



**COTSWOLDS CONSERVATION BOARD
A417 WRITTEN REPRESENTATION
SUPPORTING INFORMATION, DECEMBER 2021**

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CONTEXT

This document is intended to support the Cotswolds Conservation Board's ('the Board') written representation, as of December 2021, regarding the A417 Missing Link Scheme ('the scheme'). In particular, it gives further explanation on the three key matters:

1. *Does the proposed development comply with the National Policy Statement for National Networks (NPSNN), specifically in regard to development within an AONB?*
2. *What is the overall balance of beneficial and adverse effects?*
3. *Has National Highways sufficiently reviewed alternative options?*

NB – The explanation to our conclusions to Key Matter 3 will be covered under Key Matter 1.

In doing so, it provides additional context and detail with regards to:

- the Board's 'relevant representation', which was submitted in September 2021 (including updating the conclusions that were outlined in that representation); and
- The Board's answers to the questions posed by the Planning Inspectorate in November 2021.

1. DOES THE PROPOSED DEVELOPMENT COMPLY WITH THE NATIONAL POLICY STATEMENT FOR NATIONAL NETWORKS (NPSNN), SPECIFICALLY IN REGARD TO DEVELOPMENT WITHIN AN AONB?

Consideration of Exceptional Circumstances and Public Interest

The National Policy Statement for National Networks (NPSNN) covers a wide range of topics that are relevant to the AONB designation and the Board's two statutory purposes. However, the *most* relevant aspect of the NPSNN is on '*development proposed within nationally designation landscapes*'. Paragraph 5.151 states that '*the Secretary of State should refuse development consent in these areas except in exceptional circumstances and where it can be demonstrated that it is in the public interest*'. Paragraph 5.151 then sets out the assessments that should be undertaken when considering such applications. These are:

- The **need** for the development, including in terms of any national considerations, and the impact of consenting, or not consenting it, upon the local economy.
- The cost of, and scope for, **developing elsewhere**, outside the designated area, or **meeting the need** for it in some other way.
- Any **detrimental effect** on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.

We address each of these issues in turn, below.

a) Need

The Board has consistently recognised the need for a scheme that addresses the problems associated with 'missing link' section of the A417. For example, in our response to the 2019 consultation, we stated that:

- *The Board acknowledges that a scheme is needed to improve the 'missing link' section of the A417. We recognise that such a scheme would improve traffic flows and journey times and reduce congestion, air pollution and, most importantly, the number of accidents.*

We acknowledge that this need is exceptional. However, as stated in relevant case law, 'exceptional need', in itself, does not necessarily equate to 'exceptional circumstances' as consideration of other options and detrimental effects also have to be taken into account.

b) The scope for developing elsewhere

As stated in our response to the 2019 consultation, *'the Board ... accepts that the scheme can, realistically, only be accommodated within the Cotswolds AONB'*. This is because the scheme is being proposed to improve a section of road that lies entirely within the AONB.

c) The cost of, and scope for, meeting the need in some other way

National Highways has identified the preferred route following a rigorous process of reviewing multiple scheme options.

National Highways consulted on the proposed scheme in autumn 2019. At that stage, the scheme incorporated a 25m deep cutting up the Cotswold escarpment and would have involved approximately one million cubic metres of material being taken off site. When reviewing the proposed scheme, the Board identified that a cut and cover tunnel could potentially be incorporated into the scheme design, instead of the 25m deep cutting, at a similar cost. The Board recommended the inclusion of a cut and cover tunnel in its formal response to the statutory consultation (8 November 2019). The Board considered this cut and cover tunnel proposal to be a very different engineering solution to the tunnel options that had been previously considered and/or recommended.

Following the 2020 design changes, National Highways changed the proposed gradient of the road up the escarpment from 7% to 8%. This has resulted in the depth of cutting now being reduced to around 15m. As such, there is little requirement for material to be taken off site. The Board accepted that these changes reduced the benefits of a cut and cover tunnel.

In May 2021, National Highways provided the Board with a report that set out the reasons why the suggested cut and cover tunnel option would not represent an improvement to the proposed scheme.

Between 2018 and 2019, the Board also put forward a number of additional variations to the preferred route for National Highways to consider. These variations were put forward because the Board considered that they would potentially be less harmful / more beneficial for the natural beauty of the AONB as well as potentially delivering additional economic and social benefits. These proposed variations included:

- having a Birdlip link road that connected the B4070 south of Birdlip with Cowley Junction (rather than the link road connecting with Shab Hill Junction via Barrow Wake);
- moving the Shab Hill Junction further north (in order to reduce the impact on the valley at Shab Hill);
- re-aligning the A436 link road to a lower contour line, closer to Ullen Wood (in order to reduce the visual impact of this link road).

In August 2021, National Highways provided an Options Report which addressed each of these options in turn and concluded that none of them would represent an improvement to the proposed scheme.

Finally, in 2019, the Board put forward potential variations to how the A436 might link with the A417. In the public consultation in autumn 2019, these were identified as Alternative 2 and Alternative 3 in the A417 Consultation Booklet. National Highways identified that Alternative 2 would be the best option, both economically and environmentally, and incorporated this into the design of the A417 Missing Link Scheme.

