



**Haweswater Aqueduct Resilience Programme - Proposed Marl Hill
Section**

Environmental Statement

Volume 2

Chapter 10: Cultural Heritage

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Haweswater Aqueduct Resilience Programme - Proposed Marl Hill Section

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Contents

10. Cultural Heritage	1
10.1 Introduction	1
10.2 Scoping and Consultations	2
10.3 Key Legislation, Policy and Guidance	2
10.4 Assessment Methodology and Assessment Criteria	3
10.5 Baseline Conditions.....	8
10.6 Assessment of Likely Significant Effects.....	10
10.7 Proposed Traffic Routes Effects	17
10.8 Hedgerows.....	21
10.9 Essential Mitigation and Residual Effects.....	21
10.10 Cumulative Effects.....	23
10.11 Conclusion	23
10.12 Glossary and Key Terms.....	24

10. Cultural Heritage

10.1 Introduction

- 1) This chapter presents an assessment of the potential for likely significant effects of the Proposed Marl Hill Section on cultural heritage assets.
- 2) The chapter begins by reviewing the legislation and planning policies relevant to cultural heritage. The assessment area and methodology for the assessment are then outlined. The baseline environment is then identified before an assessment is made of the potential effects on cultural heritage for the Proposed Marl Hill Section. Embedded and good practice mitigation measures relevant to cultural heritage are summarised in Section 10.4 and have been taken into account in the assessment in Section 10.6.
- 3) The cultural heritage topic considers the following sub-topics:
 - Archaeological remains: the material remains of human activity from the earliest periods of human evolution to the present. These may be buried traces of human activities, sites visible above ground, or moveable artefacts
 - Historic buildings: architectural, designed or other structures with a significant historical value. These may include structures that have no aesthetic appeal or structures not usually thought of as buildings, such as milestones or bridges
 - Historic landscapes: the current landscape, whose character is the result of the action and interaction of natural and / or human factors. The definition encompasses all landscapes, including the countryside, townscapes and industrial landscapes as well as designed landscapes, such as gardens and parks. As the whole of the UK's (and most of the world's) landscape has been modified by past human activities, it all has a historic character. However, just as all old materials are not necessarily archaeologically significant merely by virtue of their age, so not all landscapes are equally historically significant.
- 4) The assessment area comprised a 200 m zone beyond the Bonstone and Braddup compound planning application boundaries (see Figure 10.1). A wider assessment area was also established to identify any potential for impacts on the setting of designated cultural heritage assets, based on a Zone of Theoretical Visibility (ZTV) (see Figure 10.2). Designated assets identified within 50 m of Traffic Routes and assessed as having setting impacts were also included in the baseline and assessment below.
- 5) This cultural heritage assessment is supported by the following appendices and figures:
 - Appendix 10.1 – desk-based survey
 - Appendix 10.2 – Cultural Heritage Gazetteer
 - Appendix 10.3 – Geophysical Survey Report of Bonstone Compound
 - Appendix 10.4 – Geophysical Survey Report of Braddup Compound
 - Figure 10.1 – United Utilities Water Limited Haweswater Aqueduct Resilience Programme Cultural Heritage Assets Within Assessment Area
 - Figure 10.2 – United Utilities Water Limited Haweswater Aqueduct Resilience Programme Designated Cultural Heritage Assets Within ZTV
 - Figure 10.3 – United Utilities Water Limited Haweswater Aqueduct Resilience Programme Marl Hill Environment Agency Light Detecting and Ranging (LiDAR) Digital Surface Model (DSM).

10.2 Scoping and Consultations

10.2.1 Scoping

- 6) A cultural heritage chapter was included within the Environmental Impact Assessment Scoping Report, which was submitted to the relevant planning authorities for comment in October 2019, followed by a Scoping Addendum in February due to design changes and refinements. Scoping Report responses were provided by each of the local authorities and these have been reviewed and October 2019 Scoping Report Responses incorporated into the assessment. Scoping comments and responses are outlined in Appendix 4.1.

10.2.2 Consultation

- 7) During this assessment, consultations have taken place with relevant statutory and non-statutory consultees, stakeholders and third parties, through both email correspondence and telephone calls. This has been summarised in Appendix 4.1.

10.3 Key Legislation, Policy and Guidance

- 8) Table 10.1 introduces relevant cultural heritage legislation, policy and guidance.

Table 10.1: Cultural Heritage Key Legislation, Policy and Guidance

Applicable Legislation, Policy and Guidance	Description
<i>National Planning Policy Framework (NPPF)</i> (Ministry of Housing, Communities & Local Government, 2019a) ¹	The preservation and enhancement of heritage assets forms an important part of the NPPF and is one of the 12 core planning principles that underpin plan-making and decision-taking. There are policies protecting the historic environment throughout the NPPF but section 16 paragraphs 184 to 202 deal specifically with conserving and enhancing the historic environment. Paragraph 194 relates to the consideration of impacts on the setting heritage assets.
<i>National Planning Practice Guidance (NPPG)</i> (Ministry of Housing, Communities & Local Government, 2019b) ²	The NPPG is a dynamic web-based resource in support of the NPPF (Ministry of Housing, Communities & Local Government, 2019a). For the historic environment, the NPPG provides useful guidance particularly with regard to assessing whether development will cause substantial harm (see paragraphs 193 to 196).
<i>Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 2</i> (HA 208/07) ³	Whilst DMRB sets out guidance on the assessment of the impacts of motorway and trunk road infrastructure projects, it provides a robust and widely accepted methodology that can also be adopted for other types of development. DMRB HA 208/07 sets out methods for the assessment of the value of cultural heritage assets, the magnitude of impacts and the significance of those impacts.
<i>Historic Environment Good Practice Advice in Planning: Note 1 – The Historic</i>	GPA 1 provides detail on what local plans should include regarding the historic environment including strategies ensuring its conservation and enjoyment. It also provides guidance as to the content of other plans which support the local plan, such as

¹ Ministry of Housing, Communities & Local Government (2019a) *National Planning Policy Framework* [Online] Available from: <https://www.gov.uk/government/publications/national-planning-policy-framework--2> [Accessed: December 2020]

² Ministry of Housing, Communities & Local Government (2019b) *National Planning Practice Guidance* [Online] Available from: <https://www.gov.uk/government/collections/planning-practice-guidance> [Accessed: December 2020]

³ Highways Agency (2007) *Design Manual for Roads and Bridges Volume 11 Environmental Assessment Section 3 Environmental Topics: Part 2 HA208/07 Cultural Heritage*

