activity was also observed within this area.

7.7.159 Iron Age activity was also observed across Pigeon House Farm and Widley Farm both also in Section E. Trenches excavated within this area observed Iron Age activity including ditches, pitting and postholes.

7.7.160 Burnt material including flint was observed in postholes at Widley Farm.

7.7.161 The three trenches excavated at Fisher's Pond, located within Section L, included small finds of ceramic building material within the topsoil.

7.7.162 The pottery excavated from the evaluation is noted to identify 'nearby settlement activity from the mid-late Iron Age and Romano-British periods'. Pottery dating to the medieval and post-medieval period is also 'indicative of the cultivation of domestic refuse onto agricultural fields' [51].

7.7.163 An indication is made in the report for the presence of some prehistoric activity due to an assemblage of flint including worked examples of undiagnostic flakes, though this is considered to be a 'background level of prehistoric activity' [51].

7.7.164 Animal bones comprising 1052 fragments in total were also recovered. This assemblage was recovered from Iron Age and Romano-British context and has been retained by Wessex Archaeology.

7.7.165 Amongst the undated finds, a more unusual find was a small spherical flint bead which was recovered from Trench 153/3.03 south-east of Widley Farm in an undated pit. This is noted to potentially be a fossil sponge.

7.7.166 In the BPT/IPS-E field, Field 4 Trench 4.01, a single undated ditch to the south of the field was identified, which was not identified by the geophysical campaign. To the west of this field, geophysical survey had identified two potential ditches, although these were not identified in the trial trenching and were likely a result of slight changes in the underlying geology.

Identified receptors

7.7.167 In addition to those non-designated heritage assets within 500m of the Order Limits which have been considered as part of the assessment of direct physical effects on heritage assets, all designated heritage assets within the extended study area have been considered for inclusion in the scope of detailed assessment of effects on setting set out at ES Appendix 7.6 Heritage assets settings scoping appraisal, Volume II (Document reference 6.2, DCO Volume 6).

7.7.168 Those heritage assets identified as potentially affected, either by physical change, whether occurring directly or indirectly, or by change to setting, are listed below and assessed in detail at section 7.8:

1. Deposits of potential geoarchaeological interest including those that may be dewatered by changes to drainage occurring during construction, operation and decommissioning, demonstrably present at points across the route.
2. Archaeological remains, demonstrably and potentially present at points across the route which might be subject to disturbance or drainage.
3. Old Bedhampton Conservation Area, arising from visibility of the above-ground pipeline, which is assessed at paragraph 7.8.21.
4. The Old Mill House (Grade II listed: NHLE 1340188), arising from visibility of the above-ground pipeline, which is assessed at paragraph 7.8.31.
5. Fort Purbrook (Scheduled Monument, also Grade II* listed: NHLE 1001842, 1387127, 1092134), arising from visible and audible change to setting during construction of an intermediate shaft, which is assessed at paragraph 7.8.44.
6. Fort Widley (Scheduled Monument, also Grade II* listed: NHLE 1001862, 1387128), arising from visible change to setting during construction of the Pipeline and BPT/IPS-E and from the lasting presence of BPT/IPS-E, which is assessed at paragraph 7.8.47.
7. Fort Southwick (Scheduled Monument, also Grade I listed: NHLE 1001808, 1104368, 1167213), arising from visible change to setting during construction of the Pipeline, which is assessed at paragraph 7.8.50.
8. Fort Nelson (Scheduled Monument, also Grade I listed NHLE 1001860, 1350616), arising from visible change to setting during construction of the Pipeline, which is assessed at paragraph 7.8.52.
9. Church of St Nicholas, Boarhunt (Grade I listed: NHLE 1350613), arising from visible and audible change to setting during construction of the Pipeline, which is assessed at paragraph 7.8.54.
10. Otterbourne Manor (Scheduled Monument: NHLE 1013055), arising from visible and audible change to setting during construction of the Pipeline, which is assessed at paragraph 7.8.58.
11. House at Saw Mills (Pink and Company Limited) (Grade II listed: NHLE 1230002), arising from visible and audible change to setting during construction of the Pipeline, which is assessed at paragraph 7.8.62.
12. Mission Room with Cottage Adjoining (Grade II listed: NHLE 1351248), arising from visible and audible change to setting during construction of the Pipeline, assessed at paragraph 7.8.63.

13. Castle Farmhouse (Grade II listed: NHLE 1095637), arising from visible and audible change to setting during construction of the Pipeline, which is assessed at paragraph 7.8.65.
14. Sandy Hill House (Grade II listed: NHLE 1350573), arising from visible and audible change to setting during construction of the Pipeline, which is assessed at paragraph 7.8.66.
15. Park Pale at Marwell Park (Scheduled Monument: NHLE 1012308), arising from visible and audible change to setting during construction of the Pipeline, which is assessed at paragraph 7.8.56.
16. Low Hill Farmhouse (Grade II listed NHLE1302822), arising from visible and audible change to setting during construction of the Pipeline, which is assessed at paragraph 7.8.67.
17. Otterbourne Manor House (Grade II listed: NHLE 1095795), arising from visible and audible change to setting during construction of the Pipeline, which is assessed at paragraph 7.8.58.
18. Wickham Park Deer Park and Park Place, arising from change to parkland character and potential loss of archaeological elements of the parkland landscape during construction of the Pipeline, which is assessed at paragraph 7.8.90.
19. Bishop's Waltham Deer Park, arising from change to parkland character and potential loss of archaeological elements of the parkland landscape during construction of the Pipeline, which is assessed at paragraph 7.8.90.
20. Wintershill Hall Park, arising from change to parkland character during construction of the Pipeline, which is assessed at paragraph 7.8.104.
21. Marwell Park, arising from change to parkland character and potential loss of archaeological elements of the parkland landscape during construction of the Pipeline and BPT-K, and from the lasting presence of BPT-K, which is assessed at paragraph 7.8.90.
22. Wintershill Hall, arising from visible and audible change to setting during construction of the Pipeline and BPT-K, and from the lasting presence of BPT-K, which is assessed at paragraph 7.8.104.
23. Aircraft crash site at Pigeon House Farm, arising from disturbance of the crash site during construction, which is assessed at paragraph 7.8.107.
24. Aircraft crash site at Frith Farm, arising from disturbance of the crash site during construction, which is assessed at paragraph 7.8.107.
25. Farm Range at Albany Farm (50684), arising from visible and audible change to setting during construction of the Pipeline, which is assessed at paragraph 7.8.130.
26. Little Park Mansions (Grade II listed: NHLE 1350591), arising from visible and audible change to setting during construction of the Pipeline and IPS-G, and from the lasting presence of IPS-G, assessed at paragraph 7.8.135
27. Park Place (Grade II* listed: NHLE 1095586), arising from visible and audible change to setting during construction of the Pipeline and IPS-G, and from the lasting presence of IPS-G, assessed at paragraph 7.8.137

28. Park at Park Place, arising from visible and audible change to setting during construction of the Pipeline and IPS-G, and from the lasting presence of IPS-G, which is assessed at paragraph 7.8.90.

7.7.169 Reference should be made to ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6) for detailed description of the development parameters assessed.

Future baseline

7.7.170 Development of the future baseline has used readily available information about developments that will have been constructed prior to commencement of construction of the Proposed Development and climate change scenario data to describe the natural changes in the local environment over the relevant timescale.

7.7.171 In the absence of the Proposed Development, it is assumed that the future baseline in terms of archaeological remains and historic built environment would remain broadly stable. There is a potential for a degree of erosion of near surface remains by intensive agriculture and the continued growth of existing settlements, but as a worst case scenario it has been assumed that these heritage assets would remain stable and can be assumed to remain the same as reported for the current baseline.

7.7.172 It is possible that there would be a change to historic landscape arising over the operational period as patterns of agriculture and species mix changes over time to reflect the prevailing climatic conditions. The nature, extent and pace of this change is, however, difficult to predict and as a worst case scenario for assessment purposes, it has been assumed that the contribution of setting and legibility of historic landscape character would remain broadly unchanged from existing conditions during the operation of the Proposed Development.

7.7.173 In some cases, local conditions may mean that specific pressures on the historic environment and specific proposals are more readily discerned, and where this is the case, these have been considered within the narrative assessments set out at section 7.8 or, where appropriate, considered in ES Chapter 20 Cumulative and in-combination effects, Volume I (Document reference 6.1, DCO Volume 6).

7.8 Assessment of likely significant effects

7.8.1 This section presents the assessment of likely significant effects on archaeology and cultural heritage resulting from the construction, operation and decommissioning of the Proposed Development. The likely significant effects of the Proposed Development are identified taking into account primary and tertiary mitigation. Following assessment, the need for secondary mitigation is considered in section 7.9 and residual effects are explained in section 7.10.

7.8.2 Assessment of likely significant effects has been considered within the settings assessment (ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6)) and that assessment is summarised in this section.

Construction effects

Water Recycling Plant site

Designated heritage assets

7.8.3 This element of the Proposed Development does not physically interact with any designated heritage assets and no direct or indirect physical effects would arise. As identified in the settings scoping exercise and settings assessment, no designated heritage assets or their settings would be affected by this element of the Proposed Development (ES Appendix 7.6 Heritage assets settings scoping appraisal, Volume II (Document reference 6.2, DCO Volume 6) and ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6)).

Direct physical effects on non-designated heritage assets

7.8.4 As a result of modern disturbance, primarily due to the WRP site's former use as landfill, landscaping at its margins and construction of Harts Farm Way, it is not anticipated that any near-surface archaeological remains would survive within the Order Limits here, and consequently disturbance of such assets would not arise.

7.8.5 The GDBA (ES Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation, Volume II (Document reference 6.2, DCO Volume 6)) and GI work (ES Appendix 7.5 Geoarchaeological monitoring reporting, Volume II (Document reference 6.2, DCO Volume 6)) has identified the presence of deposits of potential geoarchaeological interest within the site (GCZ6), buried at depths of -0.40m to -1.5m Ordnance Datum (OD). These deposits hold significance for archaeological interest and were assessed as being of regional interest (medium importance) for their ability to inform study of past environmental conditions and form a small part of a much more extensive sequence of deposits that survive within the area around the WRP site.

7.8.6 Any disturbance would arise through insertion of piled foundations and through construction of bored tunnels and access shafts. These would represent limited intrusion into a much more extensive deposit, and the magnitude of impact is assessed as minor adverse. This would give rise to a permanent and irreversible effect of minor adverse significance which would not be significant in EIA terms.

7.8.7 Where a temporary cofferdam would be used to install elements of the WRP Sustainable Drainage Systems outfall into the Hermitage Stream there is potential for disturbance of a limited area of what appear to be relatively recent sediments within an engineered section of the channel and no adverse effects are anticipated.

7.8.8 Construction would not give rise to any inundation, dewatering or vibration/compaction of non-designated heritage assets sufficient to give rise to any adverse effect outside areas that would be directly disturbed.