The Board's current position with regards to the cost of, and scope for meeting the need in some other way

We recognise that the tunnel options would have had significantly higher cost implications than the selected surface route and that these cost implications could potentially have jeopardised the scheme. We also accept the reasons provided by National Highways, in their Cut and Cover Tunnel report and their Options Report (referred to above) for not taking forward the options that the Board has previously put forward for their consideration. However, we are pleased that the Board's suggested route for the A436 connection was incorporated into the scheme.

We conclude that National Highways has reviewed alternative options (as previously recommended by the Board) and, where the recommendation wasn't taken forward, provided clear explanation as to the reasons why the current scheme outperforms those alternatives. ***This also covers Key Matter 3 "Has National Highways sufficiently reviewed alternative options?"***

Overall, taking all of the above points into consideration, we conclude that National Highways has adequately assessed / addressed the scope (and cost) of meeting the need in some other way. We also accept National Highways' conclusion that the variations to the preferred route that have previously been put forward by the Board would not, on balance, represent an improvement to the proposed scheme.

d) Detrimental effects

As outlined above, the NPSNN requires an assessment of any detrimental effect on the environment, the landscape and recreational opportunities and the extent to which that could be moderated. Relevant case law has clarified that major development schemes in AONBs must demonstrate that they have moderated detrimental effects to the extent possible.

The next section will go into detail on whether the scheme would have an adverse or beneficial effect on (1) the natural beauty of the Cotswolds AONB and (2) recreational opportunities.

In summary, however, we consider it unlikely that the scheme would be able to deliver an overall net beneficial effect. Furthermore, we acknowledge that National Highways has taken significant steps to moderate adverse effects. We would accept that National Highways has moderated the detrimental effects to extent that is practicable within the parameters of the scheme.

Exceptional circumstances / public interest

Taking on board all of the above points, we consider that exceptional circumstances do apply and that the scheme would be in the public interest.

Compliance with NPSNN

Taking on board all of the above points, we consider that the scheme does comply with the requirements of the NPSNN, with regards to development in an AONB.

2. WHAT IS THE OVERALL BALANCE OF BENEFICIAL AND ADVERSE EFFECTS?

In addressing this question the Board has considered two things:

- Compatibility with the Board's Statutory Purposes
- Compatibility with the Landscape-led Vision, Design Principles and Objectives

COMPATIBILITY WITH THE BOARD'S STATUTORY PURPOSES

The Cotswolds Conservation Board ('the Board') is an independent, statutory body that was established by Parliamentary Order in 2004.

The Board has two statutory purposes:

1. To conserve and enhance the natural beauty of the Cotswolds Area of Outstanding Natural Beauty (AONB);
2. To increase the understanding and enjoyment by the public of the special qualities of the Cotswolds AONB.

In furthering these two purposes, the Board also has a statutory duty to seek to foster the economic and social well-being of local communities within the Cotswolds AONB.

The first of these two statutory purposes is also the statutory purpose of AONB designation. Relevant authorities, including the Planning Inspectorate, the Secretary of State and statutory undertakers such as National Highways, have a statutory duty to have regard to this purpose.

A key component of the second purpose is the opportunity that the area provides for (quiet) open-air recreation.

If it appears to the Board that there is a conflict between the two purposes, we are legally required to attach greater weight to purpose 1. This principle is known as the Sandford Principle. We would encourage the Planning Inspectorate to apply the Sandford Principle when weighing up the relative merits of the A417 Missing Link Scheme.

The following sections provide an assessment of the overall balance of beneficial and adverse effects of the scheme in relation to the Board's two statutory purposes. It is worth noting that we provided a summary of this assessment in our 'relevant representation' in September 2021. The assessment has subsequently been updated to take account of further discussions with National Highways and their consultants.

Purpose 1 – Conserving and Enhancing the Natural Beauty

Natural England's guidance on assessing landscapes for designation as National Parks or AONBs provides a list of factors that contribute to the natural beauty of these protected landscapes. These include:

- landscape quality (including landscape character);
- scenic quality;
- relative tranquillity;
- natural heritage (including biodiversity);
- cultural heritage (including historic environment).

We have used this list of factors (with the addition of 'dark skies'¹) to help assess the overall balance of beneficial and adverse effects of the A417 Missing Link Scheme on the Cotswolds AONB.

¹ In Natural England's list of factors, dark skies are a component of relative tranquillity. However, the dark skies of the Cotswolds AONB are one of the area's 'special qualities', alongside the area's relative tranquillity. As such, in this representation, we consider the topic of dark skies in its own right.

Landscape quality / character

Landscape Character Types

The scheme passes through four of the Cotswolds AONB's 19 landscape character types (LCTs):

- LCT 2 – Escarpment
- LCT 7 – High Wold
- LCT 8 – High Wold Valley
- LCT 18 – Settled Unwooded Vale

The A417 Environmental Statement (ES) identifies permanent, adverse, significant effects on two of these LCTs (LCT2 and LCT 7), as indicated in the LVIA table below:

Table 7-17 Summary of landscape effects at operation year 15

Receptor	Sensitivity	Magnitude of effect	Operation year 15 significance of effect
AONB LCT 2 Escarpment	Very high	Minor	Moderate adverse and significant
AONB LCT 7 High Wold	Very high	Minor	Moderate adverse and significant
AONB LCT 8 High Wold Valleys	Very high	Negligible	Slight adverse and not significant

LCT 18 was 'scoped out' of the ES assessment because it was considered that the likely effects on this LCT would be of a similar nature to the existing road infrastructure.

