

Chapter 6

Historic Environment

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6. Historic Environment

6.1 Introduction

- 6.1.1 The Draft ES has been produced to fulfil the Applicant's consultation duties and enable consultees to develop an informed view of the likely significant effects of the Project.
- 6.1.2 This chapter presents the assessment of the likely significant effects of the Project with respect to historic environment, including archaeology, historic landscape character and built heritage, based on the information obtained to date. Following consultation, the assessment will be updated for the Final ES that will accompany the DCO application for the Project.
- 6.1.3 This chapter should be read in conjunction with the Project description provided in **Chapter 2: The Project** and with respect to relevant parts of the following chapters:
- **Chapter 7: Water Environment;**
 - **Chapter 8: Landscape and Visual;**
 - **Chapter 10: Noise and Vibration;**
 - **Chapter 11: Traffic and Transport; and**
 - **Chapter 12: Ground Conditions.**
- 6.1.4 This chapter describes:
- the legislation, policy and technical guidance that has informed the assessment (**Section 6.2**);
 - consultation and engagement that has been undertaken and how comments from consultees relating to historic environment have been addressed (**Section 6.3**);
 - the methods used for baseline data gathering (**Section 6.4**);
 - overall baseline, including existing and future baseline (**Section 6.5**);
 - embedded environmental measures relevant to historic environment (**Section 6.6**);
 - the scope of the assessment for historic environment (**Section 6.7**);
 - the methodology applied for the assessment (**Section 6.8**);
 - the assessment of historic environment effects (**Section 6.9**);
 - the assessment of cumulative (inter-project) effects (**Section 6.10**);
 - a summary of the significance conclusions (**Section 6.11**);

6.1.5 This chapter is supported by the following appendices:

- **Appendix 6A:** Archaeological Desk Based Assessment (DBA);
- **Appendix 6B:** Assets scoped out of setting assessment;
- **Appendix 6C:** Historic Environment Gazetteer;
- **Appendix 6D:** Historic Environment site visit photographs;
- **Appendix 6E:** Archaeological Geophysical Survey Report;
- **Appendix 6F:** Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling; and
- **Appendix 6G:** Outline Written Scheme of Investigation (OWSI).

Project overview

- 6.1.6 The Project includes the construction, operation and eventual decommissioning of approximately 100km of new pipeline to distribute hydrogen to industry in the North West. A number of Hydrogen Above Ground Installations (HAGIs), including Block Valve Installations (BVIs) are required to control the flow and pressure of hydrogen at key points along the proposed pipeline.
- 6.1.7 The Project connects the Hydrogen Production Plant (HPP) at the Stanlow site, as the source of hydrogen, for onward distribution to the network. The pipeline transports hydrogen to the Central Hub at the centre of the network, which then serves as the connection and onward distribution point to the North, East and South Corridors, which would extend to St. Helens, Partington and Northwich respectively. Branching off from each main corridor would be pipeline spurs connecting hydrogen customers to the main pipeline. Infrastructure has also been included which supports the potential blending of hydrogen with methane in the existing gas network. The Project would also link to underground hydrogen storage facilities in Cheshire used to balance supply and demand through the network.
- 6.1.8 The currently anticipated maximum extent of land in which the Project may take place, which is assessed in this Draft ES, is defined by the 'Draft Order Limits', land within which is hereafter referred to as 'land within the Draft Order Limits'.
- 6.1.9 A proportionate degree of flexibility has been incorporated into the Project design so that unforeseen issues that may be encountered following consent can be sufficiently mitigated. For example, previously unidentified poor ground conditions may require a pipeline section to be re-routed slightly for geotechnical reasons. Therefore, to allow for this, new infrastructure would be constructed within specified Limits of Deviation (LoD) which identify a maximum distance or measurement of variation within which the works must be constructed; further detail is provided on LoD in **Chapter 2: The Project**.

Limitations and assumptions

- 6.1.10 The extent of completed geophysical survey (**Appendix 6E**) undertaken to support the historic environment chapter has been influenced by ground conditions in certain land parcels. The scope of the survey was duly revised to ensure that alternative land parcels could be surveyed to complete the phase of works.
- 6.1.11 The geophysical survey undertaken so far consists of 12% of the whole Draft Order Limits which comprise relatively undisturbed agricultural land suitable for survey, and was focused on areas of high and medium archaeological potential as defined in the Archaeological DBA (**Appendix 6A**). Further archaeological geophysical survey within the Draft Order Limits is planned and the results of this will be included within the Final ES. The completed surveys this will represent a combined total of approximately 18% of the whole Draft Order Limits representing areas with the greater archaeological potential. Geophysical survey has the potential to detect anomalies with an archaeological origin, which are previously unknown or detailed in this chapter or supporting appendices. A programme of archaeological evaluation will be undertaken within the Draft Order Limits in line with the OWSI (**Appendix 6G**).
- 6.1.12 Limitations regarding the suitability and effectiveness of geophysical survey in the detection of archaeological remains is described in **Appendix 6E** Archaeological Geophysical Survey Report.
- 6.1.13 The remote sensing element of the data collection has involved review of Historic England's Aerial Photography Archive and Environment Agency LiDAR data, supplemented by a review of Google Earth and Bing satellite imagery. Satellite images obtained through Google Earth and Bing do not present consistently good conditions for the identification of cropmarks across the whole Draft Order Limits due to the coverage of satellite imagery captured at optimal times of year for the identification of archaeological cropmarks. This is reflected in the distribution of potential archaeological features recorded as cropmarks as the historic environment baseline capture.
- 6.1.14 Where there are limitations in the availability of survey data and other baseline information to support the assessment of potential and heritage significance of archaeological remains, a reasonable worst-case will be assumed.
- 6.1.15 Whilst there are some data limitations relating to historic environment these do not affect the robustness of the assessment of this Draft ES.

6.2 Relevant Legislation, Planning Policy and Technical Guidance

- 6.2.1 This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to historic environment. Further information on policies relevant to the Project is provided in **Chapter 4: Legislation and policy overview**.

Legislation

6.2.2 A summary of the relevant legislation is given in **Table 6.1**.

Table 6.1 Legislation relevant to the historic environment assessment

Legislation	Legislative Context
Ancient Monuments and Archaeological Areas Act 1979¹	The Ancient Monuments and Archaeological Areas Act sets out that sites considered to be of national importance are required to be compiled in a Schedule of Monuments. These sites are accorded statutory protection. The Act sets out conditions whereby Scheduled Monument Consent is required. This Act also provides for the designation of Areas of Archaeological Interest in which statutory provisions for access to construction sites for carrying out archaeological works apply.
Planning (Listed Buildings and Conservation Areas) Act 1990²	This Act covers the registration of Listed Buildings (buildings that are seen to be of special architectural or historic interest) and the designation of conservation areas (areas of special architectural or historic interest the character or appearance of which it is desirable to preserve or enhance). It sets out the conditions under which a Listed Building consent would be required. The Act sets out at Sections 66 and Section 72 the duties of Local Planning Authorities (LPAs) to give great weight to the desirability of preserving Listed Buildings and their settings and the character of conservation areas in planning decisions. The Section 66 and Section 72 duties are superseded in applications under the Planning Act 2008 by equivalent provisions in the Infrastructure Planning (Decisions) Regulations 2010 (see below).
Infrastructure Planning (Decisions) Regulations 2010³	These regulations require decision-makers to have regard to the desirability of preserving a Scheduled Monument or its setting; Listed Buildings, any features which contribute to their special interest and their settings and to have regard for the desirability of preserving the character and appearance of conservation areas. These duties supersede sections 66 and 72 of the

¹ UK Government (1979). Ancient Monuments and Archaeological Areas Act, 1979. (Online). Available at <https://www.legislation.gov.uk/ukpga/1979/46> (Accessed June 2024).

² UK Government (1990). Planning (Listed Buildings and Conservation Areas) Act, 1990. (Online). Available at <https://www.legislation.gov.uk/ukpga/1990/9/contents> (Accessed June 2024).

³ UK Government (2010). Infrastructure Planning (Decisions) Regs, 2010. (Online). Available at <https://www.legislation.gov.uk/uksi/2010/305/contents/made> (Accessed June 2024).

Legislation	Legislative Context
	Planning Act (Listed Buildings and Conservation Areas) 1990 in determining DCO applications.
Treasure Act 1996⁴	This Act defines what constitutes ‘treasure’. Any find of ‘treasure’ must be reported to the local Coroner.
Treasure (Designation) Order 2002⁵	This Order amends the statutory definition of ‘treasure’. Treasure is defined as: any object at least 300 years old when found which — (i) is not a coin but has metallic content of which at least 10 per cent by weight is precious metal; (ii) when found, is one of at least two coins in the same find which are at least 300 years old at that time and have that percentage of precious metal; or (iii) when found, is one of at least ten coins in the same find which are at least 300 years old at that time.
The Hedgerow Regulations 1997⁶	These regulations set out criteria to be used to determine the importance of hedgerows and protect important hedgerows from removal. Selection criteria include heritage-based considerations. This can be found in Table 6.7 .
Burial Act 1857⁷	It is generally an offence to remove human remains from a place of burial without a licence from the Secretary of State.
Protection of Military Remains Act 1986⁸	This Act sets out specific protections for aircraft which have crashed or vessels which have sunk or been stranded whilst in military service. It sets out a general prohibition on any disturbance or removal of such remains without a licence granted by the Secretary of State.

Planning policy

- 6.2.3 There are a number of national policies that may be relevant to the Project. Under Section 104 of the Planning Act 2008 the Secretary of State will decide how much weight to give to the National Policy Statements. Those relevant to the Project are the overarching National Policy Statement for Energy (EN-1) and the National Policy Statement for Natural Gas Supply Infrastructure and Gas and Oil Pipelines

⁴ UK Government (1996). Treasure Act, 1996. (Online). Available at <https://www.legislation.gov.uk/ukpga/1996/24/contents> (Accessed June 2024).

⁵ UK Government (2002). Treasure (Designation) Order, 2002. (Online) Available at <https://www.legislation.gov.uk/ukdsi/2002/0110424700/contents> (Accessed June 2024).

⁶ UK Government (1997). The Hedgerow Regulations, 1997. (Online) Available at <https://www.legislation.gov.uk/uksi/1997/1160/contents/made> (Accessed June 2024).

⁷ UK Government (1857). Burial Act, 1857. (Online). Available at <https://www.legislation.gov.uk/ukpga/Vict/20-21/81/contents> (Accessed June 2024).

⁸ UK Government (1986). Protection of Military Remains, 1986. (Online). Available at <https://www.legislation.gov.uk/ukpga/1986/35/contents> (Accessed June 2024).

(EN-4). NPS EN-4 does not provide any policy specific to the historic environment however.

- 6.2.4 Other national and local policies may also provide additional guidance on this environmental topic and could be considered material to the consideration of this Project. Policy potentially relevant to the Project and to the historic environment topic is summarised within **Table 6.2 Planning policy context relevant for the historic environment assessment**.

Table 6.2 Planning policy relevant to the historic environment assessment

Policy	Policy Context
National planning policy	
Overarching National Policy Statement for Energy (NPS EN-1)⁹	Section 5.9: NPS EN-1 requires change to the significance of heritage assets to be considered in developing an understanding of the potential effects of the Project. Further, that setting contributes to a heritage asset's significance and should be drawn into consideration of baseline conditions and assessment of significance. It outlines requirements to provide clear statements of effect pathways, consider how the Project will make a positive impact to the historic environment, assess impacts on non-designated heritage assets, and explicitly consider different types of setting impacts. Further, similarly to the NPPF, it reinforces that any level of harm to a heritage asset constitutes harm. It recommends that substantial harm to or total loss of a designated heritage asset should be 'exceptional', and 'wholly exceptional' in the case of assets of greatest importance (EN-1 paragraphs 5.9.29-30). 31.
National Planning Policy Framework (NPPF)¹⁰	Section 16 of the NPPF is consistent with EN-1. Paragraphs 195-214 relate to the historic environment and its sustainable management with regards to development. It defines heritage assets and why they should be conserved. Plans should set out a positive strategy for the historic environment, with an emphasis on enhancement. In dealing with planning applications, local authorities should require the significance of an asset to be described, including any

⁹ Department of Energy and Climate Change, (2023). Overarching National Policy Statement for Energy (EN-1) (online). Available at: <https://assets.publishing.service.gov.uk/media/65bbfdbc709fe1000f637052/overarching-nps-for-energy-en1.pdf> (Accessed June 2024)

¹⁰ Ministry of Housing, Communities and Local Government (2023). National Planning Policy Framework, (online). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1182995/NPPF_Sept_23.pdf (Accessed June 2024)

Policy	Policy Context
	contribution made by their setting. As a minimum, Historic Environment Record (HER) data should be consulted and, where there is archaeological interest, a DBA should be produced. Great weight should be given to the conservation of heritage assets, irrespective of whether potential harm amounts to substantial harm. Any harm requires clear and convincing justification. Harm to assets of the highest significance, notably Scheduled Monuments, protected wreck sites, registered battlefields, grade I and II* Listed Buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.
Local planning policy	
Cheshire West and Chester Local Plan (Part One) Strategic Policies 2015¹¹	ENV5 Historic Environment: Development should safeguard or enhance heritage assets; loss or harm to their significance should be avoided. Development which is likely to have an unavoidable significant adverse effect on heritage assets or where an asset cannot be preserved in situ should be avoided.
Cheshire West and Chester Council (CWAC) Local Plan (Part 2) 2019¹²	DM 46 Development in conservation areas: Development within or affecting the setting of conservation areas, as identified on the policies map, will be expected to pay special attention to the desirability of preserving or enhancing the character or appearance of that area, taking account of the significance of heritage assets. DM 47 Listed buildings: Development proposals or works, shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses. Development proposals or works within or affecting the setting of listed buildings will be expected to achieve a high quality of design, making a positive relationship between the proposed and existing context. DM 48 Non-designated heritage assets: Development proposals will be encouraged and supported where they are designed to preserve or enhance the significance of non-designated heritage assets. The significance of non-

¹¹ Cheshire West and Chester (2015). Cheshire West and Chester Local Plan (Part One) Strategic Policies 2015 (online). Available at:

<https://consult.cheshirewestandchester.gov.uk/kse/event/24907/section/3252243>

(Accessed June 2024)

¹² Cheshire West and Chester (2019). Cheshire West and Chester Local Plan (Part Two) Land Allocations and Detailed Policies 2015 (online). Available at: [Cheshire West and Chester Council - Cheshire West and Chester Local Plan \(Part Two\) Land Allocations and Detailed Policies](#)

(Accessed January 2023)

Policy	Policy Context
	designated heritage assets and their setting should be assessed in development proposals or works. DM 50 Archaeology: Development proposals will need to take into account the significance of the heritage asset and their setting, and the scale of any loss or harm.
Cheshire East Local Plan Strategy 2017¹³	SE7 The Historic Environment: Development should seek to avoid harm to heritage assets and make a positive contribution to the character of Cheshire East's historic environment. Development that causes harm must include detail of heritage asset significance and the contribution of its setting within an application. There is a presumption that heritage assets should be retained and reused. Harm to heritage assets should be outweighed by public benefits and any loss or harm should be mitigated to ensure that there is no net loss of heritage value.
Trafford Local Plan Core Strategy 2012¹⁴	R1 Historic Environment: Development must take account of surrounding building style, landscape, and historic distinctiveness. Proposals must complement and enhance the existing historic environment, particularly in relation to conservation areas, listed buildings and other identified heritage assets. Developers must identify the presence, absence, or potential for archaeological remains and set out a mitigation plan.
Warrington Local Plan 2023¹⁵	DC2 Historic Environment: Proposals within or affecting the setting of a conservation area will only be permitted where it preserves or enhances the character or appearance of the area including those elements which have been identified within the conservation area appraisal as making a positive contribution the significance of that area.
St Helens Core Strategy 2012¹⁶	LPC11 Historic Environment: National planning policy requires the Local Plan to set out a positive strategy for the conservation and enjoyment of the historic environment,

¹³ Cheshire East Council, (2017). Cheshire East Local Plan Strategy 2010-2030, (online). Available at: <https://www.cheshireeast.gov.uk/pdf/planning/local-plan/local-plan-strategy-web-version-1.pdf> (Accessed June 2024)

¹⁴ Trafford Council, (2012). Trafford Local Plan Core Strategy, (online). Available at: <https://www.trafford.gov.uk/planning/strategic-planning/docs/core-strategy-adopted-final.pdf> (Accessed June 2024)

¹⁵ Warrington Borough Council, (2023). Local Plan, (online). Available at: <https://www.warrington.gov.uk/LocalPlan> (Accessed June 2024)

¹⁶ St Helens Council, (2012). St Helens Local Plan 2022, (online). Available at: <https://www.sthelens.gov.uk/article/3775/Adopted-plans-and-policies> (Accessed June 2024)

Policy	Policy Context
	and that planning applications should describe the significance of any heritage assets affected, including any contribution made by their setting.
Halton Core Strategy 2013¹⁷	CS20 Natural and Historic Environment: The Borough's heritage assets should be conserved and enhanced, and special regard should be given to their setting. An overarching aim is to conserve and enhance local character and distinctiveness.

Technical guidance

6.2.5 A summary of the technical guidance for historic environment is given in **Table 6.3**.

Table 6.3 Technical guidance relevant to the historic environment assessment

Technical Guidance Document	Context
Planning Practice Guidance: Historic Environment 2019¹⁸	This guidance provides advice on the conservation and enhancement of the historic environment.
Historic England Good Practice Advice in Planning Note 2 (GPA 2): Managing Significance in decision-taking in the Historic Environment 2015¹⁹	This document provides guidance and information to assist in implementing historic environment policy and ensuring compliance with the NPPF.
Historic England Good Practice Advice in Planning Note 3 (GPA	Sets out guidance on managing change within the settings of heritage assets. The document sets out five steps to follow to

¹⁷ Halton Borough Council, (2013). Halton's Local Plan Core Strategy April 2013, (online). Available at:

<https://www3.halton.gov.uk/Documents/planning/planning%20policy/CoreStrategy.pdf> (Accessed June 2024)

¹⁸ UK Government (2019). Planning Practice Guidance: Historic Environment, 2019. (Online) Available at <https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment> (Accessed June 2024)

¹⁹ Historic England (2015). Good Practice Advice in Planning Note 2 (GPA 2): Managing Significance in decision-taking in the Historic Environment. (Online). Available at <https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/gpa2/> (Accessed June 2024)

Technical Guidance Document	Context
3): The Setting of Heritage Assets 2017²⁰	ensure an appropriate level of assessment is achieved. These are: Step 1: Identify which heritage assets and their settings are affected Step 2: Assess the degree to which these settings make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated Step 3: Assess the effects of the proposed development, whether beneficial or harmful, on that significance or on the ability to appreciate it Step 4: Explore ways to maximise enhancement and avoid or minimise harm Step 5: Make and document the decision and monitor outcomes
Conservation Principles, Policies and Guidance 2008²¹	Sets out principles for the assessment of heritage significance and its management. These are: • Understand the fabric and evolution of the place; • Identify who values the place, and why they do so; • Relate identified heritage values to the fabric of the place; • Consider the relative importance of those identified values; • Consider the contribution of associated objects and collections; • Consider the contribution made by setting and context; • Compare the place with other places sharing similar values; and • Articulate the significance of the place.
Conservation Principles for the Sustainable Management of the	A draft version of the revised conservation principles for the sustainable management of the historic environment. This provides updated principles for assessing and managing heritage significance. Whilst not yet adopted it represents

²⁰ Historic England (2017). Good Practice Advice in Planning Note 3 (GPA 3): The Setting of Heritage Assets. (Online). Available at <https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets/> (Accessed June 2024).

²¹ Historic England (2008). Conservation Principles, Policies and Guidance. (Online). Available at <https://historicengland.org.uk/advice/constructive-conservation/conservation-principles/> (Accessed June 2024).

Technical Guidance Document	Context
Historic Environment - consultation draft 2017²²	best practice and is, therefore, considered as the document is more closely aligned with EN-1 than the Conservation Principles produced in 2008. This is evidenced throughout Section 6.9 , where interest is described in terms of archaeological, architectural, artistic and historic.
Statements of Heritage Significance: Analysing Significance in Heritage Assets 2019.²³	This Historic England advice note provides information on the analysis and assessment of heritage significance in line with the NPPF to assist owners, applicants, local planning authorities (LPAs), planning and other consultants, and other interested parties in implementing historic environment legislation, the policy in the NPPF and the related guidance in the Planning Practice Guidance (PPG).
Chartered Institute for Archaeologists (CIfA) Standard and guidance for archaeological desk-based assessment 2017²⁴	Sets out the standard to produce archaeological desk-based assessments (DBA). The standard states that a DBA will determine, as far as is reasonably possible from existing data, the nature, extent and significance of the historic environment resource within a specified area. In a development context, a DBA will establish the impact of the proposed development on the significance of the historic environment and will enable reasoned proposals and decisions to be made on whether to mitigate, offset or accept without further intervention.
CIfA Standard and guidance for commissioning work or providing consultancy advice on archaeology and the	Sets out standards for the provision of consultancy advice in the historic environment, in essence that specialist advice to commissioners of archaeological and other historic environment work will, as far as is reasonably possible, ensure that the commissioner sufficiently understands and complies with ethical, legal and policy requirements, and is aware of the likely resource requirements.

²² Historic England (2017). Conservation Principles for the Sustainable Management of the Historic Environment - consultation draft. (Online). Available at <https://historicengland.org.uk/content/docs/guidance/conservation-principles-consultation-draft-pdf/> (Accessed June 2024).

²³ Historic England (2019). Statements of Heritage Significance: Analysing Significance in Heritage Assets. (Online) Available at <https://historicengland.org.uk/images-books/publications/statements-heritage-significance-advice-note-12/> (Accessed June 2024)

²⁴ CIfA (2020). Standard and guidance for archaeological desk-based assessment. (Online) Available at https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf (Accessed June 2024).

Technical Guidance Document	Context
historic environment 2014 ²⁵	
ClfA Standard and guidance for archaeological field evaluation 2014 ²⁶	Sets out the standard for archaeological evaluation, which is that it will seek to determine, record and report on the nature, extent, preservation and significance of archaeological remains within a defined area.
ClfA Standard and guidance for archaeological geophysical survey 2014 ²⁷	Sets out standard for archaeological geophysical survey, which is that it will determine, as far as is reasonably possible, the nature of the detectable archaeological resource within a specified area using appropriate methods and practices.

6.3 Consultation and Engagement

Overview

- 6.3.1 The assessment has been informed by consultation responses and statutory and technical engagement. An overview of the approach to consultation is provided in **Section 3.7 of Chapter 3: Approach to preparing the Draft ES**.

Scoping Opinion

- 6.3.2 A Scoping Opinion was adopted by the Secretary of State, administered by the Planning Inspectorate, on 08 March 2022. A summary of the relevant responses received in the Scoping Opinion in relation to historic environment and confirmation of how these have been addressed within the assessment is presented in **Table 6.4**.

²⁵ ClfA (2020). Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment. (Online). Available at https://www.archaeologists.net/sites/default/files/ClfAS%26GCommissioning_2.pdf (Accessed June 2024).

²⁶ ClfA (2023). Standard and guidance for archaeological field evaluation. (Online). Available at <https://www.archaeologists.net/sites/default/files/Standard%20for%20archaeological%20field%20evaluation.pdf> (Accessed June 2024).

²⁷ ClfA (2020). Standard and guidance for archaeological geophysical survey. (Online). Available at https://www.archaeologists.net/sites/default/files/ClfAS%26GGeophysics_3.pdf (Accessed June 2024).

Table 6.4 Summary of EIA Scoping Opinion responses for historic environment

Consultee	Consideration	How Addressed in this Draft ES
Planning Inspectorate	Where professional judgement is applied to scope out an effect-receptor pathway on the basis of a likely not significant impact, this should be clearly set out in the ES. Scoped out pathways must be agreed through consultation with relevant stakeholders. If agreement is not found or there is a lack of evidence to support the approach, the pathway must be included within assessment in the ES.	Where significant effects are unlikely and, therefore, it is proposed that an effect-receptor pathway is scoped out of further assessment, the rationale for this judgement has been set out in Table 6B1, Appendix 6B . Comments from comment by relevant stakeholders have been considered in the preparation of Appendix 6B .
Planning Inspectorate	Operational effects should include effects to setting arising from vegetation clearance along the pipeline corridor. The ES should assess any likely significant effects.	Vegetation clearance will be limited to the working width of the Project, as far as possible, and reinstated following construction to reduce ecological, landscape and visual, and heritage impacts. Low-level crops and vegetation can be planted within the pipeline easement during operation. Landscaping will be used to mitigate operational effects at HAGI and BVI locations. Where historic landscape character contributes to the significance of a heritage asset any associated vegetation clearance will be assessed. If a significant effect is unlikely to arise, this assessment can be found in Table 6B1, Appendix 6B . If required, an updated assessment of effects arising from vegetation clearance will be presented in the Final ES.
Planning Inspectorate and Historic England	A desk-based geoarchaeological assessment and deposit model should be carried out ahead of any geophysical survey in order to ensure that the correct geophysical survey method is used.	A desk-based geoarchaeological assessment and deposit model has been produced by Oxford Archaeology North, local experts in geoarchaeological deposits. This has also been supplemented by targeted archaeological

Consultee	Consideration	How Addressed in this Draft ES
		monitoring of Ground Investigation (GI) works and is included with this Draft ES as Appendix 6F Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling. The scope of these works has been guided by consultation with Historic England and the relevant LPAs.
Planning Inspectorate and Historic England	A preservation and palaeoenvironmental assessment should be carried out on any identified peat and organic-rich alluvium deposits to assess their potential for archaeological remains before any dewatering within the Study Area.	A desk study of peat deposits has been carried out and is reported in Chapter 12: Ground Conditions of the Draft ES. As noted above, the geoarchaeological desk study has also been supplemented by targeted archaeological monitoring of GI works and is included with the Draft ES as Appendix 6F Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling.
Canal and Rivers Trust	The waterways themselves should be considered non-designated heritage assets in the assessment alongside tunnels, locks, mileposts, and bridges, many of which are designated. The Anderton Boat Lift is of particular historic significance.	The waterways and their associated designated and non-designated heritage assets have been assessed within Section 6.9 of the Draft ES and summarised in 6.11 . Due to the removal of the Northwich Spur from the DCO, there will be no potential for any effect on the Anderton Boat Lift and so this is not included in the assessment.
Cheshire East	Non-designated heritage assets and previously unrecorded heritage assets should be included within assessment.	Data from Historic Environment Records and Local Lists along with features and structures identified on historic maps, aerial images, and LiDAR have been used to form the baseline in this Draft ES and the Archaeological DBA in Appendix 6A . Non-designated heritage assets and previously unrecorded heritage assets are included as part of the baseline data which has informed the assessment in this Draft ES.

Consultee	Consideration	How Addressed in this Draft ES
Cheshire East	Cumulative impacts to historic landscape and Heritage at Risk should be assessed.	Historic Landscape Character and Heritage at Risk data has been incorporated into the baseline for this Draft ES.
Cheshire West and Chester	Further research is needed to include non-designated heritage assets to gain full understanding of any impacts.	Non-designated heritage assets, including locally listed buildings have been included in the baseline in this Draft ES and the Archaeological DBA in Appendix 6A .
Historic England	It must be demonstrated that the Study Area is of an appropriate size to identify all potential effects. Photomontages might be used, and Historic England would welcome the opportunity to discuss potential locations for such techniques.	A Study Area of 1km from the Draft Order Limits was proposed and the appropriateness has been confirmed in the light of further information on the design of the Project and following site visits. The rationale for defining study areas can be found in Section 6.4 .
Historic England	The assessment should take account of the potential impact which associated activities (such as construction activity, servicing and maintenance, and associated traffic) might have upon perceptions, understanding and appreciation of the heritage assets in the area. Assessment should also consider, where appropriate, the likelihood of alterations to drainage patterns that might lead to in situ decomposition or destruction of below ground archaeological remains and deposits and can also lead to subsidence of buildings and monuments.	Construction compounds, material storage area locations, and construction traffic routes have been included in this Draft Environmental Statement. See discussion of temporal scope in Section 6.3 .
Historic England	There should be some consideration of the option of preserving archaeological remains in situ, should previously unknown but significant archaeological assets be encountered during the course of construction.	Direct effects to designated heritage assets by the Project have been avoided through design evolution by the historic environment team. The OWSI (Appendix 6G) notes that where appropriate, consideration may be

Consultee	Consideration	How Addressed in this Draft ES
		given to mitigation through design (i.e. avoidance) prior to, or in combination with, investigation and recording.
St Helens Borough Council/Wirral Council	The revised edition (2021) of the Archaeological Regional Research Framework for North West England (2006 and 2007) should be referred to. The following resources should be consulted: The Archaeology of Mining and Quarrying in England: Resource Assessment and Research Agenda (2016); and The Coal Authority, which is the Lancashire and Liverpool Archives and the St Helens Local History Library.	The Archaeological Regional Research Framework for North West England (2006 and 2007) and The Archaeology of Mining and Quarrying in England: Resource Assessment and Research Agenda (2016) have been consulted in the appended Archaeological DBA (Appendix 6A) and have been used to inform the assessment of significance in this Draft ES.
St Helens Borough Council/Wirral Council	In addition to desk- based geoarchaeological and palaeoenvironmental studies, field investigation should be carried out.	Site visits have been carried out as part of the baseline data collection work, with further survey involving targeted geophysical survey and archaeological monitoring of GI works. The results of these surveys have informed the Draft ES and have fed into the design of an evaluation programme as set out in Appendix 6G OWSI.
St Helens Borough Council/Wirral Council	Areas of medium to high potential should be agreed with the LPA Archaeologist who will be pleased to advise on the significance of predicted impacts to the archaeological resource in terms of EIA on receipt of the desk-based assessment.	The Archaeological DBA has identified areas of archaeological potential. This is described in the Archaeological DBA (Appendix 6A) This assessment was provided with the PEIR at Stage 2 Statutory Consultation to seek agreement with the relevant LPA Archaeologists. LPA comments on the PEIR are summarised in Table 6.5 .
Trafford District Council	The following assets outside the scoping boundary should be assessed for impacts:	These assets have been assessed and can be found in Table 6B.1, Appendix 6B .

Consultee	Consideration	How Addressed in this Draft ES
	- Willow Cottage, Grade II (NHLE 1121939) - Greenbank, Grade II (NHLE 1067940) - The Village Farmhouse including gatepiers, Grade II (NHLE 1337667) - Manor Farmhouse with forecourt railings and gates, Grade II (NHLE 1337640) - Orchard View, Grade II (NHLE 1099165) - The Hollies, Grade II (NHLE 1067912) - Sinderland House, Grade II (NHLE 1067911) - Barn to south-east of Birch Farmhouse, Grade II (NHLE 1101723)	
Trafford District Council	A list of all potential affected Listed Buildings should be included in the ES.	A gazetteer with this information is appended to this Draft ES (Appendix 6C). This has been updated in light of design changes which have been made following submission of the PEIR. The list of listed buildings and other assets which may be affected by changes in their setting has also been updated, with the revised scope included within the Draft ES. Those assets which are within the Study Area but for which there is no potential for a significant effect are identified in Appendix 6B Assets scoped out of setting assessment, which includes a rationale in each case.
Trafford District Council	Supplementary Planning Guidance for Dunham Woodhouses Conservation Area should be considered.	SPD5.15 has been consulted as part of the Draft ES. See entry for

Consultee	Consideration	How Addressed in this Draft ES
		Dunham Woodhouses in Table 6B.1, Appendix 6B ²⁸ .
Trafford District Council	Dunham Massey Grade II* Registered Park and Warburton Park should be assessed for potential impacts.	An assessment of effects on the setting of Dunham Massey Registered Park and Garden is included in Section 6.9 of this chapter. This includes an assessment of effects arising from the construction and operation of Warburton HAGI.
Warrington Borough Council	Authority boundaries should be shown on maps and map scale needs to be revised to enable review by readers. Conservation areas need to be mapped. Similarly, heritage assets should be listed by local authority within reporting.	Boundaries are shown on all figures and the Historic Environment Gazetteer (Appendix 6C) records the local authority within which each asset falls.
Warrington Borough Council	Grappenhall Village Conservation Area should be included within assessment. To ensure accurate data, Warrington Council should be consulted for conservation area data along with Locally Listed Buildings data.	Grappenhall Village Conservation Area was assessed and scoped out of the PEIR and remains scoped out for the Draft ES following reassessment, see Table 6B.1, Appendix 6B . Conservation Area and Locally Listed Building data for Warrington was obtained from Cheshire Historic Environment Record (HER).

Statutory Consultation

- 6.3.3 Stage 2 Statutory Consultation took place between 12 September and 10 November 2022 in accordance with the Planning Act 2008. Prescribed and non-prescribed consultees and members of the public were consulted. Various methods of consultation and engagement were used in accordance with the Statement of Community Consultation (SoCC) including letters, website, public exhibitions, publicity and advertising in newspapers and webinar briefings.

²⁸ Trafford Council (2016). SPD5.15 Dunham Woodhouses Conservation Area Supplementary Planning Document. (Online) Available at <https://www.trafford.gov.uk/planning/strategic-planning/docs/November-2016/caa-Dunham-Woodhouses-Oct-2016.pdf> (Accessed September 2024)

- 6.3.4 Cadent Gas Ltd (Cadent) (“the Applicant”) prepared a Preliminary Environmental Information Report (PEIR) which was publicised at this consultation stage. The Applicant sought feedback on the environmental information presented in that report. Feedback received during statutory consultation was considered by the Applicant and incorporated, where relevant into the design of the Project and its assessment and is presented in this Draft ES.
- 6.3.5 A summary of the relevant responses received in response to statutory consultation, together with any subsequent discussions held in relation to historic environment and confirmation of how these have been considered within the assessment to date is presented in **Table 6.5**.
- 6.3.6 Technical engagement with consultees in relation to historic environment is ongoing. This includes consultation on a further phase of archaeological geophysical survey and ground investigation works.

