



# National Trust Written Representation

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Registration ID: 20028972

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## A417 Missing Link TR010056



December 2021

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## **Part A: Context**

### **1. Introduction**

**1.1.1.** This document is the Written Representation of the National Trust for Places of Historic Interest or Natural Beauty (“National Trust”), following our registration as an interested party through our Relevant Representation (identification no. 20020498). This Written Representation follows on from the issues we flagged in our Relevant Representation.

It responds to the Development Consent Order (DCO) application submitted by National Highways, formerly Highways England (the Applicant) proposing the A417 Missing Link. The proposed road scheme would directly and indirectly affect Crickley Hill Country Park, Crickley Hill and Barrow Wake SSSI, and the Cotswolds National Landscape.

### **2. The National Trust**

**2.1.1.** The National Trust is Europe’s largest conservation charity with over five million members. Established over 125 years ago, the Trust is responsible for the protection of some of the most beautiful, historically important and environmentally sensitive places in England, Wales and Northern Ireland for the benefit of the nation. We are the largest private landowner in the UK and care for c. 250,000 hectares of countryside, 3,620 listed buildings, and over 700 miles of coastline. Given the range of our activities, we are in a position to comment both from the perspective of a landowner and as a major conservation organisation responsible for safeguarding some of the nation’s natural and historic assets.

The National Trust also has the unique ability to declare its land ‘inalienable’. Land that is held inalienably by the Trust is held for its charitable purposes and benefits from enhanced protection from compulsory acquisition.

### **3. Crickley Hill**

**3.1.1.** Crickley Hill (70.5 ha) is managed and jointly owned by the National Trust and Gloucestershire Wildlife Trust (GWT). The National Trust’s land ownership of 27.34 ha (67.56 acres) was bequeathed to the Trust in 1935 and declared inalienable due to the significance of the site. It is this parcel of land that lies adjacent to the current A417 and would be directly impacted by the proposed road scheme. The Trust also has a Farm Business Tenancy (FBT) with rights of access relating to those areas of Crickley Hill country park and land at Barrow Wake which are in the freehold ownership of Gloucestershire Wildlife Trust (GWT). The Trust and GWT work in partnership as custodians of Crickley Hill, enabling visitors to enjoy this unique place with panoramic views across the Severn Valley, whilst protecting the history and natural environment of this special site.

Crickley Hill sits on the western scarp within the Cotswolds National Landscape and, together with Barrow Wake, lies on the predominantly oolitic Jurassic Limestone belt that stretches from the Dorset coast to Lincolnshire. The significance of this site for its geology and ecology means it is a designated Site of Special Scientific Interest (SSSI) which must not be underestimated. It is also a nationally important site for archaeology, including an Iron Age hill fort, which is a Scheduled Monument, the first battle site in the country with evidence of human activity going back to 4500 BC.

Crickley Hill supports a range of habitats characteristic of the Cotswold limestone habitat. It includes species-rich grassland, semi-natural woodland, scrub and nationally important rock exposures. The main grassland type at Crickley Hill and Barrow Wake is CG5 *Bromus erectus* - *Brachypodium pinnatum* grassland and is extremely rich in wild plants, which in turn support a large variety of invertebrates, butterflies, moths, bees, snails and other protected species including adders, bats and many species of birds. The 600 varieties of fungi found in the wooded areas of Crickley Hill, including the woodland that runs down to the edge of the current A417, puts the site in the top six places in the whole country and is of huge biological importance alongside a large number of veteran trees on the Ancient Tree Inventory.

There are several species of orchid recorded, as well as 28 species of butterfly, 308 species of moth, and 49 beetles, some of which are nationally notable. Areas of the site known as The Scrubbs and Crickley Wood are remnants of a much larger ancient woodland. The present-day area of woodland in The Scrubbs is recorded as woodland on the Coberley Tithe Map of 1838. Located on thin, calcareous undulating and in some cases steep ground, this ancient woodland would likely fit into the W12 *Fagus-Mercurialis* type and is of national conservation importance due to its history of ecological continuity, notable species and SSSI notification. The Scrubbs has a long history of woodland cover as evidenced through the presence of veteran beech pollards. These open grown trees are relics of a wood-pasture system that has developed a rich and varied flora and fauna. The undisturbed soils are a key feature and may contain species communities and natural ecological process reflective of Britain's original woodland cover.

Veteran trees are the most significant feature as they support saproxylic invertebrates and fungi critical to maintaining overall species diversity and woodland functionality. As a result, every single veteran tree is irreplaceable as their loss cannot be mitigated by replacement planting. Decay wood in all trees, regardless of age or species, has the potential to support saproxylic invertebrates and fungi of conservation importance, whilst flowering scrub and ground flora is important for saproxylic invertebrates during their adult life stage. Mature and semi-mature trees will become future veterans and maintaining a stock of mixed ages is essential for ecological continuity. Thus, maintaining each of these features is important for a healthy woodland.

Whilst actively used and enjoyed by the surrounding population with over 200,000 visitors per year, Crickley Hill will be directly affected by the proposed road scheme not only along the land ownership boundary, but also by

potential changes to site access during the construction period. The Trust is concerned that the proposals would have a detrimental impact on visitors, wildlife and vulnerable habitats. It will therefore be important that the right preventative measures, monitoring and long-term management plans are secured through this DCO examination.

## **Part B: Response to proposed scheme**

### **4. Principal matters outstanding**

#### **4.1.1. National Highway's assessment of the predicted impact on Crickley Hill and Barrow Wake SSSI during construction and operation**

The National Trust disagrees with the Applicant's conclusion of a slight adverse effect, which is not significant, on Crickley Hill and Barrow Wake SSSI, as a result of increased visitor numbers following completion of the road scheme.

We believe that the impact assessment in DCO Chapter 8 does not take full account of available information and underplays the potential impacts. In 2018 we jointly commissioned an insight study with GWT (cited further below) which indicates that 75% of visitors to Barrow Wake would use a bridge to access Crickley Hill (see Habitats Regulations Statement, paragraph 5.4.4). Such numbers would increase visitor pressure, potentially damaging the woodland features in the Scrubbs (i.e. ancient trees, soils, ground flora and understorey) and calcareous grassland, especially around the hillfort. The Crickley Hill baseline conditions are of high visitor numbers (see 6.4 Habitats Regulations Statement, paragraph 5.4.2) and any addition to these would push the site over critical thresholds, causing irreversible effects to notified features e.g. compaction to veteran tree roots; requirements for veteran tree management due to high numbers of visitors, in turn leading to a decline in veteran trees and associated saproxylic invertebrate and fungal communities.

As such, the magnitude of impact should be negative moderate/large according to Table 4-4 (see Chapter 4: Environmental Assessment Methodology).

Proposed mitigation currently provides alternative recreational routes (Chapter 8: Biodiversity, paragraph 8.10.231), however the efficacy of these is unknown, according to the Habitats Regulations Assessment (see Habitats Regulations Statement, paragraph 7.1.1). Therefore, we consider that a precautionary approach should be applied to the SSSI, including monitoring visitor numbers and impacts post construction, alongside additional mitigation.

To support this position, Annex A provides extracts from the 2018 Insight Report, providing evidence of the expected increase of visitors through improved access between Crickley Hill and Barrow Wake if a pedestrian bridge were to be provided with the combined impact of expected further housing developments in the area on a sensitive site that has already reached visitor saturation.

In addition, the figures on page 7 have been derived from Strava – the popular social network that tracks human exercise (mostly cycling and running) using GPS data, generating heat maps – the higher the usage, the whiter the line. They illustrate the gradual increase of visitor pressure since 2019 to current pressure as of today. We expect this to only increase further with improved access between the sites.



Figure 1: Crickley Hill – showing an increase in use of existing routes and desire lines being created across the site

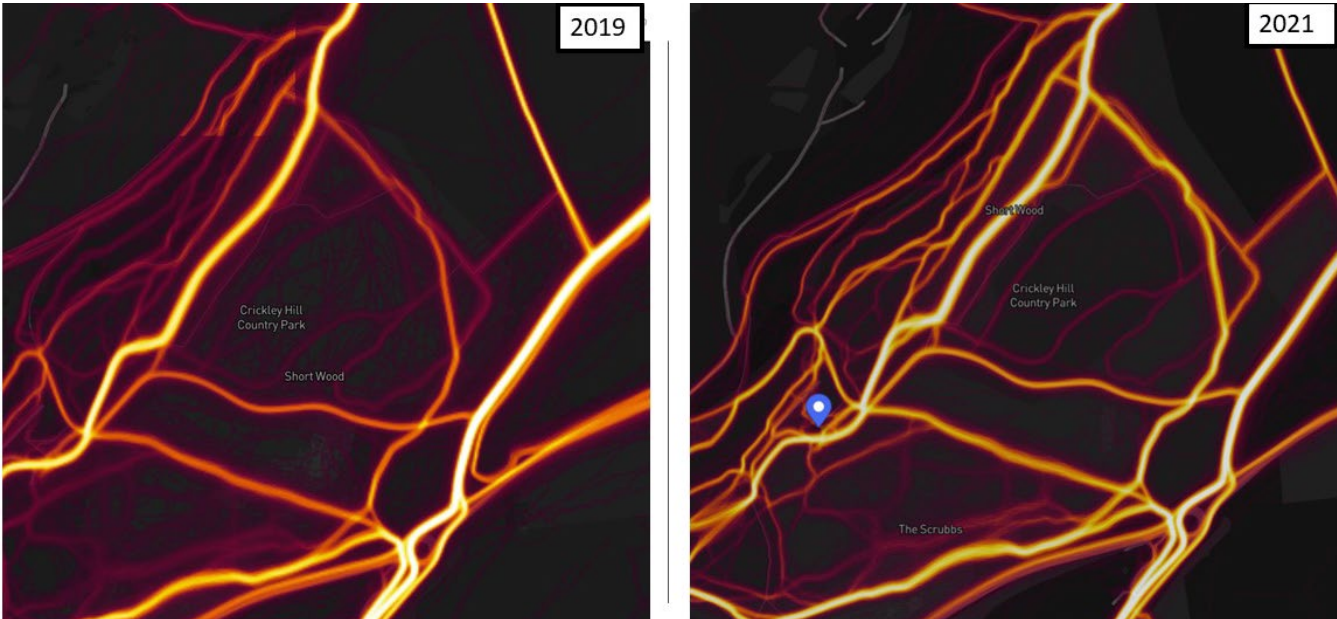


Figure 2: Crickley Hill – zoomed out image that incorporates Barrow Wake, Ullenwood and National Star College



To be clear, the Trust welcomes the opportunity of improved accessibility for people within the landscape that this scheme presents, but our concern is the Applicant’s assessment of impact on Crickley Hill and Barrow Wake SSSI.

We ask the Examining Authority to review the original assessment and the evidence being presented in this representation, as it is not only a principal issue for the Trust, but also for GWT and Natural England as outlined in their relevant representations.

In addition, an agreed mitigation strategy is required, in consultation with the Trust, GWT and Natural England to look at access during the construction period and management of access routes post construction for Crickley Hill and immediate area.

Pressures on this sensitive SSSI site are having a detrimental impact, due to already critical visitor saturation levels and need to be fully considered and alleviated wherever possible. We would therefore welcome discussions with the Applicant as part of this scheme, to look at opportunities that could alleviate these pressures, both current and longer term.

From a business impact perspective, we are also concerned about the impact the construction period will have on the business income for GWT, in relation to the visitor café and car park, upon which they rely. The Trust will also be seeking compensation for the duration of the construction on business impacts to our land and livestock management.

**4.1.2. That a holistic approach should be taken for scheme mitigation that overlays cultural heritage, historic environment, and natural environment to understand the significance of the landscape, and therefore, mitigation proportionate to the significance**

Since the Applicant's Scoping Report submission, the Trust has raised concerns about what we perceive as an over-reliance on the Design Manual for Roads and Bridges (DMRB) for assessment criteria and methodology. In our view, the DMRB methodology can be insufficient when it comes to assessing historic landscape character and the effects of the scheme, focusing on individual heritage assets with little consideration of their inter-relationships within a contextual landscape.

NPSNN para. 5.122 notes that heritage assets can include buildings, monuments, sites, places, areas or landscapes, and that the significance of heritage assets derive from the asset's physical presence but also from its setting. NPSNN para 5.128 states that, in determining applications, the Secretary of State should take into account "the available evidence and any necessary expertise from [various sources including...] representations made by interested parties during the examination".

Under Landscape and Visual Impacts, NPSNN para 5.145 states "The applicant's assessment should include any significant effects during construction of the project and/or the significant effects of the completed development and its operation on landscape components and landscape character (including historic landscape characterisation)". NPSNN para 5.146 states "The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include any noise and light pollution effects, including on local amenity, tranquillity and nature conservation".

The Trust has commissioned a report from the Countryside and Community Research Institute of the University of Gloucestershire (UoG) to look more holistically at cultural heritage, historic and natural landscape, understanding the landscape significance and the effects of the proposed road scheme. The full report can be viewed in Annex B of this written representation.

The UoG report highlights the value of taking a holistic view of the inter-relationships between human and natural factors that have shaped the present-day landscape in order to provide context to National Highways' aim to create a 'landscape-led scheme', through:

- demonstrating a unified approach to interpreting and mapping the historic and natural character of the landscape, in relationship to designated and non-designated heritage and natural assets
- comparing and contrasting the evaluation undertaken with the summary conclusions produced in the Environmental Statement (as set out in Chapter 6 Cultural Heritage and Environmental Statement Appendix 6.3 Historic Landscape Characterisation)
- assessing and considering what mitigation could be developed to respond to the envisaged impact (in addition to opportunities), focusing specifically on areas where the commissioned assessment of impact is greater than that proposed by the Applicant.

It raises issues in relation to the assessment of significance and impact of the scheme, many of which we have referred to under Cultural Heritage. The UoG report also sets out the key effects of the scheme on historic landscape character, which we have referred to in our sections on Cultural Heritage and Landscape and Visual.

Summary of conclusions from the report suggest that:

1. The EIA report has not sufficiently interpreted or understood the historic landscape context of the scheme
2. There is no methodology for grading the Historic Landscape Character Areas used in the EIA
3. The impact of the scheme on historic landscape has been underestimated, due to the under-grading of the significance of the HLCAs and their very large scale
4. The EIA report has not sufficiently interpreted or understood some key heritage assets and their significance

Summary of the recommendations from the report suggest:

1. A 'landscape-led approach should be developed as an integrated framework from the earliest stage
2. Use the cultural landscape to secure maximum ecological benefit
3. Key areas affected by the scheme need to be better understood and proper mitigation through recording put in place

4. The findings of the report should inform celebration and interpretation of this landscape

The purpose of the report is to evidence and support this principal matter of concern for the Trust. We ask the Examining Authority to consider the assessment and recommendations within the report that will deliver more relevant mitigation equal to the significance of the landscape and be more acceptable in delivering a 'landscaped' solution.

#### **4.1.3. The approach to biodiversity net gain and delivering best possible outcomes for nature**

The Applicant's Case for the Scheme (Section 8.5) sets out the national policy position on Biodiversity Net Gain (BNG). From a National Trust perspective, we are aware that there is no absolute requirement for Nationally Significant Infrastructure Projects (NSIPs) to demonstrate and secure BNG and the provisions of the Environment Act 2021 are yet to come into force. We do however note that there is policy support for maximising opportunities and moving towards BNG:

- NPSNN para 5.20 states that: "The [Natural Environment White Paper] sets out a vision of moving progressively from net biodiversity loss to net gain, by supporting healthy, well-functioning ecosystems and establishing more coherent ecological networks that are more resilient to current and future pressures".
- NPSNN para 5.33 on 'Biodiversity within and around developments' states: "Development proposals potentially provide many opportunities for building in beneficial biodiversity or geological features as part of good design. When considering proposals, the Secretary of State should consider whether the applicant has maximised such opportunities in and around developments. The Secretary of State may use requirements or planning obligations where appropriate in order to ensure that such beneficial features are delivered".
- The NPPF (2021) para 180 states "opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate".
- The Government policy paper 'A Green Future: Our 25 Year Plan to Improve the Environment' (Jan 2018) confirms that: "Current policy is that the planning system should provide biodiversity net gains where possible".

The Trust appreciates the transparent approach the Applicant has taken to assess the scheme against the developing BNG policies and note that a c. 20% net loss was recorded using the Defra Biodiversity Metric 2.0. We question the acceptability of this in the current and emerging policy environment. However, we welcome the efforts to maximise biodiversity through delivering locally appropriate Priority Habitats within the red-line boundary, rather than lower value habitat which score more favourably in the metric. We also appreciate the collaborative approach



the Applicant has taken to achieve this including investigating off-site opportunities with local landowners.

However, the Environment Act passed into law in November 2021 and places a statutory obligation on NSIPs to deliver biodiversity net gain. Whilst we recognise this does not apply to the A417 Missing Link, we hope the Applicant will use this opportunity to develop good practices and create a legacy of significant biodiversity enhancement, to establish the basis for BNG in future highways schemes.

To support this, we request that following are secured through the DCO process:

- The Applicant discloses the type (i.e. habitat), number and location of biodiversity units secured by the scheme. This will allow stakeholders to critically assess progress towards delivering biodiversity net gain.
- An enforceable requirement built into the DCO to maintain on and off-site habitats for a minimum of 30 years (see section 5.2.4).

Our response in section 5 is set in the context of recent verbal commitments from the Applicant during landowner discussions:

- to define further detailed design principles and parameters within the Environmental Management Plan
- to involve the National Trust and other key stakeholders in detailed design and other controls beyond and outside of the DCO process in relation to inalienable land compulsory purchase negotiations.

We expect to see such commitments secured during the Examination period, but should that not be the case, we would expect to make a clear case on where any shortfall will need to be addressed.

## **5. Issues and concerns**

This section sets out our current issues with the road scheme as proposed by the Applicant. The format has been aligned to follow the initial assessment of principal issues prepared by the Examining Authority (ExA) and set out in Annex C to the Rule 4, 6 and 9 letter from the Planning Inspectorate dated 30 September 2021. Our sub-headings reflect the issues set out in the Principal Issues table in the Planning Inspectorate's letter, though we have not commented in respect of each issue. We intend to highlight our areas of concern, our reasoning, and - where appropriate - a proposed method for resolution.

### **5.1. Air Quality and Emissions (AQ) (to include consideration of Green House Gas (GHG) emissions)**

#### **5.1.2. Construction effects of the Proposed Development**

The Trust would want to ensure that construction dust is minimised and that there is a means of redress if problems arise – for example, complaints reported to National Trust or GWT staff about dust at Crickley Hill country park. The ES states that measures to reduce construction dust would be included in the Air Quality Management Plan (AQMP). Para 4.3.7 of ES Appendix 2.1 EMP sets out what the AQMP would include as a minimum, including monitoring of dust and recording of inspection results. We would also want a mechanism for any dust issues to be reported and addressed. We have made further comments on dust under Biodiversity, Ecology and Natural Environment.

Proposed solution: AQMP (as part of EMP) to include mechanism for any dust issues to be reported and addressed.

#### **5.1.6. Operational and embedded GHG emissions**

The Trust considers that climate change and the loss of habitats and species represent the biggest threats to the future of places in our care. Given the impact of road schemes on climate, nature and heritage, any new road building should be delivered to the highest environmental standards.

Para 4.40 of the NPSNN states that “New national networks infrastructure will be typically long-term investments which will need to remain operational over many decades, in the face of a changing climate. Consequently, applicants must consider the impacts of climate change when planning location, design, build and operation”. Para 154 of the NPPF (2021) states that new development should be planned in ways that can help to reduce GHG emissions, such as through its location, orientation and design.

Table 14-14 of the ES climate chapter outlines the GHG mitigation measures during design and construction. These include: “Where practicable, measures would be implemented to manage material resource use during construction including: • Using materials with lower embedded GHG emissions and water consumption • Using sustainably sourced materials • Using recycled or secondary materials. • Employing

low carbon construction techniques, e.g. warm asphalt". These and the other measures would be secured via the EMP and DCO Requirement 3.

The Trust supports such measures, although given the importance of tackling climate change, even more so since the NPSNN was adopted back in 2014, we would like to see a firmer commitment to low carbon design and construction. As things stand, the use of the phrase "where practicable" needs further clarification. We would also ask the Applicant and the Examining Authority to consider whether a clear commitment could be formalised through Requirement 3 (EMP), for example via the submission and approval of a Low Carbon Construction Plan.

*Proposed solution:* Applicant and Examining Authority to consider if / how there could be a firmer commitment to low carbon construction to reduce the scheme's GHG emissions and its impacts on climate change.

#### **5.1.7. Effect on the achievement of the Government's carbon reduction targets and latest carbon budget**

The Trust would expect the Applicant to demonstrate that the proposed road scheme is compatible with the government's commitments to combat climate change, and that it conforms with all relevant legislation, policy and guidance on climate change, including on carbon reduction plans and targets. We would ask the Examining Authority to review the policy compliance of the scheme in this respect.

### **5.2. Biodiversity, Ecology and Natural Environment**

#### **5.2.3. Implications for statutorily and locally protected sites including Sites of Special Scientific Interest, Local Wildlife Reserves, Special Areas of Conservation, and Local Wildlife sites (including potential sites)**

The National Trust has a number of concerns regarding the scheme's impacts on Crickley Hill and Barrow Wake SSSI. These are detailed below.

#### ***Effects of increased visitor numbers on Crickley Hill SSSI unit***

See principal matters section 4.1.1 for a detailed response

#### ***Ecological fragmentation and connectivity between the Crickley Hill and Barrow Wake SSSI units***

We agree with the Applicant's conclusion that following mitigation and enhancement increased habitat fragmentation would represent a negligible adverse impact on the SSSI (Chapter 8: Biodiversity, paragraph 8.10.28). However, this is predicated on successful habitat creation and long-term management being secured.

*Proposed solution:* We request the Landscape and Ecology Management Plan (LEMP) is amended to include the following: formally establishing an ecological design Working Group; a requirement for detailed habitat creation methodologies to be developed and agreed with the Working Group; and a legally binding mechanism to manage new habitats for 30 years. See Section 5.2.8 for further details.

### ***Deposition of dust, pollution and sediment run-off from construction work***

We welcome the commitment to ensure all works within the SSSI will be undertaken according to a method statement agreed and signed off by Natural England (Chapter 8: Biodiversity, paragraph 8.10.30), however we are concerned that full details have not been provided at this stage.

*Proposed solution:* As joint-owners and site managers for the Crickley Hill SSSI unit, we request to be able to participate in the development and sign off the method statement.

### ***Location of dust crushing compound***

The ES refers to the dust crushing compound being moved to > 200m from Ullen Wood to protect it from dust smothering (Chapter 8, paragraph 8.9.12). The new location for the dust crushing compound is not given.

*Proposed solution:* We request the new compound location be sited > 200m from Crickley Hill and Barrow Wake SSSI, which support equally sensitive habitats to Ullen Wood.

## **5.2.5. Effects on hedgerows and trees, including ancient woodlands, important hedgerows and veteran trees**

The National Trust would like to see additional compensation measures for the loss of veteran trees. The Biodiversity chapter (paragraph 8.10.59) states that three veteran trees would be lost and that it is not possible to compensate for their loss, as they are irreplaceable features. We agree with this statement but do not believe that replacement planting with young trees of the same species is adequate compensation (Chapter 8, paragraph 8.10.60), as this would not provide suitable replacement habitat for hundreds of years.

*Proposed solution:* We believe more can be done to more adequately compensate for their loss and provide appropriate enhancement for the scheme. Potential compensation and enhancement measures include:

1. Management to improve the condition of existing veteran trees within, and adjacent to, the scheme boundary (e.g. haloing, crown reduction, fencing, mulching, etc.). A comparable approach is taken to compensate for the loss of tufa habitat.
2. Veteranise existing mature trees within, and adjacent to, the scheme boundary to provide replacement features within a shorter time period. This method is referenced in relation to bat roosting feature enhancements, but locations and numbers of trees is not given.
3. Planting mature specimen trees of 10-16cm in girth and 3-5m high. Species including Beech, English Oak, Field Maple, Hawthorn, Hazel, Blackthorn, Holly and Cherry. This would have an immediate, positive and significant impact on the landscape, as the tree canopy would give structure and obscure the view of the road from well-known viewpoints, transforming the view. Acting as a sound barrier into the wider countryside, absorbing and reducing



the noise of traffic for local residents and visitors enjoying the countryside around them.

Many of the tree species suggested are a key food source for birds, whereas standard approach of planting small tree whips will take years to provide a food source if they are able to establish. However, by planting older, more mature trees the food source would be immediate whilst at the same time, providing flight zones for bats. Mature trees would have more success in re-establishing habitats and reducing the severance caused through construction works (for example, the entire length of the existing tree line at the base of Crickley Hill that will be cleared to construct the additional lanes) allowing nature and wildlife to re-calibrate their navigation along new corridors between Crickley Hill country park and into the wider landscape.

### 5.2.7. Biodiversity Net Gain developing policy position

See principal matters section 4.1.3 for a detailed response

### 5.2.8. Other biodiversity effects (including; Mitigation / compensatory measures, timing of works and potential seasonal effects, need for Habitat Regulations Assessment / Appropriate Assessment)

**Appraisal of wildlife crossing mitigation methods:** The Applicant has not provided an evidence base supporting the design of wildlife crossing points (i.e. under passes, culverts and bridges). Neither is there reference to best practice design principles, which are fundamental in ensuring this type of mitigation is effective.

*Proposed solution:* To provide confidence in the design and efficacy of the proposed mitigation, we request supporting evidence is provided in the form of academic studies, case studies or industry accepted design principles/best practices (e.g. CIEEM, 2021<sup>1</sup>; Berthinussen & Altringham, 2015<sup>2</sup>).

**Mitigation monitoring and remedial actions:** We have concerns regarding remedial actions should any mitigation fail. Best practice is to establish clear research objectives which test the efficacy of mitigation, including triggers for remedial action (CIEEM, 2021<sup>4</sup>). An outline monitoring scheme is provided in the draft LEMP, with a commitment to setting objectives, timings and frequency in the second iteration. There is no mention of triggers for remedial actions.

*Proposed solution:* As stakeholders whose land is affected by the scheme, we request to be able to participate in the development and sign off the monitoring methodologies. We also request that a legal mechanism is included which requires

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<sup>1</sup> CIEEM. (2021). *Bat Mitigation Guidelines: A guide to impact assessment, mitigation and compensation for developments affecting bats. Beta version 1.0*

<sup>2</sup> Berthinussen, A., Altringham, J. (2015) *Development of a cost-effective method for monitoring the effectiveness of mitigation for bats crossing linear transport infrastructure*. Defra report: WC1060

the Applicant to remedy any failed mitigation identified through the monitoring schemes.

**Successful habitat creation:** The scheme's ability to meet its objective of "improving the natural environment" (Chapter 2, Table 2-1) is dependent on successfully creating and maintaining the habitats described in Chapter 8 Table 8-18.

We welcome the commitment in sections 1.2.2 to 1.2.4 of the LEMP, which states that "the contractor shall establish a Working Group to continue engagement on landscape and ecology with relevant stakeholders during the construction of the scheme". However, we are concerned this will occur after detailed ecological design decisions have been made.

*Proposed solution:* The National Trust, and other stakeholders, are formally invited to form a Working Group with National Highways to support the detailed ecological design, construction and management of the scheme.

The Applicant secures, and funds long-term management, for a minimum of 30 years, for all new habitats associated with the scheme. This is in line with emerging Biodiversity Net Gain policy and best practice (see section 4.1.3).

All habitat creation methodologies are agreed and signed off by the ecological design Working Group. These are to include, but not be limited to:

- Ensuring soil conditions are suitable before creating habitats. This can include setting appropriate pH, phosphate (P) and Soil Organic Matter (SOM) ranges for all new habitats, measures to limit and restore compacted soils and methods to establish suitable soils if they are not present already
- Using locally appropriate seed mixtures and planting plans
- Recognition that new habitats would be created in areas where NO<sub>x</sub> levels are above critical thresholds. This would need to be considered during the establishment and long-term management of these habitats.
- Fully funded monitoring to assess successful habitat creation
- A mechanism to ensure remedial actions are taken by the Applicant should habitats fail to establish

### **5.3. Compulsory Acquisition (CA) and / or Temporary Possession (TP)**

#### **5.3.4. Adequacy and security of funding for compensation**

The draft DCO indicates that certain parts of the National Trust's inalienable land would be compulsorily acquired. These parts are already dedicated for use as part of the highway and form part of National Highways' soft estate. National Highways has not yet suggested any figures for the compensation the National Trust would receive for the compulsory acquisition of these areas of land.

It is not yet clear which mechanism would be used for the acquisition of the National Trust's inalienable land. Irrespective of which method is used it is proposed that the National Trust will enter a side agreement with National Highways which deals with certain issues. It is anticipated that the compensation provided by National Highways would either be secured by an obligation in this side agreement or by an agreement which transfers the National Trust's land to National Highways.

### **5.3.5. Current position in relation to National Trust land, particularly that held as inalienable**

There are two inalienable land parcels that have been identified for compulsory purchase, illustrated on Land Plans sheet 2 of 6 as 2/14, 2/14a and 2/14b (Parcel 1) and 2/14c (Parcel 2). These two parcels of land were dedicated for use by National Highways through deeds of dedication in 1961 and 1963 respectively. The National Trust has indicated to National Highways that it will not object to these parcels of inalienable land being compulsorily acquired.

National Highways has indicated that all construction works would take place from the highway side of the National Trust's boundary and that no access onto National Trust land nor temporary use of National Trust land would be required.

The National Trust looks forward to an early resolution to the discussions with National Highways about compensation and the means by which ownership of the two parcels would be transferred to National Highways.

### **5.3.11. Book of Reference**

The following parcels listed on Land Plans 2 and 3, are held by the National Trust as leasehold. Specifically, the National Trust holds a Farm Business Tenancy dated 14 May 2013, the National Trust's landlord is Gloucestershire Wildlife Trust. The Book of Reference – Part 1 lists the National Trust as a Category 2 party, we believe we should be categorised as a Category 1 party (and that the Book of Reference should be amended accordingly). The parcels concerned are 2/13a, 2/13f, 2/13j, 3/12b, 3/12d, 3/12e and 3/12f.

If it is indeed the case that these plots will affect our Farm Business Tenancy, we do not have the necessary information to assess how the compulsory acquisition in some cases and temporary use in others would impact our ability to safely graze our cattle during construction. We also wait to hear from National Highways as to what compensation they will offer us for the temporary and / or permanent (as the case may be) loss of land from the tenancies and disturbance generally.

The National Trust's address has also been given incorrectly throughout the Book of Reference. It should be Heelis, Kemble Drive, Swindon, Wiltshire SN2 2NA and request that this is amended.

## 5.4. Cultural Heritage (CH)

### 5.4.1. The adequacy and appropriateness of the approach to the consideration of heritage matters

Since the Applicant's Scoping Report submission, the Trust has raised concerns about the reliance on the Design Manual for Roads and Bridges (DMRB) for assessment criteria and methodology. In our view, the DMRB methodology can be insufficient when it comes to assessing historic landscape character and the effects of the scheme, resulting in a focus on individual heritage assets, with little consideration of their inter-relationships within a contextual landscape.

NPSNN para. 5.122 notes that heritage assets can include buildings, monuments, sites, places, areas or landscapes, and that the significance of heritage assets derive from the asset's physical presence but also from its setting. NPSNN para 5.128 states that, in determining applications, the Secretary of State should take into account "the available evidence and any necessary expertise from [various sources including...] representations made by interested parties during the examination".

As mentioned earlier, the Trust commissioned a report from the University of Gloucestershire (UoG) to look more holistically at cultural heritage, natural and historic landscape and the effects of the proposed road scheme. Please refer to Annex B to review the full report and recommendations.

### 5.4.2. Effects on designated heritage assets and their settings

The UoG report commissioned by the Trust reached several conclusions that are relevant for designated heritages assets, including:

- **That the Applicant's EIA has not sufficiently interpreted or understood the historic landscape context of the scheme.**  
In respect of the Crickley Hill camp as a Scheduled Monument, the Applicant's setting analysis mentions modern intrusions but does not mention the inter-relationship of the natural and historic environment, which is such a critical aspect of its significance and setting, underplays this site's visual and historic relationship to The Peak, Emma's Grove with its east-facing enclosure and other prehistoric monuments in the area, or its historic and visual relationship to views westwards. Considered as a whole, this group has national importance as evidence of how prehistoric peoples adapted the landscape as agricultural, social and religious practices changed.
- **The impact of the scheme on historic landscape has been underestimated, due to the under-grading of the significance of the HLCAs and their very large scale**  
The methodology for scoring the sensitivity of the historic landscape character types affected by this scheme, by being applied at a much smaller scale, enables the potential impact of the scheme and beneficial mitigation to be identified at a finer grain. These demonstrate a particularly severe impact on views from the Gloucestershire Way towards Crickley Hill.



- **That the EIA has not sufficiently interpreted or understood some key heritage assets and their significance.**

The Environmental Impact Assessment (EIA) and DMRB methodology does not adequately address some of the key inter-relationships between different themes that are essential to understanding significance. Crickley Hill and the Peak have a historic and visual inter-relationship as gathering places dating from the early part of the Neolithic (c.3600-3700 BC) in Britain, relating to this routeway, Neolithic and Bronze Age barrows and the visually prominent saddle of land at Barrow Wake; Emma's Grove occupies a prominent position in relation to these features. This whole group should thus be considered as having 'high' significance. Designated heritage assets are all graded as 'high', meaning that archaeological sites, buildings and structures, such as the K6 phone kiosk at Brimpsfield, with very different levels of significance are all accorded the same grade. Some of these would be better graded as of 'medium' significance, but it has been determined that this would not require any significant amendment to effects.

The UoG report's recommendations are necessarily constrained by the stage the scheme is at, with little scope for further changes to be made. However, the authors were able to make four main recommendations, as set out below, with the fourth recommendation being the most relevant for designated heritage assets:

1. A 'landscape-led approach should be developed as an integrated framework from the earliest stage
2. Use the cultural landscape to secure maximum ecological benefit
3. Key areas affected by the scheme need to be better understood and proper mitigation through recording put in place
4. The findings of this report should inform celebration and interpretation of this landscape. This included celebrating key views, communicating the remarkable time depth of the landscape to users of the repurposed A417 and users of the new road, and to reveal and interpret exposed sections of geology.

From a National Trust perspective, we note that Crickley Hill camp (Scheduled Monument) would experience a 'slight adverse' significant of effect according to the ES. We question whether, in light of the conclusions of the UoG report above, including the visual and (pre)historic relationship between Crickley Hill and the Peak, this fully acknowledges the effects of the scheme on the setting and significance of Crickley Hill camp.

The Trust has also raised the effects of the scheme on the setting and significance of Emma's Grove (Scheduled Monument), for example in our draft SoCG. We understand that this is a matter Historic England will be commenting on.

### 5.4.3. Effects on non-designated heritage assets

The UoG report commissioned by the Trust's reaches several conclusions that are relevant for non-designated heritages assets, including:

- **The Applicant's EIA report has not sufficiently interpreted or understood the historic landscape context of the scheme**

The deserted medieval village site and traditional farmstead at Stockwell has not been considered as a whole, and in its landscape context which tells a story reflected in other parts of the Cotswolds of the shrinkage and desertion of settlements from the 14th century, of the growth of large farms and farmsteads in the post-medieval period and the development of estates with estate cottages and tree-lined avenues.

- **That there is no methodology for grading the Historic Landscape Character Areas as used in the EIA**

When assessed against commonly used criteria for the assessment of landscapes, and when considering the inter-relationships of heritage assets with each other and the natural environment, it is clear that the 'low' grade accorded to the three HLCAs in the Cotswolds AONB should be raised to 'high'.

*HLCA02, Woodland south of Great Witcombe:* this has considerable historic and natural importance as beech woodland with its associated Neolithic and later monuments and archaeology, and evidence of use in more recent centuries.

*HLCA03, Agricultural landscape around Brimpsfield and Birdlip and HLCA04, Agricultural landscape south of Seven Springs:* both retain clear evidence for the development of medieval and later settlement in a coherent landscape context, with ancient woodland, deserted settlements, estate landscapes and scattered prehistoric sites and monuments – all key attributes of the AONB and how it has developed into its present form.

- **The impact of the scheme on historic landscape has been underestimated, due to the under-grading of the significance of the HLCAs and their very large scale**

The Peak and the farmstead at Stockwell Farm should be added to the list of non-designated heritage assets subject to slight adverse effects, due the further severance of the former from Crickley Hill and the proximity of the latter to the scheme.

- **The EIA report has not sufficiently interpreted or understood some key heritage assets and their significance**

The Environmental Impact Assessment (EIA) and DMRB methodology does not adequately address some of the key inter-relationships between different themes that are essential to understanding significance.

The Peak [undesigned] and Crickley Hill have a historic and visual inter-relationship as gathering places dating from the early part of the Neolithic (c.

3600-3700 BC) in Britain, relating to this routeway, Neolithic and Bronze Age barrows and the visually prominent saddle of land at Barrow Wake; Emma's Grove occupies a prominent position in relationship to these features. This whole group should thus be considered as having 'high' significance. Although the establishment of woodland in around 1900 at The Peak has affected how people can experience the site, it should be graded as having 'high' significance as a prominent and integral part of this grouping.

The farmstead at Stockwell Farm and the deserted medieval settlement should be considered as a whole as having 'Medium' significance.

The hilltop location which favoured the establishment of Mesolithic and Neolithic communities prompted the choice of location for the radio station at Birdlip in the Second World War, which is a rare surviving example of its type and of 'Medium' significance in a national context.

- **That the impact of the scheme on historic landscape has been underestimated, due to the under-grading of the significance of the HLCAs and their very large scale**

The Peak and the farmstead at Stockwell Farm should be added to the list of non-designated heritage assets subject to 'slight adverse' effects, due the further severance of the former from Crickley Hill and the proximity of the latter to the scheme.

The methodology for scoring the sensitivity of the historic landscape character types affected by this scheme, by being applied at a much smaller scale, enables the potential impact of the scheme and beneficial mitigation to be identified at a finer grain. These have a particularly severe impact on views from the Gloucestershire Way towards Crickley Hill and the vale, including a medieval or earlier parish boundary extending towards Emma's Grove, and the legible estate landscape with the site of the medieval settlement and large post-medieval farmstead at Stockwell, all reflecting as a grouping key aspects of Cotswolds plateau landscapes.

- **Key areas affected by the scheme need to be better understood and proper mitigation through recording put in place.** In addition to the recommendations made in the EIA, it is recommended that:
  - any recording of the medieval settlement at Stockwell is broadened to include recording of the historic farmstead buildings and the estate landscape, including its historic links to Cowley and Coberley
  - there is an appropriate record, including reference to National Archives records, of Birdlip Radio Station
  - recording in general makes reference to, confirming and challenging as appropriate, the findings made in this report about the development of this historic landscape in its wider context.

#### 5.4.4. The effects on and strategy for dealing with archaeological remains

The UoG report commissioned by the Trust reaches the following conclusions that are relevant for archaeology:

- The ES does not draw out the potential for Mesolithic and earlier Palaeolithic remains around the springs and stream of the escarpment.
- Key areas affected by the scheme need to be better understood and proper mitigation through recording put in place. In addition to the recommendations made in the ES, it is recommended that appropriate safeguards are put in place to ensure identification and recording of the high potential for paleo-environmental evidence and also Palaeolithic and early hominid remains within the escarpment in particular.

#### 5.5. Draft Development Consent Order (dDCO)

Having reviewed the draft DCO, the National Trust has the following comments that we would welcome the ExA considering;

##### Part 2: Principal Powers

- **Article 8. Limits of deviation:** The draft DCO states that the undertaker may in respect of earthworks associated with Work Nos. 1 to 10, deviate laterally from the lines or situations shown on the works plans to a maximum of 2.0 metres except between certain points where the limits of deviation are modified. Any deviation which results in the use of National Trust inalienable land other than the parcels indicated by the Book of Reference as being compulsorily acquired or used temporarily will not be acceptable. We ask that the limit of deviation for parcels adjacent to the National Trust's inalienable land be modified to 0 metres.

##### Part 3: Streets

- **Article 15. Temporary stopping up and restriction of use of streets:** Article 15(3). The National Trust would like to understand what access arrangements will be provided for visitors and staff to Crickley Hill and Barrow Wake and for the movement of the National Trust's cattle from and to Crickley Hill and Barrow Wake.

Article 15 (4). The National Trust would like to understand what access arrangements will be provided for visitors and staff to Crickley Hill and Barrow Wake and for the movement of the National Trust's cattle from and to Crickley Hill and Barrow Wake.

- **Article 16. Permanent stopping up and restriction of use of streets and private means of access**  
The National Trust would like to be provided with the necessary information to fully understand the operational implications of the proposed stopping up and new access to Crickley Ridge south-west of the existing A436 roundabout (referred to by Draft DCO Part 4 of Schedule 4, Page 68 Ref. e). The National Trust needs this information to be able to plan for those operational implications.

– **Article 20. Cotswold Way National Trail**

The Cotswold Way National Trail runs through the National Trust's land at Crickley Hill and connects with the Gloucestershire Way and other local trails through this site. Article 20 seems only to provide for the permanent diversion of the Cotswold Way National Trail. The National Trust would like to understand what provision would be made for any temporary diversion of the Cotswold Way National Trail to be able to plan for any operational implications.

## Part 5: Powers of Acquisition

– **Article 28. Public rights of way**

A number of public rights of way run across the National Trust's land at Crickley Hill. Article 28 seems only to provide for the permanent stopping up of certain rights of way. The National Trust would like to understand what provision would be made for any temporary diversion of the public rights of way to be able to plan for any operational implications.

– **Article 29. Private rights over land**

The National Trust benefits from certain covenants given in Deeds of Dedication dated 1961 and 1963 and has been assured by National Highways that those covenants would continue for those pieces of land which are subject to the Deeds of Dedication and which would remain verges after they are compulsorily acquired by National Highways. The National Trust would like to understand how, in practice, the covenants would continue and suggests that they might be included in a transfer which vests the land in National Highways' ownership.

– **Article 39. Special category land**

The National Trust notes that the parcels of its inalienable land which are to vest in National Highways are shown on the special category land plans but are not included in this article. When it has been determined how these parcels will vest in National Highways, this article might need to be amended.

## Part 6: Operations

– **Article 40. Felling or lopping of trees and removal of hedgerows**

We refer to the National Trust's representations throughout the consultation for this scheme about the ancient woodland on its land and certain veteran trees along the boundary that require protection above and below ground. The National Trust would like to understand the detail of the works permitted by Article 40. Of particular concern are the limits of deviation referred to above (Article 8) and how these may provide for a greater impact than might be indicated by the Land Plans. The National Trust requests that measures are incorporated in the DCO to ensure the protection of its ancient woodland.

The Trust would also like to understand any works being considered for the existing tree line to Crickley Hill along both Trust and GWT boundaries that currently screen the existing roundabout from the main driveway and A46 and what mitigation measures will be employed in relation to the new road infrastructure, the impact to habitat verges and the visual impact of the new infrastructure that will be evident for visitors when exploring Crickley Hill.

- **Requirement 3 – Environmental Management Plan (Construction Stage)**  
The Trust has an interest in the key control documents, namely the Environmental Management Plan (EMP) and its constituent documents, including the Landscape and Ecology Management Plan (LEMP) and Construction Transport Management Plan (CTMP). The approach defined in these documents is an important part of the assessment of the scheme and the mitigation and management of its effects.

We would like to see clear provision for consultation and engagement.

*Note:* We have made reference to other sections within this written representation that are relevant to the EMP below:

- Air Quality and Emissions: we have made comments in relation to securing best practice for low carbon construction
  - Biodiversity, Ecology and Natural Environment: we have made some detailed comments on the content of the LEMP.
  - Noise and Vibration: we have made comments on the Air Quality Management Plan.
  - Biodiversity and Socio-Economic sections: we have made comments on the Construction Traffic Management Plan (CTMP)
- **Requirements 4 & 11 – Detailed design and Details of consultation**  
The Trust has an interest in the detailed design of the road scheme, including the proposed crossings and re-purposed A417. Requirement 11 specifies that the relevant planning authority and local highway authority should be consulted on detailed design. Elsewhere in this written representation, we have suggested that a Working Group or Consultation Panel could be established, to be consulted and provide feedback on detailed design before submission to the Secretary of State. This would effectively broaden the engagement on ‘key design elements’, which we understand is an approach being taken on the HS2 rail scheme.
  - **Requirement 7 – Fencing**  
Given that the text of this requirement refers to “fencing and other means of enclosure”, the requirement title should perhaps be amended accordingly. In our Landscape and Visual section, we have questioned whether the *Manual Contract Documents for Highways Works* would ensure appropriate consideration of the design and appearance of fencing. We would want to ensure that the scheme’s fencing is, as far as it possible, in keeping with the local landscape.

## 5.6. Landscape and Visual (LV)

### 5.6.1. Effect on landscape character

Under Landscape and Visual Effects, NPSNN para 5.145 states: “The applicant’s assessment should include any significant effects during construction of the project and/or the significant effects of the completed development and its operation on

landscape components and landscape character (including historic landscape characterisation)”).

The National Trust has previously questioned whether the Applicant has taken a sufficiently holistic approach to assessing the effects of the road scheme and as mentioned earlier in this written representation, the Trust commissioned the University of Gloucestershire (UoG) to explore this further. We refer the examining authority to the report in Annex B.

However, relevant to this section, the UoG report sets out the key effects of the scheme on historic landscape character, and these are summarised below:

- Loss; including severance and fragmentation of roads, lanes, paths, farm units, land use patterns and semi-natural vegetation communities
- Intrusion; reducing legibility; widening and deepening of the cutting for the A417, plus disturbing the relationship between the Neolithic sites of Crickley Hill and the Peak, and impacts of landscape bunds / false cuttings
- Urbanisation of the rural landscape; increased movement, noise and vibration in a rural landscape recognised as an AONB, potential introduction of night-time lighting at junctions, roadside signage
- Incidental effects on historic landscape of other mitigation activities; beneficial effects of introductions of trees, woodland and calcareous grassland
- Improvements to the historic landscape character of places bypassed; Barrow Wake, opportunity to interpret and to restore habitats, Birdlip

The UoG report’s recommendations were constrained by the stage the scheme is at and the limited scope to make changes to design and mitigation at this point. However, the report does make the following high-level recommendations:

- To use historic landscape character for ensuring maximum ecological benefit
- That key areas affected by the scheme need to be better understood and proper mitigation through recording put in place
- That the findings of the report should inform celebration and interpretation of this landscape. This includes celebrating key views, communicating the remarkable time depth of the landscape to users of the repurposed A417 and users of the new road, and to reveal and interpret exposed sections of geology

*Proposed solution:* We would ask the Examining Authority to consider the conclusions and recommendations of the UoG report on the effects of the scheme on landscape character. We would also ask the Examining Authority to consider the report’s findings as a positive mechanism to explore opportunities that could be secured through the draft DCO and the EMP and inform detailed design.

### 5.6.2. Effect on the special qualities of the Cotswolds AONB

The AONB designation and the Cotswold escarpment have no doubt contributed to the 'missing link' being the only single carriageway stretch of the A417/A419 between the M4 and M5. It is important therefore for the scheme to be properly considered and justified against planning policy in relation to AONBs.

As the Examining Authority is aware, the NPSNN contains certain tests and requirements for NSIP schemes proposed within nationally designated landscapes, including the following:

- Para 5.150 states that great weight should be given to conserving landscape and scenic beauty in nationally designated areas (Including AONBs), which have the highest status of protection in relation to landscape and scenic beauty.
- Para. 5.151 states that consent should be refused in nationally designated areas except in exceptional circumstances and where it can be demonstrated that it is in the public interest (three detailed matters are listed for consideration).
- Para. 5.152 states that there is a strong presumption against any significant road widening or the building of new roads in AONBs, unless it can be shown there are compelling reasons and with any benefits outweighing the costs very significantly. Projects should also be carried out to the highest environmental standards and where possible include measures to enhance other aspects of the environment.
- Para 5.148 states that the requirements of the Defra's *English national parks and the boards: UK government visions and circular 2010* or successor documents should be complied with for significant road widening or the building of new roads in AONBs.

In addition, the NPPF (2021) para 176 states "the scale and extent of development within all these designated areas [National Parks, the Broads, AONBs] should be limited".

These and other policy requirements have influenced the road scheme's landscape-led vision, which the Trust supports. In many ways, at this DCO examination stage, we would defer to the statutory consultees on landscape matters, namely Cotswold Conservation Board (CCB) and Natural England, who are best placed to comment on the effects on the special qualities of the AONB. From the Trust's perspective, it is important that a landscape-led scheme that conserves and enhances the character of the AONB and reconnects landscape and ecology is realised and validated by robust assessment.

The Trust has previously drawn attention to such matters as the width of the overall highway corridor, and the associated landscape severance, including the eight parallel lanes of traffic in one part of the overall highway cutting. However, we do appreciate the need to build to modern highway standards, as well as the



challenging nature of the terrain and the necessity of linking in with the local road network. These all mean that the scheme was always going to be more complex than a four-lane wide, dual carriageway link.

The Trust has previously asked for a definitive list of assurances as to how the scheme would be landscape-led, as we question whether 'landscape-led' has underpinned every design decision. We note the Applicant's Design Summary Report which provides a useful overview of the measures it has taken but we believe that a number of the measures summarised in the report could also have featured in a conventional road scheme i.e. one not within a nationally designated landscape. However, the report does show that the Applicant has given considerable thought to design and mitigation, including in respect of the natural environment.

If we are to accept the Applicant's Environmental Statement, the scheme would give rise to permanent adverse effects on the special qualities of the Cotswolds AONB, including the Cotswold escarpment (views, increased depth and width of cutting, additional carriageway width) and river valleys (Shab Hill junction etc). There would also be a range of permanent beneficial effects, although not all of these would neutralise the identified adverse effects. We also note that those benefits that rely on having an 'unlit' scheme depend on how deliverable this is in practice (please see comments below on lighting).

*Proposed solution:* For the Examining Authority to review the scheme to ensure that it sufficiently meets its landscape-led vision, taking into account the Applicant's design Summary Report (and the comments of CCB and NE). Also, to ensure the relative weight is accorded to the adverse and beneficial effects of the scheme.

### **5.6.3. Short and long-term visual impacts**

Comments in this section focus on the visual effects of the proposed road scheme when operational on outward views from Crickley Hill country park, or from adjacent areas, for example, from the Peak and Barrow Wake. In making these comments, the Trust does acknowledge that any dualling of the A417 Missing Link would always have been likely to increase visual impacts compared to the existing A417, but it is important that these impacts are fully assessed and understood and mitigated fully.

The Trust notes that visitors to Crickley Hill country park are classed as 'very high sensitivity' visual receptors and recreational users of the Cotswold Way are classed as 'high sensitivity'. At both year 1 and year 15, visitors to Crickley Hill country park and recreational users of the Cotswold Way would experience adverse permanent significant effects. It is very concerning that such effects would be experienced from the country park, by users of the Cotswold Way and that the Applicant has not proposed additional solutions to further mitigate such effects.

We acknowledge that the most iconic views from Crickley Hill are looking westwards over the Severn vale. These views would continue to be available and enjoyed by visitors to the country park (and users of the Cotswold Way). However, the new three lanes up / two lanes down at the base of Crickley Hill would be viewable from the Cotswold Way along the plateau of Crickley Hill as walkers walk along the Cotswold Way down towards the Scrubbs woodland and through into Air Balloon field, down to

the Air Balloon Cottages. The cutting may also be visible through trees in wintertime for people exiting the country park (viewpoint 22).

We are mindful that peoples' experience of the road scheme is likely to be strongly influenced by views of the maximum extent of the new A417 cutting.

Separate to the views that would be experienced by motorists on this new section, the views for Non-Motorised Users (NMU) where maximum cutting could be seen, is likely to be in the area of the Cotswold Way crossing / new Cold Slad lane / Ullenwood roundabout, looking either westwards, where the cutting is narrower but possibly deeper or eastwards, where the overall highway cutting would be wider. Currently, there do not appear to be any visualisations prepared by the Applicant that illustrate this internal view of the cutting, and we would ask the Examining Authority to consider requesting such visualisations to understand what would be seen / experienced and a more informed understanding of mitigation to screen and/or reduce the visual impact of the new infrastructure.

With regards to other viewpoints, the Trust notes the existing view from the entrance to Crickley Hill country park towards Air Balloon roundabout (viewpoint 21). As shown overleaf on page 29, we assume that the Year 1 and Year 15 visualisations show a car exiting the country park and a lorry coming down the raised Leckhampton Hill. The Engineering Drawings illustrated on the following page also suggest that Leckhampton Hill would be re-built around 2 metres higher in this location, and the entrance into the country park would also be rebuilt. This extent of change at the entrance to the country park appears to be significant, and it could affect the visitor experience of the country park – the new raised highway and vehicles using it might be more imposing from the country park near to the main entrance, GWT land, part of which is leased to the National Trust.

We would like to understand the proposed new infrastructure and landscaping here. Tree planting will most likely be necessary along both the highway and within the country park to try and screen and soften the visual impacts. It will be important that the right mix of tree species is considered and the right age of trees planted to reduce the immediate visual impact, but to also provide a better opportunity for a tree line and habitat re-establishing along the boundary of an SSSI site.

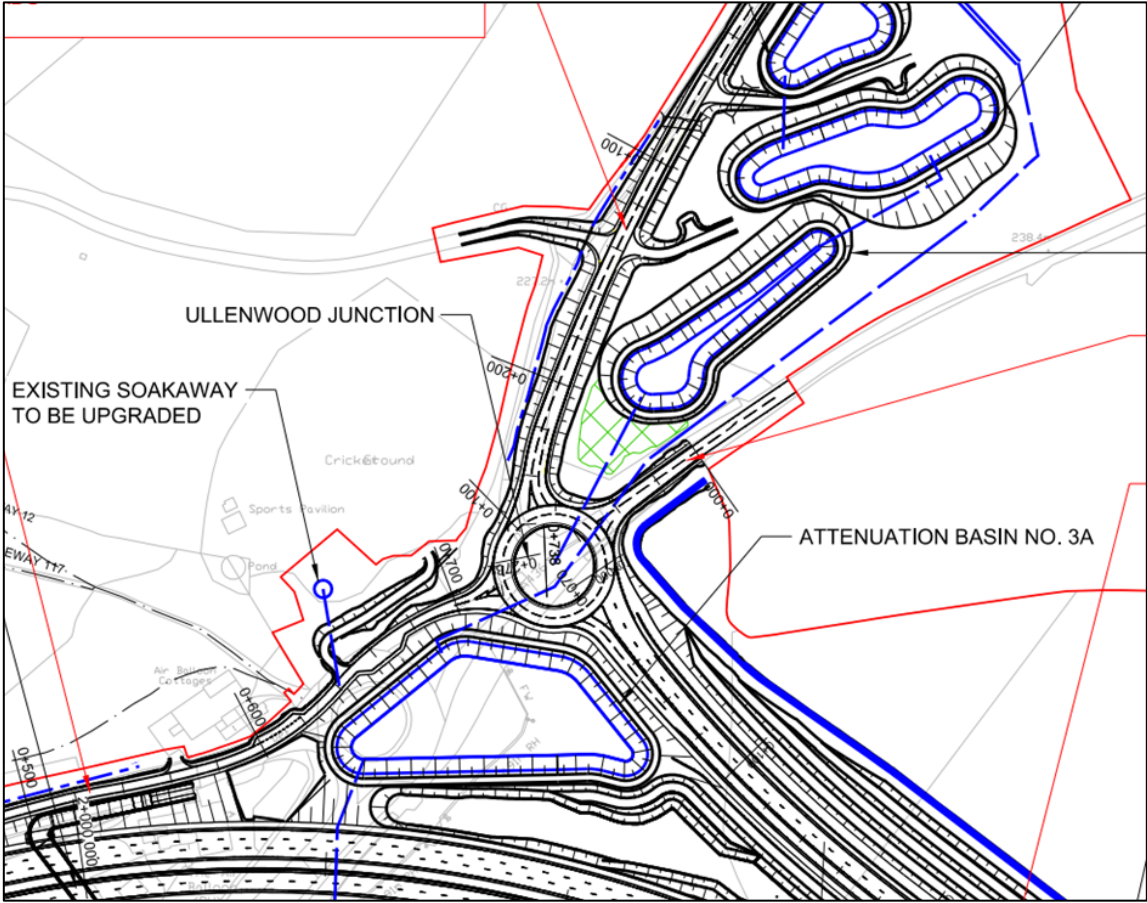


Winter baseline photograph



Operation year 15 winter photograph

Above: Viewpoint 21 – existing view and year 15 visualisation from entrance to Crickley Hill country park [from 6.3 ES – Figure 7.10 – Photosheets and Visualisations – Part 4 of 8]



Above: Extract from Applicant's General Arrangement Plans showing proposed Ullenwood roundabout, the raised Leckhampton Hill spur, the rebuilt entrance to Crickley Hill country park and the drainage attenuation basins

*Proposed solution:* The Examining Authority to consider whether further visualisations showing the cutting as experienced from the Cold Slad lane/ Cotswold Way crossing / Ullenwood roundabout area would help parties to better understand the scheme; and to ensure the impacts at the entrance to Crickley Hill country park are properly understood and mitigated as appropriate.

