

A417 Missing Link  
TR010056

6.2 Environmental Statement  
Chapter 6 Cultural Heritage

Planning Act 2008

APFP Regulation 5(2)(a)  
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Procedure) Regulations 2009

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**The Infrastructure Planning  
(Applications: Prescribed Forms  
and Procedure) Regulations 2009**

**A417 Missing Link**

Development Consent Order 202[x]

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**6.2 Environmental Statement  
Chapter 6 Cultural Heritage**

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## 6 Cultural heritage

### 6.1 Introduction

- 6.1.1 This chapter reports the potential effects of the construction and operation of the A417 Missing Link (the scheme), on heritage resources (building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest), following the methodology set out in the Design Manual for Roads and Bridges (DMRB) LA 106 Cultural heritage assessment.
- 6.1.2 The chapter details the methodology followed for the assessment, summarises the regulatory and policy framework related to cultural heritage and describes the existing environment in the area surrounding the scheme. Following this, the design, mitigation and residual effects of the scheme are discussed, along with the limitations of the assessment. The cultural heritage assessment is supported by ES Appendices 6.1 to 6.5 (Document Reference 6.4).

### 6.2 Competent expert

- 6.2.1 The cultural heritage specialist holds a BSc (Hons) in Heritage Conservation and a Postgraduate Diploma in Archaeological Resource Management. They have worked as a professional archaeologist for over 20 years and are a Member of the Chartered Institute for Archaeologists (CIfA), a Member of the Institution of Environmental Sciences, and a Chartered Environmentalist. Full details are provided in ES Appendix 1.2 Competent expert evidence (Document Reference 6.4).

### 6.3 Legislative and policy framework

#### Legislation

- 6.3.1 The legislation presented below is relevant to the assessment of effects on the cultural heritage resource for the scheme, however, the Development Consent Order (DCO) will obviate the need for any consents required by this legislation. Please refer to the Consents and Agreements Position Statement (Document Reference 7.2) for more information on consents and licences.
- Ancient Monuments and Archaeological Areas Act 1979.
  - Planning (Listed Buildings and Conservation Areas) Act 1990.
  - The Hedgerows Regulations 1997.

#### National policy

##### National policy statement for national networks

- 6.3.2 As documented in ES Chapter 1 Introduction (Document Reference 6.2), the National Policy Statement for National Networks (NPSNN) is the primary planning policy for the scheme and forms the principal basis for making decisions on DCO applications in England. The National Planning Policy Framework (NPPF) is noted as being 'important and relevant' and is to be considered, however, if there is a conflict between the NPSNN and NPPF, the NPSNN takes precedence. The policies for the conservation of the historic environment state that:

*"Those elements of the historic environment that hold value to this and future generations because of their historic, archaeological, architectural or artistic*

*interest are called 'heritage assets'. Heritage assets may be buildings, monuments, sites, places, areas or landscapes. The sum of the heritage interests that a heritage asset holds, or its value, is referred to as its significance. Significance derives not only from a heritage asset's physical presence, but also from its setting. Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets. The absence of designation for such heritage assets does not indicate lower significance."*

### 6.3.3 The NPSNN advises:

*"the Secretary of State should also consider the impacts on other non-designated heritage assets (as identified either through the development plan process by local authorities, including 'local listing', or through the nationally significant infrastructure project examination and decision-making process) on the basis of clear evidence that the assets have a significance that merit consideration in that process, even though those assets are of lesser value than designated heritage assets."*

### 6.3.4 Table 6-1 identifies the NPSNN policies relevant to the cultural heritage and then specifies where in the chapter information is provided to address the policy.

**Table 6-1 Relevant NPSNN policies for the cultural heritage assessment**

<b>Relevant NPSNN paragraph reference</b>	<b>Requirement of the National Policy Statement for National Networks (NPSNN) (paraphrase)</b>	<b>Where in the ES chapter is information provided to address this policy</b>
5.124	Non-designated assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments should be considered subject to the policies for designated heritage assets.	Section 6.4 Assessment methodology, Table 6-2.
5.126	Where the development is subject to Environmental Impact Assessment (EIA) the applicant should undertake an assessment of any likely significant heritage impacts of the proposed project as part of the EIA and describe these in the environmental statement.	The assessment of impacts is considered in section 6.10 Assessment of likely significant effects.
5.127	The applicant should describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the asset's importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant Historic Environment Record should have been consulted and the heritage assets assessed using appropriate expertise. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, the applicant should include an appropriate desk-based assessment and, where necessary, a field evaluation.	Details can be found in ES Appendices 6.1 to 6.4 (Document Reference 6.4)
5.131	When considering the impact of a proposed development on the significance of a designated heritage asset, the Secretary of State (SoS) should give great weight to the asset's conservation. The more important the asset, the greater the weight should be.	The impact of the scheme on the significance of heritage assets is considered in section 6.10 Assessment of likely significant effects (Document Reference 6.4).

Relevant NPSNN paragraph reference	Requirement of the National Policy Statement for National Networks (NPSNN) (paraphrase)	Where in the ES chapter is information provided to address this policy
5.133	Where the proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, the SoS should refuse consent unless it can be demonstrated that the substantial harm or loss of significance is necessary in order to deliver substantial public benefits which outweigh that loss or harm.	The assessment does not identify any instance of 'substantial harm' or total loss of significance to any designated asset.
5.134	Where the proposed development will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.	The impact of the scheme on the significance of heritage assets is considered in section 6.11 Monitoring (Document Reference 6.4).
5.135	Not all elements of a World Heritage Site or conservation area will necessarily contribute to its significance. The SoS should treat the loss of a building (or other element) that makes a positive contribution to the site's significance either as substantial harm or less than substantial harm, as appropriate, taking into account the relative significance of the elements affected and their contribution to the significance of the conservation area or World Heritage Site as a whole.	The assessment does not identify any instance of 'substantial harm' or total loss of significance to any designated asset.
5.140	Requirement to record and advance understanding of a heritage asset's significance prior to it being lost if this loss is justified.	Section 6.9 Design, mitigation and enhancement measures, sets out the requirement for archaeological fieldwork and recording.
5.142	Consider requirements to ensure that appropriate procedures are in place for the identification and treatment of yet undiscovered heritage assets with archaeological interest discovered during construction.	See Section 6.9 and the Detailed archaeological mitigation strategy and overarching written scheme of investigation in Annex C of ES Appendix 2.1 Environmental management plan (Document Reference 6.4).
5.144-5.146	The applicant should undertake an assessment of any likely significant landscape and visual impacts in the EIA... The applicant's assessment should include significant effects during construction of the project and/or its operation on landscape components and landscape character (including historic landscape characterisation).	The assessment has regard to historic landscape character and the impact of the scheme upon it. See section 6.10 and ES Appendix 6.3 Historic landscape characterisation (Document Reference 6.4).

### National planning policy

6.3.5 National Planning policies on the conservation of the historic environment are set out in the NPPF (2019) and should be referred to in conjunction with NPSNN, where the NPSNN does not cover a specific issue. The NPPF was updated in 2019, replacing all previous Planning Policy Statements. Guidance to help practitioners implement this policy, including the legislative requirements that

underpin it, is provided in National Planning Practice Guidance (PPG): Historic Environment (July 2019).

- 6.3.6 Non-designated heritage assets as well as those designated under the above legislation are given protection under the NPPF. Policies dealing with the conservation and enhancement of the historic environment is set out principally in Section 16 of the NPPF, which directs local planning authorities to set out:

*"a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. In doing so, they should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance."*

- 6.3.7 Paragraph 189, states:

*"In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation."*

- 6.3.8 Paragraph 190, states:

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

- 6.3.9 Paragraph 193, states:

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

- 6.3.10 Paragraph 196, states:

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

## Local planning policy

- 6.3.11 The western end of the scheme lies within that area covered by the Gloucestershire, Cheltenham and Tewkesbury Joint Core Strategy (JCS) 2011 – 2031 (adopted December 2017). Policy SD8: Historic Environment, states:
- *“The built, natural and cultural heritage of Gloucester City, Cheltenham town, Tewkesbury town, smaller historic settlements and the wider countryside will continue to be valued and promoted for their important contribution to local identity, quality of life and the economy.*
  - *Development should make a positive contribution to local character and distinctiveness, having regard to valued and distinctive elements of the historic environment.*
  - *Designated and undesignated heritage assets and their settings will be conserved and enhanced as appropriate to their significance, and for their important contribution to local character, distinctiveness and sense of place. Consideration will also be given to the contribution made by heritage assets to supporting sustainable communities and the local economy. Development should aim to sustain and enhance the significance of heritage assets and put them to viable uses consistent with their conservation whilst improving accessibility where appropriate.*
  - *Proposals that will secure the future conservation and maintenance of heritage assets and their settings that are at risk through neglect, decay or other threats will be encouraged. Proposals that will bring vacant or derelict heritage assets back into appropriate use will also be encouraged.*
  - *Development proposals at Strategic Allocations must have regard to the findings and recommendations of the JCS Historic Environment Assessment (or any subsequent revision) demonstrating that the potential impacts on heritage assets and appropriate mitigation measures have been addressed.”*
- 6.3.12 The Cotswold District Local Plan 2011 -2031 contains the following policies
- *EN1 – Built, Natural and Historic Environment*
  - *EN10 – Historic Environment: Designated Heritage Assets*
  - *EN12 – Historic Environment: Non-designated Heritage Assets*
- 6.3.13 The Tewkesbury Borough Local Plan 2011-2031 contains the following policies relevant to the historical environment
- *HER2 – Listed Buildings*
  - *HER4 – Archaeological Sites and Scheduled Monuments*
  - *HER5 – Locally Important Heritage Assets*
- 6.3.14 The scheme falls within the Cotswold Area of Outstanding Natural Beauty (AONB) which is covered by the Cotswold Area of Outstanding Natural Beauty Management Plan 2018 – 2023, in particular Policy CE6 Historic Environment and Cultural Heritage. This states that:
- *“The historic environment and cultural heritage of the Cotswolds AONB, both designated and undesignated, should be conserved and enhanced through effective management.*
  - *Designated historic environment sites, such as scheduled monuments and listed buildings, should be protected, in line with national policy and guidance.*
  - *Proposals that are likely to impact on the historic and cultural heritage of the Cotswolds AONB should have regard to these features and seek to conserve*



*and enhance them. This should include respecting historical features, buildings, sites, layout and context, including the relationship between the existing feature or settlement and the landscape.*

- *Historic Environment and Cultural Heritage should be a key component of future agri-environment, land management and rural development support mechanisms in the Cotswolds AONB.*
- *Opportunities should be sought to promote the awareness, understanding and use of Historic Environment Records, Conservation Area Appraisals, Historic Landscape Characterisation and Heritage Strategies and Action Plans. These should be used to influence decisions regarding the management of the AONB's historic environment and cultural heritage."*

## **Standards and guidance**

6.3.15 In addition to compliance with the NPSNN and NPPF, this assessment has been compiled in accordance with professional standards and with reference to relevant guidance. The standards and guidance which relate to this assessment are:

- Chartered Institute for Archaeologists (CIfA), 2020, Standard and guidance for historic environment desk-based assessment
- CIfA, 2019, Code of Conduct
- Highways England, 2020, DMRB LA 106 Cultural heritage assessment
- Highways England, 2020, DMRB LA104 Environmental assessment and monitoring
- Historic England, 2015, Good Practice Advice in Planning (GPA2) Managing Significance in Decision - Taking in the Historic Environment - this advice note provides information to support the NPPF and PPG, such as aiding in assessing the significance of heritage assets
- Historic England, 2017, Good Practice Advice in Planning Note 3 (Second Edition) The Setting of Heritage Assets - this advice note sets out a staged approach for assessing the impact of a proposed development on the heritage significance of assets, due to changes in their setting
- English Heritage, 2008, Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment - this document sets out the approach to making decisions and offering guidance about all aspects of England's historic environment
- Ministry for Housing, Communities and Local Government, 2014 (updated 2019), Planning Practice Guidance: Historic Environment.

## **6.4 Assessment methodology**

6.4.1 The assessment methodology for both construction and operational impacts is based on that set out in LA 104 Environmental assessment and monitoring and LA 106 Cultural heritage assessment. Assigning value (sensitivity), magnitude of impact and significance of effect and reporting the significant effects of the scheme on cultural heritage resource and its settings follows the requirements in LA 104 Environmental assessment and monitoring. LA 106 sets out the assessment methodology and mitigation.

6.4.2 While this chapter assesses impacts upon individual and groups of heritage resources that contribute to the AONB, impacts upon the AONB itself are assessed in ES Chapter 7 Landscape and visual (Document Reference 6.2).

## Assessment of value

- 6.4.3 The methodology for assessing effects is based on the principle that the environmental effects of the scheme, in relation to a single heritage resource (asset), should be determined by identifying the resource's value, assessing the magnitude of change the scheme would have on the resource's significance (where significance is defined as the attributes that give the resource its value) and then combining these two elements to identify the significance of effect. The following Tables (6-2 to 6-4) provide further detail on the process for assessing effects.
- 6.4.4 The importance or value of each heritage resource within the study area was determined according to the DMRB criteria set out in Table 6-2, which is a factor-specific adaptation of DMRB LA 104 Table 3.2N.