Table 6.5 Summary of Section 42 Consultation responses for historic environment

Consultee	Consideration	How addressed in this Draft ES
Historic England	Concern raised that appropriate measures be put in place to ensure below ground archaeological remains are protected	Embedded measures to protect below ground archaeological remains are described in Table 6.7 of this Chapter and in an OWSI (Appendix 6G).
National Trust	Concern about construction activity within the setting of the designated landscape at Dunham Massey and the experience of the landscape and wider setting of National Trust interests. Whilst they understand many of these impacts will be predominantly temporary in nature, construction over a large area will nonetheless result in potential visual and noise impacts for those accessing the wider Dunham estate and their use and enjoyment of the land.	An assessment of effects on the setting of Dunham Massey Registered Park and Garden is included in Section 6.9 of this chapter. This includes an assessment of effects arising from the construction and operation of Warburton HAGI.
	Concerns raised about the siting of the Warburton HAGI within close proximity to designated heritage assets, including Dunham Woodhouse Conservation Area which lies approximately 400m to the east.	An assessment of effects on the setting of Dunham Woodhouse Conservation Area is included in Section 6.9 of this chapter. This includes an assessment of effects arising from the construction and operation of Warburton HAGI.

Consultee	Consideration	How addressed in this Draft ES
Canal and Rivers Trust	Concerns raised that construction could have an adverse impact on a number of canal related listed assets including bridges, locks, tunnels and milepost markers. The ES will need to include an assessment of the heritage and archaeology and the proposed works on these heritage assets and their setting and how the proposals would impact on them in terms of physical and visual impact on views, setting and appearance. Any impacts would need to be mitigated accordingly to avoid harm to significance.	An assessment of effects on canal structures of historic interest, including designated and non-designated assets is included in Section 6.9 of this chapter. This includes potential for direct disturbance and any changes in setting.
	Dutton Hall Bridge no. 211 is Grade II listed and use by vehicles heavier than 3 tonnes may increase the risk of harm to both users and the underlying structure of the highway and waterways. If the developer is to use this as a construction route an assessment in order to determine its capacity would be required.	As identified in Table 6.7 , use of the Trent and Mersey Canal Bridge Number 211 (Listed Building (Grade II): 1139147) will be subject to controls set out in the Outline Construction Environmental Management Plan (CEMP) secured via DCO requirement. These controls will include a survey of the bridge structure prior to its use by construction vehicles over 3 tonnes.
	Request to see further detail on reinstatement, as vegetation would play a role in the setting of designated heritage assets.	Outline Landscape Planting Proposals are included as Figures 1 to 13 of the Outline Landscape and Ecological Management Plan (LEMP)
	Stressed the importance of Vale Royal Locks and associated archaeological remains. They would need to see and agree the content of the Overarching Written Scheme of Investigation (WSI).	Update to the design of the Project has ensured that the Vale Royal Locks are not within the Draft Order Limits. The OWSI is included as Appendix 6G .

Consultee	Consideration	How addressed in this Draft ES
Cheshire West and Chester Council	The Council's Conservation Officer notes that as the majority of the proposal is below ground infrastructure, and that any harm to the setting of any designated heritage assets caused by construction will be temporary and that the long-term effects of the project are, subject to suitable mitigation, likely to be negligible. Concerns raised about the impact of a number of HAGI sites that have the potential to affect the views both into and out of a number of conservation areas, along with how a number of listed buildings and scheduled monuments are experienced within their setting. These include: • Thornton-le-Moors Conservation Area. • Weaver Navigation historic waterway. • Trent and Mersey Canal Bridge number 211 (LB GII). • Brook House Farm House (LB GII). • Drakelow Hall moated site (SM). In addition, some sites may be affected by construction effects including Sutton Hall (Grade I). where the open cut method would result in the removal of a number of trees from the tree-lined avenue. The appearance of open cut pipeline once completed is of concern as the avenue would be permanently altered. It is recommended that an alternative route or trenchless crossing is used at this location. In addition to Sutton Hall, the setting of a number of other heritage assets are also at risk of being affected by vegetation removal, including: • Sandiway Bank Farmhouse (Grade II) • Earnslow Grange and Estate Cottages (both locally listed buildings).	An assessment of effects on the conservation areas and listed buildings arising from changes to their settings is included in Section 6.9 of this chapter. This includes all of the assets identified by Cheshire West and Chester Council. Potential construction effects and mitigation to the tree lined avenue associated with Sutton Hall are considered in Table 6.7.

Consultee	Consideration	How addressed in this Draft ES
	The full assessment of potential impacts remains incomplete due to limited understanding of certain above-ground features such as the HAGI and proposed mitigations. Further exploration is necessary to evaluate how these features affect adjacent designated assets. In accordance with the Local Plan. Development within or near conservation areas should prioritize preserving the area's character and appearance. The final design and layout of structures and any impact on significant trees should be addressed in the Environmental Statement.	An assessment of effects on the conservation areas and listed buildings arising from changes to their settings is included in Section 6.9 of this chapter.
	Where evaluation trial trenching is identified, this ideally should occur as early in the process as possible. However, restrictions such as securing land access in carry out field evaluation before full access has been obtained, are acknowledged.	Appropriate mitigation measures for archaeological remains is included in Table 6.12 of this chapter and the OWSI (Appendix 6G)
	Concerns raised that the project involves breaching numerous ancient parish and township boundaries depicted on early 19 th century tithe maps. These features can yield valuable archaeological and paleoenvironmental information. Quantifying and mapping this impact will help inform mitigation measures in the Environmental Statement.	Ancient parish and township boundaries are listed in Table 6G.2 of the OWSI (Appendix 6G). Mitigation measures involving archaeological recording where these are crossed are included in the OWSI (Appendix 6G).
	Chapter 6, Table 6.2 should refer to the following historic environment policies of the Cheshire West and Chester Council Local Plan (Part Two): • DM 46 Development in conservation areas • DM 47 Listed buildings • DM 48 Non-designated heritage assets • DM 50 Archaeology	These have been identified in Table 6.2 of this chapter.

Consultee	Consideration	How addressed in this Draft ES
	Concerns raised that the Trent and Mersey Canal and Bostock Conservation Areas may be impacted by the proposed route of the pipeline. These areas both have conservation area appraisals which should be considered when assessing the impacts on the significance of these heritage assets.	In light of the update to the design of the Project, effects on the setting of Trent and Mersey Canal Conservation Area have been scoped out for reasons described in Appendix 6B Assets scoped out of setting assessment. An assessment of effects on Bostock Conservation Area arising from changes to its settings is included in Section 6.9 of this chapter.
Cheshire West and Chester Council	Concerns raised that the Hydrogen Production Plant (HPP) HAGI would have the potential to impact on the setting of the Moated site, fishpond and connecting channel scheduled monument at Elton, and would want to see measures adopted to mitigate this impact.	An assessment of effects on Moated site, fishpond and connecting channel, Elton (Scheduled Monument, SM1012122) arising from changes to its settings is included in Section 6.9 of this chapter.
	Concerns raised about the protection of sensitive archaeological remains that may be disturbed by the construction of access track, and suggest where appropriate the use of prefabricated trackways be employed,	Appropriate mitigation measures for archaeological remains are included in Table 6.12 of this chapter and in an OWSI (Appendix 6.G).
Warrington Borough Council	Comments received from Warrington Borough Council on archaeology matters were the same as those received from Cheshire West and Chester Council.	See responses above
Warburton Parish Council	Raised concerns regarding effect heavy plant movement through the village (Warburton) potentially causing vibration and subsidence to the listed and historic buildings in the Conservation Area.	There will be no HGV movements in Warburton Conservation Area; and therefore, this is not considered further within this assessment

6.4 Data Gathering Methodology

Study area

- 6.4.1 Data was gathered for an area covering the Draft Order Limits, plus additional buffers as described below. This data gathering area was selected to set an appropriate assessment Study Area extending to 1 kilometre (km) from the Draft Order Limits and to contextualise the historic environment and inform an understanding of the archaeological potential within the Draft Order Limits.
- 6.4.2 National Heritage List for England (NHLE) data and conservation area data was gathered out to an additional 2km buffer from the Draft Order Limits in relation to the assessment of effects through change to setting, whilst for this assessment HER data was reviewed to a 1km buffer from the Draft Order Limits. HER data was initially gathered for the larger Scoping red line boundary Study Area, which comprised a 1km buffer of the Scoping red line boundary and has been used where appropriate to contextualise this assessment.
- 6.4.3 Historic vertical aerial imagery was selected that centred immediately over the Draft Order Limits, while oblique images were sourced that were within 500 metres (m) of it.
- 6.4.4 Raw LiDAR data covering all land within 500m of the Draft Order Limits was downloaded, processed and interpreted.

Desk study

- 6.4.5 A summary of the organisations that have supplied data, together with the nature of that data is outlined in **Table 6.6**.

Table 6.6 Data sources used to inform the Historic Environment assessment

Source	Date	Summary
National Heritage List for England	July 2024	Identification of designated and registered heritage assets: • Scheduled Monuments; • Listed Buildings; • Registered Battlefields; • Registered Parks and Gardens; and • Protected Wrecks. Identification of Heritage at Risk.
Cheshire Historic Environment Record (HER)	18 January 2022 Updated 02 July 2024	Identification of: • Non-designated monuments; • Historic environment events; • HLC data; • Conservation areas; and • Locally listed buildings.

Source	Date	Summary
Greater Manchester HER	23 February 2022 Updated 09 July 2024	Identification of: • Non-designated monuments²⁹; • Historic environment events; • HLC data; and • Conservation areas for Partington District.
Merseyside HER	10 January 2022 Updated 06 July 2024	Identification of: • Non-designated monuments³⁰; • Historic environment events; and • HLC data.
Historic England's Aerial Photography Archive	05 April 2022	Historic RAF vertical air photographs. Various oblique air photographs.
Google Earth and Bing satellite imagery	June 2006 to September 2023	Identification of cropmarks relating to buried archaeological features.
Environment Agency LiDAR	10 January 2022	2017 1m DSM data for map tiles: - SJ47 - SJ49 - SJ57 - SJ58 - SJ59 - SJ66 - SJ67 - SJ68 - SJ78 - SJ79
Tithe Maps	April – June 2022 (accessed through the Genealogist ³¹ and Cheshire Tithe Maps online ³²)	Tithe maps from which historic boundaries and land-use could be gleaned.

²⁹ Buildings recorded on the HER of equivalent significance to the Cheshire HER locally listed buildings were identified and mapped as part of the PEIR. Trafford District Council are currently creating a locally listed buildings dataset and if published, this dataset will be included in the Final ES.

³⁰ As above

³¹ Genealogy Supplies (Jersey) Limited (2022). The Genealogist. (online) Available at: <https://www.thegenealogist.co.uk/> (Accessed May 2022).

³² Cheshire East Council (2022). Cheshire Tithe Maps. (Online) Available at <https://maps.cheshireeast.gov.uk/tithemaps/> (Accessed May 2022).

Source	Date	Summary
Ordnance Survey mapping (groundsure)	April-June 2022	Ordnance Survey mapping from First Edition to most up to date at the following scales: 1:1,250 1:10,000 1:10,560
Historic Ordnance Survey Maps via National Museum of Scotland	April-June 2022	Second Edition Ordnance Survey mapping.
Historic County Maps of Cheshire	April-June 2022	Historic maps of the historic county of Cheshire, providing overviews of landscape patterns from the mid-17th century ³³ to the early 19th century ³⁴ .
1:50k British Geological Survey	April-June 2022	GIS layer file and online viewer ³⁵ containing information on: Bedrock Superficial Deposits
Soilscapes³⁶	April-June 2022	Online soils dataset covering England and Wales.
Archaeological Regional Research Framework for North West England (NWERRF) (2006 and 2007, revised 2021)³⁷	April-June 2022	Presented as Resource Assessments and a Research Agenda, with a further section focusing on overarching questions and strategies for the archaeological resource in North West England.
Archaeology of Mining and Quarrying in England: Resource Assessment and Research Agenda (2016)	April-June 2022	Used to inform discussions on the development of the salt industry at specific points in the Study Area.

³³ Joan Blaeu (1662) 'Cestria Comitatus Palatinus (from Blaeu Atlas Maior, 1662-5, Vol.V)'. (Online) Available at: <https://maps.nls.uk/counties/cheshire.html> (Accessed May 2022).

³⁴ Andrew Bryant (1831) 'Map of the county palatine of Chester from an actual survey made in the years 1829, 1830 & 1831'. (Online) Available at: <https://maps.nls.uk/counties/cheshire.html> (Accessed May 2022).

³⁵ British Geological Survey (2022). Geology of Britain Viewer (Classic). (Online) Available at: https://mapapps.bgs.ac.uk/geologyofbritain/home.html?_ga=2.133680398.1060654158.1616703570-1444136630.1616703570 (Accessed May 2022).

³⁶ Cranfield University (2022). Soilscapes. (Online) Available at: <http://www.landis.org.uk/soilscapes/index.cfm> (Accessed May 2022).

³⁷ Research Frameworks (2022). The North West England Regional Research Framework. (Online) Available at: <https://researchframeworks.org/nwrf/> (Accessed May 2022).

Survey work

Walkover survey

- 6.4.6 A site walkover survey was carried out between 16 and 18 March 2022. The survey visited known heritage assets that were likely to have above-ground remains, to assess condition and update baseline information, and to assess general ground conditions along the route of the Project. The survey was carried out on foot and used the digital data capture app, ArcMap Collector, along with photographs on digital SLR cameras Canon EOS4000D. The results of this survey have informed the Archaeological DBA (**Appendix 6A**).
- 6.4.7 A further survey was carried out on 20 - 22 April 2022, visiting heritage assets, which may experience effects through change to their setting. Analyses were recorded on the digital data capture app, Survey 123, along with photographs captured on digital SLR cameras Canon EOS4000D. Photographs from this survey can be found in **Appendix 6D**.
- 6.4.8 Additional survey work, visiting those areas not accessible during the initial two visits, and to check conditions at a different time of year, under different levels of vegetation screening was undertaken on 1-3 February 2023 by members of the WSP heritage team.

Geophysical survey

- 6.4.9 Magnetometry survey work has been completed in targeted areas in order to identify both known and previously unrecorded archaeological heritage assets. The results of this can be found in **Appendix 6E** and are incorporated into the Archaeological DBA **Appendix 6A**.

Geoarchaeological monitoring of GI works

- 6.4.10 The geoarchaeological potential is assessed in the Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling report (**Appendix 6F**) and comprises an assessment of both the likelihood for prehistoric activity or settlement based on an understanding of palaeotopography (past landscape position) and the potential for buried deposits that may contain evidence of past environments (paleoenvironmental potential). This is achieved through evaluating the stratigraphy, sediments and geology of the route.

Data limitations

- 6.4.11 Historic Environment Record (HER) data was collected from the records that hold information relevant to the Project (Cheshire, Greater Manchester and Merseyside), and while all contained data on a range of heritage assets, the data structure was not uniform. Professional interpretation of the data set was applied to provide a consistent understanding of the spatial and chronological format of the data. In addition, it must be recognised that HER data is not static and is constantly being updated with new records as and when discoveries are reported, and fieldwork undertaken. Therefore, the data represents the record at a fixed point in time, when this data was sourced in June 2024 for this Draft ES.

- 6.4.12 This is a Draft ES and further geophysical survey is planned to be undertaken in advance of completion of the Final ES. This will encompass areas identified through consultation with relevant LPA Archaeological Curators. The results of this survey will be included with the final assessment and be incorporated into the Final ES.

6.5 Overall Baseline

Current baseline

Overview of historic environment baseline

- 6.5.1 The topography across the Study Area varies from the intertidal mudflats and salt marsh in the West Corridor; to the expanse of flat or gently undulating farmland in the South Corridor; to the varied topography of low hills and valleys in the North and East Corridors of the Study Area. The height above sea level ranges from 13m in the west of the Study Area, to around 80m in the northern part of the Study Area, around Sutton Heath.
- 6.5.2 The agricultural landscapes within the Study Area are largely the result of post-medieval and modern enclosures but encased within these are traces of former landscapes of the medieval and earlier periods. Features associated with this have been detected as cropmarks and low earthworks on aerial photographs, recent geophysical survey (**Appendix 6E**) and LiDAR imagery respectively, and thus do not form tangible above-ground elements of the present historic landscape character.
- 6.5.3 In addition, a Geoarchaeological Desk-Based Assessment and watching brief (carried out on a number of ground investigation boreholes) (**Appendix 6F**) has been used to identify areas of significant geoarchaeological and paleoenvironmental potential within the order limits.
- 6.5.4 A detailed description of the archaeological baseline is included in the Archaeological DBA (**Appendix 6A**). What follows below is a summary of the character of the historic environment, both above and below ground.
- 6.5.5 HLC areas within each National Character Area (NCA) are listed in the Historic Environment Gazetteer (**Appendix 6C, Table 6C.11**).

West Corridor and Runcorn/Rocksavage Spur

- 6.5.6 The West Corridor, including the Runcorn/Rocksavage Spur, falls within the NCAs of Mersey Valley and Shropshire, Cheshire and Staffordshire Plain (the NCAs which fall within the current study are described in the Archaeological DBA (**Appendix 6A, Table 4.1**)). The landscape in this corridor consists of riverine and marsh on the south banks of the River Mersey which rise to arable and pastoral agricultural land punctuated by small villages and towns, some of which have seen extensive development related to industrial activity.

- 6.5.7 For the West Corridor the Archaeological DBA has revealed evidence for human activity dating from early prehistory to the early modern period, including Mesolithic flint scatters, Bronze Age barrows, possible late prehistoric or Romano-British settlement and field systems, medieval villages and open fields, post medieval enclosure and industrial development associated with the development of canals and the expansion of industrial towns. There is therefore high potential in parts of the West Corridor for:
- the remains of prehistoric mortuary remains, which would be of medium heritage significance;
 - lithic scatters, which would be of low/medium heritage significance;
 - buried remains of prehistoric or Romano-British field systems and boundaries related to Romano-British settlement, which would be of low/medium heritage significance;
 - former historic field boundaries of medieval and post medieval date, which would be of low heritage significance;
 - buried remains of ridge and furrow associated with medieval and post medieval agricultural use, which would be of low heritage significance; and
 - post medieval industrial remains, which would be of low heritage significance.
- 6.5.8 The Runcorn/Rocksavage Spur is located within a heavily industrialised area which includes part of Rocksavage Power Station, and former coal dumps and lagoons close to the Weaver Navigation. Due to the high levels of modern disturbance, there is deemed to be negligible potential for the survival of archaeological remains within the Runcorn/Rocksavage Spur.

Geoarchaeological potential

- 6.5.9 The Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) states that in this zone, geoarchaeological potential (Holocene palaeoenvironments and archaeology) is greatest on the floodplain of the River Weaver (high potential), an area of rich resources and attractive to humans. This includes the Weaver navigation, meandering old Weaver and LiDAR-mapped palaeochannels on the north that indicate the remnants of an estuarine creek system and possible small embayment north of the Weaver Navigation. This would have been a dynamic environment and sediment sequences (over 10m thick) are dominated by sands, silts and clays, intercalated with organics in places (eg the Ince Marshes) known to date to the Mesolithic onwards. Tidal Flats give way to alluvium up the Weaver Valley to the south-east of the Draft Order Limits, both with good potential for palaeoenvironmental remains and deposit modelling. Transect borehole profiles in this corridor are described as follows:
- WC1 – low geoarchaeological potential. Mainly on Devensian (last ice age) Glaciofluvial deposits of low geoarchaeological potential, although it is noted that potential may be greater on the edge of the Weaver Valley and the presence of palaeochannels (from LiDAR);

- WC2 – high geoarchaeological potential. River Weaver alluvium and LiDAR mapped palaeochannels north of the river suggest Holocene palaeoenvironmental and archaeological potential;
- WC3 – low geoarchaeological potential. Largely on Devensian Glaciofluvial deposits and Till;
- WC4 – high geoarchaeological potential. Tidal Flats (mainly minerogenic, but organics recorded at depth in places) in the Weaver Navigation (that probably follows former backchannel of the Weaver), the old Weaver, unnamed brooks, manmade channels and LiDAR-mapped palaeochannels that indicate buried estuarine creek system. Tidal Flats transition to alluvium to the east of the site boundary. A small embayment;
- WC5 - high geoarchaeological potential. Tidal Flats as above. More past investigation. Intercalated peats and clays investigated dating back to the Mesolithic period (Ince Marshes RSK 2012; 2017; ECH 5447 and ECH 6863);
- WC6 - high geoarchaeological potential. Although superficial geology is mostly Devensian (last glaciation) Till, this forms a low promontory and 'island', ideal marginal zone for prehistoric habitation / later industry;
- RS1 – low geoarchaeological potential. Devensian Till and bedrock. Lack of superficial geology. It might be an 'ecotonal' zone (between wet and dry land), but no mapped deposits of potential; and

6.5.10 **Table 6.2** of the Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) identifies that there is a potential for the presence of deposits of geoarchaeological interest of low to medium heritage significance within the West Corridor.

Hydrogen Production Plant (HPP) HAGI

6.5.11 This HAGI is located within the Stanlow Refinery. There is negligible potential for the presence of archaeological remains at this site due to extensive modern disturbance associated with the construction and operation of the refinery.

Rocksavage HAGI

6.5.12 The Rocksavage HAGI is located within an area of former industrial activity which is currently occupied by woodland and scrub. Archaeological potential is assessed as negligible in this location due to modern ground disturbance which is likely to have destroyed deep deposits.

Runcorn HAGI

6.5.13 This HAGI is located within former industrial activity, including Rocksavage Power Station. As a result of disturbance associated with industrial activity the archaeological potential of this area is assessed as negligible.

Identified assets within Draft Order Limits

Ridge and furrow east of Frodsham (LDr_003; 004; 027)

- 6.5.14 Extant and subsurface remains of ridge and furrow cultivation have been identified through assessment of LiDAR data (**Figure 6.2**). LDr_027 is located within the Draft Order Limits, while LDr_003 and 004 are immediately adjacent to it. These represent evidence of medieval and post medieval agriculture and are of low heritage significance as an asset of local historic interest.

Possible extraction pits within West Corridor

- 6.5.15 Earthwork remains of former minerals extraction pits have been identified through assessment of LiDAR data (**Figure 6.2**). These are all within or immediately adjacent to the Draft Order Limits. These cannot be accurately dated and may range from medieval to late post medieval periods. These are considered to be of low heritage significance as assets of local historic interest.

Royal Ordnance Factory (ROF) Dunham on the Hill (MCH9985)

- 6.5.16 This comprised a large area of land used in WW2 for ammunition storage, in which 11 steel framed magazines with brick walls and concrete roofs remain extant within the Study Area. The recorded extent of the ROF extends slightly into the Draft Order Limits, but this area does not contain any of the surviving extant structures. This is considered to be of low heritage significance as an asset of local historic interest.

Field boundaries and drainage features in Helsby and Frodsham Marshes (identified on LiDAR)

- 6.5.17 Earthwork features representing former field boundaries and drainage ditches have been identified through assessment of LiDAR data within the Draft Order Limits (**Figure 6.2**). These represent historic land management from medieval to postmedieval periods. They are considered to be of low heritage significance as assets of local historic interest.

Roman Road-Chester to Wilderspool (Route 701) (MCH1449)

- 6.5.18 Former Roman Road now on the line of the modern A56 which traverses the Draft Order Limits. Continued remodelling of the road in the post medieval and modern times is likely to have removed any trace of the original road surface. This is considered to be of medium heritage significance as a heritage asset of regional historic interest.

Possible ring ditches near Sutton Hall (MCH8218 and MCH8219; CPm_043; 109; 219; 252; LDr_005)

- 6.5.19 Cropmarks indicative of five potential Bronze Age round barrows have been recorded alongside a further subtle earthwork mound recorded from LiDAR data analysis within and adjacent to the Draft Order Limits (**Figure 6.2**). These features range in size between 15m and 30m in diameter, which is consistent with known scheduled examples of barrows at Moulton (NHLE 1011123) and south of Higher Whitley (NHLE 1011166). The features at this location are located upon underlying glaciofluvial sands and gravels, a landscape context that elsewhere in northwest England has produced similar evidence of prehistoric activity. These are considered to be of medium heritage significance as an asset of regional historic and archaeological interest.

Searchlight Battery, Aston Heath (MCH10617)

- 6.5.20 This asset represents the location of a World War II (WW2) searchlight battery, of which no surface remains survive within the Draft Order Limits. The site represents part of the air defence network around Liverpool. It is considered to be of low heritage significance as an asset of local historic interest.

Possible agricultural features and former field boundaries Aston Heath

- 6.5.21 Features and former field boundaries representing historic land management have been identified through assessment of Google Earth imagery and LiDAR data within the Draft Order Limits (CPm_123; 308, LDr_167; 168; 170) (**Figure 6.2**), and via geophysical survey (AOC_ID: 31; 34) (**Appendix 6E**). These are considered likely to date from the medieval to post medieval periods and are considered to be of low heritage significance as assets of local interest.

Earthworks North-east of Aston Grange (MCH24736)

- 6.5.22 This asset represents former field boundaries and marl extraction pits partly within the Draft Order Limits which are now degraded and part of a nature reserve and arable field. These are considered to be of low heritage significance as an asset of local interest.

Severn Vyrnwy Aqueduct (MCH10449)

- 6.5.23 The Severn Vyrnwy Aqueduct traverses the Draft Order Limits as a tunnelled pipeline. When it was built in the late 19th century it was the longest aqueduct in the world. This asset is considered to be of medium heritage significance as an asset of regional historic interest.

North Corridor and Warrington, Clock Face and St Helens Spurs

- 6.5.24 The North Corridor, including the Warrington and St Helens Spurs, is located partly in the NCAs of Mersey Valley, Shropshire, Cheshire and Staffordshire Plain and Lancashire Coal Measures. Much of the North Corridor traverses agricultural land which is bisected by historic canals and railways, and modern motorways. Notable exceptions to this landscape type are St Helens and Warrington, towns which saw significant expansion from the 19th century onwards. The current agricultural landscape is broadly a result of post medieval enclosure of former medieval open fields and common grazing grounds, traces of which are evidenced through ridge and furrow, historic field names, and the presence of settlements with origins in at least the medieval period. Numerous mineral extraction pits are recorded within the agricultural areas of this Corridor. Medieval moated sites represent high status residences and a degree of social hierarchy in the landscape during this time. Activity in the Roman period is evidenced through the substantial settlement at Wilderspool, along the former route of the River Mersey. A probable Roman road is roughly aligned with the route of the modern A56, which is believed to have connected the settlement at Wilderspool with Chester. Other Roman roads are implied in this corridor but are less well attested. Cropmark evidence of possible late prehistoric or Romano-British settlements and fieldscapes suggest at least parts of this corridor were settled from the prehistoric period onwards.
- 6.5.25 The Archaeological DBA found there to be high potential for:
- buried remains of prehistoric or Romano-British activity, which would be of medium heritage significance;
 - the survival of relict field boundaries of probable post medieval date, which would be of low heritage significance;
 - medieval and post medieval ridge and furrow ridge and furrow, which would be of low heritage significance; and
 - mineral extraction sites of probable post medieval date, which would be of low heritage significance.
- 6.5.26 The Archaeological DBA also identified medium potential for the survival of prehistoric or Romano-British field systems and settlements in certain parts of the corridor, in particular immediately south of the Manchester Ship Canal. Remains of this nature would be of medium heritage significance. The Warrington Spur comprises land which seen significant modern development, and therefore has negligible to low potential. The St Helens Spur is located within an area of modern development, and therefore has negligible potential for the survival of archaeological remains.

Geoarchaeological potential

- 6.5.27 The Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) states that topography and geology of the North Corridor and Warrington and St Helens Spurs is diverse, and the therefore geoarchaeological potential varies. In general, outside the River Mersey valley, geoarchaeological potential is lower. Deposits with the highest potential comprise intercalated peats, clays, silts and sands of the Tidal Flats (in places over 10m thick) that may contain

buried land surfaces, artefacts, palaeoenvironmental remains and past sea level index points and the fluvial or wind-blown sands flanking the valley. Transect borehole profiles in this corridor are described as follows:

- NC1 – low geoarchaeological potential, with superficial deposits mainly comprising Till.
- NC2 – medium geoarchaeological potential due to landscape position (higher ground and therefore potential for prehistoric activity or settlement), with no record of buried deposits of geoarchaeological interest.
- NC3 – medium geoarchaeological potential. Loessic deposits (wind-blow sand) or fluvial sands (at lower elevations) cover bedrock or Till and may conceal other Pleistocene deposits. Where the corridor crosses the Manchester Ship Canal and where not truncated by industrialisation, organic-rich deposits and buried land surfaces may survive.
- NC4 – high geoarchaeological potential. Tidal Flat deposits comprising intercalated peats, clays, silts and sands are present (in places over 10m thick) and may contain buried land surfaces, artefacts, palaeoenvironmental remains and past sea level index points.
- NC5 – low geoarchaeological potential. The superficial geology is mainly Till with localised alluvium around brooks and tributaries (the most significant is an unnamed tributary of the Penketh Brook between Cuerdley and Penketh).
- WS1 – high geoarchaeological potential. Tidal Flats as per NC3, but less developed (plus les GI) and incorporates a large meander that could either have preserved or scoured out deposits. Evidence for Bronze Age peat and Roman activity (cobbled surface) was found.
- WS2 - low geoarchaeological potential, including glaciofluvial deposits.

6.5.28 **Table 6.2** of the Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) identifies that there is a potential for the presence of deposits of geoarchaeological interest of low to high heritage significance within the North Corridor.

Higher Walton HAGIs

- 6.5.29 There are two options identified for the location of the Higher Walton HAGI: HWH2 and HWH8.
- 6.5.30 The Higher Walton HAGI Option HWH2 is located within an area of reinstated former quarrying. As a result of extensive ground disturbance, the archaeological potential for this area is assessed as negligible.
- 6.5.31 The Higher Walton HAGI Option HW8 is located in arable agricultural fields where the presence of cropmarks thought to represent former field boundaries have been recorded. There is high potential for the survival of former field boundaries within this area which would carry low sensitivity as features of local importance.

Clock Face HAGI

- 6.5.32 This HAGI is located within agricultural land enclosed in the post medieval period. There is high potential for the survival of boundaries dating from the prehistoric through to the post medieval period. Any which are found to be pre-medieval in date would carry medium sensitivity as assets of regional importance.

Identified assets within Draft Order Limits

Site of Knobstick Hall, Sutton Heath Road, Sutton (MME7768)

- 6.5.33 The site of a former historic building, Knobstick Hall (MME7768), located within the Draft Order Limits, was last depicted on the Ordnance Survey map of 1908, and any remains associated with this structure are likely to have been destroyed through the development of a colliery, and subsequently the modern Sutton Heath Road. There is therefore negligible potential for the survival of remains associated with this asset so there is no heritage significance.

Site of Dichefeildes house, Sutton Heath Road, Sutton (MME14832)

- 6.5.34 The site of the former Dichefeildes House is known from historic mapping within the Draft Order Limits. It was last depicted on Greenwood's map of 1818, after which the site of the house surrounded by colliery workings as depicted on Ordnance Survey mapping from 1908; and at some point in the late 20th century extensive groundworks were created on the site. The area in which the structure is recorded is currently under scrub; there is deemed to be negligible potential for the survival of remains associated with this asset so it holds no heritage significance.

Site of houses, Elton Head Road, Sutton (MME20155 and MME20156)

- 6.5.35 Two houses are recorded within the Draft Order Limits on historic mapping and believed to be of 18th century date. They are still present on early 20th century Ordnance Survey mapping; however, by the 1970s both structures had been demolished and replaced by modern development. Due to this there is deemed to be negligible potential for the survival of remains associated with these assets so it holds no heritage significance.

Cropmarks at Elton Head Hall Farm, Sutton

- 6.5.36 A series of buried linear features have been identified as cropmarks on Google Earth imagery within the Draft Order Limits. These do not conform to the field pattern depicted on historic mapping. Fieldwalking within this area has recovered numerous flint artefacts. It is possible that some of the linear cropmarks could relate to prehistoric or Romano-British land-use. There is deemed to be high potential for the survival of former field boundaries and possible prehistoric settlement at this location due to the cropmark evidence and recovery of flints through fieldwalking. Former field boundaries would be of low heritage significance, whilst remains associated with settlement would be of medium heritage significance as an asset of regional historic and archaeological interest.

Possible extraction pits within North Corridor

- 6.5.37 Numerous possible extraction pits have been identified within the Draft Order Limits as low depressions on LiDAR imagery throughout much of the North Corridor (**Figure 6.2**) within agricultural fields. Some of these have been corroborated through recent geophysical survey (GMg_007) (**Appendix 6E**). These cannot be accurately dated and may range from medieval to late post medieval periods. These are considered to be of low heritage significance as assets of local interest.

Possible agricultural features and former field boundaries within North Corridor

- 6.5.38 Remains of former field boundaries have been identified within the Draft Order Limits throughout the North Corridor, as low earthworks on LiDAR imagery (**Figure 6.2**), and as buried features on geophysical survey (AOC_ID: 3; 12) (**Appendix 6E**) and satellite imagery (CPm_13; 113; 300; 310) (**Figure 6.2**). Many of these features correlate to boundaries depicted on historic mapping; however, some do not, and may be representative of earlier phases of land use. If found to be earlier these would hold medium significance as assets of regional interest. Where the boundaries are related to those depicted on historic maps they are deemed to be of low heritage significance as assets of local historic interest.

Location of a brick kiln, School Lane, Rainhill (MME7671)

- 6.5.39 The location of a former brick kiln is recorded on the HER (MME7671) within the Draft Order Limits north of the M62 within a field that is now in agricultural use. No traces of this are now visible, and the record is based on a field name on the Rainhill tithe map of 1843. This potential site is deemed to be of low heritage significance as an asset of local historic interest.