Indirect physical effects on non-designated heritage assets

7.8.9 No non-designated heritage assets have been identified as potentially subject to indirect physical effects.

Change to the setting of non-designated heritage assets

7.8.10 As identified in the settings scoping exercise (ES Appendix 7.6 Heritage assets settings scoping appraisal, Volume II (Document reference 6.2, DCO Volume 6)) no non-designated heritage assets have been identified that would be affected by any temporary or permanent change to setting.

Pipelines between Budds Farm Wastewater Treatment Works and the Water Recycling Plant site

Designated heritage assets

7.8.11 This element of the Proposed Development does not physically interact with any designated heritage assets, and no direct or indirect physical effects would arise.

7.8.12 As identified in the settings scoping exercise and settings assessment (ES Appendix 7.6 Heritage assets settings scoping appraisal, Volume II (Document reference 6.2, DCO Volume 6) and ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6)) no designated heritage assets or their settings would be affected by this element of the Proposed Development.

Direct physical effects on non-designated heritage assets

7.8.13 The GDBA and GI work (ES Appendix 7.5 Geoarchaeological monitoring reporting, Volume II (Document reference 6.2, DCO Volume 6)) has identified the presence of deposits of potential geoarchaeological interest within the Order Limits, buried at depths of -1.5m to -1.3m OD. Tidal Flat deposits of Holocene age are assessed as being of low importance for their geoarchaeological potential however would likely contain organic detrital material which would inform on the palaeoenvironment. The underlying Pleistocene Head-Brickearth deposits, buried at a depth of -1.53 and -1.64m OD, are considered of medium importance and would inform study of past environmental conditions. Underlying the Head-Brickearth are possible chalky silts and solifluction deposits buried intermittently at depths between -2.50m OD to -14.80m OD. While these deposits are of uncertain age and potential for containing archaeological deposits, they are unlikely to contain organic detrital material which would inform on the palaeoenvironment.

7.8.14 Disturbance would arise through construction of bored tunnels between the WRP site and Budds Farm WTW and access shafts at these sites. The trenchless section, which crosses beneath Hermitage stream bed, which sits at -2m OD, would be no less than 2.5m below the base of the stream.

7.8.15 This would represent limited intrusions into much more extensive deposits, primarily where the drilling compounds for the tunnel are located at Budds Farm WTW and the WRP site, with the main trenchless section passing through chalk bedrock. This means that whilst it would give rise to a permanent and irreversible effect, the impact is assessed as of minor adverse magnitude. This is of minor adverse significance which would not be significant in EIA terms.

7.8.16 Construction would not give rise to any inundation, dewatering or vibration/compaction of non-designated heritage assets sufficient to give rise to any adverse effect outside areas that would be directly disturbed.

7.8.17 Due to the depth of the trenchless construction works under the Hermitage stream, non-designated archaeological deposits within estuarine silts would not be impacted.

Indirect physical effects on non-designated heritage assets

7.8.18 No non-designated heritage assets have been identified as potentially subject to indirect physical effects.

Change to the setting of non-designated heritage assets

7.8.19 No non-designated heritage assets have been identified that would be affected by any temporary or permanent change to setting.

Pipelines between the Water Recycling Plant site and Bedhampton Springs

Direct physical effects on designated heritage assets

7.8.20 As noted at in ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6) the Proposed Development would use pipelines constructed by Portsmouth Water as part of the consent for the Havant Thicket Reservoir, and consequently assessment has only been undertaken of the physical works required to connect the WRP to the Portsmouth Water pipelines at Bedhampton Springs. Reference has been made to viewpoints VP009 and VP009b (ES Figure 13.22 Sheet 2, Representative viewpoint, Volume III (Document reference 6.3, DCO Volume 6) in developing this assessment.

7.8.21 There would be construction compound B1-1 and entry/exit point for the trenchless construction works at Mill Lane directly to the west of Mill Lane. This would be located adjacent to and slightly overlapping the western edge of the Old Bedhampton Conservation Area, a heritage asset of medium importance. The stretch of trenchless construction below Mill Lane would emerge into construction compound B1-2 where it would be open-cut across the relict section of water meadow between Mill Lane and Bedhampton Springs, before connecting into Bedhampton Springs by an above-ground pipeline on the eastern and western sides of Old Mill Dam. The pipeline route would represent a direct physical effect on the Old Bedhampton Conservation Area.

7.8.22 Construction activity adjacent to the conservation area during the construction period would contribute to this effect and has been considered in this assessment as part of the same change to the character of the conservation area. This visible construction activity would alter the character of this part of the Old Bedhampton Conservation Area, although the relatively limited extent of the conservation area affected and the proximity of the works to the operational railway and waterworks would limit the magnitude of any adverse effect.

7.8.23 Construction noise would contribute to this effect, although modern anthropogenic noise from the railway and nearby trunk roads is characteristic of this part of the conservation area and while construction noise would represent a discernible increase in modern noise at its maximum, this would be intermittent through the construction period and would make a very limited contribution to any adverse effect.

7.8.24 The combination of a direct effect and change in the setting of the Conservation Area arising from the perception of works at Bedhampton Springs and to the west of Mill Lane would give rise to a moderate adverse magnitude of impact to a medium importance heritage asset during construction. This would be a temporary moderate adverse effect which would be significant in the context of the EIA Regulations. This would comprise less than substantial harm to the significance of the heritage asset at the middle of the scale in the context of NPSWRI.

7.8.25 Any effect would be somewhat reduced on completion of construction works due to the cessation of construction works and the restoration of any working areas, meaning the construction area for the underground pipeline within the conservation area would be restored. The existing topography of the Conservation Area and existing mature planting would provide a degree of screening of the above-ground pipe. The working areas outside the Conservation Area would be restored although effects arising from the visibility of the above-ground pipeline within Bedhampton Springs would persist as a permanent change to setting.

7.8.26 The lasting effect on the conservation area would therefore be reduced to negligible magnitude, a minor adverse effect that would be not significant in the context of the EIA Regulations. This would comprise a less than substantial harm to the significance of the heritage asset at the lowest end of the scale in the context of NPSWRI.

Indirect physical effects on designated heritage assets

7.8.27 No designated heritage assets have been identified as potentially subject to indirect physical effects.

Temporary change to the setting of designated heritage assets

7.8.28 Temporary effects arising through change to setting of the Old Bedhampton Conservation Area have been considered with the direct physical effects at paragraph 7.8.24 above, as these effects all arise from the same elements of the Proposed Development.

7.8.29 Effects arising through change to the setting of The Old Mill House (NHLE 1340188) from the construction of this element of the Proposed Development are assessed in detail at ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6).

7.8.30 The construction of the open-cut and trenchless pipeline and associated construction work would give rise to a minor magnitude of impact arising from increased visibility of modern water management infrastructure in views of what is presently a contained pocket of relatively rural land to the south of the railway from the Mill Lane bridge and in some views across the railway. The visible elements of the pipelines would be confined to the operational land at Bedhampton Springs, where similar infrastructure is already visible, and any impact would be of a minor magnitude of impact. Similarly, works associated with the trenchless construction works at Mill Lane would be visible from the Mill Lane Bridge.

7.8.31 In addition to this visual change, construction noise has the potential to affect the setting of the conservation area. Modern anthropogenic noise from the railway and nearby trunk roads is, however, characteristic of this part of the conservation area and while construction noise would represent a discernible increase in modern

noise at its maximum, this would be intermittent through the construction period and would make a very limited contribution to any adverse effect.

7.8.32 These works would be perceived against the baseline of the railway, waterworks and other modern infrastructure present in this area, and the adverse impact during construction would therefore be of minor adverse magnitude. This would give rise to a temporary effect of minor adverse significance which would not be significant in EIA terms and would be reversed on completion of construction.

7.8.33 During the construction period, these effects would represent a less than substantial harm at the lower end of the scale to the significance of the building in the context of NPSWRI.

Permanent change to the setting of designated heritage assets

Old Bedhampton Conservation Area

7.8.34 Permanent effects arising through change to setting of the Old Bedhampton Conservation Area have been considered with the direct physical effects, as these effects all arise from the same elements of the Proposed Development.

Old Mill House

7.8.35 On completion of construction works at Bedhampton Springs, the above-ground pipeline on the western bank of Old Mill Dam and the above-ground pipeline within Bedhampton Springs would remain visible in the setting of the Grade II listed Old Mill House. Design of the above-ground pipeline has accounted for optimising use of existing visual screening from hedgerows, woodland and structures, particularly in the view across the millpond from the Grade II listed Old Mill, as well as the existing grain of the historic landscape to reduce visual intrusion, in line with primary mitigation contained within the design principles detailed in paragraph 7.4.1 and Design Principles Document (Document reference 5.11, DCO Volume 5). The materials and finish of this section of above-ground pipeline, also primary mitigation (see paragraph 7.4.1), would also account for the local character. The magnitude of any lasting impact would fall to negligible adverse, a neutral adverse effect persisting through operation that would not be significant in the context of the EIA Regulations. This would represent harm at the lowest end of the scale in the context of NPSWRI.

Direct physical effects on non-designated heritage assets

7.8.36 Direct effects of this element of the Proposed Development would derive from, but not be limited to, intrusive groundworks for any intrusive enabling works including temporary construction compounds B1-1 and B1-2, drainage, access, open-cut trenching, application of trenchless works and any associated vibration, removal of established vegetation, restorative planting and any change to ground and surface water environment.

7.8.37 Any direct impacts in this area would comprise the loss or disturbance of any potential buried archaeological deposits and geoarchaeological or paleoenvironmental remains. The presence of modern water management infrastructure visible in the water meadows south of the railway at Bedhampton is suggestive of extensive prior disturbance, and it is anticipated that the potential

presence of archaeological remains would be higher to the west of Mill Lane. Archaeological remains in this area are likely to be of low importance, and subject to a moderate magnitude of adverse impact through disturbance, an effect that would be minor and not significant in the context of the EIA Regulations.

7.8.38 This area is not predicted to have potential for significant geoarchaeological remains to be present and no likely significant adverse effects in the context of the EIA Regulations are anticipated.

Indirect physical effects on non-designated heritage assets

7.8.39 No non-designated heritage assets have been identified as potentially subject to indirect physical effects.

Change to the setting of non-designated heritage assets

7.8.40 No non-designated heritage assets have been identified that would be affected by any temporary or permanent change to setting.

Pipeline between the Water Recycling Plant site and Otterbourne Water Supply Works

Direct physical effects on designated heritage assets

7.8.41 The Proposed Development's design has avoided all designated heritage assets in this component of the Proposed Development and as a consequence no direct physical effects would arise on these assets.

Indirect physical effects on designated heritage assets

7.8.42 Indirect physical effects would be localised around areas where direct disturbance is anticipated. As a result of design there are no designated heritage assets within areas that would be sufficiently affected to give rise to any discernible change. Consequently, no designated heritage assets have been identified as potentially subject to indirect physical effects.

