

Re: A417 Missing Link at the Air Balloon

National Highways Application for a Development Consent Order

Climate Emergency and relevance to Walking and the Countryside

The following submissions are noted:-

1. Climate Emergency Policy and Planning (CEPP) submission

TR010056-001647-Climate Emergency Planning and Policy - Deadline 7 Submission-2.pdf

The document suggests, with a supporting graph on page 24 of 27, that the proposed scheme is unlikely to meet Government Net Zero Strategy (NZS) - a legally binding policy under section 13 of the Climate Change Act 2008 (CCA).

2. The Examining Authority has provided

TR010054-001200-Decision Letter - M54 to M6 Link Road-2.pdf

The document suggests that for the M54-M6 link that, partly due to earlier than anticipated take up of electric vehicles, the increase in carbon emissions for the M54-M6 scheme is marginal and can be discounted.

Review of Route Options based on NZS for the A417 Missing Link at the Air Balloon

Although the impact of carbon emissions due to the Missing Link could seem marginal, the sum of all the marginal gains across the UK could prove significant - any gain a useful contribution. Do any A417 route options provide better gain than Option 30, to meet the Net Zero Strategy?

For the purposes of climate emergency planning these tests could provide an indicator:-

- a) is the route distance same or less than present
- b) is the route gradient same or less than present
- c) is there any unnecessary elevation along the route

The Applicant says a desirable maximum gradient is 4% - page 172 of 206 'Conclusion'.
TR010056-000602-7.9 Technical Appraisal Report (February 2018).pdf

For comparison the current A417 (2 or 3 lane single carriageway) from Benthams to Cowley Roundabout Junction is approx 3.5 miles or 5.6km. It has a 7% gradient up to Cold Slad turn, increasing to 9%, before levelling off at the Air Balloon, and rising again to the Birdlip junction.

The straight line distance from Benthams to Cowley Roundabout Junction is 2.4 miles 3.8km and has a height separation of 500ft or 152 metres. i.e. a possible straight line gradient of 3.9% requiring tunnels and cuttings. It is accepted that a wider longer loop could achieve a lower gradient. If parts of the proposed road follow the landscape a higher gradient may result.

The applicant has produced a document studying the feasibility of one type of tunnel.
TR010056-001005-National Highways (formerly Highways England) - 8.6 Cut and Cover Tunnel Feasibility Study.pdf

Unfortunately 'cut and cover' is unlikely to be appropriate if the landscape is to be retained.

A low cost spray concrete lined method was used at Hindhead beneath historic National Trust countryside in the North Downs. The tunnel is 1.8km long within an overall scheme of 6.5km and included landscaping for £371m in 2011. Allowing for 25% inflation to 2022 gives £465m. The route is curved and varies in elevation. Construction dealt with soft sand and solid rock.

The Applicant has already said that tunnelling could be included within the red-line boundary if it was an outcome of the DCO examination. We've also been informed that the scheme could move outside the red-line boundary if it was found necessary.

This is a unique opportunity to create an exemplar scheme that values the special character of the Cotswolds AONB National Landscape, retains footpaths, tracks and trails and helps meet the aims of the Zero Carbon Strategy.

Overview of A417 route options and carbon emissions reductions

Option	Description	ZCS
3	<p>Option 3 is a proposed cutting and surface route from Bentham to Cowley Junction includes 1km tunnel. It is shorter at 4.5km than the current 5.6km route. The gradient is reduced to 5% through the tunnel. From Bentham the slope is 7% to the tunnel and level from the tunnel towards Cowley Junction.</p> <p>Since all local roads are kept in operation, there is no Shab Hill junction. The route merely transfers the M5-M4 30,000 through vehicles and, by removing congestion, avoids local rat running. Anyone who prefers not to use a tunnel can still use the present road arrangement. Low traffic routes are suitable for active travel. Services by statutory undertakers should be largely unaffected.</p> <p>Footpaths and tracks are retained for walkers including the Cotswold and Gloucestershire Ways alongside the Air Balloon Inn.</p>	<p>Shorter route than Option 30 and reduced gradient.</p> <p>Carbon reduction benefit.</p> <p>Local road connections remain the same.</p>
3-	<p>Option 3 modified to slide the Bentham junction up to the Cold Slad turn, to minimise slip road arrangements, passing the tunnel under the SSSI tip and away from the Air Balloon. It retains the 7% gradient to the tunnel with similar ZCS benefits to Option 3.</p>	Carbon benefit as per above
30-	<p>Simplified Option 30 slides the two tunnel Portals so they're less than 150 metres apart either side of the Air Balloon site. It follows the route of Option 30 but with no Shab Hill junction. (A tunnel of length less than 150metres is deemed a bridge and Design Rules relaxed e.g. lighting and ventilation.) A 4.8km route vs. 5.6km currently. The gradient under the bridge would be 7%. Cuttings up to 20 metre deep are required either side. A green bridge is used for the Gloucestershire Way and wildlife. Another green bridge could be included near Grove Farm to take the road under the tip of the SSSI. Local roads remain open to local traffic.</p>	<p>Carbon benefit almost as per above.</p> <p>7% gradient beneath bridge rather than 5% for Option 3 tunnel.</p>
30	<p>Option 30 - the current proposal. The M5-M4 main traffic route is reduced from 5.6km to 4.8km. However the gradient from Bentham to Shab Hill is 8% throughout - an increase over the current 7% Bentham to Cold Slad. The Air Balloon is demolished. A436 journeys increase by 2km through a deep cutting to the new Shab Hill junction and adds an extra elevation of 50 metres up to the junction plus 2 extra roundabouts.</p> <p>The closure of roads for local traffic increases journey distances. Birdlip to Cowley increases from 5km to 6km using narrow roads via Brimpsfield. Birdlip to the Golden Heart at Nettleton Bottom increases from 2.5km to 4.5 km also via Brimpsfield. Birdlip to Ullenwood (to reach Cheltenham) increases from 3.3km to 3.8 km and adds the 2 extra roundabouts at Shab Hill.</p>	<p>Overall - no anticipated Carbon benefit.</p> <p>8% gradient</p> <p>Numerous other losses.</p>
12	<p>Option 12 converts part of the current A417 Birdlip Bypass into a dual carriageway but loops away, increasing the route from 5.6km to 6km. With local roads proposed to be closed as per Option 30 there is no ZCS improvement.</p>	Carbon increase and other losses as per option 30

(Values shown for indicative purposes and subject to measurement variation)

Conclusion

It appears that the Options with the best outcome for Zero Carbon Strategy are also the ones that give the best outcomes for footpaths, tracks, local roads and the countryside.

It would be useful if the Applicant could review the proposed Option 30 with a view to include features from the ZCS above, and retain the Cotswold Way alongside the landmark Air Balloon. Consideration of a longer tunnel, along the route, to achieve a 4% gradient could be included.

The ZCS improvements could assist with a point raised by the ExA about which Secretary of State would sign off a diversion of the National Trail - no diversion would be necessary.