Applicable Legislation, Policy and Guidance	Description
<i>Environment in Local Plans</i> (GPA1) (Historic England, 2015a) ⁴	Delivery Plans, Strategic Environmental Assessments / Sustainability Appraisals, Neighbourhood Plans and Supplementary Planning Documents.
<i>Historic Environment Good Practice Advice in Planning: Note 2 – Managing Significance in Decision-Taking in the Historic Environment</i> (GPA2) (Historic England, 2015b) ⁵	GPA2 provides detail on how to determine the significance of assets and methods used to enable that assessment including desk-based assessments and field evaluation.
<i>Historic Environment Good Practice Advice in Planning: Note 3 – The Setting of Heritage Assets</i> (GPA3) (2017) ⁶	GPA3 provides detail on the setting of heritage assets and replaces earlier guidance on this matter published by English Heritage in 2011 which has now been withdrawn.
Planning (Listed Buildings and Conservation Areas) Act 1990 ⁷	This act provides specific protection for buildings and areas of special architectural or historic interest.
Ancient Monuments and Archaeological Areas Act 1979 ⁸	This act provides specific protection for archaeological monuments of national interest.
The Hedgerows Regulations 1997 ⁹	These regulations outline criteria for determining whether a hedgerow is 'important' and should be protected, based on characteristics such as age and historical associations.

9) National and Local Planning Policies are covered in Chapter 5: Planning Policy and Context.

10.4 Assessment Methodology and Assessment Criteria

10.4.1 Assessment Methodology

- 10) Reference has been made to national and local policy documents, relevant British Standards, national guidance and other relevant information in determining the assessment methodology and criteria to be used.
- 11) The assessment was undertaken in accordance with the following assessment methodology:
- A baseline group of assets was determined based on the Bonstone Compound and Braddup Compound study areas, including designated and non-designated assets recorded from the local Historic Environment Records (HERs) and the National Heritage List for England (NHLE), site surveys and previous archaeological investigations. Historic Landscape Types (HLTs) are categories and are not recorded as single assets, and can be present in more than one assessment area
 - The sensitivity of each asset was then determined based on the assessment criteria outlined in Section 10.4.2

⁴ Historic England (2015a) *Historic Environment Good Practice Advice in Planning: Note 1 – The Historic Environment in Local Plans* [Online] Available from: <https://historicengland.org.uk/images-books/publications/gpa1-historic-environment-local-plans/> [Accessed December 2020]

⁵ Historic England (2015b) *Historic Environment Good Practice Advice in Planning: Note 2 – Managing Significance in Decision-Taking in the Historic Environment* [Online] Available from: <https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/> [Accessed December 2020]

⁶ Historic England (2017) *Historic Environment Good Practice Advice in Planning: Note 3 (2nd Edition) – The Setting of Heritage Assets* [Online] Available from: <https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/> [Accessed December 2020]

⁷ Planning (Listed Buildings and Conservation Areas) Act 1990 *Legislation.gov.uk* [Online] Available from: <https://www.legislation.gov.uk/ukpga/1990/9/contents> [Accessed December 2020]

⁸ Ancient Monuments and Archaeological Areas Act 1979 *Legislation.gov.uk* [Online] Available from: <https://www.legislation.gov.uk/ukpga/1979/46> [Accessed December 2020]

⁹ The Hedgerows Regulations 1997 *Legislation.gov.uk* [Online] Available from: <https://www.legislation.gov.uk/uksi/1997/1160/contents/made> [Accessed December 2020]

- The results of any investigations will inform the assessment of archaeological value and significance of effects and will also assist the formulation of any further evaluation and / or mitigation measures. Any proposed evaluation and subsequent mitigation will be designed with reference to the research aims contained in the *Archaeological Research Framework for North West England*.¹⁰

12) The methodology was agreed with relevant stakeholders as outlined above in Section 10.2.2.

10.4.2 Assessment Criteria

13) For all three sub-topics, an assessment of the value (sensitivity) of each heritage asset was undertaken on a six-point scale of very high, high, medium, low, negligible and unknown, based on professional judgement and guided by the criteria provided in DMRB HA208/07.

14) Table 10.2, Table 10.3 and Table 10.4 outline the criteria that were used in the evaluation of sensitivity for Archaeological Remains, Historic Buildings and Historic Landscape Types respectively.

¹⁰ Brennand, M., Chitty, G. and Nevell, M. (Eds) (2007) *Archaeological Research Framework for North West England* (Council for British Archaeology North West / Loughborough)

Table 10.2: Cultural Heritage Sensitivity Criteria for Archaeological Remains

Sensitivity	Criteria
Unknown	<ul style="list-style-type: none"> The importance of the resource has not been ascertained.
Negligible	<ul style="list-style-type: none"> Assets with very little or no surviving archaeological interest.
Low	<ul style="list-style-type: none"> Designated and undesignated assets of local importance Assets compromised by poor preservation and / or poor survival of contextual associations Assets of limited value, but with potential to contribute to local research objectives.
Medium	<ul style="list-style-type: none"> Designated or undesignated assets that contribute to regional research objectives.
High	<ul style="list-style-type: none"> Scheduled Monuments (including proposed sites) Undesignated assets of schedulable quality and importance Assets that can contribute significantly to acknowledged national research objectives.
Very High	<ul style="list-style-type: none"> World Heritage Sites (including nominated sites) Assets of acknowledged international importance Assets that can contribute significantly to acknowledged international research objectives.

Table 10.3: Cultural Heritage Sensitivity Criteria for Historic Buildings

Sensitivity	Criteria
Unknown	<ul style="list-style-type: none"> Buildings with some hidden (i.e. inaccessible) potential for historic significance
Negligible	<ul style="list-style-type: none"> Buildings of no architectural or historical note; buildings of an intrusive character
Low	<ul style="list-style-type: none"> 'Locally Listed' buildings Historic (unlisted) buildings of modest quality in their fabric or historical association Historic Townscapes or built-up areas of limited historic integrity in their buildings, or built settings (e.g. including street furniture and other structures).
Medium	<ul style="list-style-type: none"> Grade II Listed Buildings Historic (unlisted) buildings that can be shown to have exceptional qualities in their fabric or historical associations Conservation Areas containing buildings that contribute significantly to their historic character Historic townscapes or built-up areas with important historic integrity in their buildings, or built settings (e.g. including street furniture and other structures).
High	<ul style="list-style-type: none"> Scheduled Monuments with standing remains Grade I and Grade II* Listed Buildings Other listed buildings that can be shown to have exceptional qualities in their fabric or historical associations not adequately reflected in the listing grade Conservation Areas containing very important buildings Undesignated structures of clear national importance.
Very High	<ul style="list-style-type: none"> Structures inscribed as of universal importance as World Heritage Sites Other buildings of recognised international importance.