Site of a house, Jubits Lane, Bold (MME20239)

- 6.5.40 The site of a former house of probable 18th century date (MME20239) is known within the Draft Order Limits from the 1908 Ordnance Survey map along Jubits Lane. This was no longer in existence by the 1950s, and no structural remains are now visible at the site, which is now a field that is in agricultural use. Any surviving remains associated with the site of the former house would carry low heritage significance as an asset of local historic interest.

Sub-circular cropmark (CPM_301)

- 6.5.41 This sub-circular cropmark was identified within the Draft Order Limits through analysis of 2009 Google Earth imagery (**Figure 6.2**). The feature cannot be assigned to a specific period or type but has a diameter of approximately 15m which is typical of a late-prehistoric roundhouse. If found to be this, it would represent a rare discovery of a feature of this type within the Draft Order Limits. It would carry medium heritage significance as an asset of regional historic and archaeological interest.

Marsh Farm cropmark enclosure (MCH8824)

- 6.5.42 A cropmark enclosure believed to represent a potential prehistoric settlement is recorded within the Draft Order Limits on the HER within what is currently a golf course. The feature could not be identified on LiDAR data, and the site walkover did not lead to the identification of any above ground remains but it is possible that elements of this feature survive as below ground deposits. Any surviving remains would carry medium heritage significance for regional historic and archaeological interest.

The Manchester Ship Canal (MCH24520)

- 6.5.43 The Manchester Ship Canal traverses the Draft Order Limits. It was built between 1887 and 1894, bisecting a former pattern of enclosed fields depicted on tithe maps from the 19th century. Alongside the canal cut, construction included numerous locks and bridges, including the Acton Grange Viaduct (MCH8891) and the Grade II listed Moore Lane Swing Bridge (NHLE 1135930). It is considered to be of medium heritage significance as an asset of regional historic interest.

Acton Grange Viaduct, Grand Junction Railway (MCH8891)

- 6.5.44 This asset is a high level, skewed steel girder viaduct built across the Manchester Ship Canal in 1893 on the LNWR line to Crewe and GWR/LNWR joint line to Chester. It traverses the Draft Order Limits and remains in use today and is considered to be of low heritage significance as an asset of local historic interest.

Birkenhead and Chester Line (L & NWR/GWR) (MCH19851)

- 6.5.45 Built in 1846 to connect the port of Birkenhead with the city of Chester, the purpose of this railway was to provide access to the manufacturing districts of Lancashire to compete with the Port of Liverpool. It traverses the Draft Order Limits but is considered to be of low heritage significance as an asset of local historic interest.

The Bridgewater Canal - Stretford to Runcorn (MCH21049)

- 6.5.46 The Bridgewater Canal was built between 1759 and 1761 to link the Duke of Bridgewater's collieries at Worsley with Manchester. The canal traverses the Draft Order Limits and remains in use but following the decline in the coal industry it is now mainly used for leisure activities. It is considered to be of medium heritage significance as an asset of regional historic interest.

Roman Road-Chester to Wilderspool (Route 701) (MCH1449)

- 6.5.47 This asset represents the line of possible Roman Road between Chester and Widderspool which partly traverses the Draft Order Limits. The route would have rounded the hills behind Frodsham. It is considered to be of low heritage significance as an asset of local historic interest.

East Corridor and Warburton and Partington Spurs

- 6.5.48 The East Corridor, including the Warburton and Partington Spurs, falls within the NCA of Mersey Valley and the Shropshire, Cheshire and Staffordshire Plain. Land use in this corridor is largely agricultural and interspersed with historic farms dating from around the 18th and 19th centuries. The development of land tenure in the post medieval period is further evidenced in the estates of Arley Hall and Dunham Massey, both of which had connecting villages built for workers of the estates. The pattern of enclosed fields is bisected by historic canals and railways, and by the M6 motorway. Settlements with origins in at least the medieval period are located along the periphery of the Study Area in this corridor, around which the traces of former medieval open fields have been identified within the current pattern. Recorded evidence of prehistoric activity is scarce in this corridor but implied through the scheduled upstanding remains of a round barrow, cropmarks which may relate to late prehistoric or Romano-British fieldscapes, and peat layers within Carrington Moss and Sink Moss which may hold archaeological artefacts and ecofacts.
- 6.5.49 The Archaeological DBA found there to be high potential for:
- prehistoric mortuary remains, which would be of medium or high heritage significance;
 - buried remains of prehistoric or Romano-British activity, which would be of medium heritage significance;
 - the survival of relict field boundaries of probable post medieval date, which would be of low heritage significance; and
 - medieval and post medieval ridge and furrow ridge and furrow, which would be of low heritage significance.

Geoarchaeological potential

- 6.5.50 The Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) states that the East Corridor contains several key geoarchaeological locations with potential for early material remains, wetland archaeology, and significant palaeoenvironmental remains, traversing wetlands and river valleys. Extensive mossland (Stretton Moss, Appleton Moss, Whitely Reed and further east and north east at Sink Moss and Chat Moss) has high geoarchaeological potential to contain evidence of human exploitation and paleoenvironmental remains dating from the beginning of the Holocene (Mesolithic) onwards. Evidence may be preserved of buried landsurfaces, lithic or artefact scatters and archaeological features (such as enclosures) as well as ecofactual remains (such as pollen and plant macrofossils). Geoarchaeological potential is also raised where glaciofluvial sands are cut by alluvium, eg in the River Bollin and several brooks (the Agden, Caldwell, Red, and Sinderland), where peat deposits (developing from the Neolithic) and River Terrace Deposits may contain both artefactual and paleoenvironmental remains. Transect borehole profiles in this corridor are described as follows:

- EC1 – low geoarchaeological potential. Devensian Till, Glaciofluvial sands and bedrock. Some potential where Whiteley Brook alluvium is mapped (between Central Hub and the A49 Tarporley Road).
- EC2 - high geoarchaeological potential. Minerogenic and organic alluvium (peat c1m thick) over till. Extensive mossland (Stretton Moss, Appleton Moss and Whitely Reed. Further east is Sink Moss). Likely damage to palaeoenvironmental preservation due to peat cutting and drainage. Nevertheless, prehistoric to Roman buried land surfaces and lithic/artefact scatters and features (such as enclosures) are likely.
- EC3 – low geoarchaeological potential. Devensian Till, could be considered ecotonal location as it is raised and well-drained.
- EC4 – high geoarchaeological potential. Glaciofluvial deposits with alluvium of the River Bollin, Agden, Caldwell, Red, and Sinderland Brooks (EC4 terminates in the Mersey Valley) as well as River Bollin RTDs.
- WS2 - low geoarchaeological potential, including glaciofluvial deposits.

6.5.51 **Table 6.2** of the Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) identifies that there is a potential for the presence of deposits of geoarchaeological interest of low to high heritage significance within the East Corridor.

East Corridor Block Valve Installation

6.5.52 Sworton Heath Block Valve Installation (BVI) is located between the Central Hub HAGI and the Warburton HAGI. This is located within agricultural land enclosed in the post-medieval period. There is high potential for the buried remains of former boundaries which would carry low heritage significance as assets of local interest.

Warburton HAGI

6.5.53 This HAGI is situated in agricultural land enclosed in the post medieval period. There is medium potential for the buried remains of prehistoric or Romano-British settlement and land-use which would take the form of ditches and pits. These would be of medium heritage significance as assets of regional historic and archaeological interest. There is also high potential for upstanding and buried remains of removed post medieval boundaries which would be of low heritage significance as assets of local historic and archaeological interest.

Partington HAGI

6.5.54 Two options are being considered for HAGI locations at Partington: PH1 and PH2. Partington HAGI option PH1 is located in an area of existing and former gas works. As a result of extensive ground disturbance associated with former industrial use, the archaeological potential for this area is assessed as negligible. Partington HAGI option PH2 is located in enclosed agricultural land which was formerly part of Carrington Moss. Within this HLC area there is high potential for the presence of archaeological artefacts and ecofacts within underlying peat layers. Any remains, which could comprise metallic or ceramic fragments and

preserved seeds, charcoal and bone relating to former activity, would be of variable heritage significance depending on their nature.

Identified assets within Draft Order Limits

Site of Heath Farm (MGM8814)

- 6.5.55 The former Heath Farm (MGM8814), which is located within the Draft Order Limits. The area in which the farm was located is now scrubland with some mature trees, and it is possible that the remains of the farm survive within this area. It is considered to be of low heritage significance as an asset of local historic interest.

Site of Mary Croft (MGM8809)

- 6.5.56 Recorded as the site of a former croft, (a small, rented farm with a small plot of land attached), of which no above ground evidence remains within the Draft Order Limits. It is depicted on tithe mapping but not recorded on maps from 1897 onwards, the asset is considered to be of low heritage significance as an asset of local historic interest.

Possible extraction pits within East Corridor

- 6.5.57 Earthwork remains of former minerals extraction pits have been identified through assessment of LiDAR data (**Figure 6.2**) within the Draft Order Limits. These cannot be accurately dated and may range from medieval to late post medieval periods. These are considered to be of low heritage significance as an asset of local historic interest.

Possible agricultural features and former field boundaries within East Corridor

- 6.5.58 Features representing former field boundaries and drainage ditches have been identified through assessment of LiDAR data (**Figure 6.2**) and through geophysical survey (AOC_ID: 47) (**Appendix 6E**) within the Draft Order Limits. These most likely represent historic land management from medieval to post medieval periods as many relate to features depicted on historic mapping. They are considered to be of low heritage significance as assets of local historic and archaeological interest

The Bridgewater Canal - Stretford to Runcorn (MCH21049)

- 6.5.59 The Bridgewater Canal was built between 1759 and 1761 to link the Duke of Bridgewater's collieries at Worsley with Manchester. The canal traverses the Draft Order Limits and remains in use but following the decline in the coal industry it is now mainly used for leisure activities. It is considered to be of medium heritage significance as an asset of regional historic interest.

Sink Moss (MCH25379)

- 6.5.60 A discrete area of peat deposits is known historically as 'Sink Moss' (MCH25379) and covers an area of approximately 100ha, part of which is located within the Draft Order Limits. The area is bounded to the north, east and south by Moss

Road which defined the limits of the wetlands presumably at the time it was enclosed, as shown on the High Legh tithe map of 1847. With relatively little evidence for modern ground disturbance within this area, it is possible that, should archaeological artefacts and ecofacts be present, they may be well preserved in the peat layers. This asset is considered to be of medium heritage significance as an asset of regional historic and archaeological interest.

King Street Roman Road - Margary Route 70a (MCH8684)

- 6.5.61 This length of former Roman Road which traverses the Draft Order Limits is now on the route of the modern A550. Continued remodelling of the road in the post medieval and modern times may have removed any trace of the original road surface. This is considered to be of medium heritage significance as an asset of regional historic and archaeological interest.

Boundary Stone on north side of Whitleybrook Bridge (Grade II Listed Building, 1329857)

- 6.5.62 This is an early 19th century boundary stone within the Draft Order Limits which is designated as a Grade II listed building (NHLE 1329857). It is a simple rectangular block of pink sandstone which is now worn and partly damaged. The west face reads. “*LOWER WHITLEY Boundary THE NORTH OF THIS BRIDGE*”. As a listed building, this is considered to be of high heritage significance as a designated asset of special historic interest.

South Corridor

- 6.5.63 The South Corridor falls within the Shropshire, Cheshire and Staffordshire Plain NCA. It mostly traverses enclosed agricultural fields interspersed with farms dating to around the 18th and 19th centuries, and historic settlements with origins in at least the medieval period. Concentrations of historic industrial activity can be found south of Moulton in the form of former and current salt works. These are closely tied with the construction of the Trent and Mersey Canal and the Weaver Navigation. Traces of a former medieval landscape can be seen in the presence of historic villages and evidence for associated open fields is located within this corridor. Most of the evidence for prehistoric activity exists in the form of artefacts found by chance, with the exceptions of cropmarks of possible settlement and fieldscapes, which are recorded intermittently along this corridor, and the site of a scheduled Bronze Age round barrow which sits in isolation as a recorded feature of this type, although further possible examples have been identified in the vicinity of this on LiDAR imagery (**Figure 6.2**).
- 6.5.64 There is deemed to be high potential for the survival of:
- prehistoric mortuary remains, which would be of medium heritage significance;
 - relict historic boundaries along the South Corridor, which would be of low heritage significance; and
 - medieval and post medieval ridge and furrow ridge and furrow, which would be of low heritage significance.

- 6.5.65 There is potential for the survival of former activity dating to the prehistoric period. This is considered to be mostly medium except for particularly close to the scheduled barrow at Moulton where the potential is deemed to be high. Archaeological remains of this nature would carry medium to high heritage significance as features of regional to national importance.. There is medium potential for archaeological remains relating to Roman Roads along King Street and close to the modern Chester Road. Archaeological remains of this nature would carry medium heritage significance for regional interest. There is medium potential for the presence of historic extraction pits and small finds which would be of low heritage significance for local interest throughout much of the South Corridor.

Geoarchaeological potential

- 6.5.66 The Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) states that the South Corridor lies mainly on Late Pleistocene (Devensian) deposits. These glaciogenic (fluvial and till) sediments are of low geoarchaeological potential, but potential is higher where the route crosses the Weaver and Pettypool valleys and Holocene alluvium and where River Dane Terrace Deposits are mapped. In addition, near Bryn and Gorstage the landscape position and superficial geology (discrete peat deposits) suggests higher potential for Palaeolithic archaeology and palaeoenvironmental remains. Transect borehole profiles in this corridor are described as follows:
- SC1 – low geoarchaeological potential. Devensian Till and Glaciofluvial sands. Overlooking the Weaver, so perhaps ecotonal zone with prehistoric occupation potential;
 - SC2 – medium geoarchaeological potential. Crosses Weaver floodplain. Holocene alluvium;
 - SC3 – low geoarchaeological potential. Devensian Till and Glaciofluvial sands;
 - SC4 – high geoarchaeological potential. Although mostly on Glaciofluvial deposits (around Bryn and Gorstage), there are pockets of peat (impeded drainage, hollows, potential dead ice features) and may have Palaeolithic archaeological and palaeoenvironmental potential;
 - SC5 – low geoarchaeological potential. Devensian Till, but in an ecotonal zone;
 - SC6 – high geoarchaeological potential. Little data. Holocene alluvium of the Weaver and Pettypool Brook confluence. Peat at floodplain edges raises the potential. Significance may be low;
 - SC7 – low geoarchaeological potential, Devensian Till;
 - SC8 – high geoarchaeological potential. Alluvium and River Terrace Deposits (RTDs) River Dane; and
 - SC9 – low geoarchaeological potential, Devensian Till.

- 6.5.67 **Table 6.2** of the Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) identifies that there is a potential for the presence of deposits of geoarchaeological interest of low to high heritage significance within the South Corridor.

Hartford Block Valve Installation

- 6.5.68 The Hartford BVI is located in an area of former quarrying which is now open ground. The route of a Roman Road traverses this location; however, the archaeological potential at this location is assessed as negligible due to extensive modern ground disturbance.

Hydrogen Storage Facility (HSF) HAGI

- 6.5.69 The HSF HAGI would be located approximately 250m to the east of the A530 in a field currently bounded by hedgerow and mature trees. The route of King Street Roman road (MCH8163) passes on a north to south alignment approximately 200m to the east of the HAGI. There are few other sites currently recorded on the HER in the vicinity, but there is one prehistoric findspot, that of a Bronze Age Palstave (MCH8164) 500m north of the HSF HAGI which may be a stray find. Consequently, the archaeological potential at this location is considered to be low.

Identified assets within Draft Order Limits

King Street Roman Road - Broken Cross to Middlewich section (MCH8163)

- 6.5.70 The route of this Roman Road in the South Corridor follows the modern King Street Road and traverses the Draft Order Limits. The Roman Road links Roman settlements at Middlewich in the south with Wilderspool in the north. It is unclear whether archaeological remains relating to the Roman Road survive beneath the modern road; however, it is likely that related archaeological deposits will survive either side of it. Any surviving remains would carry medium heritage significance as assets of regional interest.

Roman Road - Cotebrook to Cuddington (MCH8023)

- 6.5.71 The conjectural route of this Roman Road in the South Corridor follows does not follow any existing key routes. It is unclear whether any archaeological remains relating to the Roman Road actually are present as no previous fieldwork has validated the record. Analysis of LiDAR data and satellite imagery did not lead to the identification of features associated with this asset; however, it is likely that related archaeological remains will survive as buried deposits. Any surviving remains if present would, however, carry medium heritage significance as assets of regional interest.

Whatcroft Hall Park (MCH24377)

- 6.5.72 Whatcroft Hall Park (MCH24377) is a non-designated late 18th century or early 19th century landscape park. This area of parkland, which partially intersects the Draft Order Limits, surrounds the Grade II* listed Whatcroft Hall. It contains a number of elements of heritage interest, including gardens, a walled garden, an ornamental pond and a possible former moat which has been incorporated into the ornamental parkland. The park carries medium heritage significance as an asset of regional historic interest.

Possible extraction pits within South Corridor

- 6.5.73 Earthwork remains of possible former minerals extraction pits have been identified through assessment of LiDAR data (**Figure 6.2**) and geophysical survey (**Appendix 6E**, GMg_020) within the Draft Order Limits. These cannot be accurately dated and may range from medieval to late post medieval periods. These are considered to be of low heritage significance as an asset of local historic interest

Possible agricultural features and former field boundaries within South Corridor

- 6.5.74 Possible former field boundaries and marl extraction pits have been identified through assessment of LiDAR data (**Figure 6.2**) and through geophysical survey (**Appendix 6E**) within the Draft Order Limits. Site visits confirmed these now appear to be degraded and are within a nature reserve and arable field. These are considered to be of low heritage significance as an asset of local historic interest.

Fishpond at Earnslow Grange (MCH24506)

- 6.5.75 A possible medieval fishpond was identified as a cropmark and is recorded on the HER (MCH24506) within the Draft Order Limits. It was interpreted to have a possible association with the adjacent monastic grange of Earnslow (MCH8140), which is outside of the Draft Order Limits. The possible fishpond is also shown on historic Ordnance Survey mapping. It is now wholly infilled with no surface evidence and within a field which is in agricultural use. The asset is considered to be of low heritage significance as an asset of local historic and archaeological interest.

Roman Road - Chester to Manchester (Route 7a) (MCH7861)

- 6.5.76 The route of this former Roman Road is partly located within an area of former quarrying and traverses the Draft Order Limits. The full extent of this quarrying cannot be defined through reviews of historic mapping and aerial imagery, so it is unclear how much of the road potentially survives. No traces were identified on LiDAR or satellite imagery. Consequently, there is low potential for the survival of any remains relating to the Road. Any surviving remains are deemed to carry medium heritage significance as assets of regional interest.

Manchester to Chester Line (CLC) (MCH19853)

- 6.5.77 The Manchester to Chester railway line (MCH19853) traverses the Draft Order Limits. It was built in the late 19th century and continues to be in use. It carries low heritage significance as an asset of local historic interest.

Embankment west of Weaverham, Grand Junction Railway (MCH8314)

- 6.5.78 This asset represents a railway embankment within the Draft Order Limits built for the Grand Junction Railway in 1837 and remains in use today. It is of low heritage significance as an asset of local historic interest.

Linear Earthworks or Cropmarks (MCH11090)

- 6.5.79 Recorded on the HER as a group of former field boundaries situated to the west of Acton Bridge, within the Draft Order Limits. These assets have been identified either as extant low earthworks or as cropmarks. Some of these correspond to boundaries shown on Ordnance Survey mapping from the 19th century and so appear to be postmedieval field boundaries. Any surviving remains related to this are deemed to be of low significance as assets of local historic and archaeological interest.

Enclosure and trackways near Bartington Hall (MCH24437 and MCH24428)

- 6.5.80 A possible prehistoric or Romano-British settlement enclosure (MCH24437) and associated trackway (MCH24428) have been identified in the form of cropmarks and are recorded on the HER within the Draft Order Limits. If found to be of this date, which is the assumed worst-case scenario, any surviving remains would be of medium heritage significance as assets of regional historic and archaeological interest.

Heritage assets subject to potential effects to setting*West Corridor and Runcorn/Rocksavage Spur**Thornton-le-Moors Conservation Area and associated listed buildings*

- 6.5.81 **Asset** - Thornton-le-Moors is a historic settlement and conservation area with origins in at least the medieval period, recorded as a township in Thornton Parish, Eddisbury Hundred in the Domesday survey of 1086. It is located approximately 220m west of the Draft Order Limits. The village comprises an historic two-row settlement in the south which contains the Grade II listed Yew Tree House (NHLE 1130651) and Church House Farmhouse (NHLE 1330240). The Grade I listed Church of St Mary (NHLE 1330242) and the historic farmsteads (Church Farmhouse NHLE 1330241, Thornton Hall NHLE 1130653, Barn to northeast of Thornton Hall NHLE 1130654, Glebe Farmhouse NHLE 1130652) occupying the northern portion. A village green also occupies the northern portion of the village, providing a central around which the village is situated. Modern extensions to the village are located to the south, beyond the conservation area boundary.

- 6.5.82 Aside from the 14th century Church of St Mary, the listed buildings within the conservation area are Grade II listed and date to the 17th and 18th centuries, representing good examples of farmhouses dating to this period in the region. Other listed buildings within the conservation area are a boundary wall (NHLE 1130655) and tomb (NHLE 1145887), both Grade II listed, related to the Church of St Mary.
- Church of St Mary Grade I (LB 1330242);
 - Church farmhouse including cottage wing to west Grade II (LB 1330241);
 - Table Tomb to John Davies Of Dunham, South East of Church of St Mary Grade II (LB 1145887);
 - Retaining wall bounding churchyard of St Mary's church on west, south and half on east side including gate piers at south west corner Grade II (LB 1130655);
 - Glebe Farmhouse Grade II (LB 1130652);
 - Church House Farmhouse including Shippon abutting on north Grade II (LB 1330240);
 - Yew Tree House Grade II (LB 1130651);
 - Thornton Hall Grade II (LB 1130653); and
 - Barn to north east of Thornton Hall Grade II (LB 1130654).
- 6.5.83 **Setting** - The immediate setting of these assets is the village unit itself, with views focusing inwards to the village and from which the historic and architectural value of the assets can be best appreciated. The village is surrounded to the east, south and west by irregular enclosed fields, and to the north by the modern A5117 road and the nearby large chemical plant. Close views within the village do include a tall chimney from the nearby chemical plant, and road noise from the A5117 also forms part of the setting.
- 6.5.84 **Contribution of setting** - The immediate setting of the village and the historic buildings contained within contribute to the architectural and historic value of the assets by providing a context in which these structures are experienced both individually and collectively, and when viewed together, enable an understanding how an historic settlement develops over time. Views from the village provide a more limited contribution to the historic value of the assets individually, but when taken together, the agricultural surroundings provide a context in which the village has operated and developed within over time. These assets, both individually and collectively, are best experienced in close views and does not depend on any distant visibility.

Moated site, fishpond and connecting channel, Elton (Scheduled Monument, SM1012122)

- 6.5.85 **Asset** - This monument comprises upstanding earthworks relating to a medieval moated site comprising a causeway and outer banks with an adjoining fishpond and connecting channel. The western arm is marshy, and extends to the fishpond, whereas elsewhere the ditches are dry.³⁸ A site visit and analysis of LiDAR LRM imagery has revealed further earthworks extending east from the scheduled area. These comprise a rectangular enclosure which probably acted as an additional outer moat or ditch as part of the earthworks associated with the moat, which are commonly known to possess multiple enclosures.³⁹ Most moated sites were constructed between the mid-13th and mid-14th centuries and are generally believed to be prestigious residences of the Lords of the manor. No trace of any buildings which would have stood in the island surrounded by the ditch survive above ground, but it is likely that buried deposits survive which may comprise building foundations or post holes and pits. It is also likely that waterlogged deposits survive within the marshy areas of the asset.
- 6.5.86 **Setting** - The monument is located within a low-lying area close to the mudflats of the River Mersey, in agricultural fields characterised as ancient field systems in the HLC (HCH4153). These are likely the result of piecemeal enclosure of former medieval open fields between the historic settlements of Elton to the north and Thornton-le-Moors to the west. The current setting of the asset is within this agricultural context, but the nearby industrial sprawl which includes numerous tall chimneys to the northwest at Ellesmere Port and the urban expansion of Elton, along with the presence of the A5117 road in-between, compromise the historic setting of the asset in views in these directions. Longer views to the south look onto agricultural fields which are punctuated by the M56 motorway 470m to the south.
- 6.5.87 **Contribution of setting** - The current setting of the moated site makes a limited contribution to its historical and archaeological value by providing a context in which it can be experienced and understood. The moated site would have been a highly visible feature in a low-lying landscape, which along with the nearby villages of Elton and Thornton-le-Moors, would have punctuated a largely agricultural setting. The agricultural setting to the south allows the moated site to be understood in a context similar to that in which it was established.

Frodsham Bridge (Grade II Listed Building, 1261905)

- 6.5.88 **Asset** – This road bridge, built in 1850, spans the River Weaver. It is built of red sandstone and limestone, with rusticated detailing, and comprises 3 deep segmental arches with slightly projecting rectangular piers.

³⁸ [Moated site, fishpond and connecting channel, Elton, Elton - 1012122 | Historic England](#) (Accessed September 2024)

³⁹ Aberg, A. (1978) *Medieval Moated Sites*, CBA Research Report 17. Available online: https://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-281-1/dissemination/pdf/cba_rr_017.pdf (Accessed September 2024)

- 6.5.89 **Setting** - The immediate setting of the bridge is the River Weaver, which runs beneath and is still in use for navigation. Its setting to the east is of agricultural fields characterised by irregular enclosures bounded by hedgerows, while to the west the setting is characterised by urban and industrial area, filtered through riverside trees and to the Frodsham Viaduct.
- 6.5.90 **Contribution of setting** - The immediate setting of the bridge contributes to the architectural and historical value by providing a context in which the asset can be experienced and understood. Both the architectural and historic interests of the asset are best experienced in close views focusing on the River Weaver and do not depend on any distant visibility beyond these parameters

Frodsham Viaduct Number 53 (Grade II Listed Building, 1253269)

- 6.5.91 **Asset** – This listed railway viaduct spans the River Weaver. It was built between 1848 and 1850 of red sandstone, brick and cast iron and spans a total of approximately 30m. It has two round arches on the west bank, and 21 on the east bank. The piers supporting the iron spans are rusticated tooled ashlar while the remaining spans have rusticated voussoirs. There are pier faces and quoins and rock-faced spandrels and brick reveals. The iron-span piers have cornice detailing, with plainer imposts to others. The top of the central pier over the river has been modified to take a mid 20th century concrete track bed.
- 6.5.92 **Setting** - The immediate setting of the railway viaduct is the River Weaver which it spans. The northeastern length of the viaduct is bounded to the south by low level industrial buildings and to the north by open scrubland. The southeastern part of the viaduct is bounded by residential development with blocks of riverside trees and vegetation. Views south along the river are to Frodsham Bridge.
- 6.5.93 **Contribution of setting** – The River Weaver provides the principal setting contributing to the heritage significance of the asset, as it defines the purpose of the structure. The wider setting of the bridge contributes to the architectural and historical value by providing a context in which the asset can be experienced and understood. Both the architectural and historic interests of the asset is best experienced in close views focusing on the River Weaver and does not depend on any distant visibility beyond these parameters.

Sutton Hall (Grade I Listed Building, 1253572) and associated feeding trough and barn (Grade II Listed Buildings, 1253612, 1261738)

- 6.5.94 **Asset** - These three listed buildings are focused on the Grade I listed Sutton Hall, a late 15th century hall which is now a farmhouse. The earliest part of the building contains late medieval oak framed great halls cased in brown brick, features which define the hall as one of the most important and least known late medieval timber-framed houses in Cheshire.⁴⁰ A further wing was added in the 17th century, along with the construction of the Grade II listed barn. The Grade II listed circular feeding trough dates to the 19th century. This is made from a single stone and measures around 2m in diameter. The barn is a two-storey structure with an attic. It has been converted into residential properties.

⁴⁰ De Figueiredo. P. (1988) *Cheshire Country Houses*, Phillimore. Pp. 274-275.

- 6.5.95 **Setting** - The asset group is contained within a farm complex set among agricultural land characterised by large, enclosed fields bounded by hedgerows which currently surround it to the north, south and east. To the west is a golf course. Close views of the assets are restricted to within the farm complex, while longer views are framed and partially screened by a tree lined driveway or avenue. Other long views of and from the asset group towards the west include Frodsham windfarm and the industrial landscape of Ellesmere Port amongst the wide vista.
- 6.5.96 **Contribution of setting** - The immediate rural and agricultural surroundings contribute to the historical and architectural interests of the asset group by providing a context for a historic hall and farmstead. Their setting in a rural context enables the assets to be understood both individually and collectively, facilitating an understanding of how the site and assets have developed over time.

Dutton Lodge Farmhouse (Grade II Listed Building, 1139142) and associated Cottage, Lodge Lane (locally listed MCH17234) and Dutton Park (DCH10136) and non-listed farmhouse (MCH7943)

- 6.5.97 **Asset** - This asset group comprises historic farmhouses within Dutton Park. All date to the 18th century and contain later extensions and represent high-quality examples of regionally distinctive farmhouse buildings which contribute to the historical development within the area.
- 6.5.98 **Setting** - These farmhouses are located within largely agricultural land characterised by a mix of ancient irregular piecemeal enclosures punctuated by areas of ancient and modern woodland. The areas of woodland in the vicinity of the assets enable only close views of the assets and restricts longer views from the assets.
- 6.5.99 **Contribution of setting** - The immediate settings of these assets contributes to their architectural value by providing a context in which the structures are experienced, while making a limited contribution to historic interest by enabling them to be understood in a rural context which allows the functional and historic relationship between some of the associated structures to be appreciated. The architectural value these structures contain is best experienced in close views and does not depend on any distant visibility.

Trent and Mersey Canal Bridge number 211 (Grade II Listed Building, 1139147)

- 6.5.100 **Asset** - This Grade II listed building is a well-preserved example of regionally distinctive canal bridge. It was built in 1777 in brown brick and render painted white. It remains accessible as part of a trackway and public right of way.
- 6.5.101 **Setting** - The immediate setting of the bridge is the Trent and Mersey Canal, which runs beneath and is still in use for barges. Its wider setting is of agricultural fields characterised by irregular enclosures bounded by hedgerows, some of which were probably already established when the bridge was first in operation.

- 6.5.102 **Contribution of setting** - The immediate setting of the bridge contributes to the architectural and historical value by providing a context in which the asset can be experienced and understood. Both the architectural and historic interests of the asset are best experienced in close views focusing on the line of the canal and does not depend on any distant visibility beyond these parameters.

Weaver Navigation, historic waterway and associated structures.

- 6.5.103 **Asset** - The River Weaver Canal, also known as the Weaver Navigation, was introduced as an idea to maintain the River Weaver as a navigation from Frodsham to Winsford, and an act of Parliament was obtained in 1721 to undertake the works. The River Weaver became fully navigable for 40-ton barges by 1732. The Weaver Navigation prospered through the 19th century, being deepened and widened alongside the construction of the docks at Weston Point in 1806. The Weaver Navigation was mainly used to transport salt, and later, chemicals from the growing industries around Northwich.⁴¹ Numerous heritage assets are associated with the Weaver Navigation, including Grade II listed buildings Viaduct over Weaver Navigation, Number 54 (NHLE 1391821), constructed in 1848 as a segmental-arched cast iron span of 25 metres with a lower round brick arch to each side surmounted by doubly-recessed rectangular panel, Boatman's Shelter on East Bank of Weaver Navigation, Chester Road (NHLE 1261700), a now-disused single-storey mid-19th century structure with a slate pyramidal roof; and Frodsham Weir with Sluice Gates (NHLE 1253445), a 45m wide coursed stone built structure providing the outfall from the Weaver Navigation to the River Weaver; and the locally listed A56 Swing Bridge (DCH10616), constructed in 1926 and still in use today to carry road traffic along the A56. These assets are located within 30m of the Draft Order Limits.
- 6.5.104 **Setting** - The immediate setting of these assets is the Weaver Navigation itself. The wider setting of the assets is a mix of agricultural land comprising historic field divisions, and large-scale industrial activity which continues to develop along the banks of the Weaver Navigation.
- 6.5.105 **Contribution of setting** - The immediate setting of the Weaver Navigation contributes to the historic and architectural value of the assets, by providing the context in which the structures can be experienced and understood both individually and collectively. The Weaver Navigation is intrinsic to the historic and architectural value of the assets, being the reason for which they were built and used. The wider setting provides a more limited contribution to the assets individually and collectively as a developing historic landscape into which the Weaver Navigation and associated structures were inserted in the 18th century.

⁴¹ Atterbury, P., and Darwin, A (1983) Ordnance Survey Guide to the Waterways: North, Part 3, London: OS-Nicholson. Pp. 150-151.

*North Corridor and Warrington and St Helens Spurs**St Anne's Well, near Rainhill (Scheduled Monument, 1019449)*

- 6.5.106 **Asset** - St Ann's Well survives as a well-preserved example of a shallow square basin with steps leading down to the water. It is located approximately 40m south of the Draft Order Limits. Holy wells are water sources with specifically Christian associations. The well is currently waterlogged following a period where it was infilled to deter vandals. There was a carved stone basin and stone conduit on the north side which took water from the overflow of the well, but these features are no longer evident. It was believed to have been associated with a burial ground which was destroyed in the 19th century; however, the exact whereabouts and nature of its destruction are unknown.
- 6.5.107 **Setting** - The setting of St Anne's Well is currently agricultural land characterised by a large, enclosed field bounded by hedgerows. A stream runs northwest to southeast around 10m southwest of the well, behind which is an open area of playing fields. Beyond this area is the modern expansion of Rainhill.
- 6.5.108 **Contribution of setting** - The setting of St Anne's Well makes a limited contribution to its historical and archaeological interests by providing a context in which the asset can be understood in a largely rural immediate setting, which although much altered since the medieval period is partially reflective of the historic landscape context in which it was established.