#### **5.6.4. Effects of lighting**

The National Trust agrees with the 'dark skies' approach taken by the Applicant. The ES states that, to respond to the AONB setting, the scheme would be unlit. The assessment of night-time landscape and visual impacts is based on unlit scheme. The Trust also notes the position of Gloucestershire County Council (GCC), as local highway authority, that it may have to retrospectively install street lighting at certain 'conflict zones' (e.g. proposed Ullenwood roundabout). We are therefore unclear whether an unlit scheme is deliverable in practice. We would like to further understand the need for such lighting, what type of lighting might be required, and how this affects the current assessment. We fully respect the need for safe driving conditions but would want light pollution to be minimised wherever possible.

*Proposed solution:* Applicant / GCC to provide further clarification on the need for and effects of parts of the scheme being lit.

#### **5.6.6. Design of the landscape mitigation, including bunds, walls and fencing**

Regarding walls, the Trust acknowledges and supports the use of Cotswold dry-stone walls, to reduce noise impacts and reflect the landscape characteristics within this area of the Cotswolds AONB. The type of stone used should be of sufficiently local provenance. In respect of fencing, the ES notes that this is uncharacteristic in the AONB. The scheme would feature a combination of post and rail, highway, badger and acoustic fencing. We would want the scheme's fencing to be of a type and design suitable for a rural area.

Requirement 7 states that fencing shall be in accordance with the *Manual Contract Documents for Highways Works*, although, as indicated, we would prefer to see some mechanism to ensure the fencing was appropriate to its setting.

*Proposed solution:* Applicant, ExA and other interested parties to consider whether current provisions for fencing are appropriate.

#### **Other matters – drainage attenuation basins**

Drainage attenuation basins are proposed to the south of the proposed Ullenwood roundabout and opposite the entrance to Crickley Hill country park (on National Star College land). The Trust accepts such basins are a necessary part of the scheme. However, we understand from the ES that the drainage basins would be prominent in certain views, including from the down ramp of the proposed Cotswold Way crossing. They may also be visible to visitors exiting the country park in the short to medium term. The drainage basins on National Star College land would be

accompanied by woodland planting to integrate them into the landscape. We are less clear as to the landscape treatment of the large basin to the south of the Ullenwood roundabout. This basin would be a considerable size, it looks to be about half the size of the nearby cricket pitch. We would want to see drainage basins designed to be in keeping with the AONB landscape and to be screened or softened by planting and boundary treatment as appropriate.

*Proposed solution:* Applicant to provide further information as to how visual impacts of the proposed drainage basin south of the Ullenwood roundabout would / could be ameliorated.

## **Other matters – cutting sides**

Regarding the treatment of the sides or faces of the road cutting, the Trust acknowledges that with the gradient change, the cutting depth has been reduced (to max. depth c. 17 metres); although significant areas of cutting still form part of the scheme. We note and support the Applicant's statement that the design and finish of the cutting would be of a 'naturalistic appearance', with mix of exposed rock, terraces and steep slopes, and avoiding 'hard engineered' solutions.

## **5.7. Noise and vibration (N&V)**

### **5.7.2. Construction effects including mitigation**

In respect of noise impacts during construction, we would want adverse impacts to be minimised where possible. We would want a clear mechanism to raise concerns about any excessive noise experienced by users of the country park during construction. If possible, we would also like the contractor to provide updates on construction, so that landowners such as the Trust could plan their land and livestock management activities accordingly.

*Proposed solution:* Appropriate provisions to be built into EMP.

### **5.7.3. Operational effects including mitigation**

The proposed road scheme lies within a nationally designated landscape, the AONB, with a national trail, the Cotswold Way crossing over it. It is important in this context for the noise impacts of the operation of the scheme to be moderated where possible. The Applicant has for some time now referred to low noise road surfacing being part of the scheme, and we have been supportive of this solution.

We do however note different references to the surfacing within the ES:

- Para. 11.5.10 of the ES Noise chapter refers to a lower noise surface;
- Table 3-2 (row NV7) of the EMP refers to a low noise road surface;
- Requirement 13 refers to a very low noise surface.

Notwithstanding the above differences, we want to ensure that low noise surfacing is secured through the DCO and forms part of the resultant scheme.

*Proposed solution:* Review by Applicant and Examining Authority and clarification or changes as appropriate.

## **5.8. Socio-economic**

### **5.8.1. The effects of the Proposed Development in terms of economic and social considerations, both during construction and in operation**

The National Trust understands that the proposed road scheme would produce a variety of outcomes, including resolving the congestion and safety issues currently being experienced. We are focusing our response on this section to Crickley Hill country park, which is jointly managed by the Trust and GWT.

Crickley Hill is valued for its natural environment and also provides publicly accessible greenspace for people to enjoy, thereby supporting both mental and physical health and wellbeing. The Trust, GWT and users of the country park have an interest in any adverse effects from the road scheme being kept to a minimum.

In terms of access to Crickley Hill, this is currently via the main entrance off Leckhampton Hill and via Public Rights of Way. The main entrance with GWT land adjacent, which is leased by the Trust under an FBT, would be directly affected by the construction works. We understand that Leckhampton Hill road could be raised by 2 metres, and the entrance to the country park would also need to be rebuilt. Whilst we welcome the statement by the Applicant that access to the country park would be retained at all times, we would like to understand how this could actually work in practice. We envisage considerable impact on the ease and convenience of staff and visitors accessing the site throughout the duration of the construction phase.

*Proposed solution:* Further information from Applicant (or changes to the CTMP) to indicate how access to Crickey Hill country park could be maintained at all times during construction.

We also note that the Applicant has committed to continued engagement with landowners and others affected to help identify and mitigate potential adverse effects, and that local landowners and businesses are listed as key stakeholders in the outline Construction Traffic Management Plan (CTMP). We would like to understand how such parties would be engaged in the CTMP as it evolves, including in respect of issues such as diversion routes. We also want to understand what mechanisms would be in place to identify and mitigate any adverse effects.

*Proposed solution:* Further information from Applicant (or changes to the CTMP) to indicate how the other matters would be addressed.

### 5.8.2. Effects on local businesses

At Crickley Hill, GWT owns and manages the key visitor facilities (public car parking, café and toilets), whilst we, the National Trust manage areas of woodland and pasture in our ownership and our in-house herd of Belted Galloway cattle, graze both National Trust and GWT areas across Crickley Hill and Barrow Wake. Our herd require daily stock checks and additional work during the calving season (March to May). Haymaking takes place in the summer, and in the autumn and winter the cattle are moved to different grazing sites. It is therefore important for Trust staff to have regular and ongoing access to the site to carry out livestock and land management related work. Emergency access is also necessary to manage livestock at short notice.

For some time, the Trust has been discussing with the Applicant the safe movement of our cattle using the Cotswold Way crossing to move between Crickley Hill and Barrow Wake under supervision. This would help with the management of both parts of the SSSI and conservation grazing in the area. We are pleased that the Applicant has considered this request, to design the crossing to accommodate this. We therefore request this verbal agreement to be secured within the dDCO and in addition for further discussion to be had at detailed design stage concerning the safe exit and entry of the crossing points and approach routes 1) between Crickley Hill at the Air Balloon cottages, across Cold Slad lane and 2) from Barrow Wake, along the access route past Emma's Grove to the entry ramp of the Cotswold Way to Crickley Hill. We will also need to understand the height and proposed safety measures being considered for all users (walkers, horse riders and cyclists) using the crossing, whilst being aesthetically designed to reflect the characteristics of the geological rock exposures of the cutting and seen to be an extension between Crickley Hill and Barrow Wake.

In respect of the Trust's grazing and land management at Crickley Hill, the proposed road scheme may have an impact on the Trust claiming Basic Payment Scheme (BPS) / Higher Level Stewardship (HLS). This is because without a detailed understanding of the effects of the scheme on our landholdings, the Trust may not be able to fulfil HLS requirements.

In relation to access to Crickley Hill by National Trust staff and contractors, our position mirrors that set out in 1.8.1 above. We continue to have significant concerns about access during construction when Leckhampton Hill and the entrance to Crickley Hill country park are due to be raised and re-built. In addition, we would want our field access adjacent to Air Balloon Cottages and used by the Cotswold Way into the country park to be maintained, with an appropriate finish and gradient, particularly given that the proposed Ullenwood roundabout might be slightly raised compared to the current Air Balloon roundabout.

For the reasons set out above, the Trust has significant concerns over access to Crickley Hill country park and disturbance during construction works that affects our land management and grazing operations. We would want to explore these matters further with the Applicant, including discussing compensation.

*Proposed solution:* Further information from and discussion with Applicant to ensure the above matters are addressed and resolved.

## **5.9. Traffic and Transport (T&T)**

### **5.9.1. The case for, and benefits of, the scheme**

The National Trust agrees that measures are needed to address the traffic and safety issues associated with the 5 km stretch of single carriageway between Brockworth bypass and Cowley roundabout (the A417 'missing link') and the need to find the right solution. The Trust agrees that the dualling of the missing link should address the identified issues. The proposed road scheme would also give rise to other beneficial effects, including the re-purposing of part of the existing A417, for the benefit of people and wildlife, and safer crossing points of the A417 for users of the Cotswold Way and Gloucestershire Way. The amount of calcareous grassland creation is also a positive outcome of the scheme in addition to the commitments made by the Applicant in 2020, agreeing to:

- a) Providing a 'steppingstone' of calcareous grassland habitat to help address fragmentation of the Crickley Hill and Barrow Wake SSSI; and
- b) Providing a Gloucestershire Way crossing to incorporate a 25 metre width of calcareous grassland habitat to help address fragmentation of the SSSI, in addition to its required functions for species connectivity, landscape integration and diversion of the Gloucestershire Way.

The Trust is also pleased with the work the Applicant is pursuing to seek opportunities to deliver wider landscape enhancements that could deliver further benefits for people, wildlife and inject resilience into the landscape.

However, it is extremely important that the scheme design, landscaping and mitigation has the right investment, and that lessons are learnt from other schemes (for example, A3 Hindhead with the movement of spoil, the repurposing of the original A3 road and the pedestrian bridge that was supposed to support trees and grass that failed). If the Applicant wants to hold this scheme up as a successful example of a landscape led road scheme, it is important that every detail is considered, the right mitigation delivered and embedded and a comprehensive long-term management plan is implemented and monitored with due care and attention. This needs to be supported by key interested parties who will remain the custodians of the landscape once the road scheme is opened to traffic.

### **5.9.2. Strategic vision and objectives for national networks**

The Trust has made comments under Air Quality and Emissions in relation to climate change and road building. In respect of strategic vision, the Trust supports the scheme's landscape led vision and we have sought to emphasise the need for landscape led solutions as the scheme has evolved. The Applicant has made significant progress over the last twelve to eighteen months, particularly concerning the natural environment aspects of the proposed scheme. We have commented further on these matters under Biodiversity, Ecology and Natural Environment and Landscape and Visual.



### **5.9.5. Alternative routes/solutions**

Over the last five years, the National Trust has actively engaged in the Applicant's consultations on the emerging road scheme. Originally, when four tunnel options and two surface options were being considered, and a tunnel solution appeared to be the best performing option in environmental terms, we had to accept that the budget envelope would only accommodate a surface option being developed. Two surface options were then taken forward for further development and consultation. We also raised the possibility of a cut-and-cover tunnel to reduce the landscape impacts of an otherwise surface-only scheme. In the absence of any tunnel, we advocated for a robust green bridge to provide landscape and ecological connectivity, but it had to be in the right location, connecting the same habitats either side. However, the originally proposed green bridge between Crickley Hill and Barrow Wake would have had unacceptable ecological implications. We then took part in workshops with the Applicant and their consultants. These workshops led to the location for the now proposed multi-use Gloucestershire Way crossing, and we have had the opportunity to provide feedback on the form and function of this crossing. The multi-use crossing, which is akin to a green bridge, will be a positive outcome for the scheme in terms of connectivity for people and wildlife.

Through engagement, the Trust understands how the scheme has evolved and how the current proposal has reached its current form. We also note that the scheme will bring some notable public benefits, but the onus is now on the Applicant to justify the scheme as proposed.

We would encourage any further measures, such as through detailed design or that can be secured through the dDCO, to minimise adverse impacts, maximise benefits and ensure the best possible outcomes are achieved. To truly be a landscape led scheme, it is not just about access and connectivity for people across the landscape, but also to reconnect wildlife corridors and create a mosaic of habitats that are interwoven with the road scheme design. Further comments can be viewed in our section on Scheme Design – additional points.

### **5.9.6. Effects on the existing road network during and after construction, including the scope of the Construction Transport Management Plan**

As stated under Socio-Economic, the Trust welcomes the statement by the Applicant that access to the country park would be retained at all times, although we would like to understand how this would be achieved in practice, during construction. In respect of the outline Construction Transport Management Plan (CTMP), we note that the Applicant will continue to engage with landowners to help identify and mitigate potential adverse effects. We would like to understand how such parties would be engaged in the CTMP as it evolves, including in respect of issues such as diversion routes. We would also want to understand what mechanisms would be in place to identify and mitigate any potential adverse effects.

*Proposed solution:* Further information from Applicant (or changes to the CTMP) to indicate how access to Crickey Hill country park will be maintained at all times.

### **5.9.10. Operational effects including on the surrounding road network and the provision for Non-Motorised Users/effects on PRow**

The proposed road scheme would address the traffic congestion experienced at the Air Balloon roundabout and although it could increase traffic movements along Leckhampton Hill, there should be an overall benefit in terms of access to Crickley Hill country park when the scheme is operational.

In respect of Public Rights of Way (PRow), the existing A417 creates an obstacle that users of the Cotswolds Way and Gloucestershire Way have to negotiate. The road scheme has the potential to address these issues, as well as re-purposing a substantial section of the existing A417. This may however increase recreational pressures and ecological impacts at Crickley Hill which we have provided comments under Biodiversity, Ecology and Natural Environment section, in addition to our principal matter concerning the impact to Crickley Hill during construction and operation.

### **5.9.11. Junction designs**

The National Trust has a particular interest in proposed highway infrastructure and landscape works near to our land at Crickley Hill country park. This includes the proposed Ullenwood roundabout, the new Cold Slad lane, the Cotswold Way crossing and the field access to our land at the Air Balloon Cottages. At present, the submitted plans do not provide sufficient detail and therefore it is difficult to fully appreciate a true to life (i.e. not artistically influenced) representation of the future infrastructure and therefore, look and feel of the area in the immediate vicinity around Crickley Hill. Regarding detailed design, we have suggested that a Working Group or Consultation Panel, above and beyond the relevant local planning authorities, could be established, to be consulted and provide feedback. As an example, with the HS2 rail scheme, the engagement is being broadened for 'key design elements' of the scheme.

*Proposed solution:* Applicant and Examining Authority to consider the case for and benefits of a Working Group or Consultation Panel on key design elements.

### **5.9.13. Mitigation/traffic calming for the surrounding roads**

In respect of the new stretch of Cold Slad Lane, from the proposed Ullenwood roundabout and past the Cotswold Way crossing, we understand that vehicle usage of the lane should be light, thus minimising the impacts of vehicular traffic on users of the crossing and that part of the existing A417 will be used to safely design this access lane. The detailed design of this area should ensure that it can safely accommodate all users and that residents that require the use of Cold Slad lane to access their properties during construction period are fully considered. The Trust also requires access via Cold Slad lane to access the northern area of our land ownership of Crickley Hill. However, safety must be the key consideration, including crossing points from the landing point of the Cotswold Way bridge, across Cold Slad lane and onwards towards Leckhampton or into Crickley Hill via the existing PRow.

## **5.10. Water Environment (WE)**

The Trust has no comments to make under Water Environment, although we understand that the Environment Agency will be making representations in this regard.

## Part C: Scheme Design – additional points

The National Trust would like to make comments on aspects of scheme design including the crossings and bridge structures, the re-purposed A417 and how stakeholders would be involved as the scheme progresses. From the Trust's perspective, it is important that the scheme design and detailed design, including aesthetics, materials and finishes, responds to its location within the Cotswolds AONB, and satisfactorily caters for all user groups.

We would want to see provisions for interested parties to be involved in meaningful consultation as the design of the scheme evolves and the detailed design is agreed. We acknowledge that there are some provisions for stakeholder engagement in the outline EMP and its constituent documents. However, it may be beneficial for a Working Group or Consultation Panel to be established to ensure relevant stakeholders could be consulted and provide feedback, particularly on key design elements. This could then inform the details submitted to the Secretary of State for approval.

### 'Landscape led' Design: Bridge structures

The National Trust does support the provision of all bridges in the scheme, in the location where they are proposed, subject to detailed design. It would also be important to consider how walkers, horse-riders and cyclists safely approach and leave the crossings and overbridges, to ensure their own safety and to safeguard priority habitats and wildlife.

- **Cotswold Way crossing.** The Trust agrees with the Applicant that the design, form and appearance of the Cotswold Way crossing should respond to the natural and built character of this part of the Cotswolds and should make a positive contribution to sense of place. The Trust has previously questioned whether the appearance of the proposed crossing would reflect the characteristics of the Cotswolds. At only 5 metres wide, thought would need to be given as to how to avoid conflict between the different user groups, including disabled users, walkers, cyclists, horse-riders and periodic movement of cattle.
- **Gloucestershire Way crossing.** The National Trust agrees with the provision of the Gloucestershire Way crossing to incorporate a 25m width of calcareous grassland habitat to help address fragmentation of the SSSI, in addition to its required functions for species connectivity, landscape integration and diversion of the Gloucestershire Way. In terms of design, we understand that the Applicant considered two main designs and selected a single span structure on safety grounds. Aesthetically, the alternative design, a double arch crossing, may have been more appropriate in an AONB landscape context. The detailed design of the crossing should try to avoid the crossing appearing as an incongruous or intrusive structure.

We would also like to understand how the bridge would be engineered to successfully sustain the intended calcareous grassland and hedgerow habitats. We absolutely want to see this bridge succeed and again there are lessons to be learnt from other schemes. In this instance, we appreciate that the size and

habitat are different, but for the A3 Hindhead scheme which directly impacted National Trust land, a 'green' bridge was constructed known as Miss James' bridge but it has been unsuccessful in establishing a habitat, leaving the bridge in the condition below, where tree whips have been unable to establish and the lack of drainage has created these conditions:



*Images of Miss James' Bridge, A3 Hindhead road scheme, Surrey*





- **Cowley and Stockwell overbridges.** These belong to a design ‘family’ along with the Gloucestershire Way crossing, although again attention is needed on their detailed design, use of dry-stone walling, etc.

It will be important that the design, form and appearance of all bridge structures respond to the natural and built character of this part of the Cotswolds and should make a positive contribution to sense of place. In 2020, the National Trust, along with Cotswolds Conservation Board (CCB), Gloucestershire Wildlife Trust (GWT) and Natural England submitted a bridges brief to the Applicant that set out our priorities as environmental stakeholders, regarding all four proposed access bridges and crossings within the scheme design using National Highways’ Aesthetic Appraisal Document (AAD) methodology. We would like to understand how the recommendations in that document have been considered and incorporated into the current proposed designs.

As a suite of bridge structures, we are still concerned that they appear visually more urban in design and perhaps not fully considering the landscape within which they sit. We ask the Examining Authority that consideration is given to provide ecological connectivity wherever possible, even through landscaping the landing points so that they naturally provide funnelled access routes across the dual carriage for wildlife, as well as providing primary access routes for people and in some instances, vehicles. As the bridge structures and aesthetics are refined, we would certainly welcome a working group being established for the detailed design stage, that would be mutually beneficial for all parties.

As an example, the images below illustrate how a landscape led approach has underpinned the construction of bridges on the Weymouth Relief Road scheme in Dorset that are now providing this benefit and reflect the local landscape characteristics.



*Example of overbridge spanning the dual carriageway, Weymouth relief road scheme*



*Approach to underpass bridge with dual carriage above, Weymouth relief road scheme*



*Standing on the overbridge spanning the dual carriageway, Weymouth relief road scheme*

## **Repurposed A417 / Proposed Air Balloon Way**

The National Trust supports the repurposing of the A417 and we believe it is an exciting opportunity to deliver a green corridor that helps to connect a severed area, and the Applicant is aware that we have expressed there are lessons to be learnt from other road schemes, including the A3 Hindhead tunnel, Surrey. The A3 Hindhead road scheme is a particularly good example as the scheme directly impacted the Trust's land at the Devil's Punch Bowl, and the same methodology to repurpose the road to reconnect the landscape was undertaken there.

The recently published five-year post-opening evaluation raised concerns regarding the strategic objective to provide environmental mitigation that would minimise predicted adverse environmental impacts. It identified issues that remain around maintenance, lack of establishment of heathland and the gorse growth which is

impacting new planting. Issues with the A3 road scheme must not be repeated regarding using topsoil spoil and not taking sufficient measures to monitor and manage the healing process of habitats and grasslands along this escarpment.

As mentioned before, a working group through detailed design would be extremely beneficial to ensure this design element is successful first time. It will be important that it is seamlessly integrated into the landscape and that lessons are learnt from other schemes – especially in relation to surface type and avoiding it having the appearance of an abandoned road or an afterthought, but having the right investment and solution implemented. We understand that it will be important that the most appropriate surface is provided for all users, but it must not appear as traditional tarmac, nor an urban ‘road’ in the landscape. The multi-purpose surface needs to blend into the surrounding grasslands whilst allowing easy transition for wildlife. It will be important that the right balance is given between access and protecting SSSI, priority habitats, species and heritage assets.



## **Part D: Conclusion**

The National Trust supports the landscape led vision for the road scheme. The Trust would want the best possible scheme within this sensitive landscape context; with the effects fully assessed and understood, the adverse impacts robustly mitigated, and the benefits and opportunities secured through the draft DCO and its requirements, and through the EMP and its constituent parts.

We have raised a range of issues, concerns and suggestions in this written representation, including in relation to our own landholdings at Crickley Hill and the effects of the scheme more generally. We hope that our written representation has provided sufficient evidence and context for matters of concern, but also highlighted areas that would be beneficial to the scheme design if incorporated at this stage. Ultimately, we want to see a 'landscape led scheme' delivered and for it not to remain merely a theoretical aspiration.

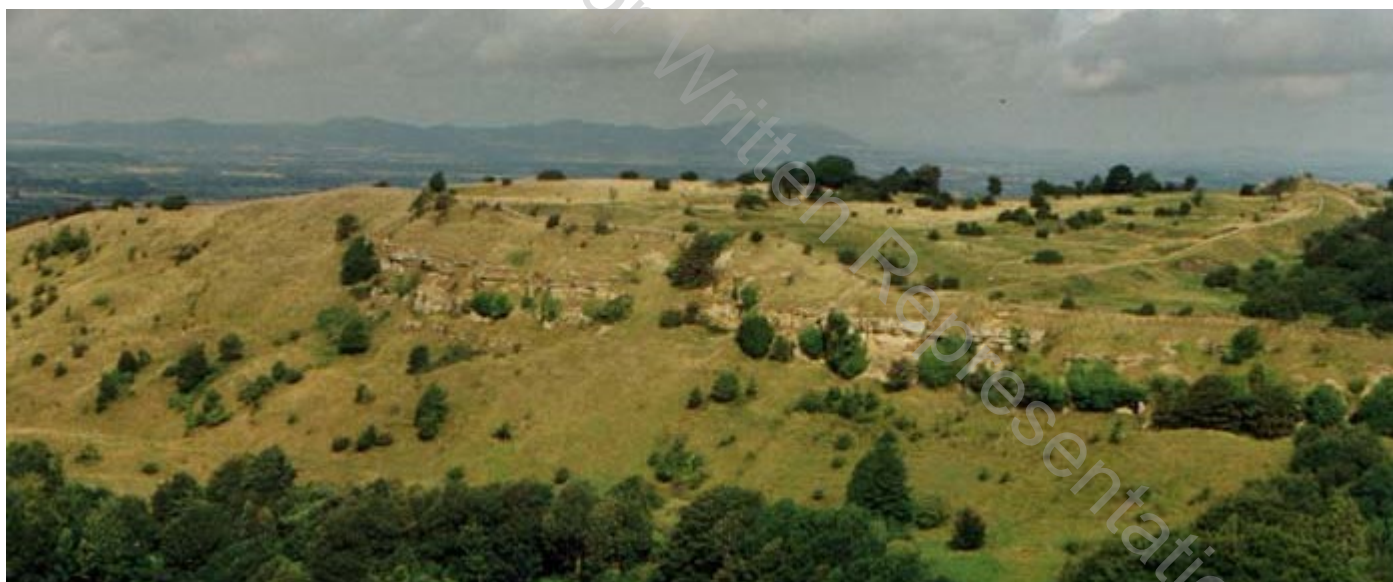
We look forward to continuing our engagement with the Examining Authority, the Applicant and fellow interested parties through this examination stage and request

## **Annex A**

**Extracts of the jointly commissioned Insight Report, supporting 4.1.1 concerns of visitor impact on Crickley Hill**



Crickley Hill Insight Study  
FINAL REPORT  
November 2018



## 1. Executive Summary

The National Trust and Gloucestershire Wildlife Trust commissioned this insight report to provide answers to a number of questions that could influence the future strategy for Crickley Hill Country Park. This is in the context of plans for a new road in the vicinity, as well as possible improvements to facilities at Crickley Hill and Barrow Wake. The report has been prepared using existing data and audience insights from the two Trusts – plus rapid surveys with a number of audiences that could be affected by the proposals.

The key messages from the study are:

### The local community

- there are 1.45m households within an hour's catchment of Crickley Hill and Barrow Wake
- awareness of Crickley Hill is very high amongst local communities and the majority (except in Gloucester) have visited the site at least once in the past. Awareness and use of Barrow Wake is very low
- correct awareness of who owns/manages Crickley Hill is very low; fewer than a quarter of residents mentioned NT/GWT

### Visitors to Crickley Hill

- Crickley Hill attracts some 250,000 visitors a year. About a third of these are members of the National Trust; about 1 in 7 are members of Gloucestershire Wildlife Trust
- although the majority of visitors come for a walk, the primary motivation for visiting the site is for the views. Peace and tranquillity is also an important factor
- Crickley Hill is a very special place for many of its visitors – special for important family connections, a connection with

nature and history, a place to encourage children's imagination and for a sense of spirituality

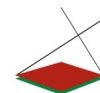
- visitor satisfaction is high, but there are some grumbles around visitor welcome, signage and interpretation, footpaths, toilets and upkeep
- potential developments that were most favoured included a children's wild-play trail, more information and interpretation and more benches to sit and look at the views. Additional catering was not favoured
- there is broad support for restrictions on public access, but the rationale for this would require careful explanation

### Barrow Wake

- there are low levels of awareness and low levels of use
- there is some interest in having more facilities at the site, although visitors' needs are fairly basic
- the site could supplement Crickley Hill but is unlikely to provide an alternative destination for Crickley Hill visitors

### Perceived impact of the A417 plans

- there is strong support for the proposed new road amongst all audiences researched in this study
- people perceive positive and negative impacts from the new road, with mostly negative perceptions in terms of pollution and the loss of tranquillity. Perceived wildlife/ecological impacts are also strongly negative – but less so for the site's archaeology
- either a bridge or a trail would do most to encourage people to visit the adjacent site at Barrow Wake.



## New Housing

In 2017, the local authorities in Gloucester, Cheltenham and Tewkesbury voted in favour of adopting their proposed Joint Core Strategy (JCS). The strategy defines the areas for future housing development in the three boroughs.

The overall growth in housing across the three boroughs – by 2013 – is projected to be about 35,200 new homes. The forecast increase in population in the three boroughs is nearly 25,000 by 2026 (+7%) and 52,000 by 2041 (+16%).

Not all of the areas for development are identified but, included in the plans were significant new housing developments in North Brockworth. The Brockworth plan would see 1,500 new homes built alongside the A417, between the junction with the A46 (Shurdington Road) and the M5, potentially resulting in a population increase of some 3,500 residents.

There are also existing plans for new housing between Leckhampton and Shurdington that would see some 370 homes built.

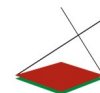
## Local Tourism

According to the Value of Tourism 2010 Report for Gloucestershire, the **Cotswolds** attracts about 16m visitors to the area, generating about £1bn to the local economy. The wider Cotswolds AONB (Area of Outstanding Natural Beauty) attracts 23m visits, with annual visitor spend of over £425m (according to the most recent Destination Management Plan).

Visitor profiles for the Cotswolds are predominantly UK-based, aged 55 years and over, ABC1 social grade status, visiting without children and living in the South West, West Midlands and the South East. Visits tend to be a mix of day trips from outside the Cotswolds, short breaks staying outside the Cotswolds, with a high proportion of repeat visits and travelling by car. These visitors do have high satisfaction levels, hence the high proportion of repeat visits.

Figures released by **Cheltenham** Borough Council in 2016 show that tourism in Cheltenham during that year was worth £158million to the local economy, up £4million (2%) on the previous year. Cheltenham receives 200,000 visitors every year to its cultural attractions from people who live outside the County, of whom approximately 6% are from overseas. With an average visit expenditure of about £74, the value of this tourist market is about £15m in terms of cultural visitor spend per year, accounting for 11% of total visitor expenditure in the town.

**Gloucester** attracts 5.9 million visitor trips each year and visitor spend is £207 million annually. The value of the visitor economy in Gloucester grew by an average of 7.9% per annum from 2002 to 2010 and that growth appears to be continuing.



## Visitor Catchment

Various recent research studies for the National Trust have revealed that visitors to outdoors places typically travel about 40 minutes to reach their destination – whether from home or from holiday accommodation. Clearly this average travel time is dependent on the relationship between the site and its surrounding population – and on the importance or attractiveness of the site itself. As it stands presently, the average journey time of visitors to Crickley Hill is 26 minutes and 46 minutes (close to the NT average) for visitors intercepted at Barrow Wake.

The majority of visitors to **Crickley Hill** (85%) start their journey to the site from their own home, but 15% of visitors are tourists, arriving from holiday accommodation or from the homes of family/friends. The residential addresses of visitors to Crickley Hill cover an area from Brighton to Nottingham, and from Swansea to London, although the vast majority are within the Cheltenham/Gloucester area. As may be seen from the catchment map alongside, more visitor demand originates in Cheltenham than in Gloucester.

In contrast, many more visitors to **Barrow Wake** – some 45% of the total, three times the level seen at Crickley Hill – can be classified as tourists and (of the total) a quarter arrive there from holiday accommodation. Residential addresses for these visitors tend to lie along the M6/ M5/ M4/ M42 corridors, suggesting that this site attracts more people who are stopping off briefly on a journey that takes them along the A417. Of those who live locally, Gloucester is more important than Cheltenham in this case.

At both sites, the majority of visitors arrive by car/van (>90%). At both sites, 4% arrive on foot.

Figure 3.3: Local catchment of Crickley Hill

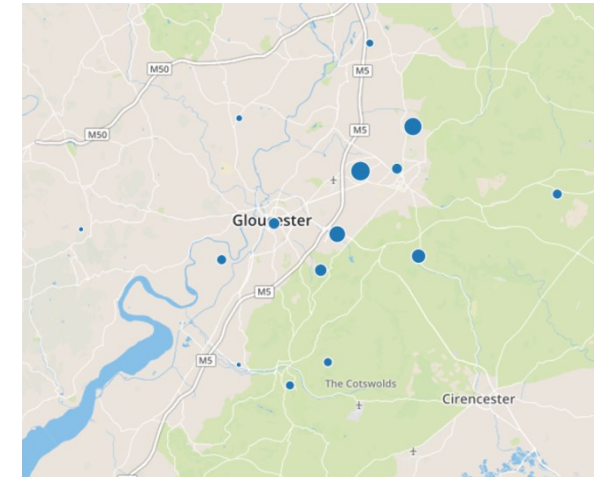
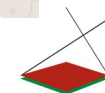
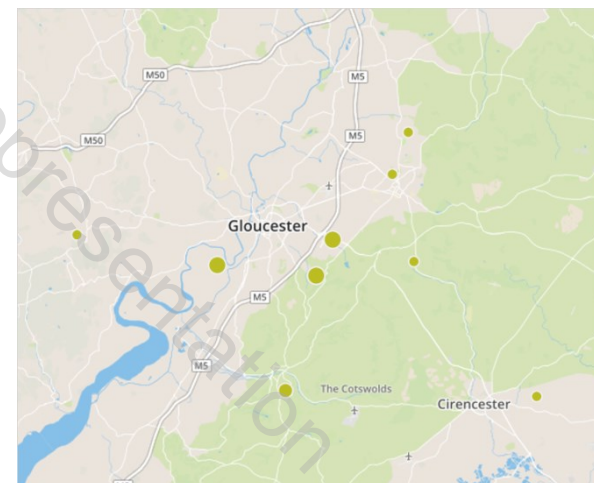


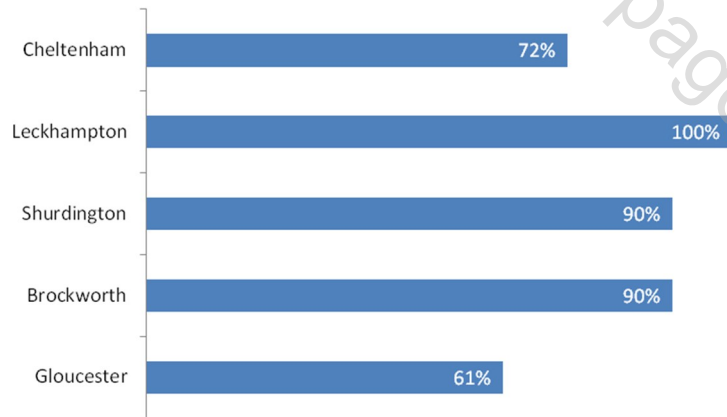
Figure 3.4: Local catchment of Barrow Wake



## Awareness and Reach

Amongst residents in local communities, awareness of the country park at Crickley Hill is very high, particularly amongst those areas closest to (or looking up at) the site itself. In the major conurbations, awareness is much lower – but still quite high.

Figure 3.5: Awareness of Crickley Hill, Local Residents



The number of people who have (ever) visited the site broadly follows the levels of awareness – visit behaviour is higher in Leckhampton, Shurdington and Brockworth, with Gloucester being the one locality with low visiting behaviour, far lower than the awareness level itself might suggest.

Of those local residents who are making visits, the majority had visited Crickley Hill more than once in the past 12 months.

Figure 3.6: % Visited Crickley Hill, Local Residents

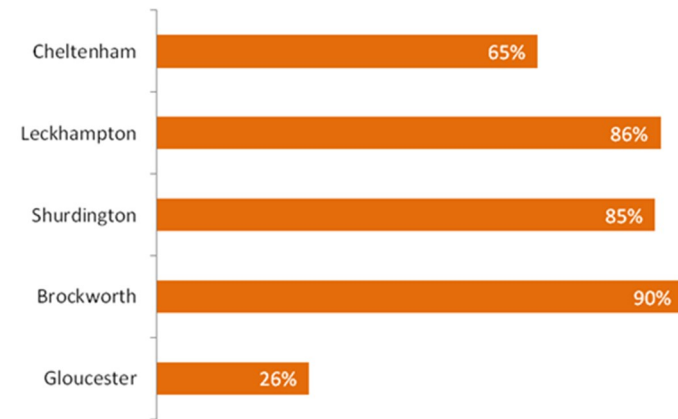
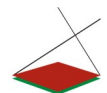
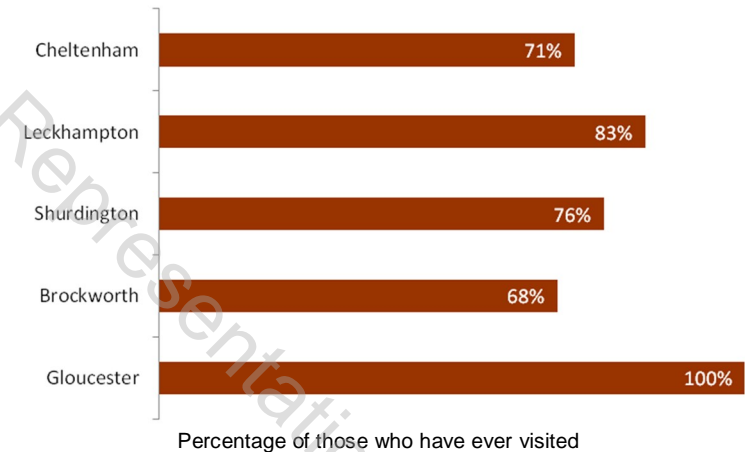


Figure 3.7: % more than 1 visit in 12m, Local Residents





People come to Crickley Hill and Barrow Wake for a variety of activities, with the most evident being walking and dog-walking – which are equal in importance<sup>3</sup>. Just over a quarter of visitors come to sit and look at the views<sup>4</sup>, with a similar number coming to visit the café. Experience of the countryside and social reasons are also important for about a fifth of visitors. Very few people came for a visit explicitly to see nature or history.

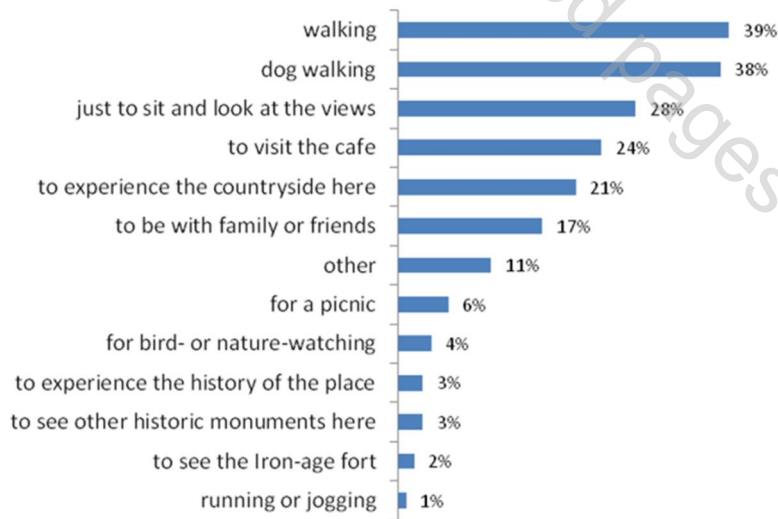


Figure 4.6: Visit Purpose, CH & BW Visitors

<sup>3</sup> More than a third of those walking (ie more than 10% of the total) were doing a long-distance trail. About a third of walkers were on the Cotswold Way, far fewer (5%) the Gloucestershire Way – the numbers are equal at both sites.

<sup>4</sup> Two-thirds of Barrow Wake visitors just sat and looked.

The results here are very similar to those from GWT’s own 2017 survey. Going for a walk was the most-cited activity (“What do you do at Crickley Hill?”), with enjoying the view second and enjoying the peace and quiet third (only the top ten activities are shown here, those with 20% or more of responses).

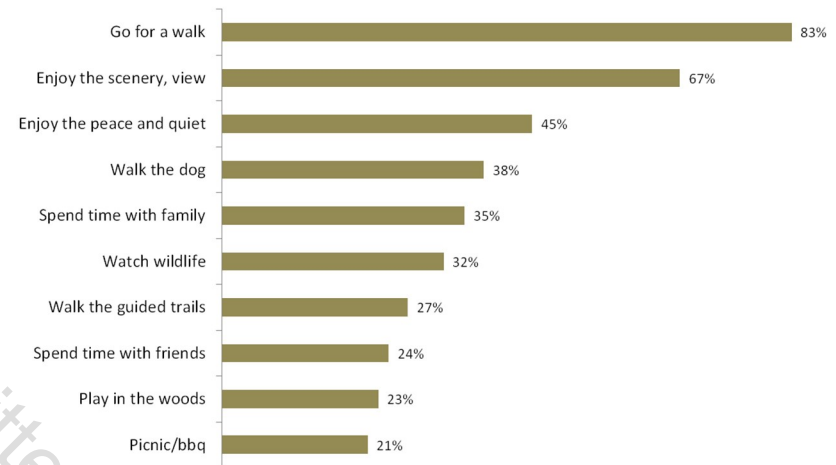
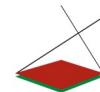


Figure 4.7: Visit Purpose, GWT 2017 Visitor Survey

In terms of where people go during their visit, there is a remarkably-wide use being made of the Crickley Hill Site, with all ‘quarters’ of the site being visited by a majority of people and very high usage (naturally) of the south-west quadrant (which include the car park and visitor facilities). However, very few visitors to Crickley Hill are also making use of Barrow Wake on the day of their visit (although a third are aware of Barrow Wake and 21% have visited it at least once in the past).





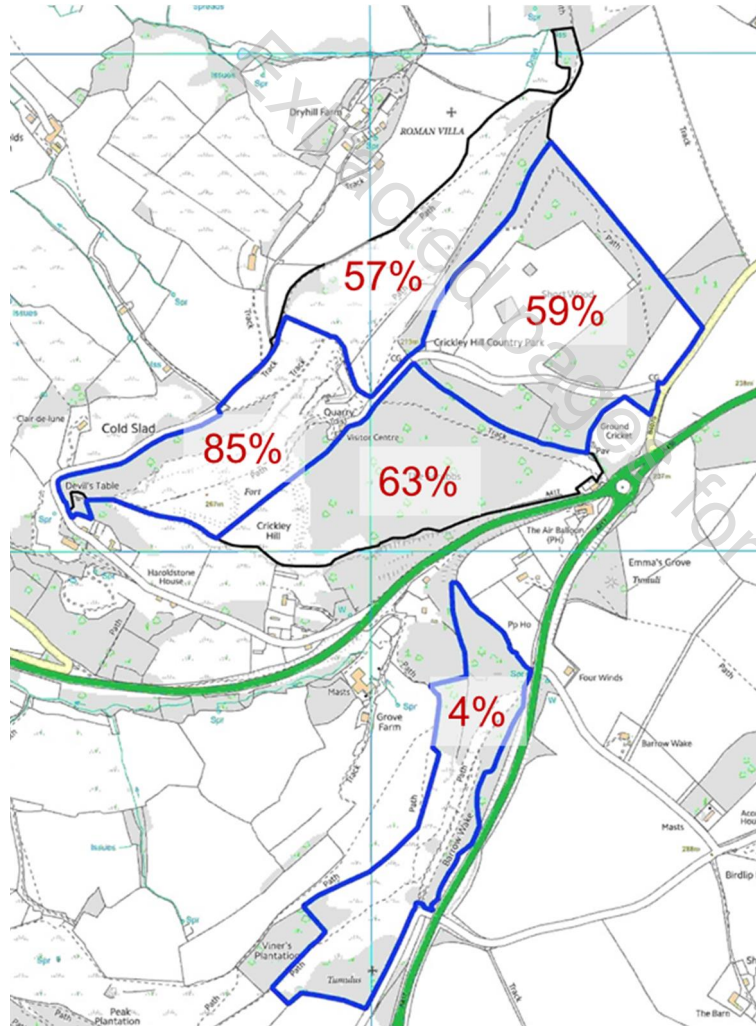


Figure 4.8: Use made of the two sites by Crickley Hill Visitors

The equivalent usage chart for Barrow Wake visitors is shown below. As may be seen, between 6% and 10% of visitors there had also gone across for a visit (or intended to visit) to Crickley Hill, with the south-east quadrant being the most popular.

At Barrow Wake, more than a half of visitors (55%) were aware of Crickley Hill and most of these people (47%) had visited the site at least once in the past.

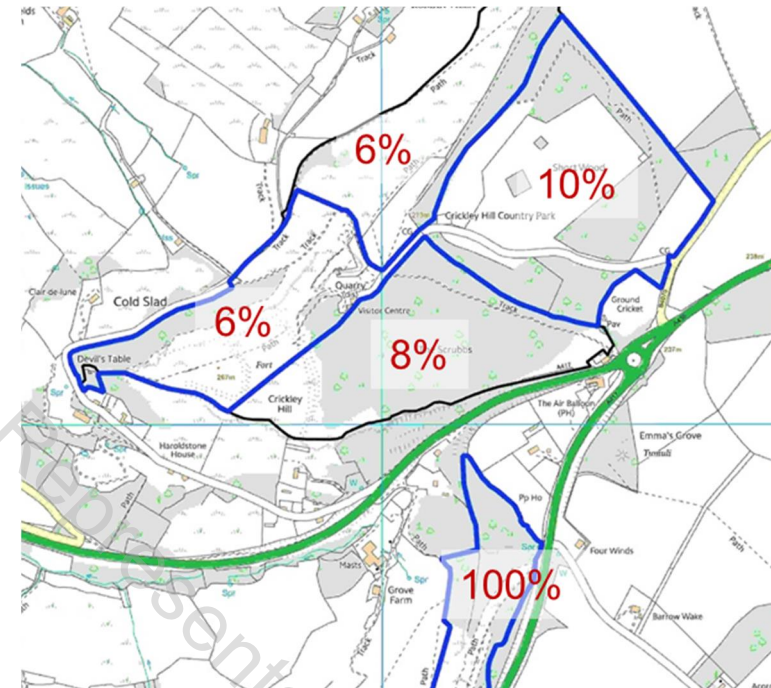
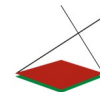


Figure 4.9: Use made of the two sites by Barrow Wake Visitors



## 5. Visitor Motivations

### Background : Landscape Benefits

The past ten years or so have seen a significant interest amongst government and academics about the benefits that landscapes and ecosystems deliver to humankind. The focus has mainly been on such benefits as food production, carbon sequestration and flood mitigation. But cultural benefits, values or services have also been examined. Cultural values include a sense of the past (history), a sense of place or belonging, inspiration, tranquillity and spirituality that people get when in the outdoors – plus the benefits that arise from outdoors activity.

A series of studies for Natural England by The Research Box (and various universities) have identified which types of landscape – and which features in the landscape – deliver cultural benefits to landscape users. The studies identified, for example, the importance of water, woodland and hills/mountains in delivering the greatest cultural benefits. Later work with Lancaster University created an England-wide map of cultural benefit intensity, which shows a low cultural ‘score’ for large areas of agricultural land in the south east of England, but a high score in upland areas (such as the Pennines and Lake District) – and for the edge of the Cotswold scarp. A key issue for this type of landscape is that people respond best to variety – whether that includes height, water or such features as hedges and walls, or even lone free-standing trees.

These studies also showed the importance of historic features in the landscape – a sense of history is not felt spontaneously, but all kinds of historic features (from hilltop forts to old drovers’ roads, abandoned railway viaducts to ruined pit buildings) deliver strong cultural values. Historic features provide a sense of continuity, a connection with our past

| Feature               | History | Place  | Inspiration | Calm   | Leisure/ activity | Spiritual | Learning | Escape |
|-----------------------|---------|--------|-------------|--------|-------------------|-----------|----------|--------|
| Water, rivers streams | Low     | Medium | High        | High   | High              | High      | Medium   | High   |
| Bogs & Marshes        | Low     | Low    | Low         | Low    | Medium            | Low       | Medium   | Low    |
| Coast                 | Medium  | High   | Medium      | Medium | High              | High      | High     | High   |
| Mountains & Hills     | Medium  | Low    | High        | Medium | High              | High      | Low      | High   |
| Moorland              | Low     | High   | High        | Low    | Medium            | High      | Low      | High   |
| Grassland             | Low     | Low    | Low         | Low    | Low               | Low       | Low      | Low    |
| Woodland & Trees      | Medium  | Medium | High        | High   | High              | High      | Medium   | High   |
| Field Systems         | High    | High   | Medium      | High   | Low               | Low       | Low      | High   |
| Hedges, walls, lanes  | High    | High   | Low         | High   | Medium            | Medium    | High     | Low    |

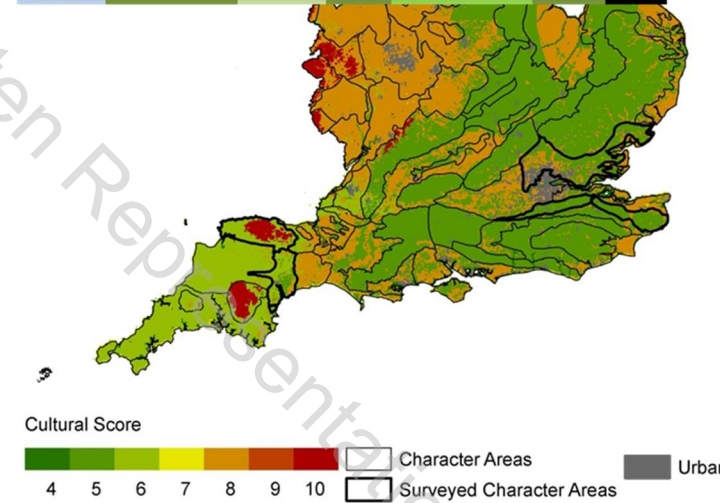
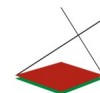


Figure 5.1: Landscape Cultural Scores (Research Box for Natural England)



and show man’s mark on the landscape (even if their rationale in the landscape may not be well understood).

The studies also indicate that landscapes can deliver disbenefits, through visual intrusion and noise (as examples).

## Background : Visitor Motivations

Over the past two years, the National Trust has been using a fairly-standard question in several surveys to understand what motivates people to visit its outdoors places and what benefits they get from their visit. The research has shown that the overwhelmingly-most important motivation is the **sense of beauty** at the place. Following this, the most important motivations (akin to the landscape cultural services or values described above) delivered by outdoors places are:

- physical well-being
- enjoyable down-time
- peace & tranquillity
- social engagement
- physical activity.

Not all places deliver exactly the same benefits to visitors, but this background is interesting for a comparison with the outcome of the surveys that were undertaken as part of this Crickley Hill insight study.

Source: Coast & Countryside Visitor Profiling Report, 2016

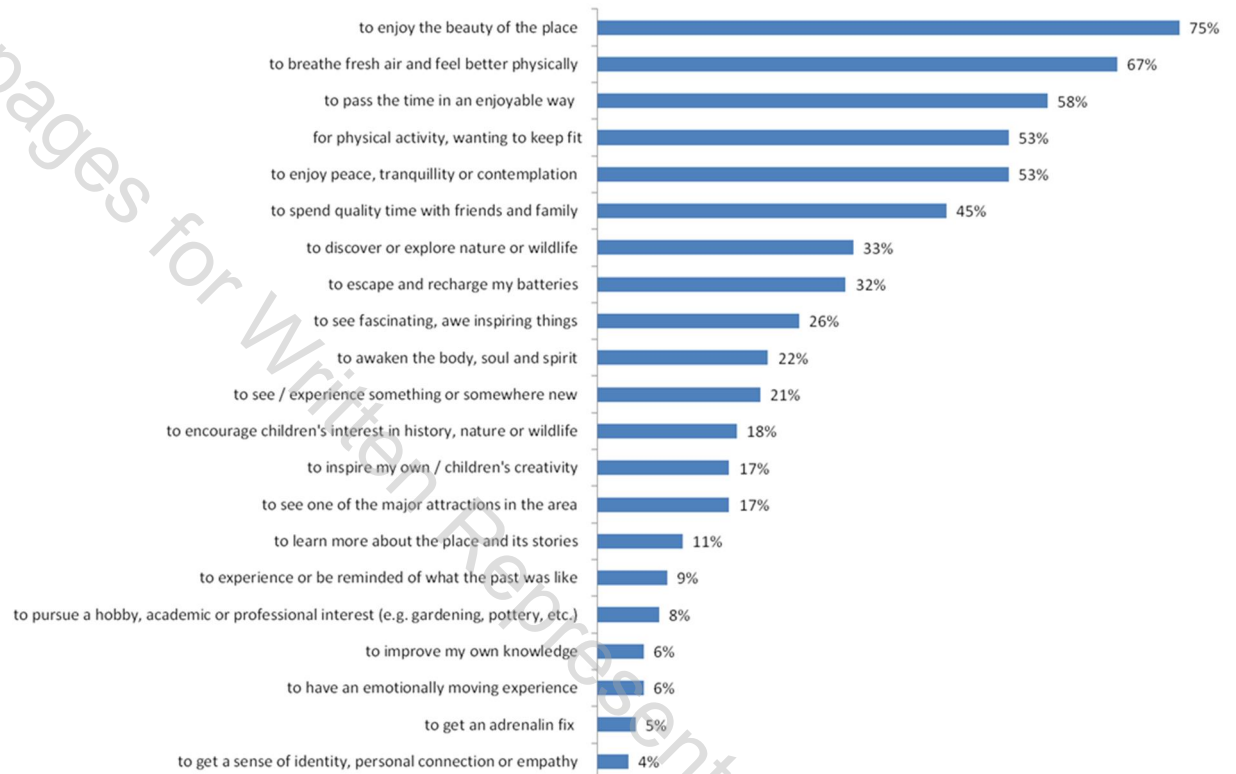
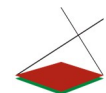


Figure 5.2: Visit Motivations



Previous research findings, collated by the Trust in 2016 (the Childreth report) clearly indicate that different lifestages have different motivations when visiting the countryside or coast:

- **Families** want to entertain and educate their children about nature
- **Young Independents** (18-39) are probably the hardest target, because of their busy lifestyles
- **Mature Independents** (40-59) are strongly connected with nature
- **Seniors** (60+) want to preserve nature for future generations.

*“My kids would stand and stare at the big waves. They do not see it very much. It is a natural thing that is magical for them”* **Families**

*“When you are younger you’ve got more of a challenge on your mind: rather than looking at the scenery, you’ll climb the mountain or do whatever. Then as you get older, you think ‘Oh, it’s nice here, isn’t it”* **Seniors**

## Crickley Hill Visitor Motivations

A slightly similar question was asked of everyone who had visited Crickley Hill. The results here show some significant differences from the national picture outlined on the previous page – for example, the views from the site are hugely important to visitors. Peace and tranquillity is slightly less important than the national picture, but is third in importance at Crickley Hill (after the opportunity to walk on the paths and trails). As may also be seen, archaeology and wildlife are not strong motivators for these people currently.

The results here are very similar to those obtain by GWT in its own survey of users in 2017, as the word cloud shown overleaf illustrates (Figure 5.4). The key responses to the question “what do you most like about Crickley Hill?” are the views, scenery, peace and quiet, space, woods history and the café.

And why go to Crickley Hill rather than somewhere else? On the face of it, many people said they come to Crickley Hill for fairly mundane reasons – such as being nearby, convenient, on route, a place to walk or walk the dog, for the café and the views.

But the in-depth interviews conducted as part of the Consultation Day revealed many more emotional factors – these are discussed in the following section.

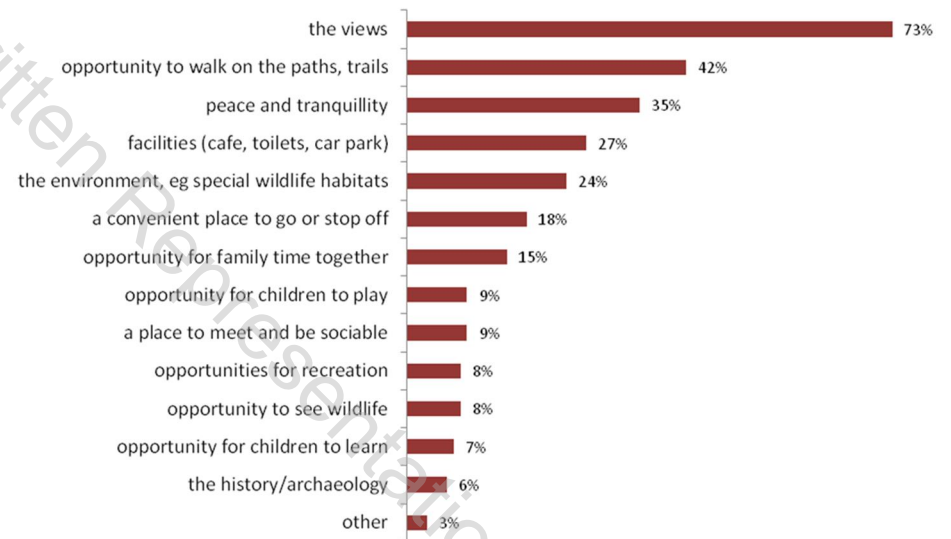
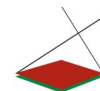


Figure 5.3: Visit Motivations, Crickley Hill Visitors







## What makes Crickley Hill Special?

During the course of the Consultation Day, visitors were invited to undertake a number of tasks (or 'games'), including:

- identifying on a map of the site, the places that they considered 'special'
- describing what makes Crickley Hill unique and distinctive
- identifying which features of the site they appreciate.