Temporary change to the setting of designated heritage assets

7.8.43 Of the designated heritage assets identified as potentially being affected by change to setting arising from construction of the Proposed Development, seven are assessed as subject to likely significant adverse effects during the construction period, which would be reversed at the completion of construction:

1. Fort Purbrook (Scheduled Monument and Grade II* listed: NHLE 1001842) – Section D
2. Fort Widley (Scheduled Monument and Grade II* listed: NHLE 1001862) – Section E
3. Fort Southwick (Scheduled Monument and Grade I listed: NHLE 1001808) – Section E
4. Fort Nelson (Scheduled Monument and Grade I listed: NHLE 1001860) – Section E
5. Church of St Nicholas, Boarhunt (Grade I listed: NHLE 1350613) – Section E

6. Park Pale at Marwell Park (Scheduled Monument: NHLE 1012308) – Section L
7. Otterbourne Manor (Scheduled Monument: NHLE 1013055) – Section M

Fort Purbrook

7.8.44 At Fort Purbrook, construction of a shaft and associated construction compound D-1 to the south-east on Portsdown Hill Road would affect views of the asset as the viewer approaches from the south-east. Fort Purbrook is a high importance receptor, and this work would constitute a minor adverse magnitude of impact, resulting in a moderate adverse effect which would be significant in the context of the EIA Regulations.

7.8.45 The existing sound environment is not considered to contribute toward the significance of the fort and any noise that would arise in the construction window would need to be perceptually intrusive or qualitatively change the nature of the setting. The entrance of the fort is located to the north of the B2177 and east of Crookhorn Lane, and is not a quiet location, with existing background noise generated by road traffic. Therefore, construction derived noise, whilst representing a slight increase in modern noise would not discernibly affect the character of the setting.

7.8.46 This would represent a less than substantial harm at the lower end of the scale to the significance of Fort Purbrook in the context of NPSWRI. The adverse effect would be reversed at the completion of construction and as the works are restored.

Fort Widley

7.8.47 Perceptibility of construction works to the north of Fort Widley (including vehicle movements) and associated temporary construction compounds along the Pipeline route, would represent a relatively minor adverse magnitude of impact. Intervisibility of the fort and BPT/IPS-E is largely precluded by woodland and hedgerow planting as well as the presence of the Churchillian and Harbour Heights apartments, which are clearly visible in some views from the fort. It is possible that works in progress on the pipeline construction and BPT/IPS-E may be visible from isolated viewpoints on the fort ramparts (REF VP 134; ES Figure 7.5 Heritage Specific View Point from Fort Widley looking East, Volume III (Document reference 6.3, DCO Volume 6)) but these would not be prominent elements of the sequential views from the fort experienced by a visitor. Similarly, some upper elements of the completed structures, which would be of a maximum building or structure height not exceeding 8m above a finished floor level of 86.6m above Ordnance Datum (AOD), may become visible in these isolated views, which is considered in more detail within ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.3, DCO Volume 6).

7.8.48 Reference has been made to viewpoints VP019, VP020, VP021, VP022, VP023, VP024 and VP136 (ES Figure 13.22, Representative viewpoint, Volume III (Document reference 6.3, DCO Volume 6) in developing this assessment.

7.8.49 The fundamental character of the area would remain unchanged, and the existing woodland and scrub to the east of the fort would be retained, and strengthened by the proposed mitigation planting discussed at section 7.4, as indicated in viewpoint photography, ES Figure 7.5 Heritage Specific View Point from Fort Widley looking East, Volume III (Document reference 6.3, DCO Volume 6). However, visibility of

construction works in the open vista of the cleared field of fire on Portsdown Hill to the north would arguably form a detracting element in the setting of the fort. This would give rise to a minor adverse magnitude of impact to a high importance heritage asset during construction. This would be a moderate adverse effect which would be significant in the context of the EIA Regulations. This would comprise a less than substantial harm at the lower end of the scale to the significance of the heritage asset in the context of NPSWRI. This effect would be largely reduced on completion of construction works and entirely reversed once reinstatement of the construction works was complete and as landscape planting at the BPT/IPS-E site matures. There would be no lasting adverse effect during the operation of the Proposed Development.

Fort Southwick

7.8.50 Change in the setting of Fort Southwick would be restricted to visibility of construction works to the north of the asset, which would form a detracting element in the setting of the fort, cutting across the cleared field of fire. This would give rise to a minor adverse magnitude of impact to a high importance heritage asset during construction. This would be a moderate adverse effect which would be significant in the context of the EIA Regulations. This would comprise a less than substantial harm at the lower end of the scale to the significance of the heritage asset in the context of NPSWRI. This effect would be rapidly reversed on completion of construction once reinstatement of the works is complete and there would be no lasting adverse effect during the operation of the Proposed Development.

7.8.51 Reference has been made to viewpoints VP033, VP034 and VP036 in developing this assessment.

Fort Nelson

7.8.52 Change in the setting of Fort Nelson would similarly be restricted to visibility of construction works, which would form a detracting element in the field of fire to the north of the fort which was cleared as part of the construction of the forts. This would give rise to a minor adverse magnitude of impact to a high significance heritage asset during construction. This would be a moderate adverse effect which would be significant in the context of the EIA Regulations. This would comprise a less than substantial harm at the lower end of the scale to the significance of the heritage asset in the context of NPSWRI. This effect would be rapidly reversed on completion of construction works and there would be no lasting adverse effect during the operation of the Proposed Development.

7.8.53 Reference has been made to viewpoints VP038, VP039 and VP042 in developing this assessment.

Church of St Nicholas, Boarhunt

7.8.54 Views of the Church of St Nicholas, Boarhunt are restricted due to the mature existing vegetation within the churchyard, and views from the church into the wider landscape to the south are very limited and do not contribute to its setting and ability to appreciate its significance. This rural and contemplative setting and the sense of time depth to the church and graveyard as tangible links to the past, means that perceptual change, primarily noise during construction would give rise

to adverse effects, particularly where temporary construction compounds E-6a and E-6b and the road crossing are located to the south of this area across Boarhunt Road. This audible change (ES Chapter 15 Noise and vibration, Volume I (Document reference 6.1, DCO Volume 6)) would be intermittent, being restricted to working hours and would be of a limited duration, with peaks around the establishment of the temporary construction compounds and the road crossing works.

7.8.55 This noise would combine with glimpsed visibility of the works in progress on a high importance receptor to represent a worst case of a minor adverse magnitude of impact resulting from a change to setting. This would be a moderate adverse effect, which would be significant in the context of the EIA Regulations. It would represent a less than substantial harm at the lower end of the scale to the asset's significance in the context of NPSWRI. Any adverse effect would cease at the completion of construction.

Park Pale at Marwell Park

7.8.56 There would be perceptibility of construction works to the south and west of the Park Pale at Marwell Park (NHLE 1012308) including construction noise and vehicle movements as well as visibility of the trenchless construction works compounds and associated temporary construction compounds along the Pipeline route. This would affect the viewers ability to 'read' the layout of the historic fishponds and their relationship to the asset, which would represent a minor adverse magnitude of impact on the Park Pale, a heritage asset of high importance, resulting from a change to setting. This would be a moderate adverse effect, which would be significant in the context of the EIA Regulations and would represent a less than substantial harm at the lower end of the scale to the asset's significance in the context of NPSWRI. Where any disturbance of the earthwork remains of the southern end of the fishpond are appropriately restored, as discussed at section 7.4 and secured in the Outline CEMP (Document reference 7.1, DCO Volume 7), any effect would be entirely reversed during the operational period as restoration matured and no lasting harm would arise.

7.8.57 Reference has been made to viewpoint VP093 in developing this assessment.

Otterbourne Manor

7.8.58 At Otterbourne Manor (NHLE 1013055), the perceptibility of open-cut trenching (and associated vehicle movements) for the Pipeline to the west of the manor and temporary construction compound M-1 to the south-west, which forms an element of the trenchless construction works of the Itchen navigation, would slightly erode the existing rural context.

7.8.59 The existing sound environment includes noise from the adjacent railway and is not considered to make a positive contribution to the significance of the manor and as such any changes arising from construction noise (ES Chapter 15 Noise and vibration, Volume I (Document reference 6.1, DCO Volume 6)) would have to be perceived as intrusive for an effect to arise. At maximum levels during construction of the trenchless shaft, it is possible that construction noise would be perceived as intrusive, but this would effectively be mitigated through good practice working methods, detailed in the Outline CEMP (Document reference 7.1, DCO Volume 7)

and at section 7.4. Whilst this does represent an increase in modern noise, it would not contribute significantly to any effect on the Manor (and associated Otterbourne Manor House, see paragraph 7.8.70).

7.8.60 Taken together, these changes would represent a minor adverse magnitude of impact as a result of change to setting. The impacts on a high importance receptor during construction would be a moderate adverse effect, which would be significant in the context of the EIA Regulations. This would give rise to a less than substantial harm at the lower end of the scale in the context of NPSWRI. The adverse effect would reduce at the completion of construction and would be completely reversed early in the operational period as the temporary construction compounds and working areas are restored and restored hedgerows mature.

Grade II listed buildings

7.8.61 Six designated heritage assets are assessed as subject to effects that would not reach the threshold for consideration as likely significant adverse effects but would result in a less than substantial harm at the lower end of the scale to the significance of a designated heritage asset in the context of NPSWRI. These effects would persist through the construction period:

1. House at Saw Mills (Pink and Company Limited) (Grade II listed: NHLE 1230002) – Section F
2. Mission Room with Cottage Adjoining (Grade II listed: NHLE 1351248) – Section F
3. Castle Farmhouse (Grade II listed: NHLE 1095637) – Section F
4. Sandy Hill House (Grade II listed: NHLE 1350573) – Section J
5. Low Hill Farm House (Grade II listed: NHLE 1302822) – Section L
6. Keepers Cottage (Grade II listed: NHLE 1095822) – Section L
7. Otterbourne Manor House (Grade II listed: NHLE 1095795) – Section M

House at Saw Mills (Pink and Company Limited)

7.8.62 Construction of the Pipeline would be visible in the field immediately to the east of the house at Saw Mills (Grade II listed: Pink and Company Limited) (NHLE 1230002), and construction noise would be audible, eroding the rural context in this view from the house. This change would represent a minor adverse magnitude of impact resulting from a change to setting on a medium importance receptor. This would be a minor adverse effect that would not be significant in the context of the EIA Regulations. This effect would represent a would represent a less than substantial harm at lower end of the scale to the asset's significance during the construction period in the context of NPSWRI. The adverse effect would cease at the completion of construction as fields are restored, and no adverse effect would arise following completion of these works.

Mission Room with Cottage Adjoining

7.8.63 Construction of the Pipeline would be visible in the field west of Mission Room (Grade II listed: NHLE 1351248) from the second storey of the cottage and construction noise would be audible. This would give rise to a change in its rural

setting. This change on a medium importance receptor would represent a minor adverse magnitude of impact and therefore a minor adverse effect that would not be significant in the context of the EIA Regulations. This would result in a less than substantial harm at the lower end of the scale to the significance of a designated heritage asset in the context of NPSWRI. The adverse effect would reduce at the completion of construction as fields are restored, and no adverse effect would persist following completion of these works.

7.8.64 Reference has been made to viewpoint VP125 (ES Figure 13.22, Representative viewpoint Volume III (Document reference 6.3, DCO Volume 6) in developing this assessment.