**Table 6-2 Importance/value criteria for heritage resources**

Criteria for establishing importance/value of heritage resources	
Value	Typical descriptors
Very high	Very high importance and rarity, international scale and very limited potential for substitution. Includes World Heritage Sites and nominated sites.
High	High importance and rarity, national scale, and limited potential for substitution. Includes scheduled monuments, listed buildings (all grades), Grade I registered parks and gardens, conservation areas containing very important buildings, undesignated structures of clear national importance, undesignated resources of schedulable quality and importance.
Medium	Medium or high importance and rarity, regional scale, limited potential for substitution. Includes conservation areas containing buildings that contribute significantly to historic character, Grade II registered parks and gardens, and non-designated archaeological remains.
Low	Low or medium importance and rarity, local scale.
Negligible	Very low importance and rarity, local scale.

## Magnitude of impacts

- 6.4.5 The approach used to assess magnitude of impacts on heritage resources considers the change upon the receptor. This takes into account the severity of impact of the scheme, together with the vulnerability of the receptor to change. The approach used is based on professional judgment and experience. It also reflects guidance on 'substantial harm' and 'less than substantial harm' in the NPPF and established methodologies in the DMRB.
- 6.4.6 Table 6-3 summarises the types of impact and magnitude used in the assessment, adapted from DMRB LA 104 Table 3.4N.

**Table 6-3 Broad criteria for assessing the magnitude of change/impact**

Magnitude of impact (change)		Description and nature of change/impact
Major	Adverse	Loss of heritage resource and/or quality and integrity of heritage resource; severe damage to key characteristics, features or elements.
	Beneficial	Large scale or major improvement of heritage resource quality; extensive restoration; major improvement of attribute quality.

Magnitude of impact (change)		Description and nature of change/impact
Moderate	Adverse	Loss of heritage resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Minor	Adverse	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring.
Negligible	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements.
	Beneficial	Very minor benefit to or positive addition of one or more characteristics, features or elements.
No change		No loss or alteration of characteristics, features or elements; no observable impact in either direction.

### Significance of effect

- 6.4.7 By combining the magnitude of impact (or change) and the importance of each heritage resource, an assessment has been made of the significance of effect, taking into account the possibility and nature of mitigation. The resultant effects may be either negative (adverse) or positive (beneficial) or neutral, depending on the nature of the impact.
- 6.4.8 Following the methodology in DMRB LA 104 Table 3.8.1 Significance Matrix, significance of effect upon the heritage resource is assessed using the matrix in ES Chapter 4 Environmental assessment methodology (Document Reference 6.2. Table 4-4).
- 6.4.9 Where the matrix suggests more than one likely outcome, for instance slight or moderate, professional judgement has been used in conjunction with the descriptors in Table 6-4 to arrive at a robust conclusion.
- 6.4.10 Table 6-4 is based upon DMRB LA 104 Table 3.7, with factor-specific examples of effect replacing the generic statement contained in LA104 Table 3.7. Effects are defined on a nine-point scale (very large beneficial, large beneficial, moderate beneficial, slight beneficial, neutral, slight adverse, moderate adverse, large adverse or very large adverse).

**Table 6-4 Assessment criteria**

Significance of effect	Descriptor
Very large adverse	Partial or total loss of a resource of very high importance. Effects at this level are material in the decision-making process.
Large adverse	Result in the total, or almost total, loss of heritage resources. Be highly intrusive and would seriously damage the setting of the heritage resource such that its significance is totally or almost totally degraded. Be in conflict with national policies for the protection of the heritage resource. Effects at this level are likely to be material in the decision-making process.

Significance of effect	Descriptor
Moderate adverse	<p>Be highly intrusive in the setting and as a result adversely affect the significance of the resource.</p> <p>Result in loss of features such that their integrity of the heritage resource is compromised, but not destroyed.</p> <p>Effects at this level can be considered to be material decision-making factors.</p>
Slight adverse	<p>Have a detrimental impact on the setting of a heritage resource such that its significance is diminished.</p> <p>Be in conflict with local policies for the protection of the local character of the heritage resource.</p> <p>Effects at this level are not material in the decision-making process.</p>
Neutral	<p>Maintain existing historic features in the townscape.</p> <p>Have no appreciable impacts either beneficial or adverse on any known or potential heritage resources.</p> <p>Result in a balance of beneficial and adverse impacts.</p> <p>Not result in severance or loss of integrity context or understanding within a historic landscape.</p> <p>Not be in conflict with and do not contribute to policies for the protection or enhancement of the heritage.</p> <p>No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.</p>
Slight beneficial	<p>Restore or enhance the sense of place of a heritage feature through good design and mitigation.</p> <p>Remove or mitigate visual intrusion (or other indirect impacts) into the setting of heritage features such as that appreciation and understanding of them is improved.</p> <p>Marginally enhance the integrity understanding and sense of place of a site or group of sites.</p> <p>Effects at this level are not material in the decision-making process.</p>
Moderate beneficial	<p>Provide potential for significant restoration of characteristic features or their setting through the removal, relocation or mitigation of existing damaging or discordant impacts on the heritage resource.</p> <p>Contribute to regional or local policies for the protection or enhancement of the heritage resource.</p> <p>Enhance the integrity, understanding and sense of place of a site or group.</p> <p>Effects at this level can be considered to be material decision-making factors.</p>
Large beneficial	<p>Result in the removal, relocation or substantial mitigation of very damaging or discordant existing impacts (direct or indirect) on the heritage.</p> <p>Result in extensive restoration or enhancement of characteristic features or their setting.</p> <p>Form a major contribution to government policies for the protection or enhancement of the heritage resource.</p> <p>Remove or successfully mitigate existing visual intrusion such as that the integrity, understanding and sense of place of a site or group of sites is re-established.</p> <p>Effects at this level are likely to be material in the decision-making process.</p>
Very large beneficial	<p>As 'large beneficial' where the effect would be upon a site of very high importance,</p> <p>Effects at this level are material in the decision-making process.</p>

6.4.11 Adverse effects of moderate significance or above represent significant effects that require mitigation, and function as means for the decision maker to take account of the likely significant effects of the scheme.

## Stakeholder engagement

- 6.4.12 Consultation is being undertaken with Historic England and the Gloucestershire Council Archaeological Officer to inform the scheme design. Engagement is ongoing and is documented in a Statement of Common Ground as part of the Statement of Commonality (Document Reference 7.3).

## 6.5 Assessment assumptions and limitations

- 6.5.1 It has not been possible to access all areas identified within the DCO Boundary for survey. As a consequence, our collected cultural heritage information is in some locations based upon limited or incomplete data from geophysical surveys. The data that is missing includes:
- Geophysical survey data for areas in which access was unavailable due to existing vegetation and ecological constraints. This represents less than 10% of the DCO Boundary spread over a number of small land parcels.
  - Trial trenching data for areas in which access was unavailable due to existing vegetation and ecological constraints. This represents less than 10% of the DCO Boundary spread over a number of small land parcels.
- 6.5.2 Over 90% of the DCO Boundary has been surveyed however, and it is considered that the baseline for the assessment is robust, despite the absence of data from these areas. Professional judgment has been used to consider the likely impacts on heritage resources in these areas.

### Limits of deviation (LoD)

- 6.5.3 An assessment has been conducted of the potential impacts on heritage resources of the LoD outlined ES Chapter 2 The project (Document Reference 6.2).
- 6.5.4 The LoD would not give rise to any new effects, or to any materially worse adverse or better beneficial cultural heritage effects from those predicted in the assessment.
- 6.5.5 Annex C Detailed archaeological mitigation strategy and overarching written scheme of investigation of ES Appendix 2.1 Environmental management plan: (Document Reference 6.4) provides a means for preservation by record for features which might be encountered within the LoD. This would be developed into a full Written Scheme of Investigation (WSI) at detailed design. This would be secured by the commitments documented in ES Appendix 2.1 EMP (Document Reference 6.4).

## 6.6 Study area

- 6.6.1 The study area is defined according to the sensitivity of the receiving environment and the potential impacts of the scheme.

### Designated resources

- 6.6.2 The study area considered in the assessment comprises a buffer that extends 1km from the DCO Boundary. This buffer has been selected on the basis of professional judgement and experience. This reflects that by their nature linear road schemes would sit within a landscape, and are likely to be visible for short stretches of their overall length; as such they are unlikely to alter the setting of heritage resources to a degree that would result in either a significant adverse or

beneficial effect beyond 1km. The design of the scheme was reviewed, and it was concluded that it shared these characteristics, and therefore fitted within the expectations of professional judgement.

- 6.6.3 All designated resources within this study area have been considered by the assessment. In addition, where designated resources, such as registered parks and gardens (RPG), straddle the limit of the study area, any designated heritage resource that are associated within them, that could experience effects have also been included in the assessment.
- 6.6.4 Following a site visit with Historic England and Gloucestershire County Council, one designated heritage resource outside of the 1km study area, the scheduled Leckhampton Camp and Tumulus (National Heritage List for England (NHLE)1004862), was identified as potentially experiencing an effect as a result of the scheme. This has been included in the assessment.
- 6.6.5 The noise model and Zone of Theoretical Visibility (ZTV) were reviewed against known heritage resources in order to identify any resources beyond the 1km study area where visual or noise changes within their settings could result in a significant effect on their heritage significance. With the exception of Leckhampton Camp and Tumulus (see section 6.7.4), no resources were identified beyond the 1km study area.

### Non-designated resources

- 6.6.6 The assessment considers non-designated heritage resources within 300m of the DCO Boundary. This study area is based upon professional judgement that non-designated resources are less likely to experience significant adverse effects as a result of changes to their settings beyond this distance, following the reasoning described in section 6.6.2. This does not preclude non-designated resources being of greater than local importance. For further details of how the importance of resources is determined, please refer to section 6.4, Table 6-1.

## 6.7 Baseline conditions

### Current baseline

- 6.7.1 This assessment has considered the known designated heritage resources within the DCO Boundary, inner study area (300m) and outer study area (1km). Approximate historical periods, as defined by Historic England<sup>1</sup>, are provided in Table 6-5.

**Table 6-5 Definition of archaeological time periods**

Period name	Date range	Additional periods, where needed
Palaeolithic	500,000 – 10,000BC	
Mesolithic	10,000 – 4,000BC	
Neolithic	4,000 – 2,200BC	
Bronze age	2,200 – 700BC	
Iron age	800BC – AD43	
Romano-British	AD43 - 410	
Early medieval (Anglo-Saxon)	410 - 1066	
Medieval	1066 - 1540	

Period name	Date range	Additional periods, where needed
Post-medieval	1540 - 1901	Tudor - 1485 - 1603 Elizabethan - 1558 - 1603 Stuart - 1603 – 1714 (Jacobean 1603 – 1625) Hanoverian – 1714 –1837 (Georgian 1714– 1830) Victorian - 1837 - 1901
20th Century	1901 - 2000	
21st Century	2001 - 2100	

### Designated heritage resources

- 6.7.2 One designated resource lies within the DCO Boundary, but outside of the footprint of the scheme. This scheduled monument consists of a group of three round barrows, known collectively as Emma’s Grove (NHLE 1017079). This resource is located approximately 70m to the south of the scheme at its closest point.
- 6.7.3 Nine scheduled monuments are present within the study area, beyond the DCO Boundary. These are:
- Coberley long barrow (NHLE 1002129)
  - Brimpsfield Castle (NHLE 1003326)
  - Brimpsfield Castle mound (NHLE 1003343)
  - Crickley Hill camp (NHLE 1003586)
  - Dryhill Roman villa (NHLE 1004848)
  - Moat and fishpond at Bentham Manor (NHLE 1016764)
  - Moated site and fishpond at Urrist Barn, 220m south-west of Yew Tree Farm (NHLE 1017039)
  - Crippets long barrow, 680m north-east of Dryhill Farm (NHLE 1017040)
  - two bowl barrows, known as Crippet’s Wood round barrows, 560m and 590m north-east of Dryhill Farm (NHLE1017041)
- 6.7.4 One scheduled monument that could be affected by the scheme lies outside of the study area:
- Leckhampton Camp and Tumulus (NHLE 1004862)
- 6.7.5 50 listed buildings are present outside of the DCO Boundary, but within the study area, which comprise:
- 2 Grade I listed buildings- Church of St Michael (NHLE 1088482) and Church of St Mary (NHLE 1091745)
  - 1 Grade II\* listed building- Dovecote circa 3 metres north of Bridge House (NHLE 1304753)
  - 47 Grade II listed buildings
- 6.7.6 One RPG is present within the study area, the Grade II\* Listed Cowley Manor.
- 6.7.7 Two conservation areas are present within the study area, Cowley and Brimpsfield.
- 6.7.8 These designated heritage resources are shown on ES Figure 6.1 Designated heritage assets within 1km of the scheme (Document Reference 6.3).