Table 10.4: Cultural Heritage Sensitivity Criteria for Historic Landscapes

Sensitivity	Criteria
Negligible	<ul style="list-style-type: none"> Landscapes with little or no significant historical interest.
Low	<ul style="list-style-type: none"> Robust undesignated historic landscapes Historic landscapes with importance to local interest groups Historic landscapes whose value is limited by poor preservation and / or poor survival of contextual associations.
Medium	<ul style="list-style-type: none"> Designated special historic landscapes Undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional value Averagely well-preserved historic landscapes with reasonable coherence, time-depth or other critical factor(s).
High	<ul style="list-style-type: none"> Designated historic landscapes of outstanding interest Undesignated landscapes of outstanding interest Undesignated landscapes of high quality and importance, and of demonstrable national value Well-preserved historic landscapes, exhibiting considerable coherence, time-depth or other critical factor(s).
Very High	<ul style="list-style-type: none"> World Heritage Sites inscribed for their historic landscape qualities Historic landscapes of international value, whether designated or not Extremely well-preserved historic landscapes with exceptional coherence, time-depth, or other critical factor(s).

15) Table 10.5 sets out the criteria used to inform determination of the magnitude of potential cultural heritage effects.

Table 10.5: Magnitude of Cultural Heritage Effects

Magnitude	Criteria
Major	<ul style="list-style-type: none"> Change to most or all key archaeological materials, such that the resource is totally altered Comprehensive changes to setting Change to key historic building elements, such that the resource is totally altered Comprehensive changes to the setting Change to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to historic landscape character unit.
Moderate	<ul style="list-style-type: none"> Changes to many key archaeological materials, such that the resource is clearly modified Considerable changes to setting that affect the character of the asset Change to many key historic building elements, such that the resource is significantly modified Changes to the setting of a historic building, such that it is significantly modified Changes to many key historic landscape elements, parcels or components; visual change to many key aspects of the historic landscape, noticeable differences in noise or

Magnitude	Criteria
	sound quality, considerable changes to use or access; resulting in moderate changes to historic landscape character.
Minor	<ul style="list-style-type: none"> ▪ Changes to key archaeological materials, such that the asset is slightly altered ▪ Slight changes to setting ▪ Change to key historic building elements, such that the asset is slightly different ▪ Change to setting of a historic building, such that it is noticeably changed ▪ Changes to few key historic landscape elements, parcels or components, slight visual changes to few key aspects of historic landscape, limited changes to noise levels or sound quality; slight changes to use or access; resulting in limited changes to historic landscape character.
Negligible	<ul style="list-style-type: none"> ▪ Very minor changes to archaeological materials or setting ▪ Slight changes to historic buildings elements or setting that hardly affect it ▪ Very minor changes to key historic landscape elements, parcels or components, virtually unchanged visual effects, very slight changes in noise levels or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character.
No Change	<ul style="list-style-type: none"> ▪ No change ▪ No change to fabric or setting ▪ No change to elements, parcels or components; no visual or audible changes; no changes arising from in amenity or community factors.

16) Table 10.6 provides a matrix setting out how the significance of effects was identified, taking into account the magnitude of change (Table 10.5) and a receptor’s sensitivity to that change (Tables 10.2 to 10.4). For the purposes of this assessment, those of moderate or above are considered to be significant in the context of the Environmental Impact Assessment Regulations.

Table 10.6: Significance of Effects

		Magnitude				
		No change	Negligible	Minor	Moderate	Major
Sensitivity	Negligible	Neutral	Neutral	Neutral / slight	Neutral / slight	Slight
	Low	Neutral	Negligible	Negligible / slight	Slight / moderate	Moderate
	Medium	Neutral	Negligible / slight	Slight	Moderate	Moderate / major
	High	Neutral	Slight	Slight / moderate	Moderate / major	Major
	Very High	Neutral	Slight	Moderate / large	Large or very large	Very large

10.4.3 Embedded Mitigation and Good Practice

17) Embedded mitigation is inherent to the design, and good practice measures are those which are standard industry practice used to manage commonly occurring environmental effects. The assessment of likely significant effects in Sections 10.6 to 10.8 takes into account the application of both embedded mitigation and good practice measures as set out in this section.

- 18) The need for any additional topic-specific essential mitigation (generally for effects likely to be significant in the context of the Environmental Impact Assessment Regulations) identified as a result of the assessment in Sections 10.6 to 10.8 is then set out separately in Section 10.9.

Embedded Mitigation

- 19) Chapter 3: Design Evolution and Development Description explains the evolution of the design with input from the environmental team, including mitigation workshops and the use of Geographic Information System-based constraints data. Due to the awareness of constraints including cultural heritage assets throughout the design process, the Proposed Marl Hill Section was designed to avoid known assets where feasible.

Good Practice Measures

- 20) Good practice measures contained in Appendix 3.2: Construction Code of Practice (CCoP) of particular relevance to cultural heritage are set out below:
- The appointed Contractor would consult with the relevant local planning authority and United Utilities' historic environment advisor should any archaeological or cultural heritage finds or sites be discovered or revealed during enabling works, to allow appropriate measures to be implemented to mitigate potential impacts
 - Maintenance and operation of the Proposed Marl Hill Section would be in accordance with environmental legislation. Good practice procedures similar to those outlined in the draft CCoP would be established for all high-risk activities and employees would be trained in responding to such incidents.

10.4.4 Assumptions and Limitations

- 21) Due to COVID-19 restrictions during 2020 and 2021, visits to council archives and local studies services were not undertaken. No intrusive archaeological investigations have been undertaken; this is considered appropriate for the purposes of this assessment.

10.5 Baseline Conditions

- 22) This section details the cultural heritage baseline for the assessment area and identifies receptors where there is potential for significant effects to arise. The Proposed Marl Hill Section is entirely within the Forest of Bowland Area of Outstanding Natural Beauty (AONB) within Lancashire.

- 23) Baseline data was collated from a variety of sources in compiling this assessment, including:

- Field Surveys
- National Heritage List for England (NHLE) for information on the designated cultural heritage resource
- Lancashire County Council Historic Environment Record (HER) for information on the non-designated cultural heritage resource including archaeological sites or monuments, non-designated historic buildings, historic landscape characterisation data and for information on locally listed buildings and Conservation Areas
- Geophysical Survey undertaken in March 2021 and April 2021
- Light Detecting and Ranging (LiDAR) Digital Surface Model (DSM)
- National Library of Scotland for digital mapping.