The ES acknowledges the significant changes in landform that would result from the scheme during the construction phase. However, it indicates that, by year 15, these changes will be better integrated into the landscape, visually and perceptually. This potentially underplays the long term significance of these major changes in landform from a landscape character perspective. As such, it potentially underplays the 'magnitude of effect', particularly with regards to LCT 7 and LCT8.

For LCT2, the wider footprint of the scheme is balanced, to some degree, by the fact that the scheme follows the same route as the existing road. As such, we acknowledge that the significance of effect would be *moderate* adverse and significant (as identified in the ES), rather than *large* adverse and significant.

For LCT 7, we consider that the ES overplays the beneficial effect of the Gloucestershire Way crossing in relation to landscape character. For example, the Environmental Statement Non-Technical Summary states that the new 37m wide multi-purpose crossing provides an enhancement opportunity for ecology and landscape. We recognise that the crossing would provide multi-purpose benefits compared to, say, a simple footbridge (or a bridge narrower than 37m). However, given that the new road would have a bigger footprint in the High Wold, compared to the current baseline, including deeper and wider cuttings and larger road junctions, we consider that the net effect would be adverse, even taking into account the proposed crossing. As such, we consider that the significance of effect at year 15 should potentially be 'large' adverse and significant for LCT7, rather than 'moderate'.

For LCT 8, the ES states that the scheme would dramatically alter the local landform as a result of large earthworks to fill in the head of the valley. However, the ES goes on to emphasise that the affected area is a relatively small component of the whole LCT, leading to the 'negligible' magnitude of effect. However, we do not consider that it is necessarily appropriate to compare the affected area with the size of the LCT as a whole. A more appropriate comparison would be the area of the LCT which the proposed development may influence in a significant manner.

It is important to note that, unlike LCT 2 and 7, LCT 8 is hardly affected by the current road. As such, when assessing the overall significance of effects on this LCT, there are the adverse effects of the new scheme but minimal beneficial effects (for LCT 8) compared to the current baseline.

As such, we consider that the significance of effect at year 15 should potentially be 'moderate' adverse and significant for LCT 8, rather than 'slight'.

Based on the comments outlined above, we consider that, overall, the scheme would have a net adverse effect with regards to landscape character, compared to the current baseline, with some of these adverse effects potentially being significant.

Special Qualities

The ES assesses the effect of the scheme on the 14 'special qualities' of the Cotswolds AONB. The effects are summarised in paragraphs 7.12.13 and 7.12.14 of the Chapter 7 of the ES.

These special qualities relate to the range of factors that contribute to the natural beauty of the area, not just landscape character. The special qualities that are most relevant to landscape character are:

1. The unifying character of the limestone geology – its visible presence in the landscape and use as a building material.
2. The Cotswold escarpment, including views from and to the AONB.
3. The high wolds – a large open, elevated, predominantly arable landscape with commons, 'big skies' and long-distance views.
4. River valleys, the majority forming the headwaters of the Thames, with high-quality water.
5. Distinctive dry stone walls.
6. Variations in the colour of the stone from one part of the AONB to another which add a vital element of local distinctiveness.

Whilst the other special qualities do relate to landscape character (particularly those relating to tranquillity and dark skies), for the purpose of this representation, they are addressed separately under the relevant topic headings.

1. Unifying character.

The ES indicates that the scheme would have a beneficial effect on 'the unifying character of the limestone geology'. This would be as a result of increasing the visible presence of the limestone in the landscape through the creation of the new cutting and through its use as a building material on the structure and the proposed, extensive stone walling.

However, the 'unifying character' referred to in the special quality is more about the harmonious effect of using the local limestone in buildings and field boundaries (i.e. dry stone walls), rather than creating large areas of exposed rock as part of a major infrastructure scheme. As such, we do not think that the creation of the new cutting should necessarily be considered to be 'beneficial', or an 'enhancement', in this regard. In addition, we would consider the use of limestone as a building material is a mitigation measure, rather than an enhancement measure. As such, we consider the long term effect on this special quality to be neutral.

2. Cotswold escarpment

The ES indicates that there would be a permanent adverse effect on the Cotswold escarpment special quality. This reflects the ES's findings with regards to LCT 2 (Escarpment), as outlined above (i.e. moderate adverse and significant). We agree with these findings.

3. High Wolds

The ES indicates that there would be a permanent beneficial effect on the high wolds special quality. This conclusion does not match up with the moderate, adverse and significant effects identified for LCT 7 (High Wold). Part of the reason for this is that the ES focuses on the long distance views across

the High Wold, which are a specified component of this special quality. The ES indicates that the scheme would help to reduce the visual dominance of the road infrastructure. However, we consider that these potential beneficial visual effects are outweighed by the adverse impacts on landscape character, resulting in a net adverse effect.

4. River valleys

The ES indicates that there would be a permanent adverse effect on the river valleys special quality. This reflects the ES's findings with regards to LCT 8 (High Wold Valleys), as outlined above. However, as outlined above, we consider that long term effect is potentially moderate adverse and significant, rather than slight adverse and significant.

5. Dry stone walls

The ES indicates that there would be a permanent beneficial effect on this special quality through the provision of extensive, additional new sections of dry stone walling across the scheme. National Highways and their consultants have provided the following statistics with regards to dry stone walls:

- Length of Cotswold stone walling permanently removed: 1.9km
- Length of Cotswold stone walling restored or enhanced: 314m
- Length of new Cotswold stone walling: 10.7km

Based on these statistics, we would agree with the conclusion that there would be a permanent beneficial effect with regards to this special quality.