- 6.7.9 A full description and statement of value for each designated resource within the study area can be found in ES Appendix 6.1 Designated assets: value (sensitivity) (Document Reference 6.4).

### **Non-designated heritage resources**

- 6.7.10 255 non-designated heritage resources are present within the study area, of which 116 lie within the DCO Boundary for the scheme. Of these, 27 are sites recorded in the Gloucestershire Historic Environment Record (HER), and the others represent individual artefact find-spots recorded by the Portable Antiquities Scheme (PAS).
- 6.7.11 The HER sites present relate to a range of periods, from prehistoric to mid- 20<sup>th</sup> century, and include cropmarks, earthworks, a possible prehistoric barrow, remnants of medieval fields and trackways (hollow ways) and World War 2 military sites. Within the PAS record, finds of Roman copper coins predominate, although more unusual artefacts have also been found, including a Roman padlock bolt and a bronze and enamel brooch in the shape of a duck.
- 6.7.12 Non-designated heritage resources are described in detail in ES Appendix 6.2 Archaeological assessment (Document Reference 6.4). These are illustrated on ES Figure 6.2 Non-designated heritage assets (Document Reference 6.3).

### **Historical background**

#### Prehistory

- 6.7.13 During the Palaeolithic period this area of Gloucestershire was tundra. The fluvial gravels found in the strata of Gloucestershire contain an abundance of well-preserved large mammal bones such as red deer and horse<sup>2</sup>. Find spots and gravel pits at the nearby Barnwood, and a sewer trench at Brockworth, has yielded evidence of lower/mid Palaeolithic human activity within the study area<sup>3</sup>. There is evidence that the area where Stockwell Farm sits, immediately north of the scheme and within the study area, was utilised since c.6500 BC and has provided a plethora of evidence for late prehistoric human activity<sup>4</sup>.
- 6.7.14 The alkaline limestone provides ideal circumstances to unveil rich faunal and human bone assemblages from the Neolithic period within Gloucestershire<sup>5</sup>. There is evidence that the study area was first domestically occupied during the Neolithic with examples of defended settlements found at Crickley Hill and The Peak, north of Birdlip. There is evidence of the first major occupation of Crickley Hill c. 3rd millennium BC with the remains of the foundations of a causewayed enclosure at the top of the hill<sup>6</sup>. The site comprised of two lines of interrupted ditches cut off the low knoll, accompanied with a bank built of stones taken from the ditch; two built entrances; and pits and post-sockets that outline where structures would've stood. The phasing of the ditches infilling suggests a lengthy but intermittent use of the early site<sup>7</sup>. The newer, larger ditch, drystone walls, fence and depositing of flint arrowheads imply a development of the site's function to a presumably defensive enclosed settlement; however, fire at the site resulted in an immediate end to Neolithic occupation<sup>8</sup>.
- 6.7.15 The Peak, which is located to the south of Crickley Hill, comprises of two concentric arcs of boundary earthworks forming an oval plan and contained evidence of plain bowl pottery; flint tools and the waste material from knapping; animal remains, mostly cattle; human metatarsal bones; traces of cereal



production; and other hand tools from the late 5th/early 4th century BC<sup>9</sup>. Evidence of worked flint is similarly found across the whole of Gloucestershire. It is believed that the sites were contemporaneous with one-another and Crickley Hill and The Peak formed a wider single complex<sup>10</sup>. There is a distinct cluster of enclosures dating from the 4th century BC to the 1st century AD within the wider boundaries of Birdlip, including Crickley and The Peak<sup>11</sup>.

- 6.7.16 The Gloucestershire landscape is also characterised with Bronze Age barrows and although there are no barrows within the footprint of the scheme, there are several within the study area. Coberley features two long barrows, with skeletal remains of a small male<sup>12</sup> found at one of the barrows in the late 18th century. There is also evidence for prehistoric activity surrounding Shurdington with spurs and other earthworks identified in the hills that look upon the village. Shurdington Hill features a long barrow which was later landscaped with the plantation of Scots pine at the end of the 19th century<sup>13</sup><sup>14</sup>. Known as 'Barrow piece', the site was excavated in the 18th century which identified a cromlech that yielded a skeleton and other burial goods that were not detailed in reports<sup>15</sup>.
- 6.7.17 The most significant evidence of Bronze Age occupation within the landscape is at Crickley Hill, where one of the phases of the hillfort dates to the late Bronze Age.

#### Iron age/Romano-British

- 6.7.18 There is no evidence of early Iron Age occupation/activity within the site. However, evidence from the pre-Roman Iron Age is in abundance for the whole of Gloucestershire, with most of the evidence coming from earthworks and enclosure complexes<sup>16</sup>. The development of the Crickley Hill Neolithic site continued into the Iron Age with the addition of a hill-top enclosure<sup>17</sup>. The development at Crickley Hill in the 7th/6th century BC saw the addition of a new rampart and ditch enclosure spanning nine acres and abutting the previous Neolithic enclosure<sup>18</sup>. The occupation of the hillfort lasted no more than two generations before the site was abandoned. A second hillfort was constructed at the site around a century later with a central "great" roundhouse c. 50 feet in diameter, surrounded by sporadically placed smaller round houses and small square structures that were probably granaries or stores<sup>19</sup>. A final episode of destruction by burning ended occupation on the hill. Construction of a road between Crickley and Birdlip at the end of the 19th century revealed a small 1st century cemetery with rich grave goods suggestive of an important family within the immediate area<sup>20</sup>.
- 6.7.19 Further evidence of Iron Age occupation comes from Barrow Wake, on the edge of the escarpment east of Crickley Hill, where a rich cemetery dating to c. 1st century was found during quarrying in 1879: comprising of three burials found under a cairn, in cists lined with limestone flags; and a fourth burial nearby<sup>21</sup>. The 'Birdlip Mirror' was also uncovered at Barrow Wake, a fine pre-Roman bronze artwork dating to c. AD50.
- 6.7.20 The major Roman military road, Ermine Street, linked the historic city of Gloucester (*Colonia Glevum Nervensis*) west of the study area, with Cirencester (*Corinium Dobunorum*) to the south-west of the site in the 1st century AD. For much of its length the present day A417 follows the alignment of the Roman road, before deviating to the south of Stockwell and continuing its route through Birdlip towards Gloucester, directly south of the scheme.

6.7.21 The Gloucestershire landscape is scattered with Roman villas, including the 3rd – 5th century villa at Great Witcombe, within the study area. Great Witcombe Villa was occupied until the 5th century and evidence was found in the 20th century that suggested it featured a bathhouse complex and ‘perhaps the shrine of a water spirit’<sup>22</sup>. Mosaic pavements were also excavated and are now housed inside a modern building for protection. Further evidence of Roman elite within the study area can be found in the north of the study area at Dryhill Villa to the north of Crickley Hill. This was excavated in the mid-19th century and comprised of twelve rooms with a hypocaust, and included painted plaster, Roman coins and pottery<sup>23</sup>. At Coberley, north-east of the study area, evidence of a Roman villa complex was found including trackways, ditches, springs, mosaics and a kiln<sup>24</sup>.

#### Early medieval

6.7.22 There is no evidence within the study area of human activity in the early Medieval, which is fitting with the overall trend across Gloucestershire of a decline in urban settlement with the end of Roman control<sup>25</sup>. The study area, and most of North Gloucestershire, fell under the control of the Hwicce mirroring the territory of the Dobunni tribe prior to the Roman period<sup>26</sup>. This territory was later absorbed into the Anglo-Saxon kingdom of Mercia.

#### Medieval

6.7.23 In the Medieval period the area that now includes Gloucestershire was noted as England’s ‘central province’, characterised by large nucleated villages surrounded by extensive open fields<sup>27</sup>. Most of these fields were enclosed through agreements during the period creating the field system landscape that is recognisable in the present day. The work of Elizabeth and Alan Jack in 2000 aimed to display the Medieval Parishes of Gloucestershire with as little modern intrusion as possible, noting the retained historic character<sup>28</sup>. During the medieval period England’s main commerce was the wool trade, with the Cotswolds often recognised as one of the key suppliers for the country, as well as being hailed for the quality of product produced<sup>29</sup>.

6.7.24 Within the study area, medieval evidence can be found on the northern slopes of Crickley Hill which were used for grazing by the people of the Brinkworth parish<sup>30</sup>. The presence of a small stone structure believed to be a shepherd’s hut supports this. There is evidence of a possible structure in use during the mid to late Medieval period within the boundary of the tennis court on the Stockwell Farm property, although the structure no longer exists<sup>31</sup>. Stockwell was first recorded in the early 13th century when it was encompassed in the Cowley manor estate<sup>32</sup>.

6.7.25 North of Stockwell is the Grade II\* Listed parish church of Saint Giles, Coberley, originated in the 12th century but was largely rebuilt in the mid 14th century. Further rebuilding of the nave and chancel occurred in the 19th century, undertaken by John Middleton, returning much of the 12th century Gothic style with the chantry to Saint Mary and the bell tower. The church is known for its unusual burials; a warhorse called Lombard was laid to rest in the churchyard-when the owner Sir Giles Berkeley died in 1294 his heart was removed and put with the horse. Monuments for his son Thomas I de Berkeley and his wife Joan Berkeley (Dick Whittington’s mother) feature in the church<sup>33</sup>.

6.7.26 There is also evidence for Medieval activity in the wider Cotswold landscape such as at Brockworth, west of Great Witcombe, where the Grade I St George’s church dates to 1142<sup>34</sup>. Adjacent is the Grade II\* Brockworth Court, a Tudor manor

house which was built for the last prior of the Llanthony Priory, Richard Hart<sup>35</sup>. There is also evidence south of Ermin Street in the village of Brimpsfield, recorded in the doomsday book as 'Brimesfelde'. A landscaped deer park was created in 1227 south-east of the town as part of the manorial estate. A castle was built following the Norman invasion, and subsequently destroyed following the rebellion of its owner, 2nd Lord of Brimpsfield John Giffard, against King Edward II in 1322. The remains of the castle are visible as a mound with an outer bank and ditch, and foundations of the gatehouse<sup>36</sup>.

### Post-medieval

- 6.7.27 During the reformation period, the county of Gloucestershire showed sympathy for the Protestant cause which in return resulted in an overwhelming support for the parliamentary cause during the civil war<sup>37</sup>. The post-Medieval period saw continued development of infrastructure within the study area, although it largely remained an agricultural landscape. The Cotswolds continued the practice of farming the land resulted in the characterisation that they were principally arable by the mid 19th century<sup>38</sup>.
- 6.7.28 At the start of the 18th century there were ten houses at the settlement at Stockwell, however this was short-lived with most tenements noted as derelict by the end of the 18th century due to the enclosure of the surrounding open fields<sup>39</sup>. By 1802 only the farmstead at Stockwell, which was rebuilt in the late 19th century, and a 17th century out-building remained. Accompanying these barns are two 19th century cottages, a 19th century barn conversion and several post-enclosure barns. The former extent of Stockwell is also implied by the 19th century name of the field adjacent to the farm- 'Rowe field', colloquially known as 'rough field' suggests an uneven field due to an abundance of archaeological resources<sup>40</sup>.
- 6.7.29 At Crickley Hill, quarrying and lime-burning took place from the 18th century into the early 19th century, creating the steep cliffs that now characterise the site.
- 6.7.30 The manor house at Witcombe was originally built by Sir Michael Hicks at the start of the 18th century, with a contemporaneous walled garden and a surviving small gazebo which dates to 1697. There are visible outlines of the presence of a deer park at the site, however the house was demolished and entirely remodelled in the late 19th century. The replacement was built in 1891 facing the park and was reportedly only a temporary structure but remains today. There are several remaining structures associated with the park including the Grade II\* Beach Hall (The Summer House) previously dated to 1697<sup>41</sup>; a Grade II Cottage in the Park built in 1617<sup>42</sup>; the Grade II Lodge to the Witcombe Park Estate built in 1845<sup>43</sup>; the Grade II mid 18th century Stableblock located south of the park<sup>44</sup>; and Grade II listed pair of 18th century Gate Piers west of the park<sup>45</sup>.

### 20th century

- 6.7.31 Gloucestershire was key contributor to the war effort during world war two. Brockworth in the west of the study area was a significant site with military aircraft industry factories and anti-aircraft defences<sup>46</sup>. The "Gloster Aircraft Company" established at the start of 20th century was a mainstay in the production of military aircraft. The company closed in 1962 and the airfield was redeveloped as Gloucester Business Park and for residential use. Within the study area at Shab Hill, was a military radio station, elements of which survive today.

6.7.32 In the north of the study area quarrying continued at Crickley Hill, although in decline, up until the mid-20th century<sup>47</sup>. The eastern part of the hill complex known as the Scrubbs was acquired by the National Trust in 1935<sup>48</sup> and was open to the public as Crickley Hill Country Park. The western part of the site is owned by Gloucestershire Wildlife Trust and the National Trust.