Castle Farmhouse

7.8.65 Construction of the Pipeline may be visible in the field immediately to the north of Castle Farmhouse (Grade II listed: NHLE 1095637) in views from the historic farmhouse, although visibility to the west and north-west of the farmhouse are limited by the intervening modern farm sheds and planting. Construction noise may be audible at times, and even in the absence of direct intervisibility, this perception of works in close proximity to the house in land historically associated with it would give rise to a minor adverse magnitude of impact on a medium importance receptor, resulting in a minor adverse effect that would not be significant in the context of the EIA Regulations. This would result in a less than substantial harm at the lower end of the scale to the significance of a designated heritage asset in the context of NPSWRI. This effect would cease on completion of construction works and no effects would persist into the operational period.

Sandy Hill House

7.8.66 Construction of the Pipeline and trenchless construction compound J-1 on the northern side of St Anne's Lane would be both visible and audible in the field immediately to the south of Sandy Hill House (Grade II listed: NHLE 1350573). Visibility is limited to points on the southern edge of the garden because of the intervening modern fencing and planting. This perceptibility of works in close proximity to this medium importance receptor, would give rise to a minor adverse magnitude of impact, resulting in a minor adverse effect that would not be significant in the context of the EIA Regulations. This would result in a less than substantial harm at the lower end of the scale to the significance of a designated heritage asset in the context of NPSWRI. This effect would cease on completion of construction works and no effects would persist into the operational period.

Low Hill Farmhouse

7.8.67 To the north of Low Hill Farmhouse (Grade II listed: NHLE 1302822), works associated with two trenchless crossing construction works compounds may be perceptible, primarily in terms of construction related noise during the works. This change to setting of the asset would represent a minor adverse magnitude of impact on a medium importance receptor, resulting in a minor adverse effect that would not be significant in the context of the EIA Regulations. This would result in a less than substantial harm at the lower end of the scale to the significance of a designated heritage asset in the context of NPSWRI. This effect would cease on

completion of construction works and no effects would persist into the operational period.

Keepers Cottage

7.8.68 A construction access from Church Lane would be located opposite the frontage of Keeper's Cottage (Grade II listed NHLE 1095822). The cottage lies amongst modern residential buildings and along Church Lane. Due to the proximity and visibility of the access in some views of and from the cottage, coupled with construction traffic movements which would be visible due to the removal of some of the planting opposite the cottage during construction, this would temporarily change the setting of this asset whilst the access route is in place. The perceptibility of the access route would not significantly alter the more modern setting in which this monument lies. Consequently, this change would represent a minor adverse magnitude of impact resulting from a change to setting on a medium importance receptor that would be a minor adverse effect that would not be significant in the context of the EIA Regulations and would cease on the completion of construction works in this area. This would result in a less than substantial harm at the lower end of the scale to the significance of a designated heritage asset in the context of NPSWRI.

7.8.69 Reference has been made to viewpoint VP096 in developing this assessment.

Otterbourne Manor House

7.8.70 Views of the wider landscape from Otterbourne Manor House (Grade II listed: NHLE 1095795) to the west and south across agricultural fields and toward a wooded common on Otterbourne Hill provide a sense of the wider landscape that may have been associated with the manorial site. The perceptibility of pipeline construction works (including construction noise, vehicle movements and launch/reception pits) and associated temporary construction compounds for trenchless works intended to take place to the south near the Itchen navigation, would erode the surviving rural character slightly. This would represent a minor adverse magnitude of impact resulting from a change to setting. This medium importance receptor, as a result of construction, would be subject to a minor adverse effect, which would not be significant in the context of the EIA Regulations and would give rise to a less than substantial harm at the lower end of the scale to the significance of a designated heritage asset in the context of NPSWRI. This effect would cease on completion of construction works and no effects would persist into the operational period.

7.8.71 Effects on the other designated heritage assets considered were assessed as no impact where no harm to significance would arise.

Permanent change to the setting of designated heritage assets

7.8.72 No lasting change would persist following post-construction restoration and as a consequence no designated heritage assets have been identified as subject to permanent adverse effects arising through change to setting as a result of the construction of the Pipeline.

Direct physical effects on non-designated heritage assets

7.8.73 Direct effects of this element of the Proposed Development would derive from, but not be limited to, intrusive works such as groundworks for any intrusive enabling works including temporary construction compounds, drainage, access, open-cut trenching, application of trenchless construction and any associated vibration, removal of small structures (such as paddock shelters, caravans, sheds), removal of established vegetation, restorative planting and any inundation.

7.8.74 The design stage has sought to avoid built heritage and therefore the direct impacts would most likely encompass the adverse effect of loss of any potential buried archaeological remains and deposits of geoarchaeological and paleoenvironmental interest. While the main, significant non-designated earthwork features, such as the Park Lug at Bishop's Waltham, have been avoided, some smaller earthworks would also be affected.

7.8.75 The heritage baseline study (ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6)) identified potential archaeological findspots and deposits across Sections D-M dating from the Palaeolithic to modern periods. The Order Limits have also been subject to two phases of geophysical survey and one phase of trial trenching to further identify buried archaeological deposits and characterise the archaeology along the route of the Proposed Development.

Prehistoric Period

7.8.76 Prehistoric activity identified across Portsdown Hill (Sections D to F) identified in the baseline assessment and in subsequent non-intrusive and intrusive surveys, includes:

1. Iron Age field systems (HER 23176/MPM116) to the immediate east of temporary construction compound D-1, suggesting that related remains may be present within the compound. Whilst the majority of this section is tunnelled, the temporary construction compound here is also the location for the intermediate shaft, which would impact near surface archaeological features (impacts to geoarchaeological deposits are discussed in paragraph 7.8.125).
2. Uncertainly dated linear ditches, possibly forming enclosures between New Barns farm and Pigeon House Farm identified by geophysical survey within Section E would be affected by works for sectional site temporary construction compound E-4b and would likely require mitigation as discussed in section 7.9.
3. Archaeological deposits related to the Prehistoric in the eastern part of Section E of the Pipeline between the WRP site and Otterbourne WSW may be affected by construction of the Pipeline.

7.8.77 There is a generalised potential for Prehistoric archaeological deposits further to the west of the route, though no coherent remains have been observed.

7.8.78 The route avoids the most significant remains identified and it is likely that archaeology from this period will be of local or regional value and has been assigned medium importance on a precautionary basis, although more significant remains may be present that are presently not recorded.

7.8.79 Disturbance during construction could entirely remove archaeological remains within the working area by construction work. This could give rise to a major adverse magnitude of impact, resulting in a major adverse effect that would be significant in the context of the EIA Regulations, although it is anticipated that in most cases, the magnitude of any effect would be lower. Consideration to the potential for archaeological remains given in detailed design in line with the Design Principles Document (Document reference 5.11, DCO Volume 5) would allow some of these likely significant effects to be avoided.

7.8.80 Surveys would be undertaken post-consent and where appropriate, the outcome of those surveys would be taken to avoid or reduce predicted effects. Mitigation would also be applied in the form of an agreed scheme of archaeological works. Survey and mitigation fieldwork are discussed at section 7.9 and are detailed in the Outline WSI (Document reference 7.6, DCO Volume 7).

Romano-British Period

7.8.81 The projected routes of three Roman roads would be crossed during the works:

1. The Portchester to Wickham Road
2. The Chichester to Bitterne Road
3. The Winchester to Wickham Road [39]

7.8.82 The Winchester to Wickham Road is crossed at four points by the Proposed Development, south of Titchfield Lane to the east of IPS-G (Section G), west of Woodman's Farm (Section H), south of the River Hamble construction works at temporary construction compound J-3 (Section J) and west of Brooklands Farm at temporary construction compound K-2 (Section K). Well-preserved elements of Roman Roads would be important remains in their own right, and the presence of the road line is strongly suggestive of related remains being present in areas adjacent to the road. Where these sites have been surveyed via geophysics (ES Appendix 7.3 Detailed gradiometer survey report – Phase 1, Volume II (Document reference 6.2, DCO Volume 6)) such as at south of Titchfield Lane to the east of IPS-G (Section G), evidence for the road and related features has been confined to possible roadside ditches and possible pitting.

7.8.83 There is potential for Roman archaeological remains to be identified across the Pipeline route, especially near postulated former roads or known Roman towns such as Wickham, where roadside settlements and farmsteads may have been occupied. Based on initial assessment, it is unlikely that archaeology from this period will be more than medium importance, and much would likely be of low importance. Disturbance during construction could, in a worst case scenario, in the absence of secondary mitigation where the most significant remains are entirely removed by construction work, give rise to a major adverse magnitude of impact, resulting in a major adverse effect that would be significant in the context of the EIA Regulations, although in most cases these remains would be of lower importance. Consideration to the potential for archaeological remains given in detailed design would allow some of these likely significant effects to be avoided.

7.8.84 Surveys would be undertaken post-consent and where appropriate, the outcome of those surveys would be taken to avoid or reduce predicted effects. Mitigation would also be applied in the form of an agreed scheme of archaeological works.

Survey and mitigation fieldwork are discussed further at section 7.9 and is secured in the Outline WSI (Document reference 7.6, DCO Volume 7).

Early Medieval and Medieval Periods

7.8.85 Early Medieval and Medieval archaeological remains are likely to be present across the route. Three Early Medieval and Medieval shrunken or deserted villages have been identified across Portsdown Hill with the closest to the route near Boarhunt. Archaeological remains of this period noted in desk-based work and observed in surveys carried out for this application is, however, of ridge and furrow cultivation and possible former field boundaries, suggesting that the Pipeline construction would affect the associated field systems rather than the more significant settlement remains.

7.8.86 These agricultural remains are unlikely to be of more than medium importance and are extensive features. Disturbance during construction could, in a worst case scenario, in the absence of secondary mitigation, result in the loss of sections of ploughed out ridge and furrow and the disturbance of field boundaries. This would give rise to a moderate magnitude of adverse impact, resulting in a moderate adverse effect that would be significant in the context of the EIA Regulations, although it is anticipated that in most cases, the magnitude of any effect would be lower.

7.8.87 No archaeological remains of features associated with Pinsley Motte in Southwick, Section E, have been observed, with only a short stretch of a historic field boundary identified. Consequently, a moderate magnitude of impact would arise on a low importance receptor, resulting in a minor adverse effect that would not be significant in terms of EIA Regulations.

7.8.88 Other Early Medieval and Medieval archaeological deposits will likely be indicative of dispersed rural farmsteads and former field systems. There is some correlation between National Mapping cropmark data and the geophysical survey results, identifying remains that are suggestive of these Medieval field systems.

7.8.89 These deposits have been assigned low to medium importance. Disturbance during construction could, in a worst case scenario, in the absence of secondary mitigation where the most significant remains are entirely removed by construction work, give rise to a major adverse magnitude of impact, resulting in a major adverse effect that would be significant in the context of the EIA Regulations, although it is anticipated that in most cases, the magnitude of any effect would be lower.