Discussions were held with visitors as they completed these tasks, as a way of understanding in more depth the issues at play.

The approach revealed that there are many more emotional factors in making Crickley Hill special than the ideas that were suggested in the surveys. So, although people talked about the prosaic (such as the café, views and the mix of land cover – open space and trees), they also talked about spiritual reasons; a deep family bond; a connection to nature; a mystical place that encourages children's imagination. Some of the 'unique and distinctive' comments included:

*Feels like a part of ancient England*

*Sense of place and space in the universe*

*I love this place and I want my ashes scattered here. This is where I am happy*

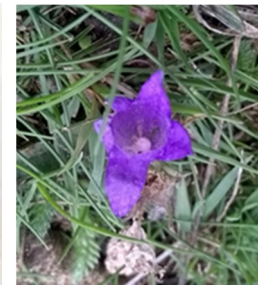
*My son, a wheelchair user is able to join with the family. He has a sense of freedom*

*Great mixture of history and nature, great walk because of the diverse habitats and views*

*Amazing views. Forest playing area for children. Amazing woodland*



A Gruffalo house in the woods

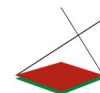


A gentian, discovered on the day

We would conclude that, to visitors, the unique character of Crickley Hill is defined (in no particular order) by its:

- history
- nature
- panoramic views
- accessibility
- opportunities for imaginative play
- inspiration
- sense of magic or mysticism
- spirituality.

The places that these features are delivered are very varied. The map alongside shows the places that people considered to be 'special' and it is



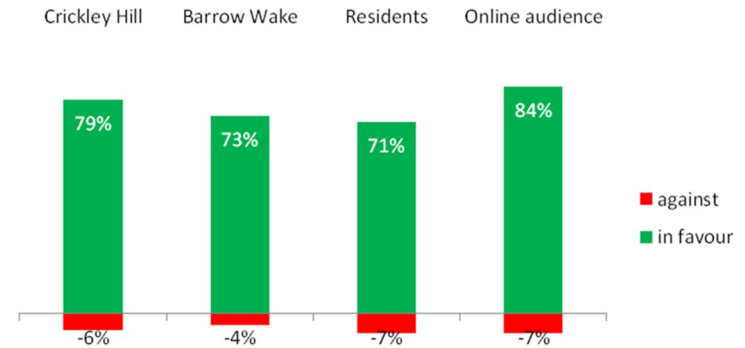


## 7. Reactions to Highways England’s Proposals

### Overall Support

After being shown the two route options and given a brief explanation, all research audiences were asked if they were generally in favour of the road scheme, or not. As may be seen, all audiences – visitors, residents and the online community – were strongly in favour of a new road.

Figure 7.1: Reactions to Road Scheme, All Research Audiences



### Perceived Impacts

People were asked whether they thought the impact of the road would be positive or negative, in terms of access to Crickley Hill, their overall enjoyment of the sites, the view, pollution and peace or tranquillity. For all these aspects, the perceptions are quite finely balanced between positive and negative. The Consultation Day revealed perhaps why – on pollution, for example, some thought the freer traffic flow resulting from the new road would reduce pollution, whereas others believed increased traffic would make it worse.

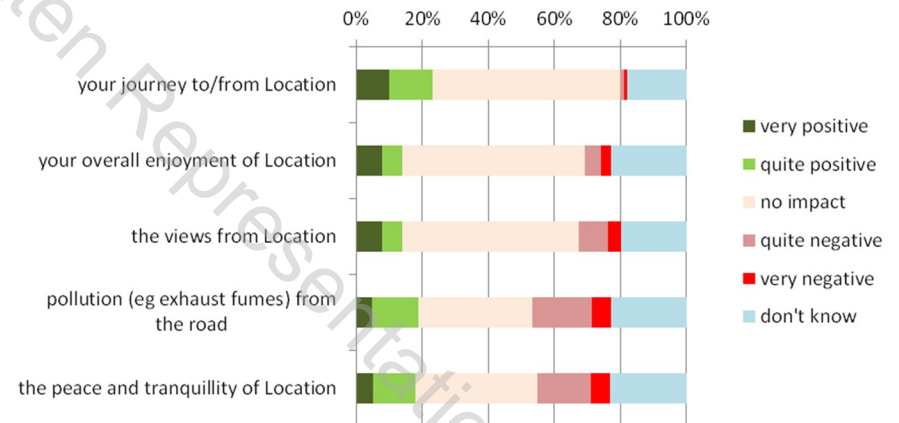
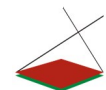


Figure 7.2: Perceived Impacts of Road Scheme, CH Visitors

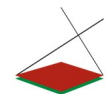
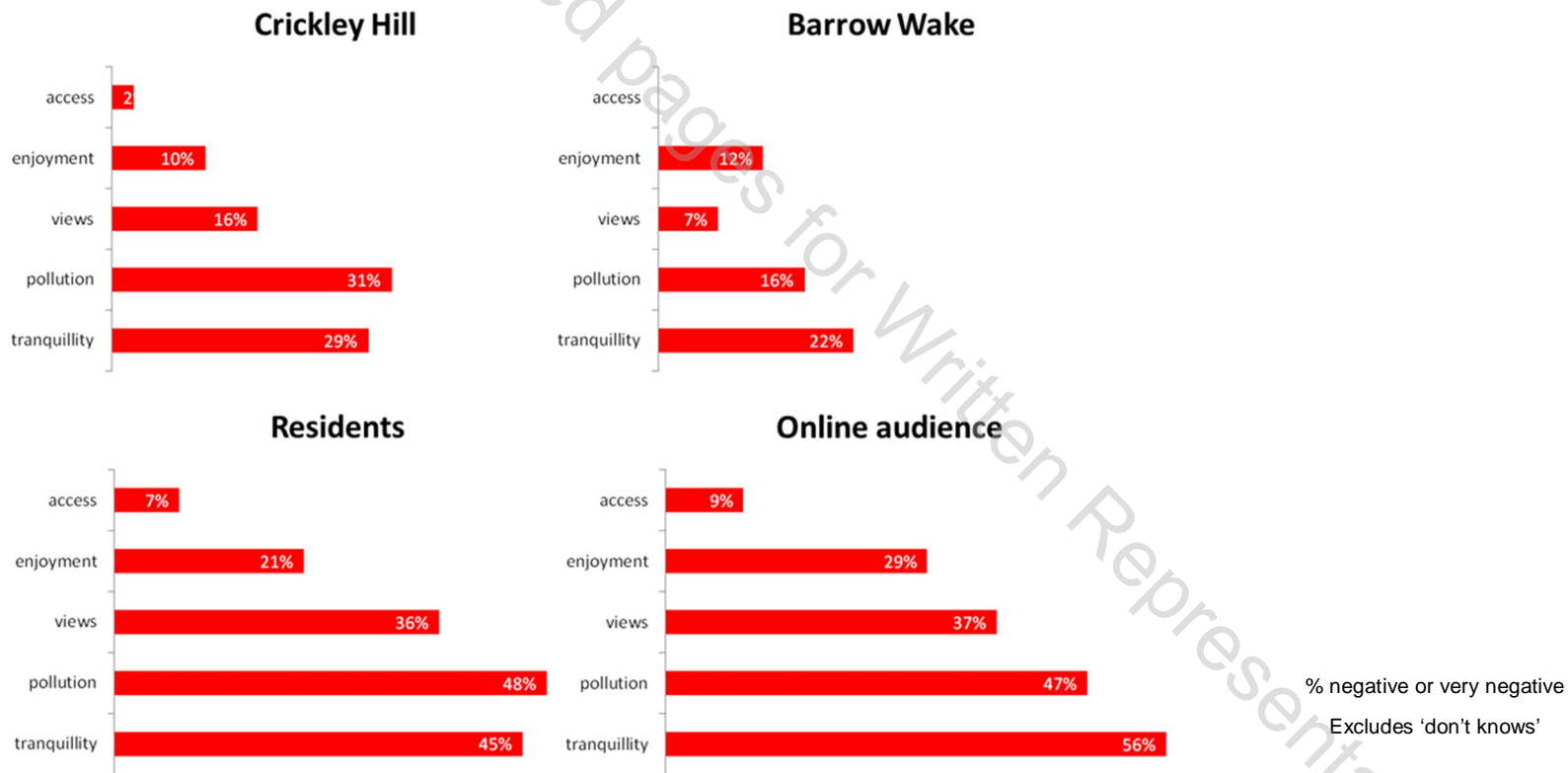




The negative perceptions have been extracted in order to show the similarities between the four research audiences. However, visitors at both sites are less concerned about the road scheme than are residents and the online audience – who both have similar views.

Visitors imagined that these potential problems could be overcome by such ideas as reduced speed, more trees, sound barriers, a tunnel, quiet road surfaces and electric cars.

Figure 7.3: Negative Perceptions of Road Scheme, All Research Audiences



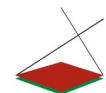
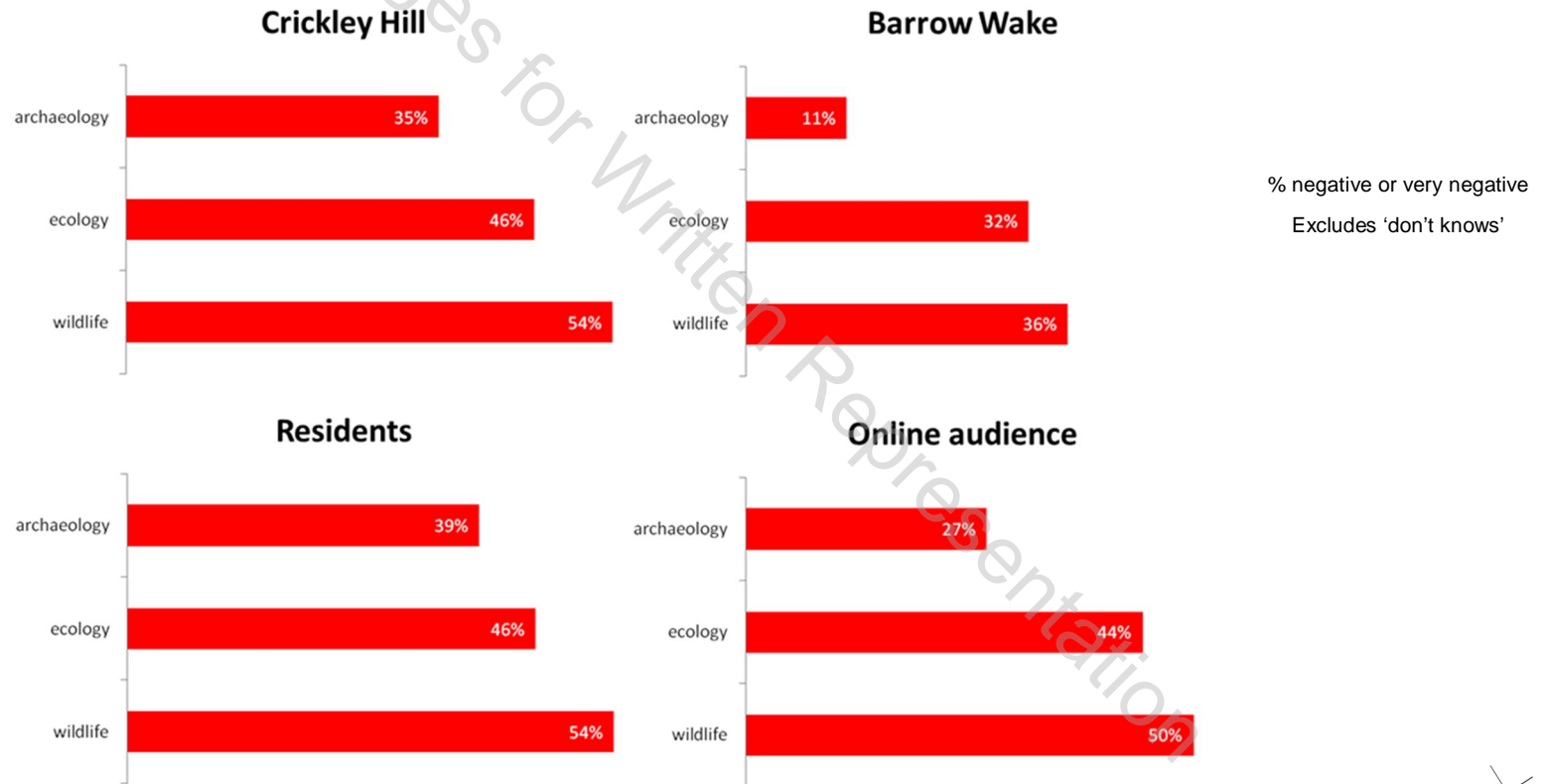
## Environmental and Archaeological Impacts

A similar question was asked about the possible impacts of the new road scheme on the archaeology and ecology of Crickley Hill and on the wildlife there. All audiences have strong concerns about the environmental and wildlife impacts – but less so for the archaeology of the site. And, once again, the views of all four research audiences are very similar.

People were less sure about overcoming these potential problems and many didn't feel qualified to judge. But there were mentions for:

- a tunnel
- a wildlife bridge or corridor
- road options that were further away from the Crickley Hill site.

Figure 7.4: Negative Perceptions of Road Scheme, All Research Audiences



It's possible that the new road scheme might result in improved access between the Crickley Hill and Barrow Wake sites. This possibility was put to visitors and they were asked if they might visit the other site (the one not being visited at the time) if:

- there were better facilities there
- there was an off-road trail connecting the two sites, suitable for walkers, cycles and mobility vehicles
- there was a bridge connecting the two sites, providing a corridor for wildlife and which could be used by walkers
- parking tickets could be used at both sites.

Amongst visitors to Crickley Hill, the possibility of a pedestrian bridge might encourage nearly two-thirds to visit Barrow Wake, with similar numbers attracted by the idea of an off-road trail. Common parking tickets might also encourage a majority to make the trip.

The picture amongst Barrow Wake visitors is quite similar, with three-quarters potentially encouraged to visit Crickley Hill if there was a wildlife/pedestrian bridge. And, again, an off-road trail connecting the sites is almost equally attractive an idea.

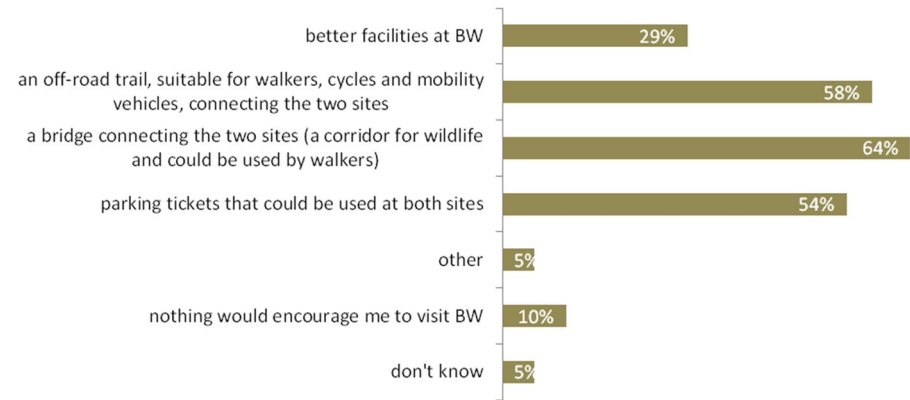
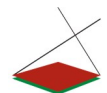


Figure 7.5: Potential Visits to BW, CH Visitors (% saying would visit if ... )



Figure 7.6: Potential Visits to CH, BW Visitors (% saying would visit if ... )



## 8. Conclusions

### A417

The study has revealed widespread public support for the new road, despite there being concerns about the impact the new road might have on Crickley Hill. There are some potential visitor benefits, notably from improved access to Crickley Hill from the loss of the existing traffic jams. But there are many concerns, with the key issues focused on pollution, loss of tranquillity, ecology and wildlife impacts.

There were a few calls for a tunnel, instead of the two options being considered by Highways England – and a few more comments about the need for a wildlife/public bridge, but demand for such a facility is not substantial. And a surface trail would satisfy the idea of linking the

Crickley Hill and Barrow Wake sites almost as much as the wildlife/public bridge.

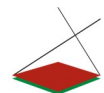
If representations are to be made by the two Trusts to Highways England about the new road scheme, there would appear to be most support for a focus on the potential visual and noise impacts of the road. Crickley Hill is a very special place to its visitors, with the panoramic views being hugely important – not only in the decision to visit, but also in terms of the cultural benefits that visitors get from being on the site. The opportunity for peace and tranquillity is also of very high importance in this regard.

### Future Developments at Crickley Hill

The study has provided clear evidence about how special Crickley Hill is to its visitors. This is partly because of the way in which the site combines huge, distant views from the promontory with the peace, tranquillity and mystery of the beech woodland of the Scrubs. But the emotional attachment that visitors display is also significant – this is a place of deep history and of more recent family memories. It is a place that allows children's imaginations to run riot. But it is also a place, for some, of spirituality and mysticism.

So it is perhaps not too surprising that there are some concerns about the idea of developing visitor facilities at the site – and the suggestions that did find favour were relatively simple. Top of the list was an idea that would further enhance children's enjoyment (a wild-play trail), with next in line being more information and interpretation.

One surprise to arise from the study was how relatively low 'nature' was as a motivator to visit Crickley Hill. This is possibly because of low understanding of the wildlife and ecology of the site – and possibly because people's understanding of wildlife is not generally very



sophisticated. The emphasis on more information and interpretation may well reflect a desire to learn more – both about the natural world at the site and the archaeology there.

There are certainly some ideas that did not find favour – most notably around more, or a wider, food and drink offer. The existing café is very highly thought of, which perhaps explains this finding. There is also no call for more car parking.

But this does not mean that visitors are perfectly happy with the facilities and features at Crickley Hill. Whilst visitor satisfaction is high, there are a number of grumbles. The Trusts have plans to address some of these

### The Opportunity at Barrow Wake

On the face of it, Barrow Wake presents an opportunity for the Trusts, partly as a way of diverting visitor demand from existing hot-spots, but also by creating higher awareness and use of an interesting site on the Cotswold scarp.

The visitor surveys at the site revealed some interest in having more facilities at the site, although visitors' needs are fairly basic – toilets, information, waymarked trails and litter bins would be enough to satisfy their needs.

### Future Visitor Demand

A key finding arising from the study relates to the capacity of the site to accommodate increasing visitor demand – there are many indicators to suggest an ongoing upward pressure on the site from more visitors.

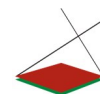
already, but there are clear indications that more could be done in the way of – in particular – enhancing visitor welcome and providing better information and interpretation.

At the outset of this study, there was some nervousness about the public's reactions to the idea of restricted access. Yet the study found widespread acceptance of restricting access for the benefit of wildlife and habitats. However, it should be stressed that the idea was very carefully introduced before asking the question, so any future moves to restrict access would also need careful introduction and explanation of the rationale and potential benefits – both to wildlife and future public visits.

But the surveys also found low levels of awareness and even lower levels of use, which suggests that attracting visitors to the site may be an uphill struggle, particularly in light of the shady reputation that the site has. Therefore, any move to make Barrow Wake a visitor destination is unlikely to succeed unless this reputation is dealt with.

So, whilst the site may become a supplementary destination (particularly after the new A417 road has been built), we would suggest that it is unlikely to fulfil a strategy to divert demand away from Crickley Hill.

The National Trust is experiencing considerable growth in visitor numbers across its estate, no doubt driven by a combination of advertising and increasing awareness, as well as its investment in improvements to the visitor experience. And there are other, social, factors at play here – such



as an increased interest in the outdoors (particularly for sports and activities) as well as the impact of the government's agendas on sport, health and increasing access and use of the natural environment.

In addition to this upward pressure nationally, it can be expected that any improvements to Crickley Hill (such as improved accessibility from the new road, and possible improvements to the facilities at the site) will also lead to an upturn in visitor demand. Since the transfer of ownership of Crickley Hill, from Gloucester City Council, GWT has been working closely with NT on a long term plan that will improve the experience for visitors and unearth its special features – and it is one of three 'Gateway sites' that GWT is promoting as a great entry point to nature. It is also an education hub for GWT and the education programme is popular and growing.

This visitor growth is likely to be further influenced by the construction of new housing within the catchment area of Crickley Hill. Gloucestershire's population growth is estimated to be 7.1% between 2016 and 2026 – an extra 44,300 people – and there will be large numbers of new housing within a short drive of Crickley Hill and Barrow Wake.

Can the site accommodate such potential increases in visitor demand? The Five Year Plan for Crickley Hill drawn up by the two Trusts makes several mentions of the problems associated with visitor numbers at the site:

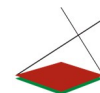
*Crickley Hill is one of the most important sites for conservation in the county, and heritage in the country. The potential for greater visitor pressure on designated areas of the site including the SSSI and SAM are therefore a huge concern.*

.. and specifically mentions "*an objective of reducing overall visitor numbers to Crickley*".

There had been a hope that some pressure might have been relieved by encouraging visitors to use less-busy and less-sensitive areas of the site, including the opportunity available at Barrow Wake. The research conducted as part of this study has, however, revealed that visitors are already using the four spatial 'quadrants' at Crickley Hill quite extensively – and there does not appear to be a great opportunity to encourage them to visit Barrow Wake as an alternative (although it might potentially become an additional destination).

The suggestion has been made that land acquisition locally might provide the opportunity to divert demand away from the more sensitive locations at Crickley Hill. Whilst we are not aware of the details here, we can say that Crickley Hill is visited for the combination of openness and mystery – but that the views are the primary driver of visits to the site. So any land acquisition might fulfil the strategy of diverting demand, but probably only if that land also provides the same sort of mix of experiences – including wide, open views that the promontory currently delivers.

The implication here is that the two Trusts should be careful about any developments for Crickley Hill that would – in the normal course of events – lead to increases in visitor demand. In fact, the more likely goal may be to limit demand in line with the Five Year Plan – and to do so in the face of upward pressures.



## **Annex B**

**Commissioned report supporting 4.1.2 that a holistic approach should be taken for scheme mitigation that overlays cultural heritage, historic environment, and natural environment to understand the significance of the landscape, and therefore, mitigation proportionate to the significance**

# Crickley Hill, Gloucestershire

Exemplar case study –A holistic evaluation of heritage and natural landscape significance and an assessment of impact, relative to National Highways’s A417 Missing Link road scheme proposals

A report commissioned by the National Trust. Countryside and Community Research Institute (CCRI), University of Gloucestershire, authored by Jeremy Lake, Nicola Bannister, Peter Herring, Rob Berry and Peter Gaskell

November 2021



A view of part of the landscape affected by the scheme, from Witcombe, showing Crickley Hill (to the left) and The Peak (to the right) flanking Barrow Wake.



## COMMISSIONING AND AUTHORSHIP

This report has been commissioned by the National Trust with the collaboration of Historic England. Particular thanks are due to the Gloucestershire Wildlife Trust, Sarah Cook of the National Trust and the members of the steering group who provided comments on the draft report. It should be cited as:

Lake, J., Banister, N., Herring, P., Berry, R., Gaskell, P. (2021) *Crickley Hill, Gloucestershire: A holistic evaluation of heritage and natural landscape significance and an assessment of impact relative to National Highway's A417 proposals*. Final report to the National Trust.

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Nicola Bannister has over 25 years experience of Landscape Archaeology, Historic Landscape Characterisation, Historic Landscape Surveys and Assessments and Management Plans. Central to her work is consideration of the inter-relationship of the historic and natural environments, having gained her doctorate in ecology from the University of London in 1991. She has written and published on the subject. Her clients include charities, NGOs, local government, AONB's, private individuals and large estates. In the past she has worked extensively with the National Trust in the South East undertaking Level 3 Historic Landscape Surveys.

Peter Herring has over 40 years of working with historic landscape, as surveyor, historian, characteriser and manager. His early career was spent in Cornwall with the National Trust and then working for the Cornwall Archaeological Unit where he undertook historic landscape survey and research to feed into assessments and management plans. With English Heritage he initiated and established the method and principles of the Historic Landscape Characterisation (HLC) approach to acknowledging and understanding the value and potential of the whole historic landscape that has since been rolled out to all of England. As Characterisation Inspector and then Head of Assessment and finally Head of Historic Places Investigation he developed a good knowledge of England's landscapes and the ways they can be studied, appraised and managed, overseeing numerous innovative projects and programmes.

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Peter Gaskell is a Senior Research Fellow at the Countryside & Community Research Institute, University of Gloucestershire. He has been conducting rural research for over 30 years and specialises in studies of the historic environment and landscape change. He has particular expertise in the design of historic environment monitoring and evaluation research methodologies. Dr Gaskell is an experienced senior researcher and project manager and has undertaken historic environment and landscape change research for a broad range of government and non-government agencies.

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# SUMMARY

## Aims and methodology

This report addresses the historic character and significance of the landscape around National Highways' proposal for a 3.4 mile (5.5km) length of new dual carriageway and associated infrastructure, to enable the movement of traffic along a currently congested length of the A417/419 between the Brockworth and Cowley roundabouts. It seeks to better understand the landscape as the result of the interaction of human and natural factors over millenia, in order to provide context to National Highways' aim to 'create a landscape-led highways improvement scheme', through:

- demonstrating a unified approach to interpreting and mapping the historic and natural character of the landscape, in relationship to designated and non-designated heritage and natural assets
- comparing and contrasting the evaluation undertaken with the summary conclusions produced in the Development Consent Order (DCO) Environmental Statement (as set out in Chapter 6 Cultural Heritage and Environmental Statement Appendix 6.3 Historic Landscape Characterisation)
- assessing and considering what mitigation could be developed to respond to the envisaged impact, focusing specifically on areas where the commissioned assessment of impact is greater than that of Highways England's consultants.

In order to do this:

- the Environmental Statement has been reviewed
- the Gloucestershire and Cotswolds Historic Landscape Characterisation has been subject to analysis, and has been simplified so that it serves as a strategic framework for understanding the variety of heritage and natural assets within it
- the significance of heritage assets, as ranked in the Environmental Statement, has been assessed
- finally, this report has considered the sensitivity of the historic landscape to the predictable effects of the principal elements of the proposed road scheme as set out by National Highways.

The emphasis in this report is on the provision of text in order to articulate and better understand the historic landscape context for the area around the scheme. GIS shape files and Historic Environment Record data for the study area assessed in this report have been submitted as a project archive, but due to resource constraints maps have either used existing data or sought to interpret key areas of the landscape around the scheme.

## Conclusions

With the information contained within the ES, submitted by National Highways, the Examining Authority and the Secretary of State do not have a full and appropriate assessment of the landscape significance, which is fundamental to the setting of Crickley Hill and other heritage assets (as set out in 5.128 of the *National Policy Statement for National Networks*, 2014). The SOS will thus be unable to confirm with full clarity that harm has been avoided or minimised (5.129 of the *National Policy Statement for National Networks*, 2014). The reasons for this are that:

1. The EIA report has not sufficiently interpreted or understood the historic landscape context of the scheme
2. There is no methodology for grading the Historic Landscape Character Areas used in the EIA
3. The impact of the scheme on historic landscape has been underestimated, due to the undergrading of the significance of the HLCAs and their very large scale.
4. The EIA report has not sufficiently interpreted or understood some key heritage assets and their significance

## Recommendations

1. A landscape-led approach should be developed as an integrated framework from the earliest stage
2. Use the cultural landscape to secure maximum ecological benefit
3. Key areas affected by the scheme need to be better understood and proper mitigation through recording put in place
4. The findings of this report should inform celebration and interpretation of this landscape

## Development of the historic landscape

In terms of its historic development:

- Crickley Hill and The Peak both date from 3600-3700 BC, and survive as a nationally important pair of causewayed enclosures for the gathering of early farming communities, also relating to three long barrows on the escarpment at The Crippets, alongside a routeway at Coberley and in Buckholt Wood at West Tump.
- Both causewayed enclosures thus form part of a grouping of monuments marking the early stages of the Neolithic in Britain, and stand in clear visual relationship to each other and a route (now the A417) of earlier origins which offered the most natural means of access between the contrasting territories of the vale and the Cotswolds.
- The Bronze Age barrows at Emma's Grove are also highly significant in this context, occupying a prominent position in relationship to the route from the vale into the Cotswolds and joined, in the Bronze Age, by additional barrows at The Crippets and at the end of the Iron Age by the high-status burials at Barrow Wake which no longer survive but yielded the famous Birdlip mirror.
- By the late 40s AD the Ermin Way connected the first phase of Roman occupation of Britain to the legionary fortress in Gloucester, and villas built later survive along the escarpment at Witcombe and Dryhill.
- There is evidence for the short-lived reoccupation of Crickley Hill in the 5th century AD after the collapse of civic authority. The place-name Crickley Hill is a fusion of British and Anglo-Saxon, reflecting the use of this area and others in the Cotswolds (Cowley and Coberley) as wood pasture landscapes in the post-Roman period which may hint at their even earlier use and development. These were all linked by routeways, further developing as the present pattern of settlement developed between the 8th and 13th centuries, and by the 14th century moated sites had developed alongside the routeways from the vale to the Cotswolds.
- By the 14th century strip fields covered most of the vale and Cotswolds, and less so the escarpment, with meadows alongside streams and some sheep walks in the Cotswolds.
- Enclosure of the landscape was mostly complete by the 1750s, leaving a strong contrast between the slopes of the escarpment, where the oldest, most species-rich boundaries remain in association with well-preserved medieval ridge and furrow, the vale with its orchards and finally the Cotswolds where extensive pastures for sheep had developed between the 14th and 17th centuries.
- A marked increase in housing over the 19th and into the 20th centuries, preceded by

the improvement of roads from the late 17th century (the A417 being one of the earliest turnpike roads in England). The importance of industrial activity is reflected in the creation of numerous quarries that have significance as habitats, including the SSSI at Birdlip Quarry, and as a result of the construction and then abandonment of the aircraft factory at Bentham which is a potential Key Wildlife Site.

- Barrow Wake and Crickley Hill, celebrated in the poetry of Ivor Gurney who worked at Dryhill Farm after leaving wartime service in 1918-20, was given to the National Trust by Sir Philip Stott in 1934. This gift followed the acquisition of Leckhampton Hill by Cheltenham Borough Council, after lobbying for its protection by the local community.

This report has revealed that, with regard to key priority (including designated) habitats:

- routeways and some field boundaries, especially those along watercourses and parish boundaries, comprise the oldest features of the landscape that are still in use
- ancient woodland is a critical part of the setting to Crickley Hill and the other prehistoric monuments along the escarpment, and most probably has been since the prehistoric period: there is documentation from the first millennium AD for the development of the internationally-significant woodland within the Cotswolds Beechwoods Special Area of Conservation (SAC), and for the use of other ancient woodland by estates based in the vale where little woodland remained by the medieval period
- the ancient calcareous grassland and remnants of wood pasture on the summit of the Cotswolds, marked off from farmland by lines of pollarded trees, remain from medieval and earlier land management and are a vital and highly significant part of the setting of Crickley Hill, linking it to the area at Barrow Wake which reverted to ancient calcareous grassland after a brief episode of enclosure and other change at the end of the 19th century
- the other areas of calcareous semi-natural grassland, including Bushley Muzzard SSSI and the area around the Neolithic long barrow at Coberley, and wet grassland now represents the extremely rare survival within the Cotswolds of these habitats as a result of the development of more intensive mixed farming systems from the 18th century

Whilst some routeways and field boundaries may date from the prehistoric period, and some fields on the escarpment may have been established by the 14th century, most fields result from a process of piecemeal enclosure of arable and some meadow from the 14th century onwards. Analysis has deepened understanding of significant differences in the pattern of historic fields and their boundaries, an essential framework as these are critical as habitats in their own right and in delivering species connectivity and dispersal for Gloucestershire's Nature Recovery Network:

- the escarpment retains Roman villas, some 17th century and earlier farmsteads, the best-surviving areas of ridge and furrow, preserved by a long history as pasture, and the most coherent pattern of ancient, irregular and species-rich boundaries with ancient holloways, veteran and some ancient boundary and parkland trees; this landscape with its ancient woodland and springheads for watercourses offers a significant means of delivering nature recovery and resilience;
  - the vale, more intensively farmed and with little surviving woodland by the 14th century, has surviving orchards, some ancient boundaries and extensive areas of medieval ridge and furrow relating to a mix of medieval and later fields and moated sites with buildings in farmsteads dating from the medieval period;
  - the Cotswolds has significant concentrations of prehistoric monuments, areas of ancient woodland (some in continuous documented use from the medieval period and earlier), rare surviving wood pasture (giving its name to Crickley Hill and other settlements), ancient calcareous grassland and lowland meadow; farmed landscapes display a contrast between areas of earlier hedged enclosures and more recent walled boundaries (dating from the late 18th century) that are mostly in poor repair and have been replaced by hedgerows and fences; these relate to mostly 18th and 19th century enclosure of areas of downland or sheep walks that had developed since the 14th century; large farmsteads, as at Stockwell, often developed on the sites of shrunken or abandoned medieval settlements whose earthworks may also now be significant grassland habitats.
3. The setting analysis in the EIA for Crickley Hill mentions modern intrusions but does not mention the inter-relationship of the natural and historic environment, which is such a critical aspect of its significance and setting. It also underplays:
    - a. this site's visual and historic relationship to The Peak, Emma's Grove with its east-facing enclosure and other prehistoric monuments in the area, and its historic and visual relationship to views westwards
    - b. the location of Crickley Hill, The Peak and other prehistoric monuments at the meeting point of two contrasting land use zones, accessed by routeways from the vale
    - c. commanding views over spring sites, watercourses and the vale, which also make a significant contribution to the significance of Crickley Hill and the neighbouring parts of the escarpment where communities settled, gathered and buried their dead in the prehistoric period – one that in the early 20th century was evoked by the musician and poet Ivor Gurney at an important moment in the realisation of the potential of landscape to well-being and national identity.
  4. It follows that the landscape context has particular relevance, in the instance of this scenario for change, to the assessment of these prehistoric sites and monuments and recognition of their national importance as evidence of how prehistoric peoples adapted the landscape as agricultural, social and religious practices changed. Although the establishment of woodland in around 1900 at The Peak has affected how people can experience the site, it should be graded as having High significance as a prominent and integral part of this grouping.
  5. The deserted medieval village site and traditional farmstead at Stockwell should be considered as a whole. In its landscape context it tells a story reflected in other parts of the Cotswolds – of the shrinkage and desertion of settlements from the 14th century, of the growth of large farms and farmsteads in the post-medieval period and the development of estates with estate cottages and tree-lined avenues.
  6. The hilltop location which favoured the establishment of Mesolithic and Neolithic communities prompted the choice of location for the radio station at Birdlip in the Second World War, which is a rare surviving example of its type and of Medium significance in a national context.

The best-surviving ridge and furrow is within the escarpment and parts of the vale, and is less legible within the part of the Cotswolds affected by the scheme due to more intense agricultural use in the last two centuries; the earthworks of the medieval settlement at Stockwell are relatively well-preserved, and have remained in pastoral use since at least this period.

### The significance of heritage assets

1. The Environmental Impact Assessment (EIA) adopts standard procedures with regard to identifying areas for archaeological assessment prior to construction. It does not, however, sufficiently distinguish, with respect to non-designated heritage, between buildings and earthworks that merit consideration as heritage assets, areas revealed by cropmarks as having different degrees of archaeological potential and findspots that may also serve as an indication of past routeways, settlements and other types of past activity.
2. Designated heritage assets are all graded by the EIA as 'High', meaning that archaeological sites, buildings and structures (such as the K6 phone kiosk at Brimpsfield) with very different levels of significance are all accorded the same grade; some of these would be better graded as of 'Medium' significance, but with no significant amendment to effects.

## The historic character and significance of the historic landscape character areas

The report has deepened understanding of the landscape context offered by the Historic Landscape Character Areas that were identified in the Environmental Statement (ES). When assessed against commonly-used criteria for the assessment of landscapes, it is clear that:

- HLCA01: Area of irregular enclosed fields east of Brockworth (the eastern part in the Cotswolds AONB), is correctly graded in the Environmental Statement as having Medium Value although significant distinctions between the escarpment and the vale have been highlighted by this report.
- HLCA02: Woodland south of Great Witcombe (within the AONB) should be graded as having High (not Low) Value given its historic and national importance as beech woodland with its associated Neolithic and later monuments and archaeology, and evidence of use in more recent centuries.
- HLCA03: Agricultural landscape around Brimpsfield and Birdlip (within the AONB) should be graded as having High (not Low) Value given the clear evidence that it retains for the development of medieval and later settlement in a coherent landscape context, with ancient woodland, deserted settlements, estate landscapes and scattered prehistoric sites and monuments.
- HLCA04: Agricultural landscape south of Seven Springs (within the AONB) should be graded as having High (not Low) Value for the same reasons, plateau landscapes enclosed from post-medieval sheepwalks being a particular feature of this area.
- HLCA05: Brockworth is correctly graded in the Environmental Statement as having Low Value, as there are some recorded archaeological sites and designated historic buildings that are scattered within a substantially redeveloped area.

## The effects of the scheme

The report demonstrates that the effects of the scheme have been underestimated.

### *The Historic Landscape Character Areas*

The scale of assessment and the undergrading of significance underestimates the impact of the scheme on HLCAs 3 and 4, which should be Moderate Adverse.

### *Heritage assets*

There is agreement with the EIA's assessment of the effect of the scheme as:

- neutral for most designated heritage assets due to their distance from the scheme, Crickley Hill Farm being closest to the scheme but already affected by its proximity to the present road as re-engineered in the 1990s
- slight adverse for the scheduled monuments at Dryhill Roman villa, Coberley and the Crippets long barrows and Crickley Hill due to changes in their wider setting, although the scheme would not be visible from these sites;
- moderate adverse for grade II listed Shab Hill Barn and the scheduled prehistoric barrows at Emma's Grove, due to the proximity of the scheme in its setting
- slight adverse for non-designated archaeological earthworks and sites directly affected by the scheme, fieldwork for this report corroborating this assessment; this includes the milestone close to the entrance to Crickley Hill Farm which will be resited
- slight adverse (given its medium value) for the Air Balloon Public House, to be mitigated by a full record of the building

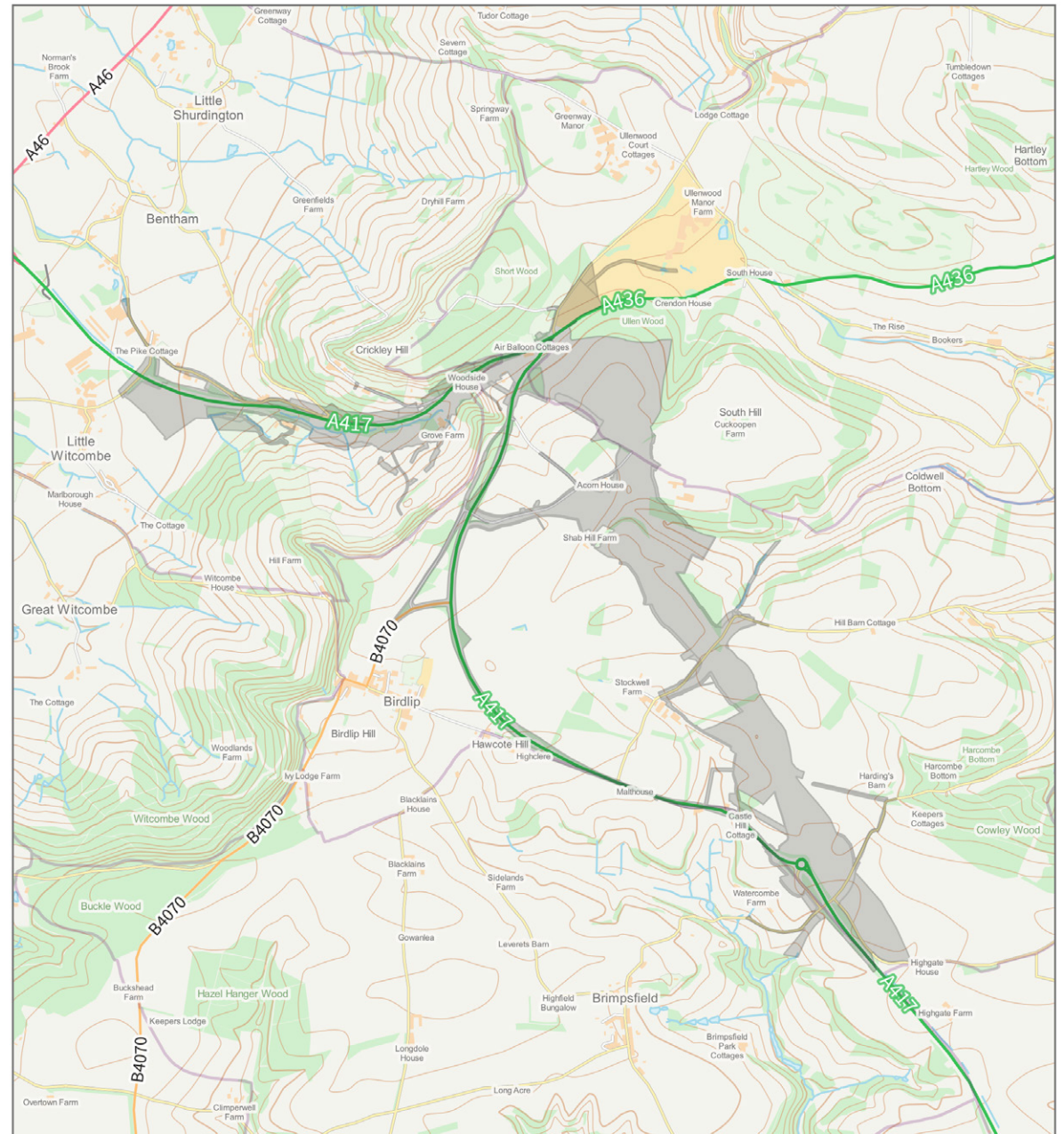
However, The Peak and the farmstead at Stockwell Farm should be added to the list of non-designated heritage assets subject to slight adverse effects, due the further severance of the former from Crickley Hill and the proximity of the latter to the scheme.

| HLC TYPE AND SENSITIVITY SCORE  | NOTES  |
|---|--|
| <b>Widened road climbing escarpment</b>   |  |
| <b>B1 and BH1 on east edge of Crickley Hill (28)</b>  | Commons (B1) and commons on scarp edges affected by quarrying (BH1) are highly vulnerable to change, being clipped by the new cutting.   |
| <b>L1 and A1s (24)</b>  | Area of irregular (L1) and piecemeal (A1s) medieval and later enclosure on scarp slopes, small in scale but with a potentially significant impact on spring sites and water levels.  |
| <b>L3 (8)</b>   | Area of late regular enclosure at Barrow Wake reverting to calcareous grassland and partly to woodland after quarrying (SSSI), very small area affected.   |
| <b>HLC Types directly affected by the new road from the Air Balloon to Cowley junction</b>  |  |
| <b>A4 to south of new road (31)</b>   | The area (HLC A4) of 17th-19th century enclosure over medieval strip fields to the south of the new road is most sensitive to change, as a consequence of the road bisecting a legible estate landscape with the site of the medieval settlement of Stockwell and a large post-medieval farmstead, with a tree-lined routeway to Cowley and its country house and a holloway extending towards the Neolithic long barrow, species-rich valley grassland and medieval settlement of Coberley. |
| <b>B4 to north of new road (28)</b>   | Area of less regular organised enclosure of former unenclosed pasture, where new road will extend within a deep cutting  |
| <b>C2 to SW of Ullen Wood (26)</b>  | Area of former ancient woodland cleared by 19th century but with historic outer boundary, intersected by new road and effect mitigated by proposal for new planting.   |
| <b>H1 (10)</b>  | Industrial area (former quarry), immediately NW of Cowley junction, intersected by new road.   |
| <b>HLC Types affected by proximity to the new road (The Air Balloon to Cowley junction)</b>   |  |
| <b>A3 to W of Cowley junction (9)</b>   | Late post-medieval regular enclosure affected by noise, lighting and other incidental effects from new road.   |
| <b>C1 at Ullen Wood and small area NE of Stockwell (10)</b>   | Ancient woodland affected by noise, lighting and other incidental effects from from new road but with opportunities for buffering by new scrub and planting.   |
| <b>HLC Types affected by the repurposing of the existing A417 from Cowley junction to The Air Balloon<br/>- note that the minus score serves as an indication of the extent that this scenario will benefit these areas</b> |  |
| <b>A4 to N of A419 (-9)</b>   | The area (HLC A4) of 17th-19th century enclosure over medieval strip fields will benefit considerably from this scenario, with opportunities for interpretation and connectivity linked to Barrow Wake.  |
| <b>L1 and A1 to S of A419 (-6)</b>  | Area of early irregular enclosure relating to medieval settlement and Roman road, less directly benefitting from this scenario.  |



# 1 INTRODUCTION

This report focuses on the area around the proposal by National Highways (formerly known as Highways England and prior to 2015 as the Highways Agency) for the A417 Missing Link. The A417 is an alternative route to the M5/M4 route via Bristol, and is thus intended to help connect the Midlands/North to the South of England. The scheme now comprises the widening of the existing A417 from Brockworth to the Air Balloon Roundabout and then the construction of a 3.4 mile (5.5km) length of new dual carriageway, entailing demolition of the Air Balloon pub, which will be connected via a large junction at Shab Hill to the present dualled section of the A417 at Cowley junction. This is intended to improve the currently-congested section of road that connects the two dual carriageway sections of the A417 at Brockworth and Cowley.



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Figure 1.  
The scheme area.



The whole project area lies within the Cotswolds Area of Outstanding Natural Beauty (AONB), and extends from a high wolds landscape to the east and down the Cotswolds escarpment past Crickley Hill into the Severn Vale to the west. It also includes common land and a number of heritage and habitat designations in close proximity to the scheme, including the Cotswold Beechwoods Special Area of Conservation, the scheduled monument and Site of Special Scientific Interest at Crickley Hill, the scheduled barrows at Emma's Grove and a number of listed buildings. From its descent from the Cotswolds at the Air Balloon roundabout, the existing road offers dramatic views into the Severn Vale with distant views of the Malverns, the Forest of Dean and the Brecon Beacons. The former commons and ancient grassland at both Crickley Hill and Barrow Wake offer dramatic vantage points for enjoying these views for walkers and cyclists as well as those arriving by car. The Gloucestershire Way passes through Crickley Hill as it passes through the area from Badgeworth to Coberley, and walkers on the Cotswolds Way can also stop at both of these sites as it extends along the top of the escarpment from Greenway Lane towards Birdlip Hill.

The National Trust is the freehold owner of part of Crickley Hill Country Park and has a farm business tenancy and has rights of access relating to parts of the Country Park in the Freehold ownership of Gloucestershire Wildlife Trust. In addition, the National Trust has a farm business tenancy on land at Barrow Wake which is in the Freehold ownership of Gloucestershire Wildlife Trust. The National Trust and Gloucestershire Wildlife Trust jointly manage this land.

National Highways, following public consultation on the amended plans, submitted a Development Consent Order and accompanying Environmental Statement, pursuant to the requirements as set out in the 2008 Planning Act for Nationally Significant Infrastructure Projects, to the Planning Inspectorate on the 1st of June 2021. This followed a period of consultation commencing in 2018, including production of a Preliminary Environmental Information Report (PEIR) in September 2020 and an Environmental Assessment. The key features of the scheme are outlined in the Digital Environmental Statement ([Digital Environmental Statement](#)) and an accompanying fly-through video (<https://highwaysengland.co.uk/our-work/south-west/a417-missing-link/>)

In accordance with the Section 9(8) and Section 5(4) of the Planning Act 2008, and the National Policy Statement for National Networks, the Environmental Statement will then be presented to the Examining Authority.<sup>1</sup> The Public Consultation document produced by National Highways states that: 'We want to create a landscape-led highways improvement scheme that will deliver a safe and resilient free-flowing road while conserving and enhancing the special character of the Cotswolds AONB; reconnecting landscape and ecology; bringing about landscape, wildlife and heritage benefits, including enhanced residents' and visitors' enjoyment of the area; improving quality of life for local communities; and contributing to the health of the economy and local businesses.' The overarching design principles for the scheme

'have been developed as part of engagement exercises undertaken with key stakeholders and include:

- Any solution involving a new road must ensure that the scheme is designed to meet the character of the landscape, not the other way around.
- Any scheme should bring about substantial benefits for the Cotswolds landscape and environment as well as people's enjoyment of the area.
- Any scheme must have substantially more benefits than negative impacts for the Cotswolds AONB.'

In the National Trust's view, and as set out in its Statement of Common Ground with the Highways Agency, 'there is a concern regarding the piecemeal approach to assets .... no overarching or interlinking analysis' and inadequate identification of non-designated assets. The Brief thus sets out the need for a holistic and inter-disciplinary evaluation of the landscape around Crickley Hill to inform assessment of the significance of today's landscape, the impact of the scheme and the priorities for detailed design, mitigation and enhancement through:

1. demonstrating a unified approach to interpreting and mapping the historic and natural character of the landscape, in relationship to designated and non-designated heritage and natural assets
2. comparing and contrasting the evaluation undertaken with the summary conclusions produced in the Development Consent Order (DCO) Environmental Statement (as set out in Chapter 6 Cultural Heritage and Environmental Statement Appendix 6.3 Historic Landscape Characterisation)
3. assessing and considering what mitigation could be developed to respond to the envisaged impact, focusing specifically on areas where the commissioned assessment of impact is greater than that of Highways England's consultants.

1 Department of Transport 2014, National Policy Statement for National Networks. Presented to Parliament pursuant to Section 9(8) and Section 5(4) of the Planning Act 2008. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/387223/npsnn-web.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/387223/npsnn-web.pdf), accessed 10.9.21.

## 2 METHODOLOGY

### 2.1 INTRODUCTION

The proposals for the new road are located within and thus have a direct impact upon the Cotswolds AONB. The National Policy Statement for National Networks states that the requirements ‘For significant road widening or the building of new roads in National Parks and the Broads applicants also need to fulfil the requirements set out in Defra’s English national parks and the broads: UK government vision and circular 2010 or successor documents. These requirements should also be complied with for significant road widening or the building of new roads in Areas of Outstanding Natural Beauty.’ This states that ‘Environmental quality should be the primary criterion in the planning of road and traffic management.’<sup>2</sup>

As stated by National Highways in its consultation documents, the ‘landscape-led’ approach ‘means that landscape is a primary consideration in every design decision that we make. Our proposals have been designed to meet the character of the surrounding area, rather than changing the landscape to fit our proposals.’<sup>3</sup> A desire to integrate road design as seamlessly as possible into its context and respond to local character and place is supported by National Highways’s Strategic Design Panel, and reflected in the core principles set out in the 2018 guidance *The Road to Good Design*: ‘Good road design demonstrates sensitivity to the landscape, heritage and local community, seeking to enhance the place while being true to structural necessities. It builds a legacy for the future.’<sup>4</sup> For over two decades road design has made use of the guidance and evidence presented by Landscape Character Assessment (LCA) and Historic Landscape Characterisation (HLC). Examples of the application of character-based approaches for informing the scoping, assessment and design stages were published by the then Highways Agency in its 2007 supplementary guidance on *Assessing the Effect of Road Schemes on Historic Landscape Character*, and was included as Annex 7 of the Cultural Heritage chapter of the Design Manual for Roads and Bridges (DMRB) guidance until its revision in 2019.<sup>5</sup> It uses the definition of historic landscape as set out in the European Landscape Convention: ‘An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors’, which calls for an integrative approach to assessment.<sup>6</sup> The United Kingdom (UK) is a signatory to the European Landscape Convention (ELC), which is

referenced in the revised DMRB guidance on cultural heritage assessment.<sup>7</sup> The 2014 National Policy Statement states that assessment of landscape and visual impacts should draw upon *Guidelines for Landscape and Visual Impact Assessment* and ‘include reference to any landscape character assessment and associated studies’ (5.144). The definition of the historic environment (5.121) that draws upon that contained in the glossary of the National Planning Policy Framework (NPPF) is similarly integrative: ‘The historic environment includes all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.’<sup>8</sup>

### 2.2 METHODOLOGY USED FOR THE ENVIRONMENTAL STATEMENT

The assessment of construction and operational effects in the Environmental Statement follows the standards for environmental assessment set out in the DMRB.<sup>9</sup> The Environment Assessment, which was prepared in accordance with the 2019 guidance on *Environmental assessment and monitoring* (LA 104), considers:

- Air quality
- Cultural heritage
- Landscape and visual
- Biodiversity
- Geology and soils
- Material assets and waste
- Noise and vibration
- Population and human health
- Road drainage and the water environment
- Climate

2 Defra 2010, English national parks and the broads: UK government vision and circular 2010, <https://www.gov.uk/government/publications/english-national-parks-and-the-broads-uk-government-vision-and-circular-2010>, accessed 10.9.21

3 Highways England, 2020. *A417 Missing Link. Public consultation*, 13 October-12 November 2020. Highways England 2018, *The Road to Good Design*.

4 Highways England 2018, *The Road to Good Design*. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/672822/Good\\_road\\_design\\_Jan\\_18.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/672822/Good_road_design_Jan_18.pdf), accessed 10.9.21.

5 Highways Agency with English Heritage, Natural England and Council for British Archaeology, 2007, *Assessing the Effect of Road Schemes on Historic Landscape Character*. Noted as withdrawn on the Highways England website: <https://www.standardsforhighways.co.uk/prod/attachments/1a4ae444-13a7-4249-9c7c-692f5cb11e14?inline=true>, accessed 2 October 2020

6 CoE (Council of Europe). 2000. European Landscape Convention text, available at: <https://rm.coe.int/09000016802f80c6>

7 Highways Agency 2019, LA 106 Sustainability and environment. Appraisal. Cultural heritage assessment. <https://www.standardsforhighways.co.uk/dmrb/search/8c51c51b-579b-405b-b583-9b584e996c80>. accessed 10.9.21

Department

8 Department of Transport 2014, *National Policy Statement for National Networks*. Presented to Parliament pursuant to Section 9(8) and Section 5(4) of the Planning Act 2008. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/387223/npsnn-web.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/387223/npsnn-web.pdf), accessed 10.9.21

9 Highways Agency 2020, *Design Manual for Roads and Bridges*. <https://www.standardsforhighways.co.uk/ha/standards/>, accessed 10.9.21

The methodology for Chapter 4 (Environmental Assessment) is based upon the analysis of baseline information for the conditions of each environmental factor or theme at the time of preparing the report, prior to assessment of value and identifying the magnitude of impacts upon receptors. The significance of the effect (from different levels of adverse to beneficial) is then calculated by combining scores for value and magnitude. Of particular relevance to this report are the methodologies for cultural heritage, biodiversity and landscape and visual assessments.

The assessment methodology for cultural heritage (Chapter 6) assesses designated heritage assets (9 scheduled monuments, 50 listed buildings, the grade II\* Registered Park and Garden at Cowley Manor and the conservation areas at Cowley and Brimpsfield) within one kilometre of the Development Consent Order (DCO) boundary and also Leckhampton Camp and Tumulus to its north. It also assesses 38 non-designated heritage assets within 300m of the DCO boundary and an additional 219 obtained from the Gloucestershire Historic Environment Record (HER). The Environmental Statement states (6.6.2) that these were selected on the basis that the scheme would not result in an adverse or beneficial effect on heritage assets beyond this boundary. Five Historic Landscape Character Areas (HLCAs) were identified in a more extensive area centred on the DCO boundary. Again following established procedure, 90% of the area within the DCO boundary was subject to geophysical survey, followed by trial trenching: this will inform standard mitigation through design and archaeological works prior to the construction phase.

The assessment methodology for landscape and visual (Chapter 7) has separately assessed landscape and visual effects using the Guidelines for Landscape and Visual Impact Assessment (GLVIA3) – the former based on ‘likely changes to the features and characteristics of the landscape, while the visual assessment assesses changes to views and the visual amenity experienced by people.’ (7.1.4) The methodology considers the special qualities of the Cotswolds AONB (7.7.5), key characteristics of the AONB and Gloucestershire Vales and as receptors the key landscape components in relationship to the AONB landscape character types and areas.