6. Variations in the colour of the stone

The ES identifies that there would be a permanent beneficial effect on this special quality through the use of Cotswold stone walling and cladding on structures, using locally sourced materials, and through the creation of rock exposures.

As indicated in relation to 'the unifying character of the limestone geology', above, we do not consider that the creation of rock exposures / cuttings as part of a road scheme, or the use of the stone in the associated engineering, should be considered beneficial in this regard. The main beneficial effect would be the use of locally sourced stone in the proposed dry stone walling.

Based on the above comments, we consider that, overall, the scheme would have a net adverse effect on the special qualities that are most relevant to landscape character, with some of these adverse effects being significant. The benefits associated with the net-gain in dry stone walls, for example, would be outweighed by the adverse impacts on the relevant landscape character types.

Scenic quality / beauty

The special qualities of the Cotswolds AONB that primarily relate to scenic beauty (and that are relevant to the scheme) are the views to and from the Cotswold escarpment and the long-distance views of the high wold.

The main measure of potential effects on scenic beauty is the assessment of visual effects on receptors (i.e. people) in various locations including public rights of way, common land, visitor attractions, key viewpoints and settlements.

The ES's assessment of visual effects is summarised in the table below:

Table 7-40 Summary of visual effects during operation year 15

Receptor	Sensitivity	Magnitude of effect	Operation year 15 significance of effect
Recreational receptors			
Walkers on the Cotswold Way National Trail	High	Minor	Moderate adverse and significant
Walkers on the Gloucestershire Way long distance footpath	High	Minor	Slight beneficial and not significant
Users of the local PRoW, bridleway, and byway networks	High	Minor	Slight adverse and not significant
Community receptors			
Community of Nettleton Bottom	Medium	Minor	Slight beneficial and not significant
The community at Stockwell and users of the local PRoW network north of Stockwell	Medium	Minor	Slight adverse and not significant
Community of Shab Hill and surrounding farms	Medium	Minor	Slight adverse and not significant
Tourism receptors			
Visitors of Crickley Hill Country Park	Very high	Minor	Moderate adverse and significant
Users of the Great Witcombe Roman Villa car park and PRoW (Brockworth Footpath 16) visiting Great Witcombe Roman Villa scheduled monument	Very high	Negligible	Slight, neutral, and not significant
Users of Barrow Wake	Very high	Minor	Moderate, neutral, and significant
Users of Leckhampton Hill	Very high	Negligible	Slight adverse and not significant

Based on this information, the overall balance of visual effects would be adverse. However, we consider that the visual effects have potentially been underplayed for some receptors, particularly with regards to walkers on the Cotswold Way National Trail and the Gloucestershire Way, as outlined below.

Walkers on the Cotswold Way National Trail

We consider that the sensitivity of walkers on the Cotswold Way National Trail should be classed as ‘very high’ in recognition of its national importance (in the same way as the AONB designation is afforded very high sensitivity with regards to the assessment of landscape effects). A very high sensitivity, combined with a minor magnitude of effect would result in a ‘large’, adverse and significant effect.

Walkers on the Gloucestershire Way

We consider that the ES potentially overplays the beneficial visual effects provided by the proposed Gloucestershire Way crossing. The current baseline for the Gloucestershire Way in the vicinity of the proposed crossing is a traffic-free environment with extensive views. As the ES itself states, the combination of new hedges, tall parapets and fencing at the crossing would prevent wide views over the landscape. In other words, the extent to which these views could be experienced would be reduced.

We also have concerns about the potential visual effect for walkers on the Gloucestershire Way between the two proposed crossings when they are looking north-east towards Ullen Wood. The eight lanes of carriageway in the cutting would be at a lower elevation, with the intervening vegetation primarily being grassland rather than woodland.

When we have raised this issue with National Highways and their consultants, they have indicated that there would actually be limited visual connectivity between this section of the Gloucestershire Way and the A417 to the north east because of the intervening topography. It would be useful if National Highways could provide a photomontage to clarify this point.

As such, although the proposed Gloucestershire Way crossing may provide some multi-functional benefits, we consider that the visual effect of the scheme on walkers on the Gloucestershire Way could either be 'moderate, adverse and significant' (or 'minor, adverse and not significant') rather than 'slight, beneficial and not significant'.

Based on the above comments, we consider that, overall, the scheme would have a net adverse effect on scenic beauty, with some of these adverse effects being significant. This includes adverse effects on the relevant special qualities of the Cotswolds AONB (i.e. views from and to the Cotswold escarpment and long distance views across the high wolds).

Relative tranquillity

The tranquillity of the Cotswolds AONB is one of the area's special qualities. A related special quality is the 'accessible landscape for quiet recreation'.

The ES identifies that there would be a permanent, beneficial effect on this special quality as a result of the removal of lit junctions (at the Air Balloon and Cowley junctions) and a better integrated carriageway to reduce noise and visual disturbance. For example, the number of properties that would experience permanent, beneficial significant effects would considerably exceed the number of properties that would experience permanent, adverse significant effects.