Roman settlement at Wilderspool (Scheduled Monument, 1006769)

- 6.5.109 **Asset** - The scheduled remains of a Roman settlement at Wilderspool, approximately 220m south of the Draft Order Limits, are largely known through archaeological excavations from the late 18th century. These have revealed a Roman period civil settlement housing a large community engaged in industrial activity, with its location closely associated to the fording of the River Mersey in this area.⁴² Excavations have mainly preceded impending development, including the Manchester Ship Canal and Greenhall's Brewery. The extent of potential remains extends beyond the scheduled area to the north, east and west: this is demarcated as part of an Archaeological Notification Area (ANA) (DCH12614).
- 6.5.110 **Setting** - The scheduled area currently lies beneath a supermarket and car park. Other areas associated with the settlement extend into the Latchford-Greenhall's Brewery Conservation Area.
- 6.5.111 **Contribution of setting** - The setting of the scheduled monument makes very little contribution to the archaeological interest of the asset, as the context it provides is completely removed from that in which the settlement was part of.

⁴² Chester Historic Towns Survey: Warrington (2003)

http://www.cheshirearchaeology.org.uk/wp-content/uploads/2013/06/HTS_Arch_Assess_Warrington.pdf (Accessed September 2024)

Micklehead Green Moated Site (Scheduled Monument, 1012329)

- 6.5.112 **Asset** - Micklehead Green Moated Site comprises the earthworks of a moat on the north, west and south sides which are currently water-filled. It is located immediately adjacent to the Draft Order Limits. The island surrounded by the moat was in occupied use until the 1960s as the site of St Michael's House (MME7933), a 17th century manor house which was demolished in 1961.⁴³ The footings of the house and its surrounding ornamental wall survive within the wooded area. Archaeological excavations undertaken in the 1980s and 1990s suggested that the moat may have been a post medieval construction⁴⁴ which would suggest it and the house may be contemporary, however this would be a surprising development given the consensus on the dating of moated sites which are known to typically date to between the 13th and 14th centuries. The construction of St Michael's House will have significantly impacted any remains of underlying medieval buildings in this particular area; however, the northern portion of the monument does not appear to have been built upon according to historic Ordnance Survey mapping, thus medieval remains may survive as below ground deposits here. The waterlogged nature of the moat poses the possibility of waterlogged deposits being present in these contexts.
- 6.5.113 **Setting** - The monument is currently surrounded by commercial and urban development south of St Helens and the modern settlement of Sutton Manor. The trees which now cover this area are largely the result of the site's disuse since the mid-20th century. As a high-status dwelling, the moated site would have been a conspicuous feature in the medieval landscape, providing a focal point around which the surrounding area was governed by the lord of the manor. The moat is now largely covered in trees which restricts views from the island within which would have contained the manor house.
- 6.5.114 **Contribution of setting** - The current industrialised and urban setting of the moated site provides a very little contribution to the historical or archaeological interests of the asset, as this context is almost completely removed from that in which the monument was initially established.

Heavy Anti-aircraft gunsite, near Cuerdley (Scheduled Monument, 1019531)

- 6.5.115 **Asset** - The Heavy Anti-aircraft gunsite 380m east of South Lane Farm consists of standing, earthwork and buried remains of most of a World War II Heavy Anti-aircraft (HAA) gunsite known as Station H17 and Barrows Green gunsite in military records. The site is located 130m south of the Draft Order Limits and includes the functional core of the gunsite with a command post, radar platform, four gun emplacements, a generator building and ancillary buildings situated 380m east of South Lane Farm. A fifth gun emplacement and ancillary buildings have been removed in recent years in preparation for the construction of a second agricultural building on the southern half of the original site. The site was commissioned by

⁴³ Wainwright, S. (2020) 'An Illustrated History of Old Sutton in St Helens, Lancashire'. Available online: https://www.suttonbeauty.org.uk/suttonhistory/sutton_halls_houses/ (Accessed September 2024).

⁴⁴ Lewis, J.M. (1991) 'Medieval Landscapes and Estates', Merseyside Archaeological Society Journal, 7. Pp. 87-103.

February 1940 and manned by units of the Royal Artillery. Analysis of historic aerial photographs and historic mapping have shown that the original layout of the site extended north and east of the scheduled area.

- 6.5.116 **Setting** - The setting of this monument is largely agricultural, characterised by large, enclosed fields bounded by hedgerows. Although some boundary loss has occurred in the modern period, the current immediate setting is very similar to that of the 1940s. A significant change to the historic setting of the monument is the presence of a modern residence immediately southeast, on land which was part of the site as shown on historic mapping. The gunsite was strategically placed to provide long views in multiple directions mainly of the sky, but also likely towards the nearby industrial towns of Warrington to the southeast and St Helen's to the northwest.
- 6.5.117 **Contribution of setting** - The setting of the monument makes some contribution to the architectural, historical, and archaeological interests of the asset by providing a general landscape context in which it can be experienced and understood. The setting of the monument in open agricultural land between the industrial towns of Warrington and St Helen's allows the historical interest of the site to be understood as a strategic location.

Manchester Ship Canal (MCH24520)

- 6.5.118 **Asset** - Built between 1887 and 1894, the Manchester Ship Canal bisected a pattern of enclosed fields depicted on tithe maps from the 19th century. The canal traverses the Draft Order Limits. Alongside the canal cut, construction included numerous locks and bridges, including the Acton Grange Viaduct (MCH8891) and the Grade II listed Moore Lane Swing Bridge (NHLE 1135930). The construction of the canal enabled sea-going vessels to access new docks at Salford from Eastham in the west (Ashmore 1982: 21). On completion it was the largest river navigation in the world.
- 6.5.119 **Setting** - The current setting of the Manchester Ship canal is a mix of historic and modern industrial development which owe their location to the presence of the canal.
- 6.5.120 **Contribution of setting** - The setting of the Manchester Ship Canal contributes to its historical and architectural interests by providing a context in which it can be experienced and understood. The mix of historic and modern industry along its length forms the context in which the historic development of the canal can be understood.

Moore Lane Bridge (Grade II Listed Buildings, 1135930, 1330358)

- 6.5.121 **Asset** -. Built in 1894, this steel segmental arched swing bridge spans the Manchester Ship Canal. It has a lattice parapet, built-up stanchions, cross-bracing and bracing across carriageway at high level. The bridge is operated from the north bank by means of hydraulic power.

- 6.5.122 **Setting** -. The overarching setting is derived from the straight and wide canal extending into the distance from both sides of the bridge. Dense tree and scrub growth long the canals banks limit any views beyond the canal. Immediately adjacent to the bridge on the northern bank is the hydraulic pumping station and control building built of red brick.
- 6.5.123 **Contribution of setting** – The Manchester Ship Canal provides a dominant and essential setting, contributing to the overall heritage significance of the asset. This setting provides the reason for the bridge's existence. Both the architectural and historic interests of the asset is best experienced in close views focusing on the line of the canal and does not depend on any distant visibility beyond these parameters.

East Corridor and Warburton and Partington Spurs

Dunham Massey Registered Park and Garden (Grade II Registered Park and Garden 1000853)*

- 6.5.124 **Asset-** Dunham Massey is a walled deer park landscaped with avenues, water features and Listed buildings of the late 17th to mid 18th centuries, and gardens which retain 18th and 19th century features. The park is focused on the Grade I listed Dunham Massey Hall (1356512). There are extensive areas of parkland featuring woodland and long avenues located to the south and east of the Hall. However, this description focuses on the western edge of the parkland and interactions with the former estate village of Dunham Woodhouses (described below) in order to identify elements that are relevant to the assessment.
- 6.5.125 There are gardens located to the north of Dunham Massey Hall, featuring sides of a former moat to the north and west of the hall, which have been widened out to form an L-shaped lake. On the edge of the lake and aligned with the hall are 2 stone piers (Grade II listed building 1356473) which frame a view along an avenue which extend beyond the park boundary to Obelisk in Whiteoaks Wood (Grade II listed building 1067939), which is located to act as a focus of the view along the avenue.
- 6.5.126 Other land within the north and western part of the registered park and garden is generally wooded (the avenue cuts through this woodland), which include a low mound planted with trees. The list entry describes this as a possible former castle motte, which was later used as a park feature with a 17th century illustration showing it topped by a gazebo. Modern visitor facilities are also located within the north and western part of the parkland and this includes a visitor's vehicular entrance from Woodhouse Lane to the north an extensive area of car parking located within the woodland.
- 6.5.127 **Setting-** The parkland provided the designed setting focused on the principal historic listed buildings within, in particular the Grade I listed Dunham Massey Hall. The parkland is enclosed within a brick wall alongside Woodhouse Lane which creates a clear visual division between the park and the surrounding agricultural, though Woodhouse Lane leads directly to the associated former estate village of Dunham Woodhouses. The view along the avenue to the listed obelisk is a clear design feature to incorporate a view extending to outside of the park boundary,

though this is terminated by the mature woodland block in which the obelisk is located. The surrounding agricultural land comprises enclosed fields marked by hedgerows, woodland blocks and the River Bolin to the west and Bridgewater Canal to the north.

- 6.5.128 **Contribution of Setting-** The setting of Dunham Massey contributes to its historical and architectural interests by providing a context in which it can be experienced and understood. The presence of associated historic structures compliments the ornamentality of the park's layout, providing a context in which both structures and the park can be understood and experienced individually and as a collective.

Dunham Woodhouses Conservation Area and associated listed buildings

- 6.5.129 **Asset** - Dunham Woodhouses is an estate village built to house workers on the nearby Dunham Massey Estate. The buildings within the conservation area, of which most are vernacular cottages, small in scale and generally detached or semi-detached.⁴⁵ These include the Grade II listed Orchard View (NHLE 1099165) and Willow Cottage (NHLE 1121939), both of which are late 18th century brick cottages. Other structures within the conservation area are larger village farmhouses such as:

- Grade II Manor Farmhouse (NHLE 1337640), mid 18th century brick farmhouse with forecourt railings and gates;
- The Village Farmhouse including gatepiers (NHLE 1337667), mid 18th century brick farmhouse with rusticated gatepiers and elaborate urns;
- Greenbank (NHLE 1067940), late 18th century brick farmhouse, converted to two houses;
- and
- The Hollies (NHLE 1067912), early 19th century brick farmhouse.

- 6.5.130 These structures taken together are high quality examples of estate village buildings dating from the 18th and 19th centuries in the region and carry high heritage significance for architectural interest. Other buildings with the conservation area are locally recognised, comprising Yewtree Farm (MGM8837) and Ash Farm (MGM8841). These buildings are good examples of farmhouses dating to the 18th century in the region and carry low heritage significance for architectural interest.

- 6.5.131 The historic core of the estate village is located around the junction of Woodhouse Lane and Station Road, where the majority of the listed buildings are located. It also extends along Station Road to the north, as far as the northern end of Station Road. It is notable that this is the furthest point of the conservation area from the

⁴⁵ Dunham Massey Conservation Area Management Plan (2016):

<https://www.trafford.gov.uk/planning/strategic-planning/docs/June2016ConsultationDocuments/caa-camp-dunham-woodhouses-june-2016.pdf> (Accessed September 2024)

core of the historic estate village and contains no listed or locally listed buildings, and so may be regarded as the least sensitive part of the conservation area.

- 6.5.132 **Setting** - The immediate setting of these assets is the linear village itself, within which key views are close and inward looking along Woodhouse Lane and Station Road. The wider setting of the conservation area and associated assets is largely agricultural, characterised by large, enclosed fields bounded by hedgerows. The Dunham Massey Conservation Area Management Plan (2016) identify key views along Woodhouse Lane in both directions and north along Station Road toward the Rope and Anchor public house. Outward views from within the conservation area are generally restricted by hedgerows and mature trees, except looking west from along Station Road from where there is a more open view, featuring an overhead electricity line approximately 400m to the west.
- 6.5.133 **Contribution of setting** - The setting of Dunham Woodhouses contributes to the architectural and historical value of the assets by providing the rural village context in which they can be experienced and understood both individually and collectively. The architectural value these buildings contain is best experienced in close views and do not depend on any distant visibility.

Non-designated heritage assets at Dunham Massey

- 6.5.134 **Asset** - A number of non-designated farms are located around the hamlet of Dunham Massey. These are located along the B5160 road and Carr Green Lane, and comprise:
- Boxedge Farm (MGM8744);
 - Barnslane Farm (MGM8838);
 - Gate House Farm (MGM8745);
 - Holly Cottage (MGM8743);
 - Hemp Croft (MGM8747);
 - Bridge Farm (MGM8748);
 - Carr Green Farm (MGM8750); and
 - Higher Carr Green Farm (MGM8746).
- 6.5.135 These brick-built structures, all of which date to between the 18th and 19th centuries, are good examples of farmhouses dating to this period in the region which carry low heritage significance for architectural and historic interest.
- 6.5.136 **Setting** - The immediate setting of these farmhouses is largely agricultural, characterised by large, enclosed fields bounded by hedgerows. This pattern of fields is broken by a substation which is well screened on all sides by mature planting. All assets face the roads upon which they are situated, which are lined by high hedgerows. This restricts longer views into the wider landscape.
- 6.5.137 **Contribution of setting** - The rural setting of these assets makes a limited contribution to their architectural interest by providing a context in which they can be experienced and understood. Taken together, the setting provides the rural

context in which the development of farms in the post-medieval period in conjunction with the enclosure of former open fields can be understood.

Bowl barrow 120m east of Village Lane (Scheduled Monument, 1011166)

- 6.5.138 **Asset** - This scheduled bowl barrow survives as a slightly oval earthen mound around 0.6m high. The monument has been spread by later ploughing, which may account for the recovery of flint artefacts and fragments of bone through fieldwalking in the vicinity. Google Earth imagery shows the cropmarks of a ring ditch surrounding the upstanding mound, along with what looks like an insertion in the summit, the cross-shape of which suggests could possibly represent a former, unrecorded excavation of the monument.
- 6.5.139 **Setting** - The bowl barrow is currently within agricultural land which is currently under pasture but is also regularly in use as arable. It is located on flat land at the top of a low hill upon which the nearby village of Higher Whitley is also situated. south. Due to its prominent position, the monument may have formed a highly visible feature in the prehistoric landscape and may have been a focal point for local communities. Longer views from the monument to the south, west and east extend across enclosed fields, with elements of the nearby village of Lower Whitley present in views to the south. Views to the north are currently screened by trees and hedges along a nearby field boundary.
- 6.5.140 **Contribution of setting** - The setting of this monument contributes to the historical and archaeological value of the asset by providing a general landscape context in which it can be experienced and understood. Although much changed from its original context, the rural and largely undeveloped setting to the east, south and west allows the monument to be understood within what would have been a prominent and visible position in the prehistoric landscape.

Boundary Stone on north side of Whitleybrook Bridge (Grade II Listed Building, 1329857)

- 6.5.141 **Asset** – An early 19th century boundary stone. A simple rectangular block of pink sandstone which is now worn and partly damaged. The west face reads. “*LOWER WHITLEY Boundary THE NORTH OF THIS BRIDGE*”
- 6.5.142 **Setting** – The boundary stone is adjacent to a small bridge at the junction of a field hedgerow and a roadside hedge off the east side of the A49. The setting is that open large scale agricultural fields, enclosed by hedgerows, set against the backdrop of the road.
- 6.5.143 **Contribution of setting** – As a boundary stone, the location of the stone on the historic parish boundary of Lower Whitley, which at this point is marked by the watercourse crossed by Whitleybrook Bridge, is clearly of primary importance in understanding its significance. Its roadside location is also relevant, as it would have been located to be visible to travellers along the road, though the status of the A49 as a busy main road clearly detracts from this. The open agricultural setting also contributes somewhat to the assets heritage significance by providing the context in which the boundary stones purpose can be understood.

South Corridor

Drakelow Hall moated site (Scheduled monument, 1020100)

- 6.5.144 **Asset** - Drakelow Hall moated site is a scheduled monument which also includes fishponds dating to the medieval period. The monument is relatively well preserved, comprising a rectangular moated enclosure comprising a grass covered island approximately 55m square and adjacent fishponds. On the surface of the island are faint traces of ridge and furrow ploughing. The moat is around 5m wide and 1.7m deep and waterlogged for most of its circumference. An outer bank is located adjacent to the northwest and southwest arms of the moat. Northwest of the moat are a series of fishponds connected by a now-dry channel, with further fishponds situated to the west and northeast. The site was an important Royal demesne manor and sanctuary and was mentioned in a letter of 1355 to the Justiciar of Chester.⁴⁶ Most moats were constructed between 1250-1350 and are generally seen as an indication of the prestigious residences of the Lords of the manor. The moat in such circumstances marked the high status of the owner, but also served to deter casual raiders and wild animals.
- 6.5.145 **Setting** - The setting of the monument is largely agricultural and pastoral, surrounded by enclosed fields bounded by hedgerows. These enclosures are largely the result of piecemeal enclosure which occurred throughout the late medieval and post medieval periods, so it is possible that elements of the current setting are contemporary with the construction and use of the moated site. The locally listed Drakelow Hall (DCH9964) and associated farm buildings are located around 60m north of the monument. In addition, elements associated with Stublach Gas Storage Plant comprising rectangular concrete compounds with a perimeter of around 200 square metres are located close to the monument, however the components within each compound are do not clear the hedge lines in height and cannot be seen as visible elements in the landscape.
- 6.5.146 As a high-status dwelling, the moated site would have been a conspicuous feature in the medieval landscape, providing a focal point around which the surrounding area was governed by the lord of the manor. The moat is now largely covered in trees which restricts views from the island within which would have contained the manor house.
- 6.5.147 **Contribution of setting** - The setting of Drakelow Hall moated site contributes to the historical and archaeological value of the monument by providing a context in which it can be experienced and understood. The relative lack of modern development in the immediate vicinity, coupled with the largely rural landscape context allow the monument to be appreciated in a context similar to that in which it was first constructed.

⁴⁶ [Drakelow Hall moated site, fishponds and moated enclosure, Byley - 1020100 | Historic England](#) (Accessed January 2023)

Brook House Farm House (Grade II Listed Building, 1160385)

- 6.5.148 **Asset** - Brook House Farm is a Grade II listed building of late 17th century date but extensively altered in the 19th century to give it its current outward appearance. It is a two-storey structure built in red brick English Garden Wall Bond with a slate roof and is typical for a building of this date in this region. It holds high heritage significance for architectural and historic interest.
- 6.5.149 **Setting** - The setting of the asset is largely agricultural, surrounded by enclosed pastoral fields bounded by hedgerows. A railway line passes within 120m to the west of the asset, and the A530 road, a former Roman Road (King Street MCH8163) runs north-south approximately 300m to the east. Trees and hedgerows bounding the property restrict longer views to the north. Views from the house frontage extend southwards towards a tree lined brook around 100m south and further agricultural land beyond.
- 6.5.150 **Contribution of setting** - The setting of Brook House Farm contributes to its architectural and historic value by providing the immediate agricultural context in which it can be experienced and understood. The architectural and historic interest of the farmhouse is best experienced in close views with surrounding farmland and does not depend on any distant visibility.

Whatcroft Hall (Grade II Listed Building, 1138463) and associated locally listed buildings (DCH10092)*

- 6.5.151 **Asset** - Whatcroft Hall is a Grade II* listed mansion dating to the 18th century with additions in the 19th century including an ogee dome on an octagonal drum.⁴⁷ The hall was originally a smaller house which faced south and overlooked wide lawns towards a large circular moat enclosing an island. This feature is believed to be the remains of a medieval moated site (MCH8227). As Whatcroft was a medieval manor, it may be that this was the site of a manor house enclosed by a moat, although the feature has also been interpreted as an ornamental pond. It could be that the feature is indeed a medieval moated site which was remodelled to form part of the gardens around Whatcroft Hall. Other historic structures are associated with Whatcroft Hall, such as the locally listed 19th century mock tudor Whatcroft Hall Lodges (DCH10092).
- 6.5.152 **Setting** - The surrounding parkland and gardens form the setting of the assets, some of which has been replaced by modern farm buildings immediately east of the Hall. Views from the assets are largely confined to the parkland, which contains numerous mature trees both along the boundary with the River Dane and lining a winding path north from the Hall. The island surrounded by the moat is now completely covered with mature trees which partially screens views south from the Hall.
- 6.5.153 **Contribution of setting** - The setting of Whatcroft Hall contributes to its historic interest by providing the context in which the asset can be experienced and understood in its historic surroundings. The inclusion of the possible moated site immediately south of the asset further contributes to the historic value by providing visible evidence of a long development of occupation and land tenure at and from

⁴⁷ (de Figueiredo 1988: 280)

the site. The carefully designed parkland and gardens surrounding the hall allow for a series of glimpsed and revealed close views which the artistic and architectural values of these assets to be displayed. The hall is best experienced in close views and does not depend on any distant visibility.

Bostock Conservation Area and associated listed and locally listed buildings

- 6.5.154 **Asset** - The Bostock Conservation Area has two main settlement foci: a small village containing a Grade II listed building and 11 locally listed buildings in the north; and the Grade II* Bostock Hall (NHLE 1138416), an 18th century country house, and associated Grade II listed buildings and structures set in parkland to the south. Both areas are joined by London Road, the line of which is also included in the conservation area.
- 6.5.155 The settlement of Bostock was first documented in the Domesday survey, and the place-name contains elements suggestive of early medieval origins.⁴⁸ The current settlement of Bostock Green replaced an earlier settlement in the late 18th century as an 'estate village' closely associated with the newly built Bostock Hall to the south. The structures within the village comprise one Grade II listed building
- 6.5.156 The present Bostock Hall was built in 1775, replacing an earlier timber framed and moated structure to the south which was demolished in 1803. In the 20th century the hall was repurposed as a residential school, with a number of dormitory blocks added immediately northwest of the hall within a former walled garden, the wall of which remains largely intact and is Grade II listed (NHLE 1330204). Other Grade II listed buildings in the immediate vicinity of the Hall comprise:
- Boat House c.80 metres West Of Bostock Hall (NHLE 1138417), a 19th century brick structure of two storeys;
 - Water Tower c.20 metres West Of Bostock Hall (NHLE 1138418) , a 19th century brick tower of three stages;
 - Farmbuilding with Spire c.80 metres North of Bostock Hall (NHLE 1138420), a mid to late 18th century brick structure;
 - Former Stable Building c.30 metres North of Bostock Hall (NHLE 1330205), a mid 18th century brick structure; and
 - Engine House (NHLE 1330206), an 18th century brick former stables, now an engine house.
- 6.5.157 Also within the parkland associated with the Hall are the Grade II listed North Lodge (NHLE 1160422) adjacent to London Road, which is a later 19th century rendered and white-washed lodge of two storeys. There are also gate piers and screen about 70m south of the hall (NHLE 1330203). The locally listed buildings of Middle Lodge (DCH9943), 6 & 8 Middlewich Road (DCH9923) and Home Farm

⁴⁸ Bostock Conservation Area Appraisal (2003) Available at:
<https://www.cheshirewestandchester.gov.uk/documents/planning-and-building-consultancy/total-environment/conservation-and-design/conservation-area-appraisals/BostockConservationAreaAppraisal.pdf> (Accessed September 2024)

(DCH9945) are also located within the conservation area and are also closely associated with Bostock Hall.

- 6.5.158 There is a single listed building within Bostock Green Village, which is The Smithy (NHLE 1310575), a 19th century brick built house of two storeys. Other buildings within Bostock Green Village are typically 19th century brick structures and include the locally listed:
- DCH9927, 17/19 Bostock Green;
 - DCH9936, 20/22 Bostock Green;
 - DCH9931, 16/18 Bostock Green;
 - DCH9937, Bostock Social Club;
 - DCH9934, 7 Bostock Green;
 - DCH9930, Bostock Green Farm;
 - DCH9929, 1 Bostock Green;
 - DCH9932, 6 Bostock Green;
 - DCH9928, 2 Bostock Green; and
 - DCH9926, Bostock Grange Farm.
- 6.5.159 **Setting** - The surrounding parkland, which largely retains its historic character, forms the setting of the Hall and its associated buildings. Longer views beyond the park are restricted by multiple instances of mature woodland, particularly that which is located between the boating lake and London Road and that which runs along the southern boundary of the parkland and the southern limit of the conservation area.
- 6.5.160 The immediate setting of Bostock Green Village is that of the contained two-row village unit containing the listed and locally listed buildings which complement each other in their architectural styles. Key views of the conservation area and the buildings contained within are inward looking through the main thoroughfare, with most properties set back from the road. The wider setting of the village is agricultural with the surrounding landscape comprising enclosed fields bounded by hedgerows.
- 6.5.161 **Contribution of setting** - The setting of Bostock Hall and related heritage assets contributes to the architectural and historic value of the assets by providing a context in which they can be experienced and understood both individually and collectively. The surrounding parkland was designed to and managed to foreground the architectural composition of the Hall to create a series of open and constrained views which allow the artistic and architectural values of these assets to be displayed.
- 6.5.162 The immediate setting of Bostock Green village, being the village unit itself, contributes to the historic and architectural value of the assets both individually and collectively. It does this by providing a context in which they can be experienced and understood as a planned estate village with buildings that share similar architectural styles which are largely contemporary in date.

Bowl barrow 160m north-east of Moultonbank Farm (Scheduled Monument, 1011123)

- 6.5.163 **Asset** - The scheduled monument is a bowl barrow comprising a low earthen mound measuring 35m in diameter with a height of 1.5m. Bowl barrows are inverted pudding bowl-shaped mounds with slopes of varying profile, sometimes with a surrounding ditch and occasionally an outer bank.⁴⁹ Despite extensive ploughing damage, the bowl barrow survives as a good example of this type of monument which commonly date to the late Neolithic or Early Bronze Age. Analysis of 2019 Google Earth imagery has revealed through differential levels of vegetation growth the probable presence of stone or rubble within the composition of the barrow, along with a possible opening to the northwest leading to a central area where no traces of rubble are present.
- 6.5.164 **Setting** - The bowl barrow is situated on a glacial mound around 160m west of Moulton Bank Farm in agricultural land. This landscape context is not contemporary with the construction or initial use of the monument. Views from its elevated position extend west beyond the farm across the valley cut by the River Weaver. Views in this direction are largely rural and agricultural. Residential development in the 20th century associated with the expansion of Moulton village immediately east of the asset restricts views of and from it in this direction.
- 6.5.165 **Contribution of setting** - The setting of the bowl barrow makes a limited contribution to the historical and archaeological value by providing a rural landscape context in which it can be experienced and understood. Although much changed from its original landscape context, the rural setting to the west of the asset towards the River Weaver allows the bowl barrow to be understood within what would have been a prominent and visible position in the prehistoric landscape.

Vale Royal Viaduct (Grade II Listed Building, 1160610)

- 6.5.166 **Asset** - The Vale Royal railway viaduct dates to 1837. It was constructed by Joseph Locke on behalf of the Grand Junction Railway. The viaduct is of a red sandstone and comprises five round arches.
- 6.5.167 **Setting** - The setting of the asset is formed by the Weaver Navigation, over which the viaduct extends and by the railway line which passes over the viaduct. A small wooded area is located at the north west and south east ends of the viaduct and beyond these lie agricultural fields.
- 6.5.168 **Contribution of setting** - The setting of the Vale Royal Viaduct contributes to its historic value by providing the immediate context in which the asset can be experience and understood. The immediate area, including the railway line, agricultural fields and Weaver Navigation has changed little since the asset was constructed.

⁴⁹ Historic England (2017) Prehistoric Barrows and Burial Mounds: Introductions to Heritage Assets. Available online: <https://historicengland.org.uk/images-books/publications/iha-prehistoric-barrows-burial-mounds/heag217-prehistoric-barrows-burial-mounds/> (Accessed September 2024).

Cattle tunnel (Grade II Listed Building, 1228362)

- 6.5.169 **Asset** - The cattle tunnel dates to 1837. It was constructed by George Stephenson and Jospeh Locke, on behalf of Lord Delamere. The 3m wide entrance, opens out into a barrel-vaulted tunnel which runs for 40m through the embankment. At each end there is a large stone key block which has the Delamere coat of arms carved into it. It is possible the tunnel was built as a concession for the railway, as the viaduct only allowed room for the carriage drive.
- 6.5.170 **Setting** - The setting of the cattle tunnel is formed by the railway line and the Vale Royal Viaduct which is located 170m to the northwest. The area surrounding the tunnel comprises tall trees in a wooded area either side of the railway track.
- 6.5.171 **Contribution of setting** - The setting of the cattle tunnel contributes to its historic value by providing the immediate context in which the asset can be experienced and understood. The immediate area, including the railway line, Vale Royal Viaduct and River Weaver has changed little since the asset was constructed.

Locally listed Earnslow Grange and Estate Cottages (DCH10749 and DCH10750)

- 6.5.172 **Asset** - Locally listed Earnslow Grange (DCH10749) is a brick-built farmhouse probably built in the 18th century on the stone footings of an earlier 16th or 17th century structure. Its architecture and appearance is typical for a building of this date in this region and holds low heritage significance for architectural and historic interest. The Estate Cottages (DCH107050) were built in 1900 on land belonging to Earnslow Grange which is located around 130m southeast.
- 6.5.173 **Setting** - The setting of both assets is largely agricultural, characterised by enclosed fields bounded by hedgerows. Both buildings are located on a south facing slope, with long views to the south. Views in other directions are restricted to those close by due to topographic factors.
- 6.5.174 **Contribution of setting** - The settings of both assets contributes to the architectural and historic value by providing a context in which they can be experienced and understood as an historic farm and associated estate cottages. Views looking south from the house frontage enable the assets to be appreciated within their agricultural setting, and when taken together, the setting provides the context in which the relationship between the two buildings can be appreciated.

Sandiway Bank Farmhouse (Grade II Listed Building, 1228575) and associated locally listed building (DCH10751)

- 6.5.175 **Asset** - The Grade II listed Sandiway Bank Farmhouse is a late 18th century brick built structure with a two-storey symmetrical three-bay frontage. Its architecture and appearance is typical for a building of this date in this region and holds heritage significance for architectural and historic interest. The locally listed Heysmere (DCH10751) is likely of 18th or 19th century date and is located around 100m south of Sandiway Bank Farmhouse.

- 6.5.176 **Setting** - The setting of both assets is within a largely agricultural landscape characterised by enclosed fields bounded by hedgerows, though the A556 curtails this to the north. Numerous tree stands are located in the vicinity, which restrict otherwise long views to the west from Sandiway Farmhouse, and south from Heysmere. Although located within 100m of each other, the two properties possess different architectural styles, and serve different purposes, with the former being a farmhouse and the latter a high-status dwelling.
- 6.5.177 **Contribution of setting** - The setting of both assets contributes to the architectural and historic value by providing a context in which they can be experienced and understood. Their setting allows the varying forms and dates of the structures to be appreciated, as they relate to this historic farm complex.

Gorstage Hall (Grade II Listed Building, 1287118)

- 6.5.178 **Asset** - Gorstage Hall is a Grade II listed building constructed in the 19th century. It was originally built as a single dwelling but is now split into multiple residences. It is square in plan with a 2-storey symmetrical 2-bay garden front. It is a high-quality example of a mansion house in the region dating to this period which carries high heritage significance for architectural and historic interest.
- 6.5.179 **Setting** - The immediate setting of Gorstage Hall is characterised by what remains of the grounds in which it was originally situated, comprising a tree lined avenue leading to wooded and open gardens to the east and south, with a driveway at the front of the property. As such, longer views of and from the asset are largely screened by vegetation.
- 6.5.180 **Contribution of setting** - The immediate surroundings of Gorstage Hall contribute to the historic value of the asset by providing a context in which it can be experienced and understood. The carefully designed parkland and gardens surrounding the hall allow for a series of glimpsed and revealed close views from the artistic and architectural values of the asset can be appreciated. The hall is best experienced in close views and does not depend on any distant visibility.

Grangelane Farm (Grade II Listed Building, 1228556)

- 6.5.181 **Asset** - Grangelane Farm (NHLE 1228556) is a Grade II Listed Building dating to the early 18th century. The building has 19th century alterations, noted by the '1865' date stone. The farmhouse is of two storeys with attic and built in a brown brick with English garden wall bond. It is of an L-shaped plan and is two storeys with attic, while the front is of 3-bays and nearly symmetrical in design.
- 6.5.182 **Setting** – The immediate setting of Grangelane Farm consists of modern farm buildings to the east, and enclosed tree lined gardens to the west and north. Beyond this, the setting of the asset is largely agricultural, formed by the farm and agricultural fields which are associated with the farmhouse. The A49 road is located to the west of the farmhouse, however there is no visibility to the road due to a small, wooded area, which screens the rear of the farmhouse.

- 6.5.183 **Contribution of setting** – The setting of Grangelane Farm (NHLE 1228556) contributes to its historic value by providing the immediate agricultural context in which it can be experienced and understood. The asset continues to be associated with the rural landscape and associated farm. However, the farmhouse is best experienced in close views which do not depend on any distant visibility into the wider landscape.