The assessment methodology for biodiversity (Chapter 8) has identified a wider range of effects in relationship to designated and non-designated sites, habitats (BAP priority, ancient woodland and ancient or veteran trees) and species. It follows established methodology in its use of desk-based survey (including data supplied from the National Trust, Gloucestershire Wildlife Trust and Woodland Trust) and field survey applied to varied distances from the proposed route for different types of biodiversity resource as summarised in Table 8.5.

## 2.3 THE PRINCIPLES OF ANALYSIS

The action and interaction of natural and historic processes have given rise to the character of the present landscape and thus provide the setting for historic and natural features and assets. The purpose of the following assessment is, rather than repeating the identification of important characteristics of these types as presented in the Environmental Statement, to show how the present landscape and its natural and cultural assets results from past functions and changing ideas.

Core to understanding landscape is its definition, in the European Landscape Convention as adopted by the Council of Europe, as ‘an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.’<sup>10</sup> This acknowledges that:

- Landscapes are ‘an important part of people’s quality of life everywhere’, new ways of linking landscapes and people being one of the key threads running through the recent Glover Landscapes Review of 2019 - ‘Our established network of national landscapes should sit alongside innovative ideas to link people to natural places close to their homes’ (p. 124).
- All areas, no matter how significant, have developed and been adapted to serve one or more functions over time. The character of all places, including habitats for plants and animals, results from how people have lived in, used, valued, managed and shared land and its resources over thousands of years, in response to the opportunities and constraints offered by geology, landform, soils and climate.
- Landscape is not simply in the view, it is an active participant in people’s perceptions of what makes places distinctive and what benefits they offer, how they have changed into their present form and how they can change in the future.

These definitions are significant at a time when awareness has been growing of the need to build upon the interactions that people have with landscapes and the need to develop integrated landscape-led approaches; it is commonly accepted that these should move away from the culture-nature divide and enable the development of more sustainable, resilient and effective policy-making and practice (Burgi et al, 2017; Global Landscapes Forum, 2021; ICOMOS 2017). An example is the sense that natural and historic interactions are better served by being considered with a ‘biocultural framework’ as recently proposed by the Convention on Biological Diversity and European Landscape Convention (Seardo 2016). Critical in this respect – and highlighted by pilot projects commissioned by Historic England - is recognition that the historic environment is an integral and seamless part of Natural Capital, as natural and ‘semi-natural’ features have historically been adapted to meet specific local needs, strongly influencing the range of fauna, flora and tree species in different types of landscape. Whilst it

<sup>10</sup> Council of Europe 2000, European Landscape Convention

should be acknowledged that there are many aspects of cultural heritage (both tangible and intangible) that are not derived from Natural Capital (Holleland 2017, 221 and 224), such an approach aligns with the concepts of ‘ecoagriculture’ (as first used in 2001 by McNeely and Scherr), the importance of using an understanding historic function to make informed choices (Fuller et al 2016) and the concept of ‘biocultural heritage’, as a forward-looking framework that must pay due recognition to the dynamism of historically-conditioned landscape.<sup>11</sup> Whilst it should be acknowledged that there are many aspects of cultural heritage (both tangible and intangible) that are not derived from Natural Capital (Holleland 2017, 221 and 224), such an approach aligns with the concepts of ‘ecoagriculture’ (as first used in 2001 by McNeely and Scherr), the importance of using an understanding historic function to make informed choices (Fuller et al 2016) and the concept of ‘biocultural heritage’, as a forward-looking framework that must pay due recognition to the dynamism of historically-conditioned landscape.<sup>12</sup>

The principles of this approach, of seeing past function as threading through all aspects of landscape rather than ‘putting heritage in a box’, informed the drafting of historic profiles for the Countryside Quality Counts (CQC) project, the revision of the National Character Areas and the drafting of revised Landscape Character Assessments (LCAs), as for example in Shropshire (Lake and Mayes 2014). Whilst LCA was developed as an explicitly ‘horizontal’ view of landscape character, HLC has used a Geographical Information System (GIS) approach to map, as a seamless layer, the ‘time depth’ of the present landscape - as a product of past change and the raw material for future change.<sup>13</sup> This then provides the context for understanding the distribution and inter-relationship of natural priority areas and heritage assets at a strategic level. Crickley Hill offers an example of natural and heritage designations (Sites of Special Scientific Interest and Scheduled Monuments) relating to the same place, due in large part here to its use as grazing land. There are obvious and easy ‘wins’ here, most obviously with regard to using the results of historic characterisation and archaeological investigation to show how moorland, heathland and other priority habitats of this type have developed and been valued as commons and for their diversity of resources since the prehistoric period: map regression shows how they have dramatically shrunk in size as their functions have been lost and changed, and necessitates a landscape-scale vision.<sup>14</sup> There has been less certainty over how to bring enclosed land, farmland not being defined as a habitat in the UK Biodiversity Action Plan (BAP), into an integrated approach. This flags a significant issue that the UK National Ecosystem Assessment raised in its assessment of enclosed land, in particular the need to get a better understanding of how it has developed into its present state and the contribution that farmsteads and routeways make to this habitat type.<sup>15</sup>

11 See Fluck and Holyoak, 2017 for consideration of how the historic environment can be better represented in ecosystem services and natural capital accounting methods; this was then taken forward in a range of pilot projects commissioned by Historic England – e.g. Powell et al., 2018, 2019

12 Lindholm, 2019, 2; Bridgewater and Rotherham, 2019, 298; for a summary of the approach from international to local level see Hanspach et al., 2020

13 See Swanwick 2002 for LCA; for the key principles and early applications of HLC see Fairclough 2003 and 2006, Clark, Darlington and Fairclough 2004, Turner and Fairclough, 2007; for a comparison of the two approaches see Fairclough and Herring 2016

14 Cheung 2004; Costello 2020; for uplands see Simmons et 2003, and for a case study showing how grassland habitats can persist long after historic grazing regimes have ceased see Grove et al 2020.

15 UK National Ecosystem Assessment 2011, 202

There is potential here to extend this principle to analyse the recorded date, type and pattern of recorded heritage assets, and of habitat designations, priority areas and the results of any survey work in relationship the wider landscape context.

## 2.4 METHODOLOGY USED FOR THIS REPORT

The Environmental Statement follows established practice in that it sets out the key themes using the data summarised above. These are not, however, set out in clear relationship to each other in a landscape context. The methodology adopted for this analysis is thus intended to deliver an integrated understanding of the natural and historic environment, and of designated and non-designated heritage assets, within the context of the present-day and historically-conditioned landscape.

The Stage 1 Landscape Assessment has provided an overview of the historic development of the whole area including the HLCAs set out in Chapter 6 of the Environmental Statement. This then delivered the context for setting out in further detail the processes that have driven the character of the landscape within and immediately around the one and three-kilometre buffer zones used in the Environmental Statement, as well as analysis of the key inter-relationships and functions which have shaped its diversity of habitats and heritage. In order to accomplish this:

1. relevant GIS data (the Gloucestershire and Cotswolds Historic Landscape Characterisation archived at the Archaeology Data Service) has been subject to analysis in order to identify key elements of the landscape and their related time-depth (see Appendix 1 for an explanation of how it has been simplified for this analysis);
2. this understanding has then been deepened through mapping the distribution, date and type of designated and non-designated heritage assets, followed by rapid walkover survey; the result has informed a deeper understanding of how the whole landscape has developed, their visual and non-visual inter-relationships and relationship to the development of the historic and natural landscape, and also the level of inclusivity of the baseline material used in the Environmental Statement;
3. further consideration has then been given to the interaction of historic and natural processes in the creation of the present landscape.

Stage 2 has assessed how the Environmental Statement has understood and ranked the significance of heritage assets in their landscape context, and where such an integrated approach can enable the identification of specific areas and themes that are of greater significance than focusing on the evidential value of their individual parts. It considers NPPF policy and Historic England guidance and best practice, with a particular focus on those

areas of Historic and Communal value that are not as well represented in the Environmental Statement, the levels of significance in relationship to 1) historic landscape, 2) heritage assets, 3) historic-natural inter-relationships, 4) historic views and 5) the development of cultural/aesthetic relationships over time.

Stage 3 then considered the sensitivity to the predictable effects of the principal elements of the proposed road scheme as set out by National Highways and with reference to the 2007 National Highways/ English Heritage guidance which included a section on using HLC. It sets out areas of opportunity and threat, through:

1. a summary of the scheme's impacts, and the range of effects that may be predicted: physical effects on above and below-ground remains; ecosystem effects caused by severances; visual effects on legibility and character, etc;
2. consideration of the vulnerability of Historic Landscape Types and Areas to each of those;
3. consideration of the significance of Historic Landscape Types and Areas in relation to those vulnerabilities.

This stage shall finally set out mitigation strategies, including feeding codes or ideas into design.

Stage 4 (Conclusions and recommendations) compares the results of this analysis with the summary conclusions produced in Chapter 6 (Cultural Heritage) of the Environmental Statement Environmental Statement and sets out recommendations for design, mitigation and enhancement with a particular focus on opportunities a) to enhance well-being, enjoyment and understanding of the landscape and b) for Biodiversity Net Gain including enhancement of habitat connectivity.



## 3 THE LANDSCAPE CONTEXT

### 3.1 INTRODUCTION

The baseline understanding of the physical landscape has been delivered by Chapter 7 of the Environmental Statement. All of the area to the east of the A46 falls within the Cotswolds AONB, and the foot of the escarpment to its east marks the division between the Cotswolds National Character Area (NCA) and the Severn and Avon Vales NCA. Chapter 7 of the Environmental Statement sets out the special qualities of the AONB as listed in the 2018-2023 Management Plan, and relates the Cotswold AONB landscape character types and areas to those of the Gloucestershire Landscape Character Assessment.

Chapter 7 of the Environmental Statement describes key variations with regard to the landscape character types and areas that fall within the Cotswolds AONB (AONB LCA), and the Settled Unwooded Vale (Landscape Character Type 18) that continues to extend westwards and is covered by the Gloucestershire Landscape Character Assessment (GLCA). It is not the intention of this assessment to repeat the summary of landscape receptors and key landscape components set out in Tables 8 and 9 of this chapter, other than to highlight here the distinction made by the LCAs between:

- The Vale of Gloucester (GLCA), including the AONB LCA of the Vale of Gloucester Fringe (18A): this has little woodland cover and takes in the lower escarpment slopes and a mix of medieval settlements and farmsteads which experienced significant settlement growth, including the development of Brockworth Aerodrome as the Gloucester Business Park, in the later 20th and early 21st centuries.
- The escarpment (2D, Coopers Hill to Winchcombe), which includes the calcareous grassland at Crickley Hill and elsewhere, 'small scale fields' with a higher density of scattered trees and scrub, some farmsteads and settlement, historic parkland, the ancient woodland at Witcombe and elsewhere, freshwater springs, quarries, prehistoric monuments and occupation sites with spectacular views across the vale.
- The Cotswolds High Wold Plateau (7C), an open landscape with a low density of settlement (and including the villages of Birdlip and Brimpsfield), woodland largely confined to plantations and valleys and 'large regular fields, bounded by degraded walls and hedgerows'.
- The High Wold Valleys (8A, 8C and 8D), with ancient woodland, a low density of dispersed settlement and the villages of Coberley, Cowley and to the east of Brimpsfield its church and castle.

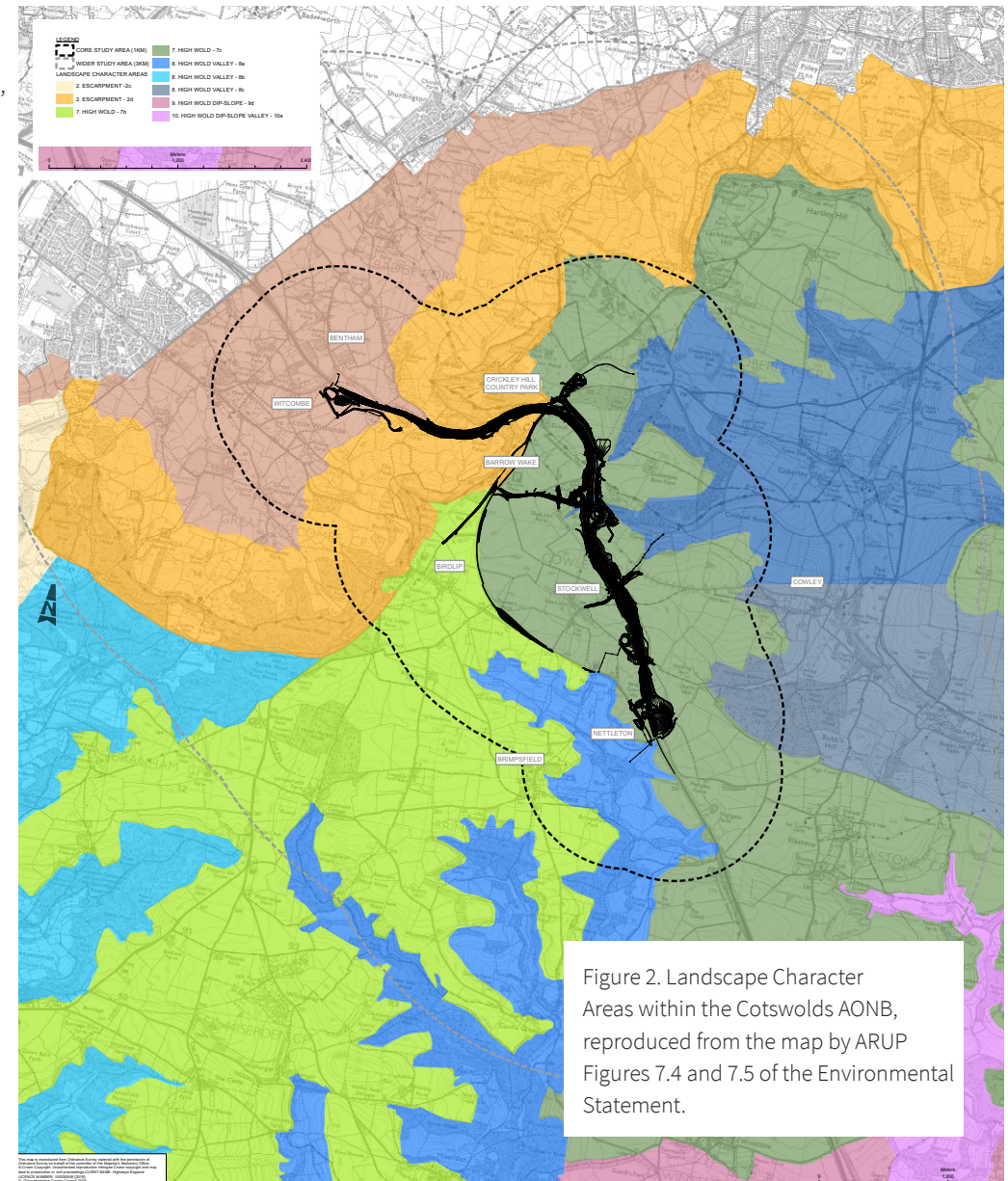


Figure 2. Landscape Character Areas within the Cotswolds AONB, reproduced from the map by ARUP Figures 7.4 and 7.5 of the Environmental Statement.



## 3.2 THE NATURAL AND HISTORIC ENVIRONMENT

### 3.2.1 Introduction

This part of the report considers the interaction of historic and natural factors that make the present landscape, prior to the more detailed analysis of historic development in section 4. The area considered in sections 4 and 5 of this report takes in the wider context considered for the drafting of the Historic Landscape Character Areas as summarised in Chapter 6 (Cultural Heritage) of the Environmental Assessment and set out in further detail in section 6 of this report.

The geology and soils of the Cotswolds offered a different set of prospects than the vale, for although the soils were generally easier to cultivate they needed constant manuring and the area is exposed to stronger winds and colder winter weather. At its simplest, the geology of

the study area marks the division between the permeable oolitic limestone of the Cotswolds, overlain by shallow free-draining soils, the slopes of the escarpment where most springs occur and meeting on its lower slopes the relatively impermeable clay soils of the Middle Lias. Realisation of the ‘time-depth’ visible in the exposed stratigraphy of the Middle and Lower Jurassic limestone outcrops, often revealed by quarrying and as seen at Crickley Hill and Leckhampton Hill, formed a significant object of study for the geologist William ‘Strata’ Smith in the early 19th century. This significance is reflected in the designation of Birdlip Quarry, Crickley Hill and Barrow Wake as and Sites of Special Scientific Interest (SSSIs) and the designation of the first two as Regionally Important Geological Sites (RIGS).



Figure 3a These two Google Earth perspective views show the relationship of The Peak and Crickley Hill to each other and the routeway which is now the A417. The view above shows the fields of the vale in the foreground, as reorganised from the post-medieval enclosure of strip fields, the 17th century and earlier enclosures on the slopes of the escarpment, the crest of the escarpment with its prehistoric sites and the larger fields of the plateau. The view, on the next page, looking down on this landscape shows the line of the routeway which is now the A417 in relationship to key prehistoric sites, and the line of the Ermin Way including the line of the present road that connects the two sections of known road in the vale and on the plateau. Images from Google Earth.



Chapter 7 of the Environmental Statement, and Appendix 9.5, sets out the bedrock geology in detail. It notes variation in the surface geology due to deposits of sand and gravel to the western part of the area (Cheltenham Sand and Gravel), of alluvium in Norman's Brook, deposits of tufa around springs and streams and the effects of 'landsliding, hillwash and soil creep' (9.7.8) which mostly occurred in the Pleistocene period (until the end of the last glaciation, Owen et. al. 2005, 15) and have been mapped adjacent to Crickley Hill and in the Churn valley near Shab Hill; as well as tufa, there are deposits of peat in areas of waterlogged ground along the escarpment. Springs are concentrated along the escarpment, at the meeting point of the Upper Lias and the Oolite, and flow into the vale via watercourses including Ham Brook and Norman's Brook to the west and Lilly Brook to the north. Seven Springs is the source of the River Churn which flows via Cirencester to the Thames, and other watercourses upon and around which mills, farmsteads and settlements have developed.

Some quarries close to the Ermin Way may be of Roman date, and stone from The Peak was used for Gloucester Cathedral in the 12th century (Price 2001, 186). The majority of quarries cannot be proven to be earlier than the 19th century when an increased amount of stone was needed for road building, housing, drystone walling and making lime for construction and fertiliser.

The natural and historic character of the present landscape results from millennia of how this landscape has been used and adapted by people. The oldest features of the landscape that are still in use comprise routeways and some field boundaries, especially those along watercourses and parish boundaries, and also the ancient calcareous grassland and remnants of wood pasture on the summit of the Cotswolds; the latter has high significance on account of its rarity as a formerly common habitat and a setting to the prehistoric monuments at Crickley Hill and elsewhere. These features were extended or adapted to serve the present pattern of settlement, the fundamental pattern of which was established between the 8th and 11th centuries. Although the area lies within England's Central Province of nucleated settlement (Roberts and Wrathmell 2000 and 2002), where villages working their open fields had become established by the 11th century, there are significant distinctions between and within the vale and the Cotswolds which had already been inherited by this period and also result from later phases of developing moated sites, farmsteads and enclosed land around them. Whilst the boundaries to some routeways and fields may date from the prehistoric period, and some fields on the escarpment may have been established by the 14th century, most fields result from a process of piecemeal enclosure of arable and some meadow from the 14th century.

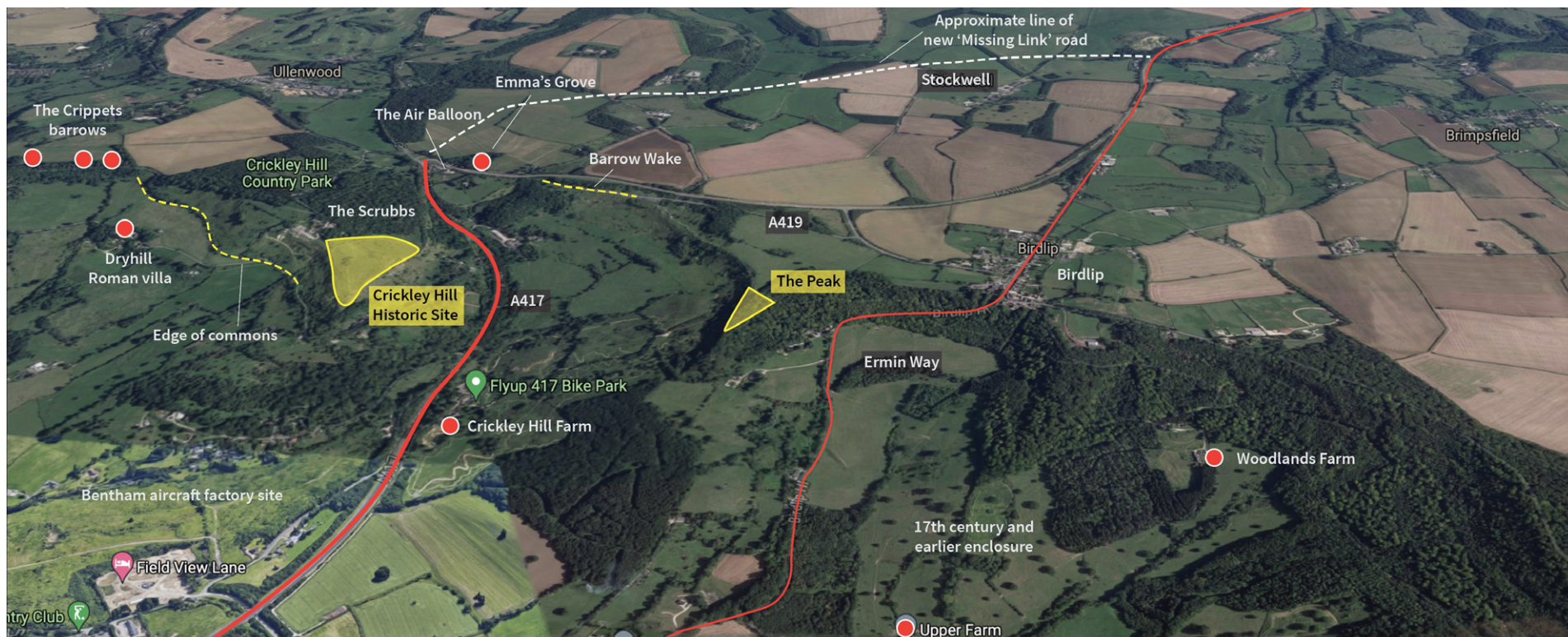
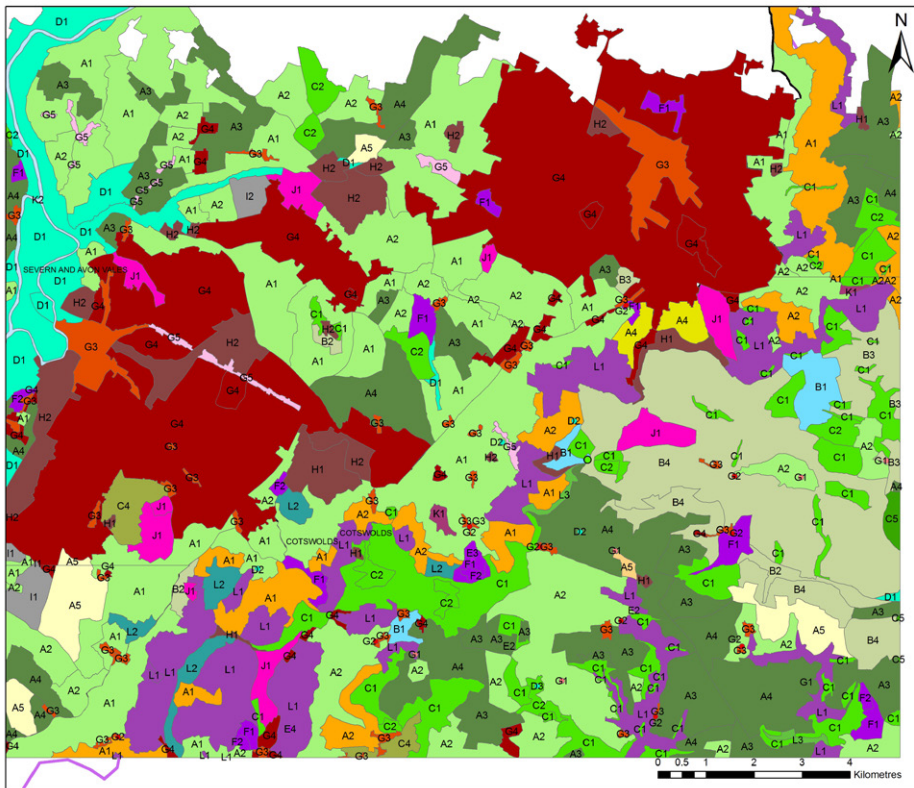


Figure 3b





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**National Trust  
Crickley Hill, Glos  
HLC 1km**

- Legend**  
**Crickley\_Hill\_HLC\_Merg**  
**Comb\_name**
- Ancient assart woodland
  - Ancient woodland cleared post-medieval
  - Assart fields
  - Commons
  - Commons - irregular enclosed
  - Commons - regular enclosed
  - Designed landscapes - post medieval Lost
  - Designed landscapes - post-medieval
  - Industrial site - active
  - Industrial site - disused
  - Irregular inclosure former land use unknown
  - Medieval deer park
  - Military site - active
  - Military site - disused
  - Modern fields of former enclosed strip fields
  - Modern fields of former enclosed strip fields on slopes
  - Modern woodland plantation
  - Piecemeal enclosure from medieval strip fields with C2
  - Piecemeal enclosure of strip fields
  - Piecemeal enclosure of strip fields on scarp slopes
  - Piecemeal enclosure strip fields in meadows
  - Piecemeal enclosure strip fields on slopes
  - Recreational site - active
  - Regular enclosed of strip fields
  - Regular enclosed over strip fields
  - Regular enclosure - origin unknown
  - Regular enclosure of irregular pattern
  - Ribbon settlement 19th - 20th century
  - River valley pasture
  - Settlement - deserted
  - Settlement - medieval
  - Settlement - up to Late 20th century
  - Settlement - up to mid-19th century
  - Tidal & Estuary
  - Waste Tip
  - Water body



Figure 4. This map, set above an Ordnance Survey extract, shows the broad patterns of landscape as mapped by the Gloucestershire and Cotswolds AONB Historic Landscape Characterisation. It shows the historic cores of Gloucester and Cheltenham (G3), the pastures along the Severn to the north-west (D1), the small amount of ancient assart woodland in the vale compared to the Cotswolds (C1, also shown being those areas of woodland cleared in later centuries – C2), the very large extent of fields enclosed on a piecemeal basis from the medieval open fields and strip fields (A1 and A2) in the vale and the area to the south of Birdlip in the Cotswolds, and the more regular enclosure and reorganisation of fields in small blocks of the vale (A3 and A4) and in larger areas of the Cotswolds plateau where large improved arable farms developed on the former downland pastures (B4). There are small areas of legible medieval and later parkland (F1-2). Running from north-east to south-west across this map is the line of the Cotswolds escarpment with surviving area of grassland which were adapted for quarrying (not legible at this scale), where the fields on the scarp slope have the most species-rich, ancient boundaries and best-surviving ridge and furrow – irregular enclosures (L1) and the piecemeal enclosure of medieval strips (marked in orange as A1).

The medieval and earlier routeways in this area were predominantly aligned north-west to south-east, sometimes feeding into major routes such as the present A417 and enabling people and livestock to access the ancient grassland and wood pasture in the Cotswolds. These routeways and early field boundaries are also aligned to the watercourses extending from the escarpment. Some of these routeways are very ancient, most notably the present A417 which provided a natural means of ascending the escarpment between the Neolithic causewayed enclosures at Crickley Hill and The Peak, the road ascending Birdlip Hill which connects to the Ermin Way either end, and Greenway Lane which is a holloway bounded by veteran trees which ascends Shurdington Hill. The prehistoric monuments bounding either side of this route as it climbs the hill could be seen as marking a 'gateway' or passage between one area of landscape resources and another. These routeways were used by estates and communities gaining access to grazing pastures in the Anglo-Saxon period. Their linear nature, marked for example by grass verges, exposed soils and geology, veteran and pollarded trees, contributes significantly to ecological interconnectedness, connecting them to priority and other habitats and facilitating the foraging and dispersal of flora and fauna.

The Ordnance Survey Draft maps of 1811 (Figure 5) clearly shows this pattern of routeways enabling access to the commons and also from farmsteads and settlements to fields and woodland. There are two routeways which cut across the grain of this network:

- the Ermin Way, originally intended in the late 40s AD to serve the legionary fortresses at Gloucester and extending from the forts in the newly-conquered territory at Leaholme in Cirencester and Silchester, which follows an older sinuous route down the escarpment from Birdlip into the vale, and has remained as a significant routeway ever since.
- The A46, turnpiked in 1746 and constructed as a new section across the landscape in the early 19th century, connecting Cheltenham to the earlier ascent via Painswick and to the south.



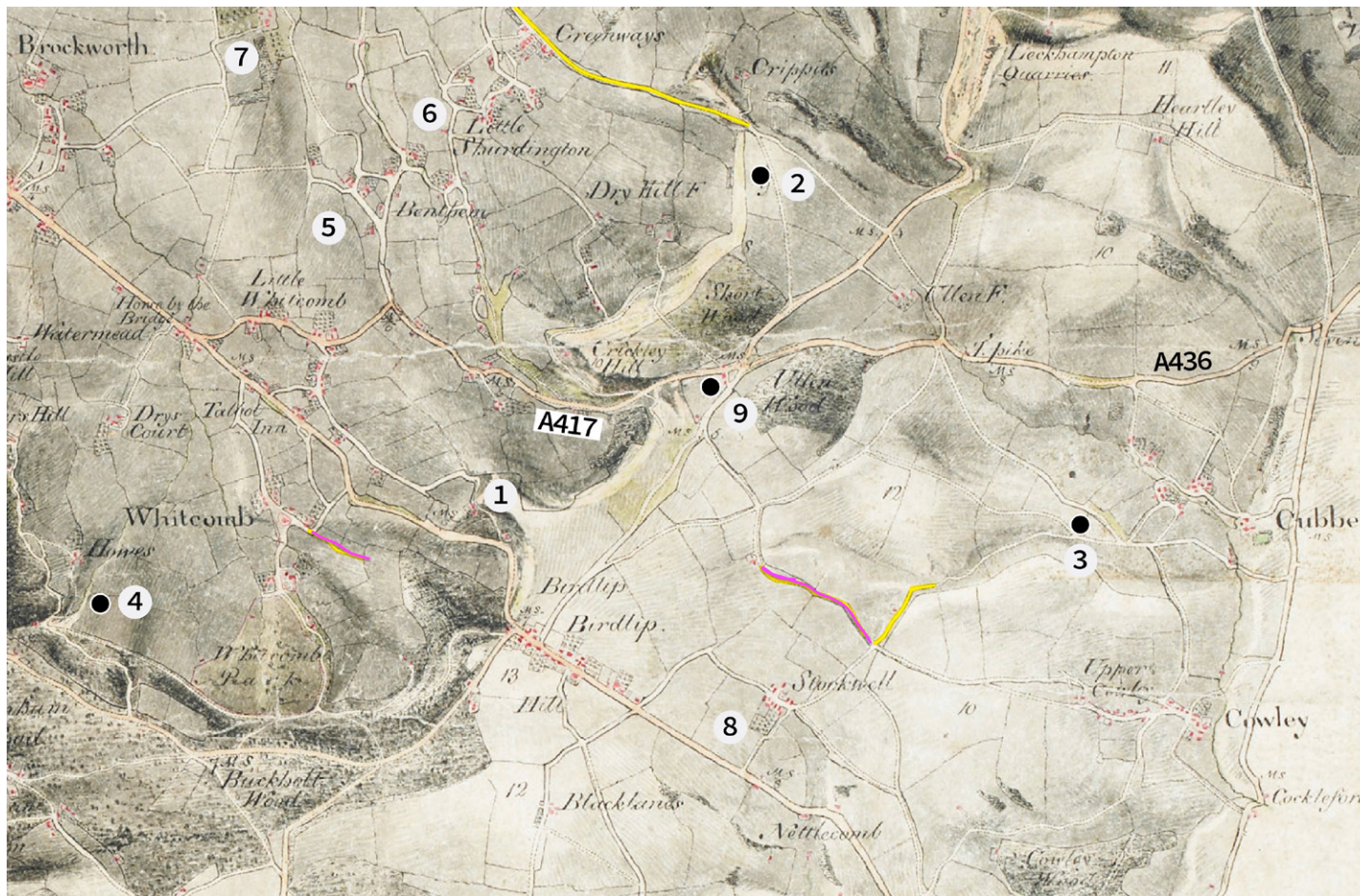


Figure 5. Map from British Library, reproduced under Open Licence Commons.

Figure 5. The Ordnance Survey Draft map of 1811, showing the locations of The Peak (1) to the south of Crickley Hill, the Crippetts long barrow to the north (2), Coberley long barrow (3), West Tump long barrow (4), the moated sites at Bentham (5) and Urrist Farm and Hunt Court (7), Stockwell Farm (8, astride the routeway and prior to the final phase of the hamlet) and the Air Balloon (9). The map clearly shows the pattern of routeways in relationship to these sites, and the north-west to south-east alignment of the medieval and earlier routeways that climbed the escarpment towards the ancient cattle pastures (the 'leahs', for more on this see 4.3.2) at Cowley and Coberley, including the Greenway to the north which climbs an ancient holloway (shown in yellow, this identified on field survey and next to one in purple shown on the HER) past the site of the Crippetts long barrow (2) and proceeds on a ridge past the Coberley long barrow. Another ancient route ascended the escarpment up one or more routeways (a section of a holloway on the HER is shown in purple) to Birdlip and via Stockwell to Cowley and (via a holloway shown in yellow, as revealed by walking for this report) to Coberley. The present A417 provides a natural means of ascent in between The Peak and Crickley Hill, with the barrows at Emma's Grove and the burial sites at Barrow Wake along its summit; as a major route linking Gloucester to London it was one of the first roads in England to be turnpiked, in 1698, and others followed in the 18th century - the Ermin Way in 1747, the road from Painswick to Cheltenham via Birdlip in 1785, the A436 from Crickley Hill to meet the A40 in 1751, the present A435 from Cheltenham to Cirencester in 1756 and the Shurdington Road to Cheltenham in 1820. The Air Balloon pub was converted from an earlier pair of cottages into an inn by 1777, and was so-named by 1802 to mark Walter Powell's descent by balloon to the site in 1796. To the east, the road from Cheltenham to Cirencester was turnpiked and partly rerouted early in the 19th century. The cluster of moated sites and recorded 17th century and earlier recorded buildings to the south of Little Shurdington reflect the emergence of a wealthier class of tenant farmers and freeholders and relate to a network of lanes which meet the present A417 on the ascent to the Cotswolds in clear sight of Crickley Hill.

Within the landscape around the proposed scheme (Figure 6), designated and non-designated heritage assets that survive as legible earthworks, sites and buildings comprise:

- Extant prehistoric monuments which are mostly found within the Cotswolds and whose designation contributes to the retention of ancient calcareous grassland within and around them (Crickley Hill, Leckhampton Hill).
- Extant prehistoric monuments within ancient woodland (West Tump and Brotheridge Camp at Witcombe Woods), in areas afforested from the later 19th century (The Peak) and in areas of the Cotswolds used as pasture and not enclosed until as late as the 19th century.
- Roman villas on the escarpment and in the Cotswolds, and the line of the Ermin Way via Birdlip to Gloucester.
- Medieval churches, cross shafts and high-status buildings in the core of medieval settlements.
- Farmsteads within medieval settlements, including some next to churches, and others with 17th century and earlier recorded buildings which relate to some medieval settlement and fields enclosed by that period in the vale (including 12th-13th century moated sites) and the shrinkage or desertion of settlements in the Cotswolds – a process underway and then accelerated by the Black Death and subsequent outbreaks of plague in the mid 14th century.
- A rich heritage of vernacular and polite architecture. The use of Cotswold stone and slate, including locally-distinctive craft techniques of working and bedding the stone and treating doors, windows and roof coping, continued to dominate its architecture into the 20th century, and is concentrated in the areas of the vale closest to the escarpment; large houses and country houses developed on the Cotswolds and on the escarpment with views westwards in the later 19th century.
- Parkland at Great Witcombe, Leckhampton Court, Brimpsfield (to the south of the 12th century castle site) and Cowley Manor, and areas of unrecorded minor parkland and large gardens in the context of post-medieval houses (the late 17th century Greenway Hotel next to the prehistoric ascent to Shurdington Hill).
- A high number of quarries dating from the Roman period on the escarpment, within woodland and alongside roads. The regeneration of trees within many and the woodland location of the majority makes them particularly well-suited as habitats for bats, birds, rare plants and reptiles.
- The site of the First World War aerodrome at Brockworth (now housing and a business park) and the Second World War aircraft factory (a potential Local Wildlife Site) at Bentham to the west of Crickley Hill, a radio station and other wartime sites.



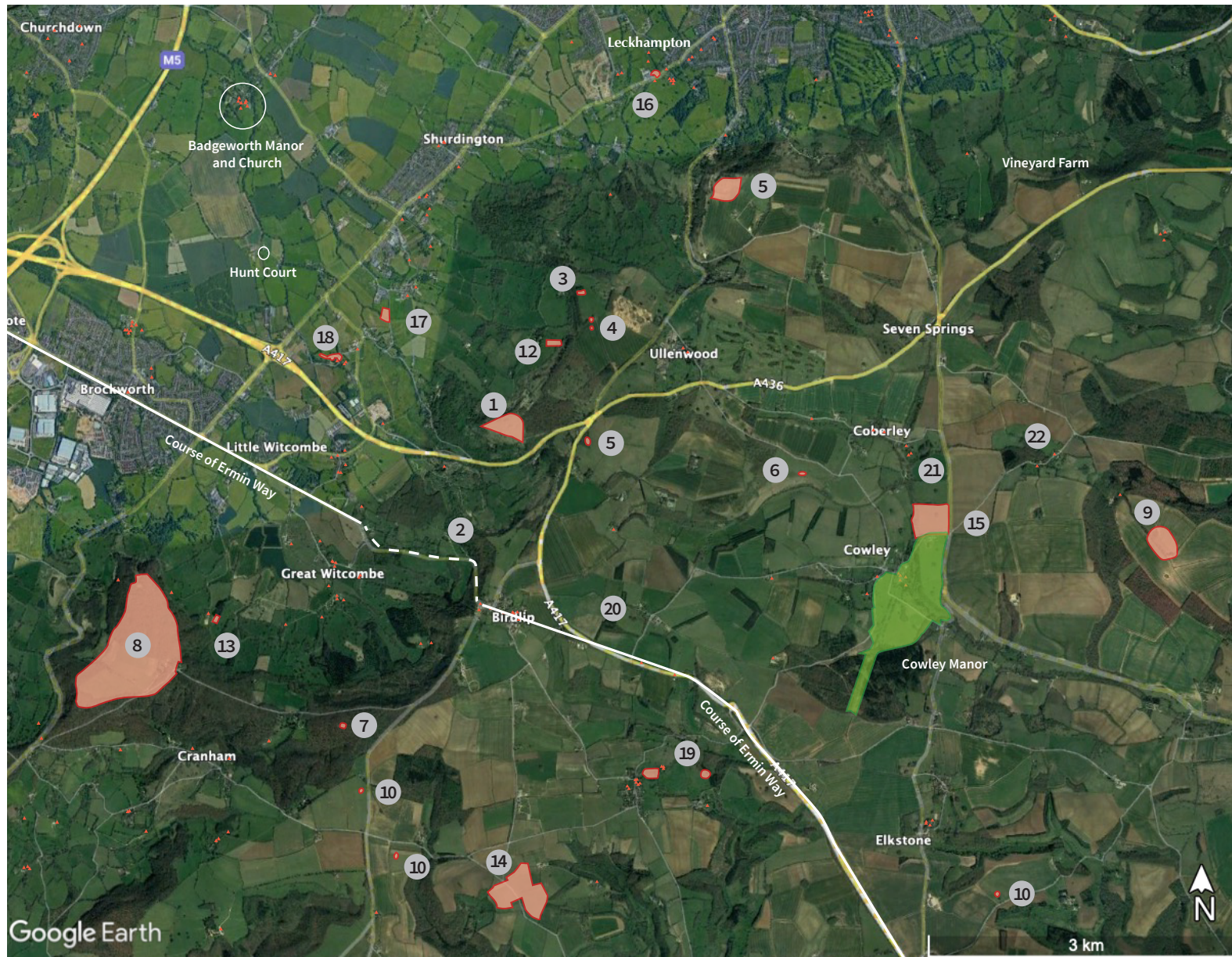


Figure 6. Google Earth image showing heritage designations in their landscape context – scheduled monuments in pink (prehistoric and Romano-British monuments are concentrated on the escarpment and plateau of the Cotswolds), listed buildings as red dots (medieval and later in date, with higher densities in the vale), and the Registered Park and Garden at Cowley Manor. The course of the Ermin Way is also shown, to either side of the ascent via at least one route to Birdlip.

*Prehistoric sites – all scheduled except The Peak*

1: Crickley Hill; 2: The Peak; 3: Crippets Long Barrow; 4: bowl barrows, c. 2400-1500 BC; 5: Emma's Grove bowl barrows, c. 2400-1500 BC; 6: Coberley long barrow; 7: West Tump long barrow; 8: Brotheridge Camp (Late Iron Age); 9: Norbury Camp (8th-5th century BC); 10 comprises two barrows, a) being a bowl barrow c. 2400-1500 BC and b) an earlier Neolithic oval barrow with side ditches; 11: Leckhampton Hill camp and tumulus (8th-5th century BC and possibly c. 2400-1500 BC).

*Romano-British sites*

12: Dryhill Roman villa; 13: Witcomb Roman villa; 14: Manless Roman army camp and medieval deserted village; 15: Coberley Roman villa.

*Medieval*

Moated sites at Leckhampton (16), Yew Tree Farm (17), Bentham Manor (18) and Hunt Court; Brimpsfield castle and motte to east (19); Manless Town deserted village (14) and non-designated deserted villages at Stockwell (20), Coberley Manor (21) and Upper Coberley (22).at Stockwell (20), Coberley Manor (21) and Upper Coberley (22).



Historic England has recently made available the results of National Mapping Programme aerial including Lidar survey in the Severn Vale and the Cotswolds on its Aerial Archaeology

Mapping Explorer website (<https://historicengland.maps.arcgis.com>). The results of this match most information in the Gloucestershire HER and are shown in Figure 7.

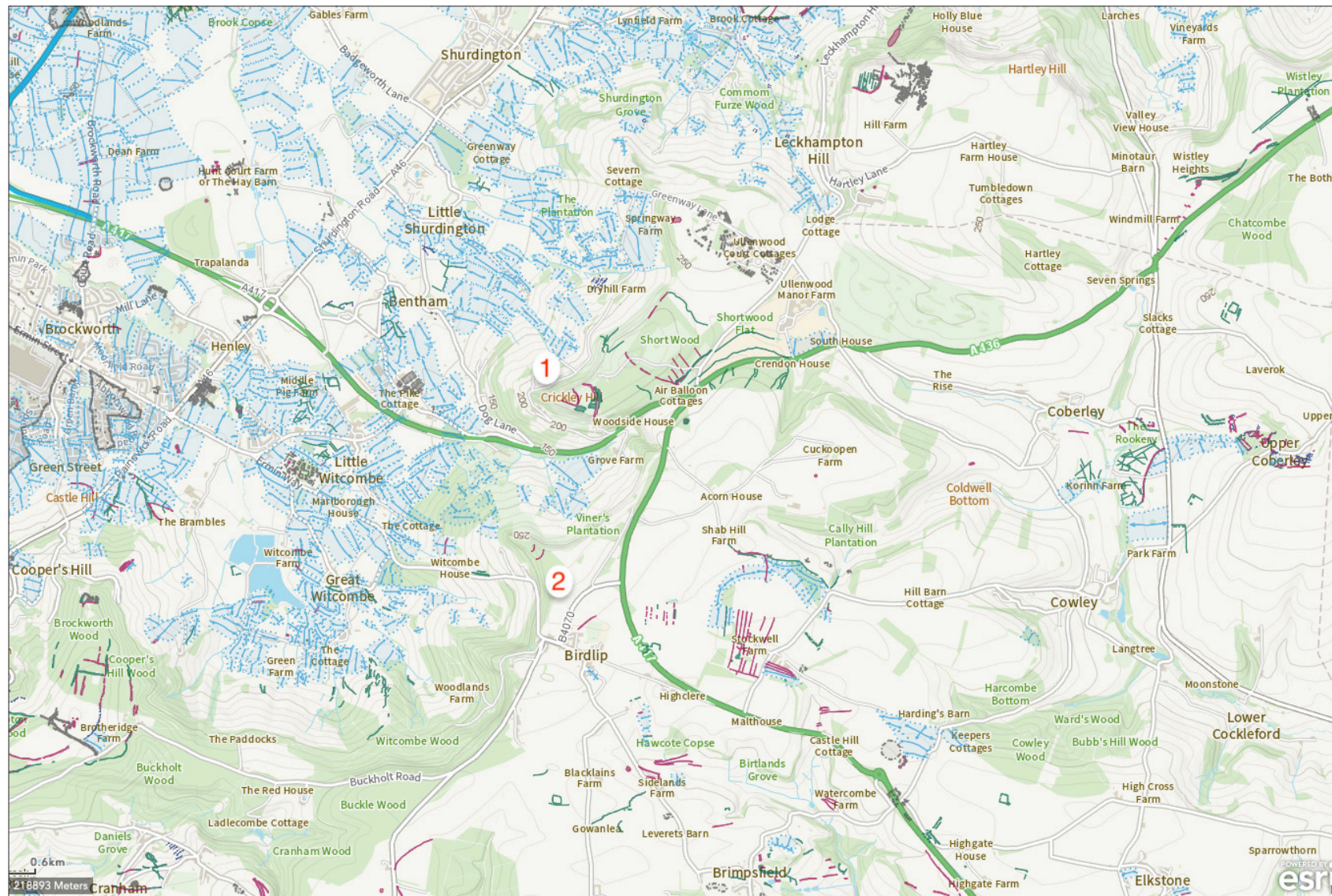









Figure 7. The results of aerial survey as shown on Historic England's Aerial Archaeology Mapping Explorer website, centred on Crickley Hill (1) with The Peak to its south (2). Note the dominance of legible ridge and furrow in the vale and the Cotswolds escarpment. These being shown in blue with the direction of the ridges shown as arrows. Prehistoric monuments are far better represented in the Cotswolds, where the intensity of later 18th century and later arable farming has whilst reducing the legibility of most earthworks enabled the identification of Romano-British and earlier sites through aerial survey. Historic England, Aerial Archaeology Mapping Explorer website (<https://historicengland.maps.arcgis.com>).

-  Structure - A building or structure built from material other than earth
-  Ditch - This includes features originally cut into the earth such as pits and ditches
-  Bank - This includes 'built' features such as mounds and banks
-  Extent of Feature - The general extent of an area of features not defined individually on another layer
-  Ridge and Furrow Area - The extent of 'Ridge and Furrow' arable cultivation
-  Ridge and Furrow Alignment - The general orientation of 'Ridge and Furrow' arable cultivation
-  Slope - This includes features which are not necessarily entirely 'cut' or 'built', but consist of changes in slope, not suitable for recording in other layers

### 3.2.2 Historic landscape character as a framework

Figure 8 sets out the patterns of historic landscape character as simplified from the Historic Landscape Characterisation, and thus the extent to which past change is legible in the present landscape. Figure 9 shows priority including designated habitats. Of particular relevance are the fragments of calcareous grassland that survive, ancient woodland and the fields and their boundaries that cover most of the area around the scheme. Field and routeway boundaries may include ancient and veteran trees, exhibit different degrees of time-depth and species diversity, and if surviving as meadow or in long-term use as pasture – and if including historic earthworks such as ridge and furrow – may have local, regional and national importance as habitats. Most national and local habitat designations in this area relate to woodland and calcareous grassland. The lowland calcareous grasslands at Crickley Hill and Barrow Wake, and Leckhampton Hill and Charlton Kings Common, are designated as UK Habitats of Principal Importance and SSSIs, and there are small areas of this priority habitat outside these designated areas. Ancient Woodland is largely absent from neighbouring parts of the vale and concentrated in the Cotswolds, Ullen Wood being closest to the proposed new road. Witcombe and Buckholt Woods are also protected as part of the Cotswolds Beechwoods Special Area of Conservation. The importance of the relict medieval or earlier wood pasture priority habitat at the Scrubbs is also reflected in its inclusion within the Crickley Hill and Barrow Wake SSSI. Bushley Muzzard SSSI to the north of Brimpsfield comprises a rare surviving area of Cotswold marshland, surrounded by calcareous grassland. Parkland, another priority habitat, is found at Cowley Manor, a grade II\* Registered Park and Garden which was remodelled in the 1850s from a 17th century and earlier park for the London stockbroker James Hutchinson, at Great Witcombe and in association with other large and mostly 19th century houses in the Cotswolds. The SSSI at Birdlip Quarry is a Key Wildlife Site and, together with Crickley Hill, a Regionally Important Geological Site. Table 8.8 of Chapter 8 sets out the non-statutory designated sites within a 1.2 mile (2 kilometre) distance from the DCO boundary, which include the Gloucestershire Wildlife Trust Reserves at Crickley Hill and Barrow Wake and the following Local Wildlife Sites (LWS) in closest proximity to Crickley Hill and the heritage assets considered in this report: Ullen Wood to its east, the calcareous semi-natural grassland at Coldwell Bottom which is a significant part of the setting to Coberley Long Barrow, and the potential LWS sites at Dog Lane, Bentham (the former aircraft factory of 1941 which is ‘rewilding’ with significant grassland and pond habitats) and Haroldstone Fields which is a small remnant of neutral and calcareous grassland and former commons on the west side of Crickley Hill.



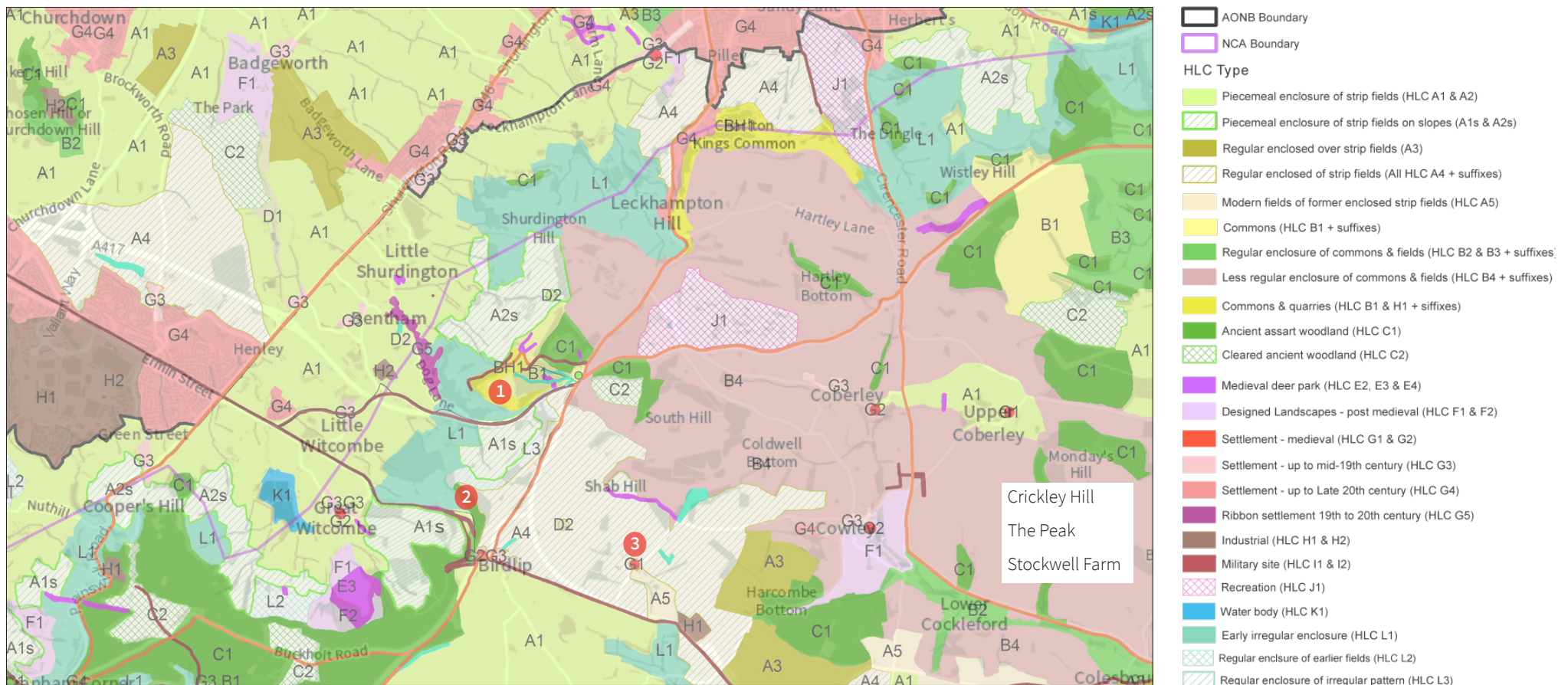


Figure 8. This map shows the Historic Landscape Characterisation mapping of a smaller selected area around the scheme. This distinguishes between those areas, mostly in the vale, where fields have been enclosed by hedgerows on a piecemeal or planned basis from medieval strip fields in unenclosed landscapes (A) and those areas (B), mostly on the Cotswolds, where fields have been enclosed by hedgerows and (especially from the mid 18th century) drystone walls from both strip fields and extensive areas of unenclosed pastures that in large part developed between the 14th and 16th centuries. The HLC has another category (L) of irregular fields which are associated with woodland edges and marginal land; these strongly resemble fields of ancient (pre-17th century) enclosure identified in later HLCs in England. A1 amalgamates those fields which reflect medieval strip fields and A2 less irregular

fields that may indicate a more coherent attempt at enclosure. A3 is regular organised enclosure ignoring former unenclosed cultivation patterns, comprising here an area of low and straight hawthorn hedges to the south-east of Badgeworth Lane and grid patterns of drystone walls in the Cotswolds, and A4 fields are slightly less regular with stronger traces of earlier field boundaries and the outlines of strip fields. B1 is largely unenclosed pasture, including Crickley Hill, and BH1 are similar areas affected by quarrying. The extensive B4 area of less regular organised enclosure of former unenclosed pasture is more likely to retain indications of enclosure from strip fields than the areas of B3 regular organised enclosure of former unenclosed pasture and the similar B2 areas that are more constrained by their topography. L1 indicates irregular enclosure where the former land use has not been identified, and together

with the A1s and A2s fields are most likely to be earlier date and concentrated on the escarpment. Ancient (medieval or earlier) woodland (C1) is most common on the Cotswolds, the HLC also indicating area cleared between the 17th and 19th centuries (C2). Also shown are water bodies (K, both late 19th century reservoirs), 20th century recreational areas (golf courses at J1), ornamental landscapes (F1, surviving; F2, former areas developed or afforested) and settlements - G1 Deserted medieval or later settlement; G2 Existing settlement of medieval or earlier origin; G3 Existing settlement - extent by mid 19th century; G4 Existing settlement - present extent and G5 Existing settlement - 19th century linear settlement infilled in 20th century.