### **Historic landscape character**

6.7.33 Historic landscape character is the attributes and qualities of a landscape which reflect past land use and settlement and are legible in the present landscape. Over the last twenty years there has been an extensive programme of assessing and mapping 'Historic Landscape Character' (HLC) across the country. This data is invaluable for understanding the nature of the historic landscape, establishing methods to manage and protect it, and to assess potential impacts from development upon it. However, since the first HLC assessment was produced in Cornwall in 1994 the methodology for the assessment of historic landscapes has evolved, meaning that there tends to be inconsistency in the data across different parts of the country. There are also limitations in how HLC data, in its raw form, can be used in the context of assessing the potential impacts of large-scale infrastructure projects such as the scheme. This is because the individual areas of land identified tend to be relatively small in comparison to the area affected, which can lead to an overstating of adverse impacts in proximity to the scheme footprint while understating the overarching effect on the wider historic landscape.

6.7.34 The approach used in this assessment takes the Gloucestershire HLC assessment as a foundation from which larger Historic Landscape Character Areas (HLCA) have been identified. These encompass areas of consistent patterns in the components of historic landscape, which share an overarching nature and quality.

6.7.35 The following sources have been used to inform the HLC baseline:

- The Gloucestershire HLC mapping
- The Cotswold National Landscape Area report
- Historic mapping including tithe maps and historic Ordnance Survey maps
- HER data
- Aerial photography
- Walkover survey

6.7.36 The full findings of the assessment are provided in ES Appendix 6.3 Historic landscape characterisation (Document Reference 6.4). In summary, five HLCAs were identified:

- HLCA01: Area of irregular enclosed fields east of Brockworth. A large expanse of agricultural land to the east of Brockworth, characterised by irregular enclosure. To the east of the area rises the Cotswold escarpment, the wooded slopes forming a clear boundary to the area. The HLCA is scattered with small villages and farmsteads and cut through by major roads including the A417.
- HLCA02: Woodland south of Great Witcombe. A large area of historic woodland.
- HLCA03: Agricultural landscape around Brimpsfield and Birdlip. Agricultural landscape surrounding the villages of Brimpsfield and Birdlip, including areas of historic woodland and a mixture of field types reflecting different patterns of post-medieval enclosure.

- HLCA04: Agricultural landscape south of Seven Springs. Characterised by irregular, often drystone walled, fields reflecting post-medieval and earlier use of the land as upland pasture, now mostly turned to arable cultivation. Several small settlements and a large modern golf course are present within this HLCA.
- HLCA05: Brockworth (east of the M5). Part of Brockworth, a large village on the edge of Gloucester. The HLCA comprises the area of the village east of the M5 which is mostly industrial in character.

6.7.37 These are illustrated in ES Figure 6.3 Historic landscape character areas (Document Reference 6.3).

### **Non-intrusive surveys**

6.7.38 A non-intrusive archaeological investigation in the form of a geophysical survey was undertaken for the DCO Boundary in 2019, in areas where access was possible, and where existing vegetation and ecological constraints allowed. The geophysical survey results can be found in ES Appendix 6.4 Geophysical survey report (Document Reference 6.4). Further survey was undertaken in 2021 to account for changes to the DCO Boundary during the design process, and where possible to include areas not able to be included in the 2019 survey. A geophysical survey<sup>49</sup> was undertaken for part of the DCO Boundary in 2003. The results of these surveys informed the ES.

6.7.39 Lidar data was reviewed to identify previously unidentified earthwork features that could be affected by the scheme. A number of previously unrecorded features were identified, however these lie outside of the DCO Boundary. These are illustrated on ES Figure 6.4 Lidar assessment (Document Reference 6.3).

### **Historic Investigations**

6.7.40 There have been two previous excavations within the DCO Boundary. From 1987 to 1988 excavations were carried out in advance of the construction of the Birdlip bypass. This project investigated a crop mark complex which was established to be the remains of a Middle Iron Age farmstead. This site now lies under the Existing A417. The second excavation was at Birdlip Quarry and was carried out as part of the A419/A417 Trunk Road Improvement in 1996.

### **Archaeological evaluation**

6.7.41 A programme of trial trenching to determine the presence, extent, significance, and level of survival of buried heritage resources was undertaken between September 2020 and March 2021 to inform the environmental impact assessment. The trenches were designed to target areas where geophysical survey had suggested the presence of archaeological remains, and areas where the geophysical survey suggested either no archaeological remains or features likely to be geological in origin. In areas where no geophysical survey had been undertaken, the layout of the trenches was random.

6.7.42 The trial trenching demonstrated a very high concordance between the geophysical survey results and the actual conditions on the ground. A very small number of archaeological features were found in areas where no archaeological features were predicted by the geophysics, or where archaeological features had been misinterpreted as geological. As a result, there is a high degree of confidence that the archaeological potential within the DCO Boundary is

understood to the degree required for an appropriate impact assessment to be carried out, and for comprehensive mitigation to be designed. The interim results of this trenching can be found in ES Appendix 6.5 Trial trenching report (Document Reference 6.4).

### **Historic hedgerows and boundaries**

- 6.7.43 A number of historic hedgerows and boundaries exist within the DCO Boundary and are detailed in Figure 5 Important hedgerows of ES Appendix 6.2 Archaeological assessment (Document Reference 6.3). These are of regional importance for their role in providing legibility to the historic landscape and are therefore considered to be of medium value.

### **Future baseline**

- 6.7.44 As set out in ES Chapter 4 Environmental assessment methodology (Document Reference 6.2), the 'Do-Minimum' and 'Do-Something' scenarios have been set out, with the 'Do-Minimum' scenario representing the future baseline with minimal interventions and without new infrastructure. Potential changes to heritage receptors in the future would not be noticeable as it is a 'fixed' resource (being the material remains of past human activity), and with the exception of new discoveries that may come to light, no 'new' receptors would be expected to enter the baseline. Therefore, the future baseline would remain the same as set out in above.

## **6.8 Potential impacts**

- 6.8.1 Mitigation measures incorporated in the design and construction of the scheme are set out in section 6.9. Prior to implementation of the mitigation, the scheme has the potential to affect cultural heritage resources either beneficially or adversely, both during construction and once in operation.
- 6.8.2 For the purposes of the cultural heritage assessment, the construction phase is defined as the temporary activities involved in building the scheme, and the subsequent permanent presence of the scheme once constructed. The operational phase comprises the situation when the scheme is being used by traffic.
- 6.8.3 As listed below, physical impacts upon resources would only occur during the construction phase; impacts upon resources' setting would arise during both the construction and operation phases. Impacts upon setting may be either beneficial or adverse.
- 6.8.4 The significance of effects are reported after an assessment of the effectiveness of the design and mitigation measures (the residual effect).

### **Construction impacts**

- 6.8.5 Construction of the scheme has potential for benefits to cultural heritage resources, such as improvements to the settings of heritage resources and the removal of existing physical severance caused by the current A417.
- 6.8.6 Where the scheme is contained within the Existing A417 corridor and alongside areas of prior disturbance, the potential for the presence of as-yet unknown archaeological remains would have been previously removed. However, where

the scheme requires excavation below existing ground surface within areas of fields, including compound areas, possible remains may exist.

- 6.8.7 Construction of the scheme has the potential for adverse impacts upon cultural heritage resources, including:
- partial or total removal of heritage resources, including archaeological remains, within the scheme footprint
  - compaction of archaeological deposits by construction traffic and structures
  - temporary impacts upon the settings of heritage resources
  - permanent impacts upon the setting of heritage resources
  - changes to key views and sight lines
  - impacts to paleoenvironmental deposits as a result of hydrological changes.
- 6.8.8 Where possible, construction impacts have been reduced through design; for example, through the relocation of the construction compound at Cowley junction to avoid impacts on the buried remains of a probable Romano-British settlement identified by geophysical survey and by previous excavation in 1999<sup>50</sup>.
- 6.8.9 Construction activity that would not cause direct impacts, including movements of plant, temporary lighting and temporary compounds, would take place within the wider setting of listed buildings and upstanding non-designated heritage resources within the study area. These works would be temporary, of limited duration and reversible. Consequently, such activities are considered not result in a significant effect on any designated resource.
- 6.8.10 Views from heritage resources towards permanent works such as new roads, cuttings, embankments and other structures are considered to be permanent construction impacts for the purposes of the assessment. Likewise, removal of elements of the Existing A417, such as lighting of junctions, are considered to be construction effects.

### **Operational impacts**

- 6.8.11 The operational phase of the scheme has the potential to result in both beneficial and adverse impacts on the setting of cultural heritage resources due to traffic noise and the visibility of moving vehicles on the road. Impacts could include:
- changes to the settings of monuments
  - changes to key views and sight lines.
- 6.8.12 There would be no physical impacts on below-ground archaeology during operation, as these would have occurred during the construction phase.

## **6.9 Design, mitigation and enhancement measures**

### **Embedded mitigation**

- 6.9.1 The scheme has been designed, as far as possible, to avoid or prevent impacts on heritage resources through the process of design development and consideration of good design principles. Embedded mitigation measures for cultural heritage are reported as part of the scheme description in ES Chapter 2: The project (Document Reference 6.2).

## Construction mitigation

### Essential mitigation

6.9.2 Essential mitigation of construction impacts would take the form of measures to reduce direct impacts (physical damage), and indirect impacts (changes to setting that affect the significance of the resources). These consider the following:

- Avoidance, preservation by burial, or investigation in the case of archaeological remains.
- Relocation, photographic or drawn to scale surveys in the case of historic buildings.
- Recording, information panels or landscape works in the case of impacts on historic landscapes.
- Reduction to impact on setting through screening or landscaping.

### *Archaeological remains*

6.9.3 Archaeological investigations carried out to inform the DCO have established that there are several areas of high value buried archaeological remains within the DCO Boundary which will be affected by the construction of the scheme. This includes potential settlement and funerary remains. Where it has not been possible to mitigate potential impacts through design (i.e. by avoiding identified archaeological remains) a programme of archaeological works will be put in place to ensure a record is made. This would include:

- Retention of archaeological remains located within the DCO Boundary but outside of the footprint of the road scheme where it is possible for them to be protected from damage during construction, for example, fencing to avoid accidental damage,
- Archaeological excavation and recording of remains identified through geophysical survey and trial trenching. This includes excavation of areas of extensive and/or complex remains, such as settlement or burial remains, and a strip, map and sample approach for larger scale areas of sparser remains, such as remains of field systems
- Archaeological monitoring (watching brief) where no archaeological remains have been identified, with a progression to an excavation methodology if remains are found.
- Building recording of structures to be relocated or demolished as part of the scheme.

6.9.4 Mitigation of direct impacts on archaeological remains would take the form of 'preservation by record', that is, the investigation of archaeological remains prior to construction, and the analysis of artefacts and publication of results following the construction of the scheme.

6.9.5 Preservation by record can involve a number of levels of detail, commensurate with the significance of the resources being impacted directly by the scheme. These may include detailed archaeological excavation of high value buried archaeological remains, strip-map-sample where archaeological remains are expected to be present dispersed over a wide area, or archaeological watching brief in areas of lower archaeological potential. The type and location of mitigation required would be agreed with the Gloucestershire Council Archaeological Officer by means of Annex C Detailed archaeological mitigation strategy and overarching WSI of ES Appendix 2.1 Environmental management plan (Document Reference



6.4). This programme of mitigation will be secured by the commitments documented in ES Appendix 2.1 EMP (Document Reference 6.4).

- 6.9.6 Archaeological excavation and recording and building recording would take place prior to any top-soil strip, whilst archaeological monitoring would be carried out at the commencement of construction.
- 6.9.7 The archaeological mitigation would also include the analysis and reporting of the archaeological investigations, followed by appropriate publication, dissemination and archiving of the results. A single final report would be produced for the scheme.

#### *Scheduled monument*

- 6.9.8 Emma's Grove scheduled monument will be retained and protected through the provision of fencing during construction. This would ensure that no accidental damage is incurred to the bowl barrows occurs.

#### *Milestones*

- 6.9.9 A non-designated milestone is located close to the entrance to Crickley Hill Farm. This would be demarcated or fenced during construction to avoid accidental damage. If necessary, it would be removed under archaeological supervision, stored, and replaced as close as possible to its original location at the end of the construction phase. This has been agreed in Annex C Detailed archaeological mitigation strategy and overarching WSI of ES Appendix 2.1 Environmental management plan (Document Reference 6.4). This programme of mitigation will be secured by the commitments documented in ES Appendix 2.1 EMP (Document Reference 6.4).

#### *Building recording*

- 6.9.10 The Air Balloon public house would be demolished as part of the scheme. Prior to demolition, a detailed record would be made by means of photographic and measured survey. The specific level of detail for the recording has been agreed in ES Appendix 2.1 Environmental management plan: Annex C Detailed archaeological mitigation strategy and overarching WSI (Document Reference 6.4). This programme of mitigation will be secured by the commitments documented in ES Appendix 2.1 EMP (Document Reference 6.4).