- 24) A summary of the baseline assets is contained within this chapter; full details of the baseline assets are contained in Appendices 10.1 and 10.2.

10.5.1 Information Sources

- 25) The assessment was undertaken with reference to the sources detailed in Table 10.7.

Table 10.7: Key Information Sources

Data Source	Reference
NHLE for information on the designated cultural heritage resource	https://historicengland.org.uk/listing/the-list/data-downloads/
Lancashire County Council HER for information on the non-designated cultural heritage resource including archaeological sites or monuments, non-designated historic buildings, historic landscape characterisation data and for information on locally listed buildings and Conservation Areas	https://www.lancashire.gov.uk/council/planning/historic-environment-record/
National Library of Scotland for digital mapping	https://maps.nls.uk/

10.5.2 Baseline

26) In total 36 cultural heritage assets were considered as part of the baseline. This comprised two archaeological remains, 29 historic buildings and five historic landscape types (see Figures 10.1 and 10.2).

Medieval Period (AD 1066 – AD 1540)

27) The Medieval economy of the region was dominated by the wool trade including the spinning, dyeing and weaving of woollen cloth. During this period a system of townships and feudal administration developed, centred on small urban administrative centres such as Clitheroe, coupled with increasingly structured patterns of agricultural land use, as is demonstrated within the study areas by Ancient Enclosure (HLT8). Rare evidence for industrial activity during this period is provided by the Ashnott Lead Mine and Lime Kiln (Asset 4005) that is within the zone of visual influence of the Bonstone Compound.

Post Medieval Period (AD 1540 – AD 1901)

28) The Post Medieval period (AD 1540 – AD 1901) witnessed considerable change in the structure, management and organisation of the rural agrarian landscape within the study areas through a combination of processes. Existing field systems, especially those below the 300 m contour, were further subdivided. These changes to the landscape were supported by an increased number of disparate farm complexes as is evidenced within both the Bonstone and Braddup compound study areas by Assets 4001, 4002, 4007 and 4008. Extractive industries were also important influential factors in shaping Post Medieval Lancashire as is evidenced by the continuation of mining at the Ashnott Lead Mine (Asset 4005).

Modern Period (AD 1901 – Present)

29) Through increasing transportation links and networks, by the Modern period (AD 1901 – Present) the study areas became increasingly connected to national audiences. Of particular note is the development of mass tourism in the early-mid 20th century AD with increasing popularity in outdoor recreational activities such as cycling, gliding and hiking. In part inspired by earlier activities of the Romantic movement, the formalisation of these pursuits with the creation of organisations such as the Ramblers has continued to ensure their popularity within the study areas. The formation of the Forest of Bowland AONB in 1964 has galvanised popular perception of the area and rural landscape as a picturesque representation of an unspoiled English landscape.

Archaeological Geophysical Survey Results

30) An archaeological geophysical survey was undertaken on the Proposed Bonstone Compound during March 2021. No anomalies suggestive of significant archaeological features were identified. Anomalies

classified as undetermined were identified within the survey area and while an archaeological origin could not be ruled out, they were interpreted as not being archaeologically significant. Anomalies of an agricultural origin were identified across the survey area including ridge and furrow cultivation, a mapped former field boundary and land drains. Modern activity within the survey area was limited to magnetic interference around field boundaries and that caused by overhead cables and farming equipment.

- 31) An archaeological geophysical survey was also undertaken on the Proposed Braddup Compound during April 2021. Again no anomalies suggestive of significant archaeological features were identified. Anomalies of an agricultural origin were identified across the survey area including drainage features and a possible unmapped track or field division. Anomalies of an undetermined origin were also identified within the survey area and while an archaeological origin could not be ruled out, they were interpreted as being of natural or agricultural origin given surrounding anomalies. Modern activity was also identified comprising magnetic disturbance around field boundaries, roads, boreholes and broad ferrous anomalies produced by buried services.

10.6 Assessment of Likely Significant Effects

- 32) The following section describes the effects of the Proposed Marl Hill Section on cultural heritage during the enabling works, construction and operational phases. The location and known extents of these assets are shown on Figures 10.1 and 10.2. Identified effects take into account both embedded mitigation and good practice measures, as set out in Section 10.4.

10.6.1 Enabling Works Phase Bonstone Compound

Archaeological Remains

- 33) No permanent physical impacts on known archaeological remains are predicted during the enabling works phase for the Bonstone Compound.
- 34) While no permanent physical impacts are predicted on known archaeological remains, there is the potential to impact unknown archaeological remains. However, this potential has been assessed to be low. This is in consideration of the largely rural and undeveloped nature of the study area but also recognising the paucity of known archaeological remains within the study area.
- 35) The enabling works phase for the Bonstone Compound may introduce a new temporary source of visual intrusion into the setting of Ashnott Lead Mine and Lime Kiln (Asset 4005), Scheduled Monument identified within the ZTV, because of the construction of the Bonstone Compound and access route in partially screened long-distance views to the north and north-east. This would not detract from the ability to understand the lead mine and lime kiln nor from the largely rural nature of its setting; therefore, the impact on the high value archaeological remains has been assessed to be negligible and the significance of effect has been assessed to be slight.

Historic Buildings

- 36) The enabling works phase for the Bonstone Compound would introduce a new temporary source of visual intrusion into the setting of Foulscles (Asset 4000), a Grade II Listed Building identified within the ZTV, because of the construction of the Bonstone Compound in partially screened views to the south-east. This would not detract from the ability to understand the historic house nor from the largely rural nature of its setting; therefore, the impact on the medium value historic building has been assessed to be negligible and the significance of effect has been assessed to be slight.
- 37) The enabling works phase for the Bonstone Compound would introduce a new temporary source of visual intrusion into the setting of Gibbs, Easington Road, Newton-in-Bowland (Asset 4001) because of the construction of the Bonstone Compound in partially screened views to the east. This would not detract from the ability to understand the laithe house nor from the largely rural nature of its setting; therefore, the impact on the low-value historic building has been assessed to be minor and the significance of effect has been assessed to be slight.