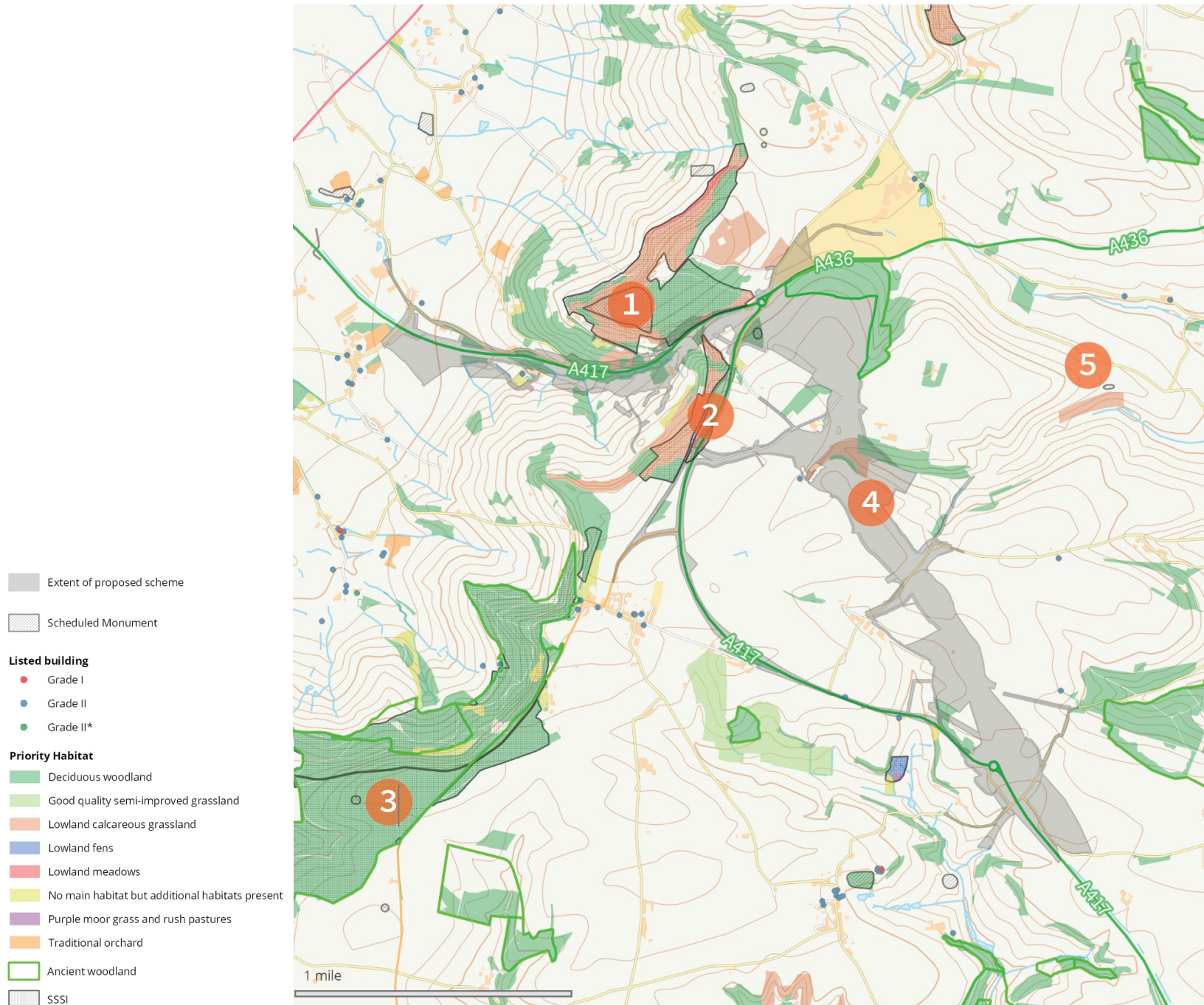


Figure 9. Priority and designated habitats, and designated heritage assets, around the scheme area. The area of the scheduled monument at Crickley Hill (1) is shown in relationship to the SSSI, which includes the calcareous grassland at Barrow Wake (2) and lies to the north of the Cotswolds Beechwoods SAC (3). The map shows the springs and streams flowing westwards from the escarpment and surviving orchards within the vale. The area of lowland meadow at Shab Hill and to the south of Shab Hill Farm (4) has been identified in the habitat survey carried out for the Environmental Statement as a small area of marshy grassland. The area of lowland calcareous grassland to the east (5) is the setting to the Neolithic long barrow at Coberley. The detailed extract from Chapter 8 of the Environmental Statement, shown on the following page, over a Google Earth map, shows the habitats named in the text. The hatched woodland is part of the Cotswolds Beechwoods SAC.

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This detailed extract from Chapter 8 of the Environmental Statement, shown over a Google Earth map, shows the habitats named in the text. The hatched woodland is part of the Cotswolds Beechwoods SAC.



The Gloucestershire Wildlife Trust has used priority (including designated) habitats as focal points in creating its spatial vision for a Nature Recovery Network (<https://www.gloucestershirenature.org.uk/nature-recovery-network>), as part of a wider national commitment by the Wildlife Trusts to deliver the government's 25 Year Environment Plan through these and other initiatives. The opportunities for habitat connectivity and species dispersal expand from these core habitats and also extend across large parts of the escarpment, thus including the early enclosures (see Figure 8) that have experienced the least arable activity since the 14th century. The evidence base is provided by HabiMap, a

citizen science project based on the use of available and where possible data which is using the UK Habitat Classification System to survey priority areas and monitor on a 3-yearly basis the condition of its Nature Reserves at Barrow Wake and Crickley Hill. As elsewhere, historic features comprise scheduled monuments, Registered Parks and Gardens and battlefields. As yet, the potential to use an understanding of historic patterns of land use as a strategic framework to understand and consider the opportunities for habitat connectivity have not been realised.



Figure 10. Screenshot showing the Nature Recovery Network, from the Gloucestershire Local Nature Partnership website (<https://www.gloucestershirenature.org.uk/nature-recovery-network>).



### 3.2.3 Key functions in more detail

#### 3.2.3.1 Ancient (unimproved) calcareous grassland

Ancient calcareous grassland is a UK Habitat of Principal Importance and with few exceptions designated as SSSIs. The unenclosed and ancient calcareous grasslands at the SSSIs at Crickley Hill and Barrow Wake, and Leckhampton Hill and Charlton Kings Common, result from their settlement and clearance for agriculture on their thin soils in the prehistoric period. They then continued to be used for grazing animals and providing fuel and other resources for local communities, the southern part of Crickley Hill for example being used by the community at Bentham whilst the northern part was used by the community at Shurdington. Many commons had been enclosed after paring and burning in the late medieval and early post-medieval periods without the need for formal agreement or Act, leaving field or woodland names such as Rock Common and Common Furze Wood to the north of Greenway Lane.<sup>16</sup> The rarity for the Cotswolds of the marshland and its surrounding calcareous pasture at Bushley Muzzard, to the north of Brimspfield, is recognized in its designation as a SSSI; it is also an extremely rare survival – due to a combination of the topography and the effects of post-1750s drainage in particular – of such a grazing landscape in the Cotswolds.

The national importance of the semi-natural ancient grassland at Crickley Hill and Barrow Wake, and further afield at Leckhampton Hill, is now safeguarded through designation as a Site of Special Scientific Interest, a form of designation that now covers over 68% of this rare surviving habitat that has otherwise been almost entirely eliminated (Ridding et. al. 2015). The combination of survey and land use data from tithe maps has demonstrated the long duration needed for the re-establishment of calcareous grassland at a landscape scale (Redhead et. al. 2013).

#### 3.2.3.2 Woodland

Semi-natural broadleaved woodland, including that identified as Ancient Woodland, is concentrated in the Cotswolds and along the escarpment, a characteristic that has been inherited from at least the first millennium AD (see section 4.2). Witcombe and Buckholt Woods form part of the Cotswolds Beechwoods Special Area of Conservation, one of 82 Special Protection Areas in the UK and extending towards Rodborough Common south of Stroud. They are mostly now high forest, dominated by beech and with remnants of beech coppice and a holly and yew understorey. The beech is nationally significant as the most westerly location for beech forest in the UK, its significance being further enhanced by its flora (including a range of Helleborine), fungi and molluscs.

Since the Neolithic period, woodland had been managed both for its timber, for feeding



Figure 11. The view from across Barrow Wake to The Peak.

animals and for its coppiced underwood (Buckley and Mills 2015). The autumn mast or nuts from beech were a valuable source of fodder for pigs into the medieval period, and probably from the prehistoric period. In the medieval and post-medieval periods the local community had, for example, pasture rights to Buckholt Wood (VCH 1981c), whose name derives from the Old English for beech ('boc'), and to collect wattle for fencing and walls from Cowley wood (VCH 1981a). A diversity of species was coppiced for the production of hurdles, gates, making barrels and fuel (Turner 1794, 22), as well as charcoal; beech was commonly grown as standards for the production of timber for furniture and other uses, and standard trees were commonly trimmed to allow light into the underwood (Rudge 1810, 240 and 246). Short Wood at Crickley Hill, bounded by a bank and ditch and most probably of medieval date,<sup>17</sup> typifies

<sup>16</sup> The process of converting commons into arable land is described by Rudge 1810, 250-7. The Leckhampton Inclosure Act map of 1778 shows the parish dominated by an ancient pattern of fields with open fields remaining to be enclosed which are now sited in Cheltenham.

<sup>17</sup> It is first mentioned in the early 17th century

despite its later thinning out the development of enclosed woodland for producing timber which is found across the Cotswolds; another example is Chatcombe Wood, mentioned in 1182 and which was managed by Gloucester Abbey for its oak and ash (VCH 1981b).

Coppicing with standards, and also the pollarding of trees on the edges of woodland in particular, continued as an active part of woodland management and exploitation into the 20th century, leaving indicator species within areas that have been lost or replanted. The Environmental Statement has noted indicator species of bluebells and other flora within areas that have lost woodland or been replanted.

The importance of grazing land for Neolithic communities, as well as prompting changes in the structure of woodland, also gave rise to a mix of open grazing land and wood pasture on landscapes with thin soils, (Hamilton et. al. 2009). It has been shown (section 4.2) that some of these areas developed as wood pasture managed from estates based in the vale from at least the first millennium AD; the pollarded beech and ash on The Scrubbs and the boundary of the medieval commons at Crickley Hill testify to the continuance of wood pasture commons into the 18th century. Limestone grasslands developed as an integral part of these more open woodlands. Pollarded trees from wood pasture and bordering commons provided a diversity of uses including fuel, fencing, poles and timber for construction and fodder for farm animals. Their veteranisation and the development of deadwood which would have been used by surrounding communities has been accompanied by the decline in commons management of these landscapes, and given rise to the national importance of the Scrubbs for its fungi, lichen and bryophytes (8.7.16).

Plantations, as cover for gamebirds and foxes and simply to ornament the landscape, developed as a feature of estates across the Cotswolds in tandem with the introduction of new species such as Lombardy poplar (Rudge 1810, 249). Examples include Hartley Bottom, mostly dating from the building of nearby Seven Springs House, and plantations of the early 1900s on the Colesbourne estate to the east (VCH 1981b).

For orchards, see *Fields and their boundaries*.

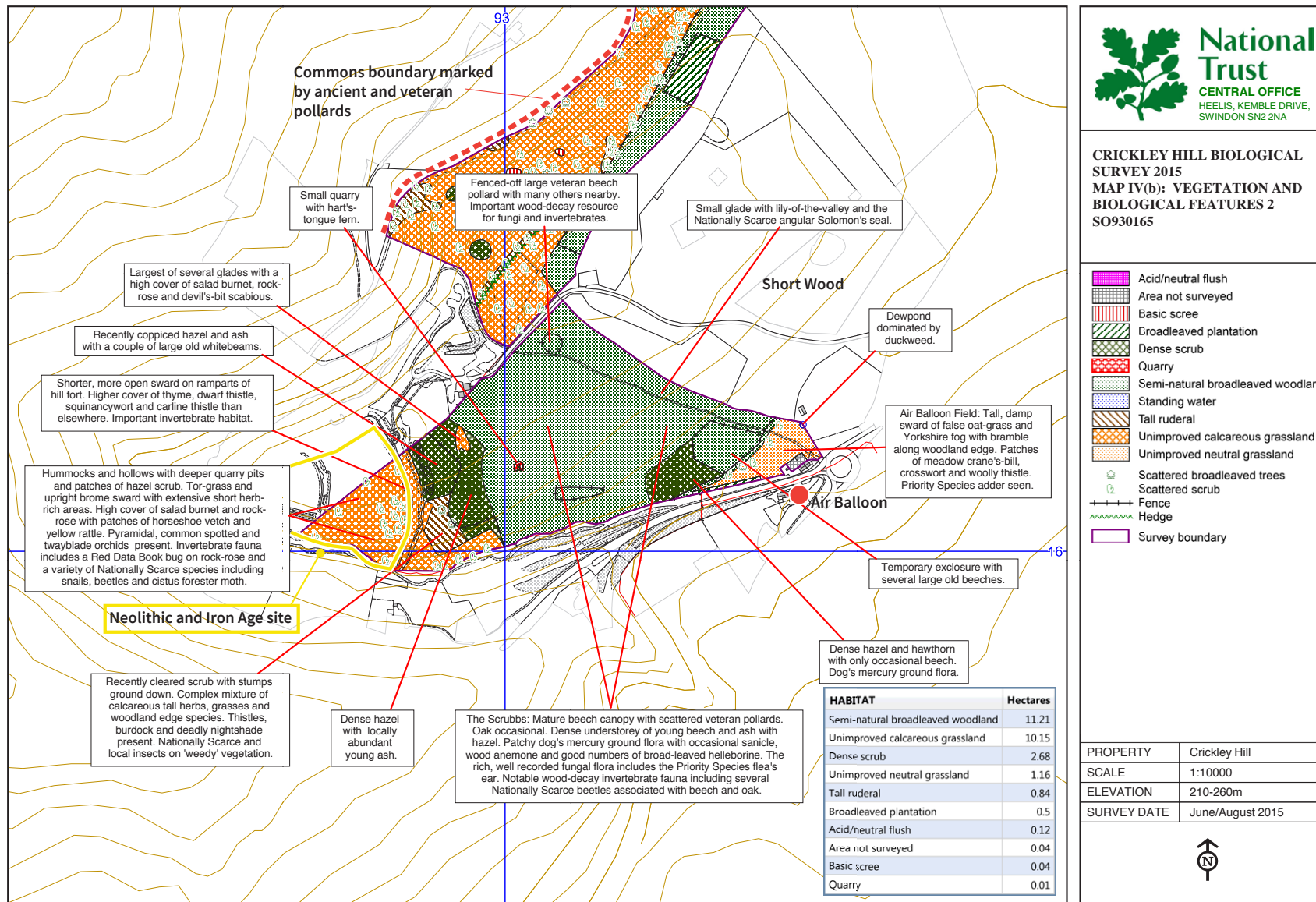


Figure 12. This map shows the area covered by the National Trust's Nature Conservation Evaluation of 2015. Calcareous grassland occupies the area of the prehistoric site as well as the steep slopes of the commons to the north, with the area of ancient wood pasture now known as The Scrubbs shown to the centre of the map and the area of Short Wood bounded by a bank and ditch to the east.

### 3.2.3.3 *Fields and their boundaries*

Fields are bounded by hedges and ditches and, on the Cotswolds, drystone walls which are mostly post-1750 in date, also with boundary trees (most commonly oak, ash and willow) for growing timber for fencing, construction and other purposes, fuel and animal fodder. Boundaries to parishes, deer parks, meadows and the fields of medieval farmsteads sited away from villages are most likely to predate the 14th century. On the escarpment and in the vale brooks formed significant boundaries within Iron Age field systems which were connected by trackways to hilltop enclosures and pastures on the Cotswolds (Moore 2006, 134-5).

Gloucestershire's Historic Landscape Characterisation has mapped the patterns of fieldscapes at a broad scale, which relate to medieval church-manor settlements and farmsteads on shrunken settlement sites in the Cotswolds and to both villages and scatters of medieval moated sites and farmsteads established by the 17th century in the vale; these patterns of farmsteads have not yet been mapped in Gloucestershire, unlike in neighbouring Worcestershire and other parts of the country where it has been shown that farmsteads and fields developed in close relationship to each other.<sup>18</sup> It is, nevertheless, possible to set out some key distinctions between:

- *the escarpment*: an early irregular pattern of enclosures is associated with ancient beechwoods (at Witcombe and Buckley Woods, and Lineover Wood to the north-east) and a high number of veteran trees found in more substantial hedgerows; these include some sited along watercourses that may (as introduced above) be pre-Roman in origin; the escarpment has well-preserved ridge and furrow, retained to a long history of post-14th-century use as grassland whilst other steep slopes remained inaccessible and may never have been ploughed; these fields are also associated with other features that by comparison with other areas are indicative of a medieval date, including medieval field names where documented (Moore-Scott 1999, 27) and farmsteads with 17th century and earlier buildings.
- *the Severn Vale*: most woodland had been cleared by the 14th century; <sup>19</sup> fields were enclosed as part of a shift from arable strip fields, which covered the majority of the area in the early 14th century, to mixed farms in which dairying and orcharding played a significant role; surviving orchards are now Priority Habitats; older boundaries survive along watercourses and would also repay investigation around the 12th-13th century moated sites which form part of a cluster of 17th century and earlier farmstead sites around Little Shurdington and Bentham; they also relate to the routeways providing access to Crickley Hill; low thorn hedges typify the areas of 19th century regular enclosure including the area of medieval woodland which until the 1840s survived to the north of the

moated site at Hunt Court.

- *the Cotswolds*: Larger fields on the Cotswolds, enclosed from medieval strip fields and also from sheep walks that had developed within former cultivated land from the 14th century, leaving some areas of earlier enclosure close to settlements and only a few pockets of open medieval open fields to be enclosed in the early 19th century; like other wold landscapes in England, the enclosure and reorganisation of fields and the rebuilding of large farmsteads with their barns, stables, granaries and cattle yards proceeded in tandem with the intensification of arable farming, enabled by rotations using new grasses, sainfoin and root crops, and other changes include estate buildings and plantations for country sports made by improving estates, such as Cowley Manor and Colesbourne to the east, and for new houses such as Ullenwood Manor and Hartley Bottom for Seven Springs House in the late 19th and early 20th centuries.

There are some areas affected by the extensive loss of field boundaries after the 1950s, most of these being in farmland already subject to reorganisation or new enclosure for new forms of productive agriculture in the 18th and (mostly) 19th centuries.

<sup>18</sup> Lake and Edwards 2006 and 2007; Rudge (1810, 19-20) noted a difference in the farmsteads between newer and older fieldscapes.

<sup>19</sup> Place names such as Redding (derived from the term 'ridding' for clearance) attest to this process





Figure 13. The view from Crickley Hill towards Little Shurdington, showing Dryhill Farm to the right and the contrast between the escarpment fields with their early, species-rich boundaries and scattered trees and the vale with a mix of early 19th century thorn hedgerows and earlier hedges resulting from the piecemeal enclosure of open fields.

Monuments within ancient grassland and the best-surviving areas of medieval ridge and furrow, which are concentrated on the escarpment, offer obvious examples of areas that have been in long-term use as pasture and thus have heightened potential for species diversity as unimproved neutral grassland (MG5 grassland). This grassland has additional potential on the Cotswolds to transition towards calcareous grassland (CG); inspection of the tithe map apportionments from the 1840s would indicate whether specific fields were then in arable use. A rare survival of MG5 grassland in the Cotswolds, which was not capable of improvement due to its land form, lies to the north of Shab Hill and close to the early 19th century outfarm there (see Figure 9); it would have been suited as meadow for foddering the cattle there, and is considered to have national importance as lowland meadow (8.7.53). For similar reasons there are small areas of marshy grassland (8.7.59) to the south of Shab Hill Farm (see Figure 9) and within Bushley Muzzard SSSI.

Semi-improved species-poor grassland, which may contain some herb-rich areas, is found across the area with species-poor grassland dominated by perennial rye grass being most common on the Cotswolds plateau and in some areas of the vale. These fields may preserve invertebrates and flora in the field margins which are relics of past cultivation and rotation crops. Detailed survey and recording can reveal rare species indicating that they are hanging on from an older cropping system.



Figure 14. The view towards Crickley Hill from the site of the new road, clearly showing the Iron Age part of the site, from the Gloucestershire Way just to the south of Ullen Wood. The hedged boundary to the left is the parish boundary between Coberley and Cowley.



# 4 HISTORIC DEVELOPMENT

This section summarises the key historic developments for the wider area.

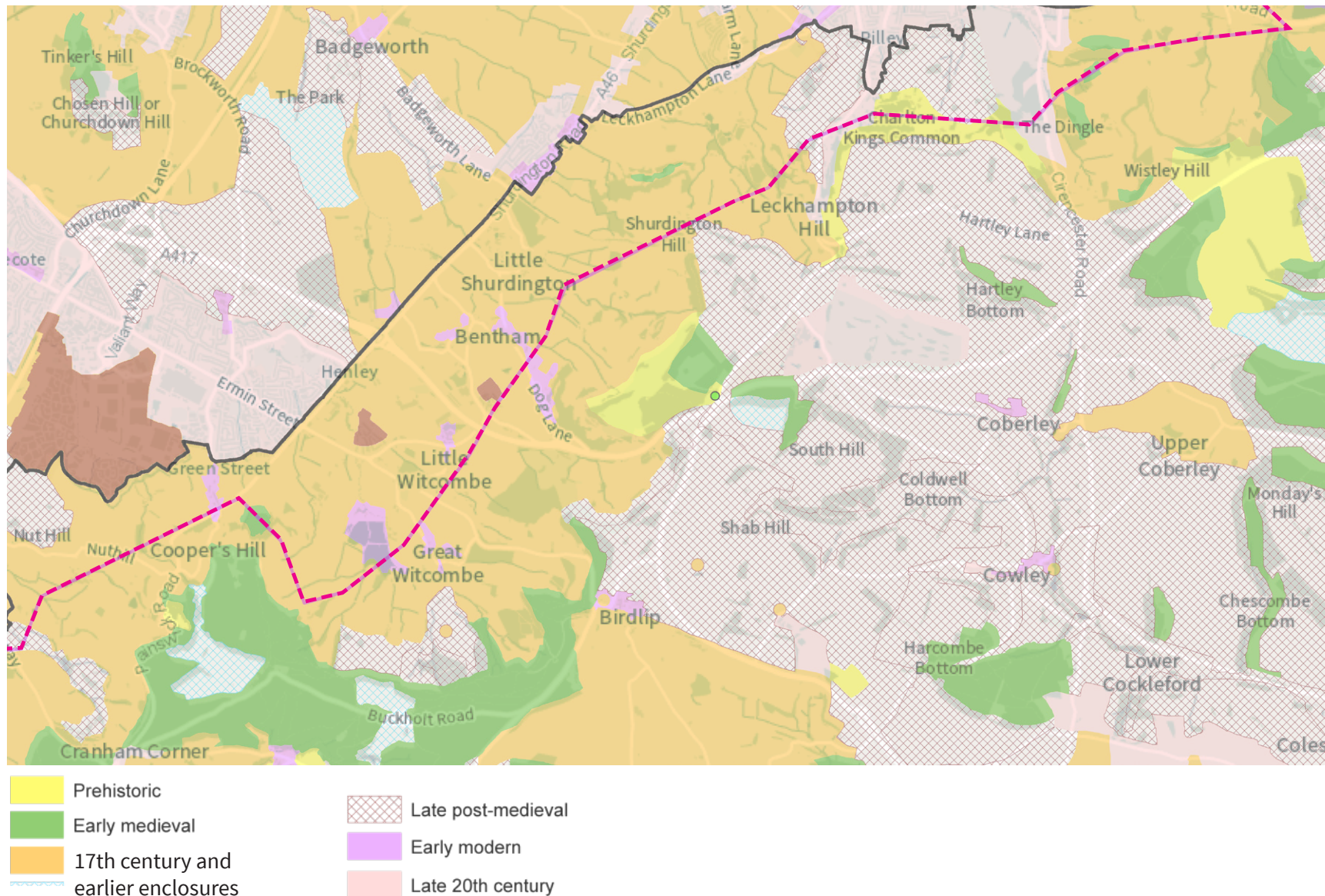


Figure 15. This map shows in simplified form the time-depth reflected in the present landscape, as also set out in 3.2.3 of this report. Thus areas of surviving calcareous grassland at Crickley Hill and Leckhampton Hill have been in continuous use as grazing land from the prehistoric period, and the pattern of woodland established by the 11th century has been assigned an early medieval date. The pattern of enclosure displays a broad distinction between the areas mostly enclosed from medieval strip fields by the 18th century, with some areas of reorganisation, and the ‘late post-medieval’ enclosure of the plateau and valleys of the Cotswolds where the present pattern reflects the strong influence of 18th and 19th century reorganisation and enclosure of commons and downland. There are large 20th century golf courses to the north of Ullen Wood and to the north.



## 4.1 THE PREHISTORIC PERIOD (TO AD 43)

### Summary

- There is strong potential for Palaeolithic and Mesolithic remains, finds and occupation sites within the folds of the escarpment, its springs and tufa deposits. Mesolithic flint-working sites are concentrated to the west of the Cotswolds, and include evidence for occupation at Crickley Hill and around Stockwell.
- Surviving prehistoric sites dating from the Neolithic period comprise an ensemble of national and international importance that developed within extensive grazing landscapes, wood pasture, areas of arable agriculture and woodland. They are concentrated on the escarpment and in parts of the Cotswolds, and are strongly associated with areas that have remained as ancient calcareous grassland or were enclosed at a later stage in the post-medieval period. There is also more evidence for crop marks from the Cotswolds, due to a combination of its geology and the intensity of arable agriculture, than in the vale and along the escarpment where it is concealed below surviving medieval ridge and furrow.
- Neolithic communities would have used the resources of both the vale and the Cotswolds, and many of the routeways including holloways which ascend the escarpment probably date from the prehistoric period. The causewayed enclosures at Crickley Hill and The Peak are gathering places which date from 3600-3700 BC, occupying commanding hilltop positions with views over the vale. They are positioned at the meeting-point of contrasting land use areas and flank a routeway which is one of the easiest means of ascending the escarpment. They are linked across the escarpment by Barrow Wake, which also offers dramatic views of the vale and towards both sites. They also relate to nearby 'Severn-Cotswolds' type long barrows at West Tump, the Crippets and Coberley. Both sites were abandoned after a battle at Crickley Hill in 3400-3350 BC. Brierly Hill long barrow (HER 3787) to the south of Stockwell Farm and the present A417 is probably a natural feature.
- By the Bronze Age the bowl barrows at Emma's Grove were prominently sited in relationship to this routeway, and there are other Late Neolithic and Bronze Age barrows in the Cotswolds with a small number of as yet unconfirmed potential barrow sites in the vale. The high-status Late Iron Age cemetery at Barrow Wake was sited on a prominent position overlooking the vale.
- There is increasing evidence for Late Bronze and Iron Age settlement in the Cotswolds and the vale. The Iron Age sees re-occupation of Crickley Hill, and occupation of other Iron Age hillforts at Leckhampton Hill (where Beaker pottery marking the beginning of the Bronze Age has been found), Brotheridge Camp, possibly at Birdlip Camp (6707 and 34807) and probably at Churchdown Hill in the vale.

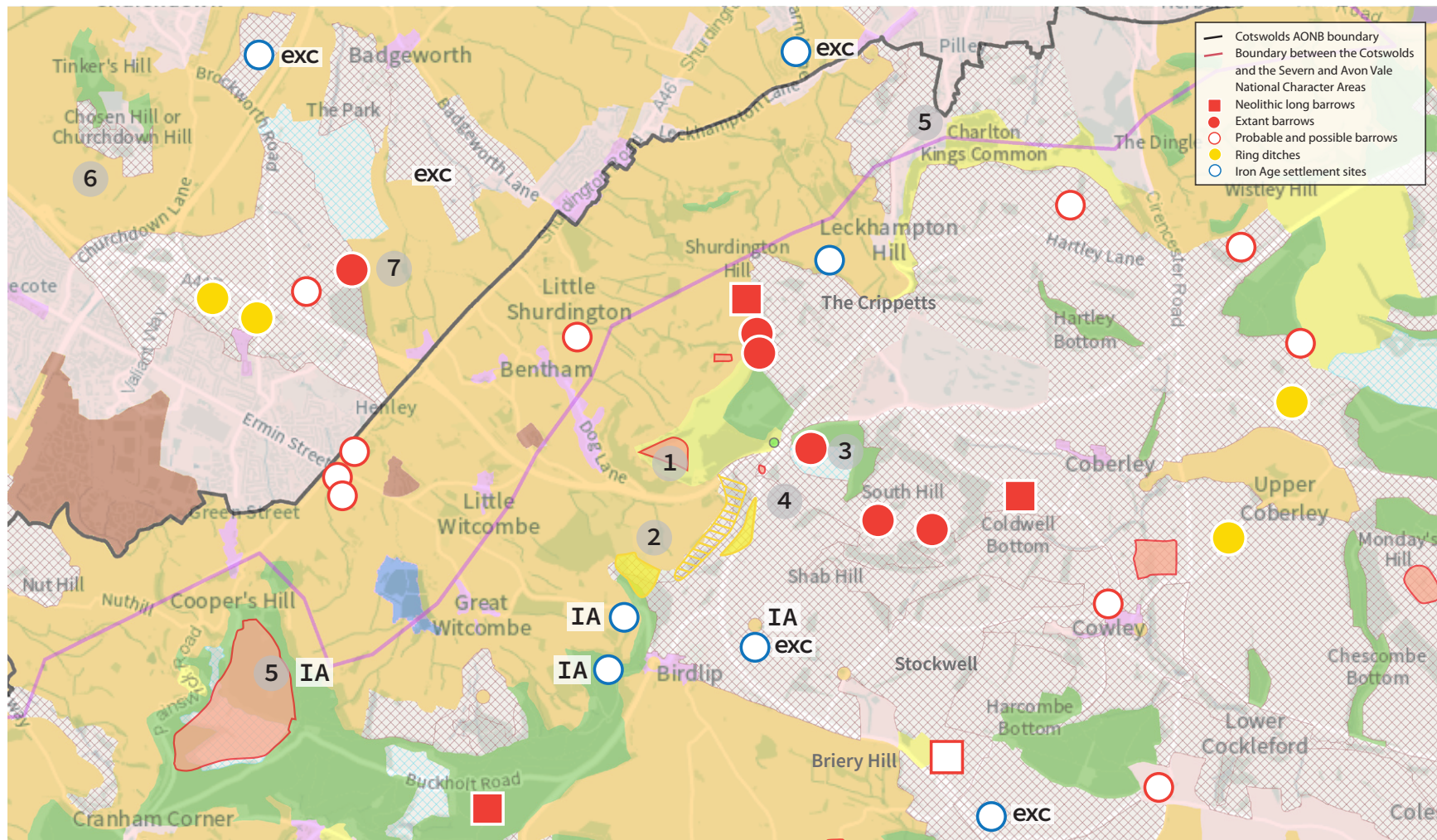


Figure 16. Principal recorded prehistoric sites set against the time-depth of the landscape as shown in Figure 15, showing the sites of Crickley Hill (1), The Peak (2), Emma's Grove (3), the site of the late Iron Age cemetery at Barrow Wake (4, the yellow hatching showing the core area of ancient grassland that has regenerated after a brief phase of enclosure reflected in its characterisation as enclosed land), Brotheridge Camp (5), the probable Iron Age hillfort at Churchdown Hill (6) and the round barrow to the south-east of Hunt Court, around which the parish boundary extends (7). Also shown, as an open blue circle to the north of the Crippets barrows, is the site of a 'false' stone circle identified by 19th century antiquarians which is recorded on the HER.

#### 4.1.1 National context

The evidence for hunter-gatherer communities which characterises the Palaeolithic period, or Old Stone Age, dating from before the last glaciation, continues to dominate the Mesolithic or Middle Stone Age from around 10,000 BC. The Mesolithic period sees a marked change in stone artefacts and more evidence for seasonal and even permanent settlement, and rising sea levels result by around 6000 BC in the coastline resembling its present form. The Neolithic period sees the arrival in around 4000 BC of the first farming communities with their livestock and crops, arriving by boat some 1000 years after they had reached the shores of neighbouring continental Europe. From around 1500 BC, in the middle of the Bronze Age and intensifying as the population grew in the Iron Age from around 800 BC, we see the emergence of extensive and planned 'landscapes'. These resulted from a renewed opening up of the landscape with clustered and scattered farms, accompanied also by a range of farmland fauna and flora familiar to people in modern times. Seasonal grazing grounds, also used for extracting fuel and other resources, developed in this period as a result of the retreat of settlement from moorland, heathland and other areas due to changing climate and over-exploitation of their soils. Earthwork evidence for houses and farmsteads, and in particular for burial, ritual and ceremonial sites, are concentrated on higher ground least affected by later agriculture, and relate to a range of ways for people to inhabit and move across the landscape. Aerial survey and excavation is revealing increasing evidence for these on lower ground as well.

#### 4.1.2 Local developments

The context for archaeological finds is markedly different for the pre-glacial Palaeolithic, as they are bound up with the underlying geology. Chapter 7 of the Environmental Statement notes deposits of tufa around springs and streams and the effects of 'landsliding, hillwash and soil creep' (9.7.8). Comparison with other areas strongly suggests that the peat or organic material embedded in the surface geology, marked by the springlines along the escarpment, have considerable potential for prehistoric material and evidence of occupation extending further back into the pre-glacial Pleistocene era. Spring sites including tufa deposits were an important source of drinking water and often a focus for Mesolithic communities (Davis 2012, 48 and 247), as has been noted in an area to the south and west of Stockwell Farm (Manning 1994).

Snashall's analysis of scatters of discarded flint, most of which had to be imported into this area for working, in relationship to enclosure, burial and other sites dating from between the Mesolithic and Early Bronze Age periods, suggests that The Peak and Crickley Hill were used by Mesolithic people to make tools using imported flint – within the wider context of a landscape for hunting and subsistence where other flint-working sites were more transient in nature (Snashall 2002, 103-4). Radiocarbon dating suggests that both of the causewayed enclosures – the one at Crickley Hill overlying a Mesolithic feature made in around 4700 BC – were first built around 3600-3700 BC, with evidence for later recutting as found on other enclosure sites of

this type (Whittle et al 2011, 254-7). The use of these sites is probably also due to the views and vantage points they provided for overlooking the vale.

Causewayed enclosures served as communal gathering places and were often sited at the junction of contrasting land use zones. Highly significant in this context is the location of two such enclosures to either side of one of the natural approaches from the vale on the westerly edge of the Cotswolds, close to redzina soils suitable for cultivation by hoe or ard and overlooking a landscape which was in contrast largely wooded into the late third millennium BC (Darvill 2011a). Causewayed enclosures are also associated with long barrows (Darvill 2004, 200-213), West Tump set in Witcombe Woods to the west having human remains dated to between 3770 and 3350 BC (Darvill 2004; Darvill et. al. 2011b, 141). The long barrow at The Crippets, sited to overlook the vale and now enclosed with a late 19th century plantation of Scots Pine, is located alongside another approach from the north, crossing over Greenway Lane which is an ancient holloway extending westwards. There is another long barrow on a ridge also accessed via a holloway of uncertain date at Coberley (less than an hour's walk to the east), and the high locations of the other long barrows indicates emerging attachment to places within a culture where the herding of cattle (dominant in the archaeological record for both sites and with evidence of their deposition in tombs) was of considerable significance (Snashall 2002, quoting Thomas 1988). It has been argued by Philip Dixon that the construction in around 3500 BC of The Long Mound at Crickley Hill was aligned to a shrine (set over an earlier shrine and Mesolithic ritual site dated to around 4700 BC) with dramatic views over the vale. This was most probably intended for the sacrifice and then cooking of cattle and other animals; its location meant that any ritual activities would have been largely hidden from view, except from Barrow Wake on the other side of the valley. Much of the structure is formed from imported soil, implying that it had significance to communities in both the vale and Cotswolds. It has also been argued that it was a pillow mound for breeding rabbits (Williamson and Loveday 1988). There are field names indicating rabbit farming to the north of Crickley Hill, but the siting of this as a pillow mound is unusual.

The two sites suggest both the organisation of labour and a developing idea of both residence as well as places for people to gather and exchange, the latter certainly including livestock but also Langdale axes and ornaments from further south-west and northern France. They developed in clear relationship to each other, with strong similarities in their pottery (using clay from the vale and the Cotswolds) to that found in neighbouring barrows of the 'Severn-Cotswold' type. The settlement at Crickley Hill was abandoned after its destruction in a battle in 3400-3350 BC, and The Peak seems to have been abandoned from this time, whereas other parts of the surrounding landscape continued to be used (Snashall 2002, 61).





Figure 17. Phase plan of Crickley Hill, from Philip Dixon's 2019 report (The Hillfort Settlements) published by the Crickley Hill Archaeological Trust. Map from British Library, reproduced under Open Licence Commons.

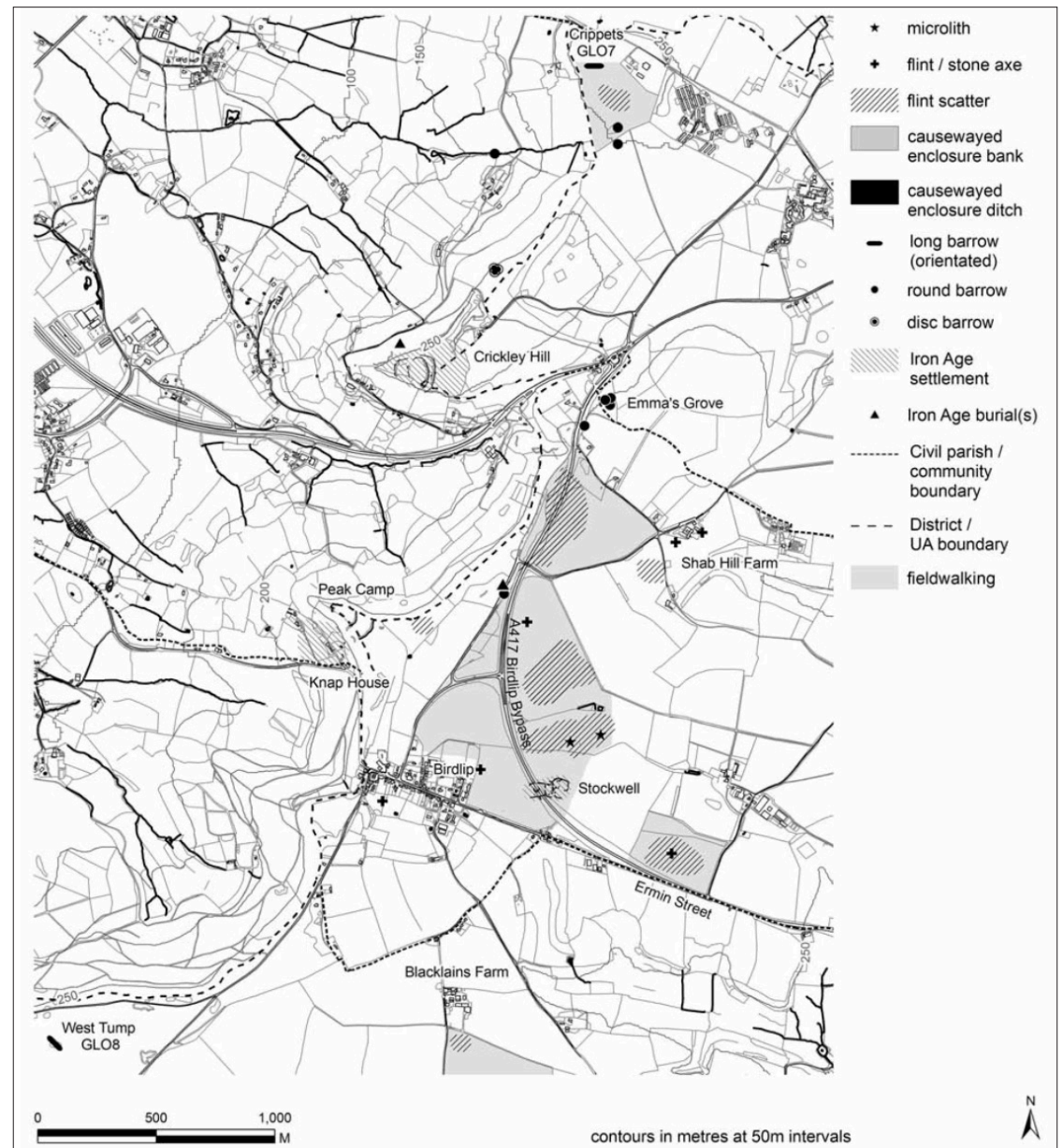


Figure 18. Extract from Darvill 2011b, showing prehistoric sites in the vicinity of The Peak and Crickley Hill.

The areas around local tombs continued to be used to make tools, but by the Late Neolithic and Early Bronze Age both The Peak and Crickley Hill seem to have been deliberately avoided (Snashall 2002, 57-64) with the exception of the Long Mound which was extended or reworked in around 3200 BC and was used for ritual deposits in the 17th century AD. The main surviving addition to the landscape in this period are the three bowl barrows at Emma's Grove, comprising one large 32-metre span barrow and two, probably earlier, smaller-span (10 and 12 metres) barrows each surrounded by a ditch. As a group, and including a curvilinear feature to their east, these occupy a prominent position in the landscape which would have been revealed to travellers cresting the scarp on the ascent from the present line of the A417.

The contrasting character and inter-relationship of the Cotswolds and the Severn Vale becomes more apparent in the Bronze Age. There is growing evidence from the vale for the development of farmsteads with their field systems and connecting routeways; the survival of ridge and furrow, particularly on the escarpment due to a long history of pastoral farming, conceals this from field and aerial survey (Crowther and Dickson 2016, 24-31). In contrast there is little evidence for this on the Cotswolds but a concentration of barrow sites for individual burials in areas 'devoid of Neolithic monuments' (Janik et. al. 2011, 20) located within what appears to be a pastoral farming landscape with woodland interspersed by pastures for sheep and cattle. Some of the rectilinear enclosures and boundaries identified

from aerial survey may be of Bronze Age origin, but the evidence for the intensification of land use belongs with more confidence to later in the Iron Age (from the fourth century BC, Moore 2006 125-6).

The first phase of the Iron Age hillfort with its dramatic defences at Crickley Hill dates from the 6th-7th century BC. It was abandoned after destruction in a battle around 400 BC and reoccupied with round houses and other strong cultural influences belonging to the southern English 'Wessex' culture. It was not then reoccupied until around the turn of the first millennium. Both forts, together with Leckhampton Hill and High Brotheridge (less securely dated), form one of a group of Iron Age forts along the western edge of the Cotswolds, looking towards the Severn, the Forest of Dean, the Malverns and the Brecons; the pair of hillforts with the earlier barrow or cairn at Dowdeswell look northwards towards the extensive prehistoric landscape of Cleeve Hill, and the hillfort site at Norbury to the east looks into valleys to east and west. Farmsteads with their associated rectilinear enclosures, dating from around the 'watershed period' of the 4th century BC and serving successive generations of small household units, relate to more place-bound communities with access here to different valleys with more easily cultivated soils and a mix of arable and pastoral farming (Moore 2006, 134, 205, 214 and 135). Their relationship to routeways leading into the vale may relate to seasonal occupation of land by communities from the vale as well as the establishment of kin-based communities working on a co-operative basis with each other (Moore 2006, 78 and 142).

A brief period of re-occupation of Crickley Hill at the turn of the new millennium appears to be linked to the high-status burials discovered under the present road at Birdlip, revealed in the late 19th century and including the fine 'Birdlip mirror' which may relate to the reoccupation of Crickley Hill in this period. These reflect the rise of a late Iron Age social elite observed elsewhere in southern England, and may also relate to the establishment of the oppidum at Bagendon to the south.

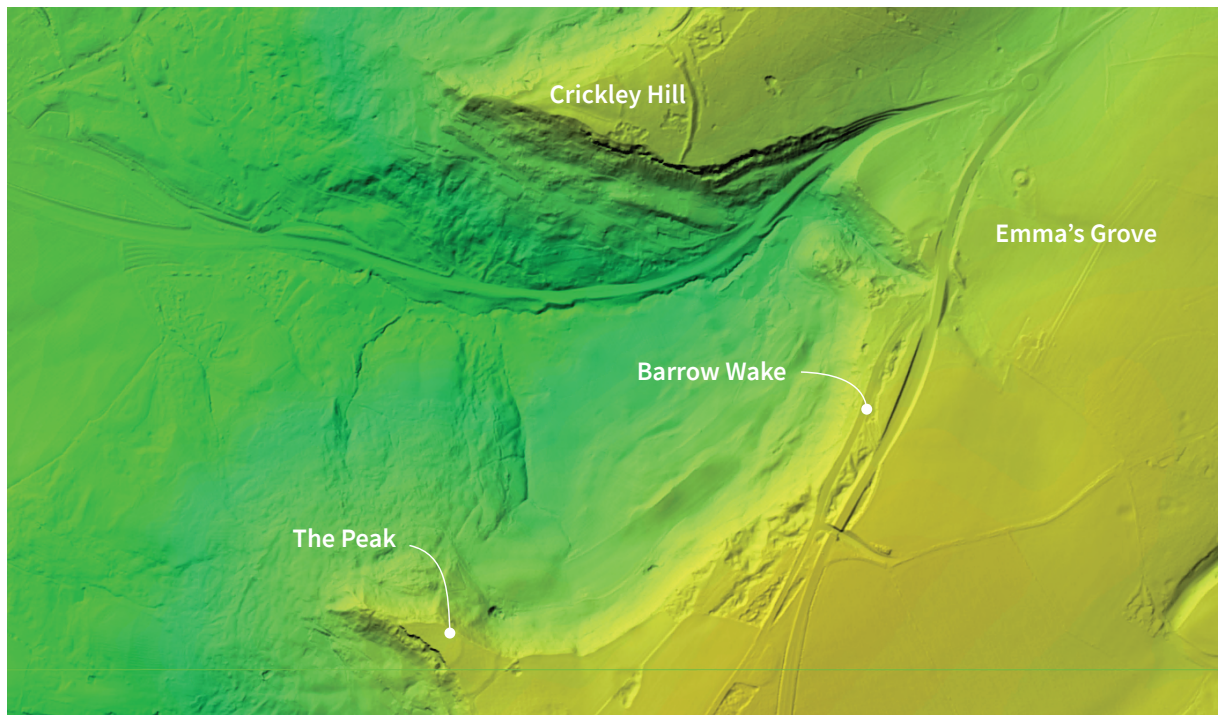


Figure 19. This LiDAR image clearly shows the Neolithic and Iron Age boundaries to Crickley Hill and The Peak, and their relationship to the early routeway, Emma's Grove and Barrow Wake (as also shown on Figure 3). Also shown is the impact of quarrying and the division between the area of earlier enclosures on the escarpment in contrast to the vale. Source: the Environment Agency



4.2 THE ROMANO-BRITISH PERIOD (AD 43 – AD 410)

Summary

- By the late 40s AD the Ermin Way connected the first phase of the occupation to the legionary fortress in Gloucester.
- There is, typically for this period, an abundance of findspots compared to earlier and most later periods.
- Settlement sites and fieldscapes display a contrast between those that are little different from their predecessors to the evidence for high-status sites on the approach to Gloucester, settlement alongside the Ermin Way, a villa at Coberley which probably managed a large Cotswolds estate and villas on the escarpment including those at Witcombe and at Dryhill to the north of Crickley Hill.

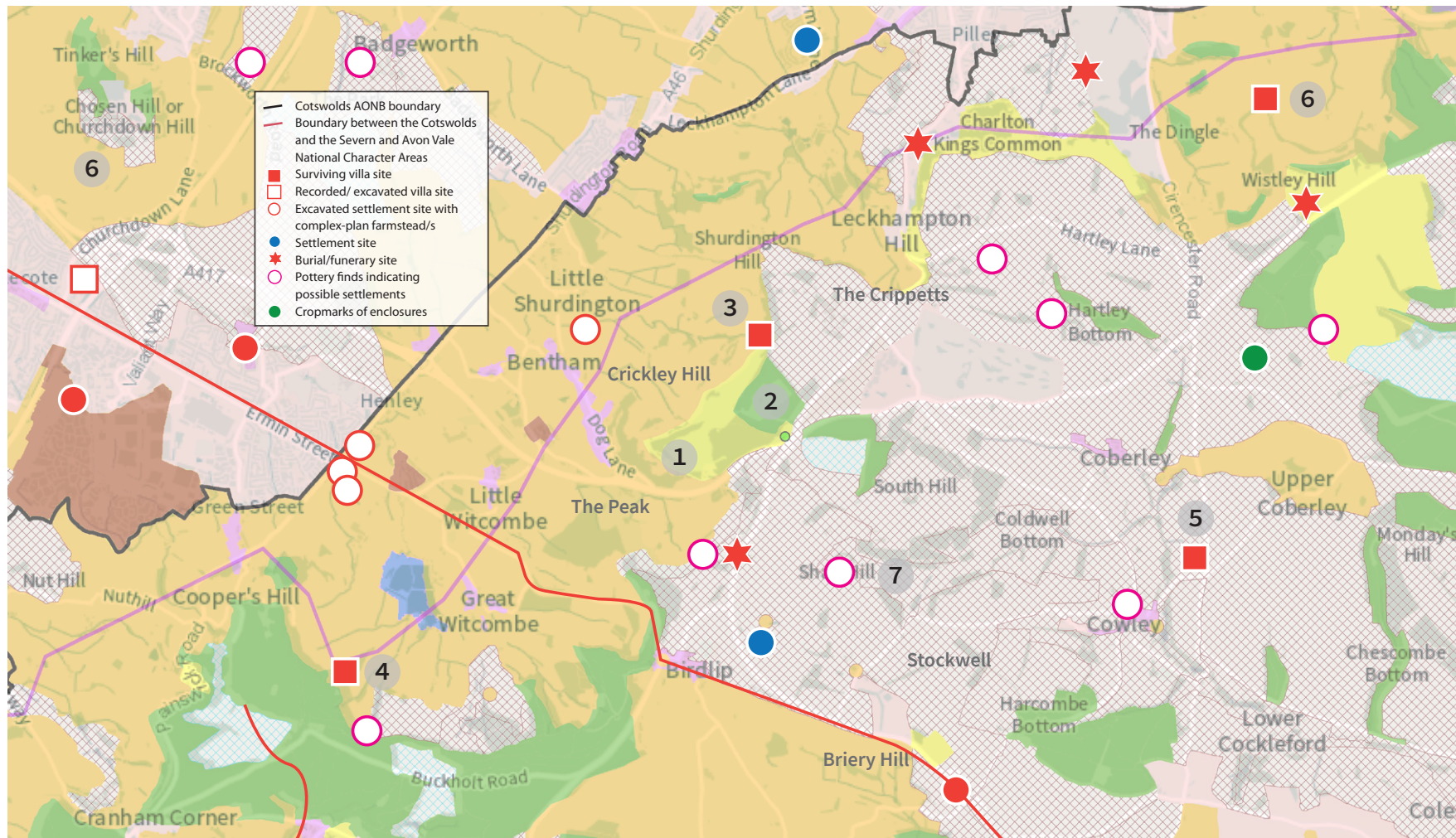


Figure 20. Recorded Romano-British sites set against the time-depth of the landscape as shown in Figure 15., showing the line of Ermine Street, Crickley Hill (1) and the possible stock enclosures and associated finds within Short Wood (2), in close proximity to Dryhill Roman villa (3, Scheduled Monument), the other villa sites at Witcombe (4, Scheduled Monument) and Coberley (5, Scheduled Monument)) and also the site of a villa and earlier (with recorded Neolithic finds) site at Vineyards Farm (6). Also shown is the line of Ermin Street, close to two excavated sites of complex-plan farmsteads (as elsewhere these indicate a greater level of sophistication than other farmsteads of this date), and the line of another recorded Roman road south of Brotheridge Camp.



#### 4.2.1 National context

Towns and estates developed as a key feature of the Roman 'period' from AD 43 to around AD 410: both experienced decline in the Saxon period, in parallel with falling population (by as much as half, from around four million in the Roman period). There is much evidence for the continuity of rural settlement patterns into the centuries after the Romans left.

#### 4.2.2 Local developments

The area is crossed by the Ermin Way (HER 7542), which linked a string of forts extending from Silchester in Hampshire via Cirencester to the legionary fortress and port at Gloucester, established in around AD 48 and which developed from AD 97 as a colonia for retired legionaries. It partly runs along the course of the old A417, before splitting off at Nettleton where its course is defined by large banks to either side. There is some uncertainty about the route or multiple routes it takes to descend the escarpment before it rejoins its known historic course in the vale.<sup>20</sup> A farmstead, or a string of farmsteads dating from around 160-180 AD and with successive phases until its abandonment in around 370-380 AD, was excavated close to the Cowley roundabout junction at Barrow Wake (Mudd 1999); it shows that the landscape here was cultivated with pasture for sheep, cattle and horses. Other Romano-British farmsteads – including ones at Brockworth, Bentham and Leckhampton – are scattered across the vale, with evidence for more formality in their planning and the use of imported Samian ware on the approach to Gloucester; there is not yet any clear evidence for the colonisation of farmland or for any replanning of the agricultural landscape.<sup>21</sup> These show that the pattern of settlement established by the Late Iron Age continued throughout this period and beyond, but the evidence for increasing density of settlement over this period raises the question of how much produce was exported to the legionary base. There are villa sites at Witcombe (occupied from c.250 AD) and Dryhill, at Birdlip and also on the high wolds at Coberley to the east, although the nature of the estates that they managed is uncertain.



Figure 21. The Ermin Way with its flanking embankments, view towards Birdlip.

<sup>20</sup> A linear earthwork interpreted as a holloway is one suggested candidate (HER 9491) and the line of the Witcombe parish boundary via Barrow Wake being another. The Ermin Way is also known as Ermin Street, and can understandably be confused with Ermine Street which linked London to Lincoln.

<sup>21</sup> See map in *The Rural Settlement of Roman Britain*, Allen et al 2016, accessible at <https://archaeologydataservice.ac.uk/archives/view/romang>.

### 4.3 THE EARLY MEDIEVAL PERIOD (AD 410 to 1066) AND THE MEDIEVAL PERIOD (1066-1540)

#### *Summary*

- There is evidence for the short-lived reoccupation of Crickley Hill at the beginning of this period, after civic authority had collapsed. The place-name Crickley Hill is a fusion of British and Anglo-Saxon, reflecting the use of this area and others in the Cotswolds (Cowley and Coberley) as wood pasture landscapes which may hint at their earlier use and development.
- The Ermin Way and earlier routeways continue to be used, the latter as a means of connecting (mostly ecclesiastical) estates based in the vale from the late 7th century to wood pasture landscapes for grazing sheep and cattle in the Cotswolds.
- The present pattern of settlement with strip fields within core areas of open fields developed between the 8th and early 11th centuries, with small nucleated settlements dominated by churches and manors with their parkland and scatters of farmsteads and moated sites in the vale relating to the period of settlement expansion up to the 14th century. By this period strip fields covered most of the landscape in both the vale and Cotswolds, and less so the escarpment, with meadows alongside streams and some sheep walks in the Cotswolds.
- The enclosure of fields, particularly along the escarpment and in the vale, was underway by the end of this period, accompanied in the Cotswolds by the development of extensive sheep walks as settlements shrank or were abandoned from the 14th century. Ridge and furrow survives best in areas where pastoral farming was dominant from this period, in parts of the vale, away from the plateau in the Cotswolds and particularly along the escarpment.



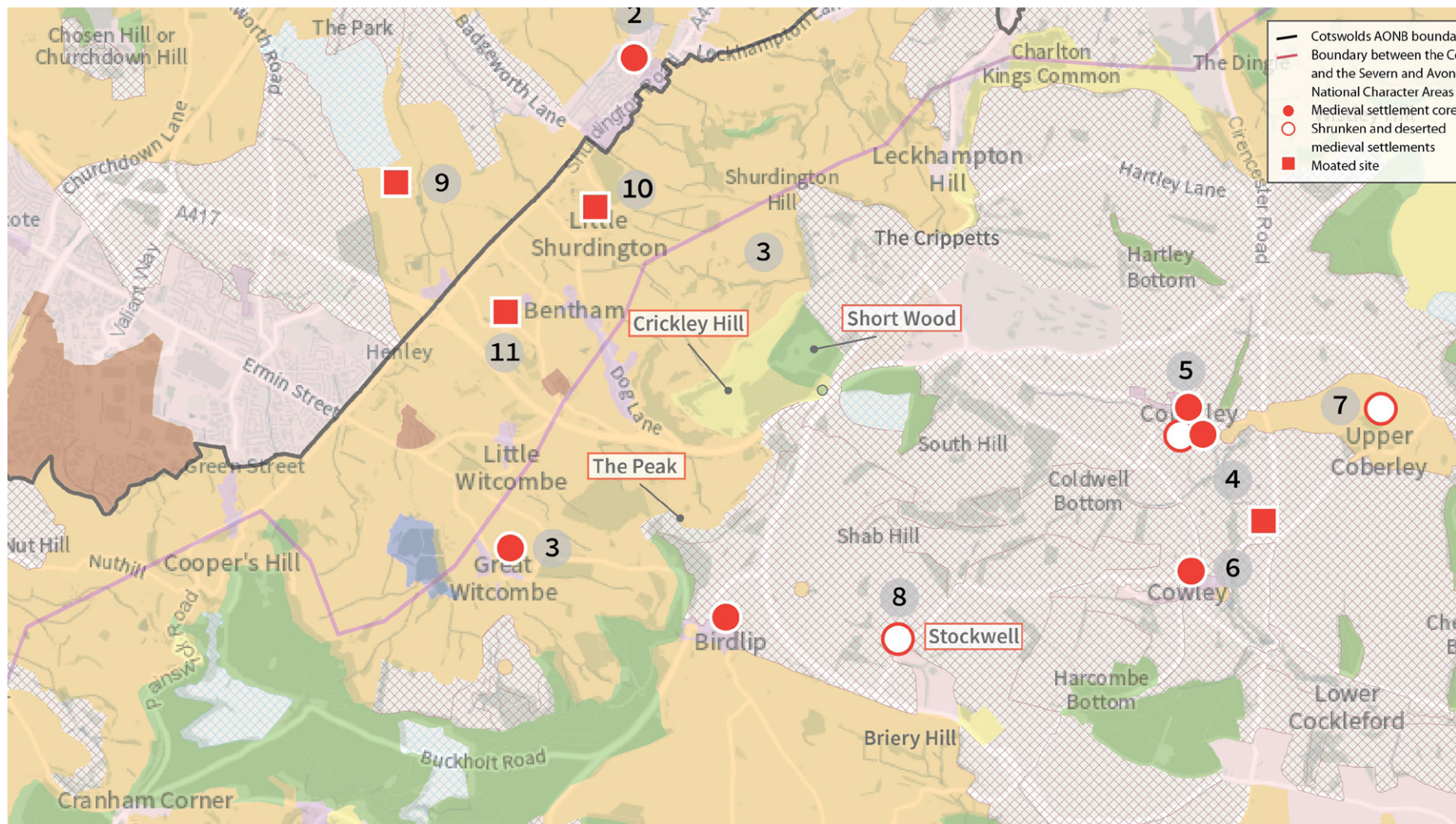


Figure 22. Recorded early medieval and medieval settlement sites set against the time-depth of the landscape as shown in Figure 15. Small medieval settlements developed around churches at Leckhampton (to north), Badgeworth with its neighbouring manor (1), Shurdington (2), Great Witcombe (3) and Coberley (4) and in the Cotswolds around crosses at Coberley (5) and Cowley (6). Birdlip developed as a settlement along the Ermin Way. Also shown are the shrunken and deserted settlements at Upper Coberley (7), Coberley and Stockwell (8). The moated sites at Hunt Court (9), Yew Tree Farm (10) and Bentham Manor (11) with its medieval house and fishponds now represent the best survival of the scatters of farmsteads that had also developed across this part of the vale by the 14th century. The map does not show the extent of medieval ridge and furrow, which is shown on Figure 7: in this area, this survives best on the escarpment and in parts of the vale, the map showing its extent in contrast to its relative absence in parts of the Cotswolds.