7.8.90 The Medieval period is also characterised by the emparkment of substantial areas of land. Recorded parklands within this Proposed Development element comprise:

Wickham Park deer park and Park Place

7.8.91 This parkland is poorly preserved, with much of its southern extent being taken up by a golf course and development around Park Place having encroached on and fragmented surviving elements of the park and caused significant disturbance to any archaeological remains. Consequently, it is of low importance for historic interest. The Pipeline would pass through the golf course and an arable field without affecting any key elements of the parkland and any impact on the historic character and significance of the park would be of negligible adverse magnitude of

impact and a neutral effect that would not be significant. Any visible disturbance could be readily restored, and it is not anticipated that any lasting adverse effect would arise.

Bishop's Waltham deer park

7.8.92 The deer park at Bishop's Waltham is one of the largest in the region, forming the periphery of a parkland around the former Bishop's Place at Bishop's Waltham. While much of the northern part of the parkland is now intensively developed, the extent and character of the deer park is legible to an informed viewer.

7.8.93 The key survivals are the park pales or 'lugs', bank and ditch boundary earthworks and the pattern of field boundaries and woodland. The palace site which is outside the Order Limits is scheduled, and the non-designated remainder of the park is a heritage asset of medium importance for historic interest.

7.8.94 Geophysical Survey that has been undertaken within the park, has primarily identified historic cultivation and ploughed out ridge and furrow across the area, with some possible enclosures to the south-west of the parkland within the Order Limits.

7.8.95 The Proposed Development design has aimed at avoiding the physical elements of the park that contribute to this parkland character (section 7.4 above) and as a result, change would primarily result from visibility of the Pipeline construction during the construction period. Avoidance of disturbance or loss of presently discernible physical remains of the park such as surviving earthwork boundaries and blocks of woodland would also allow any restoration to take effect more quickly and completely. Consequently, any loss of parkland character would be limited to the construction period and would be a minor magnitude of impact, resulting in a minor adverse effect that would not be significant and would be reversed following reinstatement of the works.

Marwell Park

7.8.96 Marwell Park is another very large, high status deer park that passed into secular hands at the restoration. Like Bishop's Waltham, it is best considered as a non-designated heritage asset of medium importance but contains highly significant elements which are legally protected as scheduled monuments, comprising park pales and a moated site. The park also contains a remarkably large and comparatively well-preserved network of medieval fishponds that survive as earthworks and below-ground remains. Indeed, it appears likely that some of the scheduled elements of the parkland formed functional elements of these fishponds. These remains are of considerable significance and have been considered here as non-designated heritage assets of high importance; where these discrete features would be affected, these have been assessed individually.

7.8.97 In general, the Proposed Development would avoid the most significant and visible elements that contribute to parkland character, and any effect is therefore assessed as of low magnitude of impact and a minor adverse effect that would not be significant, and which would be reversible on the completion of construction works.

7.8.98 The Pipeline route would affect a small area of the substantial fishpond complex at 11 Acre Pond, on the eastern side of the B3354 Winchester Road. The pipeline

construction works at Winchester Road would be by trenchless construction. This trenchless construction would be contained within natural alluvial deposits below the depth of any elements of the fishpond dam that now forms the causeway.

7.8.99 The temporary construction compound would be located on previously disturbed land at Crowdhill (temporary construction compound L-1) and the temporary construction compounds, L-5, L-6 and L-7, for the trenchless construction works at Winchester Road located within the area that was terraced in the medieval period to form the fishpond, avoiding any surviving earthworks. Ground investigation work (ES Appendix 7.5 Geoarchaeological monitoring reporting, Volume II (Document reference 6.2, DCO Volume 6)) in this area did not identify any deposits that appeared to relate to fishpond fills, and while further work is required to confirm this conclusion, it appears unlikely that any significant archaeological deposits would be affected.

7.8.100 The open-cut Pipeline would cut across the slight bank and infilled diversion ditch at the southern side of the fishpond complex. This element of the fishponds is, while of high importance, the least visible element of the complex of fishponds in 11 Acre Pond. In the absence of secondary mitigation, the resulting disturbance would affect a small but well-preserved part of the wider complex, presenting a degree of lasting loss both of archaeologically significant deposits and disruption of a visible earthwork feature.

7.8.101 Overall, the effect on the non-designated fishponds is assessed as a moderate adverse magnitude of impact and a major adverse effect that would be significant and adverse in the absence of secondary mitigation. Mitigation would be through archaeological investigation in advance of works to record the profile and appearance of any earthworks, investigate and record any associated below-ground remains and to inform reinstatement of earthworks. Further survey and mitigation fieldwork are discussed further at section 7.9 and secured in the Outline WSI (Document reference 7.6, DCO Volume 7).

Post Medieval Period

7.8.102 Post Medieval archaeological remains are likely to be encountered during the works. From the initial baseline assessment, including both phases of geophysics and the phase of trial trenching, this will principally be related to rural farming practices, e.g. ploughed-out ridge and furrow field systems, as well as former field boundaries across the route. Extant ridge and furrow earthworks would be more significant though none are noted within the Order Limits. The prevalence, extent and limited value of ploughed-out field systems, which are unlikely to be more than low importance, means that avoidance is not practicable. Disturbance during construction could, in a worst case scenario, where the most significant remains are entirely removed by construction work, give rise to a major adverse magnitude of impact, resulting in a moderate adverse effect that would be significant, although it is anticipated that in most cases, the extent of disturbance and/or the value of the receptor would be lower, resulting in a lower significance of any effect.

7.8.103 Archaeological remains from this period may also be related to the increasing industrialisation throughout the period and are likely to be of no more than medium importance. Disturbance during construction could, in a worst case scenario, where the most significant remains are entirely removed by construction work, give rise to a major adverse magnitude impact, resulting in a major adverse effect that

would be significant, although it is anticipated that in most cases, the magnitude of any effect would be lower; consideration to the potential for archaeological remains post-consent would allow some of these significant effects to be avoided.

7.8.104 Wintershill Hall park was formed in the late 19th century from enclosed former Common Land. The core of the park is the Wintershill Hall, a non-designated mansion house, and associated estate buildings, which face east over an area of clump planting and to the west over a more domestic scaled garden. Geophysical survey within the parkland identified former field boundaries and historic cultivation, a remnant of the pre-parkland land use as agricultural fields.

7.8.105 The parkland is a non-designated heritage asset of low importance for historic and architectural interest deriving from its visible association with the mansion house as part of a designed scheme.

7.8.106 The Pipeline would cut across the east facing slope in front of the house beyond the more mature elements of the clump planting. Works would be clearly visible during construction, and because of this prominent visibility in an important part of the designed parkland, would adversely affect parkland character during the construction period. The retention of the more mature elements of the parkland by the Proposed Development would allow any loss of character to be quickly reversed during restoration of the works and the effect would be reversed at the completion of construction works. This impact would be of minor magnitude of impact resulting in a temporary minor adverse effect that would not be significant in terms of EIA Regulations and would be reversed following the completion of construction works. Construction of BPT-K would also contribute to the effect on this heritage asset and is assessed below at paragraph 7.8.148.

Modern Period

7.8.107 Modern remains are likely be identified during the works. Portsdown Hill was in militarily use during the First and Second World Wars, primarily using the Palmerston Forts as barracks and bases and so it is possible that features related to these periods, for example training trench networks, may be identified within the Order Limits. These features are generally unlikely to be more than medium importance. There are, however, two recorded military aircraft crash sites (ES Figure 7.4 Coverage of archaeological surveys undertaken, Volume III (Document reference 6.3, DCO Volume 6) within the 500m study area. These are:

Pigeon House Farm

7.8.108 Approximately 95m south of the Order Limits at Pigeon House Farm (ES Appendix 7.10 World War II Crash Site Pigeon House Farm Technical Note and geophysical survey report, Volume II (Document reference 6.2, DCO Volume 6)).

7.8.109 The likely presence of in situ wreckage and human remains makes this location of high importance and it is unlikely that a licence would be granted to carry out investigative works on the crash itself.

7.8.110 This location is approximately 95m outside the Order Limits from and the crash site would be avoided entirely (see section 7.4 above), although there is a potential that fragmentary elements of related wreckage are present within the topsoil as a result of the crash, excavation and subsequent ploughing.

7.8.111 Consequently, no adverse magnitude of impact is anticipated as a result of the Proposed Development.

Within the Order Limits Near Frith Farm, Shirrell Heath

7.8.112 While the majority of any coherent wreckage has been removed from the site in wartime salvage and controlled archaeological excavation, considerable surface scatters of debris and some in situ material may survive.

7.8.113 Given the condition of the remains, this is considered to be a heritage asset of high importance for archaeological and historic interest. The removal of any remaining wreckage would represent a major adverse magnitude of impact and a major adverse effect that would be significant in the context of the EIA Regulations in the absence of the mitigation set out at section 7.9 and secured in the Outline WSI (Document reference 7.6, DCO Volume 7).

7.8.114 Separate to any effect in EIA terms, a requirement for licencing of works to the crash site by the Ministry of Defence (MoD) will apply.

7.8.115 Features related to rural farming practices are highly likely to be encountered, based on the results from the completed geophysical surveys and the trial trenching completed to date. It is unlikely these features will be of more than low importance. Disturbance during construction could, in a worst case scenario, where the most significant remains are entirely removed by construction work, give rise to a moderate adverse magnitude of impact, resulting in a minor adverse effect that would not be significant in the context of the EIA Regulations in the absence of secondary mitigation, although it is anticipated that in most cases, the magnitude of any effect would be lower.

Historic water meadows

7.8.116 The Pipeline route crosses a series of historic water meadows which are regionally important in themselves as examples of downland management, as well as potentially preserving paleoenvironmental remains. These features are crossed in three locations:

1. Section G – River Meon (trenchless construction)
2. Section J – River Hamble (trenchless and open-cut construction)
3. Section M – River Itchen (trenchless construction)

7.8.117 These non-designated water meadows are of medium importance and construction would represent, in the worst case scenario of pipeline construction by open-cut trenching at the River Hamble, a moderate adverse magnitude of impact, which would be a moderate adverse significance of effect that would be significant in the context of the EIA Regulations in the absence of secondary mitigation. The impact would, however, be short-term and reversed following completion of works, resulting in no lasting impact. Loss of archaeological interest would be addressed through investigative mitigation secured in the Outline WSI (Document reference 7.6, DCO Volume 7) and discussed at section 7.9.

7.8.118 Where trenchless construction is used at the crossings of the Rivers Itchen and Meon, no visible effect would arise. While there is a potential for change to water environment, the nature of that water environment, taken with the mitigation noted at section 7.4 means that dewatering would not give rise to any loss of

archaeological or geoarchaeological remains beyond areas that would be subject to physical disturbance.

Previously unrecorded archaeological remains

7.8.119 There is a potential that further archaeological remains may be identified during post-consent surveys. These would generally be expected to be of low to medium importance, but in some cases could be of high importance. Effects on these remains could result in the loss of all archaeological features within the Limits of Deviation for Intrusive works. In the absence of secondary mitigation, the loss of archaeological remains could therefore present significant adverse effects.

7.8.120 To address these effects, the Applicant has committed to procure additional programmes of survey where of relevance to sub-surface archaeological remains, which may include any remaining geophysical survey and a programme of trial trenching, this strategy is secured within the Outline WSI (Document reference 7.6, DCO Volume 7) and discussed at section 7.9.