- 38) The enabling works phase for the Bonstone Compound would also introduce a new temporary source of noise and visual intrusion into the setting of Farm Building, approximately 150 m South of Farmhouse, Storth (Asset 4002) because of the construction of the Bonstone Compound in partially screened views to the south and west. This would not detract from the ability to understand the farm building nor from the largely rural nature of its setting; therefore, the impact on the medium value historic building has been assessed to be minor and the significance of effect has been assessed to be slight.
- 39) The enabling works phase for the Bonstone Compound would also introduce a new temporary source of noise and visual intrusion into the setting of Higher Underhand, B6478, Newton-in-Bowland (Asset 4004) because of the construction of the Bonstone Compound in partially screened views to the north and north-west. This would not detract from the ability to understand the lime kiln nor from the largely rural nature of its setting; therefore, the impact on the low value historic building has been assessed to be minor and the significance of effect has been assessed to be slight.

Historic Landscape Types (HLTs)

- 40) Construction of the Bonstone Compound would result in minor changes to and loss of elements from Ancient Enclosure (HLT8) and Post Medieval Enclosure (HLT10). This would not affect the legibility of these common and widespread low value HLTs; therefore, the magnitude of impact has been assessed to be minor and the significance of effect has been assessed to be slight.
- 41) Construction of the Bonstone Compound access would also result in minor changes to and loss of elements from Reverted Moorland (HLT12). This would not affect the legibility of the common and widespread low value HLT; therefore, the magnitude of impact has been assessed to be minor and of negligible significance.

10.6.2 Enabling Works Phase Braddup Compound

Archaeological Remains

- 42) No permanent physical impacts on known archaeological remains are predicted during the enabling works phase for the Braddup Compound.
- 43) While no permanent physical impacts are predicted on known archaeological remains during the enabling works phase for the Braddup Compound and access route, the potential to impact unknown archaeological remains has been assessed to be low. This is in consideration of the largely rural and undeveloped nature of the study area but also recognising the paucity of known archaeological remains within the study area.

Historic Buildings

- 44) The enabling works phase for the Braddup Compound would introduce a new temporary source of noise and visual intrusion into the setting of Thornbers (Asset 4007) because of the construction of the Bonstone Compound access route in partially screened views to the south. This would not detract from the ability to understand the longhouse nor from the largely rural nature of its setting; therefore, the impact on the medium value historic building has been assessed to be minor and the significance of effect has been assessed to be slight.
- 45) The enabling works phase for the Braddup Compound would introduce a new temporary source of visual intrusion into the setting of Burbles Hill, Bashall Eaves (Asset 4008) because of the construction of the Bonstone Compound in partially screened views to the south. This would not detract from the ability to understand the farmstead nor from the largely rural nature of its setting; therefore, the impact on the negligible value historic building has been assessed to be minor and the significance of effect has been assessed to be slight.
- 46) The enabling works phase for the Braddup Compound would introduce a new source of temporary visual intrusion into the setting of Braddup House and Farm Building adjoining to the West (Asset 4009), a Grade II Listed Building identified within the ZTV, because of the construction of the Bonstone Compound in long-distance screened views to the north. This would not detract from the ability to understand the

house and farm building nor from the largely rural nature of its setting; therefore, the impact on the high value historic buildings has been assessed to be negligible and the significance of effect has been assessed to be neutral.

Historic Landscape Types (HLTs)

- 47) Construction of the Braddup Compound would result in minor changes to and loss of elements from Post Medieval Enclosure (HLT10). This would not affect the legibility of this common and widespread low value HLT; therefore, the magnitude of impact has been assessed to be minor and the significance of effect has been assessed to be slight.
- 48) A summary of potential enabling works effects is provided in Table 10.8.

Table 10.8: Summary of Potential Enabling Works Effects (Pre-Essential Mitigation)

Environmental / Community Asset	Value / Sensitivity	Effect	Duration	Magnitude	Significance of Effect (Pre-Essential Mitigation)
Bonstone Compound					
Ashnott Lead Mine and Lime Kiln (Asset 4005)	High	Visual intrusion into the setting	Short term – Adverse	Negligible	Slight
Foulscales (Asset 4000)	Medium	Visual intrusion into the setting	Short term – Adverse	Negligible	Slight
Gibbs, Easington Road, Newton-in-Bowland (Asset 4001)	Low	Visual intrusion into the setting	Short term – Adverse	Minor	Slight
Farm Building, approximately 150 m South of Farmhouse, Storth (Asset 4002)	Medium	Noise and visual intrusion into the setting	Short term – Adverse	Minor	Slight
Higher Underhand, B6478, Newton-in-Bowland (Asset 4004)	Low	Noise and visual intrusion into the setting	Short term – Adverse	Minor	Slight
Ancient Enclosure (HLT8)	Low	Minor changes and loss of elements	Long term – Adverse	Minor	Slight
Post Medieval Enclosure (HLT10)	Low	Minor changes and loss of elements	Long term – Adverse	Minor	Slight
Reverted Moorland (HLT12)	Low	Minor changes and loss of elements	Long term – Adverse	Minor	Negligible
Braddup Compound					
Thornbers (Asset 4007)	Medium	Noise and visual intrusion into the setting	Short term – Adverse	Minor	Slight
Burbles Hill, Bashall Eaves (Asset 4008)	Negligible	Visual intrusion into the setting	Short term – Adverse	Minor	Slight
Braddup House and Farm Building Adjoining to the West (Asset 4009)	High	Visual intrusion into the setting	Short term – Adverse	Negligible	Slight
Post Medieval Enclosure (HLT10)	Low	Minor changes and loss of elements	Long term – Adverse	Minor	Slight

10.6.3 Construction Phase Bonstone Compound

Archaeological Remains

- 49) During the construction phase of works for the Bonstone Compound there would be continuing visual intrusion into the setting of Ashnott Lead Mine and Lime Kiln (Asset 4005), a Scheduled Monument identified within the ZTV, because of the Bonstone Compound in partially screened long-distance views to the north and north-east. This would not detract from the ability to understand the Scheduled Monument nor from the largely rural nature of its setting. The impact on the high value Ashnott Lead Mine and Lime Kiln (Asset 4005) has been assessed to be negligible and the significance of effect has been assessed to be slight.

Historic Buildings

- 50) There would be continuing visual intrusion into the setting of Foulscles (Asset 4000), a Grade II Listed Building identified within the ZTV, because of the Bonstone Compound in partially screened views to the south-east. There would also be continuing visual intrusion into the setting of Gibbs, Easington Road, Newton-in-Bowland (Asset 4001) because of the Bonstone Compound in partially screened views to the east. Similarly there would be continuing visual intrusion into the setting of the Farm Building, approximately 150 m South of Farmhouse, Storth (Asset 4002) because of the Bonstone Compound in partially screened views to the east. There would also be continuing visual intrusion into the setting of Higher Underhand, B6478, Newton-in-Bowland (Asset 4004) because of the Bonstone Compound in partially screened views to the north and north-west. This would not detract from the ability to understand the historic buildings nor from the largely rural nature of their settings.
- 51) Therefore, the impact on the medium value Foulscles (Asset 4000) has been assessed to be negligible and the significance of effect has been assessed to be slight. The impact on the low value Gibbs, Easington Road, Newton-in-Bowland (Asset 4001) has been assessed to be minor and the significance of effect has been assessed to be slight. The impact on the medium value Farm Building, approximately 150 m South of Farmhouse, Storth (Asset 4002) has been assessed to be minor and the significance of effect has been assessed to be slight. The impact on the low value Higher Underhand, B6478, Newton-in-Bowland (Asset 4004) has been assessed to be minor and the significance of effect has again been assessed to be slight.