#### 4.3.1 National context

The collapse of the Roman civil administration, the decline of civic centres and then the withdrawal of the army in AD 410 is well recorded; it is probable that the population fell by as much as a half, from 4 million. There is increasing archaeological evidence, alongside this decline in civic life, for the continuity of settlement into the Anglo-Saxon period prior to the expansion of arable farming and the development of a more stable pattern of permanent settlement in farmsteads and villages in the 8th and 9th centuries.

These developments shaped the present landscape, and the patterns of routeways, fields and woodland around them. The pattern of rural settlement was established by the 14th century, in many areas by the 11th century, and is marked by a strong contrast between a central ‘village strip’ of England, where most farmland was managed as open fields subdivided into cultivation strips, and dispersed settlement dominated by isolated farmsteads and small hamlets which farmed a complex mix of strip fields, enclosed fields and blocks of rough ground. New regional patterns of farming, accompanied by the shrinkage and abandonment of settlements and the enclosure of open fields and common land, developed after the famines in the early 1300s and then the plagues and epidemics which commenced with the Black Death of 1347–9 and reduced the population (of 6 million in around 1300) by a third or more.

#### 4.3.2 Local developments

The context for the early 5th century occupation of Crickley Hill, and continued occupation of the villa at Witcombe, is the evidence for the reuse of hill forts further into the south-west, the collapse of civic administration followed by occupation of parts of Gloucester and Cirencester and of villas (notably at Chedworth) in the decades after the departure of the Roman legions. By the 7th century the area fell within the kingdom of the Hwicce, within which large estates and communities based in the vale used routeways to gain access to the commons, wood pasture and woodland (Old English ‘wald’) in the Cotswolds (Hook 1985, 230 and 234).

Routeways reflect a pattern seen across the Cotswolds escarpment, in that many continued to enable access to common pastures, on the thin soils of the limestone uplands extending from Barrow Wake and via Leckhampton Hill to Wistley Hill to the north-east, and also to pastures within the Cotswolds. Comparison with recent research in the Weald (Margretts 2021) strongly suggests that these routes developed along ancient transhumant routes for the movement of cattle to pastures in woodland. The present A417 would thus have offered the most natural means for Gloucester Abbey, as documented after its foundation in the 670s, to take its cattle to pastures at Coberley.<sup>22</sup> It is important to note here the results of place-name research by Della Hooke which establishes that ‘ley’ is not simply derived from the Anglo-Saxon *leah* for a glade or clearing (Gelling 1994, 7) but the term for a woodland pasture (Hooke 1985, 120;

116). This has significant implications for the development of Crickley Hill as a wood pasture and commons landscape, ‘crick’ being adapted from the Welsh ‘crug’ or ‘cruoco’ for hill or mound (Smith 1964, 115-6). Greenway Lane extends from the vale via the enclosure for stock at Badgeworth (‘Baecga’s enclosure’) to the ‘cow wood or clearing’ at Cowley; it is legible as a holloway lined by ancient and veteran pollarded ash and oak as it climbs the escarpment, is documented in the 13th century (VCH 1981a) and is probably much older (Neolithic axe find). Another routeway extending to Cowley and via a holloway to Coberley passes the site of the shrunken village of Stockwell, which developed around a green and from at least the 16th century became part of the Cowley Manor estate; the last tenements there were abandoned after enclosure in the 1780s-1790s (VCH 1981a). A green sited between Buckle and Hazel Hanger woods sat astride another route, subject to a toll by the local lord and indicative of the movement of livestock and other valued traffic, documented in the 13th century (VCH 1981c). Deer parks had also developed by the 13th century to the south of Witcombe Manor, nested into the escarpment, and to the south of the castle at Brimpsfield.

Charters indicate that ancient trees and other landmarks in this area were being used to mark out estates by the 8th century. It is important in this context to note that the barrows to the west of Hunts Court, at Emma’s Grove and Hunts Court are also aligned to parish boundaries. By this period large estates, including those of the emerging kingdoms, Gloucester Abbey (land at Coberley), Pershore Abbey (land at Cowley) and the bishopric at Worcester (land at Colesbourne), used routeways to gain access from the vale to the wolds, the evidence showing that the formation of parishes by the 11th century followed the granting of small estates by the 9th century and preceded the post-Norman evidence for the building of churches in this area. It is notable in this context, and in consideration also of how many Roman roads continued in use into the medieval period, that the Ermin Way forms the parish boundary between Great Witcombe and Badgeworth and part of the parish boundary between Great Witcombe and Cowley. By the 12th century the present pattern of village-based settlement had formed, most with their own church and manor and with a looser pattern of settlement that may result from later expansion around the routeways leading from the vale to the line of the present A417 to Crickley Hill and the Cotswolds. Some earlier features including those along brooks were absorbed into the boundaries of new field systems, but with the exception of some the pattern of settlement and of fieldscapes with strip fields was fundamentally rewritten over the earlier layers of landscape which has been revealed through aerial and other remote sensing methods.

There is further evidence for the use of routeways, for example in the concentration of smithies for shoeing horses and repairing vehicles at Birdlip on the Gloucester to Cirencester road (VCH 1981c). Strip fields for growing corn came to dominate the landscape in the vale and the Cotswolds by the 14th century, with the exception of small areas of parkland and meadow,

<sup>22</sup> Personal communication, Simon Draper, Victoria County History (research underway at time of writing)

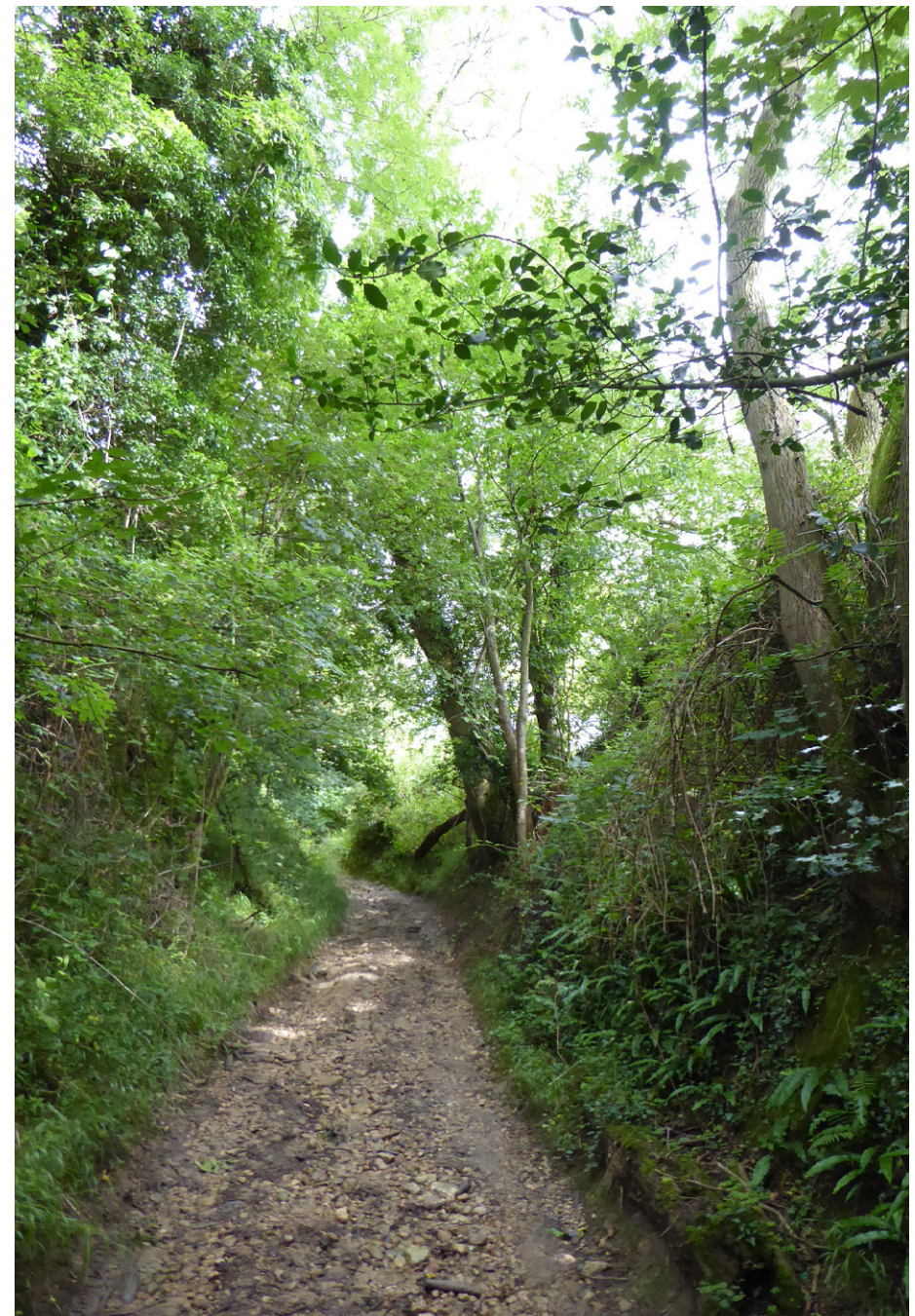


wood pasture, open commons and some blocks of woodland now concentrated along the escarpment and on the Cotswolds. Such was the importance of arable land on the Cotswolds that sheep were fed in large sheepcotes on imported hay as well as on the stubbles after harvesting and fallow land (Dyer 1987 and 1995).

In the vale, much woodland had been cleared by the 10th century (Hook 1985, 235) Hedges to protect crops from animals and enclosures were attached to farmsteads (the 'worthy' place names as at Badgeworth) for holding stock at the foot of the escarpment astride routeways (Hook 1985, 240-1). The moat at Hunt Court lies to the south of the former Badgeworth Wood (cleared in the early 19th century), bounded to the east by a long hay meadow along Norman's Brook extending to the parkland below the church and manor at Badgeworth. The cluster of moated sites and recorded 17th century and earlier recorded buildings to the south of Little Shurdington reflect the emergence of a wealthier class of tenant farmers and freeholders and relate to a network of lanes which meet the present A417 on the ascent to the Cotswolds in clear sight of Crickley Hill. This forms part of a more dispersed pattern of settlement extending south towards Witcombe and a more irregular pattern of fields that are indicative of pre-14th century enclosure.

The predominance of pastoral farming along the steeper and wetter slopes of the escarpment from the 14th century is the principal reason for its ridge and furrow being so well-preserved. More specialist systems of agriculture develop from this period with corn and cattle in the vale and the development of sheep pastures on the thin soils of Cotswolds, where the shrinkage and desertion of settlements (at Peggleswell, Coberley and Manless Town to the south of Brimpsfield in this area, the Cotswolds having one of the major concentrations of these in England) had begun after the famines of the early 14th century. There were substantial sheep walks converted from former open fields as at Coberley Downs (VCH 1981b). Flaxley Abbey had a sheep house at Birdlip in 1536 and had gained more from the sale of wool from its land in Brimpsfield than that of corn and timber together (VCH 1981c), there were extensive sheep pastures to the east of Coberley by the early 16th century and sheep houses were recorded at Cowley in the early 16th century where extensive pastures for sheep in addition to an Ox Pasture south-west of Cowley wood remained in use into the post-medieval period (VCH 1981a). Early 18th century enclosure resulted in the conversion of land to pasture for large herds of cattle as well (VCH 1981a). Open fields at Cowley, Stockwell, Birdlip, Coberley and Brimpsfield remained until a final phase of enclosure in the late 18th century.

Figure 23. The Greenway, a route of probable prehistoric date documented as in use in the 13th century which climbs the escarpment from Shurdington to meet other routeways into the Cotswolds.



#### 4.4 THE POST-MEDIEVAL PERIOD, 1550-1750 AND 1750-1914

##### *Summary*

- Older routeways inherited from the prehistoric period continue to be used for the movement of livestock between the vale and the Cotswolds. The existing A417 and other major routeways including the Ermin Way are turnpiked from the late 17th century, with a new north-south road (the present A46 to Cheltenham made in 1820) cutting across the earlier pattern. The Air Balloon is built as an inn on the ancient summit of the ascent from the vale, its name commemorating an early episode in the history of ballooning.
- Enclosure of the landscape is mostly complete by the 1750s, leaving small areas of medieval open fields and ancient calcareous grassland on the Cotswolds for a final phase of enclosure on the 19th century. This process is accompanied by the reordering and rebuilding of farmsteads, Stockwell providing an example of a farmstead which developed after the shrinkage and then abandonment of a medieval settlement, and sometimes the establishment of new farmsteads.
- Apple and pear orchards for the cider (and perry) industries developed around farmsteads and settlements at Little Shurdington, Bentham, Leckhampton, Great and Little Witcombe, leaving cider mills in farmyards and gardens and sometimes surviving cider houses.
- The centuries-old system of using and managing the open and wood pasture commons, including at Crickley Hill, declines at the end of this period.
- There is much more extensive evidence for quarries in woodland, on commons and besides roads, developing in an industrial scale with limekilns on the former commons at Leckhampton Hill, Barrow Wake and Crickley Hill.
- Settlements expand relatively modestly in the Cotswolds, accompanied by the rebuilding of houses in local stone and slate from the later 16th century and the development of large country houses and villas to the south of Cheltenham and on the western side of Crickley Hill. Plantations are established for ornament, income from timber and to provide cover for foxes and other game.
- High-status houses were most likely to be built in Cotswold stone and slate, but there is also extensive evidence for the use of timber framing for a range of houses and farm buildings here into the 17th and 18th centuries. There is a higher density of new settlement in the vale in the late 19th and early 20th centuries.



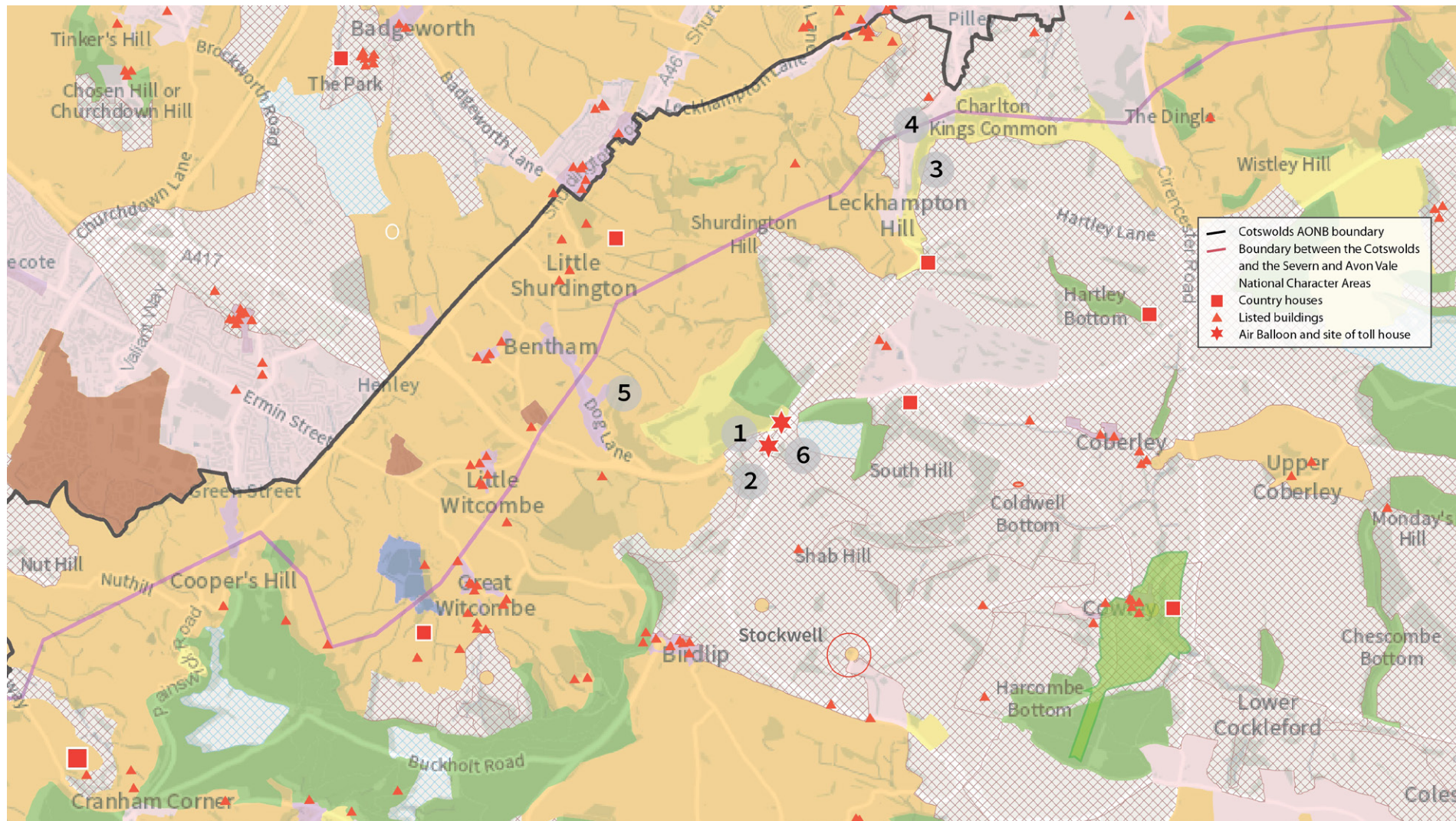


Figure 24. Recorded post-medieval sites set against the time-depth of the landscape. There was quarrying from Crickley Hill from at least the 17th century, developing on an industrial scale in tandem with the quarries at Barrow Wake (2) and Leckhampton Hill (4) over the 19th century. Small quarries exploiting Cotswold stone take up a large proportion of HER entries of this period. Listed buildings are predominantly of late 16th to early 19th century date. They mostly reflect building in medieval and post-medieval settlements and on older and newly-established farmsteads. These tend to be older and more likely to have listed buildings in the vale, and to have been comprehensively rebuilt in the late 18th to mid 19th centuries in the Cotswolds. Stockwell Farm was not listed due to this later date, but complete outfarms of the same date (at Shab Hill and Hilcot Barn) have been listed. With the exception of Badgeworth Court, which relates to an early 19th century park to its south, and the present Greenway Hotel placed alongside the ancient routeway from Little Shurdington to Shurdington Hill and the Cotswolds, country houses date from the mid 19th century. Also show are the strip of large houses built along the escarpment south of Cheltenham (4) and the area around Dog Lane to the west of Crickley Hill where enclosure, allotments and sale of land resulted in the building of a mix of large houses and cottages over the mid-late 19th century.

#### 4.4.1 National context

This period commenced with the final phase of the Church of England's independence from Rome and the transfer of land to new owners after the Dissolution of the Monasteries in 1536–41. It was characterised by a general increase in agricultural incomes and productivity and the emergence – particularly from 1660 and enabled by improved transport networks – of increasingly market-based and specialised regional economies. Enclosure – and probably over 75% of the land area in England had been enclosed by 1750 – enabled individual farms to manage their own grazing and arable land, using new crops and rotations.

The development of England's increasingly urban and industrial economy was underpinned by technical innovations (for example steam engines to pump water out of mines) and the development of roads, canals and, from the 1820s, the rail network. The population increased from around 6 million in 1750 to 8.3 million in 1801, nearly 17 million in 1851 and 33 million in 1911. Urban areas expanded rapidly, most notably London, industrial towns and coastal and inland leisure resorts. The 1851 census famously marked England's emergence as the world's first 'urban society'. The impacts of these changes are also visible throughout rural England, in the rebuilding and sometimes re-siting of farmsteads and workers' housing, the final phase of enclosure (concentrated in Midland villages and the northern uplands) and the ornamentation of estates for landed families and those who had made new fortunes in commerce and industry. Small family farms were increasingly under pressure by the late 19th century.

#### 4.4.2 Local developments

Until the end of this period, the open commons continued, despite waxing and waning in size and occasional ploughing up for arable, to provide open grazing and a source of fuel and other products for surrounding communities.

Decline in the communal regulation of arable and pasture, and a shift from arable to mixed and pastoral husbandry combined with orcharding from the 17th century (Newman 1983), was accompanied by the subdivision or enclosure of land by farmers wishing to manage their own farmland. They thus created new field boundaries that often respected earlier routeways and land divisions, headlands for turning ploughs and strip fields (Allen 1992). The waterlogged clays of the vale also provided particularly rich pastures for cattle, cheese production being a major industry in the 18th and 19th centuries, and for over-wintering sheep brought down from the Cotswolds. This process of piecemeal enclosure was largely complete by the 18th century, leaving some areas where open fields survived and were subject to more regular late 18th and 19th century enclosure (Allen 1992). The smallest farms and most irregular

enclosures with evidence for the rebuilding of houses and barns in the 16th and 17th centuries were concentrated on the slopes of the escarpment and at its foot, where grass and hay were the main crops. Larger courtyard farms developed on manorial and moated sites and where larger-scale cultivation was easier. Farmhouses continued to be rebuilt in timber frame into the 17th century, but local stone was also used in the rebuilding of farmsteads such as Crickley Hill Farm just south of the A417. The last areas of woodland were cleared in the 19th century.

The contrast with the Cotswolds is striking, with evidence here for the development of much larger courtyard farmsteads intermixed with extensive sheep pastures covering large areas with shrunken and deserted settlements. Peggleswell to the north-east, for example, had shrunk from a hamlet with its open fields into a single large farmstead with its own fields by the late 17th century (VCH 1981c). The present pattern of enclosure also reflects a piecemeal process, a significant driver from the early 18th century being the return of arable farming to the high ground (and the ploughing up of sheep pastures) accompanied by the introduction of new grasses and then roots in rotations and an increase in the numbers of cattle (Thirsk 1984, 179); this put an end to the practice of overwintering cattle in the vale (Rudge 1807, 21). One of the last remaining areas of unenclosed land at Barrow Wake was enclosed in the late 18th century. Stockwell Farm has a fine group of farm buildings dating from after the enclosure of the fields around it in the 1780s and 1790s (VCH 1981a), which in the late 19th century housed one of the last teams of working oxen in England.<sup>23</sup> The early-mid 19th century outfarms at Shab Hill and Hill Barn enabled the storage of the harvested crop and the manuring of newly-enclosed land around them. Hartley Farm to the north was rebuilt in the mid 19th century after the taking in of open pasture just to the south of Charlton Kings Common. All of these were built or rebuilt in Cotswold stone and slate, with evidence of the timber-framed buildings that characterised medieval Cotswold farmsteads now being only visible in the archaeological record.

Substantial areas of woodland in the Cotswolds continued to be managed for their timber and underwood, but plantations were also established from the later 18th century for the rearing of game and as cover for foxes.<sup>24</sup> The result, in combination with the provision of estate housing and the rebuilding of farmsteads, is a strong estate character across this area as across much of the Cotswolds. This includes Cowley Manor, its house and parkland rebuilt and remodelled for the London stockbroker James Hutchinson in the 1850s, and the establishment of a tree-lined drive past Hill Barn to Stockwell where the farmhouse was rebuilt for the estate in the early 1870s.

These developments also made use of an improved transport network. The present A417 linking Gloucester to London was one of the first roads in England to be turnpiked, in 1698, and others followed in the 18th century - the Ermin Way in 1747, the road from Painswick to Cheltenham via Birdlip in 1785, the A436 from Crickley Hill to meet the A40 in 1751, the present

<sup>23</sup> Stockwell Farm was recorded in 1883 as having 12 cart horses and 24 working oxen - *Cheltenham Examiner*, 4 April 1883.

<sup>24</sup> See for example the *Wiltshire and Gloucestershire Standard*, 22 February 1890.



A435 from Cheltenham to Cirencester in 1756 and the Shurdington Road to Cheltenham in 1820. The Air Balloon pub was converted from an earlier pair of cottages into an inn by 1777, and was so-named by 1802 to mark Walter Powell's descent by balloon to the site in 1796. The walking of cattle to London declined from this period, and the railway system put an end to it. An increasing number of houses were built along these roads. An increasing number of large houses were built on the slopes of Leckhampton Hill and Crickley Hill in the late 19th century, other significant properties of this period being Ullenwood House (now the National Star Centre), Salterley Grange of 1858 (converted to a sanatorium in 1907) and Seven Springs House built in the 1850s (VCH 1981b). Cottages were also built along the edge of the commons, notably the group to the south-west of Crickley Hill which were built after the enclosure of one of the last remaining areas of the commons in Bentham in 1871.<sup>25</sup> Allotments of land – but not built upon – were also established near the old stock pound and fronting the turnpike road, and next to Dryhill Hill Farm.

The improvement of roads, the construction of drystone walls, the development of Cheltenham and the strong market for Cotswold stone for building increased demand for quarries, which are widely distributed across the area and was undertaken on an industrial scale with lime burning at Barrow Wake, Crickley Hill and Leckhampton Hill. The protests between 1894 and 1906 over attempts by new quarry owners to block access to Leckhampton Hill offer evidence of an increasing desire to seek to amenities offered by the open commons, a trend which gathered pace in succeeding generations. Crickley Hill was by then attracting the attention of natural historians and antiquarians.<sup>26</sup>



Figure 26. Stockwell Farm from the east.

<sup>25</sup> *Gloucestershire Chronicle*, 17 June 1871

<sup>26</sup> Cheltenham Natural Science Society visit, *Cheltenham Examiner*, 20 July 1904.



Figure 25. A rare example of a 17th century timber-framed dovecote at Bridge House, opposite a surviving orchard and one of the cluster of farmsteads and moated sites with 17th century and earlier recorded buildings in Bentham and Little Shurdington.



Figure 27. The Air Balloon.





Figure 28. The Ordnance Survey map of 1903, layered under a satellite image, showing the outfarm at Shab Hill (1), and another (since redeveloped) at Cuckoo Barn to its north-east, Ullenwood House to the north and the houses mostly built from the 1870s to the south-west of Crickley Hill after the enclosure of Bentham.

Map from British Library, reproduced under Open Licence Commons.



#### 4.5 THE TWENTIETH AND EARLY 21st CENTURIES

##### Summary

- The First World War see the establishment of the aerodrome and aircraft factory at Brockworth, which after closure in the 1990s was developed for new housing and the Gloucester Business Park. New housing is concentrated in proximity to the A417, which was dualled to the M5 in the 1990s, along the A46 including at Shurdington and in recent years to the west at Leckhampton.
- The aircraft factory at Brockworth was joined in 1941 by a satellite factory at Bentham, and both were involved in the development of the E28 project (one of the world's first jet aircraft) and the production of the RAF's first wartime generation of jet fighters. The

Bentham site has 'rewilded' with ponds, herbs and rough grassland and is a potential Key Wildlife Site.<sup>27</sup>

- Little remains of the anti-aircraft and balloon sites which were intended to protect these significant sites from aerial attack, or of Ullenwood Camp which housed the 'diggers' working on the archaeological excavations at Crickley Hill from the late 1960s. The most significant survival from the wartime period is Birdlip Radio Station.
- Barrow Wake and Crickley Hill, celebrated in the poetry of Ivor Gurney who worked at Dryhill Farm after leaving wartime service in 1918-20, was given to the National Trust by Sir Philip Stott in 1934. Public pressure had also led to the acquisition and protection of Leckhampton Hill. The Cotswolds was designated as an AONB in 1966.

<sup>27</sup> Heritage Gateway, UID 1530837 (<https://www.heritagegateway.org.uk/>)

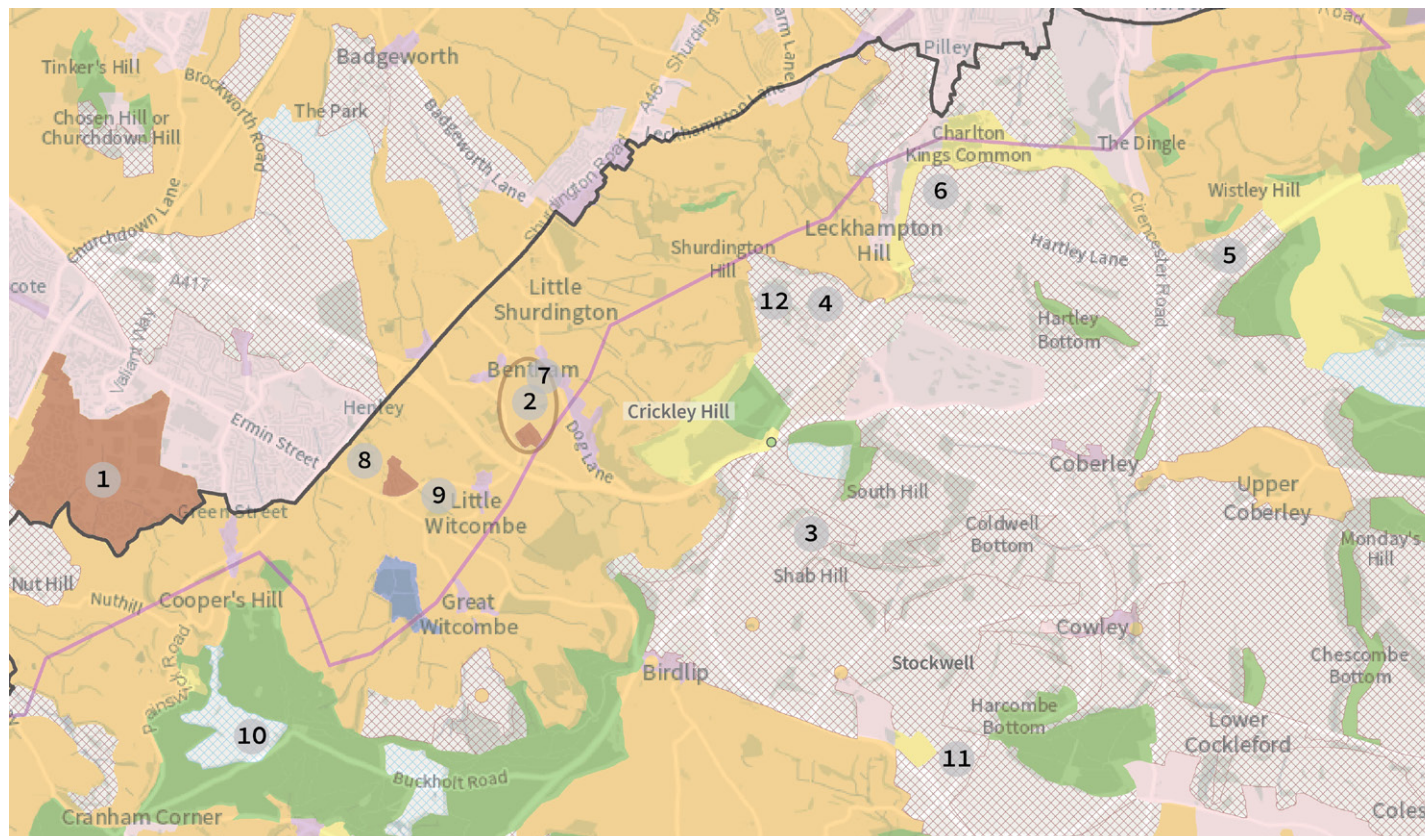


Figure 29. Recorded 20th century sites set against the time-depth of the landscape as shown in Figure 15. Of particular relevance to the scheme are the site of the former Brockworth aerodrome (1, now a business park and housing) and the early 1940s satellite factory at Bentham (2), which is now a potential Key Wildlife Site, and the radio station at Birdlip (3). Also dating from the Second World War, but now leaving little trace, are the site of Ullenwood Camp (4), a Starfish decoy site at Wistley Hill (5), a radar station at Leckhampton Hill (6), barrage balloon sites offering protection to the aircraft factory (7), the site of a hostel for factory workers (8) and a WAAF camp (9) and Heavy Anti-Aircraft sites at Buckholt Wood (10) and to the east of Cowley roundabout (11). Also show is the site of the 1950s Cold War Anti-Aircraft Operations Room and Regional Headquarters (12).

- The section of the M5 motorway to the west was built in the late 1960s, linked to a dualled section of the A417 connecting it to a junction at Brockworth in the mid 1990s.

#### 4.5.1 National context

The area and location of land for house building increased due to massive land sales and cheaper credit. The development of the road network, motor transport and the electricity grid enabled development away from coalfields and older industrial centres, the most marked growth being along the south coast, around London and in the West Midlands. By 1939 nearly a third of the population lived in houses built after 1918, public housing accounting for one in four of the four million new houses (mostly in urban or suburban areas) built in 1918–1939. Substantial areas were developed and used for airfields and other military purposes, in both World Wars and as Britain rearmed after 1933. Since the Second World War, England's population has grown from 41 million (in 1951) to 62 million in 2011. The 1947 Town and Country Planning Act introduced a strong system of regulatory control operated by local planning authorities, in parallel with the development of New Towns, the extension of Green Belts around London and other urban areas, and the designation of National Parks and Areas of Outstanding Beauty. Various means of agricultural support also prompted a massive rise in productivity, accompanied by larger farms and larger fields in many areas. Manufacturing peaked in the mid-1960s, followed by the shift to a service economy. Housing output then fell as a result of the decline, and then the ending, of public sector housing in the early 1980s. Since this period, new development through new construction and modification has been concentrated within existing settlements: it has also followed the large-scale release of industrial land, and, from the 1980s, of historic sites such as Victorian institutions and former airfields.

#### 4.5.2 Local developments

The success of the protests between 1894 and 1910 to enable public access to Leckhampton Hill, was followed by the purchase of 400 acres by Cheltenham Town Council (Miller 1999, 10–11) and soon afterwards the acquisition of Cleeve Hill to the north of the town. It is relevant in this context to note that the Cheltenham politician Frederick Feeney had bequeathed funds for the building of the canopy over the well sunk by Octavia Hill at Toy's Hill in Kent, with its fine view from the Chart to the High Weald.

This touches on a factor of growing importance in the inter-war period, building upon the efforts to preserve common land and footpaths promoted by remarkable personalities such as Octavia Hill, which was the intertwining of ideas of citizenship around landscape and heritage. The music and poetry of Ivor Gurney, who wrote his poem *Crickley Hill* while recuperating from injury on the Western Front, falls within this tradition; he worked at Dryhill Farm after

he left the army, between 1918 and 1922.<sup>28</sup> Gurney's work (*Quietude* being another featuring Crickley Hill) is another example of poetry, music, art and the fight for landscape being bound up with a growing sense of the importance of landscape to English culture – the idea of a landscape to fight for, and its time-depth, being central to the work of the Scott and other wartime committees that prepared the way for the late 1940s legislation that included the designation of historic buildings and the establishment of Areas of Outstanding Natural Beauty (the Cotswolds being designated in 1966). The discovery of the countryside was enabled by the car, a fact underlined by publication of the Shell guides (Gloucestershire's was published in 1939), and aerial survey – the Cotswolds being an early subject of O G S Crawford's famous aerial mapping of prehistoric Britain which in turn influenced the work of John Piper and other artists.

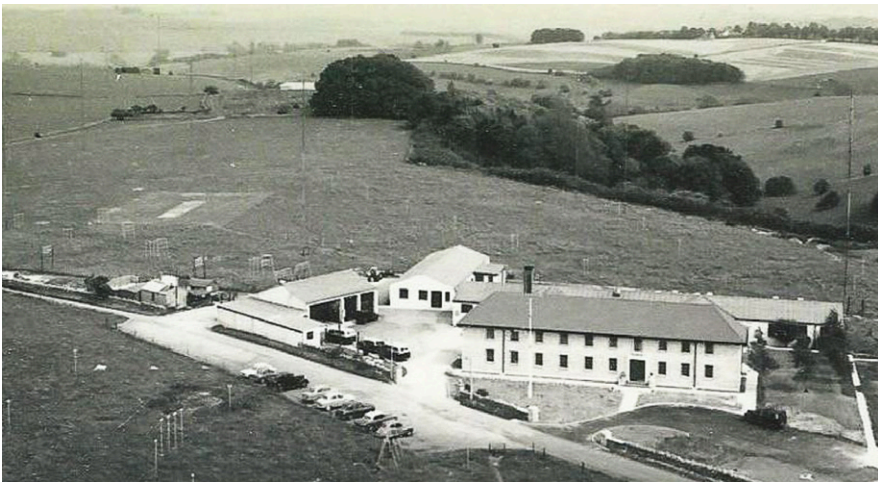
Ribbon development continued to progress along main roads, and in addition to the expansion of Gloucester's suburbs the main impact on views from Crickley Hill and the escarpment would have been the airfield at Brockworth. This was established in 1915 as an Aircraft Acceptance Park and in 1917 as the factory for the Gloster Aircraft Company, joined in 1940 by a short-lived decoy airfield at Shurdington and in 1941 by a satellite factory at Bentham. Brockworth was the scene of the flight in 1941 of Frank Whittle's E28/39 jet ('a world first'), but redevelopment from the mid 1990s as Gloucester Business Park has removed all traces of its global significance in this respect – and neither of its hugely important role as a base for test flights of some of the world's most advanced aircraft in the decade after the Second World War. A cluster of sites including a hostel for factory workers and a WAAF camp were built along the north side of Ermin Way. The remains of a dispersal site for Shurdington airfield at Little Witcombe is sited in regenerated woodland. The anti-aircraft and balloon barrage sites – holdfasts from the latter surviving - within the setting of the proposed new road were placed here for the defence of this vital factory in the early stages of the war (Crowther and Dickson 2016, 64). Brick wartime buildings remain from the construction of Shab Hill (then known as Birdlip) Radio Station, provided in the early 1960s with a neo-Georgian office building for air traffic control staff from the Civil Aviation Authority. Footings remain from the radar station at Leckhampton Hill. Only fragments now remain of the camp at Ullenwood, which served as accommodation from 1968 for the diggers at Crickley Hill and is being developed in this prominent location as luxury housing. To its west, echoing in its form the Neolithic and Bronze Age mounds to its south, is a 1950s earth-covered AA Operations Room and Regional Headquarters built as part of the first wave of the UK warning system against nuclear attack. The section of the M5 motorway to the west was built in the late 1960s, linked to a dualled section of the A417 connecting it to a junction at Brockworth in the mid 1990s.

<sup>28</sup> See Rawling 2011; the Centre for South West Writing based at the University of Exeter is leading a study of his work - <https://humanities.exeter.ac.uk/english/research/centres/literatureandarchives/holdings/gurney/>; for the Ivor Gurney Society see <https://ivorgurney.co.uk>





Figure 29. Birdlip radio station, showing the air traffic control room (a) built c. 1960, an aerial view taken in the early 1960s from the Guild of Air Traffic Control Officers' Archive (<https://atchistory.wordpress.com>) and some of the surviving wartime buildings.



## 5 AREA SUMMARIES

Appendix 2 of Chapter 6 (Cultural Heritage) sets out Historic Landscape Character Areas (HLCAs) which describe extensive areas around the proposed scheme, summarised as:

- *HLCA01: Area of irregular enclosed fields east of Brockworth* - 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.
- *HLCA02: Woodland south of Great Witcombe* - The HLCA is a large area of historic woodland on the slopes of the Cotswold escarpment.
- *HLCA03: Agricultural landscape around Brimpsfield and Birdlip* - An agricultural landscape reflecting a variety of patterns of post-medieval enclosure. The Roman Ermin Way, 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.
- *HLCA04: Agricultural landscape south of Seven Springs* - 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.
- *HLCA05: Brockworth* - 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 research undertaken for this report has deepened understanding of these areas, in particular how the historic functions embodied in the present landscape (primarily its patterns of settlement, woodland and fields) relate to routeways, heritage assets and habitats.



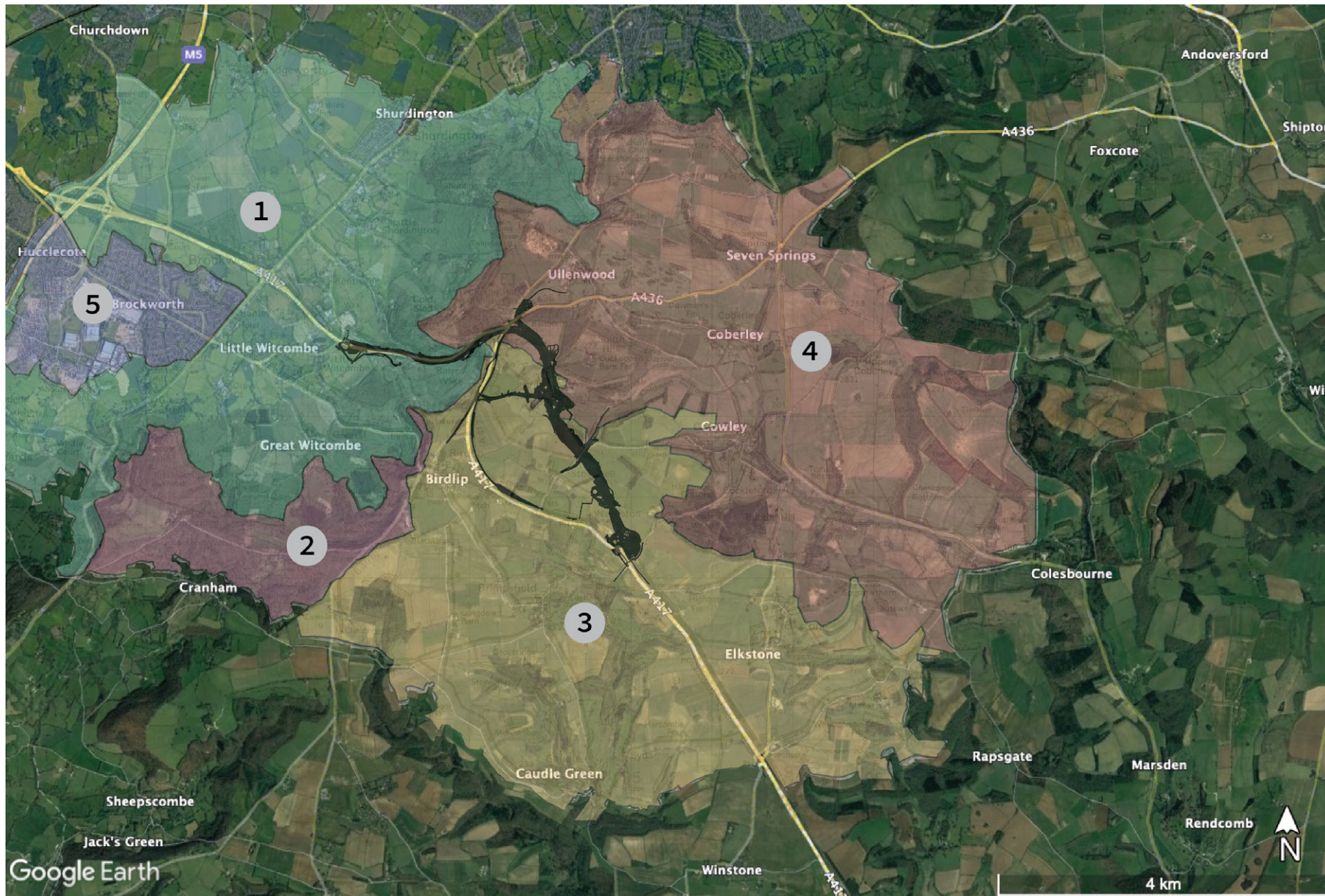


Figure 31. The HLCAs, map from the Environmental Statement shown on Google Earth as a background.



**HLCA01: Area of irregular enclosed fields east of Brockworth**

*Summary:* This area presents a strong contrast between:

- the vale, where mixed farming with a strong emphasis on dairying and orcharding developed from at least the 15th century;
- the steep-sided escarpment with earlier fields, a richer resource of species-rich boundaries, ancient and veteran trees and spring sites; this is a landscape which has moved in and out of agricultural use, arable farming being associated with periods of high demand such as in the 12th-13th centuries.

There is little woodland in the vale, the medieval and later pattern of boundaries (and earlier along watercourses) along routeways and fields being critical to habitat connectivity. Priority and emerging significant habitats are limited to small areas of surviving woodland and lowland meadow, also within this area being watercourses adapted since the medieval period for powering mills, the late 19th century Witcombe Reservoir and a large former aircraft factory at Bentham which is now a potential key Wildlife Site.

Developer-funded excavation has revealed a rich potential, often concealed by medieval ridge and furrow and sometimes exposed to remote sensing by a combination of the underpinning geology and modern agriculture, for pre-medieval settlement and fieldscapes.

*The vale*

- Little woodland remained in this area by the 14th century, with some substantial remnants being cleared in the 19th century.
- Small nucleated settlements established by the 11th century have medieval churches and manor farms intermixed with some medieval and early post-medieval dispersed settlement including medieval moated sites, which indicate the expansion of dispersed settlement to the south and east of the area below the escarpment, where the pattern of fields may in part date from this period.
- These settlements are linked by medieval and earlier including prehistoric routeways, the latter extending from the vale to ascend the escarpment to the Cotswolds. The Ermin Way extends from Birdlip across this landscape to Gloucester, and dates from the late 40s AD.
- Some areas of historic parkland dating from the medieval period at Great Witcombe and Badgeworth, and parkland trees at some large houses such as the late 17th century Greenway Hotel which developed from an earlier farmstead. High-status houses dating from the medieval period (e.g. Bentham Manor), farmsteads with 17th century and earlier buildings and some later farmsteads. 19th century ribbon development to the west of Crickley Hill and along the A46.

- Brooks and streams drain westwards from the springs along the escarpment, but drainage in the 19th and 20th centuries has resulted in the loss of areas of meadow as indicated by field names. Witcombe Reservoir dates from the late 19th century.
- There are several routeways that extend across the vale, linking Anglo-Saxon settlements and moated sites established by the 13th century, and which then ascend the escarpment.
- Hedged fields mostly result from the piecemeal enclosure of medieval strip fields between the 15th and 18th centuries, with some areas of legible ridge and furrow; the landscape also results from some 19th century woodland clearance, regular enclosure and reorganisation of earlier fields. Areas with survival of medieval ridge and furrow reflect a long (often post-14th century) history of grazing for dairying and also the importance of the cider industry and orchards which have contracted to small areas in recent decades.

*The escarpment*

- The escarpment, which borders ancient woodland to the south and the remnants of ancient grassland intermixed with later enclosure to its east, is a landscape which has responded to changing demand for land use, with some areas of historic medieval and later ploughing intermixed with areas where the steep and uneven ground has been suited to grazing and scrub.
- Spring sites and areas of land slips on the escarpment have potential for Mesolithic and Palaeolithic activity and remains. The area is dominated by clay soils, with patches of lighter more easily-drained soils, where as elsewhere at the foot of the escarpment developer-funded excavation has revealed Iron Age and earlier fields and settlement – the evidence for which is otherwise largely concealed beneath medieval ridge and furrow.
- Roman villas were sited next to spring sites at Dryhill Farm, to the west at Little Witcombe and possibly to the west of Birdlip.
- This area has a more irregular pattern of fields with more species-rich boundaries and veteran trees than in the vale; these include some which were enclosed from the medieval period, some along watercourses which may be of a much earlier date and others which either frame or have been enclosed from well-preserved medieval ridge and furrow; the 17th century or earlier farmsteads which worked these fields are either sited within this area or in the vale.

**HLCA02: Woodland south of Great Witcombe**

*Summary:* Buckholt and Witcombe Woods forms the north end of the Cotswold Beechwoods National Nature Reserve as it extends southwards into the Painswick Valley; limestone grasslands, sometimes returning to scrub/ woodland and being cleared again, developed as an inextricable part of these woodlands. This area also includes the medieval and later parkland to the south of Witcombe Court.

*Narrative*

Woodland bordering and intermixed with limestone grassland has probably been present on the steep-sided slopes of this area from the prehistoric period, and has been subject to episodes of clearance, contraction and expansion. West Tump long barrow to the west has human remains dated to between 3770 and 3350 BC, making it contemporary with the Neolithic causewayed enclosure at The Peak, and was probably set in one such glade. Also to the west, now mostly within woodland, is the so-called Cooper's Hill complex of Iron Age enclosures and settlement. This includes the scheduled monument at High Brotheridge and covers an area of 80 hectares; it would have been a prominent feature in the landscape, including in views from Crickley Hill and the escarpment. The Roman villa at Witcombe is sited just to the north of the well-preserved bank which extends northwards from Buckholt Cottage.

The beech woods were an important source of fodder for pigs from local communities from at least the Iron Age, as indicated by its name derived from the Old English for beech and small wood. There is extensive evidence – awaiting systematic survey - for historic coppicing, quarrying, earlier routeways and also replanting in the 20th century, resulting in a mix of recent and older standard trees and coppice for fuel, poles, timber and making barrels for the local cider industry (Cooper's Hill).

**HLCA03: Agricultural landscape around Brimpsfield and Birdlip**

*Summary:* Much of the landscape in this area was worked from the medieval villages at Brimpsfield and Birdlip, and the deserted medieval village at Stockwell, resulting in a pattern of piecemeal and semi-regular enclosure of the arable strip fields that covered most of this area in the early 14th century. Further reordering of the fieldscape in the late 18th and 19th centuries, for improved systems of rotating crops, was associated with the rebuilding of farmsteads and the establishment of outfarms to manure the land. Small areas of commons grazing survived into the 19th century and were then enclosed or afforested, including the SSSI at Barrow Wake (which since the late 19th century has reverted to pasture) and The Peak. Hedgerows are more common in this landscape than on the plateau landscapes of the Cotswolds, and in areas of early enclosure can be associated with woodland indicator flora.

*Narrative*

There is extensive evidence for prehistoric activity across this area, including a Iron Age settlement sites and a high-status Iron Age cemetery at Barrow Wake (dating from the end of the Iron Age). Ancient routeways extending from the vale into the Cotswolds include the Portway to the south of Brimpsfield (from Gloucester to Northleach) and the route extending via Stockwell to Cowley.

Findspots, cropmarks and excavation of the line of the 1990s Birdlip by-pass has revealed rich evidence for Romano-British settlement, fields and burial sites around the Ermin Way. Birdlip developed along the Ermin Way in the medieval period, its building stock including inns mostly dating from the 17th to 19th centuries. Brimpsfield developed by the 12th century with its church and castle sited to the east of the settlement with its 16th-19th century houses. Deer parks linked with the manor at Brimpsfield, recorded from the 13th century, survive in the outer line of banks at Hazel Hangar Wood – including a substantial wood and enclosed by a stone wall by 1399 - and to the south-east of Brimpsfield.

The line of the Ermin Way marks the division between a plateau landscape with a semi-regular pattern of mostly post-1750 enclosure to the north and a much more undulating landscape of earlier piecemeal enclosure from strip fields and holloways extending from Birdlip to Brimpsfield to its south. The substantial farmstead at Stockwell, with its 17th century house and late 18th and 19th century buildings and estate farmhouse, is sited to the east of a deserted medieval settlement and relates to a significant area of Mesolithic activity. The influence of the Cowley and other estates can also be read in the building of outfarms, the mid 19th century planting of trees along routeways (e.g. from Stockwell to Cowley) and the early 20th century establishment of plantations for rural sports. Areas of earlier enclosure and ancient woodland extend southwards along the valleys from the Cowley roundabout towards Brimpsfield and Syde, and extending towards Hazel Hangar Wood to the west.

**HLCA04: Agricultural landscape south of Seven Springs**

Summary: This area is dominated by the regular and semi-regular enclosure of a post-medieval landscape of open commons and remaining open fields by hedgerows and drystone walls, intermixed with substantial blocks of ancient woodland, with areas of wood pasture (as at The Scrubbs, Crickley Hill) and with ancient calcareous grassland at Leckhampton Hill and Charlton Common and at Crickley Hill.

*Narrative*

Settlement is comparatively sparse in this area, and apart from the cores of medieval settlements at Cowley and Coberley is mostly encountered as substantial isolated farmsteads. These range in date from the farmsteads at Upper Coberley and Pegglesworth to the north-east, with buildings dating from the later 16th century and dating from after the abandonment of the villages there, to the large mid 19th century farmstead and outfarms at Hartley Farm which relate to the later 18th or early 19th century enclosure of the open commons just south of Charlton Kings Common. The pattern of enclosure is found in other parts of the Cotswolds plateau – hedgerows along parish boundaries (marking the division between Cowley and Coberley parishes to the south), drystone walls and thin hedgerows associated with later 18th and early 19th century enclosure and reorganisation, and the use of wire fencing where walls have collapsed.

This area retains nationally significant areas of calcareous grassland in the setting of the Neolithic and Iron Age hillfort at Crickley Hill and the Iron Age hillfort at Leckhampton Hill, and there are Neolithic and Bronze Age barrows sited close to routeways along the top of the escarpment and extending from the vale into the Cotswolds. The Scrubbs at Crickley Hill is a nationally significant remnant of wood pasture, a rare survival of wood pasture which in the first millennium AD included those at Cowley and Coberley. Short Wood at Crickley Hill remains from enclosed woodland, and other ancient woodland was exploited for timber and coppiced wood.

**HLCA05: Brockworth**

The settlement at Brockworth – intersected by the Ermin Way and bounded to the west by the M5 - has developed from a medieval core with a church and manor farm (Brockworth), a cross to its south (HER 6529) and a mill of at least late Saxon origins (HER 6540) alongside Horsebere Brook to the east. Buildings dating from the 15th century are found here and in the farmsteads which by the 16th century had developed around the small settlement. Brockworth experienced some growth in the 19th century but has developed into its present form as a result of late 20th century housing and the establishment of the Gloucester Business Park on the site of Brockworth Aerodrome. This was opened as an aircraft factory (for the Gloster Aircraft Company) and Aircraft Acceptance Park, continuing to manufacture and test aircraft until 1964 including some of the world's first jet aircraft in the Second World War. It was protected from airborne assault by a ring of defences and from aerial bombardment and strafing by anti-aircraft positions and balloon barrages: the sites of these have been recorded but no known remains survive.