The ES identifies a permanent significant beneficial effect on part of the Cotswold Way National Trail, with regards to noise and vibration. For example, noise levels on the National Trail between the Air Balloon roundabout and Barrow Wake view point would reduce by between 5 and 10dB(A) or more, from the current baseline of 72.5-75.0dB_{Aeq,16hr} in the vicinity of the Air Balloon.

However, there would also be a permanent, significant adverse effect on part of the Gloucestershire Way and on footpath links to the east from Stockwell in this regard. For example, noise levels on the Gloucestershire Way between Birdlip Radio Station and Rushwood Kennels would increase from approximately 40.0-45.0dB_{Aeq,16hr} to 60dB_{Aeq,16hr}.

The national importance of the Cotswold Way National Trail means that the beneficial effects on the Cotswold Way potentially outweigh the adverse effects on the Gloucestershire Way. However, this net-benefit would depend on the length of footpath where noise is increased or reduced and the scale of this increase or reduction.

The areas that would experience reductions in noise would primarily be near where the existing road alignment would be removed, such as along the top of the escarpment. The areas that would experience increases in noise would primarily be near the new alignment between the current Air Balloon roundabout and Cowley Junction.

Information provided by National Highways and their consultants indicates that the length of the Gloucestershire Way exposed to noise levels over 67dB(A) would be less than 160m with the new alignment, compared to 400m of the Cotswold Way over 67dB(A) for the existing alignment. This indicates that the length of the Cotswold Way that would benefit from reductions in noise would be greater than the length of the Gloucestershire Way where noise levels increase.

There would be a mixture of beneficial and adverse effects on some public rights of way. Five 'Noise Important Areas' would benefit in noise reductions compared to the current baseline.

Overall, based on the above comments, we consider that compared to the current baseline:

- **there would be a net beneficial effect on tranquillity for local residents;**
- **there would be a net beneficial effect on tranquillity for users of public rights of way, particularly the Cotswold Way National Trail.**

Dark skies

The extensive dark sky areas of the Cotswolds AONB are one of the area's special qualities.

The ES indicates that the scheme would have a permanent beneficial effect on this special quality as a result of the removal of lit junctions (Air Balloon and Cowley junction roundabouts) and a better integrated carriageway.

However, the Environmental Statement also states that '*night-time effects of vehicle lights would be similar in extent and nature to the baseline, with vehicle lights being visible but with little spill into the wider landscape, with the exception of at Barrow Wake, where during the winter months vehicle headlights would be seen as they navigate the roundabout and short section of the realigned B4070*'. This indicates that there would potentially be a net adverse effect with regards to vehicle lights.

Overall, based on the above comments, we consider that scheme would have a net minor beneficial effect on dark skies, compared to the current baseline.

Natural heritage

There are two special qualities of the Cotswolds AONB that relate specifically to natural heritage. These are:

- internationally important flower-rich grasslands, particularly limestone grasslands;
- internationally important broadleaved woodland, particularly along the crest of the escarpment.

Although the special qualities refer specifically to *internationally* important habitats, the overall limestone grassland habitat and broadleaved woodland habitat (including national and local nature conservation designations and non-designated habitat) clearly contributes to these special qualities.

The ES indicates that the scheme would have a permanent beneficial effect on both of these special qualities as a result of the provision of large areas of calcareous grassland (75.41ha, providing a net-gain of 72.88ha) and additional areas of broadleaved woodland (25.57ha, providing a net gain of 9.59ha), respectively.

Calcareous grassland takes a long time to become well-established (i.e. 30+ years). In effect, it is an 'irreplaceable habit' (in planning policy terms), although it is not currently, formally identified as such. As such, the creation of one hectare of new grassland habitat does not balance out the loss of one hectare of well-established grassland. However, assuming that measures are put in place to effectively manage the new grassland habitat for 30 years or more, we accept that there would be a significant net-gain with regards to calcareous grassland (and broadleaved woodland) habitat.

We are pleased to see that the main focus is on creating calcareous grassland habitat, rather than larger areas of woodland, as there has been a significant loss of calcareous grassland habitat, which is so characteristic of the Cotswolds, over the last century.

Additional key considerations include the potential impacts on Crickley Hill and Barrow Wake Site of Special Scientific Interest (SSSI), which is of national importance, and on Ullen Wood local wildlife site and ancient woodland, which is an irreplaceable habitat.

The ES identifies that there would be an adverse significant effect on the Barrow Wake Unit of Crickley Hill and Barrow Wake SSSI resulting from the (irreversible) loss of calcareous grassland (0.09ha). It also identifies that there would be a beneficial significant effect on the SSSI due to conversion of approximately 0.1ha of hardstanding to calcareous grassland. However, we consider that the adverse effect of losing well-established calcareous in a SSSI would far outweigh the creation of an equivalent area of new calcareous grassland. As such, there would be a net *adverse (and potentially still significant) effect in this regard*.

The scheme would also involve upgrading a section of road and a roundabout within the SSSI to become the main link road between Birdlip and the proposed Shab Hill Junction. In principle, this would be of significant concern. However, the ES indicates that the habitat affected by these works comprises young to semi-mature trees, which are not (according to the ES) considered to be high value habitat within the designated area. As such, we accept that this would be a relatively minor adverse effect, albeit in a nationally important designation. The ES also indicates that the increase in nitrogen deposition from vehicles using this upgraded section of road in the SSSI would be outweighed by a much larger reduction in road traffic in close proximity to the SSSI as a result of the decommissioning of the current A417 route.