7.8.121 These surveys would enable these resources to be appropriately mitigated where required through investigation or through avoidance/minimisation of effects post-consent, in a manner which is proportionate to the significance of the remains present.

Deposits of geoarchaeological interest

7.8.122 With respect to the potential presence of geoarchaeological/paleoenvironmental remains, the GDBA (ES Appendix 7.4 Geoarchaeological desk-based assessment and landscape characterisation, Volume II (Document reference 6.2, DCO Volume 6)) has identified deposits of high potential for Palaeolithic archaeological and palaeoenvironment remains within the terraces of the River Itchen and these have been tested during the GI works and reported on in ES Appendix 7.5 Geoarchaeological monitoring reporting, Volume II (Document reference 6.2, DCO Volume 6).

7.8.123 Remains of this date would be considered of medium to high importance. Disturbance during construction could, in a worst case where the most significant remains are entirely removed by construction work, give rise to a major adverse magnitude of impact, resulting in a major adverse effect that would be significant, although it is anticipated that in most cases, the magnitude of any effect would be lower.

7.8.124 Holocene alluvial and colluvial deposits are noted across the route, within areas of former historic water meadow, riverbanks and within localised solution features. These deposits have been assigned a precautionary medium heritage importance. Disturbance during construction could, in a worst case where the most significant remains are entirely removed by construction work, give rise to a major adverse magnitude of impact, resulting in a major adverse effect that would be significant in terms of EIA, but in most cases would be lower.

7.8.125 Pleistocene Head deposits have been mapped within the Pipeline route and at the intermediate shaft location in Section D. These have a low to moderate potential to preserve archaeological and palaeoenvironmental remains, however they may seal or bury earlier archaeology. Due to the uncertainty of the importance of these deposits, these deposits have been assigned a precautionary medium heritage

importance. Disturbance during construction could, in a worst case where the most significant remains are entirely removed by construction work, give rise to a major adverse magnitude of impact, resulting in a major adverse effect that would be significant in the context of the EIA Regulations, although it is anticipated that in most cases, the magnitude of any effect would be lower.

7.8.126 Further mitigation of these effects is secured in the Outline WSI (Document reference 7.6, DCO Volume 7) and discussed at section 7.9.

7.8.127 As a result of the primary and tertiary mitigation set out at section 7.4, any inundation, dewatering would be managed to levels such that non-designated heritage assets would not be subject to any adverse effect beyond areas that would be subject to direct disturbance.

Indirect physical effects on non-designated heritage assets

7.8.128 No non-designated heritage assets have been identified as potentially subject to indirect physical effects and emissions of dust, vibration or compaction would be limited to levels that would be insufficient to give rise to any adverse physical effect beyond areas that would be subject to direct disturbance.

Temporary change to the setting of non-designated heritage assets

7.8.129 The assessment of effects arising through change to setting has identified that Farm Range at Albany Farm (50684) – Section F – would be subject to adverse impacts arising through change to setting during the construction period.

Albany Farm

7.8.130 At Albany Farm, construction of the Pipeline along with temporary construction compounds and access roads from Wickham Road to the east would be discernible in the fields immediately to the north, south and east of the farmhouse and range. There may be some visibility of the IPS-F, although this visibility would be very limited and would not contribute to any adverse effect. These changes would result in the temporary change of the agricultural landscape immediately around the model farm range and further loss of agricultural historic character during the construction period. Any changes that interact with setting would cease at the end of the construction period. This change to the setting of a low importance heritage asset would represent a moderate adverse magnitude of impact, resulting in a minor adverse effect that would not be significant in the context of EIA Regulations. This change would be entirely reversed on completion of the construction period, and the effect would not persist into the operational period.

Permanent change to the setting of non-designated heritage assets

7.8.131 No non-designated heritage assets were identified where a permanent change to setting would arise from the construction of this element of the Proposed Development.

Above Ground Plant

Direct physical effects on designated heritage assets

7.8.132 The design of this Proposed Development component has avoided all designated heritage assets and as a consequence no direct physical effects would arise on these assets.

Indirect physical effects on designated heritage assets

7.8.133 Indirect physical effects would be localised around areas where direct disturbance is anticipated. As a result of design there are no designated heritage assets within areas that would be sufficiently affected to give rise to any discernible change. Consequently, no designated heritage assets have been identified as potentially subject to indirect physical effects.

Temporary change to the setting of designated heritage assets

7.8.134 No designated heritage assets have been identified as subject to effects arising solely from temporary change to setting during the construction of the AGP; the contribution of temporary change to setting of Fort Widley during the construction of BPT/IPS-E has been considered in the assessment set out in paragraph 7.8.47. Those assets discussed in the assessment of permanent change to setting below would, however, experience an elevated magnitude of effect during construction that would persist at a reduced level through the operational period.

Permanent change to the setting of designated heritage assets

7.8.135 The assessment of effects arising through change to setting established that permanent effects arising through change to setting would be experienced at:

1. Little Park Mansions (Grade II listed: NHLE 1350591) – Section G
2. Park Place (Grade II* listed: NHLE 1095586) – Section G

7.8.136 The retention of permanent above-ground infrastructure (IPS-G) during operation on the medium importance Little Park Mansions would lead to a minor adverse magnitude of impact. This would result in a minor adverse effect on significance of the heritage asset and is not significant in the context of the EIA Regulations. This would represent less than substantial harm at the lower end of the scale in the context of NPSWRI that would persist throughout the operational period.

7.8.137 The adverse effect on the high importance Park Place would reduce at the completion of construction as fields are restored, but the retention of permanent above-ground infrastructure (IPS-G) means that these effects would reduce to a negligible magnitude as a permanent adverse effect. This would be a minor adverse effect and not significant in the context of the EIA Regulations. This would represent less than substantial harm at the lowest end of the scale in the context of NPSWRI that would persist throughout the operational period.

Direct physical effects on non-designated heritage assets

Break Pressure Tank and Intermediate Pumping Station E

7.8.138 The baseline report (ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6)), geophysical work and trial trenching in the case of BPT/IPS-E has identified the potential for direct impact to buried archaeological deposits.

7.8.139 The baseline report indicated that BPT/IPS-E had a medium to high potential for Prehistoric to modern archaeological deposits. Two isolated prehistoric burials have been identified to the south of BPT/IPS-E, as well as an Iron Age settlement to the south-east, outside of the Order Limits. Neolithic findspots are present to the north of the BPT/IPS-E location as well as post-roman field systems of uncertain date. Late post-medieval to modern chalk extraction is also commonplace along the ridge line.

7.8.140 The geophysical survey (ES Appendix 7.3 Detailed gradiometer survey report – Phase 1, Volume II (Document reference 6.2, DCO Volume 6)) identified two potential linear features, likely ditches to the west of the BPT/IPS-E site, along with areas of increased response, which was likely from the spreading of modern material in the field. A series of land drains were also detected in the south-west corner of the field.

7.8.141 The trial trenching (ES Appendix 7.9 Trial trenching report, Volume II (Document reference 6.2, DCO Volume 6)) in the BPT/IPS-E field, in Field 4 Trench 4.01, identified a single undated ditch to the south of the field, which was not identified by the geophysical campaign. The investigated areas of increased response did not identify any archaeological remains. The potential ditches indicated by the geophysical survey to the west of the BPT/IPS-E site were targeted by Trenches 4.06 and 4.07, although in both cases the ditches were not present, and were related to changes within the underlying geology.

7.8.142 Based on the results from the trial trenching evaluation, the archaeological remains identified are of a low heritage importance. In a worst case scenario these low importance deposits may be subjected to a major magnitude of impact, resulting in a moderate adverse effect, which would be significant in the context of the EIA Regulations without mitigation secured within the Outline WSI (Document reference 7.6, DCO Volume 7).

7.8.143 Further mitigation of these effects is discussed at section 7.9.

Intermediate Pumping Station F

7.8.144 IPS-F has been subject to priority geophysics which has identified archaeological remains around the AGP. These relate to a series of post-medieval chalk quarry pits and spoil heaps noted in the HER. In a worst case construction scenario, these low importance deposits may be subject to a major magnitude of impact, resulting in a moderate adverse effect that would be significant in the context of the EIA Regulations without mitigation secured within the Outline WSI (Document reference 7.6, DCO Volume 7).

7.8.145 Further mitigation of these effects is discussed at section 7.9.

Intermediate Pumping Station G

7.8.146 IPS-G has been subject to priority geophysics which has identified a concentration of archaeological remains in and around the AGP. These are likely to relate primarily to the Roman road between Winchester and Wickham, and the features are indicative of a settlement, which would be of a medium to high importance. In a worst case construction scenario, these medium to high importance deposits may be subject to a major magnitude of impact, resulting in a major adverse effect that would be significant in the context of the EIA Regulations without mitigation secured within the Outline WSI (Document reference 7.6, DCO Volume 7).

7.8.147 Further mitigation of these effects is discussed at section 7.9.

Break Pressure Tank K

7.8.148 As noted in the baseline report (ES Appendix 7.1 Historic environment baseline study, Volume II (Document reference 6.2, DCO Volume 6)), BPT-K is located in an area of former Common Land enclosed in the 1850s. The area of BPT-K has been subject to geophysics as part of the Phase 2 survey. A ditch feature was identified which is thought to correspond to former post medieval field boundaries. In a worst case construction scenario, these low importance deposits may be subject to a major magnitude of impact, resulting in a moderate adverse effect that would be significant in the context of the EIA Regulations without mitigation secured within the Outline WSI (Document reference 7.6, DCO Volume 7).

7.8.149 Further mitigation of these effects is discussed at section 7.9.

Geoarchaeological effects at Above Ground Plant sites

7.8.150 Direct effects to geoarchaeological/palaeoenvironmental deposits through disturbance would arise through insertion of piled foundations and possibly through construction of bored tunnels and access shafts located at AGP sites (see ES Chapter 3 Description of the Proposed Development, Volume I (Document reference 6.1, DCO Volume 6)).

7.8.151 Due to the uncertainty of the geoarchaeological deposit survival and significance of these deposits, these deposits have been assigned a precautionary medium heritage importance.

7.8.152 In a worst case construction scenario, these medium importance deposits may be subject to a major magnitude of impact, resulting in a major adverse effect that would be significant in the context of the EIA Regulations without mitigation.

7.8.153 Construction would not give rise to any inundation, dewatering or vibration/compaction of non-designated heritage assets sufficient to give rise to any adverse effect outside areas that would be directly disturbed, and any such change would be of limited duration.

7.8.154 Further mitigation of these effects is discussed at section 7.9.

Indirect physical effects on non-designated heritage assets

7.8.155 No non-designated heritage assets have been identified as potentially subject to indirect physical effects.

Temporary change to the setting of non-designated heritage assets

7.8.156 No non-designated heritage assets have been identified as subject to effects arising solely from temporary change during the construction of this element of the Proposed Development.