## 6 ASSESSMENT OF SIGNIFICANCE

### 6.1 INTRODUCTION

#### 6.1.1 National policy and guidance

Understanding the nature, level and extent of significance is essential in guiding how policies should be applied, so that conservation and mitigation can be proportionate to the significance of heritage assets and the contribution to that significance made by their settings. Heritage assets comprise designated and non-designated buildings, monuments, sites, places, areas or landscapes. The definition of significance for historic buildings and areas, and for archaeological sites, operates under different legal statutes and is thus couched in rather different terms. Discretion can be exercised in the selection of which monuments of national importance should be protected through legislation,<sup>29</sup> as non-designated monuments can be appropriately managed through the planning system and also in rural areas through Environmental Land Management Schemes. In contrast, conservation areas and listed buildings qualify for statutory protection purely on the grounds of their ‘special architectural or historic interest’, meaning that non-designated historic buildings and areas receive comparatively low levels of protection.<sup>30</sup>

Significance for heritage policy is defined in the glossary of the NPPF as ‘The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset’s physical presence, but also from its setting.’ Revision to the NPPG and Historic England’s Advice Note 12 on *Statements of Heritage Significance*, which provide guidance on how significance should be applied in the planning context, provide definitions of these heritage interests. These align with three of the values used to define ‘the heritage significance of a place’ in Historic England’s *Conservation Principles*, which has no formal status in planning policy but has since 2008 been used in local authority policy and practice, and has in particular been used in Conservation Management Plans and other strategies and plans for management of the historic environment. These values broadly equate to three of the ‘heritage interests’ as used in the planning context:

- *Archaeological interest (NPPF)/ Evidential value (Conservation Principles)*. ‘Value deriving from the potential of a place to yield evidence about past human activity’, including its potential for below-ground archaeological remains as stated in the NPPF (para 194): “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.”

- *Historic interest (NPPF)/ Historical value (Conservation Principles)*. ‘Value deriving from the ways in which past people, events and aspects of life can be connected through a place to the present’, which derive from the ways in which places illustrate or are associated with past people, historic developments and aspects of life, complementing or enriching what we may know from documentary and other sources. This may result from the age and history of an asset, or how it illustrates local and national historic developments. *Conservation Principles* states that the values associated with places are not as easily undermined by changes to their physical form and fabric as evidential value.
- *Architectural and artistic interest (NPPF)/ Aesthetic value (Conservation Principles)*. ‘Value deriving from the ways in which people draw sensory, intellectual stimulation from a place’, which derive from how a place has been designed and has evolved, and is core to how people experience places - from views in the landscape to the type, planning, style, details of craftsmanship and construction of buildings.

*Communal value*, as also used in *Conservation Principles*, is omitted from the NPPF and its PPG and Historic England’s Advice Note 12 on *Statements of Heritage Significance*. It is defined ‘Value as deriving from the ways in which people draw sensory and intellectual stimulation from a place’, deriving from the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory, and affords the opportunity to consider other factors such as the additional social, spiritual and other benefits offered by places. This may take in a broad range of tangible and intangible heritage and practice, the Faro Convention defining it as resulting from the interaction between people and places through time’ and ‘a group of resources inherited from the past which people identify, independently of ownership, as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions.’ Intangible heritage, as defined by UNESCO, ‘includes traditions or living expressions inherited from our ancestors and passed on to our descendants, such as oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts.’ (Unesco 2003). Communal value aligns with some of the cultural ecosystem services that flow from Natural Capital and ecosystem services.

Setting is defined in the National Planning Policy Framework as ‘The surroundings in which

<sup>29</sup> ‘to help preserve them, so far as possible, in the state in which they have come down to us today’ (The Ancient Monuments and Archaeological Areas Act, 1979)

<sup>30</sup> Sections 66 (1) and 72 (1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 provide specific protection for buildings and areas (conservation areas) of special architectural or historic interest through the planning process.

a heritage asset is experienced ... (which) ... may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.<sup>31</sup> Consideration of the contribution of settings to the significance of heritage assets follows established best practice, as set out in the NPPG and in Historic England's guidance on *The Setting of Heritage Assets (Good Practice Advice in Planning Note 3, 2015)*. Historic England's guidance on *The Setting of Heritage Assets (Good Practice Advice in Planning Note 3, 2015)* establishes key principles and checklists for assessing the contribution made by setting to the significance of heritage assets, including the value placed on views, and how it should be mapped in the context of development applications or proposals. Its five steps progress from 1) identification of which heritage assets and their settings are affected, to 2) assessment of significance through consideration of what elements contribute to significance, and how that significance is appreciated, 3) assessment of the effects of proposed development, 4) exploring ways in which to maximise enhancement or minimise harm and 5) making and documenting the decision and monitor outcomes.

## 6.2 SIGNIFICANCE OF HERITAGE ASSETS AND THEIR SETTINGS IN THE SCHEME AREA

### 6.2.1 The Environmental Statement

Table 6.2 in the Environmental Statement (below) follows established DMRB procedure, and that followed in general terms for Environmental Impact Assessments, in setting out the criteria for how heritage significance is ranked.<sup>31</sup> It is a desk-based assessment, and thus reflects what is known and recorded on the Historic Environment Record, clarified by reference to LiDAR data (ES Figure 6.3).

Tables 6.6 and 6.7 of the Environmental Statement summarises the setting and impact (in terms of nature, magnitude and significance of effect) for:

- all designated heritage assets up to or straddling a boundary drawn 1km from the DCO boundary, plus the Scheduled Monument at Leckhampton Hill and Tumulus;
- non-designated heritage assets within the area directly affected by the proposed route (the Study Area);
- non-designated heritage assets in a wider buffer area extending 300 metres from the boundary of the Study Area.

All designated heritage assets are considered in the Environmental Statement to have High Value on account of their designated status. They comprise:

| 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.   |

- 10 scheduled monuments, including the Emma's Grove barrows (SM3) within the Study Area and two (Crickley Hill SM2 and the moat and fishpond at Bentham Manor, SM1) within the 300m Buffer Area; Leckhampton Hill and Tumulus falls outside the 1km zone but is also considered.
- 50 listed 'buildings' (6.7.5) which comprise a varied group of buildings, monuments and structures:
  - the grade I medieval church at Brimpsfield and seven churchyard monuments listed at grade II
  - the grade I medieval church at Great Witcombe with two churchyard monuments listed at grade II, and listed buildings within the Buffer Area (LB 1-4)
  - listed buildings within the Buffer Area at Birdlip (LB 7-10)
  - the grade II church at Bentham, built as a chapel of ease in 1888, which is within the Buffer Area (LB5)
  - the grade II Golden Heart Inn at Nettleton, and the milestone to the west, both of which are within the Study Area (LB 14 and 15)
  - other dwellings dating from the medieval period, including former farmhouses and other buildings converted from estate and farm buildings; Hilcot Barn (LB 16) is within the Buffer Area and Shab Hill Barn (LB 12) is within the Study Area
  - a grade II K6 telephone kiosk at Brimpsfield
- The 19th century grade II\* Registered Park and Garden at Cowley Manor
- Cowley and Brimpsfield Conservation Areas

<sup>31</sup> DMRB LA 104 provides a standard approach to the determination of significance of environmental effects for highway schemes.

Non-designated heritage assets within the Study Area are ranked as having:

- High value: the Ermin Way
- Medium value: these comprise:
  - the Air Balloon public house, to be demolished as part of the scheme
  - an Iron Age site and enclosure, partly excavated in 1990 and to the south of the scheme area (253)
- Medium to low value: twelve sites with earthworks and cropmarks, comprising:
  - the slighted (low) earthworks of medieval ridge and furrow and routeways on the Cotswolds plateau
  - holloways and cropmarks east of Ardencote Piggery to the south-east of the Brockworth roundabout (11)
  - a scatter of Romano-British pottery which may indicate a settlement site to south-east of Shab Hill Farm (121)
  - multi-period linear features of possible prehistoric origin, to the east of Cuckoopen Farm (75), which the 6.2 Archaeological Assessment Appendix states has potentially high value
- Low value:
  - earthworks of possible prehistoric barrows (116), Late Iron Age or Romano-British routeways (132) and cropmarks (175 and 248)
  - medieval and possibly earlier ridge and furrow, lynchets and routeways (21, 119, 120, 122, 133, 144, 246)
  - numerous quarries
  - from the Second World War, the site of a searchlight battery (237) and an anti-aircraft battery (241-2) to the east and west of the Cowley roundabout
  - findspots, a high proportion of which belong to the Romano-British period
- Most non-designated heritage assets within the buffer area – including quarries and earthworks within The Scrubs and to the north of Crickley Hill - are assigned a low value, those of medium value comprising:
  - the Neolithic causewayed enclosure at The Peak (45)
  - the possible site of a Bronze Age round barrow (71)

- the site of Barrow Wake Iron Age cemetery (72)
- cropmarks and excavation of a Middle Iron Age farmstead (81)
- the bank-and-ditch boundary to Short Wood (100)
- the post-medieval grotto or cave to the rear of The Royal George Hotel, Birdlip (46)
- a milestone at Highgate (252)
- the earthworks of Stockwell Deserted Medieval Village and the buildings surviving from the historic farmstead (ES reference 115, although the farmstead is omitted from Chapter 6 of the ES and so not assessed in terms of the effects of the scheme)

Also of medium-low value are:

- other cropmarks indicative of medieval-to-prehistoric date, in the western part of the scheme area (12-18)
- linear cropmarks indicative of a Romano-British date to the north-east of Short Wood
- the site of the aircraft factory at Bentham (23), which is also a potential Local Wildlife Site
- a possible Roman building and quarry (60) and linear features to its east, the latter just to the south of Stockwell Farm

Appendix 6.2 applies a well-established approach to the assessment process, stating that there will be potential for unrecorded remains close to and in the environs of recorded remains – noting that their value and archaeological potential will be lower for the post-medieval and modern periods. Remnants of medieval ridge and furrow are ‘considered of medium to low significance due to their evidential and historic values.’ assessed as having ‘some heritage value; it is normally only in cases where preservation of the earthworks is extremely good that there may be a case for preservation in situ.’



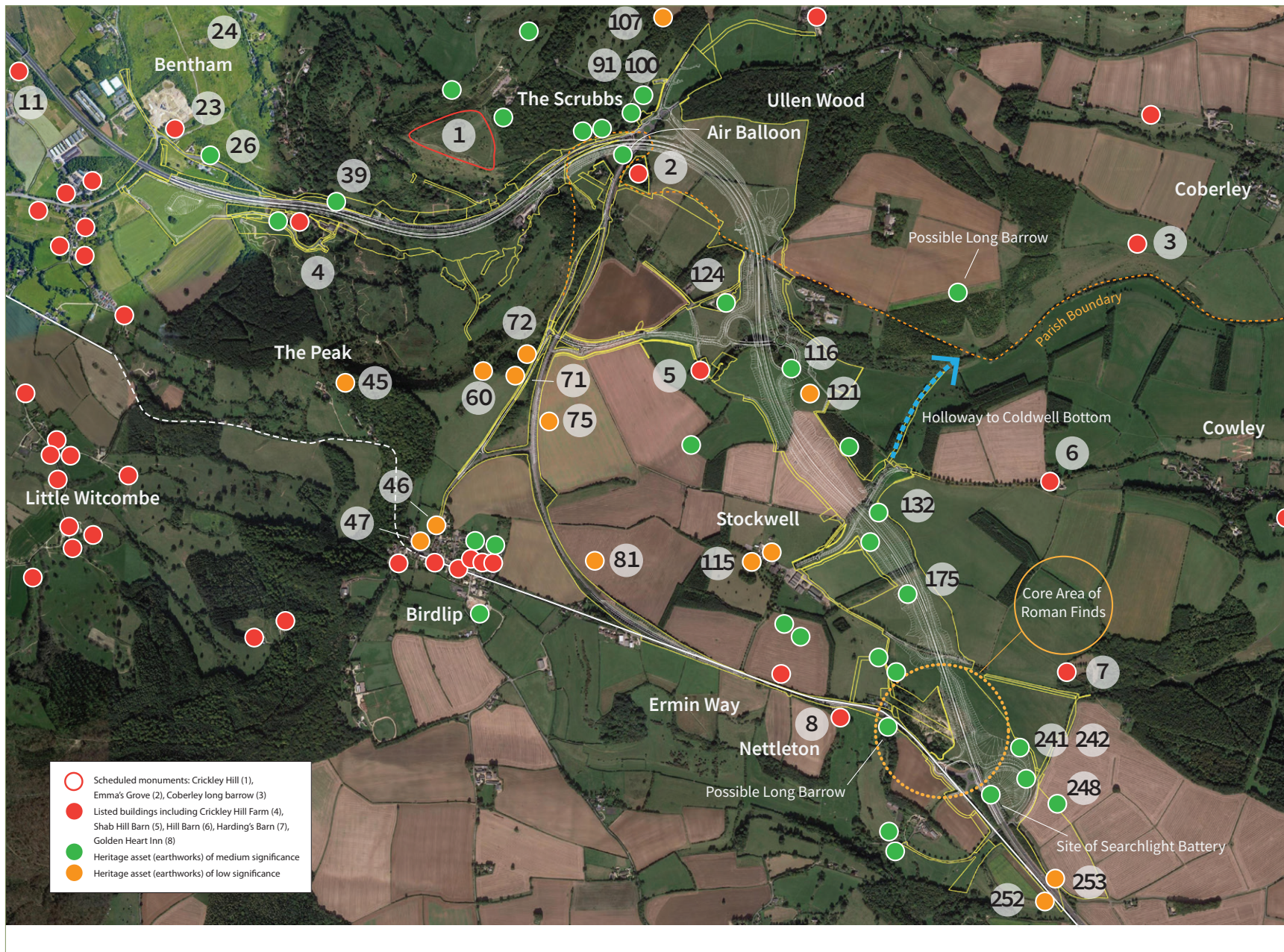


Figure 32. Map adapted from the Archaeological Assessment (Appendix 6.2 of the Environmental Statement), showing key legible heritage assets (excluding quarries, cropmarks and findspots) within the Study Area and Buffer Area.



## 6.2.2 Heritage assets: issues to consider

The descriptions and values accorded to heritage assets have been checked, in some cases in the field, with the following observations to make:

### 6.2.2.1 Designated heritage assets

There are minor issues with the valuation of some of the designated heritage assets, as summarised in Appendix 2 to this report and which do not raise significant issues of concern for this assessment.

- Designated heritage assets display a huge range in terms of significance, which is reflected in how scheduling is a discretionary act for the selection of sites considered to be of national importance and the grading system for listed buildings (recognised also in the distinction made in NPPF para. 200 between different grades when considering potential impacts). The Environmental Assessment does not take account of how the criteria have been applied and other factors such as the nature of survey (the majority of rural listings dating from the Accelerated Resurvey of the 1980s where interior inspection was carefully targeted), changing understanding of the significance of building types in a national and broader context and the degree of alteration post-survey (consequent for example to the conversion of the early-mid 19th century Shab Hill and Hillcot Barns to domestic use).
- A non-EIA assessment would assign different levels of significance to items as disparate as Crickley Hill (inaccurately dated to the 3rd millennium BC), medieval churches and other buildings, 16th-19th century farmhouses and farm buildings and the K6 telephone kiosk in Brimpsfield; this is an issue for the DMRB guidance to address, and does not raise significant issues of concern for this assessment.
- The setting analysis for Crickley Hill mentions modern intrusions but does not mention the inter-relationship of the natural and historic environment, which is such a critical aspect of its significance and setting, underplays this site's visual and historic relationship to The Peak and other prehistoric monuments in the area, or its historic and visual relationship to views westwards.
- The settings analysis for each of the major Neolithic and Bronze Age barrows (at Emma's Grove, Coberley and Crippets), whilst acknowledging that they are sensitive to any changes in landform whether visible or not, does not develop thinking on how they relate to each other and other prehistoric monuments.

### 6.2.2.2 Non-designated heritage assets within the Study area

Sites stated to survive as earthworks have been checked through field survey for this report. It is from this category, and specifically from those assessed as having national importance, that future scheduled/designated assets will be identified. There needs to be some assessment, therefore, of whether or not assets of designatable quality are included in the undesignated category.

- Most earthworks are either stated in the HER as being of doubtful prehistoric origin or if recorded as medieval cultivation earthworks and holloways have left little legible trace. No buildings, contrary to the ES, survive at the Anti-Aircraft Sites.
- The deserted medieval village and historic buildings at Stockwell Farm are the most significant assemblage of surviving heritage assets, and it would be useful to more clearly set out their heritage significance.
- It would be useful, how to more clearly distinguish between sites which survive as earthworks, which clearly have a higher evidential value and contribute to their landscape settings, and those which have been identified through remote sensing; extensive survey for this report has not raised significant issues of concern for this assessment for traces of the earthworks identified on the Cotswolds are medieval or later and have been slighted through later agricultural activity.
- It would be useful to separate out findspots as a distinct category which are not heritage assets requiring management as part of NPPF and other policies and guidance, but are indicative of different degrees of past activity and archaeological potential.

### 6.2.2.3 Non-designated heritage assets within the buffer area

- The medium grading of The Peak does not reflect its national importance as a Neolithic site in its landscape context.
- There is a very clear and legible holloway extending from Stockwell towards Coldwell Bottom with its Neolithic long barrow, and which is of medieval or earlier date as a routeway enabling access into the valley pastures and former arable here (see Figure 32).

### 6.2.3 Natural and historic inter-relationships: issues to consider

There are some obvious examples of how an integrated approach can deepen and enable consideration of the significance of heritage assets in the context and setting of habitats:

- The potential for Palaeolithic and Pleistocene evidence of human activity in the folds and landslips of the escarpment 4.1).
- The tufaceous vegetation and peats of regional importance around the springs and other sites along the escarpment (8.7.91), which have high potential for prehistoric finds and evidence for environmental conditions and change in that period.
- The importance of recognising historic quarries as habitats for bats and reptiles (8.7.171-180).
- The need to record and identify historic routeways with their boundaries (including banks, hedgerows, walls, veteran and ancient trees) as means of linking distinct landscape zones over millennia, so that those within the scheme area can be seen in a wider context of past and present human and species movement; there is no mention of the fact that the banked verge at Hawcote Hill, a former Conservation Road Verge due to its loss of species richness (8.7.43), is in fact alongside the Ermin Way.
- The national and county importance of the unimproved calcareous grassland at Crickley Hill and Barrow Wake, and small areas of semi-improved calcareous grassland outside the SSSIs, as both habitats and as critical to the setting of prehistoric monuments and sites.
- Similarly the importance of the pollarded beech and ash on The Scrubbs and the boundary of the medieval commons at Crickley Hill, testifying to the continuance of wood pasture commons on the Cotswolds from at least the first millennium and probably the prehistoric period.
- There is also evidence that woodland has developed as a distinct aspect of the Cotswold economy from this period. Ullen Wood (Ancient Woodland and Local Wildlife Site) is adjacent to the DCO boundary. It should be noted, contrary to the Environmental Statement finding no mapping for Ullen Wood despite it having indicator species (8.5.5), that the wood is clearly shown on the Ordnance Survey draft of 1811; it was also recorded in 1601 along with Short Wood (VCH 2001a). The statement (8.7.24) also notes herb Paris, woodruff, bluebell and other indicator species within Emma's Grove, which adjoined this area of woodland and may have been wooded prior to the 16th century.
- More recent woodland - 8.7.25 - linear belt of mature woodland including mature beech is found on the southern verge of the A417 between Brockworth and Crickley Hill. The plantation mixed broadleaved woodland at Clay Hill to the east of Shrub Hill is assessed as of local importance (8.7.30-31).
- The need for a better understanding, working from a strategic scale, of the time-depth and habitat potential of enclosed land which covers the overwhelming majority of the area and is closely linked to the pattern of routeways and settlement including farmsteads:
  - the hedgerows within the slopes of the escarpment and in other areas of early piecemeal enclosure in topographically-varied landscapes are most likely to be associated with veteran boundary trees and watercourses; the Environmental Statement notes that wood avens and other indicator species are concentrated in the areas of earlier hedged fields to the west of the A417 (8.7.70);
  - wintering birds including lapwing and fieldfare are concentrated on the plateau, where field boundaries are generally later with late 18th century and 19th century drystone walls, many part or wholly collapsed and replaced by fencing; some ancient hedgerows including parish boundaries
  - scattered trees (not ancient or veteran trees) are assessed as of local importance (8.7.34-36); tree roosts and foraging for bats (8.7.94-103)
  - monuments within ancient grassland and the surviving medieval ridge and furrow concentrated on the escarpment offer obvious examples of areas that have been in long-term use as pasture and thus have heightened potential for species diversity as unimproved neutral grassland (MG5 grassland) with additional potential on the Cotswolds to transition towards calcareous grassland (CG); inspection of the tithe map apportionments from the 1840s would indicate whether specific fields were then in arable use. A rare survival in the Cotswolds, which was not capable of improvement due to its land form, lies to the north of Shab Hill and close to the early 19th century outfarm there; it would have been suited as meadow for foddering the cattle there, and is considered to have national importance as lowland meadow (8.7.53). For similar reasons there are small areas of marshy grassland (8.7.59) to the south of Shab Hill Farm and within Bushley Muzzard SSSI.
  - semi-improved species-poor grassland, which may contain some herb-rich areas, is found across the area with species-poor grassland dominated by perennial rye grass being most common on the Cotswolds plateau and in some areas of the vale.
- The potential for sites of a recent date to become significant habitats – examples include Witcombe Reservoir and the former aircraft factory at Bentham, the historic character and habitat significance of which are not related to each other in the Environmental Statement.
- The 6.2 Archaeological Assessment Appendix also notes that hedgerows depicted on 19th century maps are '*non-designated heritage assets*' of low heritage significance. Problems with some hedges eg parish boundary across Shab Hill



- These may be understood at a professional level but are not clearly articulated through the EIA or DMRB process, making it difficult for non-specialists in particular to identify and understand key issues.

#### 6.2.4 Key amendment: Crickley Hill, The Peak and other prehistoric sites

As a causewayed enclosure, and for its association with Crickley Hill and other Neolithic monuments in this area, The Peak is demonstrably of national importance and should be ranked as of High significance.

It is also considered that the suite of Neolithic and Iron Age monuments in this area have borderline High/ Very High Significance in view of:

- the evidential significance of the causewayed enclosures and three long barrows in relationship to each other, relating also to earlier phases of Mesolithic activity, Bronze Age barrows including Emma's Grove, the reoccupation of Crickley Hill in the Iron Age and the recorded high status Late Iron Age burials at Barrow Wake
- historic significance: the dating of two causewayed enclosures (The Peak and Crickley Hill) to the early stage of the Neolithic in Britain, both occupying sites on the interface between contrasting territories (the vale and the Cotswolds), flanking a 'natural' routeway and relating also to other routeways of probable prehistoric date; the evidence for the 4th

millennium battle and the continuance of the ritual landscape focused on the Long Mound

- historic significance: the history of Crickley Hill as a wood pasture landscape from at least the first millennium, its name also as testament to its interface between Anglo-Saxon and Brittonic-speaking peoples and relating to its deeper past
- aesthetic significance: the views which inspired the work of Ivor Gurney and in turn relate to this area's deep past and probable strategic importance

#### 6.2.5 Key suggested amendment: Stockwell Farm

This shall be revised to stress:

- The evidential significance of the earthworks and historic farmstead in relationship to each other
- The historic significance of the earthworks and historic farmstead in relationship to each other – the shrinkage of medieval settlements is a particular theme on the Cotswolds, as also is the development of large courtyard farmsteads with large barns, granaries, stables and housing for cattle and working oxen.
- The aesthetic significance of the farmstead in exemplifying materials and craft techniques



Figure 34. The view from Crickley Hill towards Barrow Wake and (to right of the image) The Peak.

that make a strong contribution to local character and distinctiveness.

### 6.2.6 Key suggested amendment: Birdlip Radio Station

Work to date on the heritage of 20th century wireless communications, including those that supported the work of GCCS at Bletchley Park, suggests that the survival of Second World War fabric here is rare in a national context (Cocroft 2013). Whilst the degree of survival might not merit designation through listing, it is sufficiently rare to merit upgrading from low to medium significance.

### 6.3 SIGNIFICANCE OF THE HISTORIC LANDSCAPE CHARACTER AREAS

The Environmental Statement assessed the value of the Historic Landscape Character Areas (HLCAs), but without reference to any commonly-accepted criteria used at a strategic level.

Historic Environment Character Assessments (HECAs), as practised for example in neighbouring Worcestershire (Mindykowski et. al. 2010), have selected from the following criteria:

- survival: based on assessment of the survival of heritage assets and the impact of previous development
- potential: likelihood for the presence of additional historic environment features
- documentation: previous investigation, field survey and research potential with reference to national and regional research frameworks
- diversity: the range of assets assessed by type and date
- group value: coherence by period and/or type
- sensitivity to change/ development
- amenity potential

Sensitivity to change is considered in section 8 of this report. At its simplest, and as used in pilot projects aimed at assessing the contribution of the historic environment and heritage assets to natural capital stock and ecosystem services (Powell, Lake, Gaskell, Courtney and Smith, 2018), historic landscape areas can also be assessed for:

- legibility – the extent to which heritage assets and landscapes can be seen, understood and read in relationship to each other ; relates to survival in the HECAs methodology
- time depth – considering those key periods of the past that can be read in the present landscape; relates to potential and diversity in the HECAs methodology
- inter-relationships - of heritage assets, the natural and historic environment to each other

The criteria used in this report shall thus add inter-relationships as a heading.

***HLCA01: Area of irregular enclosed fields east of Brockworth (assessed in Environmental Statement as Medium Value, and partly in Cotswolds AONB).***

This report agrees with the Environmental Statement of this area as Medium Value:

- Survival: Areas of 20th and early 21st century development are intermixed with legible historic landscapes – primarily post-medieval enclosure of different phases - including part of the Cotswolds AONB. Strong survival in the vale of medieval and post-medieval farmsteads including moated sites, relating to strong pattern of medieval and earlier routeways, ridge and furrow and fieldscapes enclosed from the medieval period. Strong legible pattern of early including medieval enclosure on the escarpment.
- Potential: Very high potential for early prehistoric activity and remains along the escarpment, and high potential for Romano-British and earlier settlement and fieldscapes within the vale; historic buildings, including those remodelled in Cotswold stone and superficially of post-1650 date, have high potential for earlier fabric.
- Diversity: heritage assets in this area are dominated by those of medieval and post-medieval date, with Roman villas in the escarpment, and are primarily domestic and agricultural types with medieval churches and churchyard monuments.
- Group value: assets are both clustered in nucleated medieval settlements, absorbed within (sometimes extensive) modern development and found in moderate densities of dispersed settlement closer to the escarpment where earlier enclosures and routeways are legible in the landscape.
- Amenity value: public rights of way are aligned towards the escarpment and include some ancient routeways rising up the steeper slopes including Greenway Lane and the

Gloucestershire Way which extends along a historic watercourse (Norman's Brook); there is good public access to the former aircraft factory and potential Local Wildlife Site at Bentham, where in addition to views to the escarpment the remains of service roads etc are visible but not interpreted

- Inter-relationships: heritage assets relate to a dominant pattern of post-medieval piecemeal enclosure with some earlier patterns of fields in the setting of more dispersed settlement around Little Witcombe; some survival of once-common orchards.

***HLCA02: Woodland south of Great Witcombe (assessed in Environmental Statement as Medium Value, and in Cotswolds AONB).***

Reassessed as High Value:

- Survival: Highly significant area of ancient woodland with evidence for prehistoric burial (West Tump) and occupation (High Brotheridge) sites, holloways, boundaries, historic use of woodlands and relationship to clearings including calcareous grassland.
- Potential: high potential for medieval and earlier including palaeo-environmental remains, and for evidence of woodland exploitation (sawpits, charcoal stands etc).
- Diversity: identified heritage assets are primarily of prehistoric date.
- Group value: identified heritage assets are sparsely distributed except for cluster of sites and findspots at High Brotheridge.
- Amenity value: access into this protected woodland is highly valued and encouraged as a means of experiencing and enjoying the natural and historic landscape.
- Inter-relationships: the beech woodlands are recognised as having international significance as habitats and provide the essential context to understanding the historic landscape and any heritage assets within it.

***HLCA03: Agricultural landscape around Brimpsfield and Birdlip (assessed in Environmental Statement as Low Value, and in Cotswolds AONB).***

Reassessed as High Value:

- Survival: strong survival of small medieval nucleated settlements, with minimal impact of modern development within an AONB, including castle site relate to ancient routeways, woodland, different phases of later enclosure and development of estate landscape around shrunken medieval settlement and 17th-19th century farmstead at Stockwell.

- Potential: high potential for a) prehistoric origins of some routeways and field boundaries; b) early medieval and earlier sites as revealed by remote sensing, find spots and excavation for Romano-British and earlier settlement close to Ermin Way, burial and land use and to the south of this area (although far from the project area) for buildings linked to 18th century and earlier textile industry.
- Diversity: high diversity of heritage assets in this area, dating from the prehistoric period and including Roman encampment and deserted medieval settlement; high survival of traditional farmsteads and some outfarms which are mostly without listed buildings.
- Group value: prehistoric sites have high significance as a group in a national context, and relate to higher land and the scarp-edge (including The Peak within modern woodland); 18th century and earlier buildings are mostly clustered with small nucleated settlements which have retained a strong sense of historic character.
- Amenity value: area crossed by many routeways enabling appreciation of a varied valley and plateau landscape.
- Inter-relationships: very limited survival of wet pasture and calcareous grassland (including the post-enclosure and quarrying area close to the Iron Age cemetery site at Barrow Wake), ancient woodland documented from the medieval period with legible pattern of earlier enclosures in the valleys, the latter mostly relating to post-medieval farmsteads with 18th and 19th century buildings.

***HLCA04: Agricultural landscape south of Seven Springs (assessed in Environmental Statement as Low Value, and in Cotswolds AONB).***

Assessed in Environmental Statement as Low Value. In Cotswolds AONB.

Reassessed as High Value:

- Survival: strong and legible survival of historic settlement pattern including small medieval nucleated settlements, Cowley having a strong sense of its character as a 19th century estate village as well, post-medieval farmsteads and large 19th century houses.
- Potential: High potential revealed by remote sensing, find spots and excavation for Romano-British and earlier settlement, burial and land use.
- Diversity: extraordinary diversity of heritage assets in this area, from prehistoric and Romano-British sites to shrunken and deserted medieval settlements which in turn relate to the development of large farmsteads characteristic of this area.
- Group value: the prehistoric sites have high significance as a group in a national context,



and relate to higher land (including the crests between valleys) and the scarp-edge 'string' of prehistoric sites; the group value relationship of medieval shrunken settlement and large post-medieval farmsteads can be clearly seen and appreciated, as also can estate landscape as a wider context to settlements and farmsteads.

- Amenity value: area crossed by Cotswold Way and Gloucestershire Way, with nationally-acclaimed views from the escarpment, expansive views from the plateau and walks within valleys enabling enjoyment and appreciation of this rich historic landscape.
- Inter-relationships: nationally significant survival of calcareous grassland relating to prehistoric sites on the scarp edge (including Crickley Hill and Leckhampton Hill) within fieldscapes reorganised and enclosed from strip fields and open pastures, with ancient routeways linked to vale, ancient woodland and nationally significant survival of calcareous grassland, wood pasture landscapes and legible prehistoric occupation and burial sites.

#### *HLCA05: Brockworth*

This report agrees with the Environmental Statement of this area as Low Value:

- Survival: Scattered survival of 18th century and earlier buildings intermixed with late 20th and early 21st century development; there is very little trace or sense, even in modern infrastructure, of the historic aerodrome.
- Potential: relatively little additional potential due to extent and intensity of development.
- Diversity: medieval and post-medieval buildings, the latter including areas of 19th century housing.
- Group value: the ability to appreciate the group value of heritage assets is constrained by the extent and intensity of development in this area.
- Amenity value: with the exception of the church/ Horsbere Brook area to the north, there is limited amenity value in this area.
- Inter-relationships: areas of public access do not relate to pre-development landscape with the exception of the path along Horsebere Brook which offers views towards the medieval church.

| Significance of HLCAs   |  |
|---|--|
| Area  | Revised assessment of value  |
| <p><b>HLCA01: Area of irregular enclosed fields east of Brockworth</b></p> <p>Assessed in ES as Medium Value. Partly in Cotswolds AONB.</p> | <p><i>Medium Value:</i> Areas of 20th and early 21st century development intermixed with legible historic landscapes including part of the Cotswolds AONB. Strong survival in the vale of medieval and post-medieval farmsteads including moated sites, relating to strong pattern of medieval and earlier routeways, ridge and furrow and fieldscapes enclosed from the medieval period. Strong legible pattern of early including medieval enclosure on the escarpment. Very high potential for early prehistoric activity and remains along the escarpment, and high potential for Romano-British and earlier settlement and fieldscapes within the vale.</p> |
| <p><b>HLCA02: Woodland south of Great Witcombe</b></p> <p>Assessed in ES as Medium Value. In Cotswolds AONB.</p>                            | <p><i>High Value:</i> Highly significant area of ancient woodland with evidence for prehistoric burial (West Tump) and occupation (High Brotheridge) sites, historic use of woodlands and relationship to clearings including calcareous grassland.</p>  |
| <p><b>HLCA03: Agricultural landscape around Brimpsfield and Birdlip</b></p> <p>Assessed in ES as Low Value. In Cotswolds AONB.</p>          | <p><i>High Value:</i> medieval settlements including castle site relate to ancient routeways, woodland, different phases of later enclosure and development of estate landscape around shrunken medieval settlement and 17th-19th century farmstead at Stockwell. High potential revealed by remote sensing, find spots and excavation for Romano-British and earlier settlement, burial and land use.</p>   |
| <p><b>HLCA04: Agricultural landscape south of Seven Springs</b></p> <p>Assessed in ES as Low Value. In Cotswolds AONB.</p>                  | <p><i>High Value:</i> sparse settlement including post-medieval farmsteads and large 19th century houses within fieldscapes reorganised and enclosed from strip fields and open pastures, with ancient routeways linked to vale, ancient woodland and nationally significant survival of calcareous grassland, wood pasture landscapes and legible prehistoric occupation and burial sites.</p>  |
| <p><b>HLCA05: Brockworth</b></p> <p>Assessed in ES as Low Value.</p>  | <p><i>Low Value:</i> Scattered survival of 18th century and earlier buildings intermixed with late 20th and early 21st century development; opportunities for developer-funded excavation limited.</p>   |

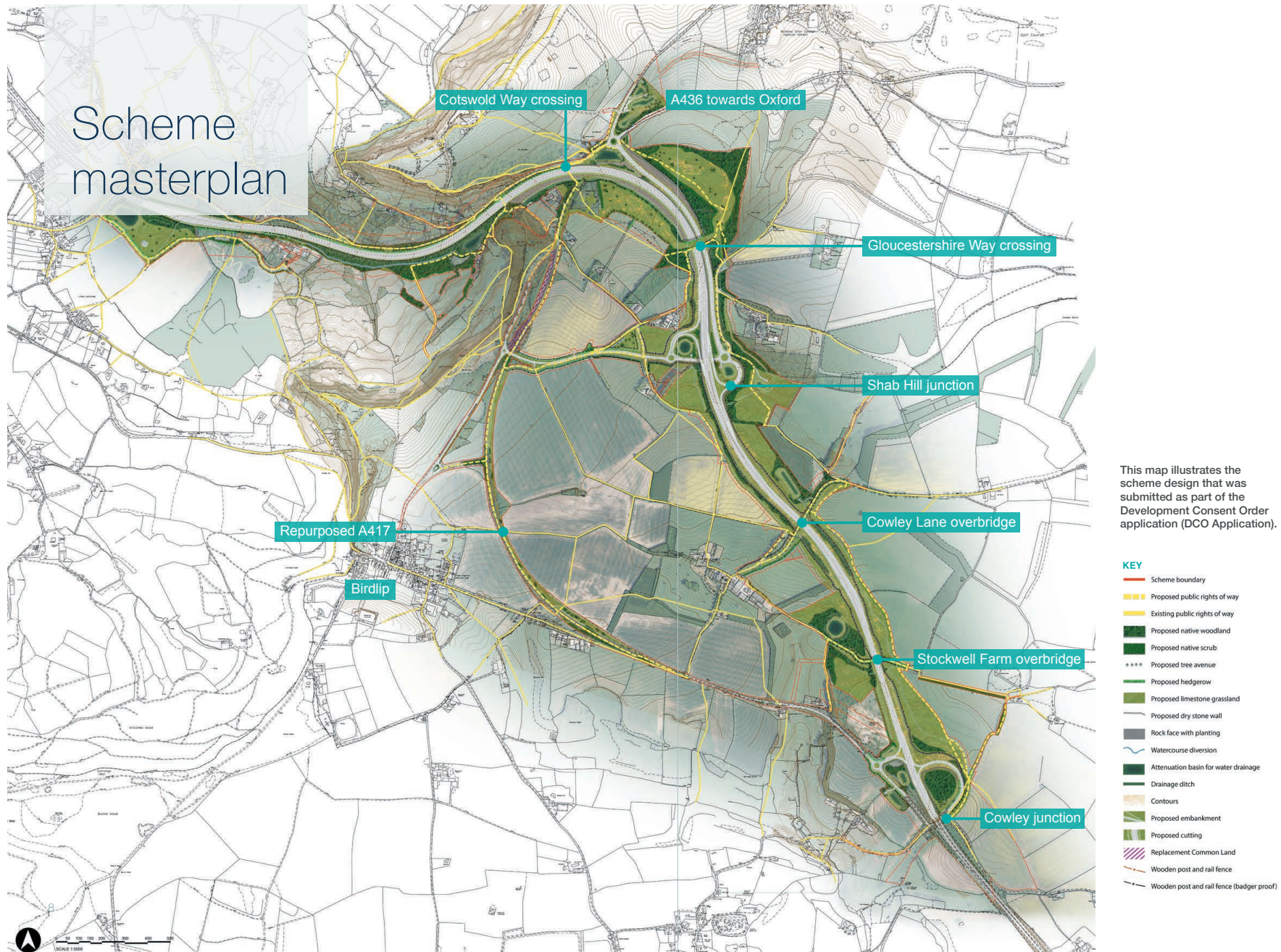


Figure 35. Scheme masterplan submitted as part of the Development Consent Order Application.

This map illustrates the scheme design that was submitted as part of the Development Consent Order application (DCO Application).



## 7 ASSESSMENT OF EFFECTS ON THE HISTORIC LANDSCAPE

The Non Technical Summary of the Environmental Statement states that: *‘The environmental impact assessment follows standard methodologies set out in National Highways’s Design Manual for Roads and Bridges, along with topic-specific guidance as appropriate.*

*The approach to the environmental impact assessment comprises:*

- *Gathering information about the environment to establish the environmental baseline, to enable the environmental constraints and opportunities which may influence or be affected by the scheme to be identified.*
- *Identifying the potential impacts of the scheme (without mitigation); • Developing mitigation measures to avoid, reduce or offset adverse (negative) environmental impacts, and where possible enhance beneficial effects.*
- *Assessing the likely significant effects of the scheme on local communities and the environment, after mitigation measures are implemented.*

*For each environmental topic, a prediction (based on industry guidance and methodologies) in regard to ‘significant effects’ has been provided. Significant effects can either be adverse (negative) or beneficial (positive) and indicate the greatest environmental impacts. Predictions regarding significant effects take into account mitigation and are the effect that is likely to occur once mitigation has been implemented, for example, noise barriers and landscape planting such as woodland and grassland. ‘*

Table 6.9 of Chapter 6 in the Environmental Statement sets out the impacts of the scheme on the historic landscape, using the values assigned to the Historic Landscape Character Areas which were considered in section 6 of this report:

- HLCA01: Area of irregular enclosed fields east of Brockworth, following the line of the existing road from the Brockworth roundabout to the top of the escarpment to the west of the present Air Balloon roundabout. Impact is assessed as No change and Neutral, as ‘the changes would be restricted to the existing road corridor’.
- HLCA02: Woodland south of Great Witcombe, to the south and west of the scheme. Impact is assessed as No change and Neutral, as ‘There would be no change to the historic landscape character’.
- HLCA03: Agricultural landscape around Brimpsfield and Birdlip, which includes the section that involves demolition of the Air Balloon public house and extending towards the new Shab Hill junction. Impact is assessed as Moderate Adverse and Slight Adverse.

- HLCA04: Agricultural landscape south of Seven Springs, which includes the most substantial stretch of the proposed new road extending towards Cowley roundabout. Impact is assessed as Negligible and Neutral, as the ‘area affected is on the edge of the HLCA and in an area mostly hidden from it by existing woodland’.
- HLCA05: Brockworth, to the west of the new scheme. Impact is assessed as No change and Neutral, as the ‘scheme does not extend into the HLCA’.
- It has been seen, in section 6.3 of this report, that the Environmental Statement both underplays and does not provide justification for the significance ascribed to these areas, and it is of particular concern that the impact of the new road upon HLCA04 is not acknowledged. This is in part due to the large scale of these areas.

### 7.2 REASSESSMENT OF EFFECTS

This section of the report intends to deepen understanding of the effects (both positive and negative) of the scheme through using the Gloucestershire and Cotswolds AONB Historic Landscape Characterisation (HLC) and the narrative presentation of the historic landscape introduced and presented above. It acknowledges that the historic landscape is a non-renewable resource in terms of its fabric, but that its wider character and significance may still be managed. The methodology employs the main principles of an approach to assessing the sensitivity of the historic landscape to proposed change, and its capacity to accommodate it, as currently being developed for Historic England – and which has been developed over the last 20 years for understanding the capacity of historic landscapes to accommodate different degrees of change . This approach refines EIA methods in order to enable them to be applied at different scales, and will here take at its starting point the different types of landscape which will be affected by the scheme. It has four elements, usually undertaken in the following stages:

1. Examine the change scenario: identify its **principal effects** (positive as well as negative) and the ways they can be expected to impact historic landscape.
2. Consider the historic landscape, most comprehensively represented here in the HLC Types and their inter-relationship with heritage assets and the natural environment, in terms of its **vulnerability** to the effects or impacts of the change scenario identified in Stage 1, and their capability of benefitting from those effects.
3. Assess the degree that the vulnerability and **capability** of the historic landscape in relation to the expected effects of the proposed changes matters by assessing the **significance** of the historic landscape in relation to those proposed changes.
4. Gather the results of those three stages of assessment into judgements regarding

**sensitivity and capacity**, or **opportunity**, and then work with decision makers to minimise the negative effects.

### 7.2.1 Stage 1 The Change Scenario: the proposals and their effects (Figure 35)

Chapter 2 of the Environmental Statement sets out what works are proposed for each stretch of the new road; these are summarised here, and then the principal effects on historic landscape are drawn out. A video ‘fly-through’ prepared by National Highways was also used to gain a sense of the road’s design and its effects (<https://highwaysengland.co.uk/our-work/south-west/a417-missing-link/>).

The scheme will provide a ‘new, rural all-purpose dual carriageway for the A417’, 3.4 miles (5.5km) long, connecting the A417 bypass of Brockworth with the dual carriageway SE of Cowley junction. It will be ‘completed in line with current trunk road design standards’ (*Environmental Statement* 2.6.1), but also ‘so that it is sympathetic to the AONB character’ (ES 2.6.2). Whilst the section to the west of the existing Air Balloon roundabout will follow the existing A417 corridor, working to an 8% gradient, the section extending to join a new junction and the existing dual carriageway at Cowley will be new and cross an undulating farming landscape. In addition, and to summarise other aspects of the scheme from the west:

- the 8% gradient shall necessitate a stepped 15-metre deep cutting as the road climbs the escarpment on the approach to Crickley Hill and its continuing ascent past Emma’s Grove
- bridges shall enable safe crossing for able and disabled walkers, cyclists, horse riders of the Cotswold Way and the Gloucestershire Way: the 5-metre wide Cotswold Way crossing shall be located close to Emma’s Grove, and include a viewing platform, the Gloucestershire Way crossing shall be much wider (37 metres including a 25-metre wide wildlife corridor) and planted with hedgerows, and is thus intended to also enable the connection and movement of wildlife
- a new junction at Shab Hill: a new road to its east will take drivers via the existing Ullenwood roundabout to Cheltenham and the A436 (towards the A40 and Oxford) and, to its west, an existing road and underpass shall then be joined to a new section of road which will link up with the B4070 for Birdlip and other local destinations
- overbridges at Cowley Lane and Stockwell Farm will be planted with hedgerows
- a new junction to enable access to Nettleton Bottom, Brimpsfield and other local destinations will replace the existing Cowley roundabout, and is designed to prevent ‘rat run’ access to the narrow Cowley Lane
- the existing A417 between the Air Balloon roundabout and the Cowley roundabout would be repurposed; some lengths of this existing road would be converted into a route for walkers, cyclists and horse riders including disabled users; other sections would be

retained to maintain local access for residents and replacement Common Land.

The text for this section of the report is arranged according to the three principal route sections: a) climbing the escarpment, which deepens and widens an existing stretch of the A417, b) an entirely new section of road from Air Balloon to Cowley junction and c) repurposing of the existing A417.



Figure 36. View to west from Cotswold Way crossing (Highways Agency).

**a) Climbing the escarpment** (ES 2.6.5 to 2.6.16)*Main elements of this stretch:*

1. Road levels adjusted to achieve 8% uphill gradient (initially in 2019 Highways England had aimed for 7%, but changed due to feedback, to reduce impact on landscape, woodland, water courses, etc.).
  - a. This involves raising ground (embanked road) over much of the western stretch (including immediately below the prehistoric site at Crickley Hill) and then a cutting that from there sweeps around, first north-east along the southern edge of The Scrubbs, to meet the junction with the A436, where the existing roundabout will be relocated further to the north-east, close to Ullen Wood, and then south-east to commence the New Section.
  - b. The cutting reaches 17m deep. It has been designed to eat into the escarpment to the west of Crickley Hill rather than the hill itself. Bedrock to be left exposed and cut into benches 5m high.
2. There will be three lanes climbing (one for heavy vehicles), two descending.
3. A landscape bund to be built 'along Crickley Hill' to screen views of the road from Barrow Wake and the Cotswold Way national trail.
4. Several adjustments to side road junctions.
5. A new underbridge to give access to Grove Farm.
6. A bridge carrying the Cotswold Way National Trail over the road, with a viewing platform at its hinge.
7. A new bat underpass.

*The effects of these changes include:*

1. Retention of the line of the ancient routeway for the main road at the upper eastern part of the climb: that further west (from a short way north-east of Crickley Hill Farm) having been streamlined to accommodate motorised traffic on the A417 during the second half of the 20th century. The line (but not the carriageway) of the upper eastern stretch is likely to be ancient, probably prehistoric, gaining access to the uplands.
2. Running a 5-lane trunk road along the base of the hill on which Crickley Hill's early Neolithic causewayed enclosure stands. Although its effect on the hill will be minimised by the continuation of the cutting to the west, cutting into it will affect its integrity: it is

important in this respect to note that whilst the Neolithic causewayed enclosure and later Iron Age fort is in part a construction (now an integral part of the ancient grassland here) it was intended to utilise a natural promontory which is thus itself an essential part of the monument. This deepened cutting, therefore, further compromises the setting of this remarkable prehistoric site.

3. Deepening the separation of Crickley Hill promontory and its Neolithic and Iron Age enclosures from the curving escarpment to its south, and especially The Peak (with another early Neolithic causewayed enclosure) as the road becomes faster and perhaps also more heavily used. This affects historic landscape character and further diminishes the potential to restore significant viewpoints, historic inter-relationships and the ecological networks in which the pattern of historic routeways, grassland and wood pasture has played a key role. It also severely affects the potential to present the story of how this remarkable landscape has developed.
4. Widening of the existing road will result in the disturbance or removal of land, especially on the south side of the existing road in close proximity to the listed Crickley Hill Farm, and with it semi-natural communities, possibly including some trees, and any undisturbed archaeological remains surviving within the escarpment and alongside a probably very early routeway.
5. The widening of the road's cutting entails removal of a portion of the treeline along the crest of the scarp.
6. Removal of large quantities of spoil and its placement elsewhere (presumably in the embankment required further west to achieve the 8% gradient).
7. New woodland, scrub and individual tree planting along the south side of the road as it climbs the hill, including around a new attenuation basin and screening woodland and scrub area in the field to the west of Crickley Hill Farm.
8. Uncertain impacts on natural drainage will;
  - a. have a potentially significant impact on the springs that appear to have been important determiners of early settlements and fields on the slopes of the escarpment.
  - a. result in potentially significant changes in water level and drainage on any palaeo-environmental deposits (especially waterlogged soils) in an area where there is likely to have been important Mesolithic and Neolithic activity.



**b) New Section** (ES, 2.6.17 to 2.6.32)*Main elements of this stretch:*

1. The road continues to ascend along a deep cutting, especially pronounced on its south and west side, as it continues along the curve to just north of the proposed of Shab Hill junction. It otherwise runs at ground level (screened by false cuttings) or in actual cuttings to 6m deep from Shab Hill junction to Cowley Junction.
2. The new road will necessitate demolition of The Air Balloon public house and associated structures and spaces.
3. Third climbing lane ends at Shab Hill junction.
4. Carriageway on Shab Hill junction embankment, which fills the coombe at the east-facing head of the valley that extends towards Coberley, is 20m high.
5. A proposed new A436 link road runs alongside the new road from the new roundabout at the Ullenwood junction to the roundabout at Shab Hill, with a climbing lane further widening the scheme as it rises to the south-east at 8% in places. Those 3 lanes are adjacent to the 5 lanes of the A417, making effectively an 8-lane wide barrier
6. An underbridge beneath Shab Hill junction and the main carriageway enables those travelling on the A436 to gain access to the B4070 (Birdlip link).
7. The Cowley Lane junction to the south is in a cutting (up to 5m deep) and uses an existing underbridge beneath the present A417.
8. The B4070 link that connects Barrow Wake to Birdlip has a segregated walk, cycle, horse riding (WCH) lane alongside for much of its length until the WCH way leaves to join the Air Balloon Way.
9. The Gloucestershire Way crossing is a 37m wide multi-purpose green bridge for bats and ecological integration that also carries the Gloucestershire Way footpath over the road.
10. Two other overbridges for Cowley Lane and Stockwell Farm include tree/shrub/hedge planting alongside the carriageways and over the bridges, aiming to mitigate their impact through landscape integration and provide some ecological linkage. Otherwise these are highway bridges set within cuttings and rising above surrounding ground.
11. There will be drystone walling along much of the east side of the road at the top of the cutting. Hedgerows or trees will be planted on the west side along the crest of the cutting/embankment with trees in places on the slope of the cutting.
12. Several new attenuation basins to store run-off will be partly screened by trees and scrub

along the route.

13. Earth banks or bunds to c 2-3m high ('false cuttings') along sections of the scheme are intended to 'reduce views of the traffic on the scheme as well as reduce noise levels to the surrounding area.' Gradients will be 50 degrees on the carriageway side, their backs being designed to fit with the surrounding landscape.
14. Cuttings which are typically 35 degrees to the horizontal, steepened locally to 60 degrees, with benches at 5m height intervals where bedrock is left exposed.



Figure 37. View south-west towards Gloucestershire Way crossing from south (above) and north (below) (Highways Agency).

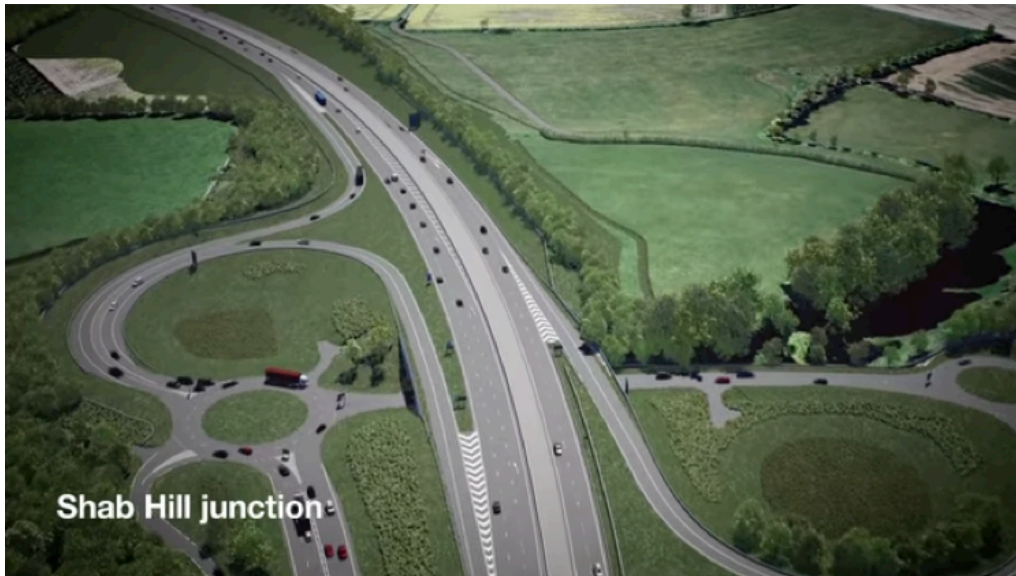


Figure 38. Shab Hill junction, view looking north-east (Highways Agency).

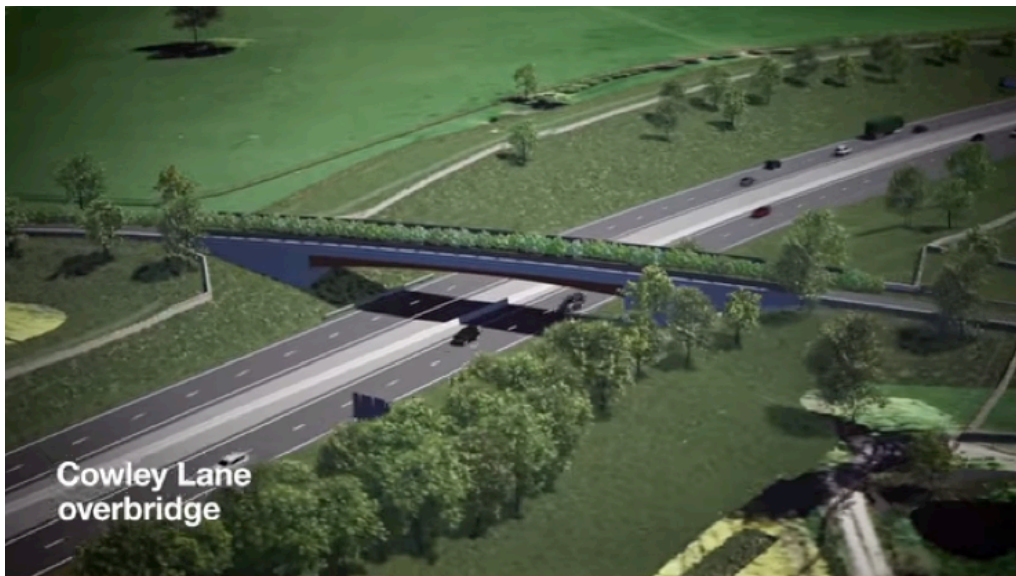


Figure 39. Cowley Lane junction, view looking north-east (Highways Agency).