The ES identifies that there would be adverse significant effects on parts of Ullen Wood resulting from an increase in nitrogen deposition from vehicle emissions. Whilst the proposed woodland planting adjacent to Ullen Wood would help to *compensate* for this adverse effect, it would not *mitigate* the harm.

The ES also identifies an adverse significant effect on tufa habitat, which is an 'Annex 1' priority habitat and a priority habitat for the Cotswolds AONB, albeit with some restoration of other tufa spring habitat.

Other (residual) adverse effects identified in the ES (albeit 'slight' and 'not significant') include habitat loss / damage at Crickley Hill Country Park and Haroldstone Fields Local Wildlife Site (LWS), loss of bat roosting sites and disturbance to bats, loss / severance of badger habitat, loss / fragmentation of breeding habitat for breeding and wintering bird assemblages, habitat loss for the reptile assemblage.

Overall, we consider that the scheme has the potential to provide a significant net-increase in the extent and connectivity of key priority habitats, particularly calcareous grassland. However, this will be dependent on an effective, long term (30+ years) management regime.

Balanced against this is the significant adverse effects on a nationally important SSSI and the irreplaceable habitat of Ullen Wood ancient woodland.

Cultural heritage

The special qualities of the Cotswolds AONB that relates specifically to cultural heritage (and which is relevant to the scheme) are:

- Significant archaeological, prehistoric and historic associations dating back 6,000 years, including Neolithic stone monuments, ancient drove roads, Iron Age forts, Roman villas, ridge and furrow fields, medieval wool churches and country estates and parks.
- A vibrant heritage of cultural associations, including the Arts & Crafts movement of the 19th and 20th centuries, famous composers and authors and traditional events such as the Cotswolds Olympics, cheese rolling and woosack races.

The ES indicates that there would be permanent, adverse significant (moderate) effects on Shab Hill Barn Grade II listed building and on Emma's Grove scheduled monument, both as a result of the scheme altering the setting of the resource (and, in the case of Shab Hill Barn, due to increased traffic noise during the operational phases of the scheme, compared to the current baseline).

The Emma's Grove scheduled monument would experience a noticeable reduction in traffic noise during the operational phase, compared to the current baseline, but not to a degree that would significantly enhance its value (resulting in a slight beneficial effect, rather than moderate).

There would also be 'slight' adverse effects on multiple scheduled monuments. The effect of the scheme on all other listed buildings is classed as 'neutral'. There would also be a moderate adverse significance of effect on the non-designated heritage resource of Stockwell deserted medieval village and a permanent 'slight adverse' significance of effect on Peak Camp.

Whilst there are a number of proposed mitigation measures (such as avoiding, retaining, relocation and recording heritage features) the proposed enhancement measures are limited. The main proposed enhancement is the removal of vegetation from the Emma's Grove barrows, which would enhance their interpretation and enable them to be removed from the Historic England Heritage at Risk Register.

Overall, based on the above comments, we consider that there would be a net adverse effect on cultural heritage, compared to the current baseline, with some of these effects being significant.

Overall balance

In summary, we consider the balance of adverse and beneficial effects on the factors that contribute to the natural beauty of the Cotswolds AONB (when compared to the current baseline) to be as follows:

- **Landscape quality / character:** net adverse effect, with some of these adverse effects potentially being significant.
- **Scenic quality / beauty:** net adverse effect, with these adverse effects potentially being significant in multiple locations.
- **Relative tranquillity:** net beneficial effect for both residents and users of public rights of way, particularly the Cotswold Way National Trail.
- **Dark skies:** net minor beneficial effect.
- **Natural heritage:** potential to provide a significant net-increase in the extent and connectivity of key priority habitats, particularly calcareous grassland (dependent on an effective, long term (30+ years) management regime); balanced against this is the significant adverse effects on a nationally important SSSI and the irreplaceable habitat of Ullen Wood ancient woodland.
- **Cultural heritage:** net adverse effect, with some of these effects potentially being significant.

Taking into account the great weight that should be given to landscape and scenic beauty (i.e. all of the above factors except for natural heritage and cultural heritage), we consider that the overall balance of adverse and beneficial effects on the natural beauty of the Cotswolds AONB would be adverse, with several of these adverse effects being significant.

Based on this assessment we do not consider that the scheme would conserve and enhance the natural beauty of the Cotswolds AONB (albeit that there would be some beneficial effects).

Purpose 2 – Increasing the understanding and enjoyment of AONB special qualities

One of the Board’s statutory purposes is to increase the understanding and enjoyment by the public of the special qualities of the Cotswolds AONB. A key component of the second purpose is the opportunity that the area provides for (quiet) open-air recreation and the overall recreational experience.

This ties in well with one of the ‘special qualities’ of the Cotswolds AONB, which is:

- An accessible landscape for quiet recreation for both rural and urban users, with numerous walking and riding routes, including the Cotswold Way National Trail.

The A417 Missing Link scheme would have a number of both beneficial and adverse effects on the quiet, open-air recreation in the Cotswolds AONB.