Hefferston Grange (Grade II Listed Building, 1287121 and Grade II Listed Buildings, 1228557, 1228558)*

- 6.5.184 **Asset** - This group of heritage assets is focused on the historic Hefferston Grange, a Grade II* listed building with origins in the 18th century but thought to incorporate elements of an earlier structure. It was originally built as a country house, before being turned into a hospital in the 20th century. The hospital was closed in the late 20th century and Hefferston Grange, along with the Grade II listed stables (NHLE 1228557) and Ice House (NHLE 1228558) are currently part of a modern residential development.
- 6.5.185 **Setting** - The immediate setting of these listed buildings includes surviving elements of historic ornamental gardens and associated parkland surrounded by a tree-lined boundary. These are largely contemporary with the listed buildings in their original form and use. Other areas of associated gardens and parkland have been replaced by modern residential development. Views within the complex in which the assets are situated now include aspects of modern residential development, which also restrict views of the assets from further away, and views into the wider landscape from the assets.
- 6.5.186 **Contribution of setting** - The immediate setting of the asset group makes a limited contribution to the historic and architectural value both individually and as a group of related structures, demonstrating the relationship between high-status residences and their ancillary buildings typical of this type of building in the 18th and 19th centuries and their relationship to ornamental gardens and parkland. The house is best experienced in close views and does not depend on any distant visibility.

Future baseline

- 6.5.187 It would reasonably be expected that large parts of the Study Area that comprise arable land would experience some degradation of any extant earthworks and shallowly buried archaeological deposits through continued agricultural activity. Urban development, particularly around Runcorn, Widnes, Northwich, and the western suburbs of Greater Manchester would also alter the baseline.
- 6.5.188 In the longer term it is possible that the preservation of buried remains of archaeological and particularly of geoarchaeological interest will be affected by factors related to climate change. It is predicted that winters will become generally wetter and summers generally drier, and this may adversely affect the survival of buried deposits where the groundwater regime is a factor in archaeological preservation, such as peat, though it is not possible to quantify how this will affect heritage assets within the lifetime of the Project.

6.5.189 In the absence of development, it is not anticipated that the settings of heritage assets within the study area would notably change.

6.6 Embedded Environmental Measures

6.6.1 As part of the Project design process, a number of embedded environmental measures are proposed to reduce the potential for impacts on the historic environment. These are broken down into measures that are incorporated into the overall design of the Project, and those that are to be implemented during its construction and operational phases. No measures have been specifically identified for the decommissioning phase of the Project as decommissioning phase activities can be expected to take place within areas affected during construction. However, it is anticipated that measures equivalent to those implemented during construction would also be effective in mitigating effects on heritage assets during decommissioning. **Table 6.7** outlines how these embedded measures will influence the historic environment assessment.

Table 6.7 Summary of embedded environmental measures

Embedded Measures	Compliance Mechanism
Construction phase	
Selection of pipeline routes and consideration of HAGI location options has been undertaken to avoid or minimise, as far as possible, identified areas of greater sensitivity.	Location and design of project components and limits of deviation are controlled by the DCO.
Programme of archaeological evaluation (trial trenching) and mitigation. The overarching research aims and approach to evaluation and mitigation is set out in the OWSI. This may be updated and is to be agreed with consultees and submitted as part of the DCO application..	The delivery of this agreed programme of works would be secured through a DCO Requirement and would be subject to detailed WSI or method statements.
Construction routes to use existing access, as far as possible, to minimise disturbance or compaction of archaeological remains and to reduce perceptual change within the setting of heritage assets.	Outline Construction Environmental Management Plan (CEMP) secured via DCO requirement.
Trackway would be used for access, where areas of archaeological potential have been identified, to avoid or minimise disturbance or compaction of archaeological remains.	Outline CEMP secured via DCO requirement.
Temporary accesses would be removed and reinstated following the completion of the construction works.	Outline CEMP secured via DCO requirement.

Embedded Measures	Compliance Mechanism
Avoidance of conservation areas within settlements by HGV construction routes, where possible.	Outline Construction Traffic Management Plan (CTMP) secured by DCO requirement.
The Project design has been optimised to minimise the removal of hedgerows and trees to accommodate the siting and working areas associated with the HAGI/ BVIs, construction compounds and material storage areas. Localised losses of hedgerows and trees related to the pipeline corridor, temporary/permanent access and associated visibility splays have been minimised and will be refined by the BS 5837 (2012) arboricultural surveys and ecological surveys currently underway.	Location and design of project components and limits of deviation are controlled by the DCO.
The removal of trees from within the avenue to Sutton Hall (Grade I Listed Building: 1253572) would be minimised as far as possible. Where mature sycamores are required to be removed they would be replanted with specimens as similar to the extant trees as possible, i.e., species, age and size.	Outline LEMP (followed by 'stage specific' LEMPs secured via DCO requirement.
The Grade II listed boundary stone (1329857) is located in the verge of the A49 on the north side of Whitleybrook Bridge. The stone will be protected on site and marked up on plans to increase awareness of its position.	Outline CEMP secured via DCO requirement.
The use of the Trent and Mersey Canal Bridge Number 211 (Listed Building (Grade II): 1139147) for construction plant movements will be subject to agreement with the Canal and Rivers Trust with regards a maximum load and vehicle size to avoid potential impacts to this Grade II listed structure.	Outline CEMP secured via DCO requirement.
Operation phase	
Any sections of hedgerow and trees that are removed would be reinstated following construction. Above the pipeline, appropriate low-level species would be selected to avoid damage to the buried pipe, whilst also reducing effects to the historic environment through promoting legibility of HLC.	Outline CEMP and Outline LEMP secured via DCO requirement.
Consideration of permanent low-level earthworks and/or tree/shrub planting to screen views of HAGIs and BVIs. Details to be confirmed in the Final ES.	Outline CEMP and Outline LEMP secured via DCO requirement.

6.7 Scope of the Assessment

- 6.7.1 The scope of the assessment has been refined as the Project design has evolved and responds to feedback received to date as set out in **Section 6.3**.

Spatial scope

- 6.7.2 The spatial scope for assessment refined that used for data gathering, based on revisions to the design of the Project and following review of the data collected. Consequently, a 1km Study Area from the Draft Order Limits has been used for the spatial scope of assessment (see **Figures 6.1** and **6.2**).
- 6.7.3 Interpretation and mapping of noteworthy features from a remote sensing analysis was carried out for all land within the Draft Order Limits, except for existing tracks and roads to be used for access. This was deemed to be appropriate to undertaking the interpretation rather than expanding it to the 1km study area, which was used to gather and analyse HER data.
- 6.7.4 Given the properties of the Project components, this spatial scope will allow assessment of all likely significant effect resulting from the Project. This includes any effects arising from impacts to the setting of heritage assets.

Temporal scope

- 6.7.5 The temporal scope of the assessment of historic environment is consistent with the period over which the Project would be carried out and therefore covers the following periods:
- the construction period, commencing in Q1 2027 ready for commissioning in Q1 2030, as described in **Chapter 2: The Project**;
 - the operational period for the above ground infrastructure (HAGIs and BVIs), as described in **Chapter 2: The Project**; and
 - the decommissioning phase.
- 6.7.6 Disturbance of archaeological remains is likely to occur during construction phase activity. Change to the setting of heritage assets through vegetation clearance is likely to also occur during construction.
- 6.7.7 Change to the setting may occur during operation, through the continued presence of HAGIs and BVIs in the landscape and any permanent changes to the historic landscape.
- 6.7.8 Maintenance and decommissioning activities are described in **Chapter 2: The Project** and would not result in any additional adverse effect to historic environment. Any effects to historic environment through maintenance and decommissioning would be neutral.

Potential receptors

- 6.7.9 Heritage assets may be subject to potential effects resulting from physical disturbance or from effects arising from change within the setting of a heritage asset.

Disturbance to heritage assets

- 6.7.10 Effects to heritage assets may arise from physical damage or disturbance which leads to a loss of heritage significance. It is only those assets that might be physically disturbed by the Project and associated enabling works, including:
- intrusive surveys;
 - the pipeline working width, including crossings;
 - the footprint of the above-ground elements;
 - temporary construction compounds; and
 - access route visibility splays, bellmouths, culverts within the Draft Order Limits.
- 6.7.11 An Archaeological DBA (**Appendix 6A**) has been undertaken to assess the potential for heritage assets to be present throughout the Draft Order Limits.

Effects arising through change to setting of heritage assets

- 6.7.12 Effects to heritage assets may also arise from a change to the settings of heritage assets which are either located within or outside of the Draft Order Limits. The 1km Study Area has been adopted to identify those heritage assets which may be affected by change within their settings. This has been applied to all elements of the project, including all above ground infrastructure and has been chosen with reference to ZTVs of the above ground elements. A review of heritage assets within the Study Area has been completed in order to identify those which may be affected as a result of changes to their setting. Heritage assets have been reviewed in light of the available design information on the Project and following site visits in order to identify those which may be subject to significant effects, taking account of:
- distance to the asset;
 - topography;
 - relationship to other assets;
 - potential changes resulting from noise, dust, vibration, and severance; and
 - duration of any effect.
- 6.7.13 This represents Step 1 of the process set out in Historic England guidance²⁰, and where it is concluded that an asset may be affected as a result of change in setting it is taken forward for assessment in this chapter. Assets which have not been taken forward for assessment are identified in **Appendix 6B**, with a rationale provided in each case.

- 6.7.14 Heritage assets may be affected by changes to setting as a result of visual change, but also due to changes resulting from noise, dust, vibration, and severance as noted above. During the operational phase of the Project, controls would be in place to limit noise and vibrations from above ground installations as will be described in **Chapter 10: Noise and Vibration** of the Final ES so it is not anticipated that noise or vibration would contribute to any effect on settings and only visual change is considered in the operational assessment.
- 6.7.15 The Draft Outline CEMP (**Appendix 3B**) identifies the controls on construction noise that would be in place to limit construction noise, with a limit of 65 dB L_{Aeq, 12 hours} identified in **Chapter 10: Noise and Vibration** as the threshold for significance where works are expected to be undertaken in the same location for a duration of one month or more and 75 dB L_{Aeq, 12 hours} where works are for longer than 10 days, but less than a month. These levels can be taken as reasonable levels above which construction noise could contribute to an effect on the significance of an asset through change in setting. **Tables 10.21 and 10.22 of Chapter 10: Noise and Vibration** identifies the distances from construction that these levels could be exceeded. Heritage assets included in the settings assessment are generally located beyond the identified distances and therefore construction noise will not contribute to any change in setting.
- 6.7.16 The principal historic environment receptors that have been identified as being potentially subject to effects are summarised in **Table 6.8**.

Table 6.8 Historic environment receptors subject to potential effects

Receptor	Reason for consideration
Buried archaeological remains	Potentially direct effects arising from the construction of the Project could include the disturbance or removal of archaeological remains by intrusive groundworks, including field survey, and the disturbance or dewatering of deposits of palaeoecological or geoarchaeological interest.
Built heritage assets	Potentially direct effects arising from use of historic bridges on construction routes. Potential effects arising from the operation of the Project could include change to setting (and consequently change to the character of conservation areas) resulting from visibility of HAGIs and BVIs, in views of and from heritage assets.
Historic Landscape Character	Change may arise to historic landscape character in areas of construction as a result of the loss or modification of landscape features, the introduction of new features, or a change to the perception of the use or appearance of parts of the landscape. Where not reinstated, these effects may persist into the operational phase.

Likely significant effects

- 6.7.17 In line with the EIA Regulations 2017 and as set out in Scoping, only where there is a risk of a likely significant effect, or where there is currently insufficient information to make an assessment of likely impact, has an impact been taken forward for assessment in the Draft ES.
- 6.7.18 A crossing schedule is shown in **Appendix 2B** and **Figure 2.3** and details of these crossing techniques can be found in **Chapter 2: The Project**. Open cut crossings would remove all archaeological deposits within the excavated area during the construction phase, whilst ground disturbance for trenchless crossings would be limited to the entry and exit pits and associated compounds. The pipeline would be below-ground, avoiding operational impacts to the setting of heritage assets.
- 6.7.19 The following section draws on industry experience and professional expertise to identify those effect-receptor pathways that may potentially lead to a significant effect based on worst-case scenarios. Where experience and available evidence indicates an effect-receptor pathway will not lead to a significant impact with regards to the EIA Regulations 2017 the pathway is scoped out from assessment.
- 6.7.20 The effects on historic environment receptors which have the potential to be significant and have been taken forward for detailed assessment are summarised in **Table 6.9**.
- 6.7.21 Where a piece of infrastructure does not appear in this table it has been scoped out for potential significant effects on the historic environment.

Table 6.9 Potential significant historic environment effects

Receptor	Potential Significant Effects
Project-wide	
Buried Archaeological Remains	
Ridge and furrow and removed post medieval boundaries	Remains of buried and upstanding ridge and furrow and removed post medieval boundaries are common throughout parts of the Study Area which are currently in agricultural use. These have been identified as cropmarks on aerial photographs and satellite imagery, and as low earthworks on LiDAR imagery and buried features on geophysical survey (Appendix 6E). Areas containing high potential for these features are detailed in Appendix 6A . Ground disturbance during the construction phase would result in the loss of or disturbance to remains of ridge and furrow and former boundaries within the directly affected areas inside the Draft Order Limits.

Receptor	Potential Significant Effects
Late prehistoric/Romano-British settlements and field systems	The buried remains of probable settlement and land-use dating to the late prehistoric or Romano-British periods have been identified as cropmarks in various portions of agricultural land of the Study Area. Areas containing high potential for features of this type are detailed in Appendix 6A . Ground disturbance during the construction phase would result in the loss of or disturbance to such remains within directly affected areas inside the Draft Order Limits.
Buried remains of prehistoric mortuary monuments	The buried remains of prehistoric round barrows are recorded in agricultural land between the villages of Sutton Weaver and Aston and have been identified as cropmarks on aerial photographs and satellite imagery. Further discussion can be found in Appendix 6A . Ground disturbance during the construction phase would result in the loss of or disturbance to such remains within directly affected areas inside the Draft Order Limits.
Artefacts and ecofacts within peat layers	Archaeological artefacts and ecofacts are recorded in peatland contexts which occur in various parts of the Study Area, such as Ince Marshes and Carrington Moss, detailed in Appendix 6A . Artefacts may comprise stone tools of early prehistoric date, and ecofacts may include preserved charred grains relating to prehistoric activity. Ground disturbance during the construction phase would result in the loss of or disturbance to such remains within directly affected areas inside the Draft Order Limits and possibly outside this area through the effects of dewatering.
Historic Parish Boundaries	The route corridor is likely to cross a number of historic parish or township boundaries. Many of these will survive as earthworks comprising banks and/or ditches. Ground disturbance during the construction phase would result in the loss or disturbance to remains of this nature within the route corridor.
West Corridor and Runcorn/Rocksavage Spur	
Known and potential archaeological remains	Potential for loss of or disturbance to archaeological remains as a result of construction

Receptor	Potential Significant Effects
• Ridge and furrow east of Frodsham (identified on LiDAR) • Possible extraction pits within West Corridor (identified on LiDAR) • ROF Dunham on the Hill (MCH9985) • Field boundaries and drainage features in Helsby and Frodsham Marshes (identified on LiDAR) • Roman Road-Chester to Wilderspool (Route 701) (MCH1449) • Possible ring ditches near Sutton Hall (MCH8218 and MCH8219) • Searchlight Battery, Aston Heath (MCH10617) • Possible agricultural features and former field boundaries Aston Heath (cropmarks, LiDAR, geophysics) • Earthworks North-east of Aston Grange • Severn Vyrnwy Aqueduct (MCH10449)	activities, including excavation of the pipeline trench.
Thornton-le-Moors Conservation Area and associated listed buildings Listed Buildings: 1330242 (Grade I); and 1330241, 1145887, 1130655, 1130652, 1330240, 1130651, 1130653, 1130654 (all Grade II)	Potential effect on the setting of the Conservation Area and Listed Buildings due to distance of approximately 500m to construction of pipeline and HPP HAGI. Potential effect on the setting of the conservation area as a result of the presence of the HPP HAGI.
Moated site, fishpond and connecting channel, Elton (Scheduled Monument, SM1012122)	Potential for change in setting due to distance of approximately 80m to construction of pipeline

Receptor	Potential Significant Effects
Frodsham Bridge (Grade II Listed Building, 1261905)	Potential effect on the setting of the Listed Building as it is located within approximately 200m of a trenchless crossing of the Weaver Navigation.
Frodsham Viaduct Number 53 (Grade II Listed Building, 1253269)	Potential effect on the setting of the Listed Building as it is located within approximately 200m of a trenchless crossing compound for crossing of the Weaver Navigation.
Sutton Hall (Grade I Listed Building, 1253572) and associated feeding trough and barn (Grade II Listed Buildings, 1253612, 1261738)	Potential effect on the setting of the Listed Buildings, as a result of the open cut pipeline crossing the main approach to the heritage asset Pipeline approximately 80m from nearest listed building, a tree-lined avenue, requiring removal of vegetation.
Dutton Lodge Farmhouse (Grade II Listed Building, 1139142) and associated Cottage, Lodge Lane (locally listed MCH17234) and Dutton Park (DCH10136) and non-listed farmhouse (MCH7943)	Potential effect on the setting of the Listed Building and locally Listed Building, as a result of construction of the pipeline within approximately 300m.
Trent and Mersey Canal Bridge number 211 (Grade II Listed Building, 1139147)	Potential effect on the setting of the Listed Building as it is located within the Draft Order Limits and in close proximity to trenchless crossing compounds for canal crossing.
Weaver Navigation, historic waterway and associated structures. Listed Buildings: 1261700, 1391821, 1253624, 1253630, 1253269, 1261905 Locally Listed Building: DCH10616	Potential effect on the setting of historic structures due to crossing of the Weaver Navigation.
North Corridor and Warrington and St Helens Spurs	
Known and potential archaeological remains: • Site of Knobstick Hall, Sutton Heath Road, Sutton (MME7768) • Site of Dichefeildes house, Sutton Heath Road, Sutton (MME14832)	Potential for loss of or disturbance to archaeological remains as a result of construction activities, including excavation of pipeline trench.

Receptor	Potential Significant Effects
• Site of houses, Elton Head Road, Sutton (MME20155 and MME20156) • Cropmarks at Elton Head Hall Farm, Sutton • Possible extraction pits within North Corridor • Possible agricultural features and former field boundaries within North Corridor • Location of a brick kiln, School Lane, Rainhill (MME7671) • Site of a house, Jubits Lane, Bold (MME20239) • Cropmark 2009 • Marsh Farm cropmark enclosure (MCH8824) • The Manchester Ship Canal (MCH24520) • Acton Grange Viaduct, Grand Junction Railway (MCH8891)	
St Anne's Well, near Rainhill Scheduled Monument: 1019449	There is the potential for effects on setting during the construction of the pipeline and railway crossing, approximately 30m to the east of the well.
Micklehead Green Moated Site Scheduled Monument: 1012329	There is the potential for effects on setting during the construction of the pipeline to the immediate west of the scheduled area.
Heavy Anti-aircraft gunsite 380m east of South Lane Farm Scheduled Monument: 1019531	There is the potential for effects on setting during the construction of the pipeline at a distance of approximately 100m and use of an access route to the west.
Manchester Ship Canal MCH24520	Potential effects on the setting of the Canal as a result of construction of the pipeline, including compounds for a trenchless crossing of the canal,

Receptor	Potential Significant Effects
Listed Buildings (Grade II): 1135930, 1330358	and the operation of the Higher Walton HAGI on the north bank of the Canal.
East Corridor and Warburton and Partington Spurs	
Known and potential archaeological remains: • Site of Heath Farm (MGM8814) • Site of Mary Croft (MGM8809) • Possible extraction pits within East Corridor • Possible agricultural features and former field boundaries within East Corridor • The Bridgewater Canal - Stretford to Runcorn (MCH21049) • Sink Moss (MCH25379) • King Street Roman Road - Margary Route 70a (MCH8684)	Potential for loss of or disturbance to archaeological remains as a result of construction activities, including excavation of pipeline trench.
Dunham Massey Registered Park and Garden Registered Park and Garden (Grade II*): 1000853	There is the potential for an effect to arise during the construction of the pipeline and operation of the Warburton HAGI, c.1.1km west, through change within the setting.
Dunham Woodhouses Conservation Area Listed Buildings (Grade II): 1067912, 1337667, 1337640, 1099165, 1067940, 1121939, 1067912 HER entry: MGM8844	There is the potential for an effect to arise during the construction of the pipeline and operation of the Warburton HAGI, c.300m west, through change within the setting of these heritage assets. This would be reduced by intervening landscape features. No change to the key relationship with Dunham Massey Park, as defined by the Supplementary Planning Document, is anticipated and appreciation of architectural interests should be unaffected.

Receptor	Potential Significant Effects
	Change to traffic caused by the proposed use of the B5160 as a construction route is unlikely to result in a significant effect as its use would be short-term and temporary.
Dunham Massey HER entries: MGM8749, MGM8746, MGM8750, MGM8744 MGM8743, MGM8745, MGM8838, MGM9091, MGM9092, MGM9044	Potential effect on the setting of the non-designated heritage assets as a result of the operation of Warburton HAGI.
Bowl barrow 120m east of Village Lane Scheduled Monument: 1011166	The scheduled barrow lies approximately 150m from the pipeline LoD and there is potential for effects on the setting of the monument.
Boundary Stone on north side of Whitleybrook Bridge (Grade II Listed Building, 1329857)	The listed boundary stone is within the Draft Order Limits, adjacent to a temporary access track.
South Corridor	
Known and potential archaeological remains: • King Street Roman Road - Broken Cross to Middlewich section (MCH8163) • Roman road - Cotebrook to Cuddington (MCH8023) • Whatcroft Hall Park (MCH24377) • Possible extraction pits within South Corridor • Possible agricultural features and former field boundaries within South Corridor • Fishpond at Earnslow Grange (MCH24506) • Roman Road - Chester to Manchester (Route 7a) (MCH7861)	Potential for loss of or disturbance to archaeological remains as a result of construction activities, including excavation of the pipeline trench.

Receptor	Potential Significant Effects
- Manchester to Chester Line (CLC) (MCH19853) - Embankment west of Weaverham, Grand Junction Railway (MCH8314) - Linear Earthworks or Cropmarks (MCH11090) - Enclosure and trackways near Bartington Hall (MCH24437 and MCH24428)	
Drakelow Hall moated site Scheduled Monument: 1020100	Potential effects on the setting of the monument as a result of the presence of HAGI approximately 600m to the west.
Brook House Farm House Listed Building (Grade II): 1160385	Potential effects on the setting of the Listed Building as a result of pipeline construction and trenchless crossing compounds within 100m to the north.
Whatcroft Hall Listed Buildings: 1138463 (Grade II*) Locally Listed Buildings: DCH10092	Potential effect on the setting of the Listed Building and locally Listed Building as a result of pipeline construction within approximately 400m to the south and use of the Hall's main access as a construction route.
Bostock Conservation Area Listed Buildings: 1138416 (Grade II*); 1330203, 1330205, 1138419, 1138417, 1330204, 1330205, 1338420, 1330206, 1160422, 1310575 (all Grade II) Locally Listed Buildings: DCH9943, DCH9923, DCH9945, DCH9927, DCH9936, DCH9926, DCH9938, DCH9939, DCH9928, DCH9929, DCH9932, DCH9930,	Potential effect on the setting of the conservation area and associated heritage assets as a result of construction of the open cut crossing of the pipeline to cross the tree-lined London Road, which links the village to Bostock Hall and is locally designated as a conservation area.

Receptor	Potential Significant Effects
DCH9933, DCH9934, DCH9935, DCH9937, DCH9931, DCH9936	
Bowl barrow 160m north-east of Moultonbank Farm	Potential effect on the setting of the monument, as a result of pipeline construction approximately 50m to the west.
Scheduled Monument: 1011123	
Vale Royal Viaduct Listed Building (Grade II) 1160610)	Potential effect on the setting of the Listed Building, as a result of pipeline construction and trenchless crossing compound to the immediate north.
Cattle Tunnel 170 Metres North West of Vale Royal Railway Viaduct	Within Draft Order Limits, but a section which will be a trenchless crossing.
Listed Building (Grade II) 1228362	
Earnsrow Grange and Estate Cottages	Potential effect on the setting of the locally Listed Buildings, as a result of pipeline construction approximately 90m to the south.
Locally Listed Buildings: DCH10749 and DCH10750	
Sandiway Bank Farmhouse	Potential effect on the setting of the Listed Building and locally Listed Building, as a result of the use of adjacent roads as access routes and pipeline construction, including trenchless crossing compounds approximately 400m to the west.
Listed Building (Grade II): 1228575	
Locally Listed Building: DCH10751	No effects anticipated from construction or operation of the South Corridor: Hartford BVI.
Gorstage Hall	There is the potential for an effect to arise during the construction of the pipeline approximately 300m to the northeast.
Listed Building (Grade II): 1287118	
Grangelane Farm	Potential effect on the setting of the Listed Building, as a result of pipeline construction and trenchless crossing compound approximately 100m to the southwest.
Listed Building (Grade II) 1228556	
Hefferston Grange	Potential effect on the setting of the Listed and locally Listed Buildings, as a result of pipeline construction approximately 150m to the west and
Listed Buildings:	

Receptor	Potential Significant Effects
1287121 (Grade II*); and 1228557, 1228558 (Grade II), respectively	trenchless crossing compounds approximately 400m to the north and south.

Elements scoped out of further assessment

6.7.22 The receptors/effects detailed in **Table 6.10** have been scoped out from the assessment because the potential effects are not likely to be considered significant.

Table 6.10 Summary of effects scoped out of the historic environment assessment

Receptors/potential effects	Justification
Disturbance to heritage assets	
Heritage assets outside of the Draft Order Limits	There will be no physical disturbance to heritage assets outside of the Draft Order Limits
Birkenhead and Chester Line (L & NWR/GWR) (MCH19851)	This asset crosses the Draft Order Limits but construction of the pipe trench at this location will be via a trenchless crossing, with no physical affects to the non-designated asset.
The Bridgewater Canal - Stretford to Runcorn (MCH21049)	This asset crosses the Draft Order Limits but construction of the pipe trench at this location will be via a trenchless crossing, with no physical affects to the non-designated asset.
Roman Road-Chester to Wilderspool (Route 701) (MCH1449)	This asset crosses the Draft Order Limits but construction of the pipe trench at this location will be via a trenchless crossing, with no physical affects to the non-designated asset.
Effects arising through change to setting of heritage assets	
Heritage assets outside of the 1km Study Area	The nature of the Project is such that significant effects would not occur as a result of change in setting to heritage assets outside of the 1km Study Area. Following a review of heritage assets beyond the 1km Study Area and stakeholder consultation Dunham Massey Registered Park and Garden (Grade II* Registered Park and Garden 1000853) has been included due to the extensive and sensitive nature of the asset.
Heritage assets within the 1km Study Area	Where the distance involved or existing intervening features are likely to prevent or preclude an adverse effect

Receptors/potential effects	Justification
identified as scoped out in Appendix 6B	arising as a result of change within the setting of heritage assets from operational elements of the Project (i.e., HAGI and BVI locations), these are scoped out. The receptors/effects detailed in Table 6B.1 (Appendix 6B) have been scoped out from being subject to further assessment because the potential effects are not considered likely to be significant.
Operational phase effects for below ground elements of the Project	There will be no effect on the settings of any heritage assets as a result of the presence of below ground elements of the Project during the operational phase.

6.8 Assessment Methodology

Introduction

6.8.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 3: Approach to preparing the Draft ES**, and specifically in **Section 3.10**. However, whilst this has informed the approach that has been used in this historic environment assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this historic environment assessment.

Assessment criteria

Significance/sensitivity

6.8.2 The heritage significance or sensitivity of a heritage asset is the product of the value it holds for this and future generations as a result of its historic, archaeological, architectural, or artistic interests:

- Historical Interest - through association with past events or past people; or where a heritage asset is illustrative of a particular asset type, theme, or period;
- Archaeological Interest - through the potential to hold evidence about the past that can be retrieved through specialist investigation; and
- Architectural/Artistic Interest - through value derived from contemporary appreciation of a heritage asset's aesthetics.

6.8.3 National Policy Statement (NPS) EN-1 notes that setting contributes to a heritage asset's significance but that it may be either positive or negative. Similarly, setting is defined in the NPPF (2023) and GPA320 as:

"The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a

positive or negative contribution to the significance of an asset, may affect the ability to appreciate an asset, or may be neutral."

- 6.8.4 For the purposes of this historic environment assessment, the heritage significance of an asset will be assigned to one of four classes, with reference to the heritage interests described above and professional judgement informed by policy and guidance. In particular, NPS EN-1 distinguishes between the heritage significance of designated and non-designated assets.
- 6.8.5 To align with other workstreams in this assessment, heritage significance is referred to as a receptor's sensitivity in **Table 6.11**.

Table 6.11 Classification of sensitivity of receptors

Sensitivity	Criteria	Receptor Type
High	Assets of national importance, which have significance for an outstanding level of historic, archaeological, architectural, and/or artistic interest.	Designated heritage assets, or non-designated heritage assets of demonstrable equivalence, of national importance.
Medium	The sensitivity of these assets will largely be dependent upon their current setting and their character. Asset has significance for a high level of historic, archaeological, architectural and/or artistic interest.	Non-designated heritage assets of regional importance.
Low	Assets of local interest, which have significance for elements of historic, archaeological, architectural and/or artistic interest.	Non-designated heritage assets of local importance.
Negligible	Due to its nature of form/condition/survival, cannot be considered as an asset.	HER record relating to a feature which is no longer present.

Magnitude of change

- 6.8.6 Magnitude of change is a measure of the extent to which the heritage significance or sensitivity of an asset is affected, which can be influenced by several factors:
- the permanence of the impact (temporary, permanent, or reversible);
 - physical changes caused by the impact (positive or negative); and
 - the extent of the asset or its setting that would be affected and contribution of that part to significance.
- 6.8.7 In respect of buried archaeological deposits, where no remains are visible above ground, change would arise from direct disturbance or removal of archaeological material resulting in the loss of archaeological interest. In certain instances,

elements of architectural and historic interest can also be affected. Direct loss, damage or alteration of a structure would primarily affect architectural interest, although historic and archaeological interests may also be affected.

- 6.8.8 The effects of change in the setting of a heritage asset depends on the contribution of setting to the heritage significance of the asset, and assessments must be, by their nature, specific to the individual assets being considered. Significance and sensitivity are qualitative measures of value, and any assessments of effect will be drawn from professional judgement exercised within a context defined by statute, policy and guidance.
- 6.8.9 All assessments will be presented as a narrative, setting out the nature and extent of the change to an asset's interests arising from the Project, the permanence of change and the impact, whether positive or negative, of those changes, before assigning those changes to a magnitude of change as set out in **Table 6.12**.
- 6.8.10 Change can be beneficial or adverse. NPS EN-1 expects developers to make, where possible, a positive contribution or beneficial impact to the historic environment.

Table 6.12 Classification of magnitude of change

Change	Criteria Adverse	Criteria Beneficial
High	Loss of significance resulting from irreversible total or substantial demolition or disturbance of a heritage asset or from the total disassociation of an asset from its setting.	Sympathetic restoration of an at-risk or otherwise degraded heritage asset and/or its setting. Bringing an at-risk heritage asset into sustainable use, with robust long-term management secured.
Medium	Loss of significance arising from partial disturbance or inappropriate alteration of asset which will adversely affect its importance. Change to the key characteristics of an asset's setting, which gives rise to lasting harm to the significance of the asset, but which still allows its historic, archaeological, architectural, and/or artistic interest to be appreciated.	Appropriate stabilisation and/or enhancement of a heritage asset and/or its setting that better reveal the significance of the asset or contribute to a long-term sustainable use or management regime.
Low	Minor alteration to, or alteration of, an asset, which presents minimal change to significance, including minor and/or short term or reversible change to setting which does not affect key characteristics and in which the	Minor enhancements to an asset and or its setting, which better reveal its significance or contribute to its sustainable use and management.

Change	Criteria Adverse	Criteria Beneficial
	historical context remains substantially intact.	
Negligible	Very minor alteration to an asset that does not affect its significance in any discernible way, including very minor and/or short-term or reversible change to setting that does not affect significance.	Very minor enhancement to an asset which presents minimal beneficial change to significance.

Significance evaluation methodology

- 6.8.11 The classification of the significance of an effect is judged by the relationship of the magnitude of change to the assessed heritage significance (sensitivity) of an asset (see **Table 6.13**).
- 6.8.12 As a rule, major and moderate effects are considered to be significant whilst minor and negligible effects are considered not significant. However, professional judgement is applied, and this may be amended as appropriate.
- 6.8.13 All assessments will be presented as narrative descriptions that set out the heritage significance of an asset, including, where appropriate, the contribution of its setting to significance, anticipated magnitude of change to significance and a resulting significance of effect.

Table 6.13 Classification of effect

Sensitivity	Magnitude of Change			
	High	Medium	Low	Negligible
High	Major (significant)	Major (significant)	Moderate (potentially significant)	Minor (not significant)
Medium	Major (significant)	Moderate (potentially significant)	Minor (not significant)	Minor (not significant)
Low	Moderate (potentially significant)	Minor (not significant)	Minor (not significant)	Negligible (not significant)
Negligible	Minor (not significant)	Minor (not significant)	Negligible (not significant)	Negligible (not significant)

Assessment of harm and substantial harm

- 6.8.14 Harm and substantial harm are distinguished in NPS EN-1. For this assessment, adverse change of negligible to medium magnitude to a designated asset or a non-designated asset of equivalent heritage significance would normally be considered as harm, while a high magnitude of adverse change would normally be considered substantial harm. This follows the case of *James Hall v City of Bradford* (2019, EWHC 2899) that determined that even a negligible magnitude of change to a designated heritage asset would constitute harm. The fact that the harm may be limited or negligible will contribute to the weight to be afforded to it as part of the planning balance as recognised in Paragraph 5.8.15 in NPS EN-1.
- 6.8.15 Professional judgment will be applied to the case of each individual asset and comments on the magnitude of any harm arising will be noted in the narrative of each assessment.