Permanent change to the setting of non-designated heritage assets

7.8.157 The assessment of change to setting identified three receptors that would be subject to permanent effects arising through change to setting:

1. Park at Park Place – Section G
2. Wintershill Park – Section K
3. Wintershill Hall – Section K

Park at Park Place

7.8.158 At the park at Park Place, the perceptibility of construction works (including construction noise and vehicle movements) and associated temporary construction compounds and structures related to AGP in the form of IPS-G to the north, are limited from Park Place by mature tree screening to the north, but this may still give rise to glimpsed views as the viewer moves around the asset. These views would represent change to setting of a heritage asset of low importance, a negligible adverse magnitude of impact, resulting in a neutral effect that would not be significant in the context of the EIA Regulations.

7.8.159 This effect would reduce slightly at the completion of construction as fields are restored and as restoration and screening planting provided as part of the Proposed Development matures, but the retention of permanent above-ground infrastructure (IPS-G) means that these impacts on a heritage asset of low importance would persist throughout the operational period at a negligible magnitude of impact, and result in a neutral effect that would be not significant in terms of EIA Regulations (ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6)).

Wintershill Park

7.8.160 At Wintershill Park, works to BPT-K and the associated access would affect the periphery of the clump-planted field to the west of the Wintershill Hall. These works would be well screened and would not affect the underlying grain of the parkland, following existing field boundaries. Perceptibility of the construction of the Pipeline between the WRP site and Otterbourne WSW would add to this effect (paragraph 7.8.106). The non-designated park is a low importance heritage receptor and would be subject to a moderate magnitude of impact, resulting in a minor adverse effect that would not be significant in terms of EIA Regulations. This effect would persist through operation but would continue to gradually reduce as planting matures.

7.8.161 After the completion of the construction phase, impacts would arise only from the visible presence of BPT-K from the northern fringes of the low importance park during the operational phase and would fall to a minor magnitude of impact. This

would result in a minor adverse effect that would not be significant in the context of the EIA Regulations, on completion of construction works.

Wintershill Hall

7.8.162 Perceptibility of construction works at BPT-K and the Pipeline would also represent an adverse impact on Wintershill Hall, in the form of construction noise and changes to views as the viewer moves around the asset. These effects would be greatest during the construction period, and on completion of construction would reduce significantly. This change on a low importance heritage receptor would represent a moderate adverse magnitude of impact from a change to setting, resulting in a minor adverse effect that would not be significant in terms of EIA Regulations. This effect would persist for up to approximately 15 years while any required restoration planting matured but would largely be reversed within the operational period as a result of the maturing of the screening planting to BPT-K, falling to a negligible magnitude of impact, a neutral effect that would not be significant in terms of EIA Regulations.

Invasive Non-Native Species Treatment at Otterbourne Water Supply Works

Direct physical effects and Indirect physical effects on designated heritage assets

7.8.163 With the Invasive Non-Native Species Treatment at Otterbourne WSW primarily making use of existing infrastructure within Otterbourne WSW, this element of the Proposed Development does not physically interact with any designated heritage assets and no direct or indirect physical effects would arise. As identified in the settings scoping exercise and settings assessment, no designated heritage assets or their settings would be affected by this element of the Proposed Development (ES Appendix 7.6 Heritage assets settings scoping appraisal, Volume II (Document reference 6.2, DCO Volume 6) and ES Appendix 7.7 Heritage assets setting assessment, Volume II (Document reference 6.2, DCO Volume 6)).

Direct physical effects on non-designated heritage assets

7.8.164 The Invasive Non-Native Species Treatment at Otterbourne WSW would primarily make use of existing infrastructure within Otterbourne WSW and as such non-designated archaeological deposits that may have been present would have been previously disturbed by phases of construction and remodelling of the existing works. To the immediate south of the WSW, a strip map and sample was undertaken in 2021 by Archaeology South East [54] where a 12m by 12m strip was monitored. During the works a single pit containing possible Roman ceramic building material and a sherd of intrusive medieval pottery was identified, indicating that there is some potential for low importance archaeological deposits surrounding the current extents of the WSW.

7.8.165 In a worst case construction scenario, these low importance deposits may be subject to a major magnitude of impact, resulting in a moderate adverse effect that would be significant in the context of the EIA Regulations without mitigation secured within the Outline WSI (Document reference 7.6, DCO Volume 7).

7.8.166 Further mitigation of these effects is discussed at section 7.9.

Indirect physical effects on non-designated heritage assets

7.8.167 No non-designated heritage assets have been identified as potentially subject to indirect physical effects.

Temporary change to the setting of non-designated heritage assets

7.8.168 No non-designated heritage assets have been identified as subject to effects arising from temporary change to setting during the construction of this element of the Proposed Development.

Permanent change to the setting of non-designated heritage assets

7.8.169 No non-designated heritage assets have been identified where a permanent change to setting would arise from the construction of this element of the Proposed Development.

Operational effects

Water Recycling Plant site

7.8.170 Visits to this site carried out to inform development of the settings assessment noted that this element of the Proposed Development would be heavily screened by existing planting and in a context that is influenced by the perceptual presence of not only the existing A27 to the landward but also the nearby industrial estates including Budds Farm WTW; where visibility would be available, it would be at distance and in the context of this wider industrial development, and there are no heritage assets within sufficient proximity of this element to be affected by increased foot traffic due to the creation of a footpath, noise or vehicle movements. As a result, no designated heritage assets were identified during this assessment which would have the potential to be affected by change to setting arising from perceptibility of this element of the Proposed Development. No adverse effects on heritage assets have been identified as arising during the operation of this element of the Proposed Development.

Pipelines between Budds Farm Wastewater Treatment Works and the Water Recycling Plant site

7.8.171 No adverse effects on heritage assets have been identified as arising during the operation of this element of the Proposed Development.

Pipelines between the Water Recycling Plant site and Bedhampton Springs

7.8.172 Any effects that would be experienced during the operational period would arise as a result of the persistence of effects which arise during construction of the Proposed Development around the AGP sites, which have already been assessed in the construction phase assessment. No adverse effects on heritage assets have been identified as arising during the operation of this element of the Proposed Development.

Pipeline between the Water Recycling Plant site and Otterbourne Water Supply Works

7.8.173 Any effects that would be experienced during the operational period would arise as a result of the persistence of effects which arise during construction of the Proposed Development and have already been assessed in the construction phase assessment. No adverse effects on heritage assets have been identified as arising during the operation of this element of the Proposed Development.

Above Ground Plant

7.8.174 Any effects that would be experienced during the operational period would arise as a result of the persistence of effects which arise during construction of the Proposed Development and have already been assessed in the construction phase assessment. Operational use of the Proposed Development would not present sufficient change to setting to present any increase on those effects identified as permanent construction effects. No adverse effects on heritage assets have been identified as arising during the operation of this element of the Proposed Development, although some effects that initially arose during the construction period would persist through operation and have been considered as permanent construction effects.

Invasive Non-Native Species Treatment

7.8.175 Any effects that would be experienced during the operational period would arise as a result of the persistence of effects which arise during construction of the Proposed Development and have already been assessed in the construction phase assessment. Operational use of the Proposed Development would not present sufficient change to setting to present any increase on those effects identified as permanent construction effects. No adverse effects on heritage assets have been identified as arising during the operation of this element of the Proposed Development.

Decommissioning

7.8.176 Effects from decommissioning of the Proposed Development are considered to be no greater than those identified during the construction phase and, would in most cases be significantly lower than during construction.

7.8.177 Direct disturbance of archaeological remains would be unlikely to arise as intrusive works related to demolition and removal of infrastructure would be undertaken in ground that had been disturbed during construction and the Pipeline would be retained in situ after decommissioning. Consequently, these effects are not anticipated to arise.

7.8.178 Change to setting would in theory be of a similar magnitude to construction but would benefit from retention of mitigation planting and landscaping, and would normally be expected to be of discernibly shorter duration and where an effect has been present during operation, would be perceived as the progressive removal of that effect. Effects arising from change to setting are assessed as being the same as or lower than construction effects.

7.8.179 Where change to setting during construction would arise only from perceptibility of the construction of buried pipelines, however, no adverse effect would arise during decommissioning, as decommissioning works would be very limited and of a short duration, and adverse effects from decommissioning would be limited to works to the above-ground pipeline, the WRP site and AGP.

7.8.180 Consequently, many of the receptors that were assessed as subject to significant residual effects (section 7.10) or harm to significance arising during construction as a result of the perceptibility of pipeline construction works would not be subject to any adverse effect during decommissioning. These comprise:

1. The Old Mill House (NHLE 1340188)
2. Fort Purbrook (NHLE 1001842)
3. Fort Nelson (NHLE 1001860)
4. Fort Southwick (NHLE 1001808)
5. Church of St Nicholas, Boarhunt (NHLE 1350613)
6. Otterbourne Manor (NHLE 1013055)
7. House at Saw Mills (Pink and Company Limited) (NHLE 1230002)
8. Mission Room with Cottage Adjoining (NHLE 1351248)
9. Castle Farmhouse (NHLE 1095637)
10. Sandy Hill House (NHLE 1350573)
11. Park Pale at Marwell Park (NHLE 1012308)
12. Otterbourne Manor House (NHLE 1095795)

7.8.181 Where change to setting arises from the perceptibility of AGP in the settings of heritage assets, however, demolition and reinstatement would give rise to an effect, albeit temporary and short-lived. These sites would also benefit from screening from the landscaping and planting established during the operational period.

7.8.182 At Old Bedhampton Conservation Area, decommissioning of the above-ground pipeline at Bedhampton Springs would result in a limited and short-lived change that would be experienced in the context of the operational waterworks. This would be a negligible magnitude of temporary impact which would give rise to a temporary neutral effect which would not be significant in terms of the EIA Regulations.

7.8.183 The decommissioning would, however, be almost entirely screened in views from The Old Mill House (NHLE 1340188) and no effect would arise.

7.8.184 Fort Widley (NHLE 1001862) was predicted as being subject to significant adverse effects during construction as a result of visibility of construction works at BPT/IPS-E and to the Pipeline across Portsdown Hill. By the time of decommissioning, the proposed screening planting would have reached maturity and in the absence of works to the Pipeline, any effect during decommissioning would be discernibly reduced from that experienced in construction. This is assessed as a temporary impact of negligible magnitude, resulting in a temporary minor adverse effect that would not be significant in terms of the EIA Regulations.

7.8.185 At Little Park Mansions (NHLE 1350591), decommissioning works would present a limited and short-lived change. This is assessed as a negligible magnitude of

temporary impact which would give rise to a temporary neutral effect which would not be significant in terms of the EIA regulations.

7.8.186 At Park Place, (NHLE 1095586), decommissioning works would present a limited and short-lived change. This is assessed as a negligible magnitude of temporary impact which would give rise to a minor adverse effect which would not be significant in terms of the EIA regulations.

7.8.187 At the park at Park Place decommissioning works would present a discernible but short-lived change. This is assessed as a minor magnitude of temporary impact which would give rise to a temporary minor adverse effect which would not be significant in terms of the EIA regulations.

7.8.188 At Wintershill Hall, decommissioning works would present a limited and short lived change that would be largely screened in views of or from the house by the mature planting. This is assessed as a negligible magnitude of temporary impact which would give rise to a temporary neutral effect which would not be significant in terms of the EIA regulations.