*The effects of this new road include the following.*

1. 1. An engineered road, largely sunken (or in false cuttings), will represent a major intervention in this plateau landscape in a way that:
  - a. does not allow its users to appreciate the Cotswold geomorphology, which is a nationally-important aspect of the Cotswolds AONB escarpment.
  - b. restricts view of open country, largely confining these to the area immediately S of Shab Hill junction.
2. The road runs against the dominant west to east orientation of ancient and historic routeways leading up from the Vale to ascend the escarpment and enter the Wolds: most are medieval and some are likely to be prehistoric. These form the framework of a historic landscape rich with the story of prehistoric and later communities: a palimpsest of over-written lines and historical meanings.
  - a. The new road greatly reduces the integrity and legibility of this historic landscape, which includes views westwards towards Crickley Hill and the vale.
  - b. It makes exploration and appreciation substantially less easy and enjoyable (cutting through two adopted roads and five footpaths, bridleways or permissive paths, including the Gloucestershire Way).
3. The road cuts through numerous field boundaries of various periods and forms (medieval to modern, mostly comprising drystone walls with some hedgerows and areas of fencing especially to the north where walls have tumbled down), including a parish boundary to the north and the setting (a holloway leading to Coldwell Bottom and its Neolithic long barrow, a 19th century estate landscape with trees lining the routeway) to Stockwell Farm.
4. The line cuts across several historic landscape types which define historic field patterns, are in part framed by historic routeways which are strongly associated with distinct dates and types of heritage asset and habitat types.
5. Although habitats in this area have been affected by modern agricultural practice, a continuation of 18th century and later agricultural improvement, it will undermine the potential to restore connectivity and habitats, It will also affect semi-natural communities, flora and fauna, including the area of beech and mixed woodland and MG5 grassland (see 3.3.3.3) to the east of Shab Hill barn, and may compromise the agricultural viability of fields that require land management in order to achieve the aimed for ecological outcomes of the scheme.
6. Long-term sustainable management will be required for those areas proposed for new limestone (calcareous) grassland, presumably to be integrated into the fields of adjacent farms, and for those patches of new woodland or scattered trees, many of them planted as screens alongside stretches of the new road, others around attenuation basins. These will be planted or allowed to develop through natural regeneration; several proposed new woodland patches are adjacent to existing woodland, the most substantial of which will partly infill an area of the original Ullen Wood that had been cleared after the 1811 OS 2-inch drawing was made and will form the north-eastern curve from 'Ullenwood' junction.
7. The road introduces cuttings, bunds that increase the depth of cuttings to help screen the road, tall sign panels, and other elements of the scheme to a landscape that is otherwise agricultural, diminishing its long-established rural character.
8. The Shab Hill junction infills the head of a Cotswold valley, draining eastwards into the River Churn, and imposes on the topography of Shab Hill itself. Although efficiently designed to modern highways standards, with some planting to ameliorate its impact, the junction affects a large block of land at the head of an important valley, for which there is evidence of activity and occupation from the prehistoric period.
9. In terms of affecting the settings of heritage assets:
  - a. the cutting to the new road will be visible in distant views from Leckhampton Hill to the north, already being affected by the new housing development at Ullenwood, and views towards it from Crickley Hill will be obscured by the cutting in which it will be set
  - b. the road cuts across significant views towards the Scheduled Monument on Crickley Hill from the Gloucestershire Way
  - c. and it affects the setting of the historic farmstead and shrunken medieval settlement and stock farm of Stockwell, the development of which is inextricably linked to the historic pattern of fields in this southern section and marks an area with evidence of activity since the Mesolithic period.
10. Construction will entail removal of an historic public house complex, The Air Balloon, whose name derives from the early years of manned balloon flight – only a decade after its first use
11. Cowley Lane overbridge and its approaches key into but also truncate an avened lane lined with mature lime trees, the trees already in place by 1883 (OS 1:2500) and part of the approach from the Ermin Way to the great house at Cowley Manor (rebuilt in 1855).
12. The road will in part affect the area's long-established tranquillity, as mapped by the Cotswolds AONB, through introducing speeding colour and glare, noise, danger, night light and emissions. A degree of permanent road lighting will be required at junctions that will reduce the long-established dark skies here



### c) Repurposing the existing A417 (2.6.33 to 2.6.41)

*Main elements of this work:*

1. Retention of parts of the existing A417 retained from Cowley junction to lane to Stockwell Farm, also the former end of the avened lane from Cowley Manor. Will be narrowed, given the significant reduction in traffic.
2. Reuse of the existing A417 from Cowley roundabout to the Cotswold Way for walking, cycling and horse-riding, involving narrowing of the carriageway, sowing and planting for grassland and planting of trees along verges, leaving 3 metres of paved surface. Probably as a restricted byway.
3. To reduce pressures at Crickley Hill and Barrow Wake, the siting of new disabled car parking near Stockwell Farm /A417 junction and more parking near the Golden Heart Inn at Nettleton.
4. Common land being deregistered as part of the scheme would be replaced by similar habitats to be established in land on and beside the existing A417 at Barrow Wake.

*The effects of this include the following.*

1. Considerable enhancement of the settings of Crickley Hill, The Peak, Emma's Grove and Barrow Wake.
2. Improvements to health and well-being for those using and experiencing the routeways and landscape in this area, through improved access and safer crossing points.
3. Counter to this, the risk of increased visitors to Crickley Hill which is already at a full capacity with over 190, 000 visitors a year.
4. Less noise and night-time light along or near the crest of the escarpment.
5. If well-designed and then well managed, there should be ecological gains, including from the new 'common', and there are significant opportunities to interpret the story of this remarkable landscape.



Figure 40. The repurposed Air Balloon Way (Highways Agency).

### Summary of key effects of the proposed road on the historic landscape.

These effects are grouped along the lines suggested in Section 7 of the guidance prepared by the Highways Agency and Historic England on *Assessing the Effect of Road Schemes on Historic Landscape Character* (Highways Agency 2007).

#### Loss

1. Loss of semi-natural communities and possibly also below-ground archaeological remains alongside the ancient routeway of the A417 as it climbs past Crickley Hill and as a consequence of the construction of the road as it crosses the Wolds to Cowley junction.
2. Demolition of the mid 18th century Air Balloon public house.
3. Loss of some historic field boundaries, including the parish boundary between Cowley and Coberley and the former southern edge of Ullen Wood, both probably medieval, and later boundaries to the east of Stockwell Farm
4. Stretches of lanes, tracks and paths, some of them likely to be medieval or earlier with possible remnants of early surfaces, etc.
5. Stretch of the Victorian ornamental approach from the Ermin Way to Cowley Manor that runs through Stockwell.

#### Severance and fragmentation

1. The scheme effectively slices across and obscures the prehistoric, early medieval, later medieval and post-medieval narratives that are legible in this wold-edge landscape; this will also be one of the largest excavations of the oolite sequence undertaken in the British Isles.
2. Deepening and widening of the main climb from Brockworth reinforces severance of Crickley Hill from associated prehistoric complexes at Barrow Wake (where the famous Birdlip Iron Age mirror was found), Emma's Grove and The Peak, and to a lesser but significant extent their relationship to Neolithic and later monuments to the east.
3. Further severance of field boundaries and historic routeways and paths, affecting long established lines of quiet movement and bringing noise etc to areas that have been peacefully enjoyed.
4. Further fragmentation of semi-natural vegetation communities maintained by locally traditional land uses – of broadleaved woodland within the widened corridor of the A417, of beech woodland and significant grassland (MG5) to east of Shab Hill Farm and of the estate landscape around Stockwell Farm.

5. The risk without adequate long-term management of the viability of patches of calcareous grasslands introduced as part of the scheme

#### Intrusion; reducing legibility

1. Widening and deepening the cutting for the A417 disturbs and distorts the lower southern slopes of Crickley Hill, integral to the jutting and rising natural promontory that formed the essence of this important Neolithic gathering place and its relationship to the other gathering place just one kilometre to the south at The Peak.
2. As noted above, the numerous severances caused by the new build from The Air Balloon to Cowley junction reduce the legibility of the prehistoric, medieval and post-medieval narratives embedded in the historical landscape.
3. Landscaping bunds up Crickley Hill and along stretches of the new build, intended to screen the road from view are themselves alien forms or intrusions in this rural historic landscape.
4. The deepening of the road on the climb and the creation of the new line intrude upon the settings of significant prehistoric heritage assets at Crickley Hill and Emma's Grove, Stockwell Farm on the site of a shrunken 13th century farming hamlet, and the Second World War Birdlip radio station on Shab Hill.

#### Urbanisation of rural landscape

1. Introduction of the movement, noise, emissions and vibration of a busy trunk road with its night-time lighting and signage to the rural landscape, particularly the estate landscape around Stockwell Farm and the area northwards to the plateau around Shab Hill with its sweeping views.
2. Thus conveying an urbanising message that the needs of a modern trunk road prevail over the needs of the rural landscape recognised in its AONB designation.

#### Incidental effects on historic landscape of other mitigation activities

1. Trees and woodland plantings along the climb, around the curve and in places along the new line are introductions, but some can be shown to reintroduce woodland to former woods and others can be designed to work well in reintroducing a more treed or wooded character.
2. Calcareous grassland will be buffered by the creation of further areas that will require appropriate management.

*Improvements to the historic landscape character of places bypassed*

1. The potential to enhance connectivity of the escarpment top at Barrow Wake (including the reduction in size or removal of the car parking areas there), and the fields and settlements on the slopes below, to areas of restored calcareous grassland including the proposed strip extending to the Gloucestershire Way crossing.
2. Opportunity to deepen understanding and better interpret this remarkable landscape, and how natural and historic factors have created and sustained it.
3. Opportunity to restore habitats, which will be a slow reversion process.
4. Opportunity for improved environmental conditions at the medieval village of Birdlip, which with Nettleton owes much to its position astride the Ermin Way.

severe at Shab Hill, due to the new junction providing access via a 2-lane route back to a new junction at Ullenwood and a new road connecting to Birdlip.

### **7.2.3 Stages 2, 3 and 4 Assessing the sensitivity of Historic Landscape Character Types in relation to those effects**

Table 6.9 of Chapter 6 in the Environmental Statement sets out the impacts of the scheme on the HLCAs.

This section provides an assessment of the sensitivity of Historic Landscape Character Types in relation to the effects set out above, based upon setting out:

- the vulnerability (graded 1, 2 or 3, low to high) of each HLC Type to each of the effects of the proposed road scheme: a) Loss; b) Severance and Fragmentation; c) Intrusion and reduction of Legibility; d) Urbanisation; e) Incidental effects of mitigations
- the capability or opportunity (graded at -1, -2, -3 low to high, 0 if not obviously relevant) of each HLC Type to benefit from the effects of the proposed road scheme including f) Improvements to character due to by-passing
- the HLC Type's significance once the expected effects of the road scheme on the Type have been considered; again graded 1, 2, 3, low to high, 0 if not obviously relevant. Note that grades for significance are not absolutely fixed as the qualities that contribute to the significance of each type will be affected differently by each change scenario and its effects.

A measure of sensitivity for each HLC Type is then set out by multiplying the scores for a) vulnerability/capability and b) significance in relation to each effect.

This shows that, whilst the widening of the road to a 5-lane highway set into a deep cutting will further sever the relationship between Crickley Hill and The Peak, it will have the most severe impact on the section of the plateau crossed by the new road. The impact will be particularly



| Summary of effects as described in 7.2.3 and shown on Figure 41.  |  |
|---|--|
| B1 and BH1 on east edge of Crickley Hill (28)   | Commons (B1) and commons on scarp edges affected by quarrying (BH1) are highly vulnerable to change, being clipped by the new cutting.   |
| L1 and A1s (24)   | Area of irregular (L1) and piecemeal (A1s) medieval and later enclosure on scarp slopes, small in scale but with a potentially significant impact on spring sites and water levels.  |
| L3 (8)  | Area of late regular enclosure at Barrow Wake reverting to calcareous grassland and partly to woodland after quarrying (SSSI), very small area affected.   |
| <i>HLC Types directly affected by the new road from the Air Balloon to Cowley junction</i>  |  |
| A4 to south of new road (31)  | The area (HLC A4) of 17th-19th century enclosure over medieval strip fields to the south of the new road is most sensitive to change, as a consequence of the road bisecting a legible estate landscape with the site of the medieval settlement of Stockwell and a large post-medieval farmstead, with a tree-lined routeway to Cowley and its country house and a holloway extending towards the Neolithic long barrow, species-rich valley grassland and medieval settlement of Coberley. |
| B4 to north of new road (28)  | Area of less regular organised enclosure of former unenclosed pasture, where new road will extend within a deep cutting  |
| C2 to SW of Ullen Wood (26)   | Area of former ancient woodland cleared by 19th century but with historic outer boundary, intersected by new road and effect mitigated by proposal for new planting.   |
| H1 (10)   | Industrial area (former quarry), immediately NW of Cowley junction, intersected by new road.   |
| <i>HLC Types affected by proximity to the new road (The Air Balloon to Cowley junction)</i>   |  |
| A3 to W of Cowley junction (9)  | Late post-medieval regular enclosure affected by noise, lighting and other incidental effects from new road.   |
| C1 at Ullen Wood and small area NE of Stockwell (10)  | Ancient woodland affected by noise, lighting and other incidental effects from new road but with opportunities for buffering by new scrub and planting.  |
| <i>HLC Types affected by the repurposing of the existing A417 from Cowley junction to The Air Balloon – note that the minus score serves as an indication of the extent that this scenario will benefit these areas</i> |  |
| A4 to N of A419 (-9)  | The area (HLC A4) of 17th-19th century enclosure over medieval strip fields will benefit considerably from this scenario, with opportunities for interpretation and connectivity linked to Barrow Wake.  |
| L1 and A1 to S of A419 (-6)   | Area of early irregular enclosure relating to medieval settlement and Roman road, less directly benefitting from this scenario.  |

- the vulnerability (graded 1, 2 or 3, low to high) of each HLC Type to each of the effects of the proposed road scheme: a) Loss; b) Severance and Fragmentation; c) Intrusion and reduction of Legibility; d) Urbanisation; e) Incidental effects of mitigations
- the capability or opportunity (graded at -1, -2, -3 low to high, 0 if not obviously relevant) of each HLC Type to benefit from the effects of the proposed road scheme including f) Improvements to character due to by-passing
- the HLC Type's significance once the expected effects of the road scheme on the Type have been considered; again graded 1, 2, 3, low to high, 0 if not obviously relevant. Note that grades for significance are not absolutely fixed as the qualities that contribute to the significance of each type will be affected differently by each change scenario and its effects.

A measure of sensitivity for each HLC Type is then set out by multiplying the scores for a) vulnerability/capability and b) significance in relation to each effect.

This shows that, whilst the widening of the road to a 5-lane highway set into a deep cutting will further sever the relationship between Crickley Hill and The Peak, it will have the most severe impact on the section of the plateau crossed by the new road. The impact will be particularly severe at Shab Hill, due to the new junction providing access via a 2-lane route back to a new junction at Ullenwood and a new road connecting to Birdlip.

**7.2.3.1 HLC Types affected by the road climbing the escarpment (see 7.2.1a)**

**B1 and BH1** Commons (B1) and commons on scarp edges affected by quarrying (BH1). Area of Crickley Hill protected as Scheduled Monument and SSSI. Types affected by embankment, 17-metre deep cutting to southern edge and Cotswold Way crossing.

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

|  |                         |   |
|--|-------------------------|---|
| a) Loss                                  | $V 2 \times S 2 = 4$    | Graded medium because just sliver of lower slope affected.  |
| b) Severance and Fragmentation           | $V 3 \times S 3 = 9$    | Graded high because of the permanent barrier established between Crickley Hill and the escarpment including The Peak and Barrow Wake to its south.                  |
| c) Intrusion and reduction of Legibility | $V 3 \times S 3 = 9$    | Graded high because of the physical intrusion of the road on the promontory that is an important element of the Neolithic and Iron Age enclosures of Crickley Hill. |
| d) Urbanisation                          | $V 3 \times S 3 = 9$    |   |
| e) Incidental effects                    | $V 1 \times S 3 = 3$    |   |
| f) Improvements due to bypassing         | $C -2 \times S -3 = -6$ | Graded medium because of the opportunities for interpretation of these highly significant landscapes.   |

**Sensitivity 28**

**L1 and A1s** *Area of irregular (L1) and piecemeal (A1s) medieval and later enclosure on scarp slopes, a defining feature of the western escarpment of the Cotswolds. L1 extends from the middle and lower slopes of the escarpment from Birdlip Hill in the south to Cold Slad on the north-west flank of Crickley Hill in the north, with A1s on the upper slopes to the east of the listed Crickley Hill Farm. Area will be affected by the widening of the existing road, with potentially significant impact on spring sites and water levels.*

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

- |  |               |  |
|--|---------------|--|
| a) Loss                                  | V 1 x S 3 = 3 |  |
| b) Severance and Fragmentation           | V 1 x S 3 = 3 | Graded low because the road is largely already an integral part of this pattern. |
| c) Intrusion and reduction of Legibility | V 2 x S 3 = 6 | will be wider  |
| d) Urbanisation                          | V 2 x S 3 = 6 |  |
| e) Incidental effects                    | V 2 x S 3 = 6 |  |
| f) Improvements due to bypassing         | C 0 x S 0 = 0 |  |

**Sensitivity 24**

**L3** *Regular enclosure at Barrow Wake (SSSI) segmenting long thin areas, usually between two land uses (like a woodland and a road) and here resulting in late and brief enclosure followed by reversion to quarrying and calcareous grassland. It is a prominent saddle of land that sits between Crickley Hill and The Peak. A small area to its north will be lost to the new road, and the area will benefit from the restoration of calcareous grassland to its east.*

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

- |  |                  |
|--|------------------|
| a) Loss                                  | V 1 x S 2 = 2    |
| b) Severance and Fragmentation           | V 1 x S 1 = 1    |
| c) Intrusion and reduction of Legibility | V 2 x S 1 = 2    |
| d) Urbanisation                          | V 3 x S 1 = 3    |
| e) Incidental effects                    | V 2 x S 1 = 2    |
| f) Improvements due to by-passing        | C -2 x S -1 = -2 |

**Sensitivity 8**

**7.2.3.2 HLC Types directly affected by the new road from the Air Balloon to Cowley junction, from north-west to south-east (see 7.2.1b)**

**B4** *Less regular organised enclosure of former unenclosed pasture, late post-medieval and found almost exclusively in Cotswolds AONB as enclosures of former sheep runs and fields on thin soils on limestone bedrock. Area extends eastwards and south-eastwards from The Air Balloon, where new road will be set within a deep cutting and it continues past the new junction at Shab Hill.*

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

- |  |               |
|--|---------------|
| a) ) Loss                                | V 3 x S 2 = 6 |
| b) Severance and Fragmentation           | V 3 x S 2 = 6 |
| c) Intrusion and reduction of Legibility | V 3 x S 2 = 6 |
| d) Urbanisation                          | V 3 x S 2 = 6 |
| e) Incidental effects                    | V 2 x S 2 = 4 |
| f) Improvements due to by-passing        | C 0 x S 0 = 0 |

**Sensitivity 28**



**C2** *Ancient assart woodland cleared in post-medieval period, SW of Ullen Wood.*

The boundary of the former Ullen Wood (surviving as Ancient Woodland to its north) will be sliced through by the new road set in its cutting. New woodland is proposed for the remainder of this area adjacent to Ullen Wood.

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

|  |                 |
|--|-----------------|
| a) Loss                                  | V 3 x S 2 = 6   |
| b) Severance and Fragmentation           | V 3 x S 2 = 6   |
| c) Intrusion and reduction of Legibility | V 3 x S 2 = 6   |
| d) Urbanisation                          | V 3 x S 2 = 6   |
| e) Incidental effects                    | V 3 x S 2 = 6   |
| f) Improvements due to bypassing         | C -2 x S -2 = 4 |

**Sensitivity 26**

**A4** *Less regular enclosure over strip fields, fields in the southern half of the new stretch, interrupted by a tongue of B4 to S of Shab Hill and by a hollow-way N of Stockwell. This is mostly 18th-19th century enclosure that partly retains pattern of earlier strip fields and which extends from an open plateau to east of Birdlip to the estate landscape with tree-lined routeways around Stockwell Farm and extending to Cowley. New road will be set in a deep cutting, be traversed by overbridges and be mitigated by trees and scrub, drystone walling to north-east and hedges to south-west.*

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

|  |               |
|--|---------------|
| a) Loss                                  | V 3 x S 3 = 9 |
| b) Severance and Fragmentation           | V 3 x S 3 = 9 |
| c) Intrusion and reduction of Legibility | V 3 x S 3 = 9 |
| d) Urbanisation                          | V 3 x S 3 = 9 |
| e) Incidental effects                    | V 2 x S 3 = 6 |
| f) Improvements due to bypassing         | C 0 x S 0 = 0 |

**Sensitivity 42**

**H1** *Industrial, immediately NW of Cowley junction. This is a disused 20th century quarry.*

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

|  |               |
|--|---------------|
| a) Loss                                  | V 3 x S 1 = 3 |
| b) Severance and Fragmentation           | V 3 x S 1 = 3 |
| c) Intrusion and reduction of Legibility | V 3 x S 1 = 3 |
| d) Urbanisation                          | V 1 x S 1 = 1 |
| e) Incidental effects                    | V 0 x S 0 = 0 |
| f) Improvements due to bypassing         | C 0 x S 0 = 0 |

**Sensitivity 10**

**HLC Types affected by proximity to the new stretch (The Air Balloon to Cowley junction)**

**C1** *Surviving early woodland*, Ullen Wood and patch to NE of Stockwell

This is a significant area of early coppiced woodland (Ancient Woodland and Local Wildlife Site).

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

|  |                         |
|--|-------------------------|
| a) Loss                                  | $V 0 \times S 3 = 0$    |
| b) Severance and Fragmentation           | $V 0 \times S 3 = 0$    |
| c) Intrusion and reduction of Legibility | $V 1 \times S 3 = 3$    |
| d) Urbanisation                          | $V 2 \times S 3 = 6$    |
| e) Incidental effects                    | $V 0 \times S 3 = 0$    |
| f) Improvements due to bypassing, etc    | $C -2 \times S -3 = -6$ |

**Sensitivity 3**

**A3** *Regular enclosure imposed on strip fields*, late post-medieval. Western extremities of an area of this Type are affected just N of Cowley junction.

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

|  |                      |
|--|----------------------|
| a) Loss                                  | $V 0 \times S 2 = 0$ |
| b) Severance and Fragmentation           | $V 0 \times S 2 = 0$ |
| c) Intrusion and reduction of Legibility | $V 0 \times S 2 = 0$ |
| d) Urbanisation                          | $V 2 \times S 2 = 4$ |
| e) Incidental effects                    | $V 1 \times S 2 = 2$ |
| f) Improvements due to bypassing         | $C 0 \times S 0 = 0$ |

**Sensitivity 6**

**A5** *Irregular modern (former piecemeal) fields*, late 20th century and to south-east of Stockwell. Whilst the outer boundaries are earlier in date, this area results from the removal of historic field boundaries.

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

|  |                         |
|--|-------------------------|
| a) Loss                                  | $V 1 \times S 2 = 2$    |
| b) Severance and Fragmentation           | $V 2 \times S 2 = 4$    |
| c) Intrusion and reduction of Legibility | $V 2 \times S 2 = 4$    |
| d) Urbanisation                          | $V 3 \times S 2 = 6$    |
| e) Incidental effects                    | $V 2 \times S 2 = 4$    |
| f) Improvements due to by-passing        | $C -2 \times S -2 = -4$ |

**Sensitivity 16**

7.2.3.3 **HLC Types directly affected by the repurposing of the existing A417 from Cowley junction to The Air Balloon (see 7.2.1c), from south-east to north**

**A4** *Less regular enclosure over strip fields*, late post-medieval. North of the Ermine Street Roman road.

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

|  |                         |
|--|-------------------------|
| a) Loss                                  | $V 0 \times S 3 = 0$    |
| b) Severance and Fragmentation           | $V 0 \times S 3 = 0$    |
| c) Intrusion and reduction of Legibility | $V 0 \times S 3 = 0$    |
| d) Urbanisation                          | $V 0 \times S 3 = 0$    |
| e) Incidental effects                    | $V 0 \times S 0 = 0$    |
| f) Improvements due to bypassing         | $C -3 \times S -3 = -9$ |

**Sensitivity -9**

**L1 and A1** *Area of irregular (L1) and piecemeal (A1) medieval and later enclosure to the south of the Ermin Way; probably earliest and most irregular at head of the valley south of Nettleton (L1) and retaining some boundaries derived from strip fields.*

**Vulnerabilities (V), capabilities (C) and significances (S) in relation to effects**

|  |                         |
|--|-------------------------|
| a) Loss                                  | $V 0 \times S 3 = 0$    |
| b) Severance and Fragmentation           | $V 0 \times S 3 = 0$    |
| c) Intrusion and reduction of Legibility | $V 0 \times S 3 = 0$    |
| d) Urbanisation                          | $V 0 \times S 3 = 0$    |
| e) Incidental effects                    | $V 0 \times S 3 = 0$    |
| f) Improvements due to bypassing         | $C -2 \times S -3 = -6$ |

**Sensitivity -6**

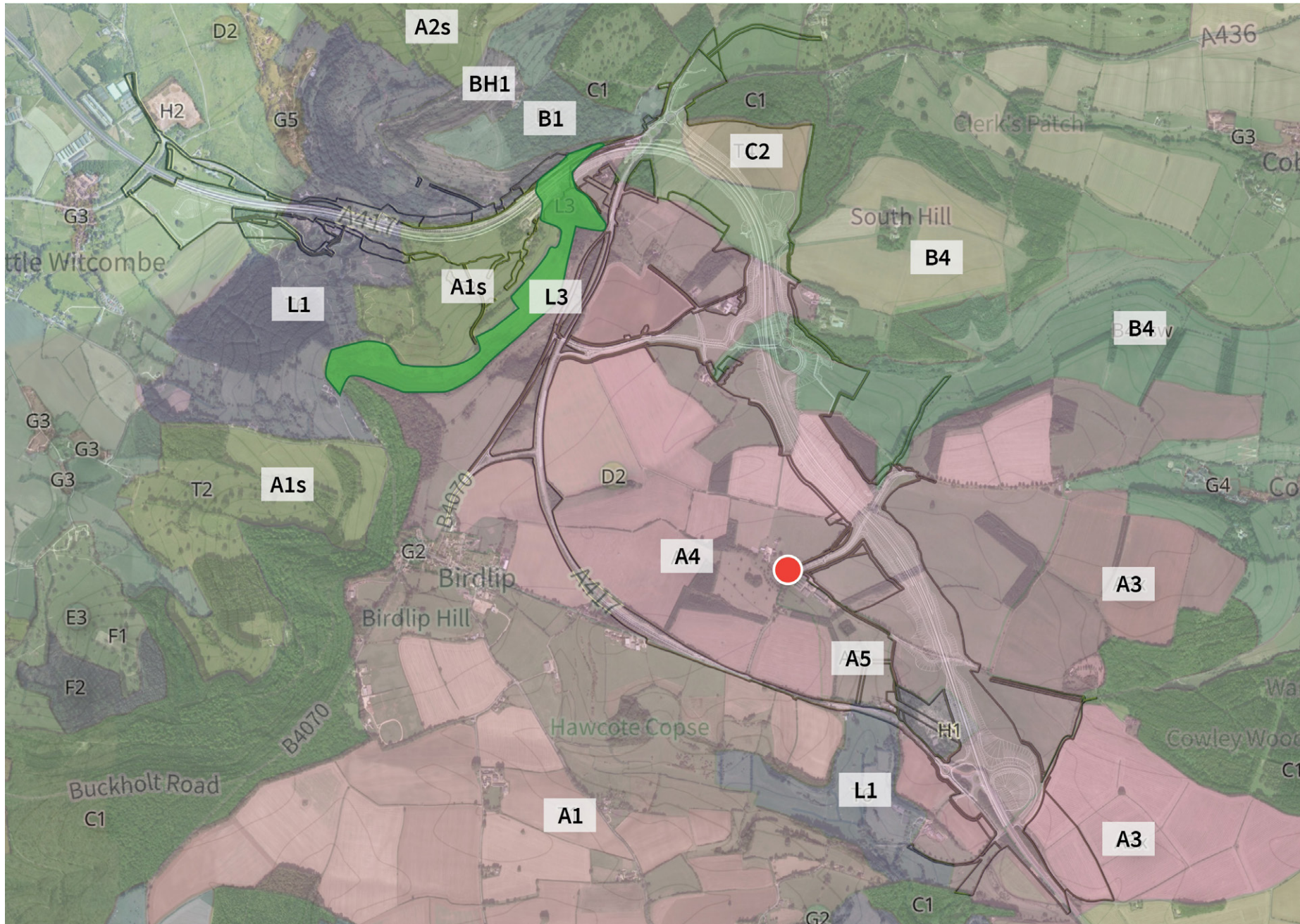


Figure 41. Historic Landscape Character Types affected by the new scheme.



## 8 CONCLUSIONS AND RECOMMENDATIONS

### 8.1 CONCLUSIONS

With the information contained within the ES, submitted by National Highways, **the Examining Authority and the Secretary of State do not have a full and appropriate assessment of the landscape significance**, which is fundamental to the setting of Crickley Hill and other heritage assets (as set out in 5.128 of the *National Policy Statement for National Networks*, 2014). **The SOS will thus be unable to confirm with full clarity that harm has been avoided or minimised** (5.129 of the *National Policy Statement for National Networks*, 2014). The reasons for this are that:

1. **The EIA report has not sufficiently interpreted or understood the historic landscape context of the scheme**
  7. It does not draw out the potential for Mesolithic and earlier Palaeolithic remains around the springs and streams of the escarpment.
  8. The setting analysis in the EIA for Crickley Hill mentions modern intrusions but does not mention the inter-relationship of the natural and historic environment, which is such a critical aspect of its significance and setting, underplays this site's visual and historic relationship to The Peak, Emma's Grove with its east-facing enclosure and other prehistoric monuments in the area, and its historic and visual relationship to views westwards. Considered as a whole, this group has national importance as evidence of how prehistoric peoples adapted the landscape as agricultural, social and religious practices changed.
  9. The deserted medieval village site and traditional farmstead at Stockwell has not been considered as a whole, and in its landscape context which tells a story reflected in other parts of the Cotswolds – of the shrinkage and desertion of settlements from the 14th century, of the growth of large farms and farmsteads in the post-medieval period and the development of estates with estate cottages and tree-lined avenues.
2. **There is no methodology for grading the Historic Landscape Character Areas used in the EIA**

The EIA does not contain a methodology for the grading of significance for these areas. When assessed against commonly-used criteria for the assessment of landscapes, and when considering the inter-relationships of heritage assets with each other and the natural environment, it is clear that the Low grade accorded to the three HLCAs in the Cotswolds AONB should be raised to High:

  - HLCA02, Woodland south of Great Witcombe: this has considerable historic and natural importance as beech woodland with its associated Neolithic and later monuments and archaeology, and evidence of use in more recent centuries.
  - HLCA03, Agricultural landscape around Brimpsfield and Birdlip and HLCA04, Agricultural landscape south of Seven Springs: both retain clear evidence for the development of medieval and later settlement in a coherent landscape context, with ancient woodland, deserted settlements, estate landscapes and scattered prehistoric sites and monuments – all key attributes of the AONB and how it has developed into its present form.
3. **The impact of the scheme on historic landscape has been underestimated, due to the undergrading of the significance of the HLCAs and their very large scale.**
  - The Peak and the farmstead at Stockwell Farm should be added to the list of non-designated heritage assets subject to slight adverse effects, due the further severance of the former from Crickley Hill and the proximity of the latter to the scheme.
  - The methodology for scoring the sensitivity of the historic landscape character types affected by this scheme, by being applied at a much smaller scale, enables the potential impact of the scheme and beneficial mitigation to be identified at a finer grain. These:
    - serve to underpin and strengthen recommendations for mitigation already made by the National Trust, the Gloucestershire Wildlife Trust and others, and key amendments made by National Highways in response
    - demonstrate a particularly severe impact on views from the Gloucestershire Way towards Crickley Hill and the vale, including a medieval or earlier parish boundary extending towards Emma's Grove, and the legible estate landscape with the site of the medieval settlement and large post-medieval farmstead at Stockwell, all reflecting as a grouping key aspects of Cotswolds plateau landscapes.
4. **The EIA report has not sufficiently interpreted or understood some key heritage assets and their significance**
  - The Environmental Impact Assessment (EIA) and DMRB methodology does not adequately address some of the key inter-relationships between different themes that are essential to understanding significance.

- The Peak and Crickley Hill have an historic and visual inter-relationship as gathering places dating from the early part of the Neolithic (c.3600-3700 BC) in Britain, relating to this routeway, Neolithic and Bronze Age barrows and the visually prominent saddle of land at Barrow Wake; Emma's Grove occupies a prominent position in relationship to these features. This whole group should thus be considered as having High significance. Although the establishment of woodland in around 1900 at The Peak has affected how people can experience the site, it should be graded as having High significance as a prominent and integral part of this grouping.
- The farmstead at Stockwell Farm and the deserted medieval settlement should be considered as a whole as having Medium significance.
- The hilltop location which favoured the establishment of Mesolithic and Neolithic communities prompted the choice of location for the radio station at Birdlip in the Second World War, which is a rare surviving example of its type and of Medium significance in a national context.
- Designated heritage assets are all graded by the EIA as 'High', meaning that archaeological sites, buildings and structures (such as the K6 phone kiosk at Brimpsfield) with very different levels of significance are all accorded the same grade; some of these would be better graded as of 'Medium' significance, because it has been determined that this would not require any significant amendment to effects.

## 8.2 RECOMMENDATIONS

1. **A 'landscape-led approach should be developed as an integrated framework from the earliest stage'**  
The EIA process would have benefitted from a dynamic landscape-led approach at the earliest possible stage, in order to conserve and enhance the special character of the AONB, reconnect landscape and ecology, enhance visitor enjoyment and have specific benefits for landscape, wildlife and heritage. It should have been developed as an interdisciplinary framework at the earliest stage, preferably prior to the drafting of individual EIA chapters. This would have been built upon the principles of analysis set out in section 2.3 of this report, so that potential synergies, opportunities, threats and issues can be identified at the earliest possible stage. It is suggested that this could save and focus resources when it comes to the analysis of data for individual specialist chapters, if used as a forward-looking framework that draws together different professional perspectives and can thus be used as a basis for interpretation and communication with relevant stakeholders.
2. **Use the cultural landscape to secure maximum ecological benefit**  
The National Trust welcomes National Highways' commitment to maximise the opportunities for biodiversity by delivering locally distinctive Priority Habitats within the red line boundary. This includes 72ha of calcareous grassland, 9ha of lowland mixed deciduous woodland and 5.5km of species-rich hedgerows. These locally distinctive habitats are the consequence of the historic cultural land use and efforts to restore them represent an integrated understanding of cultural history.  
However, additional concerns raised by this report must address:
  - securing long-term sustainable and beneficial management of the landscape after completion of the scheme, ensuring that a considerable amount of time and management is needed to deliver the restoration of new habitats. This should be secured for a minimum of 30 years, to be in line with the emerging biodiversity net gain policies
  - structural and species diversity, including through allowing the development of scrub mosaics on the road cuttings and within the area of former woodland and semi-improved grassland to the south of Ullen Wood

3. **Key areas affected by the scheme need to be better understood and proper mitigation through recording put in place**

In addition to the recommendations made in the EIA, it is recommended that:

- appropriate safeguards are put in place to ensure identification and recording of the high potential for paleoenvironmental evidence and also Palaeolithic and early hominid remains within the escarpment in particular
- any recording of the medieval settlement at Stockwell is broadened to include recording of the historic farmstead buildings and the estate landscape, including its historic links to Cowley and Coberly
- there is an appropriate record, including reference to National Archives records, of Birdlip Radio Station
- recording in general makes reference to, confirming and challenging as appropriate, the findings made in this report about the development of this historic landscape in its wider context.

4. **The findings of this report should inform celebration and interpretation of this landscape**

There are very significant opportunities, in support of the health and well-being agenda and specifically the Statements of Environmental Opportunities for the Cotswolds National Character Area, within which almost all of the proposed scheme lies, to:

- celebrate and interpret key views to the vale from the repurposed A417, celebrating one of the key views from the AONB, and also from the plateau landscape
- communicate the remarkable time-depth and story of this landscape to users of the repurposed A417 and also to users of the new road which need to be set out further to the completion of this report
- enable physical and intellectual access to and interpretation of the wider landscape, including the relationship between natural processes and human influences, and thus lessen some of the pressure on Crickley Hill itself
- to reveal and interpret exposed sections of the geology (stratigraphy and palaeontology) as part of the design of the scheme.



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# APPENDICES

## APPENDIX 1: GLOUCESTERSHIRE AND COTSWOLDS AONB HISTORIC LANDSCAPE CHARACTERISATION AND THE COUNTY HISTORIC ENVIRONMENT RECORD

This project has produced datasets derived from the HLC and the HER, for loading and querying onto a GIS map-system.

### *Gloucestershire and Cotswolds AONB Historic Landscape Characterisation (HLC)*

Crickley Hill HLC Merged Excel Sheet shows the existing Glos HLC types and the new Combined Types in the following columns:

- A: object ID
- B: TAG – the Glos HLC Numeric Code for Broad and Primary (Narrow) Types and (in lower case letters) suffixes used
- C: Shape Area
- D: Shape Len
- E: Description of Broad Type as tagged in column B
- F: Primary (Narrow) Type as tagged in column B (using the letter small-case suffixes
- G, H, I: Suffix meaning as tagged in column B
- J: Combined Type Merged Numeric Code if different from Column B
- K: Combined Type Name
- L: Broad Type as tagged in Column B

Appendix G of the Gloucestershire HLC Report contains a full explanation of the Primary Types with suffixes, which have been used to combine the HLC polygons as follows:

### *Fields*

- A1 and A2 - both are piecemeal enclosure of medieval strip fields, mostly in the vale, A2 being less irregular
- The 's-suffix' A1s and A2s are earlier enclosures on scarp slopes which have been retained as a separate layer
- A1f - larger fields resulting from C20 boundary removal.
- A3 and A4: organised enclosure

- C1, C2 and C3 to remain as separate
- B categories with suffixes to remain separate
- L1, 2 and 3 to remain as separate - L1 (v irregular and marginal, strong likelihood of being medieval), separate from later L2 common-edge enclosures and L3 which is late enclosure from downland N of The Peak

### *C - early woodland and assarted fields*

C1: surviving early woodland of probable medieval or earlier origin (C1) includes The Scrubs at Crickley Hill and Witcombe Wood, Shurdington Grove, Cowley Wood, Ullen Wood and blocks of woodland within the early irregular enclosures north of Ravensgate Hill to the north-west.

C2: late organised enclosure from woodland - cleared after the OS Draft from Badgeworth Wood (C2), to the north-west of the moated site at Hunt Court cleared after 1842 tithe map

C3: areas with probable medieval woodland boundaries (C3), and areas cleared from woodland through assarting (C4)

### *D – pastures and meadows*

Enclosures around riverine pastures and hay meadows have high potential for early origins. There are small pockets of meadow indicated by place names (D2) and a long strip of meadow along Norman's Brook, extending from Badgeworth to Hunt Court, which is also bounded by ancient ash and oak pollards and is similar in its form to other pastures doled out as meadows (D1).

**A, B, L - Fields**

The Historic Landscape Characterisation distinguishes between those areas, mostly in the Vale, where fields have been enclosed by hedgerows on a piecemeal or planned basis from medieval strip fields in unenclosed landscapes (A) and those areas (B), mostly on the Cotswolds, where fields have been enclosed by hedgerows and (especially from the mid 18th century) drystone walls from both strip fields and extensive sheep runs and cattle pastures in unenclosed land. The HLC has another category (L) of irregular fields which are associated with woodland edges and marginal land; these strongly resemble fields of ancient (pre-17th century) enclosure identified in later HLCs.

**Fields in the vale**

Whilst the sinuous or curved boundaries of fields in the vale and the scarp show a pattern of piecemeal enclosure from medieval plough strips there are significant distinctions between:

- The area to the north-west of the A46, where there are areas of more ordered regular enclosure and fields that have been enlarged in the 20th century; these are associated with the large farmsteads at Hunt Court moated site with Syringa Farm, Church Farm at Shurdington, Badgeworth (including the manor) and farmstead that were rebuilt and newly-sited in their own fields after enclosure
- A large area of 17th century or earlier enclosure extending from Leckhampton towards Witcombe, where fields have been subject to some enlargement and reorganisation but are also associated with clusters of farmsteads with moated sites and recorded 17th century and earlier buildings.
- A more coherent pattern of early enclosure on the scarp slopes (A with 's' suffixes and L1), associated with springheads, the Roman villa sites at Dryhill Farm and Witcombe and 17th century and earlier recorded buildings on farmsteads. L1 is very irregular and does not relate to any identified ridge and furrow.

**Fields on the Cotswolds**

The HLC shows a strong division between:

- HLCA4 which is dominated by B4 less regular organised enclosure of former unenclosed pasture which retains indications of enclosure from strip fields (very large post-1750s farmsteads) with small plantations (not caught by HLC) and to north the open commons and to NE around the golf course 17th century or earlier enclosures with earlier farmsteads

- HLCA3 which is dominated by enclosure of former unenclosed cultivation, A2 to south of Birdlip (including Brimsfield with its village-based older farmsteads) showing a stronger pattern of piecemeal enclosure and A4 being more organised in its appearance with field barns in large fields

**A – former unenclosed cultivation****Irregular enclosures which reflect medieval strip fields (A1)**

These can date from the medieval period, are generally 1-7ha in size, and boundaries along watercourses, holloways and other routeways are likely to be of medieval or even earlier date

- A1f to NW of A46 is where many boundaries on historic maps have been removed
- A1m to W edge is rich wet grassland/ probable meadow
- A1rm to E of A46 is where fields are larger than the norm for this type (but here comparatively small and associated with medieval to C17 houses and farmsteads, I can explain this in text as area of medieval to C17 fields with later reorganisation)

The 'S' suffix marks fields found on sloping land and these are more species-diverse and with the best-preserved ridge and furrow indicating a long history of pastoral use.

**Less irregular enclosure partly reflecting medieval strip fields (A2)**

These are less irregular and may indicate a more coherent attempt at enclosure.

More regular enclosures are:

- *A3 Regular organised enclosure ignoring former unenclosed cultivation patterns* This is an area of low and straight hawthorn hedges around earlier Badgeworth Lane; 4-16ha, most likely to be a grid pattern, mostly found in the Cotswolds
- *A4 Less regular organised enclosure partly reflecting former unenclosed cultivation patterns*, and also some earlier enclosures; found quite evenly in vale and Cotswolds – on the Cotswolds (Birdlip to Stockwell), around Dean Farm to west, and on northern slopes of Charlton Kings Common – long co-axial boundaries which in many cases seem to take in earlier headlands of open fields

**B is enclosure of predominantly pasture and downland with some arable strip fields, mostly on the Cotswolds and associated with nature conservation designations and ancient monuments; it is in overall terms more regular than A**

- B1 Largely unenclosed pasture – Crickley Hill
- B2 Regular organised enclosure of former unenclosed pasture - boundaries constrained by topography such as narrow valley sides – B2s (sloping land) to SE of Cowley
- B3 Regular organised enclosure of former unenclosed pasture – 6-14ha and very common, dates from later 17th century but mostly post-1750, may retain earlier outer boundaries
- B4 Less regular organised enclosure of former unenclosed pasture is more likely to retain indications of enclosure from strip fields – B4r is a massive area on the Cotswolds extending south from Leckhampton Hill and Charlton Kings Common, the r suffix indicating it is larger than the norm. The B4Asw to east of Cowley includes A to indicate former unenclosed cultivation and the suffix s indicates the presence of water bodies and so richer grassland.

**L is enclosure where former land use has not been identified and are often found on the edges of commons, woodland and on marginal slopes**

- L1 in this area is found on the scarp slopes and surrounding pockets of ancient woodland to NW (north of Ravensgate Hill); the irregular form, small scale (1-6ha) field size and association with springheads and C16-17 dated farmsteads suggests irregular enclosure driven by individual farmers and a probable early date
- L2 is similar but with more straight boundaries suggesting later reordering
- L3 relates to the ‘terrace’ of grassland extending from Barrow Wake to The Peak

#### **F ornamental landscapes**

- F1 Surviving post-medieval designed ornamental landscape – Cowley Park and Witcombe Park
- F2 Former post-medieval designed ornamental landscape – rewooded area of Witcombe Park (33% as recorded from c. 1900 survive)

#### **G Settlement**

- G1 Deserted medieval or later settlement – change date of HLC type to medieval
- G2 Existing settlement of medieval or earlier origin
- G3 Existing settlement - extent by mid 19th century
- G4 Existing settlement - present extent
- G5 Existing settlement - 19th century linear settlement infilled in 20th century

#### **H – industrial sites**

**J – active recreational areas** – Lillybrook and Ullenwood golf courses

## Historic Environment Record (HER)

The project has delivered:

- Shape files for the Glos HER entries all organised by Type and Period:
  - Prehistoric, divided where possible into:
    - Palaeolithic 500,000 - 10,000BC
    - Mesolithic 10,000 – 4,000BC
    - Neolithic 4,000 – 2,200BC
    - Bronze Age 2,200 - 700BC
    - Iron Age 700BC – 43AD
  - Romano-British 43 – 410AD
  - Early Medieval – 410 - 1066
  - Medieval – 1066 - 1540
  - Post-Medieval subdivided into:
    - Early Post-Medieval 1540-1750
    - Late post-medieval
  - Early Modern
  - Early 20th century
  - Late 20th century
  
- An excel sheet (HER Entries) that shows the HER entries all organised by HER code as used on maps (TAG, Col. B), Summary Description (Col. H), Period (Col J, new field) and Type (Col. K, new field). For period there are also:
  - Unknown
  - Multi-period – few of these as we have gone for date of origin where possible

The HER polygons GIS layer had the following fields added:

- Period
- Monument Type

The HER data was infilled using the text descriptions for each polygon in the Description field. These means that the data can now be queried as to Type and Period.

- Listed Buildings = Where Farmhouse specified in the description this was use in Mon-Type field. Others were just called House.

The following can be queried but cannot be shown as they result from recording (known in HERs as Events)

- AE = Archaeological Evaluation/Excavation
- DBA = Desk-based Analysis
- AWB = Archaeological Watching Brief

The National Mapping Programme (NMP) polygons GIS layer already has these fields but a sum-period field was added with the names made the same as HLC for comparison.



## APPENDIX 2: SUMMARIES OF DESIGNATED HERITAGE ASSETS

Tabulated summaries of designated heritage assets, as considered in Appendix 6.2 of the Environmental Statement, set out, by period and for each item:

- address and designation status if relevant (SM=Scheduled Monument, LB=listed building plus grade, RPG=Registered Park and Garden plus grade, CA=Conservation Area)
- additional information relevant to description of asset in Environmental Statement
- additional information relevant to identification of setting in Environmental Statement
- value attributed to item in Environmental Statement
- if there is disagreement with the accuracy and assessment set out in Appendix 6.2 of the Environmental Statement and there are issues to be addressed (Y=yes and N=no)

### Prehistoric monuments

| Summary of effects on historic landscape types                    |   |              |
|---|---|--------------|
| Address and status  | Description   | Value in ES  |
| <b>Designated heritage assets</b>                                 |   |              |
| Coberley long barrow (SM)   | Neolithic long barrow, sited on probable early routeway on high ground overlooking confluence of tributaries of river Churn. Priority Habitat.  | High         |
| Crickley Hill (SM) - within 300m buffer zone                      | Inaccurate dating of monument; setting analysis mentions modern intrusions but does not mention inter-relationship of natural and historic environment and of this site to The Peak and other prehistoric monuments in the area, or its historic and visual relationship to views westwards.  | High         |
| Crippets long barrow (SM) and<br>Crippets Wood round barrows (SM) | Neolithic long barrow and Bronze Age round barrows, sited within area shown as commons in early 19th century and with views westwards to vale.  | High<br>High |
| Emma's Grove round barrows (SM) - within 300m buffer zone         | Full description of archaeological interest but setting analysis does not set out relationship to other prehistoric monuments or significance of its siting.  | High         |
| Leckhampton Camp and Tumulus (SM)                                 | The barrow and enclosure is probably late Iron Age and not Bronze Age. Setting analysis mentions modern intrusions but does not mention inter-relationship of natural and historic environment and of this site to The Peak and other prehistoric monuments in the area, or its historic and visual relationship to views westwards. Relationship to Crickley Hill is acknowledged. | High         |

Peak Camp should be High not Medium Value

The setting analysis in the Environmental Statement uses standard text for the barrows: '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.'

#### Romano-British

| Address and status       | Description and Setting issues   | Value in ES | Issue?                        |
|--------------------------|--|-------------|-------------------------------|
| Dryhill Roman Villa (SM) | Excavated 1849, scarp-edge location typical of other villas including Great Witcombe and with views towards what would have been farmland and Roman Gloucester; the location in relationship to Greenway Lane, the scarp-top commons and prehistoric monuments/ evidence for Romano-British sites in vicinity is not acknowledged. | High        | Yes but does not affect Value |

#### Early Medieval and Medieval

| Address and status                           | Description and Setting issues  | Value in ES | Issue? |
|--|---|-------------|--------|
| Brimpsfield Castle (SM)                      | A significant group where the inter-relationship of the late 11th century castle mound and later castle (demolished on the orders of Edward II), and the church (grade I), including the potential for the priory site, can be clearly understood and appreciated in the setting of post-medieval enclosure of parkland and strip fields. | High        | N      |
| Brimpsfield Castle Mound (SM)                |   | High        | N      |
|  |   | High        |        |
| Moated site and fishpond at Urrist Barn (SM) | Full description of archaeological interest including leats running to Norman's Brook; routeways and probable early field boundaries contribute to significance   | High        | N      |
| Moat and fishpond at Bentham Manor (SM)      | Full description of archaeological interest although relationship to grade II listed house and farm buildings not mentioned ; routeways and probable early field boundaries contribute to significance  | High        | N      |
| Church of St Mary, Great Witcombe (LB1)      | Parish church dating from the 12th century.   | High        | N      |
| Church of St Michael, Brimpsfield (LB I)     | Parish church dating from the 12th century, adjoining site of Benedictine Priory built by the Giffords (lords of the manor who owned the castle).   | High        | N      |

## Post-medieval to 1914

| Address and status   | Description and Setting issues   | Value in ES | Issue?                        |
|--|--|-------------|-------------------------------|
| <i>Badgeworth</i><br>All the listed properties are located in Bentham and relate to a medieval network of routeways and early enclosures affected by 19th century reorganisation and enlargement |  |             |                               |
| Crickley Hill Farm (LB II)   | Early 18th century farmhouse in Cotswold stone and slate, relates to early enclosures.   | High        | N                             |
| Church of St Peter, Bentham (LB II)  | 1888, architect Charles Gambier Parry and glass by Heaton, Butler and Bayne. Interest clearly set out.   | High        | Y                             |
| The Elms, Bentham (LB II)  | Mid to late 17th century Cotswold stone and tile. Stone and brick farm buildings not listed. Interest clearly set out.   | High        | Y                             |
| Bentham Manor (LB II) and moated site and fishpond (SM) - - within 300m buffer zone  | 17th century Cotswold stone and slate farmhouse including probable in situ medieval doorway, relates to moated site and fishpond (Scheduled Monument). Interest clearly set out. | High        | Yes but does not affect Value |
| Dovecote c3m N of Bridge House (LB II*)  | 17th century, description not accurate as timber-frame dovecotes such as this are rare. Interest clearly set out.  | High        |                               |
| Bridge House (LB II)   | 17th century timber frame and stone farmhouse. Interest clearly set out.   | High        | N                             |
| Milestone on A417 - within 300m buffer zone  | Late 18th century, interest and setting clearly set out.   | High        | N                             |
| Golden Heart Inn (LB II) - within 300m buffer zone   | Inn built 1772-1796, relates to the Ermin Way and 18th century turnpiking; interest and setting clearly set out.   | High        | N                             |

| Address and status   | Description and Setting issues   | Value in ES | Issue? |
|--|--|-------------|--------|
| <i>Birdlip Village – properties here built in Cotswold stone and slate, within conservation area</i> |  |             |        |
| Birdlip House, Birdlip (LB II)   | Later rebuilding of 17th century house, interest and setting clearly set out.  | High        | N      |
| Pool House, Birdlip (LB II)  | Mid to late 17th century, interest and setting clearly set out.  | High        | N      |
| Beverley Cottage, Birdlip (LB II)  | Mid 17th century, interest and setting clearly set out.  | High        | N      |
| Cotswold Cottage, Birdlip (LB II)  | Mid 17th century, interest and setting clearly set out.  | High        | N      |
| Greywalls, Birdlip (LB II)   | 17th century, interest and setting clearly set out.  | High        | N      |
| Kingshead House Restaurant, Birdlip (LB II)  | Late 18th century, interest and setting clearly set out although style is more polite than vernacular.                         | High        | N      |
| Black Horse Ridge, Birdlip (LB II)   | 17th century inn used for first meeting in 1846 of the Cotswold Naturalist's Field Club, interest and setting clearly set out. | High        | N      |
| The Lodge, Witcombe (LB II)  | 1845 with Hicks arms to west end of village, interest and setting clearly set out.   | High        |        |

| Address and status   | Description and Setting issues  | Value in ES | Issue?                        |
|--|---|-------------|-------------------------------|
| <i>Brimpsfield village – properties here built in Cotswold stone and slate, within conservation area</i> |   |             |                               |
| Pear Tree Cottage (LB II)  | 17th century, interest and setting clearly set out.   | High        | N                             |
| Brimpsfield House (LB II)  | Large house - 17th century, interest and setting clearly set out.   | High        | N                             |
| Dog kennels and shed to above (LB II)  | Kennels – probably c. 1900 - for hunt dogs and of significance in relationship to estate landscape, otherwise interest and setting clearly set out.                   | High        | Yes but does not affect Value |
| Game House (LB II)   | Rare survival of early 19th century gamekeeper's house, and also of significance in relationship to estate landscape, otherwise interest and setting clearly set out. | High        |                               |
| Yew Tree Farmhouse (LB II)   | c. 1840 relates to development of farmed landscape, otherwise interest and setting clearly set out.   | High        | N                             |
| The Old Malt House (LB II)   | Early 18th century, interest and setting clearly set out.   | High        | N                             |

| Address and status  | Description and Setting issues   | Value in ES | Issue? |
|---|--|-------------|--------|
| <i>East of Brimpsfield village</i>  |  |             |        |
| Churchyard monuments (7 in total) Church of St Michael, Brimpsfield (LB II) | 18th and early 19th century, interest and setting clearly set out.   | High        | N      |
| Brimpsfield Park (LB II)  | 18th century rebuilding of 17th century house, probable medieval reused fabric. Parkland, woodland and farmland setting. | High        | N      |

| Address and status   | Description and Setting issues  | Value in ES | Issue? |
|--|---|-------------|--------|
| <i>Coberley</i>  |   |             |        |
| Caretaker's Residence at the entrance to Ullenwood Manor (LB II) | Entrance lodges in Cotswold stone and slate to Ullenwood Manor (not listed due to extent of alterations), interest and setting clearly set out.     | High        |        |
| West Lodge   |   | High        |        |
| Hill Barn (LB II)  | Late C18 or early C19 stone-built outfarms in Cotswold stone and slate, set in piecemeal enclosure landscape, interest and setting clearly set out. | High        |        |
| Hardings Barn (LB II)  |   | High        |        |
| Bookers (LB II)  | Mid C17 stone-built cottage row, parish workhouse in C19, interest and setting clearly set out.   | High        |        |

| Address and status          | Description and Setting issues   | Value in ES | Issue? |
|-----------------------------|--|-------------|--------|
| <i>Cowley</i>               |  |             |        |
| Shab Hill Barn              | Early 19th century outfarm, Cotswold stone and slate, converted to residential use. Clear relationship to piecemeal enclosure.   | High        | Medium |
| Cowley Manor Park (RPG II*) | Parkland focused on grade II Cowley Manor, built c. 1860 for London stockbroker James Hutchinson.  | High        | N      |
| Air Balloon Public House    | 18th century in Cotswold stone and slate, noted as in inn by 1777 and named by 1802 after the descent by balloon onto the site in 1796. Owned by Cowley Manor estate and served as an inn on this key road junction. | Medium      | N      |



| Address and status                 | Description and Setting issues   | Value in ES | Issue? |
|------------------------------------|--|-------------|--------|
| <i>Witcombe Woods</i>              |  |             |        |
| Woodlands Farm (LB II)             | Early 17th century timber frame, sited in early enclosures. Not identified in Environmental Statement.   | High        | N      |
| Keeper's Cottage, Witcombe (LB II) | Early to mid 17th century timber frame, interest and setting clearly set out although rarity as an estate worker's house of this type not mentioned. | High        | N      |

| Address and status   | Description and Setting issues  | Value in ES | Issue? |
|--|---|-------------|--------|
| <i>Great Witcombe</i><br><i>Properties relate to a dispersed settlement pattern and an early pattern of enclosure.</i> |   |             |        |
| Churchyard monuments (2 in total) at Church of St Mary, Great Witcombe (LB II)   | Early 19th century, interest and setting clearly set out.   | High        | N      |
| Tadleys, Witcombe (LB II)  | Early 17th century timber frame and stone, interest clearly set out.  | High        | N      |
| Willow Farm, Little Witcombe (LB II)   | 16th century timber frame, stone and brick, to south-east of hamlet, interest clearly set out although this clearly relates to early enclosure in area. | High        | N      |
| Chandler's Farmhouse (LB II)   | Mid to late 18th century, brick and tile, interest clearly set out.   | High        | N      |
| The Cot (LB II)  | Late 16th to early 17th century timber-frame, later clad in limestone, interest clearly set out.  | High        | N      |
| Little Witcombe House (LB II)  | Early to mid 17th century timber frame and stone, interest clearly set out.   | High        | N      |
| Witcombe Court (LB II)   | Early to mid 19th century villa, interest clearly set out.  | High        | N      |

|                          |  |      |   |
|--------------------------|--|------|---|
| Chestnut Cottage (LB II) | Late C16-early C17 timber frame, interest clearly set out.       | High | N |
| The Retreat (LB II)      | Late C18 to early C19 red brick house, interest clearly set out. | High | N |

The Golden Heart Inn and the milestone fall within the 300m buffer zone and are assessed as of High Significance in Appendix 6.2.

#### 1914 to present

| Address and status                              | Description and Setting issues  | Value in ES | Issue? |
|---|---|-------------|--------|
| K6 telephone kiosk, Brimpsfield village (LB II) | The listing of K6 kiosks was focused on those on the best-retained historic settings, most being in nucleated settlements such as this, interest clearly set out. | High        | Medium |