6.9 Assessment of Historic Environment Effects

Construction phase

Disturbance to heritage assets

- 6.9.1 In order to inform the detailed design of the archaeological mitigation for the Project, there will be further field evaluation and this will be followed by provision for archaeological recording, as stated in **Table 6.7** - and set out in **Appendix 6G** OWSI. The assessment presented in this section is based on the inclusion of this as an embedded measure which will be implemented in the delivery of the Project.
- 6.9.2 Historic township boundaries within the Draft Order Limits have been identified and are listed in **Table 6G.2** of the OWSI (**Appendix 6G**) and referred to in the Archaeological DBA (**Appendix 6A**). Some of these boundaries are represented by historic hedgerows which may meet the criteria to be considered important under the Hedgerow Regulations.

West Corridor and Runcorn/Rocksavage Spur

Overall archaeological potential

- 6.9.3 Evidence of human activity from the early prehistoric to early modern periods include mesolithic flint scatters, Bronze Age barrows, late prehistoric or Romano-British settlement and field systems, medieval villages and open fields, post medieval enclosure and industrial development associated with the development of canals and the expansion of industrial towns.
- 6.9.4 There is a medium potential for remains of medieval and/or post medieval field boundaries. These would be of low to medium heritage significance.
- 6.9.5 There is therefore potential for partial disturbance to associated archaeological remains and with an appropriate programme of archaeological recording as mitigation the overall magnitude of change would be low. This would result in a **minor** effect, which would be **Not Significant**.

Geoarchaeological potential

- 6.9.6 Geoarchaeological studies, including the Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) produced alongside this Draft ES, has found there to be high potential for the presence of deposits of geoarchaeological interest, particularly along the tidal flats and marsh between Ince and Frodsham. Evidence of this nature would be of low/medium heritage significance.
- The geoarchaeological potential has been assessed in the context of a series of Geoarchaeological Character Zones (GCZ), which are generally defined by topographic features and/or major changes in drift geology so as to remain distinct and meaningful. As such, they vary in size but as the identified geoarchaeological potential is based on topography and drift geology this generally extends beyond the Draft Order Limits and only a small portion would be directly disturbed in each case. Effects to these deposits would be mitigated through a programme of archaeological recording, as set out in the OWSI (**Appendix 6G**). Consequently, the magnitude of change is considered to be negligible. This would result in an overall **minor** effect, which would be **Not Significant**.

Ridge and furrow east of Frodsham

- 6.9.7 This areas of ridge and furrow identified on LiDAR data has been identified as being of low heritage significance. Construction may affect both extant remains as well as subsurface evidence but would not remove whole areas and impact would be generally localised and limited to the width of the required working area. Consequently, the magnitude of change to this area of ridge and furrow is considered to be low. This would result in an overall **minor** effect, which would be **Not Significant**.

Possible extraction pits within West Corridor

- 6.9.8 Any former extraction pits along this corridor have been identified as being of low heritage significance. Construction may affect isolated examples and would be limited to the width of the required working area. Consequently, the magnitude of change to the former extraction pits is considered low. This would result in an overall **minor** effect, which would be **Not Significant**.

ROF Dunham on the Hill (MCH9985)

- 6.9.9 The former ammunition storage site and its buildings are identified as being of low heritage significance, and here would be no direct construction impact and consequently, the magnitude of change to the asset is considered negligible. This would result in an overall **negligible** effect, which would be **Not Significant**.

Field boundaries and drainage features in Helsby and Frodsham Marshes

- 6.9.10 Former field boundaries and drainage features identified on LiDAR data along this corridor have been identified as being of low heritage significance. Construction may affect short sections of these features but would be limited to the width of the required working area would not directly affect the whole asset. Consequently, the

magnitude of change to the ridge and furrow is considered low. This would result in an overall **minor** effect, which would be **Not Significant**.

Roman Road-Chester to Wilderspool (Route 701) (MCH1449)

- 6.9.11 The Roman Road (modern A56) has been identified as being of medium heritage significance. Construction would cross this asset using a trenchless crossing, with the establishment of temporary construction compounds at entry and exit sites to either side of the road. This may have potential to disturb any associated archaeological deposits, but not the asset itself, and would be very localised in terms of the overall length of the asset. Consequently, the magnitude of change to the Roman Road would be no negligible or low. This would result in an overall **minor** effect, which would be **Not Significant**.

Possible ring ditches near Sutton Hall (MCH8218 and MCH8219; CPm_043; 109; 219; 252; LDr_005)

- 6.9.12 The possible prehistoric ring ditches or barrows have been identified as being of medium heritage significance. The assets recorded on the HER are located outside of the Draft Order Limits. However, a ring ditch identified as a cropmark (CPm_043), and circular mound identified on LiDAR imagery (LDr_005) are partially within the Draft Order Limits though outside of the Indicative Limits of Deviation for the pipeline and not in a location in which any works are currently proposed. Therefore, while construction works would be unlikely to physically impact the known remains, there is potential for construction to affect associated remains. Consequently, the magnitude of change to this group of ring ditches would be low. This would result in an overall **minor** effect, which would be **Not Significant**.

Searchlight Battery, Aston Heath (MCH10617)

- 6.9.13 The site of a former WW2 Searchlight Battery has been identified as being of no more than low heritage significance, as site no longer extant, but there remains the small possibility of sub surface trace remains of its structure. The recorded location of the battery is within the Draft Order Limits though outside of the Indicative Limits of Deviation for the pipeline and not in a location in which any works are currently proposed. However, construction may affect any surviving sub surface remains. Consequently, the magnitude of change to the asset is considered low. This would result in an overall **minor** effect, which would be **Not Significant**.

Possible agricultural features and former field boundaries Aston Heath (cropmarks, LiDAR, geophysics)

- 6.9.14 The former field boundaries are considered to be of low heritage significance. Construction may affect short sections of these features but would not directly affect the whole asset. Consequently, the magnitude of change to the former field boundaries is considered to be low. This would result in an overall **minor** effect, which would be **Not Significant**.

Earthworks North-east of Aston Grange (MCH24736)

- 6.9.15 The former field boundaries and marl pits considered to be of low heritage significance. Construction may affect short sections of these features but would not directly affect the whole asset. Consequently, the magnitude of change to the ridge and furrow is considered low. This would result in an overall **minor** effect, which would be **Not Significant**.

*North Corridor and Warrington, Clock Face and St Helens Spurs**Overall archaeological potential*

- 6.9.16 Evidence of human activity from the early prehistoric to early modern periods include mesolithic flint scatters, Bronze Age barrows, late prehistoric or Romano-British settlement and field systems, medieval villages and moated sites, and open fields, post medieval enclosure and industrial development associated with the development of canals and the expansion of industrial towns.
- 6.9.17 There is a high potential for remains of medieval and/or post medieval field boundaries. These would be of low heritage significance. There is medium potential for the survival of archaeological remains relating to prehistoric activity. This is currently confined to specific areas based on current knowledge, such as agricultural land immediately south of the Manchester Ship Canal, and agricultural land between Clock Face and St Helens. Remains of this nature would be of medium heritage significance. There is high potential for the survival of former extraction pits which have been identified through LiDAR imagery and geophysical survey across much of the North Corridor.
- 6.9.18 The Warrington and St Helens Spurs are located upon heavily developed land. The St Helens Spurs are surrounded by former historic coal mining sites which have since been replaced by modern development. There is negligible to low potential for the survival of archaeological remains within these Spurs. The Warrington Spur is located along existing roads with modern development in the immediate vicinity. The scheduled Roman settlement at Wilderspool is located close to this Spur. There is low potential for associated remains to extend into the Draft Order Limits. Clock Face Spur is partly located along enclosed agricultural fields with the northern portion in an area of modern industrial development. The scheduled Micklehead moated site is located immediately adjacent to the Spur in the northern, developed, portion.
- 6.9.19 There is therefore potential for the presence of previously unidentified archaeological remains of low to medium heritage significance. Partial disturbance to associated archaeological remains and with an appropriate programme of archaeological recording as mitigation would result in an overall magnitude of change of low. This would result in a **minor** effect, which would be **Not Significant**.

Geoarchaeological potential

- 6.9.20 Geoarchaeological studies, including the Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) produced alongside this Draft ES, has found there to be a high potential for the presence of

deposits of geoarchaeological interest, particularly within the River Mersey valley with Tidal Flats that may contain buried land surfaces, artefacts, palaeoenvironmental remains and past sea level index points. Evidence of this nature could potentially be of high heritage significance.

- 6.9.21 The geoarchaeological potential has been assessed in the context of a series of Geoarchaeological Character Zones (GCZ), which are generally defined by topographic features and/or major changes in drift geology so as to remain distinct and meaningful. As such, they vary in size but as the identified geoarchaeological potential is based on topography and drift geology this generally extends beyond the Draft Order Limits and only a small portion would be directly disturbed in each case. Effects to these deposits would be mitigated through a programme of archaeological recording, as set out in the OWSI (**Appendix 6G**). Consequently, the magnitude of change is considered to be negligible. This would result in an overall **minor** effect, which would be **Not Significant**.

Site of Knobstick Hall, Sutton Heath Road, Sutton (MME7768)

- 6.9.22 The site of Knobstick Hall is considered to be of low heritage significance. Due to previous significant ground disturbance on the site of the former structure and the fact that this part of the Draft Order Limits will be used for access only, the magnitude of change is considered to be negligible. This would result in an overall **negligible** effect, which would be **Not Significant**.

Site of Dichefeildes howse, Sutton Heath Road, Sutton (MME14832)

- 6.9.23 The site of the former Dichefeildes Howse is considered to be of low heritage significance. Due to previous ground disturbance on the site of the former structure and the fact that this part of the Draft Order Limits will be used for access only, the magnitude of change is considered to be negligible. This would result in an overall **negligible** effect, which would be **Not Significant**.

Site of houses, Elton Head Road, Sutton (MME20155 and MME20156)

- 6.9.24 The sites of these former houses are considered to be of low heritage significance as former assets of local historic interest. Due to the demolition of these structures and being replaced by modern development and the fact that this part of the Draft Order Limits will be used for access only, the magnitude of change is considered to be negligible. This would result in an overall **negligible** effect, which would be **Not Significant**.

Cropmarks at Elton Head Hall Farm, Sutton

- 6.9.25 The linear cropmarks identified west of Elton Head Hall Farm are considered to be of low heritage significance where related to former field boundaries and medium heritage significance if related to prehistoric or Romano-British settlement. Excavation within the required working area would result in the loss of limited sections of these buried features. Any effects to the buried features would be mitigated through a programme of archaeological recording. Consequently, the magnitude of change to these buried linear features is deemed to be low, which would result in an overall **minor** effect, which would be **Not Significant**.

Possible extraction pits within North Corridor

- 6.9.26 Possible extraction pits recorded through much of the Northern Corridor are considered to be of low heritage significance. Excavation within the required working area for the pipeline may affect isolated examples and consequently the magnitude of change to possible extraction pits is considered low. This would result in an overall **minor** effect, which would be **Not Significant**.

Possible agricultural features and former field boundaries within North Corridor

- 6.9.27 The remains of former field boundaries and agricultural features is deemed to be of low heritage significance. Construction is likely to lead to the disturbance or removal of short sections of these features and would not lead to the complete removal. Any effects would be mitigated through a programme of archaeological investigation defined through the OWSI (**Appendix 6G**) as an embedded measure (**Table 6.7**) Consequently, the magnitude of change is deemed to be low, which would result in a **minor** effect, which would be **Not Significant**.

Location of a brick kiln, School Lane, Rainhill (MME7671)

- 6.9.28 The location of a former brick kiln (MME7671) is considered to hold low heritage significance as an asset of local historic interest. Construction may lead to the partial or complete disturbance of this asset as it is located within the Indicative Limits of Deviation for the pipeline. Any effects would be mitigated through a programme of archaeological excavation. Consequently, the magnitude of change is deemed to be medium, which would result in a **minor** effect, which would be **Not Significant**.

Site of a house, Jubits Lane, Bold (MME20239)

- 6.9.29 The site of the former house is considered to be of low heritage significance. Construction works associated with the Clockface HAGI would lead to the disturbance to or loss of any surviving remains associated with the former house. Any effects of this nature would be mitigated through a programme of archaeological excavation. Consequently, the magnitude of change is deemed to be medium, which would result in a **minor** effect, which would be **Not Significant**.

Sub-circular cropmark (CPm_301)

- 6.9.30 Any potential remains associated with this possible late prehistoric roundhouse are considered to be of medium heritage significance. Construction activity in this area comprises the pipeline and a material storage area. The feature is located outwith the LoD for the pipeline so would not be affected. The material storage area may partly or wholly impact buried archaeological remains associated with this feature depending on the construction techniques used. Any potential effects would be mitigated through a programme of archaeological excavation secured through a WSI. Therefore, in a worst-case scenario where topsoil removal is required, the magnitude of change to potential remains is deemed to be medium, resulting in an overall **moderate** effect which would be **Significant**. This assessment is subject to a review of the design relating to the material storage area and will be updated at Final ES stage as appropriate.

Marsh Farm cropmark enclosure (MCH8824)

- 6.9.31 Any potential remains associated with the site of a potential prehistoric enclosure are considered to be of medium heritage significance. There are two alternative routes included within this section of the Draft Order Limits, which are Fiddler's Ferry Golf Course northern route (NP6) and a southern route (NP7). The northern part of the cropmark enclosure is located within the Draft Order Limits for NP7 and extending across the full width of the Indicative Limits of Deviation for the pipeline. Excavation within the required working area for the pipeline would therefore result in the partial loss of buried deposits associated with this asset. It is considered that any effects would be appropriately mitigated through a programme of archaeological excavation. Therefore, the magnitude of change to potential remains is deemed to be low, resulting in an overall **minor** effect, which would be **Not Significant**.
- 6.9.32 In the event that NP6 was adopted in preference to NP7 then there would be no effect to this asset.

The Manchester Ship Canal (MCH24520)

- 6.9.33 The Manchester Ship Canal is considered to be of medium heritage significance. Crossing of this asset will be through a trenchless crossing using micro-tunnelling beneath the canal. Consequently, there will be **no effect** to this asset.

Acton Grange Viaduct, Grand Junction Railway (MCH8891)

- 6.9.34 This asset is considered to be of low heritage significance. It is a railway viaduct over the Manchester Ship Canal, which will be crossed through a trenchless crossing. Consequently, there will be **no effect** to this asset.

Birkenhead and Chester Line (L & NWR/GWR) (MCH19851)

- 6.9.35 This asset is considered to be of low heritage significance. It is a railway connecting the port of Birkenhead with the city of Chester, which will be crossed through a trenchless crossing. Consequently, there will be **no effect** to this asset.

Roman Road-Chester to Wilderspool (Route 701) (MCH1449)

- 6.9.36 This asset is considered to be of low heritage significance. It is a route of a possible Roman Road, which will be crossed through a trenchless crossing. Consequently, there will be **no effect** to this asset.

*East Corridor and Warburton and Partington Spurs**Overall archaeological potential*

- 6.9.37 Evidence of human activity from the early prehistoric to early modern periods include mesolithic flint scatters, Bronze Age barrows, late prehistoric or Romano-British settlement and field systems, medieval villages and open fields, post medieval enclosure and industrial development associated with the development of canals and the expansion of industrial towns.

- 6.9.38 There is potential for the presence of prehistoric mortuary remains, which would be of medium to high heritage significance and buried remains of prehistoric or Romano-British activity, which would be of medium heritage significance. There is also a medium potential for remains of medieval and/or post medieval field boundaries. These would be of low heritage significance.
- 6.9.39 There is therefore potential for the presence of previously unidentified archaeological remains of low to high heritage significance. Partial disturbance to associated archaeological remains and with an appropriate programme of archaeological recording as mitigation would result in an overall magnitude of change of low. This would result in a **moderate** effect, which would be **potentially Significant**.

Geoarchaeological potential

- 6.9.40 The Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) states that the East Corridor contains several key geoarchaeological locations with potential for early material remains, wetland archaeology, and significant palaeoenvironmental remains, traversing wetlands and river valleys. Extensive mossland (Stretton Moss, Appleton Moss, Whitely Reed and further east and north east at Sink Moss and Chat Moss) has high geoarchaeological potential to contain evidence of human exploitation and palaeoenvironmental remains dating from the beginning of the Holocene (Mesolithic) onwards. Evidence may be preserved of buried landsurfaces, lithic or artefact scatters and archaeological features (such as enclosures) as well as ecofactual remains (such as pollen and plant macrofossils). Evidence of this nature could potentially be of high heritage significance.
- 6.9.41 The geoarchaeological potential has been assessed in the context of a series of Geoarchaeological Character Zones (GCZ), which are generally defined by topographic features and/or major changes in drift geology so as to remain distinct and meaningful. As such, they vary in size but as the identified geoarchaeological potential is based on topography and drift geology this generally extends beyond the Draft Order Limits and only a small portion would be directly disturbed in each case. Effects to these deposits would be mitigated through a programme of archaeological recording, as set out in the OWSI (**Appendix 6G**). Consequently, the magnitude of change is considered to be negligible. This would result in an overall **minor** effect, which would be **Not Significant**.

Site of Heath Farm (MGM8814)

- 6.9.42 The site of the farmhouse is considered to be of low heritage significance. Construction is highly likely to disturb any below ground remains of the farmhouse and any associated structures. Consequently, the magnitude of change to the remains of the farmhouse is considered medium. This would result in an overall **minor** effect, which would be **Not Significant**.

Site of Mary Croft (MGM8809)

- 6.9.43 Recorded as the site of a former croft, identified as being of low heritage significance. Construction is likely to disturb any below ground remains of the farmhouse and any associated structures. Consequently, the magnitude of change to the remains of the farmhouse is considered medium. This would result in an overall **minor** effect, which would be **Not Significant**.

Possible extraction pits within East Corridor

- 6.9.44 Any former extraction pits along this corridor have been identified as being of low heritage significance. Construction may affect isolated examples during excavation within the required working area and consequently the magnitude of change to the ridge and furrow is considered low. This would result in an overall **minor** effect, which would be **Not Significant**.

Possible agricultural features and former field boundaries within East Corridor

- 6.9.45 Any former field boundaries and former agricultural features along this corridor have been identified as being of low heritage significance. Construction may affect short sections of these features during excavation within the required working area but would not directly affect the whole asset. Consequently, the magnitude of change to the former field boundaries and former agricultural features is considered low. This would result in an overall **minor** effect, which would be **Not Significant**.

The Bridgewater Canal - Stretford to Runcorn (MCH21049)

- 6.9.46 Bridgewater Canal is considered to be of medium heritage significance. Construction would involve a trenchless crossing beneath the canal, and consequently there would be **no effect** on the asset.

Sink Moss (MCH25379)

- 6.9.47 The area of peat deposits are considered to be of medium heritage significance. Construction would include the pipe trench and adjacent a trenchless crossing beneath the M6 motorway would impinge on the Moss and may result in physical removal of peat deposits. Consequently, the magnitude of change to the asset would be medium. This would result in an overall **moderate** effect, which would be **Significant**.

King Street Roman Road - Margary Route 70a (MCH8684)

- 6.9.48 King Street Roman Road (now the A550) was the major Roman north-south route through the county. It has been identified as being of medium heritage significance. Construction would cross this asset north of Frandley, which would be by a trenchless crossing, with establishment of crossing compounds to either side of the road. This has the potential to disturb potential archaeological deposits associated with the road. This would however be very localised in terms of the overall length of the asset. Consequently, the magnitude of change to the Roman Road would be low. This would result in an overall **minor** effect, which would be **Not Significant**.

Boundary Stone on north side of Whitleybrook Bridge (Grade II Listed Building, 1329857)

- 6.9.49 This early 19th century boundary stone adjacent to the A49 is designated as a Grade II Listed Building (NHLE 1329857) and is located within the Draft Order Limits, within an area to be used for temporary access to a trenchless crossing compound. The boundary stone would be protected by fencing for the duration of construction works and so there would be **no effect** from direct disturbance of this asset.

*South Corridor**Overall archaeological potential*

- 6.9.50 Evidence of human activity from the early prehistoric to early modern periods include mesolithic flint scatters, Bronze Age barrows, late prehistoric or Romano-British settlement and field systems, medieval villages and open fields, post medieval enclosure and industrial development associated with the development of canals and the expansion of industrial towns.
- 6.9.51 There is high potential for the survival of prehistoric mortuary remains, which would be of medium heritage significance and relict historic boundaries as well as medieval and post medieval ridge and furrow ridge and furrow, which would be of low heritage significance.
- 6.9.52 There is therefore potential for the presence of previously unidentified archaeological remains of low to medium heritage significance. Partial disturbance to associated archaeological remains and with an appropriate programme of archaeological recording as mitigation would result in an overall magnitude of change of low. This would result in a **minor** effect, which would be **Not Significant**.

Geoarchaeological potential

- 6.9.53 The Geoarchaeology Desk-Based Assessment and preliminary Deposit modelling (**Appendix 6F**) states that the South Corridor lies mainly on Late Pleistocene (Devensian) deposits. These glaciogenic (fluvial and till) sediments are of low geoarchaeological potential, but potential is higher where the route crosses the Weaver and Pettypool valleys and Holocene alluvium and where River Dane Terrace Deposits are mapped, with potential for buried deposits and settlement on terraces. Evidence of this nature could potentially be of high heritage significance.
- 6.9.54 The geoarchaeological potential has been assessed in the context of a series of Geoarchaeological Character Zones (GCZ), which are generally defined by topographic features and/or major changes in drift geology so as to remain distinct and meaningful. As such, they vary in size but as the identified geoarchaeological potential is based on topography and drift geology this generally extends beyond the Draft Order Limits and only a small portion would be directly disturbed in each case. Effects to these deposits would be mitigated through a programme of archaeological recording, as set out in the OWSI (**Appendix 6G**). Consequently, the magnitude of change is considered to be negligible. This would result in an overall **minor** effect, which would be **Not Significant**.

King Street Roman Road - Broken Cross to Middlewich section (MCH8163)

- 6.9.55 The route of this Roman Road in the South Corridor follows the modern King Street Road. Any surviving remains would carry medium heritage significance as assets of regional interest. Construction at this point would be through trenchless crossing beneath the modern road; however, it is possible that establishment of temporary compounds at the entry and exit points for this may lead to disturbance of potential archaeological remains associated with the Roman Road. Any potential effects could be mitigated through a programme of archaeological excavation secured through a WSI. The magnitude of change is therefore deemed to be low, which would lead to an overall **minor** effect, which would be **Not Significant**.

Roman road - Cotebrook to Cuddington (MCH8023)

- 6.9.56 The conjectural route of this Roman Road in the South Corridor follows does not follow any existing key routes. It is unclear whether any archaeological remains relating to the Roman Road actually are present as no previous fieldwork has validated the record. Construction may affect a short section of this asset but would not directly affect the whole asset. Consequently, to an asset of low significance, the magnitude of change to the asset is considered low. This would result in an overall **minor**, which would be **Not Significant**.

Whatcroft Hall Park (MCH24377)

- 6.9.57 This asset is considered to be of medium heritage significance. Works associated with the Project in this area is limited to using existing tracks as temporary access within the southern portion of the park. The magnitude of change is therefore deemed to be negligible, which would lead to an overall **minor** effect, which would be **Not Significant**.

Possible extraction pits within South Corridor

- 6.9.58 Any former extraction pits along this corridor have been identified as being of low heritage significance. Construction may affect isolated examples and consequently the magnitude of change to these is considered to be low. This would result in an overall **minor** effect, which would be **Not Significant**.

Possible agricultural features and former field boundaries within South Corridor

- 6.9.59 Any former field boundaries and former agricultural features along this corridor have been identified as being of low heritage significance. Construction may affect short sections of these features but would not directly affect the whole asset. Consequently, the magnitude of change to the assets is considered low. This would result in an overall **minor** effect, which would be **Not Significant**.

Fishpond at Earnslow Grange (MCH24506)

- 6.9.60 The former fishponds are Identified as being of low heritage significance. Construction may affect any surviving subsurface remains, including paleoenvironmental depots associated with the fill of the fishpond. Construction during excavation within the required working area is likely to affect part of the former fishpond. Consequently, the magnitude of change to the former fishponds is considered medium. This would result in an overall **minor** effect, which would be **Not Significant**.

Roman Road - Chester to Manchester (Route 7a) (MCH7861)

- 6.9.61 The route of this former Roman Road is considered to have medium heritage significance. Due to its location on an area of former quarrying, remains are likely to have been previously disturbed. Construction therefore would not have any further effects on this asset at this location, and the magnitude of change is considered to be negligible. This would result in an overall **minor** effect, which would be **Not Significant**.

Manchester to Chester Line (CLC) (MCH19853)

- 6.9.62 This asset is deemed to be of low heritage significance. Construction in this area would comprise trenchless crossing beneath the line of the railway and consequently, there will be **no effect** to this asset.

Embankment west of Weaverham, Grand Junction Railway (MCH8314)

- 6.9.63 This asset is deemed to carry low heritage significance. Construction works in this would comprise trenchless crossing beneath the railway and embankment and consequently, there will be **no effect** to this asset.

Linear Earthworks or Cropmarks (MCH11090)

- 6.9.64 Potential surviving remains related to these features are deemed to be of low heritage significance. Construction is likely to result in disturbance to or loss of sections of these buried features so resulting in partial loss at most. Any effects to the buried features could be mitigated through a programme of archaeological excavation. Consequently, the magnitude of change to these buried linear features is deemed to be low, which would result in an overall **minor** effect, which would be **Not Significant**.

Enclosure and trackways near Bartington Hall (MCH24437 and MCH24428)

- 6.9.65 Potential surviving remains related to these features are deemed to be of low heritage significance. Construction is likely to result in disturbance to or loss of sections of these buried features so resulting in partial loss at most. Any effects to the buried features could be mitigated through a programme of archaeological excavation. Consequently, the magnitude of change to these buried linear features is deemed to be low, which would result in an overall **minor** effect, which would be **Not Significant**.

*Effects arising through change to setting of heritage assets**West Corridor and Runcorn/Rocksavage Spur**Thornton-le-Moors Conservation Area and associated listed buildings*

- 6.9.66 Thornton-le-Moors origin dates to at least the medieval period, recorded as a township in Thornton Parish, Eddisbury Hundred in the Domesday survey of 1086. The village comprises an historic two-row settlement in the south which contains five Grade II listed buildings, and three Grade II listed buildings occupying the northern part of the village. A village green provides a focus around which the village is situated. Modern extensions to the village are located to the south, beyond the conservation area boundary. This is considered to be of high heritage significance as a designated conservation area containing listed buildings of special historic and architectural interest. The setting of Thornton-le-Moors Conservation Area contributes in parts to the architectural and historical value of the assets by providing the rural village context in which they can be experienced and understood both individually and collectively. However, the immediate north of the conservation area is bounded by the A5117 and the extensive Stanlow oil refinery. The architectural value the historic buildings with the Conservation Area is best experienced in close views and do not depend on any distant visibility. Given that the Stanlow HPP HAGI, will be situated within the Stanlow Refinery, located ~350m northeast of the Conservation Area boundary, at worst, there would extremely limited views of the HAGI construction site and compounds from the due to intervening tree belts and the industrial environment of the oil refinery. Consequently, visibility of construction of the Stanlow HPP HAGI would not affect heritage interests of the listed buildings or wider Thornton-le-Moors Conservation Area, and no effect is anticipated. Magnitude of change is anticipated to be negligible, which, to heritage assets of high heritage significance, could represent a **minor** adverse effect. This would be **Not Significant**.

Moated site, fishpond and connecting channel, Elton (Scheduled Monument, SM1012122)

- 6.9.67 This monument comprises upstanding earthworks relating to a medieval moated site comprising a causeway and outer banks with an adjoining fishpond and connecting channel. This is considered to be of high heritage significance as a designated asset of national importance. The current setting of the moated site makes a limited contribution to its historical and archaeological value by providing a context in which it can be experienced and understood.
- 6.9.68 Construction of the pipeline will take place within approximately 80m of the monument and will be within the same field in which the monument is located. The sequence and activities for pipeline construction are described in **Section 2.5 of Chapter 2: The Project** and will involve site preparation, soil stripping and trenching, pipe laying and reinstatement. This would introduce construction activities, including movement of plant and pipe laying and welding, within the setting of the monument, which would affect its heritage significance as a change to the agricultural context in which it is experienced. However, whilst the total construction period will be over 3 years, actual activity at individual sections of

pipeline construction will be much more limited in duration. Change to the setting of this asset will therefore be temporary and relatively short-lived.

- 6.9.69 Due to the temporary nature, the magnitude of change is anticipated to be negligible, which, to heritage assets of high heritage significance, could represent a **minor** adverse effect, which would be **Not Significant**.

Frodsham Bridge (Grade II Listed Building, 1261905)

- 6.9.70 This Grade II listed road bridge, built in 1850, spans the River Weaver. This is considered to be of high heritage significance as a designated asset of national importance. The immediate setting of these assets is the Weaver Navigation itself. The wider setting of the assets is a mix of agricultural land comprising historic field divisions, and large-scale industrial activity which continues to develop along the banks of the Weaver Navigation.
- 6.9.71 The listed bridge is located within approximately 200m of the western trenchless crossing compound required for the micro-tunnelling of the Weaver Navigation. The sequence and activities for micro-tunnelling are described in **Section 2.5** and involve the excavation of an entry pit within a fenced compound. The compound will also be used for site welfare and offices as well as materials storage and processing. Trenchless crossing compounds would be in use for up to 6 months (see **paragraph 2.5.53**). The establishment and use of the compound would therefore introduce construction activity within the setting of the bridge but across an area with some existing industrial use and also due to its temporary nature the magnitude of change is anticipated to be negligible, which, to heritage assets of high heritage significance, could represent a **minor** adverse effect, which would be **Not Significant**.

Frodsham Viaduct Number 53 (Grade II Listed Building, 1253269)

- 6.9.72 This Grade II listed railway viaduct spans the River Weaver. Built between 1848 and 1850, of red sandstone, brick and cast iron. This is considered to be of high heritage significance as a designated asset of national importance. The immediate setting of these assets is the Weaver Navigation itself. The wider setting of the asset is a mix of agricultural land comprising historic field divisions, and large-scale industrial activity which continues to develop along the banks of the Weaver Navigation.
- 6.9.73 The listed viaduct is located within approximately 200m of the western trenchless crossing compound required for the micro-tunnelling of the Weaver Navigation. The sequence and activities for micro-tunnelling are described in **Section 2.5** and involve the excavation of an entry pit within a fenced compound. The compound will also be used for site welfare and offices as well as materials storage and processing. Trenchless crossing compounds would be in use for up to 6 months. The establishment and use of the compound would therefore introduce construction activity within the setting of the bridge but across an area with some existing industrial use and also due to its temporary nature the magnitude of change is anticipated to be negligible, which, to heritage assets of high heritage significance, could represent a **minor** adverse effect, which would be **Not Significant**.

Sutton Hall (Grade I Listed Building, 1253572) and associated feeding trough and barn (Grade II Listed Buildings, 1253612, 1261738)

- 6.9.74 These three listed buildings are focused on the Grade I listed Sutton Hall, a late 15th century hall which is now a farmhouse. They are considered to be of high heritage significance as a designated asset of national importance. The immediate rural and agricultural surroundings contribute to the historical and architectural interests of the asset group by providing a context for a historic hall and farmstead. Their setting in a rural context enables the assets to be understood both individually and collectively, facilitating an understanding of how the site and assets have developed over time.
- 6.9.75 Construction of the pipeline will take place within approximately 50m of the nearest listed building, essentially cutting across the fields to the immediate north of where the farmhouse is located. The sequence and activities for pipeline construction are described in **Section 2.5** and will involve site preparation, soil stripping and trenching, pipe laying and reinstatement. This would introduce construction activities, including movement of plant and pipe laying and welding, within the setting of the monument, which would affect its heritage significance as a change to the agricultural context in which it is experienced. However, whilst the total construction period will be over 3 years, activity at individual sections of pipeline construction will be much more limited in duration. Change to the setting of this asset during pipeline construction will therefore be temporary and relatively short-lived. Pipeline construction will also potentially require the removal of trees from within the avenue to Sutton Hall Grade I Listed Building (NHLE 1253572). As noted in **Table 6.7** this would be minimised as far as possible with provision for replanting with specimens as similar to the extant trees as possible in line with a commitment provided within the Outline LEMP, secured by DCO requirement. This would, however, introduce a longer term change in the setting of the listed building.
- 6.9.76 Overall, the magnitude of change is anticipated to be low, which would result in a **moderate** adverse effect, which would be **Significant**.

Dutton Lodge Farmhouse (Grade II Listed Building, 1139142) and associated Cottage, Lodge Lane (locally listed MCH17234) and Dutton Park (DCH10136) and non-listed farmhouse (MCH7943)

- 6.9.77 This asset group comprises historic farmhouses within Dutton Park. The all date to the 18th century and contain later extensions. They represent high-quality examples of regionally distinctive farmhouse buildings which contributes to the historical development and character of the area. They are considered to be of high heritage significance as a designated asset of national importance. The immediate settings of these assets comprise largely of agricultural land characterised by a mix of ancient irregular piecemeal enclosures punctuated by areas of ancient and modern woodland. The areas of woodland and orchards in the vicinity of the assets enables only close views of the assets and restricts longer views from the assets into the wider landscape. Consequently, setting contributes to their architectural value by providing a context in which the structures are experienced, while making a limited contribution to historic interest by enabling them to be understood in a rural context which allows the functional

and historic relationship between some of the associated structures to be appreciated. The architectural value these structures contain is best experienced in close views and does not depend on any distant visibility.

- 6.9.78 Construction of the pipeline and a material storage area will occur within ~350m of Dutton Lodge Farmhouse and adjacent non designated historic buildings. The sequence and activities for pipeline construction are described in **Section 2.5** and will involve site preparation, soil stripping and trenching, pipe laying and reinstatement. This would introduce construction activities, including movement of plant and pipe laying and welding, within the wider setting of the listed building. This would have a minor effect on its heritage significance as a change to the agricultural context in which it is experienced. However, whilst the total construction period will be over 3 years, actual activity at individual sections of pipeline construction will be much more limited in duration. Any change to the setting of this asset during pipeline construction will therefore be temporary and relatively short-lived.
- 6.9.79 Consequently, the magnitude of change is anticipated to be negligible, which, to heritage assets of high heritage significance, could represent a **minor** adverse effect, which would be **Not Significant**.