Historic Landscape Types (HLTs)

- 52) No impacts on HLTs are predicted during the construction phase of works for the Bonstone Compound as any impacts would have occurred during the enabling works phase.

10.6.3 Construction Phase Braddup Compound

Archaeological Remains

- 53) No impacts on archaeological remains are predicted during the construction phase of works for the Braddup Compound as any impacts would have occurred during the enabling works phase.

Historic Buildings

- 54) There would be continuing visual intrusion into the setting of Thornbers (Asset 4007), a Grade II Listed Building, because of the Braddup Compound in partially screened views to the south. Similarly there would be continuing visual intrusion into the setting of Burbles Hill, Bashall Eaves (Asset 4008) because of the Braddup Compound in partially screened views to the south. There would also be continuing visual intrusion into the setting of Braddup House and Farm Building adjoining to the West (Asset 4009), a Grade II Listed Building identified within the ZTV, because of the Braddup Compound in long-distance screened views to the north. This would not detract from the ability to understand the historic buildings nor from the largely rural nature of their localities.

- 55) Therefore, the impact on the medium value Thornbers (Asset 4007), a Grade II Listed Building, has been assessed to be minor and the significance of effect has been assessed to be slight. The impact on the negligible value Burbles Hill, Bashall Eaves (Asset 4008) has also been assessed to be minor and the significance of effect has again been assessed to be slight. The impact on the high value Braddup House and Farm Building adjoining to the West (Asset 4009), a Grade II Listed Building, has been assessed to be negligible and the significance of effect has been assessed to be slight.

Historic Landscape Types (HLTs)

- 56) No impacts on HLTs are predicted during the construction phase of works for the Braddup Compound as any impacts would have occurred during the enabling works phase.
- 57) A summary of potential construction effects is presented in Table 10.9.

Table 10.9: Summary of Potential Construction Phase Effects (Pre-Essential Mitigation)

Environmental / Community Asset	Value / Sensitivity	Effect	Nature of Effect	Magnitude	Significance of Effect (Pre-Essential Mitigation)
Bonstone Compound					
Ashnott Lead Mine and Lime Kiln (Asset 4005)	High	Visual intrusion into the setting	Short term – Adverse	Negligible	Slight
Foulscales (Asset 4000)	Medium	Visual intrusion into the setting	Short term – Adverse	Negligible	Slight
Gibbs, Easington Road, Newton-in-Bowland (Asset 4001)	Low	Visual intrusion into the setting	Short term – Adverse	Minor	Slight
Farm Building, approximately 150 m South of Farmhouse, Storth (Asset 4002)	Medium	Visual intrusion into the setting	Short term – Adverse	Minor	Slight
Higher Underhand, B6478, Newton-in-Bowland (Asset 4004)	Low	Visual intrusion into the setting	Short term – Adverse	Minor	Slight
Braddup Compound					
Thornbers (Asset 4007)	Medium	Noise and visual intrusion into the setting	Short term – Adverse	Minor	Slight
Burbles Hill, Bashall Eaves (Asset 4008)	Negligible	Visual intrusion into the setting	Short term – Adverse	Minor	Slight
Braddup House and Farm Building Adjoining to the West (Asset 4009)	High	Visual intrusion into the setting	Short term – Adverse	Negligible	Slight

10.6.4 Commissioning Phase Bonstone and Braddup Compounds

58) No impacts are predicted on archaeological remains, historic buildings or HLTs during the commissioning phase for the Proposed Marl Hill Section.

10.6.5 Operational Phase Bonstone and Braddup Compounds

59) No impacts are predicted on archaeological remains, historic buildings or HLTs during the operational phase for the Proposed Marl Hill Section as any impacts would have occurred during the enabling works and construction phases.

10.7 Proposed Traffic Routes Effects

60) Proposed Construction Traffic Routes Impacts Volume 2 Chapter 3: Development Description and Design Evolution and the corresponding appendix in Volume 4 describes the public highway traffic routes that construction vehicles would use from the strategic road network to the construction compounds. Construction vehicles would use these public highway routes from the early stages of the enabling works through to completion of the commissioning phase, although the largest number of vehicle movements would be associated with the construction phase.

61) Construction vehicles movements would have the potential to give rise to adverse, direct effects on cultural heritage assets through impacts on their settings. Section 10.7 examines the listed buildings and conservation areas located either on or adjacent (within 50 m) to the proposed construction traffic routes.

62) There are 21 Listed Buildings and one Conservation Area within 50 m of the proposed traffic routes for the Proposed Marl Hill Section on that part of the local road network serving the Bonstone and Braddup compounds in the administrative area of Ribble Valley Borough Council. Of these, 20 are Grade II Listed and one is Grade II* Listed. There are no Grade I Listed Buildings within the 50 m proposed traffic routes assessment area. The operation of the proposed traffic routes would not physically impact on any of the Listed Buildings within the 50 m assessment area. The Waddington Conservation Area is located at the convergence of haulage route options 1 and 2 prior to the traffic route continuing in a northerly direction along the Slaidburn Road – this is described in Chapter 3: Development Description and Design Evolution and Chapter 16 Transport Planning. Traffic Route impacts on cultural heritage assets in the Ribble Valley area are presented in Table 10.10.