7.8.189 At Wintershill Hall Park, decommissioning works would present a limited and short-lived change that would be largely screened in views of or from the park by the mature planting. This is assessed as a minor magnitude of temporary impact which would give rise to a temporary minor adverse effect which would not be significant in terms of the EIA regulations.

7.9 Mitigation, monitoring and enhancement

7.9.1 Mitigation measures are defined in ES Chapter 5 EIA approach and methodology, Volume I (Document reference 6.1, DCO Volume 6), with primary mitigation and tertiary mitigation for archaeology and cultural heritage being presented in section 7.4 of this chapter.

Secondary mitigation

7.9.2 Secondary mitigation would comprise the application of an agreed scheme of archaeological investigation aimed at providing mitigation of the loss of archaeological information and secured in the Proposed Development Outline WSI (Document reference 7.6, DCO Volume 7).

7.9.3 While policy states a preference for archaeological remains to be left in situ where possible, this mitigation would reduce the impact of the loss of remains that are valued for their archaeological interest. Additional programmes of survey and evaluation, where relevant, to sub-surface archaeological remains would be required. This may include any outstanding geophysical survey, trial trenching and other related intrusive or non-intrusive works.

7.9.4 This strategy is outlined as part of an Outline WSI (Document reference 7.6, DCO Volume 7), submitted as part of the DCO application. This document identifies what further survey is required and methodology and model clauses required for subsequent SSWSI(s) to be produced post-consent.

7.9.5 The results of these further surveys may indicate the presence of previously known and unknown buried archaeology, the resource to be appropriately addressed by

means of mitigating any impacts in a manner that is proportionate to the significance of the remains present.

7.9.6 In accordance with the Outline WSI, all relevant SSWSIs are envisaged to comprise a combination of the following recognised standard approaches and to be produced post-consent:

1. Planning and enacting of preservation in situ options and requirements (e.g. avoidance/micro-siting/trenchless construction where possible).
2. Archaeological evaluation and excavation: including subsequent post-excavation assessment, and analysis, publication and archiving.
3. Archaeological monitoring/watching brief: including subsequent post-excavation assessment, and analysis, publication and archiving (where appropriate).
4. Targeted Metal Detector Survey in fields identified as containing WWII plane crashes with excavation of the crash site at Frith Farm; including subsequent post-excavation assessment, and analysis, publication and archiving (where appropriate).
5. Earthwork condition surveys: including subsequent reporting and archiving (followed by reinstatement to former condition following construction, where required on a case-by-case basis, such as at Fisher's Pond).

7.9.7 Post-consent evaluation of potential geoarchaeological/palaeoenvironmental remains is likely to include a programme of geoarchaeological monitoring of engineering-led GI works to inform mitigation approaches such as geoarchaeological assessment and palaeoenvironmental survey.

7.9.8 The site-specific measures adopted by the Contractor are secured in the Outline WSI (Document reference 7.6, DCO Volume 7) tailored on a case-by-case/area-by-area basis (as required) accordingly and in response to the archaeological and cultural heritage assessment. Opportunities to optimise the programme, including expedient commencement of archaeological work in the immediate post-consent stages would also be sought in ongoing discussion and agreement with the relevant consultees.

7.9.9 With the application of secondary mitigation through investigation and recording, it is anticipated that the magnitude of impact and significance of effect of direct physical effects to non-designated archaeological remains can be reduced or offset to a residual non-significant effect in EIA terms (i.e. anticipated to be no worse than a minor adverse significance of effect).

7.9.10 Mitigation of construction period effects arising through change to setting would primarily be achieved by the primary measures set out at section 7.4 during design of the Proposed Development and/or through the adoption of good practice measures as tertiary mitigation (e.g. reinstatements, sequencing works, noise abatement and dust control measures) during construction.

Monitoring

7.9.11 Any landscape restoration and screening carried out as primary mitigation would require monitoring during the aftercare period to ensure that this planting is successfully established. Proposals for this monitoring are set out in the relevant

sections of the Outline LEMP (Document reference 7.5, DCO Volume 7), which has been prepared as part of the DCO application.

Monitoring of archaeological and built heritage works is described in the Outline WSI (Document reference 7.6, DCO Volume 7). Direct (physical) impacts would be offset or reduced through either preservation in situ or archaeological fieldwork and reporting set out in the Outline WSI, undertaken by professional archaeologists and monitored by the archaeological advisors to HCC and WCC.

Enhancement

7.9.12 Opportunities to incorporate environmental enhancements have been identified through the design development process to date and are detailed in the Indicative Environmental Masterplan, appended to the Design Approach Document (Document Reference 5.12, DCO Volume 5) and at section 11 Outreach and engagement of the Outline WSI (Section 11, Document reference 7.6, DCO Volume 7).

7.10 Summary of residual effects

7.10.1 Table 7-11 provides a summary of the residual effects relating to the construction, operation and decommissioning of the Proposed Development with regard to archaeology and cultural heritage receptors.

Table 7-11 Summary of residual effects

Component/Section	Impact	Receptor	Residual effects		
			Construction	Operation	Decommissioning
WRP site	Physical disturbance	Deposits of potential geoarchaeological interest at the WRP site	Permanent minor adverse (not significant)	No effect	No effect
Pipelines between Budds Farm WTW and the WRP site	Physical disturbance	Archaeological remains at the Pipelines between Budds Farm WTW and the WRP site	No effect	No effect	No effect
	Physical disturbance	Deposits of potential geoarchaeological interest at the Pipelines between Budds Farm WTW and the WRP site	Permanent minor adverse (not significant)	No effect	No effect
Pipelines between the WRP site and Bedhampton Springs	Change to character by physical change and change to setting	Old Bedhampton Conservation Area	Temporary moderate adverse (significant) reducing to minor adverse permanent residual construction effect (not significant), persisting through operation	No effect	Temporary neutral (not significant)
	Effect to setting of heritage asset	The Old Mill House (NHLE 1340188)	Temporary minor adverse (not significant) reducing to neutral permanent on completion of construction persisting through operation	No effect	No effect
	Physical disturbance	Archaeological remains	Permanent minor adverse (not significant)	No effect	No effect

Component/Section	Impact	Receptor	Residual effects		
			Construction	Operation	Decommissioning
Pipeline between WRP site and Otterbourne WSW					
Section D-M	Physical disturbance	Deposits of geoarchaeological interest	Permanent minor adverse (not significant)	No effect	No effect
Section D-M	Physical disturbance	Archaeological remains	Permanent minor adverse (not significant)	No effect	No effect
Section D	Effect to setting of heritage asset	Fort Purbrook (NHLE 1001842)	Temporary moderate adverse (significant)	No effect	No effect
Section E (BPT/IPS-E)	Effect to setting of heritage asset	Fort Widley (NHLE 1001862)	Temporary moderate adverse (significant)	No effect	Temporary minor adverse (not significant)
Section E	Effect to setting of heritage asset	Fort Southwick (NHLE 1001808)	Temporary moderate adverse (significant)	No effect	No effect
Section E	Effect to setting of heritage asset	Fort Nelson (NHLE 1001860)	Temporary moderate adverse (significant)	No effect	No effect
Section E	Effect to setting of heritage asset	Church of St Nicholas, Boarhunt (NHLE 1350613)	Temporary moderate adverse (significant)	No effect	No effect
Section F	Effect to setting of heritage asset	House at Saw Mills (Pink and Company Limited) (NHLE 1230002)	Temporary minor adverse (not significant)	No effect	No effect
Section F	Effect to setting of heritage asset	Mission Room with Cottage Adjoining (NHLE 1351248)	Temporary minor adverse (not significant)	No effect	No effect
Section F	Effect to setting of heritage asset	Castle Farmhouse (NHLE 1095637)	Temporary minor adverse (not significant)	No effect	No effect

Component/Section	Impact	Receptor	Residual effects		
			Construction	Operation	Decommissioning
Section F (IPS-F)	Effect to setting of heritage asset	Farm Range at Albany Farm (50684)	Temporary minor adverse (not significant)	No effect	Temporary minor adverse (not significant)
Section G (IPS-G)	Direct physical effect	Wickham Park Deer Park	Permanent neutral (not significant)	No effect	No effect
Section G (IPS-G)	Effect to setting of heritage asset	Little Park Mansions (NHLE 1350591)	Permanent minor adverse (not significant)	No effect	Temporary neutral (not significant)
Section G (IPS-G)	Effect to setting of heritage asset	Park Place (NHLE 1095586)	Permanent minor adverse (not significant) persisting into operation	No effect	Temporary minor adverse (not significant)
Section G (IPS-G)	Direct physical effect	Park at Park Place	Permanent neutral (not significant)	No effect	Temporary neutral (not significant)
Section G	Physical Disturbance	Historic Water Meadows at River Meon	No effect	No effect	No effect
Section H	Physical disturbance	Aircraft crash site at Frith Farm	Permanent minor adverse (not significant)	No effect	No effect
Section J	Effect to setting of heritage asset	Sandy Hill House (NHLE 1350573)	Temporary minor adverse (not significant)	No effect	No effect
Section J and Section K	Physical Disturbance	Bishop's Waltham Deer Park	Temporary minor adverse (not significant)	No effect	No effect
Section J	Physical Disturbance	Historic Water Meadows at River Hamble	Temporary minor adverse (not significant)	No effect	No effect

Component/Section	Impact	Receptor	Residual effects		
			Construction	Operation	Decommissioning
Section K (BPT-K)	Effect to setting of heritage asset	Wintershill Hall	Temporary minor adverse (not significant) falling to permanent neutral (not significant) on maturation of reinstatement	No effect	Temporary neutral (not significant)
Section K (BPT-K)	Effect to setting of heritage asset	Wintershill Hall Park	Permanent minor adverse (not significant) persisting through operation	No effect	Temporary minor adverse (not significant)
Section L	Physical disturbance	Non-designated fishponds at Fishers Pond	Permanent minor adverse (not significant)	No effect	No effect
Section L	Physical Disturbance	Marwell Park	Temporary minor adverse (not significant)	No effect	No effect
Section L	Effect to setting of heritage asset	Low Hill Farmhouse (NHLE 1302822)	Temporary minor adverse (not significant)	No effect	No effect
Section L	Effect to setting of heritage asset	Keepers Cottage (NHLE 1095822)	Temporary minor adverse (not significant)	No effect	No effect
Section L	Effect to setting of heritage asset	Park Pale at Marwell Park (NHLE 1012308)	Temporary moderate adverse (significant)	No effect	No effect
Section M	Effect to setting of heritage asset	Otterbourne Manor (NHLE 1013055)	Temporary moderate adverse (significant)	No effect	No effect
Section M	Effect to setting of heritage asset	Otterbourne Manor House (NHLE 1095795)	Temporary minor adverse (not significant)	No effect	No effect

Component/Section	Impact	Receptor	Residual effects		
			Construction	Operation	Decommissioning
Section M	Physical Disturbance	Historic Water Meadows at River Itchen	No effect	No effect	No effect

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