#### *Designated assets*

- 6.9.11 Where significant effects have been identified on listed buildings and scheduled monuments as a result of permanent changes to their settings during construction, mitigation measures that would reduce the significance of these effects are not possible.

### **Operational mitigation**

#### Essential mitigation

- 6.9.12 A significant effect was identified for the operation phase as a result of increased noise at the grade II listed Shab Hill barn. Noise mitigation in the form of a 1.2m stone wall along the B4070 (from Shab Hill Farm access road to Shab Hill junction) has been incorporated as part of the scheme for Shab Hill Farm (which includes the barn), however the reduction in noise would not reduce the change

to its setting to a degree that would result in a non-significant effect. This mitigation is detailed in Chapter 11 Noise and vibration (Document Reference 6.2).

- 6.9.13 No designated heritage resources would be situated within the Applicant's owned land, therefore there is no requirement for cultural heritage resource management plans to be produced.

### **Enhancement**

- 6.9.14 The removal of vegetation from the Emma's Grove barrows would enhance their interpretation and enable them to be removed from the Historic England Heritage at Risk Register.
- 6.9.15 The improvements to the Cotswold Way National Trail and Gloucestershire Way enable greater permeability within the landscape. These allow greater access to heritage resources by members of the public.
- 6.9.16 Interpretation boards would be provided as part of the scheme, adjacent to the Cotswold Way National Trail crossing. These will be developed at detailed design.

## **6.10 Assessment of likely significant effects**

### **Construction effects**

- 6.10.1 The permanent construction impacts on designated heritage resources are presented in Table 6.6 Scheduled monuments and Table 6.7 Listed buildings.
- 6.10.2 All designated heritage resources listed in the tables are high value receptors, as described in Table 6-2 and ES Appendix 6.1 Designated assets: value (sensitivity) (Document Reference 6.4).

**Table 6-6 Scheduled monuments (high value)**

<b>NHLE No.</b>	<b>Name</b>	<b>Distance from scheme</b>	<b>Setting</b>	<b>Nature of impact</b>	<b>Magnitude of impact</b>	<b>Significance of effect</b>
1002129	Coberley long barrow	1,300m	The setting of the barrow comprises an undulating rural landscape, featuring a mixture of historic and modern fields, boundaries, tracks and woodlands. The topography is such that long distance views are rare and this sense of hiddenness and discovery, as an observer moves through the landscape encountering other contemporary prehistoric monuments as they appear in view, is a key aspect of setting that adds to its significance. This 'mind visibility' is likely to have been important to the builders of the barrow and therefore the significance of the barrow is sensitive to changes to the landform within this setting, regardless of whether these changes are visible.	Although the scheme would not be visible or audible from the barrow, the scheme would represent a modern alteration to the wider rural landscape within which the barrow sits and would change elements of its setting that contribute to its significance. This change would affect the ability to understand the barrow in its wider context, and as a consequence its significance would be diminished. This would equate to a slight adverse effect according to the criteria in Table 6-4.	Minor Adverse	<i>Slight Adverse</i>
1003326	Brimpsfield Castle	920m	The setting of the castle comprises agricultural fields, the neighbouring village of Brimpsfield, Benedictine Grange and shrunken medieval village earthworks and the contemporary church of St Michael and all Angels. This setting emphasises the group association between the buildings and contributes to the significance of the resource.	The scheme would not alter the setting of the resource, and its significance would not be affected.	No change	<i>Neutral</i>
1003343	Brimpsfield Castle mound	500m	The castle mound lies to the east of the remains of the later Brimpsfield Castle, and immediately to the west of the river Frome. To the north is an area of woodland, with large pasture fields to the south and west. The rural location, and the relationship with the neighbouring Brimpsfield Castle, contribute to its significance.	The scheme would not alter the setting of the resource, and its significance would not be affected.	No change	<i>Neutral</i>

NHLE No.	Name	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
1003586	Crickley Hill camp	250m	<p>Sitting in a prominent position on the edge of the Cotswold escarpment, Crickley Hill's setting is one of long views over the lowlands to the west, shorter views to the south, down onto the slopes of Crickley Hill itself, and to the south east across Emma's Grove Barrows. This setting takes in a wide range of modern intrusions, not least the city of Gloucester with its residential and light industrial outskirts, the M5 in the mid distance, and the A417 as it approaches and passes next to the site. Despite these intrusions, the setting of the site clearly demonstrates the situation of the Neolithic, Bronze Age and Iron Age phases of the site and as such makes a substantial contribution to the significance of the resource.</p>	<p>The widened A417 would be visible from Crickley Hill in views to the south and would alter some elements of the setting that contribute to its significance, in particular views towards the contemporary prehistoric site, The Peak. This change to its setting would affect the ability to understand Crickley Hill in its wider context, and as a consequence its significance would be diminished. This would equate to a slight adverse effect according to the criteria in Table 6-4.</p>	Minor Adverse	<i>Slight Adverse</i>
1004848	Dryhill Roman villa	500m	<p>The villa lies to the north of Crickley Hill, in a prominent location on the edge of the Cotswold escarpment. There would have been long views from the villa towards the Roman town of Glevumm (now Gloucester) and the Roman road of Ermine street, the line of which is still visible in the modern road network.</p> <p>Although the villa is a buried site, the fact that its setting includes contemporary Roman elements, means that its historical setting can be relatively easily understood in relation to the modern landscape. On this basis, its setting is a factor that contributes to its significance.</p>	<p>The scheme would not be visible from the resource, which exists as below-ground archaeological remains. However, the scheme would change the wider setting of the villa including elements of setting that contribute to the significance of the resource, in terms of legibility of landform. As such its significance would be diminished. This would equate to a slight adverse effect according to the criteria in Table 6-4.</p>	Negligible	<i>Slight adverse</i>

NHLE No.	Name	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
1016764	Moat and Fishpond at Bentham Manor	1,000m	The moat and fishponds lie adjacent to Bentham Manor, which was once likely to have been located within the moat itself and therefore retain their historical association. More widely their setting retains a largely rural character. The relationship between the moat, ponds and the manor is a key element of setting that contributes to their significance.	The scheme would not alter the setting of the resource, and its significance would not be affected.	No change	<i>Neutral</i>
1017039	Moated site and fishpond at Urrist Barn, 220m south west of Yew Tree Farm	1,000m	The resource lies within and is surrounded by a rural agricultural landscape and reflects the character of the landscape which would have existed when the moat was use. This immediate rural setting makes a positive contribution to the resource's significance.	The scheme would not alter the setting of the resource, and its significance would not be affected.	No change	<i>Neutral</i>
1017040	Crippets long barrow, 680m north-east of Dryhill Farm	1,000m	The setting of the barrow comprises an undulating rural landscape, featuring a mixture of historic and modern fields, boundaries, tracks and woodlands. The topography is such that the barrow would have had long distance views to the north, although it is currently screened by trees. There are no views towards the scheme from the monument, however it shares the importance of hiddenness and discover that are characteristics of the other prehistoric barrows within the study area. Therefore the significance of the barrow is sensitive to changes to the landform within this setting, regardless of whether these changes are visible.	Although the scheme would not be visible or audible from the barrow, the scheme would represent a modern alteration to the wider rural landscape within which the barrow sits and would change elements of its setting that contribute to its significance. This change would affect the ability to understand the barrow in its wider context, and as a consequence its significance would be diminished. This would equate to a slight adverse effect according to the criteria in Table 6-4.	Minor adverse	<i>Slight adverse</i>
1017041	Two bowl barrows,	780m	The barrows are aligned roughly north-east, south-west, located just below the crest of a hill. The setting	Although the scheme would not be visible or audible from	Minor adverse	<i>Slight adverse</i>

NHLE No.	Name	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
	known as Crippet's Wood round barrows, 560m and 590m north-east of Dryhill Farm		of the barrows comprises an undulating rural landscape, featuring a mixture of historic and modern fields, boundaries, tracks and woodlands. The topography is such that long distance views are rare and this sense of hiddenness and discovery as an observer moves through the landscape, encountering other contemporary prehistoric monuments as they appear in view, is a key aspect of setting that adds to its significance. This 'mind visibility' is likely to have been important to the builders of the barrow, and therefore the significance of the barrow is sensitive to changes to the landform within this setting, regardless of whether these changes are visible.	the barrows, the scheme would represent a modern alteration to the wider rural landscape within which the barrow sits and would change elements of its setting that contribute to its significance. This change would affect the ability to understand the barrow in its wider context, and as a consequence its significance would be diminished. This would equate to a slight adverse effect according to the criteria in Table 6-4.		
1017079	Three bowl barrows, known as Emma's Grove barrows	80m	The barrows are located immediately to the east of the 'Air Balloon' roundabout and are hidden within a small copse. The wider setting of the barrows comprises an undulating rural landscape, featuring a mixture of historic and modern fields, boundaries, tracks and woodlands. The topography is such that long distance views are rare and this sense of hiddenness and discovery as an observer moves through the landscape, encountering other contemporary prehistoric monuments as they appear in view, is a key aspect of setting that adds to its significance. This 'mind visibility' is likely to have been important to the builders of the barrow, and therefore the significance of the barrow is sensitive to changes to the landform within this setting, regardless of whether these changes are visible.	Passing approximately 50m to the north of these barrows, the scheme would alter the immediate setting of the barrows, although this would be ameliorated slightly by the removal of the Existing A417 immediately to the west. The scheme would represent a modern alteration to the wider rural landscape within which these barrows sit. This wider rural setting, which contains a number of other prehistoric funerary monuments, provides context to the barrow, of which the concept of movement through the	Minor adverse	<i>Moderate adverse</i> (significant effect)

NHLE No.	Name	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				<p>landscape is a key aspect. The scheme would create a physical barrier in the landscape that would be highly intrusive in the setting of the barrows and as a result adversely affect the significance of the resource. This would equate to a moderate adverse effect according to the criteria in Table 6-4.</p>		
1004862	Leckampton Camp and Tumulus	2,000m	<p>Sitting in a prominent position on the edge of the Cotswold escarpment, Leckampton Camp's setting is one of long views over the lowlands to the west and north and towards the broadly contemporary Crickley Hill to the south. This setting takes in a wide range of modern intrusions, not least the city of Gloucester with its residential and light industrial outskirts, and the M5 in the mid distance. Despite these intrusions, the setting of the site clearly demonstrates the original situation of both the Bronze Age barrow and Iron Age hillfort and, as such, makes a substantial contribution to the significance of the resource.</p>	<p>The scheme would be visible from the resource and would therefore represent a change to the wider views which contribute to the significance of the resource. However, at a distance of 1.2 miles (2km) these changes would not materially affect the significance of the resource. This would equate to a slight adverse effect according to the criteria in Table 6-4.</p>	Negligible	<i>Slight adverse</i>

**Table 6-7 Listed buildings (high value)**

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
1088481	Brimpsfield Park	II	710m	Brimpsfield Park is located on the eastern side of a working farm complex, with gardens laid out running down the slope to the east. Around 300m north is a round earthwork mound, the motte of a medieval castle understood to be the precursor to Brimpsfield Castle, located further west. Both are scheduled monuments (1003343, 1003326) and were the centres of power for the local lords before Brimpsfield Park was built in the 17th century. Long views are partially screened by areas of mature woodland, focussing the eye on the rising landscape to the west, out over the ponds. The position of the house and the orientation of its gardens were designed to complement the form of the landscape as it descends to the valley bottom before rising to the horizon over areas of open pasture hemmed by woodland. The relationship of the park and house to the past and present pastoral agricultural activities of the wider landscape are also still legible. The setting of this resource makes a positive contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1088482	Church of St Michael	I	770m	The Church of St Michael is located to the east of the village of Brimpsfield, immediately north-east of the mound which is all that visibly remains of the 12th century castle built by the local lords who also built the church. Its setting is formed of its churchyard, the castle mound to the south and the village and its surrounding agricultural land to the west. The relationship between the castle mound, which is a scheduled monument (1003326) and the church contributes to its historic interest, the visual connection emphasising the historic	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>



NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				association between the two. More generally, the rural setting of St Michaels, standing a short distance from the village which it has served as the parish church for nearly a millennium, contributes to its significance through providing legibility to its historic context.			
1088483	Wilks monument in the churchyard approximately 9m south-west of Church of St Michael	II	770m	The setting of this resource is the churchyard of St Michael's, Brimpsfield. The setting has both a functional and historic association with the monument and contributes to its group value with the church and the other tombs and gravestones. This setting makes a positive contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1088484	Unidentified monument in the churchyard approximately 10m south-west of Church of St Michael	II	770m	The setting of this resource is the churchyard of St Michael's, Brimpsfield. The setting has both a functional and historic association with the monument and contributes to its group value with the church and the other tombs and gravestones. This setting makes a positive contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1088485	Hayward monument in the churchyard approximately 12m south of Church of St Michael	II	770m	The setting of this resource is the churchyard of St Michael's, Brimpsfield. The setting has both a functional and historic association with the monument and contributes to its group value with the church and the other tombs and gravestones. This setting makes a positive contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1088486	Winning family monument in the churchyard approximately 2m south of	II	770m	The setting of this resource is the churchyard of St Michael's, Brimpsfield. The setting has both a functional and historic association with the monument and contributes to its group value with the church and the other tombs and gravestones.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
	Church of St Michael			This setting makes a positive contribution to its significance.			
1088487	Pear Tree Cottage	II	1,050m	Pear Tree Cottage is located within Brimpsfield village, near the centre of the residential core, and is approximately 45m north of Brimpsfield House. There are several limestone-built structures directly to the north and east of the cottage which comprise of its setting. Opposite the cottage, to the west, is a small pasture field enclosed by drystone walling as well as a bench, telephone box and bus stop. Its significance is primarily derived from its group value, to which its setting makes a positive contribution.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1088488	Brimpsfield House	II	1,050m	Brimpsfield House is a large country house situated in the centre of Brimpsfield village and surrounded by other residential dwellings. The garden space of Brimpsfield House features the Game House (108849) and the 19th or early 20th century dog kennels (1171399). The gardens and further property of the house extends eastwards away from the centre of the village and is noted to blend into the rolling countryside. The west-facing side of the house features a small courtyard which is enclosed by limestone walling with an ornamental metal fencing finish and gate. The southern extending gable continues into the brick gate piers that enclose the eastern area of the property. Its village setting contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1088489	Game house adjoining Brimpsfield House	II	1,050m	The Game House sits within the property of Brimpsfield House as part of the gardens on the eastern side. Access to the house is through the stone gate piers and metal gate that leads from the main road. The house is not visible from the village	The scheme would not alter the setting of this resource, and as a result there would be	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				and is screened by mature trees in the east and south. The building was likely linked to Brimpsfield House's recreational activities such as game hunting and would've housed a game keeper who controlled the fowl within the parkland further east. Its setting within the grounds of Brimpsfield House, and the close functional relationship between the two, makes a positive contribution to its significance.	no impacts upon its significance.		
1088492	Yew Tree Farmhouse	II	1,100m	Yew Tree Farmhouse is a residential dwelling situated within the village of Brimpsfield, on a road that is predominately housing. On the side of the east-facing façade there is a small front garden area with a path leading from the road to the entrance of the house. This area and the perimeter of the property abutting the road is enclosed by a short stone wall finished with a decorative metal fencing. The west-facing side of the house has a gate opening which leads onto an area of hardstanding at the back of the house. Unlike the Old Malt House (1171422) opposite, the farmhouse is not backed by other residential dwellings but instead there are large enclosed fields possibly linked to historic farming associations. The rural village setting of the farmhouse contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1091744	Black Horse Ridge	II	540m	Black Horse Ridge is located at the western end of Birdlip village on the apogee of Birdlip Hill. Its immediate setting is a complex of other buildings fashioned in limestone both adjacent and opposite the house. The inn was noted as having 'a fine view from its garden' in 1796. Today, any outward views from the garden are obscured by the substantial mature woodland that covers the escarpment edge. Its past connection to the body	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				of the village is still visible. However, its previous role as an inn or hotel is no longer discernible as it blends seamlessly with the other residential properties that now accompany it. Its setting, therefore, makes a neutral contribution to its significance.			
1091745	Church of St Mary	I	1,200m	The church stands within the village of Great Witcombe, a loosely arranged rural settlement at the foot of the Cotswold escarpment. The church is surrounded by its churchyard and its setting is formed by this and the village located around it. The connection between the church and village and the church and churchyard makes a positive contribution to its heritage interest, underpinning its legibility as the most important building in the settlement historically.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1091746	Holbert family monument in the churchyard of the Church of St Mary circa 10m east of the chancel	II	1,200m	The monument is a freestanding structure on the eastern side of the Church of St Mary (1091745). It is situated within the relatively spacious, open graveyard that encircles the church building. The churchyard is bounded by hedgerow, which in the north screen the area from other residential buildings in Witcombe, but in the south the churchyard is still visible from the road and old school house. The churchyard setting of the monument contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1091750	The Keeper's Cottage	II	1,250m	The Keeper's Cottage is situated within an open field that is bounded by historic woodlands, with the space also enclosing Woodlands Farmhouse (1152855) which is approximately 60m south-west of the cottage. It is situated in the eastern most point of the Witcombe Park Estate, hidden within a small area of open fields amongst the Witcombe Wood. The screening created by the mature beech woodlands would have enabled the 'keeper' to	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				work and live at the park, whilst not imposing on the designed landscape. The setting of the cottage contributes to its significance.			
1091758	Chandler's Farmhouse	II	280m	Chandler's Farmhouse is situated in the northern section of Little Witcombe near other listed buildings such as Witcombe Court approximately 70m north-east. A small grey brick wall encloses the front garden from the road and further west on the road is the hidden driveway entrance to the property. This track leads to a garden to the north of the house with mature trees screening the house from the agricultural complex behind. Its setting contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1091759	The Cot	II	490m	The Cot is screened from Green Lane by tall hedgerow that partially screens the ground floor of the cottage and the garden area that sits north of the building. Within the property there has been the addition of another structure, assumed to be a garage, which is north of the cottage and east-facing. There is hardstanding leading from this structure to the road acting as a driveway, as well as a small path leading to the entrance of the cottage. Opposite sits Chestnut Cottage which was built contemporaneously to the Cot; both buildings have maintained their original appearance and this relationship contributes to their significance. The eastern side of the property borders a field. The rural village setting of the farmhouse contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1091760	Little Witcombe House	II	480m	Little Witcombe House's east-facing entrance is fronted with a large area of hardstanding which is separated from the main road by a metal gate. This hardstanding also features a small structure believed to be a garage or shed serving the house. The western facade (rear elevation) of the house	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				features an enclosed garden space including several mature trees and defined by hedgerows. These hedgerows also screen the later extensions at the back of the house from the road. The setting of this resource makes a neutral contribution to its significance.			
1091761	Witcombe Court	II	280m	Witcombe Court is immediately encircled by an area of hardstanding for parking and a large garden space to the back (north) of the building. There are gate piers to signify the entrance track to the house, with dry-stone walling on either side, creating a feature entrance to the building. The house is set back away from the road, reflecting its origin as a Victorian large house. There are several other notable buildings on the street with Chandler's Farmhouse c.45m west and Little Witcombe House 120m south-west. This immediate setting contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1091773	Caretaker's Residence at the entrance to Ullenwood Manor	II	1,000m	The Caretaker's residence is located in Ullenwood and originally served the manorial estate. The property is now occupied by the National Star College, the entrance to which is via the original limestone gate piers and wrought iron gate. The lodge has limited visibility to the rest of the estate and is mostly screened by mature trees around the southern half of the building. Its setting is the entrance of the manorial estate and the surrounding structures, and this functional grouping contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1091775	Shab Hill Barn	II	50m	The post-enclosure barn stands in an area of gardens and grounds and is bounded by Cotswold stone walls. It is located high in the Cotswold Hills, within the Cotswolds Area of Outstanding Natural Beauty and has views over open farmland and along the secluded valley it is located within. Shab	Although surrounded by trees, the setting of the resource would be altered by the proximity of the Shab Hill junction to the east and	Moderate adverse	<i>Moderate adverse</i> (significant effect)

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				<p>Hill barn is one of a small handful of barns in this area that represent a change in agricultural practice in the late 18th/early19th century. This change has left us with the field patterns we now have. This makes up part of the landscape interest of this area. The barn's position relates to its historic relationship to the farmland in the valley. The rural agricultural setting of the barn contributes to its significance.</p>	<p>the physical alteration of the historic access to the resource to accommodate the provision of a new connecting road from Shab Hill junction to Birdlip. The barn would be partially removed from its original landscape and fields. The scheme would result in a partial loss of key characteristics of setting of the resource and would be detrimental to its significance. The scheme is highly intrusive in the setting and as a result adversely affect the significance of the resource. This would equate to a moderate adverse effect according to the criteria set out in Table 6-4.</p>		
1091776	Kingshead House Restaurant	II	510m	<p>Kingshead House Restaurant adjoins a non-designated house fashioned in the same local limestone as itself. The house fronts onto Ermine Street, the historical main road running from Cirencester to Gloucester. The house is characteristic of Birdlip village and the wider Cotswold area in its vernacular style and use of</p>	<p>The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.</p>	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				local Cotswold Limestone. Its setting within Birdlip contributes to its significance.			
1091787	Crickley Hill Farm	II	50m	Crickley Hill Farm sits within a wider farming complex with associated stables, storage facilities and agricultural buildings situated 10m east of the house. To the south of the house there is a hedgerow-enclosed garden, partially screened from the fields by mature trees. Further west from the house is a slope which has been substantially remodelled as an off-road bike track which detracts from the vista of large pastoral fields that, although screened by trees, surround the Farm to its east, west and south. The neighbouring trunk road further detracts from the setting of this resource, severing it from the other side of the valley. Its setting makes a neutral contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1091796	Church of St Peter	II	200m	St Peter's is located within its churchyard in the south-west of the village of Badgeworth and is screened from much of the surrounding area by mature trees. Its relationship to the village and its churchyard, which forms its setting, make a positive contribution to its heritage interest through their historic association and functional connection.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1091797	The Elms	II	900m	The Elms is located within Bentham which is an area characterised by the scattered residential dwellings in the south of the parish of Badgeworth. The farmhouse is south-east, facing towards Bentham Lane from which it is screened by a hedgerow. Directly north and west former agricultural buildings appear to have been redeveloped as dwellings. The relationship of the	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>



NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				farmhouse with its associated former farm buildings, the agricultural (pastoral) landscape that surrounds it and with other farmsteads in the area is still legible. This setting makes a positive contribution to its significance.			
1152474	Bentham Manor	II	900m	Bentham Manor is located approximately 300m north of the A417. Despite its proximity, the resource is sheltered from direct views of the road as the A417 descends into a slight cutting and is further screened by the presence of an established treelined boundary between the Manor and the large arable fields between it and the road. The Manor's immediate setting comprises a range of former agricultural buildings (now dwellings) and an irregular shaped, large area of open pasture scattered with lone trees and boarded by established hedgerows and treelines. It's relationship with the other detached farmsteads and residences in the area is still legible within its wider setting. Its past manorial function also remains discernible. Its setting makes a positive contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1152477	Willow Farm	II	600m	Willow Farm is immediately surrounded by modern hardstanding which acts as a parking area for the cottage and other residential buildings approximately 10m north of the cottage. The hardstanding that runs to the south of the building leads to other residential buildings that were built in the 20th century. The cottage fronts onto Green Lane and is noted to feature the timber-framed façade facing the road which suggests the building was meant to be experienced and appreciated when approaching. To the south and west of Willow Farm and the eastern side of Green Lane, cultivated fields dominate the landscape -	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				enclosed by the tree-lined field boundaries that rise in the east with the hills. The cottage and other residential buildings are situated at the southern side of Little Witcombe. Due to the agricultural history of the building, its rural setting makes a positive contribution to its significance.			
1152705	West Lodge	II	1,000m	West Lodge is located in Ullenwood and originally served the manorial estate. The property is now a residential dwelling with the addition of hardstanding to the northern side for parking. The cottage is enclosed with a limestone wall along the eastern road-side of the property. Its historic relationship with the other lodge(s) of the estate is represented in its shared architectural style. To the west, its immediate setting comprises a large residential range and a smaller one-and-a-half story domestic building, removing its previously designed setting as a semi-isolated structure. Its setting therefore, makes a neutral contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1152733	Hill Barn	II	700m	Hill Barn is situated on the top of a slope looking down over the fields south of it. Immediately at the front of the barn is an area of hardstanding for parking and this is enclosed with drystone walling and a metal gate. The barn is historically associated with the fields to the south and the network of trackways leading from its south-facing facade to the individual fields. This setting contributes to its significance.	The scheme would be present within the wider rural setting of this resource, but this change would not impact upon its significance.	No change	<i>Neutral</i>
1152736	Milestone	II	700m	The Milestone is set back on the northern side of the A417, towards Birdlip, among shrubbery so that its lower extent is not visible. The increased motorisation and infrastructure of the road and surrounding villages since the construction of the milestone have not impacted the milestone's	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				setting drastically as its purpose was to distinguish distance on a road that is still in use, though by different traffic. The roadside setting contributes to the significance of the resource.			
1152813	Reeves family monument in the churchyard of the Church of St Mary, circa 11 metres north-west of the tower	II	1,200m	The monument is a freestanding structure on the north-west side of the Church of St Mary (1091745). It is situated within an area of more densely populated gravestones, with the closest being c.0.5m to the east. The churchyard is bounded by hedgerow, which in the north screen the area from other residential buildings in Witcombe, but in the south the churchyard (and thus the monument) is still visible from the road and old school house. The churchyard setting of the monument contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1152820	Tadleys	II	1,200m	Tadleys is fronted by a garden which encircles the property with an open area south of the cottage and is bounded by hedgerows. The hedgerows almost entirely screen the building from the roadside at its front, apart from a small footpath that leads from the roadside to the entrance of the house, creating the concept of hidden space. Although some longer views exist out over the surrounding hedgerow and over the large descending pastoral field to the rear, they would be constrained by the surrounding hedgerow. The same views at ground level are likely not obtainable. The building is noted to be a part of the wider Witcombe Estate and sits alone at the northern tip of the village. This setting makes a neutral contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1171399	Dog kennels and shed approximately 5m east of	II	1,050m	The kennel is located a few metres from Brimpsfield House and its setting is formed by the house and its garden. The relationship between the house and the kennels is clearly legible and	The scheme would not alter the setting of this resource, and as a result there would be	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
	Brimpsfield House			makes a positive contribution to the significance of this resource.	no impacts upon its significance.		
1171422	The Old Malt House	II	1,200m	The Old Malt House is located on a street running west within Brimpsfield village and was noted as being 'on the knapp' which can be attributed to its former name. The house is surrounded, from the north around to the east and south, with a garden which is enclosed with a combination of drystone walling and hedgerow. There is a Royal Mail post box at the end of the path that leads from the road to the entrance to the house. Directly north of the house sits Yew Tree Farm (1088492) on the opposite side of the road, which is also a listed building, but of later origin. The house is situated within an area of more densely populated dwellings compared to the northern side of the street with open fields abutting the village to the west. Its village setting contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1248788	Unidentified monument in the churchyard approximately 9.5m west of Church of St Michael	II	770m	The setting of this resource is the churchyard of St Michael's, Brimpsfield. The setting has both a functional and historic association with the monument and contributes to its group value with the church and the other tombs and gravestones. This setting makes a positive contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1277748	Unidentified monument in the Churchyard approximately 10m south-west of	II	770m	The setting of this resource is the churchyard of St Michael's, Brimpsfield. The setting has both a functional and historic association with the monument and contributes to its group value with the church and the other tombs and gravestones. This setting makes a positive contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
	Church of St Michael						
1304608	Cotswold Cottage	II	460m	Cotswold Cottage's setting is comprised of the plot it shares with Beverley Cottage (193852) which adjoins it on the western side. The surrounding land is defined by a hedgerow boundary cutting the front garden where the two cottages split. Like most properties in Birdlip, the remainder of the property boundaries for Beverley Cottage are outlined with dry stone walling, with the cottage featuring hedgerow that extends above this, partially screening the ground floor of the structure. The house is noted by Historic England as having a group value with the attached Beverley Cottage to the east and adjacent Pool House (1340135). Furthermore Beverley and Cotswold cottages share a local limestone outbuilding dating from the late 19th century to the north, one of a back-to-back pair that provided facilities for the cottages. The cottage is backed by a cultivated field that was part of Birdlip Farm prior to the mid-20th century which was enclosed with hedgerows. Its village setting contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1304609	The Lodge	II	540m	The building is surrounded by a partially damaged limestone wall enclosing a courtyard on the northern side of the property. It sits at the junction between the B4070 and a sideroad leading to the Cotswold Way National Trail where, approximately 35m north of this, the Black Horse Ridge is located. The Lodge was designed to serve the Witcombe Park Estate, marking the main entry point to the designed landscape west of the lodge. Its setting on the edge of the park and the village of Birdlip contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
1304644	Greywalls	II	500m	The semi-detached house is adjoined to another house known as 'The Forge' which differs entirely in appearance with larger window frontages and a painted finish to the building. Greywalls sits on the south side of Ermine Street, the Roman Road that historically ran from Cirencester to Gloucester. Greywalls is centrally located within the village of Birdlip and its vernacular nature means it is in keeping with most buildings in the use of local limestone. Its setting within Birdlip contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1304753	Dovecote circa 3m north of Bridge House	II*	900m	The setting of this resource comprises its immediate relationship with Bridge House. It is located a short distance from the house, within its gardens which are screened from external views by mature trees. The relationship between the house and the dovecote is central to its historic interest and this setting makes a positive contribution to its heritage interest as a result.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1340107	Bridge House	II	900m	Bridge House is located to the south of the village of Bentham opposite Bentham Manor (1152474). Its immediate setting comprises a large irregularly shaped enclosure bounded by established hedgerows that envelopes the house, its associated dovecote and a connected range built in the rural vernacular style. Its wider setting comprises Bentham Manor and the various detached and dispersed farmsteads and houses Bentham village; surrounded by large field turned over to pasture and arable and lined with established hedgerows and small scattered woodblocks. Both the internal setting of what is now the garden to Bridge House, and its wider setting, make a positive contribution to its significance and that of its associated resources.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
1340126	Chestnut Cottage	II	500m	Chestnut Cottage is fronted by a small maintained garden area that is enclosed by large hedgerows and a wooden fence gate. These hedgerows are large enough to screen the cottage, except the roof, from Green Lane. The cottage is backed by a garden enclosed by hedgerows and bordering a field that is sectioned with hedgerows demarking the modern boundaries cut from the original post-medieval enclosure. Its setting as part of a similarly secluded village streetscape contributes to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1340127	The Retreat	II	370m	The Retreat is fronted by a small garden which extends further on the southern side due to the north-west area of the property intersecting with a modern building constructed in the same red brick as the retreat. The property of both the houses is enclosed from the road with a similar red brick material that forms a wall. The house sits back from Green Lane which has become a more densely populated street than it historically was meaning there are houses either side. On the eastern side of the house is the back garden which features a small structure in red brick believed to be a shed and a larger area enclosed by hedgerows. This setting does not contribute to the significance of the building.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1340132	Booker's	II	2,000m	Booker's has a small garden in front of the east-facing façade. The garden is enclosed by hedgerow to the north and dry-stone walling to the south, next to the road. To the west-facing façade (back of the house) there is an enclosed area of hardstanding with a garage. The entrance to this is demarked further west by two gate piers and a cattle grid between these. There is a small enclosure west of the house also and both fields	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				appear to be part of the original post-medieval property. Its wider setting comprises large, regular field systems turned over to pasture and arable respectively. The landscape drops sharply and steeply away to the south into a narrow valley, bottomed by a stream before it steadily rises again. Due to its position on the apogee of this valley, long largely uninterrupted views are obtainable to the east, west and south. Its setting contributes to its significance.			
1340133	Harding's Barn	II	470m	Harding's Barn sits within an agricultural landscape approximately 110m west of Cowley Wood. There is a small drystone wall and steps that demark the north-east entrance to the barn which is partially hidden by overgrown vegetation. A building also made from Cotswold limestone runs from the north side of the barn and creates the small complex around it. The barn is immediately surrounded by small cultivated fields to the east which are intersected by the trackway that leads to the barn. To the west of the barn are much larger pasture fields. This rural setting contributes to the significance of the resource.	The scheme would be present within the wider rural setting of this resource, but this change would not impact upon its significance.	No change	<i>Neutral</i>
1340134	Birdlip House	II	540m	Birdlip House is situated within the village of Birdlip, a settlement established in 1221 on the line of the Roman Road Ermine Street. The house is the furthest east along the road and is enclosed with a limestone wall and hedgerows that partially screen the property. It fronts an enclosed garden and driveway with gated entrance retaining the privacy of the house. The house is backed by a collection of farm buildings that have been redeveloped for residential purposes but mostly retaining the characteristics of a stables complex. These buildings, including Birdlip House, make up	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>



NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				part of the eastern section of the historical Birdlip village. The surrounding largely contemporary houses within Birdlip add to the historical and architectural interest of the house as they share the locally characteristic use of Cotswold Limestone in their construction. This village setting makes a positive contribution to its significance.			
1340135	Pool House	II	450m	The house has gardens at the front which are bounded by dry stone walling, which runs the extent of Ermine Street in Birdlip. The house is situated within the village of Birdlip, a medieval village built onto the Roman road of Ermine Street. Pool House is a vernacular structure built in local limestone and is situated within a group of others of similar style. Its village setting and relationship with the adjacent Beverley Cottage gives it group value and contributes to its architectural interest. Overall, its village setting makes a positive contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1341764	Unidentified monument in the churchyard approximately 9m west of Church of St Michael	II	770m	The setting of this resource is the churchyard of St Michael's, Brimpsfield. The setting has both a functional and historic association with the monument and contributes to its group value with the church and the other tombs and gravestones. This setting makes a positive contribution to its significance.	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1341766	Golden Heart Inn	II	450m	The Golden Heart Inn is situated on the road frontage off the A417, which traces the route of the Roman Road, Ermine Street. The 20th century extension at the back of the inn includes a patioed terrace which opens onto a descending landscape of large pastoral and arable fields. Nettleton Cottages, the small settlement contemporaneous with the inn, are situated directly east on the northern side of the A417. The historical functional	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				relationship between the inn and the near-by settlements is now, arguably, less legible than its role as a roadside stopping point. Previous experiences of rural tranquillity and close community are now adversely affected by the volumes of traffic using the trunk road at its front. Despite this effect, the inn's relationship with the routeway is a core part of its character. The setting of this resource contributes to its significance.			
1391005	K6 Kiosk	II	1,070m	The setting of this K6 is the village of Brimpsfield, which is a conservation area. It stands on the eastern side of the village green, close to several other listed buildings. This setting contributes to the heritage interest of the telephone box through its group value with the village buildings and through the contrast between the subdued Cotswold limestone architecture and the bold red colour of the telephone box which is central to its iconic artistic interest. Its village setting makes a positive contribution to its significance	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>
1393852	Beverley Cottage	II	480m	Beverley Cottage's immediate setting is the plot it shares with Cotswold Cottage (1304608) which adjoins the western side. The surrounding land is defined by a hedgerow boundary cutting the front garden where the two cottages split. Like most properties in Birdlip, the remainder of the property boundaries for Beverley Cottage are outlined with dry stone walling, with the cottage featuring hedgerow that extends above this, partially screening the ground floor of the structure. The house is noted by Historic England as having a group value with the attached Cotswold Cottage to the west and adjacent Pool House (1340135). Furthermore, Beverley and Cotswold cottages share a local limestone outbuilding dating from the	The scheme would not alter the setting of this resource, and as a result there would be no impacts upon its significance.	No change	<i>Neutral</i>

NHLE No.	Name	Grade	Distance from scheme	Setting	Nature of impact	Magnitude of impact	Significance of effect
				late 19th century to the north, one of a back-to-back pair that provided facilities for the cottages. The cottage is backed by a cultivated field that was part of Birdlip Farm prior to the mid-20th century where it was enclosed with hedgerows. Its village setting contributes to its significance.			

### Registered parks and gardens

- 6.10.3 Cowley Manor RPG, a high value resource, lies to the east of the scheme at a distance of 850m at its closest point. It comprises a mid to late 19<sup>th</sup> century landscape park and formal garden with lakes and waterworks. The focus of the park is the Grade II\* Cowley Manor, the south western facing view from which is considered to be the principal view within the RPG; this is emphasised by an avenue of trees that extends south-west from the Manor, for a distance of 0.9 miles (1.4 kilometres), culminating at the summit of Bubb's Hill. At this point the view to the south-west encompasses the Existing A417 dual carriageway.
- 6.10.4 The RPG would be screened from the scheme by topography and existing mature vegetation, and as such its setting would not alter as a result of either the construction or operation of the scheme. This would result in a magnitude of impact of no change, and the resultant significance of effect on the RPG would therefore be *neutral*.

### Conservation areas

- 6.10.5 Cowley conservation area largely coincides with the area of Cowley Manor RPG, and therefore the effect upon it would be as described in 6.10.3.
- 6.10.6 Brimpsfield conservation area, a resource of medium value, lies approximately 750m to the south-east of the scheme at its closest point. The scheme would not be visible from the conservation area, and its setting would not be altered. This would result in a magnitude of change of no change, and the resultant significance of effect on the conservation area would therefore be *neutral*.

### Non-designated heritage resources

- 6.10.7 Of the 36 resources that lie within the DCO Boundary described in ES Appendix 6.2 Archaeological assessment (Document Reference 6.4), 18 would be directly impacted by the scheme. These are listed in Table 6-8.
- 6.10.8 Of the 219 non-designated resources that lie outside of the DCO Boundary, an adverse effect would occur at two assets.
- 6.10.9 Peak Camp (45), a resource of medium value. Though currently wooded, Peak Camp was located to take advantage of views to the west from the escarpment, and towards a contemporary prehistoric enclosure on Crickley Hill. These views today contain modern infrastructure including the A417, M5 and other modern development that forms the urban curtilage of Gloucester to the west. Despite this, the location of Peak Camp, and views from it make a positive contribution to its significance.
- 6.10.10 The scheme would change the form of the Existing A417, to the north of Peak Camp, within the setting of the resource, and altering the relationship between it and Crickley Hill. This would equate to a minor adverse magnitude of impact that diminished the significance of the resource, resulting in a permanent *slight adverse* significance of effect.
- 6.10.11 An adverse effect would also occur at Stockwell deserted medieval village (127). As well as earthwork remains a number of non-designated buildings dating from approximately the 18<sup>th</sup> century remain and form the core of Stockwell Farm; these assets are of medium value. The current rural setting of the deserted medieval village and non-designated buildings would be altered by the construction of the

scheme, including the bisection of a tree lined avenue that leads to the conservation area of Cowley. This change to the setting would equate to a moderate adverse magnitude of impact on the significance of the resource, resulting in a *moderate adverse* significance of effect.