Table 10.10: Traffic Route Impacts – Bonstone and Braddup Compounds

Asset Name	NHLE reference	Value / Sensitivity	Setting	Effect	Magnitude	Significance of Effect
Church of St Mary with Presbytery	1072076	High	Its setting is defined by its position within the settlement of Osbaldeston and proximity to the A59 Longsight Road.	The presence of construction traffic on the A59 is likely to present some noise and visual intrusion.	Negligible	Slight
Brungerley Farmhouse	1072154	High	Its setting is defined by its location off the B6478.	The use of the B6478 as a traffic route for construction traffic would introduce a temporary noise and visual impact.	Minor	Slight

Asset Name	NHLE reference	Value / Sensitivity	Setting	Effect	Magnitude	Significance of Effect
Glebe House	1072155	High	Its setting is defined by its location off the B6478 Slaidburn Road.	The use of the B6478 Slaidburn Road as a traffic route for construction traffic would introduce a temporary noise and visual impact.	Negligible	Slight
The Three Millstones	1072161	High	Its setting is defined by its position within the settlement of West Bradford and proximity to Waddington Road.	The presence of construction traffic on Waddington Road is likely to present some noise and visual intrusion.	Negligible	Slight
West Bradford Bridge	1072162	High	Its setting is defined by its position within the settlement of West Bradford, across the West Bradford Brook, supporting Waddington Road.	The presence of construction traffic on Waddington Road is likely to present some noise and visual intrusion.	Negligible	Slight
The Alleys	1072356	High	Its setting is defined by its roadside position within the historic market town of Clitheroe.	The presence of construction traffic on Waddington Road B6478 is likely to present some noise and visual intrusion.	Negligible	Slight
Post Office and House adjoining to South	1163638	High	Its setting is defined by its roadside position within the settlement of Waddington.	The presence of construction traffic on Belle Vue Lane is likely to present some noise and visual intrusion.	Negligible	Slight
Thornbers	1163647	High	Its setting is defined by its rural location off the B6478 Slaidburn Road.	The presence of construction traffic on Slaidburn Road is likely to present some noise and visual intrusion.	Minor	Slight
Church of St Helen	1163679	High	Its setting is defined by its position within the village of Waddington off the B6478 Clitheroe Road.	The presence of construction traffic on the B6478 is likely to present some noise and visual intrusion.	Negligible	Slight

Asset Name	NHLE reference	Value / Sensitivity	Setting	Effect	Magnitude	Significance of Effect
Lane Side	1163699	High	Its setting is defined by its rural, roadside position on the West Bradford Road.	The presence of construction traffic on West Bradford Road is likely to present some noise and visual intrusion.	Negligible	Slight
Crown Inn Chambers and Numbers 3 to 7 (odd)	1164312	High	Their setting is defined by their urban location.	The presence of construction traffic on Waddington Road/Well Terrace (B6478) is likely to present some noise and visual intrusion.	Negligible	Slight
School South West of Church of St Mary	1164570	High	Its setting is defined by its roadside position by the A59 on the periphery of Osbaldeston village.	The presence of construction traffic on the A59 is likely to present some noise and visual intrusion.	Negligible	Slight
Lower West Clough Farmhouse	1318111	High	Its setting is defined by its rural location.	The presence of construction traffic on Grindleton Road is likely to present some noise and visual intrusion.	Minor	Slight
Crow Trees Farmhouse	1318160	High	Its setting is defined by its roadside position on Crow Trees Brow, within the settlement of Chatburn.	The presence of construction traffic on Crow Trees Brow is likely to present some noise and visual intrusion.	Negligible	Slight
Saint Mary's Well	1362227	High	Its setting is defined by its roadside position off the B6478.	The presence of construction traffic on Well Terrace (B6478) is likely to present some noise and visual intrusion.	Negligible	Slight
Waddington Hall	1362302	High	Its setting is defined by its position within the settlement of Waddington.	The presence of construction traffic on Clitheroe Road (B6478) is likely to present some	Negligible	Slight

Asset Name	NHLE reference	Value / Sensitivity	Setting	Effect	Magnitude	Significance of Effect
				noise and visual intrusion.		
Ivy Cottage	1362303	High	Its setting is defined by its position within the settlement of Waddington.	The presence of construction traffic on Clitheroe Road (B6478) is likely to present some noise and visual intrusion.	Negligible	Slight
Waddington Bridge	1362304	High	Its setting is defined by its position within the settlement of Waddington, across the Waddington brook, supporting West Bradford Road.	The presence of construction traffic on West Bradford Road is likely to present some noise and visual intrusion.	Negligible	Slight
Stocks	1072160	High	Its setting is defined by its location off the B6478 within the village of Waddington .	The presence of construction traffic on Belle View Lane is likely to present some noise and visual intrusion.	Negligible	Slight
Wall West of Waddington Hall containing 2 Gateways and 2 pairs of Gate Piers with Gates	1163629	High	Its setting is defined by its roadside location off the B6478 within the village of Waddington.	The presence of construction traffic on Clitheroe Road is likely to present some noise and visual intrusion.	Minor	Slight
Waddington Hospital Gateway	1163649	High	Its setting is defined by its roadside location off the West Bradford Road within the village of Waddington.	The presence of construction traffic on West Bradford Road is likely to present some noise and visual intrusion.	Minor	Slight
Tomb of Robert Parker in St Helen's Churchyard, approximately 1 Metre East of Chancel	1163690	High	Its setting is defined by its roadside location off the B6478 within the churchyard of St Helen's within the village of Waddington.	The presence of construction traffic on Clitheroe Road is likely to present some noise and visual intrusion.	Negligible	Slight

Asset Name	NHLE reference	Value / Sensitivity	Setting	Effect	Magnitude	Significance of Effect
Oaks Bar	1362342	High	Its setting is defined by its roadside location off the A59.	The presence of construction traffic on Longsight Road is likely to present some noise and visual intrusion.	Minor	Slight
Waddington War Memorial	1431780	High	Its setting is defined by its roadside location by the B6478 within the village of Waddington.	The presence of construction traffic on Clitheroe Road is likely to present some noise and visual intrusion.	Minor	Slight
Waddington Conservation Area	N/A	Medium	Its setting is within the banks of the narrow valley cut by the Waddington Brook.	Significant levels of construction traffic passing through the village over an extended period of time are likely to introduce general disturbance, noise and visual intrusion into the setting of the conservation area.	Moderate	Moderate - significant

10.8 Hedgerows

63) During enabling and construction works for the Proposed Marl Hill Section temporary impacts on one hedgerow classified as archaeologically or historically important under The Hedgerow Regulations 1997 has been identified due to the partial removal of sections of hedgerow as a result of the works. It is proposed that impacted Hedgerows would be reinstated once the construction phase has been completed.

10.9 Essential Mitigation and Residual Effects

64) As explained in Section 10.4.3, the assessment of effects in Sections 10.6 to 10.8 takes into account the application of both embedded mitigation and good practice measures. This section identifies additional topic-specific essential mitigation identified through the assessment process, and then sets out the residual effects taking all three categories (embedded, good practice and essential) into account. Each essential mitigation item is assigned a reference number.