Long term beneficial effects would include:

- the repurposed A417, with some lengths of this existing road being converted into a route for walkers, cyclists and horse riders;
- the Cotswold Way crossing, which would provide a safe, car-free crossing of the A417 for walkers on the Cotswold Way National Trail and the Gloucestershire Way, cyclists, horse riders and disabled users;
- permanent beneficial significant effects at some public rights of way, notably the Cotswold Way National Trail, as a result of reduced noise levels (were the existing road alignment would be removed);

Long term adverse effects would include:

- permanent significant adverse effects at some public rights of way, notably the Gloucestershire Way, as a result of increased noise levels (near the new road alignment).

As discussed in the ‘Tranquillity’ section, earlier in this representation, the adverse effects of increased noise levels on the Gloucestershire Way would be outweighed by the beneficial effects of reduced noise levels on the Cotswold Way National Trail, resulting in a net beneficial effect.

With regards to the repurposed A417, we consider it should potentially be classed as ‘mitigation’ rather than ‘enhancement’. For example, it would have been highly inappropriate to create a new, separate road alignment and just leave the old, disused alignment in its current state to slowly deteriorate, as this would have resulted in an even more significant adverse effect on landscape character.

However, **overall, based on the comments above, we consider that the scheme would have a net beneficial effect on opportunities for (quiet) open-air recreation and on the recreational experience.**

In effect, the scheme would help to increase the understanding and enjoyment of the special qualities of the Cotswolds AONB.

Overall compatibility with the Board’s statutory purposes

A summary of our assessment of the net-effect of the scheme (in relation to the Board’s statutory purposes) is provided in the table below. This includes a comparison of our position at the time of our relevant representation in September 2021 and our current position, as of December 2021.

Table the net-effects of the A417 scheme in relation to the Board's statutory purposes

Factors relevant to the Board's statutory purposes	Relevant representation, September 2021	Current position (December 2021)
Natural Beauty:		
- Landscape quality / character	Net adverse effect, with some of these adverse effects potentially being significant.	As per relevant representation.
- Scenic quality / beauty	Net adverse effect, with these adverse effects potentially being significant in some locations.	As per relevant representation.
- Relative tranquillity	Net beneficial effect for both residents and users of public rights of way, particularly the Cotswold Way National Trail.	As per relevant representation.
- Dark skies	Net neutral or minor beneficial effect.	Net minor beneficial effect. ²
- Natural heritage	Net beneficial effect, albeit with some significant adverse effects on a nationally important SSSI and on irreplaceable ancient woodland habitat.	Potential to provide a significant net-increase in the extent and connectivity of key priority habitats, particularly calcareous grassland (dependent on an effective, long term (30+ years) management regime); balanced against this is the significant adverse effects on a nationally important SSSI and the irreplaceable habitat of Ullen Wood ancient woodland. ³
- Cultural Heritage	Net adverse effect, with some of these effects potentially being significant.	As per relevant representation.
Enjoyment and understand of special qualities:		

² We now give slightly more weight to the beneficial effect of the proposed removal of street lighting.

³ This is a more nuanced summary, which highlights the importance of the long term management of the newly created habitat and recognises the difficulty of directly comparing the creation of new habitat with the loss of, or harm to, designated sites and irreplaceable habitat.

- Recreational opportunities	Net beneficial effect, particularly with regards to the Cotswold Way National Trail.	As per relevant representation.
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As outlined above, we have concluded that the scheme:

- would have a net adverse effect on the natural beauty of the Cotswolds AONB, with several of these adverse effects potentially being significant (i.e. on balance, it would not help to conserve and enhance the natural beauty of the Cotswolds AONB);
- would have a net beneficial effect on opportunities for (quiet) open-air recreation and on the recreational experience (i.e. on balance, it would help to increase the understanding and enjoyment of the special qualities of the Cotswolds AONB).

Where there is a conflict between the Board’s two purposes, greater weight should be given to the first purpose (i.e. to conserving and enhancing the natural beauty of the Cotswolds AONB). On this basis, greater weight should be given to the effects on natural beauty than to the effects for open-air recreation.

Therefore, **overall, we consider that there would be a net adverse effect on the Board’s statutory purposes.**

COMPATIBILITY WITH LANDSCAPE-LED VISION, DESIGN PRINCIPLES AND OBJECTIVES

In 2017, the principles for a landscape-led approach to the A417 Missing Link scheme were agreed between National Highways and key stakeholders. This landscape-led approach is underpinned by the vision, design principles, objectives and sub-objectives that are shown in Appendix 1 of this document. The Board played a key role in instigating and developing this landscape-led approach.

Paragraph 7.3.5 of the A417 Environmental Statement (ES) states that *‘landscape-led means that landscape was a primary consideration in every design decision made, with an understanding of how the design should meet the character of the surrounding area, rather than changing the landscape to fit the proposals’*. We acknowledge that National Highways has considered landscape, including AONB designation, in their design decisions.

However, the landscape-led design principles of the scheme go further than this. For example, one of the three, over-arching, landscape-led design principles states that:

- Any scheme must have substantially more benefits than negative impacts for the Cotswolds AONB.

As we identified in our relevant representation in September 2021 (and as re-iterated and updated in this document) we consider that the scheme would result in a net adverse effect on the natural beauty of the Cotswolds AONB (including its landscape and scenic beauty).

We acknowledge that there would potentially be net benefits in other regards (e.g. a net beneficial effect for recreational use, which relates directly to the Board’s second statutory purpose of increasing the understanding and enjoyment of the AONB’s special qualities). However, it is worth noting that, in the context of the AONB designation, it is only the effects on landscape and scenic beauty that should be given great weight. It is also worth noting that if it appears that there is a conflict between the Board’s two statutory purposes, the Board is to attach greater weight to the purpose of conserving and enhancing the natural beauty of the AONB.