Trent and Mersey Canal Bridge number 211 (Grade II Listed Building, 1139147)

- 6.9.80 This Grade II listed bridge is a well-preserved example of regionally distinctive canal bridge. It was built in 1777 in brown brick and render painted white. It remains accessible as part of a trackway and public right of way. This is considered to be of high heritage significance as a designated asset of national importance. The immediate setting of the bridge contributes to the architectural and historical value by providing a context in which the asset can be experienced and understood. Both the architectural and historic interests of the asset is best experienced in close views focusing on the line of the canal and does not depend on any distant visibility beyond these parameters.
- 6.9.81 The listed bridge is located immediately adjacent to a trenchless crossing by auger bore of the Trent and Mersey Canal and associated compounds would be located to either side of the canal. The sequence and activities for auger bore are described in **Section 2.5** and the compounds would be in use for up to 6 months. The presence and operation of the auger bore activities would alter the setting of this asset, including the close views in the context of the canal. The bridge will also be in use as part of a temporary on-site access route, though as noted in **Table 6.7** this would be subject to agreement over the weight limit for the bridge in order to avoid any damage. This works would also introduce construction activities, including movement of plant and pipe laying and welding, within the wider setting of the listed bridge. This would have a minor effect on its heritage significance as a change to the agricultural and navigation context in which it is experienced. However, whilst the total construction period will be over 3 years, actual activity at individual sections of pipeline construction will be much more limited in duration. Any change to the setting of this asset during pipeline construction will therefore be temporary and relatively short-lived.

- 6.9.82 The trenchless crossing activities and vehicle movements will therefore have a temporary effect on the setting of the bridge of high significance and overall, the magnitude of change is anticipated to be negligible, which would result in a **minor** adverse effect, which would be **Not Significant**.

Weaver Navigation, historic waterway and associated structures.

- 6.9.83 Numerous heritage assets are associated with the Weaver Navigation, including four Grade II listed buildings and one locally listed. These listed buildings associated with the Weaver Navigation are considered to be of high heritage significance as a designated asset of national importance. While the swing bridge and the Weaver Navigation (itself is not currently recorded as an asset in the HER) are of low heritage significance as an asset of local historic interest.
- 6.9.84 The listed boatman's shelter is located approximately 60m south of the eastern trenchless crossing compound required for the micro-tunnelling of the Weaver Navigation, while the listed viaduct is located approximately 70m north from both trenchless crossing compounds. The sequence and activities for micro-tunnelling are described in and involve the excavation of an entry pit within a fenced compound. The compound will also be used for site welfare and offices as well as materials storage and processing. Trenchless crossing compounds would be in use for up to 6 months. The establishment and use of the compound would therefore introduce construction activity within the setting of the listed boatman's shelter, the viaduct, and the locally listed swing bridge. The magnitude of change is anticipated to be low, which, to heritage assets of high and low heritage significance, could represent no more than a **moderate** adverse effect, which due to the relatively short-term and temporary nature of these works, would be **Not Significant**.

North Corridor and Warrington and St Helens Spurs

Roman settlement at Wilderspool (Scheduled Monument, 1006769)

- 6.9.85 Archaeological excavations from the late 18th century onwards have revealed the site to have been a 2nd and 3rd century AD civil settlement housing a large community engaged in industrial activity, with its location closely associated to the fording of the River Mersey in this area. Excavations have mainly preceded impending development, including the Manchester Ship Canal and Greenhall's Brewery, which overlies much of the scheduled area. The site is considered to be of high heritage significance as a designated asset of national interests. The setting of Wilderspool Roman settlement makes a very limited contribution to the historical interest in that the River Mersey at this point does not follow the route it took at the time of the establishment of the settlement in the 2nd century AD; and modern and pre-modern development overlies the designated area.
- 6.9.86 Construction of the pipeline and HAGI at Higher Walton would not affect the historical or archaeological interest of the asset, and as a result, there will be **no effect** to this asset.

Heavy Anti-aircraft gunsite 380m east of South Lane Farm (Scheduled Monument, 1019531)

- 6.9.87 The Heavy Anti-aircraft gunsite 380m east of South Lane Farm consists of standing, earthwork and buried remains of most of a World War II Heavy Anti-aircraft (HAA) gunsite known as Station H17 and Barrows Green gunsite in military records. It is a designated heritage asset of high heritage significance for historical and archaeological interests. The setting of the asset makes a limited contribution to its historical and archaeological interest through retaining the rural context in which it was constructed, providing a level of protection to the nearby towns of Warrington and St Helens from enemy aircraft attacks.
- 6.9.88 Construction period activities will involve pipeline construction approximately 150m to the northeast of the scheduled monument and a trenchless crossing of a railway by micro-tunnel approximately 400m to the east. The sequence and activities for pipeline construction and micro-tunnelling are described in **Section 2.5**. The trenchless crossing compounds would be in use for up to 6 months, whilst the duration of pipeline construction at a particular location would be shorter. These construction activities would alter the setting of this asset, involving a limited and temporary effect on the setting of the asset which would not affect its historical or archaeological interests. The magnitude of change is anticipated to be negligible, which to a heritage asset of high heritage significance, would result in a **minor** adverse effect, which would be **Not Significant**.

St Anne's Well, near Rainhill (Scheduled Monument, 1019449)

- 6.9.89 St Ann's Well survives as a well-preserved example of a shallow square basin with steps leading down to the water. Holy wells are water sources with specifically Christian associations. The well is currently waterlogged following a period where it was infilled to deter vandals. This is considered to be of high heritage significance as a designated asset of national importance. The setting of St Anne's Well makes a limited contribution to its historical and archaeological interests by providing a context in which the asset can be understood in a largely rural immediate setting, which although much altered since the medieval period is partially reflective of the historic landscape context in which it was established. Construction period activities will involve of the pipeline construction approximately 100m to the east of the scheduled monument and a trenchless crossing of a railway by micro-tunnel approximately 250m to the north. The sequence and activities for pipeline construction and micro-tunnelling are described in **Section 2.5**. The trenchless crossing compounds would be in use for up to 6 months, whilst the duration of pipeline construction at a particular location would be shorter. These construction activities would alter the setting of this asset, involving a temporary and limited effect on the setting of the well and would not affect heritage interests of the asset and no effect is anticipated. Magnitude of change is anticipated to be negligible, which, to heritage assets of high heritage significance, could represent a **minor** adverse effect, which would be **Not Significant**.

Manchester Ship Canal (MCH24520)

- 6.9.90 The Manchester Ship Canal was built between 1887 and 1894. Most of the engineering works are of examples of very fine large-scale Victorian construction. The canal is considered to be of medium heritage significance for historical and architectural interests. The current industrialised and urban context of the canal contributes to its setting as a continually developing industrialised area which the canal was built to serve.
- 6.9.91 Two HAGI options are planned close to the asset, Higher Walton HAGI Options HWH2 and HWH8. The construction of the HAGI in either location would add further temporary elements to an already industrialised context in which the canal is situated, with HAGI construction anticipated to take from 6 to 12 month (**Section 2.5**). Further construction in this area would comprise trenchless crossing of the ship canal itself by micro-tunnelling, with the establishment and use of trenchless crossing compounds to the north and south of the canal.
- 6.9.92 Overall, then, construction activity would have a temporary and limited effect to the historical and architectural interests of the asset within a setting with established industrial uses. The magnitude of change would be negligible, which to an asset of medium heritage significance would lead to a **minor** adverse effect, which would be **Not Significant**.

Micklehead Green Moated Site (Scheduled Monument, 1012329)

- 6.9.93 Micklehead Green Moated Site comprises the earthworks of a moat on the north, west and south sides which are currently water-filled. The island surrounded by the moat was in occupied use until the 1960s as the site of St Michael's House. This is considered to be of high heritage significance as a designated asset of national importance. The current industrialised and urban setting of the moated site provides a very little contribution to the historical or archaeological interests of the asset, as this context is almost completely removed from that in which the monument was initially established. Pipeline construction would be to the immediate west of the monument but in view of the existing industrialised and urban setting this would have a temporary and limited effect on the setting of the of the asset and the magnitude of change would be negligible, which, to a heritage assets of high heritage significance, would result in a **minor** adverse effect, which would be **Not Significant**.

Moore Lane Bridges (Grade II Listed Buildings, 1135930, 1330358)

- 6.9.94 This Grade II listed bridge was built in 1894, this steel segmental arched swing bridge spans the Manchester Ship Canal. This is considered to be of high heritage significance as a designated asset of national importance. The Manchester Ship Canal provides a dominant and essential setting for the bridge, contributing to the overall heritage significance of the asset. This setting provides the reason for the bridge's existence. Both the architectural and historic interests of the asset is best experienced in close views focusing on the line of the canal and does not depend on any distant visibility beyond these parameters.

- 6.9.95 The bridge is within the Draft Order Limits and would be used as a temporary and a permanent access route. Subject to adherence to weight limits, this would not be expected to result in any harm to this asset.
- 6.9.96 Two HAGI options are located approximately 1km to the east of the asset, Higher Walton HAGI Options HWH2 and HWH8, as well as the trenchless crossing of the Manchester Ship Canal also approximately 1km to the east of the asset. Construction activities at this distance from the asset would not affect the asset.
- 6.9.97 Overall, then, there will be **no effect** to this asset.

East Corridor and Warburton and Partington Spurs

Dunham Massey Registered Park and Garden (Grade II Registered Park and Garden 1000853)*

- 6.9.98 Dunham Massey is a walled deer park landscaped with avenues, water features and Listed buildings of the late 17th to mid 18th centuries, and gardens which retain 18th and 19th century features. It is of high heritage significance as a designated asset of national importance. The park is focused on the Grade I listed Dunham Massey Hall, which forms the focus of the parkland design. The north and west part of the parkland is generally wooded and is enclosed by a brick wall alongside Woodhouse Lane. There is an entrance into the park off Woodhouse Lane, with outward views from this point restricted by a mature tree belt along Bridgewater Canal.
- 6.9.99 Construction phase works will involve open cut installation of the pipeline at a minimum distance of approximately 1.1km to the west. In addition, there will be a trenchless crossing by micro-tunnel of the River Bolin, with trenchless crossing compounds located approximately 1.3km to the west. Construction of the Warbuton HAGI would be located approximately 1.1km to the northwest of the obelisk and 1.25km from the main body of the parkland. At this level of separation, and with the presence of existing screening through mature trees both within the asset and the intervening landscape, it is not considered that construction noise would be sufficient to give rise to discernible change to setting. The Project would not be visible in close views from within the asset in which it is best experienced and understood. Long views from the asset are largely screened by mature woodland in the direction of the Project. The magnitude of change is therefore deemed to be negligible, which for a heritage asset of high heritage significance, resulting in a **minor** adverse effect, which would be **Not Significant**.

Dunham Woodhouses Conservation Area and associated listed buildings

- 6.9.100 Dunham Woodhouses is an estate village built to house workers on the nearby Dunham Massey Estate. The buildings within the conservation area, of which most are vernacular cottages, small in scale and generally detached or semi-detached. This is considered to be of high heritage significance as a conservation area containing listed buildings of special historic and architectural interest. The setting of Dunham Woodhouses contributes to the architectural and historical value of the assets by providing the rural village context in which they can be experienced and understood both individually and collectively. The architectural value these

buildings contain is best experienced in close views and do not depend on any distant visibility.

- 6.9.101 Construction phase works will involve open cut installation of the pipeline at a distance of approximately 400m to the west of the core of the village on the junction between Woodhouse Lane and Station Road, and 320m from the northern end of the conservation area. In addition, there will be a trenchless crossing by micro-tunnel of the River Bolin, with trenchless crossing compounds located approximately 600m to the west of the core of the village. Construction of the Warbuton HAGI would be located approximately 325m west of the northern end of the conservation area. This is therefore the closest point of the conservation area to the proposed construction activity, though may be regarded as the least sensitive part of the conservation area.
- 6.9.102 Due to the open views west from Station Road, there may be views of the open cut installation of the pipeline, though this would be a temporary and short term activity. Construction activity associated with Warbuton HAGI would be screened by a mature woodland belt located along the railway line which cuts across the northern edge of the conservation area and would therefore not be visible from within the conservation or from its immediate surrounds. Overall, therefore, due to the duration and screening of the works from within the conservation area there will be an adverse effect during the construction phase of a low magnitude, resulting in a **moderate** adverse effect, which due to the temporary nature of the construction phase would be **Not Significant**.

Non-designated heritage assets at Dunham Massey

- 6.9.103 These assets are all non-designated brick-built house and farm structures, which date to between the 18th and 19th centuries, The rural setting of these assets makes a limited contribution to their architectural interest by providing a context in which they can be experienced and understood.
- 6.9.104 Construction phase works within this area will primarily involve construction of the Warbuton HAGI to the south of Carrgreen Lane and within the rural setting of these assets. This would be screened from the assets to varying by existing but overall, due to the proximity of construction works, there would be a medium magnitude of change to the settings of these assets. To assets of low heritage significance, this would result in a **minor** adverse effect, which would be **Not Significant**.

Bowl barrow 120m east of Village Lane (Scheduled Monument, 1011166)

- 6.9.105 The prehistoric bowl barrow survives as a slightly oval earthen mound around 0.6m high. The monument has been spread by later ploughing, which may account for the recovery of flint artefacts and fragments of bone through fieldwalking in the vicinity. This is considered to be of high heritage significance as a designated asset of national importance. The setting of this monument contributes to the historical and archaeological value of the asset by providing a general landscape context in which it can be experienced and understood. Although much changed from its original context, the rural and largely undeveloped setting to the east, south and west allows the monument to be

understood within what would have been a prominent and visible position in the prehistoric landscape.

- 6.9.106 Construction would involve open cut pipeline installation at a distance of approximately 170m to the southeast of the monument. Construction activities at this location would therefore be temporary and short term and so would have a temporary and limited effect on the setting of the well and would not affect heritage interests of the asset and no effect is anticipated. The magnitude of change would be negligible, which, to heritage assets of high heritage significance, would result in a **minor** adverse effect, which would be **Not Significant**.

Boundary Stone on north side of Whitleybrook Bridge (Grade II Listed Building, 1329857)

- 6.9.107 The Grade II listed 19th century boundary stone is adjacent to a small bridge at the junction of a field hedgerow and a roadside hedge. This is considered to be of high heritage significance as a listed building of special historic interest. This is a historic roadside parish boundary marker with a wider setting is of open large scale agricultural fields, enclosed by hedgerow.
- 6.9.108 A trenchless crossing of the A49 by auger-bore would be located approximately 260m north of the stone, with associated compounds located approximately to the north and an access next to the boundary stone. The stone would be physically protected during the construction works but there would be some change in setting due to the proximity of construction activity, though the current setting already features the close proximity of the busy A49. Overall, then, there would be a temporary and limited effect on the setting of the boundary stone, though the magnitude of change would be negligible, which, to heritage assets of high heritage significance, would represent a **minor** adverse effect, which would be **Not Significant**.

South Corridor

Drakelow Hall moated site (Scheduled monument, 1020100)

- 6.9.109 This scheduled moated site is relatively well preserved, comprising a rectangular moated enclosure with a grass covered island approximately 55m square and adjacent fishponds. It carries high heritage significance as a designated asset of national importance. The relative lack of modern development in the immediate vicinity, coupled with the largely rural landscape context allow the monument to be appreciated in a context similar to that in which it was first constructed.
- 6.9.110 Construction activities in this area comprise the construction of the Hydrogen Storage Facility HAGI and associated temporary construction compound. Construction of the HAGI would be anticipated to take between 6 and 12 months. The construction of the HAGI would take place at a distance of approximately 600m from the monument, with a series of mature high hedgerows between them. This would limit the degree of visual or audible change and so the construction of these elements would have a temporary and limited effect on the historical and archaeological interests of the asset. The magnitude of change would therefore be negligible, which to an asset of high heritage significance, would lead to a **minor** adverse effect, which would be **Not Significant**.

Brook House Farm House (Grade II Listed Building, 1160385)

- 6.9.111 Brook House Farm is a Grade II listed building of late 17th century date but extensively altered in the 19th century. It is of high heritage significance as a listed building of special historic and architectural interest. The setting of Brook House Farm contributes to its architectural and historic value by providing the immediate agricultural context in which it can be experienced and understood. The architectural and historic interests of the farmhouse is best experienced in close views with surrounding farmland and does not depend on any distant visibility.
- 6.9.112 The pipeline would be constructed approximately 140m to the north and as well as the open cut section of pipeline to the north, construction works in this area would comprise a trenchless crossing of a railway line by micro-tunnelling approximately 160m to the northwest and a trenchless crossing of a road by auger-bore approximately 350m to the northeast. There would also be a material storage area on the northern side of the pipeline corridor approximately 185m north of the listed building. The enclosed field in which the listed building is located is outside of the Draft Order Limits and there would be no works within this field. These activities will have a temporary and limited visual and audible effect on the historical and architectural interests of the asset. The magnitude of change would be low, which to an asset of high heritage significance would lead to a **moderate** adverse effect, which due to the relatively short-term and temporary nature of these works, would be **Not Significant**.

Whatcroft Hall (Grade II Listed Building, 1138463) and associated locally listed building (DCH10092)*

- 6.9.113 Whatcroft Hall is a Grade II* listed mansion dating to the 18th century with additions in the 19th century including an ogee dome on an octagonal drum. It is considered to be of high heritage significance as a listed building of special historic and architectural interest. The surrounding parkland and gardens form the setting of the assets, some of which has been replaced by modern farm buildings immediately east of the Hall. The carefully designed parkland and gardens surrounding the hall allow for a series of glimpsed and revealed close views which the artistic and architectural values of these assets to be displayed. The hall is best experienced in close views and does not depend on any distant visibility.
- 6.9.114 Construction in this area would comprise the pipeline approximately 400m to the south, at which point there will be a trenchless crossing by auger bore of the Trent and Mersey Canal. Temporary access routes would also be immediately adjacent to the grounds associated with the Hall, largely using existing tracks and routed away from the listed building. It is also notable that the pipeline would be to the south of the listed hall, whilst the focus of the associated non-designated parkland and the locally listed Whatcroft Hall Lodges (DCH10092) are to the north. Construction of the pipeline and associated use of the access route would therefore have a temporary and limited effect on the historic interest of the Hall and associated listed and locally listed buildings. The magnitude of change would be negligible, which to a heritage asset of high heritage significance would lead to a **minor** adverse effect that would **Not Significant**.

Bostock Conservation Area and associated listed and locally listed buildings

- 6.9.115 Bostock Conservation Area has two main settlement foci: a small village containing a Grade II listed building and 11 locally listed buildings in the north; and the Grade II* Bostock Hall (NHLE 1138416) and associated Grade II listed buildings and structures set in parkland to the south. Both areas are joined by London Road, the line of which is also included in the conservation area, as well as woodland belts to either side of the road. The setting of Bostock Hall and related heritage assets contributes to the architectural and historic value of the assets by providing a context in which they can be experienced and understood both individually and collectively. The surrounding parkland was designed to and managed to foreground the architectural composition of the Hall to create a series of open and constrained views which allow the artistic and architectural values of these assets to be displayed.
- 6.9.116 The immediate setting of Bostock Green village, being the village unit itself, contributes to the historic and architectural value of the assets both individually and collectively. It does this by providing a context in which they can be experienced and understood as a planned estate village with buildings that share similar architectural styles which are largely contemporary in date.
- 6.9.117 Construction activities in this area would comprise a trenchless crossing through micro-tunneling beneath London Road, which forms part of the conservation area. Trenchless crossing compounds, with the entry and exit points for the micro-tunnel would be located to either side of London Road, separated from the road by the substantial tree belts which line on it on either side. The compounds will therefore be located outside of the conservation area, though there will also be temporary construction access points within the conservation area to allow construction traffic to access the compounds. These access points are on the location of existing farm access to the respective fields. Due to intervening screening through mature tree cover, it is not anticipated that this would have any adverse effect on the listed and locally list buildings within the conservation area. It may have a temporary and limited effect on the setting of the conservation area due to the construction activity, including the use of London Road for construction traffic and access points to the compounds. The magnitude of this change would be negligible, which to an asset of high heritage significance would lead to a **minor** adverse effect that would be **Not Significant**.

Bowl barrow 160m north-east of Moultonbank Farm (Scheduled Monument, 1011123)

- 6.9.118 The scheduled monument is a bowl barrow comprising a low earthen mound measuring 35m in diameter with a height of 1.5m. It is considered to be of high heritage significance as a designated asset of national importance. The setting of the bowl barrow makes a limited contribution to the historical and archaeological value by providing a rural landscape context in which it can be experienced and understood. Although much changed from its original landscape context, the rural setting to the west of the asset towards the River Weaver allows the bowl barrow to be understood within what would have been a prominent and visible position in the prehistoric landscape.

- 6.9.119 Construction activities in this area would comprise open cut installation of the pipeline, which would involve temporary and short term activity at this location. There will therefore be a temporary and limited adverse effect on the historical interests of the bowl barrow. The magnitude of change would be negligible, which to an asset of high heritage significance would lead to a **minor** adverse effect, which would be **Not Significant**.

Vale Royal Viaduct (Grade II Listed Building, 1160610)

- 6.9.120 The Vale Royal railway viaduct dates to 1837 and was constructed by Joseph Locke on behalf of the Grand Junction Railway. The viaduct is of a red sandstone and comprises five round arches. This is considered to be of high heritage significance as a listed building of special historic and architectural interest. The setting of the Viaduct contributes to its historic value by providing the immediate context in which the asset can be experience and understood. The immediate area, including the railway line, agricultural fields and Weaver Navigation has changed little since the asset was constructed.
- 6.9.121 Construction in this area would involve a trenchless crossing by HDD beneath the Weaver Navigation, with the crossing located to the immediate north of the listed viaduct. The crossing of the railway over the Weaver Navigation is a within a wooded with broad tree belts located either side of the Waver and the trenchless crossing compounds would be located beyond these wooded belts. As a result of this, the HDD entry point would be approximately 500m west of the viaduct and the exit point approximately 390m to the east. This construction activity would therefore have a temporary and negligible effect to the historical and architectural interests of the asset including it setting. The magnitude of change would be negligible, which to an asset of high heritage significance would lead to a **minor** adverse effect, which would be **Not Significant**.

Cattle tunnel (Grade II Listed Building, 1228362)

- 6.9.122 The cattle tunnel dates to 1837. It was constructed by George Stephenson and Josphe Locke, on behalf of Lord Delamere. The 3m wide entrance, opens out into a barrel-vaulted tunnel which runs for 40m through the embankment. This is considered to be of high heritage significance as a listed building of special historic and architectural interest. The setting of the cattle tunnel is formed by the railway line and the Vale Royal Viaduct which is located 170m to the northwest. The area surrounding the tunnel comprises tall trees in a wooded area either side of the railway track.
- 6.9.123 The listed tunnel is within the Draft Order Limits. However, construction in this area comprises of a trenchless by HDD beneath the Weaver Navigation, with the crossing located, with the crossing likely being to the immediate south of the tunnel. The line of the railway is a within a wooded in this section with broad tree belts located either side of the Waver Navigation and the trenchless crossing compounds would be located beyond these wooded belts. As a result of this, the HDD entry point would be approximately 410m west of the tunnel and the exit point approximately 470m to the east. Due to the temporary nature of the construction activity and the screening provided by the existing woodland, there would be a temporary and negligible effect to the historical and architectural

interests of the asset including its setting. The magnitude of change would be negligible, which for an asset of high heritage significance would lead to a **minor** adverse effect, which would be **Not Significant**.

Locally listed Earnslow Grange and Estate Cottages (DCH10749 and DCH10750)

- 6.9.124 Earnslow Grange is a brick-built farmhouse probably built in the 18th century on the stone footings of an earlier 16th or 17th century structure. The Estate Cottages (DCH107050) are located approximately 120m northwest of Earnslow Grange and were built in 1900. As locally listed buildings these assets are considered to be of medium heritage significance for their historical and architectural interests. The setting of both assets is largely agricultural, characterised by enclosed fields bounded by hedgerows. Both buildings are located on a south facing slope, with long views to the south. Views in other directions are restricted to those close by due to topographic factors.
- 6.9.125 Construction activities in this area would involve the pipeline construction works approximately 25m to the south of these assets. This would have a limited and temporary effect on views to the south from these assets, with some potential for construction noise during the use of plant. Overall, the magnitude of change is deemed to be low as, despite the proximity of the works, this would be a relatively short-lived and temporary effect. To assets of medium heritage significance would result in a **minor** adverse effect, which would be **Not Significant**.

Sandiway Bank Farmhouse (Grade II Listed Building, 1228575) and associated locally listed building (DCH10751)

- 6.9.126 Sandiway Bank Farmhouse is a late 18th century brick-built structure with a two-storey symmetrical three-bay frontage. It is considered to carry high heritage significance for historical and architectural interests as a designated heritage asset. The locally listed Heysmere (DCH10751) is likely of 18th or 19th century date and is located around 100m south of Sandiway Bank Farmhouse. This asset is considered to carry medium heritage significance for historical and architectural interest. The different architectural styles of both assets allows an appreciation of their varying forms and dates which helps to demonstrate the development of an historic farm estate. The setting of both assets is within a largely agricultural landscape characterised by enclosed fields bounded by hedgerows. Numerous tree stands are located in the vicinity, which restrict otherwise long views to the west from Sandiway Farmhouse, and south from Heysmere.
- 6.9.127 The pipeline would be constructed approximately 500m to the south and west of the listed farmhouse, with a trenchless crossing by micro-tunnel of the A556 Chester Road located approximately 500m to the west. There would also be HGV access along Whitegate Lane to the front of the listed farmhouse. Views to the west towards the works are largely screened by mature trees and this would greatly limit visibility of the trenchless crossing compounds in views west from the listed building. Construction works would therefore lead to a temporary and limited effect to the setting of these assets. The magnitude of change is deemed to be negligible, which for an asset of high heritage significance, would result in a **minor** adverse effect, which would be **Not Significant**.

Gorstage Hall (Grade II Listed Building, 1287118)

- 6.9.128 Gorstage Hall is a Grade II listed building built in the 19th century with a late 20th century interior. It is of high heritage significance as a listed building of special historic and architectural interest. The immediate surroundings of the hall currently comprise an ornamental garden with mature trees in the south and east, with modern buildings immediately to the west. Views from the Hall frontage to the north are partial and framed by further mature trees. The Hall is effectively experienced in close views in its immediate surroundings which does not depend on distant visibility into the wider landscape.
- 6.9.129 Construction in this area would involve installation of the pipeline to the north and east, at a distance of approximately 380m at its nearest point. In addition, there will be trenchless crossings by micro-tunnel for a railway approximately 760m to the east of the listed building and by auger bore for a crossing of the A49 approximately 630m to the north. The listed building is well screened from the location of these construction activity and so overall these would have a temporary and limited effect on the historical and architectural interests of the asset. The magnitude of change would be negligible, which to a heritage asset of high heritage significance would lead to a **minor** adverse effect, which would be **Not Significant**.

Grangelane Farm (Grade II Listed Building, 1228556)

- 6.9.130 Grangelane Farm is a Grade II listed building constructed in the early 18th century. The listed building is considered to be of high heritage significance as listed building of special historic and architectural interest. The immediate surroundings comprising of the modern farm buildings and gardens are enclosed by hedgerows and trees, which provides screening around the listed farmhouse. The farmhouse is best experienced in close views which do not depend on any distant visibility into the wider landscape.
- 6.9.131 Construction in this area would involve the pipeline route approximately 130m south of the listed building, at which point there will be a trenchless crossing of the A49 using an auger bore, with associated construction compounds to either side of the road. There would also be a material storage area located to the immediate southeast of the farm complex, approximately 65m from the listed farmhouse. Though the farmhouse is well screened this would bring construction activity very close to the farm complex in which the listed farmhouse is located, including to either side of the approach to the farmhouse along Grange Lane. Associated construction activity would therefore have some temporary effect to the historical and architectural interests of the asset including its setting. The magnitude of change would be low, which to an asset of high heritage significance would lead to a **moderate**, which due to the relatively temporary nature would be **Not Significant**.

Hefferston Grange (Grade II Listed Building, 1287121 and Grade II Listed Buildings, 1228557, 1228558)*

- 6.9.132 Hefferston Grange was built in 1741, incorporating parts of a former house dated to 1700. It was originally built as a country house before becoming a sanatorium between 1921 and 1948, and later a hospital. Two Grade II listed buildings are closely associated with Hefferston Grange, a former stable block and Ice House. The listed buildings are considered to be of high heritage significance as listed building of special historic and architectural interest. The locally listed buildings are considered to be of medium heritage significance as assets of regional importance. The immediate setting of the buildings is ornamental parkland which was developed in the 18th century. Much of this has been subsequently lost and replaced by modern housing. This entails that the current setting of Hefferston Grange provides a limited contribution to the heritage significance of the asset. The setting of the former stable block, Ice House and Lodges are dependent on their relationship with Hefferston Grange through close views, which has been partially severed due to modern development.
- 6.9.133 Construction of the pipeline would be approximately 180m west of the assets, and would involve short term and temporary works, which would not affect the close views in which the assets are experienced. There is also screening from mature trees and modern residential development between the listed buildings and the pipeline route and so the works would have a temporary and limited effect on the settings of these assets. The magnitude of change would be negligible, which for assets of high heritage significance would lead to a **minor** effect, which would be **Not Significant**.

Operational phase

Drakelow Hall moated site (Scheduled monument, 1020100)

- 6.9.134 This scheduled moated site is relatively well preserved, comprising a rectangular moated enclosure comprising a grass covered island approximately 55m square and adjacent fishponds. It carries high heritage significance as a designated asset of national importance. The relative lack of modern development in the immediate vicinity, coupled with the largely rural landscape context allow the monument to be appreciated in a context similar to that in which it was first constructed.
- 6.9.135 Permanent Project elements in this area comprise the HSFHAGI. This is expected to be around 3m in height and surrounded by fencing up to 3.6m in height and would be located approximately 600m to the west of the monument. A Zone of Theoretical Visibility (ZTV) illustration based on a height of 5m (based on a maximum height of lighting columns) for the Hydrogen Storage Facility HAGI is shown on **Figure 8.38** and shows that the area of the scheduled monument is within, but on the edge of the area from which the Hydrogen Storage Facility HAGI. At a distance of approximately 600m and with the presence of multiple mature high hedgerows and mature tree stands, visibility of the HSF HAGI is likely to be largely limited to theoretical visibility of the lighting columns. As slender structures within an area in which there are existing vertical elements, such as overhead electricity lines, this will result in only a marginal change to the setting of the monument, with a very limited effect on its historical and archaeological

interests. The magnitude of change would be very low, which to an asset of high heritage significance would lead to a **minor** effect, which would be **Not Significant**.

Dunham Woodhouses Conservation Area and associated listed buildings

- 6.9.136 Dunham Woodhouses is an estate village built to house workers on the nearby Dunham Massey Estate. It is a conservation area containing six Grade II listed buildings. These assets are considered to be of high heritage significance as a designated conservation area containing buildings of national importance. The setting of Dunham Woodhouses contributes to the architectural and historical value of the assets by providing the rural village context in which they can be experienced and understood both individually and collectively. The architectural value these buildings contain is best experienced in close views and do not depend on any distant visibility.
- 6.9.137 Operational elements within this area comprise the Warburton HAGI, at a distance of approximately 330m west of the northern end of the conservation area and approximately 550m north of the historic core of the estate village at the junction of Woodhouse Lane and Station Road. A ZTV illustration based on a height of 3.6m (based on a maximum height of lighting columns) for Warburton HAGI is shown on **Figure 8.35** and shows that there would be theoretical visibility of the HAGI from the southern part of Station Road and from the western edge of the southern part of the conservation area. Due to the presence of intervening mature hedgerows and tree stands visibility of Warburton HAGI from the conservation area may be limited to the lighting columns, which would be seen alongside existing vertical elements, such as overhead electricity lines. With the importance of close, inward-looking views to understanding the historical and architectural interests of the assets individually and collectively, this limited visual change resulting from the presence of the HAGI would result in a very low magnitude of change, which to assets of high heritage significance would present a **minor** adverse effect, which would be **Not Significant**.

Dunham Massey Registered Park and Garden (Grade II Registered Park and Garden 1000853)*

- 6.9.138 Dunham Massey is a walled deer park landscaped with avenues, water features and Listed buildings of the late 17th to mid 18th centuries, and gardens which retain 18th and 19th century features. It is of high heritage significance as a designated asset of national importance. The park is focused on the Grade I listed Dunham Massey Hall, which forms the focus of the parkland design. The north and west part of the parkland is generally wooded and is enclosed by a brick wall alongside Woodhouse Lane. There is an entrance into the park off Woodhouse Lane, with outward views from this point restricted by a mature tree belt along Bridgewater Canal.
- 6.9.139 Operational elements within this area comprise the Warburton HAGI, at approximately 1.1km northwest of the registered park boundary at its closest point. A ZTV illustration based on a height of 3.6m (based on a maximum height of lighting columns) for Warburton HAGI is shown on **Figure 8.35** and shows that the registered park and garden of Dunham Massey is entirely outside of the ZTV and

so the HAGI would not be visible from within the asset. It would also not be visible from the approach to the park entrance along Woodhouse Lane. There will therefore be **no effect** on this asset during the operational phase.