10.9.1 Archaeological Remains

65) Prior to the enabling works, archaeological trial trenching would be undertaken in line with the Chartered Institute for Archaeologists (CIfA) *Standard and guidance for archaeological field evaluation* (CIfA, 2020).¹¹ This would target both known archaeological remains and areas of archaeological potential for

¹¹ Chartered Institute for Archaeologists (2020) *Standard and guidance for archaeological field evaluation* [Online] Available from: https://www.archaeologists.net/sites/default/files/CIfA%26GFieldevaluation_3.pdf [Accessed December 2020]

unknown remains arising from the geophysical survey undertaken from 31 March to 1 April 2021 on the Proposed Bonstone Compound (Appendix 10.3) and on the Proposed Braddup Compound from 14 to 15 April 2021 (Appendix 10.4) (Mitigation Item CH1).

- 66) Following archaeological trial trenching (Mitigation Item CH1), archaeological mitigation to make a permanent record of any affected previously unknown archaeological remains could include:
- Detailed archaeological excavation (Mitigation Item CH2)
 - Strip, map and sample (Mitigation Item CH3)
 - Archaeological recording during construction ('watching brief') (Mitigation Item CH4).
- 67) Sufficient time must be allowed within the construction programme in order to mitigate any previously unknown archaeological remains identified during the archaeological trial trenching (Mitigation Item CH1). These or any other mitigation measures would be agreed with the local planning authority archaeological advisor.

10.9.2 Historic Buildings and Conservation Areas

- 68) Good practice measures that would mitigate noise impacts in the settings of Foulscles (Asset 4000); Gibbs, Easington Road, Newton-in-Bowland (Asset 4001); Farm Building, approximately 150 m South of Farmhouse, Storth (Asset 4002); and Thornbers (Asset 4007) are set out in Environmental Statement Chapter 17: Noise and Vibration.
- 69) Opportunities to mitigate the anticipated adverse effects on Waddington conservation area would centre on the deployment of the CTMP, and the adoption of measures to reduce overall vehicle movements by implementing the park and ride facility near Ribblesdale Cement Works. These steps would not, however, be sufficient to reduce the overall effects on the conservation area below the 'significant' threshold.

10.9.3 Historic Landscape Types (HLTs)

- 70) No additional mitigation is proposed for the HLTs.

10.9.4 Summary of Mitigation and Residual Effects

- 71) To mitigate potential impacts on previously unknown archaeological remains, a staged programme of archaeological investigations comprising archaeological evaluation by trial trenching (Mitigation Item CM1) would be required. Depending on the results of the trial trenching, further mitigation works comprising either detailed archaeological excavation, strip map and sample or an archaeological watching brief (Mitigation Items CM2 to CM4) may be required.
- 72) No essential mitigation was identified for likely neutral to slight significance effects on the following cultural heritage assets as they would experience temporary non-significant impacts in their settings, and these therefore remain as stated in Tables 10.8 and 10.9:
- Ashnott Lead Mine and Lime Kiln (Asset 4005)
 - Foulscles (Asset 4000)
 - Gibbs, Easington Road, Newton-in-Bowland (Asset 4001)
 - Farm Building, approximately 150 m South of Farmhouse, Storth (Asset 4002)
 - Higher Underhand, B6478, Newton-in-Bowland (Asset 4004)
 - Thornbers (Asset 4007)
 - Burbles Hill, Bashall Eaves (Asset 4008)
 - Braddup House and Farm Building adjoining to the West (Asset 4009).
- 73) Significant residual effects would remain through the construction programme at Waddington conservation area, due to the level of construction vehicle movements.

10.10 Cumulative Effects

- 74) The following section provides an overview of the potential cumulative effects from different proposed developments and land allocations, in combination with the Proposed Marl Hill Section (i.e. inter-project cumulative assessment). Data on proposed third party developments and land allocations contained in development plan documents were obtained from various sources, including local planning authority websites, online searches, and consultations with planning officers. Proposed development data were then reviewed with a view to identifying schemes or land allocations whose nature, scale and scope could potentially give rise to significant environmental effects when considered in combination with the likely effects arising from the Proposed Marl Hill Section.
- 75) Intra-project cumulative impacts, i.e. two or more types of impact acting in combination on a given environmental receptor, property or community resource, are considered in Chapter 14: Communities and Health.
- 76) It is important to note that future growth on the local road network was taken into account in the traffic modelling described in Chapter 16: Transport Planning. For this reason, the potential cumulative effects of future traffic growth between the Proposed Marl Hill Section and other proposed developments are embedded into predicted road traffic-related impacts on highways capacity, air quality and noise.
- 77) The over-arching cumulative effects of the Proposed Programme of Works i.e. the five proposed replacement tunnel sections in combination, are considered in Chapter 19: Cumulative Effects. In addition, Chapter 19 examines the cumulative effects associated with the outcomes from Volume 2 (delivery and operation of the main construction compounds, tunnel, and construction traffic routes), Volume 5 (proposed off-site highways works and satellite compounds), and Volume 6 (Proposed Ribble Crossing).
- 78) Based on professional judgement, it was concluded that there are no proposed third party developments or land allocations in local development plan documents which could potentially give rise to likely significant cumulative effects. No cumulative assessment was therefore undertaken in connection with cultural heritage.

10.10.1 Highways Works

- 79) As described in Volume 5 there would be no likely significant effects due to off-site highways works.

10.10.2 Proposed Ribble Crossing

- 80) Impacts on cultural heritage resource by the Proposed Ribble Crossing have been assessed and are reported in Volume 6.
- 81) There were no significant effects predicted on the known cultural heritage resource identified due to the proposed Ribble Crossing. However, there is the potential for previously unknown archaeological remains to be present and evaluation by geophysical survey and/or trial trenching should be undertaken to ascertain the presence or absence of previously unknown archaeological remains.

10.11 Conclusion

- 82) This chapter of the Environmental Statement considered the potential cultural heritage impacts associated with the Enabling Works Phase, Construction Phase, Commissioning Phase and Operation of the route of the Proposed Marl Hill Section. Residual impacts of slight significance have been identified on 11 cultural heritage assets and a residual impact of negligible significance has been identified on one cultural heritage asset. In addition, a significant effect has been identified on Waddington conservation area due to the anticipated volume and duration of construction vehicle movements passing through the village en route to the Proposed Marl Hill Section.
- 83) No further residual impacts were identified on the remaining cultural heritage resource.

10.12 Glossary and Key Terms

- 84) Key phrases and terms used within this technical chapter relating to Cultural Heritage are defined within Appendix 1.2: Glossary and Key Terms.