**Table 6-8 Permanent direct impacts on non-designated resources within DCO Boundary**

Archaeological Assessment Ref no.	Description	Period	Type	Value	Nature of impact	Magnitude of impact	Significance of effect
118	The earthworks of two oolitic limestone quarries	Unknown	Earthworks	Low	The resource would be removed entirely by construction activities within the DCO Boundary.	Major adverse	<i>Slight adverse</i> due to the total loss of a low value resource, mitigated by preservation by record.
119	The earthwork remains of a Medieval or Post Medieval hollow way	Medieval	Earthworks	Low	Construction activities would remove part of this resource, which extends beyond the DCO Boundary.	Moderate adverse	<i>Slight adverse</i> due to the partial loss of a low value resource, mitigated by preservation by record.
122	The earthwork remains of Medieval or Post Medieval ridge and furrow, hollow ways and trackways	Medieval	Earthworks	Low	Construction activities would remove part of this resource, which extends beyond the DCO Boundary.	Moderate adverse	<i>Slight adverse</i> due to the partial loss of a low value resource, mitigated by preservation by record.
127	Stockwell Deserted Medieval Village	Medieval	Earthworks	Medium	Construction activities would remove part of this resource, which extends beyond the DCO Boundary.	Moderate adverse	<i>Slight adverse</i> due to the partial, loss of a medium value resource, mitigated by preservation by record.
133	The earthwork remains of Medieval or	Medieval	Earthworks	Low	Construction activities would remove part of this resource, which extends beyond the DCO Boundary.	Moderate adverse	<i>Slight adverse</i> due to the partial loss of a low value

Archaeological Assessment Ref no.	Description	Period	Type	Value	Nature of impact	Magnitude of impact	Significance of effect
	Post Medieval lynchets and ridge and furrow						resource, mitigated by preservation by record.
144	The earthwork remains of Medieval or Post Medieval lynchets	Medieval	Earthworks	Low	Construction activities would remove part of this resource, which extends beyond the DCO Boundary.	Moderate adverse	<i>Slight adverse</i> due to the partial loss of a low value resource, mitigated by preservation by record.
156	Ermin Way - Roman road running from Cirencester to Gloucester	Roman	Road	High	Construction activities would remove part of this resource, which extends beyond the DCO Boundary.	Moderate adverse	<i>Slight adverse</i> due to the partial loss of a high value resource, mitigated by preservation by record.
237	The site of Second World War searchlight battery	WWII	Earthworks	Low	The resource would be removed entirely by construction activities within the DCO Boundary.	Major adverse	<i>Slight adverse</i> due to the total loss of a low value resource, mitigated by preservation by record.
241	A Second World War Heavy Anti-Aircraft Battery and camp	WWII	Building	Low	The resource would be removed entirely by construction activities within the DCO Boundary.	Major adverse	<i>Slight adverse</i> due to the total loss of a low value resource, mitigated by preservation by record.

Archaeological Assessment Ref no.	Description	Period	Type	Value	Nature of impact	Magnitude of impact	Significance of effect
242	A Second World War Heavy Anti-Aircraft Battery	WWII	Building	Low	The resource would be removed entirely by construction activities within the DCO Boundary.	Major adverse	<i>Slight adverse</i> due to the total loss of a low value resource, mitigated by preservation by record.
N/A	Air Balloon Public House	Post-medieval	Building	Medium	The resource would be removed entirely by construction activities within the DCO Boundary.	Major adverse	<i>Slight adverse</i> due to the total loss of a medium value resource, mitigated by preservation by record by means of photographic and measured survey.



6.10.12 The following non-designated resources that lie within or partially within the DCO Boundary coincide with features confirmed and investigated by geophysical survey and trial trenching. These are therefore considered as a component of buried archaeological remains, below.

- 21- ridge and furrow
- 116 - elongated mound (possible barrow)
- 120 - linear earthwork bank
- 132 – cropmark of late prehistoric and Roman trackways
- 175 – rectilinear cropmark
- 246 – ridge and furrow, circular enclosure and trackways
- 248 – cropmarks south west of Harding’s Barn, Cowley.

#### Historic landscape character areas (HLCA)

6.10.13 Of the five HLCAs identified within the study area, one would be affected by the scheme. The results of the assessment are presented in Table 6-9.

**Table 6-9 Impacts on HLCAs**

HLCA	Value	Description of impact	Magnitude of impact	Significance of effect
HLCA01: Area of irregular enclosed fields east of Brockworth	Medium	The HLCA is characterised by irregular fields and small villages, with smaller areas of historic landscaped gardens interspersed. The scheme would run into the HLCA from its eastern boundary, following the course of the Existing A417 road. As the changes would be restricted to the existing road corridor there would be no change to the historic landscape character.	No change	<i>Neutral</i>
HLCA02: Woodland south of Great Witcombe	Medium	The HLCA is a large area of historic woodland on the slopes of the Cotswold escarpment. The scheme runs to the north of the HLCA along the line of the Existing A417. There would be no change to the historic landscape character.	No change	<i>Neutral</i>
HLCA03: Agricultural landscape around Brimpsfield and Birdlip	Low	An agricultural landscape reflecting a variety of patterns of post-medieval enclosure. The Roman Road of Ermine Street, which the A417 follows to just east of Birdlip, forms a distinct boundary within the landscape, with a subtle shift in the pattern of enclosed fields on either side. The scheme would cut through the northern part of the HLCA, branching off the current line of the A417 to cross the fields between Nettleton Bottom and Shab Hill Farm. While the scheme would affect a relatively large area in the north of the HLCA, the impact would be moderated by the fact that it would not affect the way that the line of the Roman Road acts as a boundary in the landscape, or the patterning of fields around Birdlip and Brimpsfield which reflect post-medieval enclosure practices. It would alter the character and patterning of the fields in the northern part of the HLCA, although many of historic field boundaries would be unchanged. This would constitute a moderate adverse magnitude of change, reflecting a loss of	Moderate adverse	<i>Slight adverse</i>

HLCA	Value	Description of impact	Magnitude of impact	Significance of effect
		historic landscape character but not affecting the integrity of the key characteristics of the HLCA.		
HLCA04: Agricultural landscape south of Seven Springs	Low	This is an area of irregular fields, often with drystone walls, reflecting post-medieval and earlier land use as upland pasture, now mostly turned to arable cultivation. It includes several small settlements and a large modern golf course. The scheme would introduce a new road along the southern boundary of the HLCA and would, temporarily, take land around Ullen Wood and South Hill for compounds and other works. The area affected is on the edge of the HLCA and in an area mostly hidden from it by existing woodland. The changes would constitute a negligible adverse magnitude of change.	Negligible	<i>Neutral</i>
HLCA:05 Brockworth (east of the M5)	Low	This HLCA is part of Brockworth, a large village on the edge of Gloucester. It is characterised by 20th century industrial and residential development. The scheme does not extend into the HLCA and there would be no change to its historic landscape character.	No change	<i>Neutral</i>

### Buried archaeological remains

6.10.14 Geophysical surveys undertaken for the scheme identified a number of areas of archaeological interest, which could be impacted by construction activities. These results were tested by archaeological trial trenching and were shown to be of medium value for the most part, with remains dating from the Bronze Age to the Post Medieval periods. These remains included settlement sites, prehistoric and Romano-British boundaries, and furrows relating to post-medieval field systems. Prior to the trial trenching three areas were identified where resources of schedulable quality, and therefore high value could be present. These are:

- Area 6 (ES Appendix 6.4 Geophysical survey report, Figure 30; Document Reference 6.4), feature 4500 (a possible cemetery) and feature 4501 (a possible Romano-British shrine). The trenching ruled out the presence of a shrine, this feature was found to be a burial of cremated human remains, surrounded by a square ditch. Although unusual, this feature is of medium rather than high value. No evidence of further human burials was found in this area, despite trenches investigating 'grave-like' geophysical anomalies
- Area 7 (ES Appendix 6.4 Geophysical survey report, Figure 34 Document Reference 6.4), features 4700-4711 (a potential Romano-British settlement). This site was confirmed to be a settlement broadly Romano-British in date, with some features of prehistoric and possible Anglo-Saxon date. However no substantial stone-built structural remains were found, and no evidence was found to suggest that this was the site of a common rural settlement/farmstead. These remains are considered to be of medium value
- Area 10 (ES Appendix 6.4 Geophysical survey report, Figure 39 and 40 Document Reference 6.4), all features (a potential Romano-British roadside settlement). The trial trenching confirmed that the features in this area are associated with the settlement discovered during the construction of the Existing A417 and roundabout. To the south of the Existing A417, and to the south of the extant section of the former Roman road, the stone footings of a

building were found, together with a large amount of pottery and metal artefacts. To the north of the Existing A417, the remains of the settlement continued. Despite the presence of roof tile, glass, and a large number of coins within the ditches, no evidence for stone foundations was found. The site is considered to be of regional interest and is therefore of medium value.

- 6.10.15 The scheme would result in the total loss of any buried archaeological remains that lie entirely within its footprint, which would be a major magnitude of impact. This would result in a permanent *slight adverse* significance of effect once mitigation of preservation by record has been applied.
- 6.10.16 The scheme would result in the partial loss of any buried archaeological remains that extend beyond its footprint. This would be a major magnitude of impact, which due to the partial rather than total loss of the resource, would result in a permanent *slight adverse* significance of effect once mitigation has been applied.
- 6.10.17 ES Chapter 13 (Road drainage and the water environment) and in particular ES Appendix 13.7 has concluded that there are no areas of the scheme in which waterlogged deposits would be adversely affected, and therefore the significance of effect of the scheme on preserved palaeo-environmental material would be *neutral*.

#### Historic hedgerows and boundaries

- 6.10.18 A number of historic hedgerows and boundaries (ES Appendix 6.2 Archaeological assessment) would be severed by the construction of the scheme. The partial loss of these resources would constitute a moderate adverse magnitude of impact which would result in a *slight adverse* significance of effect.

#### **Operational effects**

- 6.10.19 The heritage resources that would experience effects as a result of the operation of the scheme, beyond those already identified as the permanent effects of construction in the preceding sections are described here.

#### Three bowl barrows known as Emma's Grove barrows (NHLE 1017079)

- 6.10.20 The Emma's Grove barrows would experience a noticeable reduction in traffic noise compared to the existing situation as a result of the closure of the Existing A417, and the relocation of traffic in cutting to the north of the resource as part of the scheme. It is considered that the change to the resource's setting due to this reduction in noise would be a minor beneficial magnitude of impact, resulting in a slight beneficial significance of effect. A *slight beneficial* effect, rather than moderate, has been ascribed as while the reduction in noise would be noticeable, it would not be to a degree that would significantly enhance its value.

#### Shab Hill Barn (NHLE 1091775)

- 6.10.21 Shab Hill Barn (NHLE 1091775) would experience a noticeable increase in traffic noise compared to the existing situation as a result of traffic moving on the scheme to the east. It is considered that the change to the resource's setting due to this increase in noise would be a minor adverse magnitude of impact, resulting in a moderate adverse significance of effect. A *moderate adverse* effect, rather than slight, has been ascribed due to the pervasive nature of the change to the resource's setting.

## 6.11 Monitoring

- 6.11.1 The archaeological mitigation works would be undertaken during the works (the majority of the archaeological fieldwork and recording) and construction works stages. The archaeological mitigation works would be monitored to ensure compliance with Annex C Detailed archaeological mitigation strategy and overarching WSI of the ES Appendix 2.1 Environmental management plan: (Document Reference 6.4), to ensure the works are undertaken to the appropriate standards.
- 6.11.2 Annex C Detailed archaeological mitigation strategy and overarching WSI sets out appropriate measures to be undertaken during the works and construction stages to ensure that the mitigation measures embedded in the scheme design are appropriately implemented.
- 6.11.3 Mitigation measures would be monitored in the field and also during the post-excavation analysis and publication stages, to ensure that the mitigation is achieving the aims of reducing the significant effects identified on heritage resources.

## 6.12 Summary

### Construction assessment

- 6.12.1 The assessment of impacts of the scheme on the historic environment has identified a range of effects upon heritage resources during construction.

#### Likely Significant effects

- 6.12.2 Scheduled monument Emma's Grove barrows would experience a permanent moderate adverse effect as a result of changes to its setting; this effect would be significant.
- 6.12.3 At Shab Hill Barn, a grade II listed building, the presence of the scheme would result in a permanent moderate adverse effect on its setting; this would be a significant effect.

### Operational assessment

#### Likely Significant effects

- 6.12.4 Shab Hill Barn would experience a noticeable increase in traffic noise compared to the existing situation as a result of traffic moving on the scheme to the east. This would result in a moderate adverse effect. This effect would be significant.

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