Thornton-le-Moors Conservation Area and associated listed buildings

- 6.9.140 Thornton-le-Moors origins date to at least the medieval period, recorded as a township in Thornton Parish, Eddisbury Hundred in the Domesday survey of 1086. The village comprises an historic two-row settlement in the south which contains five Grade II listed buildings, and three Grade II listed buildings occupying the northern part of the village. A village green provides a focus around which the village is situated. Modern extensions to the village are located to the south, beyond the conservation area boundary. This is considered to be of high heritage significance as a conservation area containing buildings of special historic and architectural interest. The setting of Thornton-le-Moors Conservation Area contributes in parts to the architectural and historical value of the assets by providing the rural village context in which they can be experienced and understood both individually and collectively. However, the immediate north of the conservation area is bounded by the A5117 and the extensive Stanlow Oil Refinery. The architectural value the historic buildings with the conservation area is best experienced in close views and do not depend on any distant visibility.
- 6.9.141 Operational elements within this area comprise the HPP HAGI, set within the existing Stanlow oil refinery site and at a distance of historical and architectural interests 500m northeast of the conservation area. A ZTV illustration based on a height of 5m (based on a maximum height of lighting columns) for Stanlow HAGI is shown on **Figure 8.28** and shows that theoretical visibility of the HAGI would be limited to the eastern edge of the conservation area. Due to the presence of intervening mature hedgerows visibility of Stanlow HAGI from the conservation area may be limited to the lighting columns, which would be seen alongside the existing the existing industrial character of the Stanlow complex. Due to this, and the importance of close, inward-looking views to understanding the historical and architectural interests of the assets individually and collectively, there would be **no effect** to this asset during the operational phase.

Decommissioning phase

- 6.9.142 Decommissioning is described in **Section 2.7 of Chapter 2: The Project**. Decommissioning of the Project would likely involve removing the hydrogen and leaving the pipeline in situ thus avoiding removal and associated potential environmental effects. All above ground facilities including HAGIs and BVIs would be removed and decommissioning activities would not be greater in scale than for construction. As no significant adverse effects have been identified through the operational phase of the Project, conversely there would be no positive effects to heritage assets through the removal of above ground facilities.

6.10 Assessment of Cumulative (Inter-project) Effects

- 6.10.1 A cumulative effects assessment (CEA) has been undertaken for the Project which considers the combined impacts with other developments on the same single receptor or resource (inter-project effects). The detailed method followed in identifying and assessing potential cumulative effects is set out in **Chapter 3: Approach to preparing the Draft ES**.
- 6.10.2 **Table 6.14** presents a list of all Tier 1 and 2 developments within the defined ZOI for historic environment of 1km. In each case, consideration has been given as to whether there is a potential for cumulative (inter-project) effects to historic environment.

Table 6.14 Potential for significant cumulative (inter-project) effects to historic environment

LP	Description	National Grid Reference	Potential cumulative effect?	Rationale / Timescale	Figure 3A.1 Reference
Warrington Borough Council	Warrington Western Link - Environmental Impact Assessment (EIA) Scoping Opinion.	SJ 59136 87032	No	Potential to interact with Manchester Ship Canal (MCH24520) but limited effects of the Project will ensure that it would not result in a significant cumulative effect.	33
Cheshire West and Chester Council	Forest Hill Quarry Extension.	SJ 61122 71985	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	8
DCO	Frodsham Solar Project	SJ 51000 78500	No	Construction of Frodsham Solar Project may result in loss or disturbance to areas of ridge and furrow and former field boundaries identified by remote sensing in the area of Frodsham Marshes. However, these are of low heritage significance and the limited extent of disturbance which would result from construction of the pipeline would mean that it would not result in a significant cumulative effect.	9

LP	Description	National Grid Reference	Potential cumulative effect?	Rationale / Timescale	Figure 3A.1 Reference
St Helens Council	Linkway Distribution Park Residential Development.	SJ 50814 92985	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	20
DCO	Hynet CO ₂ Pipeline DCO - A new build carbon dioxide (CO ₂) pipeline that will transport CO ₂ produced and captured by future hydrogen producing facilities and existing industrial premises in Northwest England and North Wales for offshore storage. The CO ₂ pipeline will comprise both newbuild and existing pipelines that will be covered under the DCO.	SJ 25615 71058	No	Hynet CO ₂ Pipeline passes near Thornton-le-Moors Conservation Area, but limited effects of the Project will ensure that it would not result in a significant cumulative effect.	14
Cheshire West and Chester Council	Hynet Hydrogen Production Plant.	SJ 39242 76979	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	15
DCO	Keuper Gas Storage Project.	SJ 70813 69640	No	The Keuper Gas Storage Project is located beneath ground containing the Drakelow Hall moated site (Scheduled	16

LP	Description	National Grid Reference	Potential cumulative effect?	Rationale / Timescale	Figure 3A.1 Reference
				monument, 1020100). The magnitude of effect on the monument during the operational phase of the Project has been assessed as very low (paragraph 6.9.128) and so would not contribute to a significant cumulative effect.	
Trafford Council	Carrington Village at Future Carrington.	SJ 73378 92880	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	2
Trafford Council	Voltage Park Phase 2.	SJ 72932 91154	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	31
Trafford Council	Carrington Relief Road.	SJ 73769 92634	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	1

LP	Description	National Grid Reference	Potential cumulative effect?	Rationale / Timescale	Figure 3A.1 Reference
Cheshire West and Chester Council	Vertex Natural Gas Pipeline.	SJ 45940 73774	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	30
Cheshire West and Chester Council	Protos ERF Carbon Capture Facility.	SJ 46789 76752	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	24
Cheshire West and Chester Council	Enric Automated Warehouse.	SJ 46227 75999	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	6
Cheshire West and Chester Council	Protos Plastics Park.	SJ 46353 76394	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	25
Warrington Borough Council	Fiddlers Employment Land Phase 1 - Proposed phased development comprising the construction of units for general industrial (Use Class B2) and/or storage or	SJ 54015 86310	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	7

LP	Description	National Grid Reference	Potential cumulative effect?	Rationale / Timescale	Figure 3A.1 Reference
	distribution (Use Class B8) uses, together with ancillary offices (Use Class E(g)(i)), and associated service yards, parking, landscaping and infrastructure, with access from Widnes Road.				
Warrington Borough Council	Land at the former Fiddlers Ferry Power Station site will be allocated to deliver a mixed-use development comprising approximately 101ha of employment land and a minimum of 860 new homes in the Plan period.	SJ 54299 86058	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	7
Warrington Borough Council	Warrington Policy DEV4 - Over the 18 year Plan period from 2021/22 to 2038/39 provision will be made to meet the need for 168 hectares of employment land to support both local and wider strategic employment needs. Includes land at Fiddler's Ferry, and the	Several locations	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	32

LP	Description	National Grid Reference	Potential cumulative effect?	Rationale / Timescale	Figure 3A.1 Reference
	existing Centre Park, and off Thelwall Lane.				
Halton Borough Council	Halton Policy RD1 Residential Development Allocations -Strategic housing locations and residential allocations including M8, P1, P2, R28, R29, R30, R32, R33, R36, R37, R39, R40, R41, R67, R38, R79, and R84 in Runcorn, and W2, W9, W11 and W49 in Widnes.	Various	No	Potential for construction to take place within the setting of Heavy Anti-aircraft gunsite, near Cuerdley (1019531) at same time as pipeline construction, but the temporary nature of this would ensure that there would not be a significant cumulative effect.	11
St Helens Council	Strategic Housing Site.	SJ 64701 86855	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	17
St Helens Council	Strategic Housing Site with an indicative capacity of 352 dwellings.	SJ 50814 92985	No	It would not affect any of the of the assets which were identified as being potentially affected by the Project.	20

- 6.10.3 Based on this review, it is concluded that there would be no potentially significant cumulative (inter-project) effects to historic environment.

6.11 Significance Conclusions

- 6.11.1 A summary of the results of the historic environment assessment is provided in **Table 6.15**.

Table 6.15 Summary of significance of effects

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Construction phase					
<i>Disturbance to heritage assets - West Corridor and Runcorn/Rocksavage Spur</i>					
Potential for disturbance to previously unidentified archaeological remains within West Corridor and Runcorn/Rocksavage Spur	Low/medium	Low	Minor (Not Significant)	The assessment has identified a high potential for the presence of archaeological remains including: • lithic scatters • buried remains of prehistoric or Romano-British field systems and boundaries related to Romano-British settlement • former historic field boundaries of medieval and post medieval date • buried remains of ridge and furrow associated with medieval and post medieval agricultural use • post medieval industrial remains There is therefore potential for partial disturbance to associated archaeological remains and with an appropriate programme of archaeological recording as	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
				mitigation the overall magnitude of change would be low.	
Potential for disturbance to deposits of geoarchaeological interest within West Corridor and Runcorn/Rocksavage Spur	Low/medium	Negligible	Minor (Not Significant)	In this zone, geoarchaeological potential is greatest on the floodplain of the River Weaver, an area of rich resources and attractive to humans. The geoarchaeological potential has been assessed in the context of a series of GCZ, which are generally defined by topographic features and/or major changes in drift geology and so the geoarchaeological potential generally extends beyond the Draft Order Limits and only a small portion would be directly disturbed in each case. Effects to these deposits would be mitigated through a programme of archaeological recording, as set out in the OWSI (Appendix 6G).	CWACC Section 6.9
Disturbance to Ridge and furrow east of Frodsham	Low	Low	Minor (Not Significant)	Few areas directly affected, and disturbance would be limited to parts of the asset.	CWACC Section 6.9
Disturbance to possible extraction	Low	Low	Minor (Not Significant)	Few assets directly affected, and disturbance would be limited	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
pits within West Corridor					
Disturbance to ROF Dunham on the Hill (MCH9985)	Low	Negligible	Negligible (Not Significant)	No direct affect to asset or setting as result of construction	CWACC Section 6.9
Disturbance to field boundaries and drainage features in Helsby and Frodsham Marshes	Low	Low	Minor (Not Significant)	Construction would only affect parts of the former boundaries and drainage ditches and would not alter the wider understanding of the landscape and its development.	CWACC Section 6.9
Disturbance to Roman Road-Chester to Wilderspool (Route 701) (MCH1449)	Medium	Low	Minor (Not Significant)	Construction would cut across the line of the Roman Road in one location and would not affect the wider understanding and readability of the asset.	CWACC Section 6.9
Disturbance to Possible ring ditches near Sutton Hall (MCH8218 and MCH8219)	Medium	Low	Minor (Not Significant)	One circular feature identified on LiDAR imagery (LDr_005) is partially within the Draft Order Limits though outside of the Indicative Limits of Deviation for the pipeline and not in a location in which any works are currently proposed.	CWACC Section 6.9
Disturbance to Searchlight Battery,	Low	Low	Minor (Not Significant)	Site no longer extant but may have subsurface trace remains. Any construction	CWACC

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Aston Heath (MCH10617)				over this asset may therefore affect these but would be limited.	Section 6.9
Disturbance to Possible agricultural features and former field boundaries at Aston Heath	Low	Low	Minor (Not Significant)	Construction would only affect parts of the former boundaries and would not alter the wider understanding of the landscape and its development.	CWACC Section 6.9
Disturbance to Earthworks North-east of Aston Grange (MCH24736)	Low	Low	Minor (Not Significant)	Construction would only affect parts of the former boundaries and would not alter the wider understanding of the landscape and its development.	CWACC Section 6.9
Severn Vyrnwy Aqueduct (MCH10449)	Medium	Low	Minor (Not Significant)	It is assumed that the construction would not extend to the depth of the aqueduct.	CWACC Section 6.9
<i>Effects arising through change to setting of heritage assets - West Corridor and Runcorn/Rocksavage Spur</i>					
Change to setting of Thornton-le-Moors Conservation Area and associated listed buildings	High	Negligible	Minor (Not Significant)	Distance, screening and current industrial nature of Stanlow site will greatly limit any change to setting of the listed buildings or Thornton-le-Moors Conservation Area during construction of the Stanlow HPP HAGI.	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Change to setting of Moated site, fishpond and connecting channel, Elton (Scheduled Monument, SM1012122)	High	Negligible	Minor (Not Significant)	Any change to setting during construction phase would be greatly limited by the temporary and short term nature of the works.	CWACC Section 6.9
Change to setting of Frodsham Bridge (Grade II Listed Building, 1261905)	High	Negligible	Minor (Not Significant)	Distance, current screening and industrial nature of current uses will greatly limit and change to the setting of this asset during construction activity.	CWACC Section 6.9
Change to setting of Frodsham Viaduct Number 53 (Grade II Listed Building, 1253269)	High	Negligible	Minor (Not Significant)	Distance, current screening will greatly limit and change to the setting of this asset during construction activity.	CWACC Section 6.9
Change to setting of Sutton Hall (Grade I Listed Building, 1253572) and associated feeding trough and barn (Grade II Listed	High	Low	Moderate (Significant)	Construction would have a temporary effect on the setting of the Sutton Hall.	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Buildings, 1253612, 1261738)					
Change to setting of Dutton Lodge Farmhouse (Grade II Listed Building, 1139142) and associated Cottage, Lodge Lane (locally listed MCH17234) and Dutton Park (DCH10136) and non-listed farmhouse (MCH7943)	High	Negligible	Minor (Not Significant)	Distance, current screening will greatly limit and change to the setting of this asset during construction activity.	CWACC Section 6.9
Change to setting of Trent and Mersey Canal Bridge number 211 (Grade II Listed Building, 1139147)	High	Negligible	Minor (Not Significant)	Construction of a trenchless crossing and associated compounds would have a temporary and limited effect on the setting of the bridge and so only a negligible change is anticipated.	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Change to setting of Weaver Navigation, historic waterway and associated structures.	High	Low	Moderate (Not Significant)	Trenchless crossing compounds would be in use for up to 6 months. The establishment and use of the compound would therefore introduce construction activity within the setting of the listed boatman's shelter, the viaduct, and the locally listed swing bridge. Due to the temporary nature of the works, the effect would be Not Significant.	CWACC Section 6.9
<i>Disturbance to heritage assets - North Corridor and Warrington, Clock Face and St Helens Spurs</i>					
Potential for disturbance to previously unidentified archaeological remains within North Corridor and Warrington and St Helens Spurs	Low/medium	Low	Minor (Not Significant)	The assessment has identified a high potential for the presence of archaeological remains including: • buried remains of prehistoric or Romano-British activity • relict field boundaries of probable post medieval date • medieval and post medieval ridge and furrow • mineral extraction sites of probable post medieval date There is therefore potential for partial disturbance to associated archaeological	St Helens, Warrington, Halton, CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
				remains and with an appropriate programme of archaeological recording as mitigation the overall magnitude of change would be low.	
Potential for disturbance to deposits of geoarchaeological interest within North Corridor and Warrington and St Helens Spurs	Low to high	Negligible	Minor (Not Significant)	There is a high potential for the presence of deposits of geoarchaeological interest, particularly within the River Mersey valley with Tidal Flats that may contain buried land surfaces, artefacts, palaeoenvironmental remains and past sea level index points. The geoarchaeological potential has been assessed in the context of a series of GCZ, which are generally defined by topographic features and/or major changes in drift geology and so the geoarchaeological potential generally extends beyond the Draft Order Limits and only a small portion would be directly disturbed in each case. Effects to these deposits would be mitigated through a programme of archaeological recording, as set out in the OWSI (Appendix 6G).	St Helens, Warrington, Halton, CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Disturbance to site of Knobstick Hall, Sutton Heath Road, Sutton (MME7768)	Low	Negligible	Negligible (Not Significant)	Hall is no longer present and remains may only be partially within the Draft Order Limits.	St Helens Section 6.9
Disturbance to site of Dichefeildes house, Sutton Heath Road, Sutton (MME14832)	Low	Negligible	Negligible (Not Significant)	Hall is no longer present and remains may only be partially within the Draft Order Limits, in an area to be used for access only.	St Helens Section 6.9
Disturbance to site of houses, Elton Head Road, Sutton (MME20155 and MME20156)	Low	Negligible	Negligible (Not Significant)	Houses are no longer present and remains may only be partially within the Draft Order Limits, in an area to be used for access only.	St Helens Section 6.9
Disturbance to cropmarks at Elton Head Hall Farm, Sutton	Low	Low	Minor (Not Significant)	Archaeological features likely to be partially affected. Any impacts would be mitigated through a programme of archaeological excavation secured through a WSI.	St Helens Section 6.9
Disturbance to possible extraction pits within North Corridor	low	low	Minor (Not Significant)	Few assets directly affected, with limited extent of potential disturbance.	St Helens, Warrington, CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Disturbance to possible agricultural features and former field boundaries within North Corridor	Low-Medium	Low	Minor (Not Significant)	Archaeological features likely to be partially affected. Any impacts would be mitigated through a programme of archaeological excavation secured through a WSI.	St Helens, Warrington, Halton, CWACC Section 6.9
Disturbance to location of a brick kiln, School Lane, Rainhill (MME7671)	Low	Medium	Minor (Not Significant)	Effects to potential remains would be mitigated through a programme of archaeological excavation secured through a WSI.	St Helens Section 6.9
Disturbance to site of a house, Jubits Lane, Bold (MME20239)	Low	Medium	Minor (Not Significant)	Effects to potential remains would be mitigated through a programme of archaeological excavation secured through a WSI.	St Helens Section 6.9
Disturbance to Sub-circular cropmark (CPm_301)	Medium	Medium	Moderate (Significant)	Total loss of feature, though effects to potential remains would be mitigated through a programme of archaeological excavation secured through a WSI.	
Disturbance to Marsh Farm cropmark enclosure (MCH8824)	Medium	Low	Minor (Not significant)	Potential remains would only be partially affected. Any effects would be mitigated through a programme of archaeological excavation secured through a WSI	Warrington Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Disturbance to the Manchester Ship Canal (MCH24520)	Medium	None	No effect	Trenchless crossing used at this location so they will be no physical effect.	Warrington Section 6.9
Disturbance to Acton Grange Viaduct, Grand Junction Railway (MCH8891)	Low	None	No effect	Trenchless crossing used at this location so they will be no physical effect.	Warrington Section 6.9
<i>Effects arising through change to setting of heritage assets - North Corridor and Warrington, Clock Face and St Helens Spurs</i>					
Change to setting of Roman settlement at Wilderspool (Scheduled Monument, 1006769)	High	None	No effect	Construction of the pipeline and HAGI at Higher Walton would not affect the historical or archaeological interest of the asset, and as a result, no effect is anticipated.	Warrington Section 6.9
Change to setting of Heavy Anti-aircraft gunsite, near Cuerdley (Scheduled Monument, 1019531)	High	Negligible	Minor (Not Significant)	Construction of the pipeline approximately 150m to the north of the scheduled monument would have a limited and temporary effect on the setting of the asset with negligible effect to its historical or archaeological interests.	St Helens Section 6.9
Change to setting of St Anne's Well, near Rainhill (Scheduled	High	Negligible	Minor (Not Significant)	Construction of a trenchless crossing, and associated compounds would have a temporary and limited effect on the setting	St Helens Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Monument, 1019449) (DIRECT)				of the well with negligible effect to heritage interests of the asset.	
Change to setting of Manchester Ship Canal (MCH24520) including Moore Lane Bridges (Grade II Listed Buildings 1135930 and 1330358)	Medium	Negligible	Minor (Not Significant)	Construction activity would have a temporary and limited effect to the historical and architectural interests of the asset within a setting with established industrial uses.	Halton, Warrington Section 6.9
Change to setting of Micklehead Green Moated Site (Scheduled Monument, 1012329)	High	Negligible	Minor (Not Significant)	Temporary and limited effect on the setting of the of the asset and the magnitude of change would be negligible.	St Helens Section 6.9
Change to setting of Moore Lane Bridges (Grade II Listed Buildings, 1135930, 1330358)	High	None	No effect	Within the Draft Order Limits but would be used as an access route only.	Halton, Warrington Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
<i>Disturbance to heritage assets - East Corridor and Warburton and Partington Spurs</i>					
Potential for disturbance to previously unidentified archaeological remains within East Corridor and Warburton and Partington Spurs	Low to high	Low	Moderate (Significant)	The assessment has identified a high potential for the presence of archaeological remains including: • prehistoric mortuary remains • buried remains of prehistoric or Romano-British activity • the survival of relict field boundaries of probable post medieval date • medieval and post medieval ridge and furrow ridge and furrow. There is therefore potential for partial disturbance to associated archaeological remains and with an appropriate programme of archaeological recording as mitigation the overall magnitude of change would be low.	Trafford, Cheshire East, CWACC Section 6.9
Potential for disturbance to deposits of geoarchaeological interest within East Corridor and	Low to high	Negligible	Minor (Not Significant)	The East Corridor contains several key geoarchaeological locations with potential for early material remains, wetland archaeology, and significant palaeoenvironmental remains, traversing wetlands and river valleys.	

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Warburton and Partington Spurs				The geoarchaeological potential has been assessed in the context of a series of GCZ, which are generally defined by topographic features and/or major changes in drift geology and so the geoarchaeological potential generally extends beyond the Draft Order Limits and only a small portion would be directly disturbed in each case. Effects to these deposits would be mitigated through a programme of archaeological recording, as set out in the OWSI (Appendix 6G).	
Disturbance to site of Heath Farm (MGM8814)	Low	Medium	Minor (Not Significant)	Construction is likely to disturb any below ground remains of the farm and any associated structures.	Trafford Section 6.9
Disturbance to site of Mary Croft (MGM8809)	Low	Medium	Minor (Not Significant)	Construction is likely to disturb any below ground remains of the croft and any associated structures.	Trafford Section 6.9
Disturbance to possible extraction pits within East Corridor	Low	Low	Minor (Not Significant)	Few assets directly affected, and construction would be limited.	Trafford, Cheshire East, CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Disturbance to possible agricultural features and former field boundaries within East Corridor	Low	Low	Minor (Not Significant)	Construction would only affect parts of assets and would not alter the wider understanding of the landscape and its development.	Trafford, Cheshire East, CWACC Section 6.9
Disturbance to the Bridgewater Canal - Stretford to Runcorn (MCH21049)	Medium	None	No effect	Construction would involve a trenchless crossing beneath the canal with no physical effects to the asset.	Warrington, Cheshire East Section 6.9
Disturbance to Sink Moss (MCH25379)	Medium	Medium	Moderate (Significant)	Construction would include the pipe trench and adjacent a trenchless crossing beneath the M6 motorway. These would impinge on the Moss and may involve physical removal of peat deposits.	Cheshire East Section 6.9
Disturbance to King Street Roman Road - Margary Route 70a (MCH8684)	Medium	Low	Minor (Not Significant)	Construction would cross this asset north of Frandley, which would be by a trenchless crossing. This has some potential to disturb potential archaeological deposits associated with the road.	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
<i>Effects arising through change to setting of heritage assets - East Corridor and Warburton and Partington Spurs</i>					
Change to setting of Dunham Massey Registered Park and Garden (Grade II* Registered Park and Garden 1000853)	High	Negligible	Minor (Not Significant)	The Project would not be visible in close views from within the asset in which it is best experienced and understood. Long views from the asset are largely screened by mature woodland in the direction of the Project.	Trafford Section 6.9
Change to setting of Dunham Woodhouses Conservation Area and associated listed buildings	High	Low	Moderate (Not Significant)	Due to the duration and screening of the works from within the conservation area there will be an adverse effect during the construction phase of a low magnitude.	Trafford Section 6.9
Change to setting of Non-designated heritage assets at Dunham Massey	Low	Medium	Minor (Not Significant)	Construction phase works within this area will primarily involve construction of the Warburton HAGI. This would be screened from the assets to varying by existing but overall, due to the proximity of construction works.	Trafford Section 6.9
Change to setting of Bowl barrow 120m east of Village Lane	High	Negligible	Minor (Not Significant)	Construction would have a temporary and limited effect on the setting of the barrow.	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
(Scheduled Monument, 1011166)					
Change to setting of Boundary Stone on north side of Whitleybrook Bridge (Grade II Listed Building, 1329857)	High	Negligible	Minor (Not Significant)	Construction of a trenchless crossing, and associated compounds would have a temporary and limited effect on the setting of the boundary stone with only negligible change to its heritage interests.	CWACC Section 6.9
<i>Disturbance to heritage assets - South Corridor</i>					
Potential for disturbance to previously unidentified archaeological remains within South Corridor	Low/medium	Low	Minor (Not Significant)	The assessment has identified a high potential for the presence of archaeological remains including: • prehistoric mortuary remains • relict historic boundaries. There is therefore potential for partial disturbance to associated archaeological remains and with an appropriate programme of archaeological recording as mitigation the overall magnitude of change would be low.	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Potential for disturbance to deposits of geoarchaeological interest within South Corridor	Low to high	Negligible	Minor (Not Significant)	The South Corridor lies mainly on Late Pleistocene (Devensian) deposits, with high potential where the route crosses the Weaver and Pettypool valleys and Holocene alluvium and where River Dane Terrace Deposits are mapped. Potential for buried deposits and settlement on terraces which could be of high heritage significance. The geoarchaeological potential has been assessed in the context of a series of GCZ, which are generally defined by topographic features and/or major changes in drift geology and so the geoarchaeological potential generally extends beyond the Draft Order Limits and only a small portion would be directly disturbed in each case. Effects to these deposits would be mitigated through a programme of archaeological recording, as set out in the OWSI (Appendix 6G).	
Disturbance to King Street Roman Road - Broken Cross to Middlewich section (MCH8163)	Medium	Low	Minor (Not Significant)	Entry and exit points of drilling may lead to disturbance of archaeological remains. Any effects would be mitigated through a programme of archaeological investigation and recording.	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Disturbance to Roman road - Cotebrook to Cuddington (MCH8023)	Low	Low	Minor (Not Significant)	Construction may affect a short section of this asset but would not directly affect the whole asset. Consequently, the magnitude of change to the assets is considered low.	CWACC Section 6.9
Disturbance to Whatcroft Hall Park (MCH24377)	Low	Negligible	Minor (Not Significant)	Activities confined to access along existing tracks.	CWACC Section 6.9
Disturbance to possible extraction pits within South Corridor	Low	Low	Minor (Not Significant)	Few assets directly affected, and isolated remains are considered unlikely to yield valuable archaeological information.	CWACC Section 6.9
Disturbance to possible agricultural features and former field boundaries within South Corridor	Low	Low	Minor (Not Significant)	Archaeological features likely to be partially affected. Any impacts would be mitigated through a programme of archaeological excavation secured through a WSI.	CWACC Section 6.9
Disturbance to Fishpond at Earnslow Grange (MCH24506)	Low	Medium	Minor (Not Significant)	Construction may affect any surviving subsurface remains, including paleoenvironmental depots associated with the fill of the fishpond.	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Disturbance to Roman Road - Chester to Manchester (Route 7a) (MCH7861)	Medium	Negligible	Minor (Not Significant)	Potential archaeological remains likely to have been removed through intensive quarrying.	CWACC Section 6.9
Disturbance to Manchester to Chester Line (CLC) (MCH19853)	Low	None	No effect	Trenchless crossing proposed beneath the asset so they will be no physical effect.	CWACC Section 6.9
Disturbance to embankment west of Weaverham, Grand Junction Railway (MCH8314)	Low	None	No effect	Trenchless crossing proposed beneath the asset so they will be no physical effect.	CWACC Section 6.9
Disturbance to linear earthworks or cropmarks (MCH11090)	Low	Low	Minor (Not Significant)	Archaeological features likely to be partially affected. Any impacts would be mitigated through a programme of archaeological excavation secured through a WSI.	CWACC Section 6.9
Disturbance to enclosure and trackways near Bartington Hall	Low	Low	Minor (Not Significant)	Archaeological features likely to be partially affected. Any impacts would be mitigated through a programme of archaeological excavation secured through a WSI.	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
(MCH24437 and MCH24428)					
<i>Effects arising through change to setting of heritage assets - South Corridor</i>					
Change to setting of Drakelow Hall moated site (Scheduled monument, 1020100)	High	Negligible	Minor (Not Significant)	Due to intervening topography and the presence of multiple mature high hedgerows, the construction of the Hydrogen Storage Facility HAGI and temporary construction compound would have a temporary and limited effect on the historical and archaeological interests of the asset.	CWACC Section 6.9
Change to setting of Brook House Farm House (Grade II Listed Building, 1160385)	High	Low	Moderate (Not Significant)	Construction works in this area would comprise micro-tunneling entry and exit points, the pipeline construction, and a material storage area. These activities are likely to have a temporary and limited visual and audible effect on the historical and architectural interests of the asset.	CWACC Section 6.9
Change to setting of Whatcroft Hall (Grade II* Listed Building, 1138463) and associated	High	Negligible	Minor (Not Significant)	Construction in this area would comprise the pipeline approximately 400m to the south. This would have a temporary and limited effect on the historic interest of the	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
locally listed buildings (DCH10092)				Hall and associated listed and locally listed buildings.	
Change to setting of Bostock Conservation Area and associated listed and locally listed buildings	High	Negligible	Minor (Not Significant)	Due to intervening screening through mature tree cover, it is anticipated that this would not have any adverse effect on the listed and locally list buildings within the conservation area. It may have a temporary and limited effect on the setting of the conservation area in the specific work location.	CWACC Section 6.9
Change to setting of Bowl barrow 160m north-east of Moultonbank Farm (Scheduled Monument, 1011123)	High	Negligible	Minor (Not Significant)	Construction activities in this area would comprise excavations for the pipeline which would have a temporary and limited adverse effect on the historical interests of the bowl barrow.	CWACC Section 6.9
Change to setting of Vale Royal Viaduct (Grade II Listed Building, 1160610)	High	Negligible	Minor (Not Significant)	Construction in this area comprises of a trenchless crossing beneath the Weaver Navigation, through which associated construction activity would have a temporary and negligible effect to the historical and architectural interests of the asset including it setting	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Change to setting of Cattle tunnel (Grade II Listed Building, 1228362)	High	Negligible	Minor (Not Significant)	Construction in this area comprises of a trenchless crossing beneath the Weaver Navigation, through which associated construction activity would have a temporary and negligible effect to the historical and architectural interests of the asset including its setting due to intervening woodland	CWACC Section 6.9
Change to setting of Locally listed Earnslow Grange and Estate Cottages (DCH10749 and DCH10750)	Medium	Low	Minor (Not Significant)	It is expected that construction works would have a limited and temporary effect on views to the south from these assets.	CWACC Section 6.9
Change to setting of Sandiway Bank Farmhouse (Grade II Listed Building, 1228575) and associated locally listed building (DCH10751)	High	Negligible	Minor (Not Significant)	It is expected that construction works would lead to a temporary and limited effect to the setting of these assets.	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Change to setting of Gorstage Hall (Grade II Listed Building, 1287118)	High	Negligible	Minor (Not Significant)	Construction in this area comprises the pipeline, which would have a temporary and limited effect to the historical and architectural interests of the asset	CWACC Section 6.9
Change to setting of Grangelane Farm (Grade II Listed Building, 1228556)	High	Low	Moderate (Not Significant)	Construction in this area comprises trenchless crossing, and a material storage area, through which associated construction activity would have a temporary and limited effect to the historical and architectural interests of the asset including its setting.	CWACC Section 6.9
Change to setting of Hefferston Grange (Grade II* Listed Building, 1287121 and Grade II Listed Buildings, 1228557, 1228558)	High	Negligible	Minor (Not Significant)	Construction of the pipeline approximately 180m west of the assets is likely to have a temporary and limited effect on the settings of these assets.	CWACC Section 6.9
Operational Phase					
Change to setting of Drakelow Hall moated site	High	Very Low	Minor (not significant)	Due to distance, intervening topography and the presence of multiple mature high hedgerows, the presence of the Hydrogen Storage Facility HAGI would have a very	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
(Scheduled Monument, 1020100)				limited effect on the historical and archaeological interests of the asset.	
Change to setting of Dunham Woodhouses Conservation Area and associated listed buildings	High	Low	Minor (not significant)	Due to the distances between the assets and the HAGI, and the importance of close, inward-looking views to understanding the historical and architectural interests of the assets individually and collectively, no operational effects through noise are anticipated, and visual effects of the HAGI are likely to be low	
Change to setting of Dunham Massey Registered Park and Garden (Grade II* Registered Park and Garden 1000853)	High	None	No effect	Dunham Massey is entirely outside of the ZTV for Warbuton HAGI and no part of the Project would be visible from within the asset or the approach to it.	
Change to the setting of Thornton-le-Moors Conservation Area and associated listed buildings	High	None	No effect	Due to the distance of the Stanlow HPP HAGI, its location within the existing Stanlow oil refinery site, and the importance of close, inward-looking views to understanding the historical and architectural interests of the conservation area and its listed buildings, there will be no operational effects on this asset.	CWACC Section 6.9

Receptor and summary of predicted effects	Sensitivity/ importance/ value of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale	LPA and Chapter section reference
Manchester Ship Canal	Medium	None	No effect	Based on the existing industrial nature of the canal and the limited visibility, there would be no effect to this asset during the operational phase.	

1. The sensitivity/importance/value of a receptor is defined using the criteria set out in **Section 6.9** and is defined as [negligible, low, medium and high].
2. The magnitude of change on a receptor resulting from activities relating to the development is defined using the criteria set out in **Section 6.9** and is defined as [negligible, low, medium and high].
3. The significance of the environmental effects is based on the combination of the sensitivity/importance/value of a receptor and the magnitude of change and is expressed as major (significant), moderate (potentially significant) or minor/negligible (not significant), subject to the evaluation methodology outlined in **Section 6.9**.
4. Local Planning Authority: Cheshire West and Chester Council (CWAC); Cheshire East Council (CEC); Halton Borough Council (HBC); Warrington Borough Council (WBC); St. Helens Borough Council (SHBC); Trafford Council (TC).

6.12 In-combination Climate Change Impact (ICCI) Assessment

- 6.12.1 The impact of future climate change has been considered throughout the assessment and in-combination climate change impacts (ICCI) have been identified. The ICCI assessment is reported in Chapter 19: Intra-project effects.

6.13 Next Steps

- 6.13.1 The Draft ES will be subject to Stage 3 Statutory Consultation. Comments received will be considered and the assessment updated where appropriate as part of the Final ES. Additional geophysical survey is underway and the results of this survey will be included within the Final ES.

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