As such, **we do not consider that the scheme fulfils this particular design principle of the agreed landscape-led approach.**

However, we do consider that the landscape-led approach that National Highways has followed (i.e. considering landscape in their design decisions) has resulted in a considerably better scheme than might have otherwise been the case. For example, the proposed Gloucestershire Way crossing provides a wider range of multi-functional benefits than a simple footbridge would have provided.

We also consider that National Highways has moderated adverse effects to the extent that is practicable within the parameters of the scheme. As such, we do not have specific recommendations on further mitigation measures that could or should be implemented.

We will continue to work with National Highways, their consultants and other key stakeholders to ensure that the scheme delivers the proposed design and mitigation measures.

APPENDIX 1. LANDSCAPE-LED VISION, DESIGN PRINCIPLES AND OBJECTIVES

Version: Updated 17/07/17

Department for Transport Road Investment Strategy
A417 'missing link' at Air Balloon improvement – connection of the two dual carriageway sections of the A417 near Birdlip in Gloucestershire, taking account of both the environmental sensitivity of the site and the importance of the route to the local economy.

Client Scheme Requirements					
Improve the operation and efficiency of the existing transport network	Support economic growth	Improve connectivity and community cohesion	Safety improvements for customers and operational staff	Deliver capacity enhancements to the strategic road network	Enhance & protect the quality of the surrounding environment while conforming to the principles of sustainable transport

Scheme Vision
<i>A landscape-led highways improvement scheme that will deliver a safe and resilient free-flowing road whilst conserving and enhancing the special character of the Cotswolds AONB; reconnecting landscape and ecology; bringing about landscape, wildlife and heritage benefits, including enhanced visitors' enjoyment of the area; improving local communities' quality of life; and contributing to the health of the economy and local businesses.</i>

Scheme Design Principles
Any solution involving a new road must ensure that the scheme is designed to meet the character of the landscape, not the other way round.
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.

A417 scheme objectives				
Safe, resilient and efficient network: to create a high quality resilient route that helps to resolve traffic problems and achieves reliable journey times between the Thames Valley and West Midlands as well as providing appropriate connections to the local road network.		Improving the natural environment and heritage: to maximise opportunities for landscape, historic and natural environment enhancement within the Cotswolds AONB and to minimise negative impacts of the scheme on the surrounding environment.	Community & access: to enhance the quality of life for local residents and visitors by reducing traffic intrusion and pollution, discouraging rat-running through villages and substantially improving public access for the enjoyment of the countryside.	Supporting economic growth: To facilitate economic growth, benefit local businesses and improve prosperity by the provision of a free-flowing road giving people more reliable local and strategic journeys.
A417 scheme sub-objectives				
1	Road safety will be improved by designing to current standards and better separating strategic and local traffic.	The Scheme will have an identity which reflects, conserves and enhances the character of the local landscape.	The Scheme will enhance community cohesion by improving local connectivity and accessibility by helping to separate strategic and local traffic.	The Scheme will contribute towards national transport policies that support economic growth.
2	The Scheme will be designed to provide greater road traffic capacity, improved network resilience and better journey time reliability for strategic and local journeys.	The Scheme will improve landscape and ecological connectivity through landscape and habitat restoration and creation.	The Scheme will reduce rat-running on local roads through provision of a more reliable strategic route with improved capacity, thereby enhancing the amenity of local settlements.	The Scheme will complement Development Plans published by local authorities in the region to support regional and local economic growth and prosperity.
3	The Scheme will enhance operational efficiency, improve maintenance safety and support best value whole-life cost benefits.	The horizontal and vertical alignments of the Scheme will pay due regard to the nature of the local landform.	The Scheme will contribute towards community and recreational opportunities through improved provision for motorised and non-motorised users.	The Scheme will contribute to the health of the local visitor economy through improved access and visitor experience of the Cotswolds AONB.
4	The Scheme will consider appropriate relaxations or departures from highways standards to minimise the environmental impact of the road without compromising safety.	The siting and form of structures, cuttings, embankments and landscape mounding will reflect local topography and landform.	The Scheme will minimise road noise by applying sensitive noise mitigation measures where required.	The Scheme will minimise disruption to local economic interests and businesses during both construction and operation.
5		The design of structures will be of lasting architectural quality.	The Scheme will minimise light pollution through sensitive structural, junction, and lighting design and sign illumination.	The Scheme will restore redundant highways land to agricultural, public access, community or nature benefit uses where appropriate.

6		The Scheme will avoid significant interruption to groundwater flows or negative impacts on the aquifer, springs and watercourses.	The Scheme will improve air quality by reducing pollution from traffic congestion.	The Scheme will support the development and employment of local skills in its construction.
7		The Scheme will avoid or, where absolutely necessary, minimise the direct loss of National Trust land, other areas owned and managed for conservation, open access land and country parks and at the same time minimise intrusion upon such land.	The Scheme will improve continuity of access to the public rights of way network, the Cotswold Way National Trail and the Gloucestershire Way.	The Scheme will seek sustainable opportunities to use locally sourced construction materials to support the local economy.
8		The Scheme will enable enhanced preservation of heritage assets and their settings and adopt designs that reflect and enhance the historic character of the area.		