

Welcome

We are seeking your views on our proposed route options for a solution to the A417 Missing Link. The information we receive during this consultation will help us develop a preferred route.

We would encourage you to read the information on display today, take a copy of our consultation booklet and provide your thoughts by completing a feedback form.

You can either complete a feedback form and leave it with us today, post it to us or it can be found online.

Address: FREEPOST A417 MISSING LINK

Website: www.highways.gov.uk/a417-missing-link

Email: A417MissingLink@highwaysengland.co.uk

Telephone: 0300 123 5000

Your feedback is important to us in shaping a solution for this section of the A417. We will consider all feedback we receive and use it to help us develop our proposals further.

Please send us your feedback form by the end of **29 March 2018**.



About the A417

Together, the A417 and A419 through the Cotswolds make up one of the south west's most important road corridors, helping people get to work and school and visit family and friends.

But there's a problem. While most of the route is dual carriageway, there's one section that isn't. Known as the 'Missing Link', this 3-mile stretch of single carriageway on the A417 between the Brockworth bypass and Cowley roundabout restricts the flow of traffic, causing congestion and pollution.

Congestion can be so unpredictable that some motorists rat run along local roads, affecting the communities along these routes. These local roads were not designed for this level of traffic and collisions often happen.

The existing A417 runs through the Cotswolds Area of Outstanding Natural Beauty, and crosses the highly sensitive Cotswolds escarpment at Crickley Hill. This steep change in the landscape means that finding a suitable solution for upgrading the A417 Missing Link is extremely challenging.

The A417 Missing Link needs an upgrade to be able to accommodate the future increases in traffic likely to be generated by the new housing and jobs being created in the area.



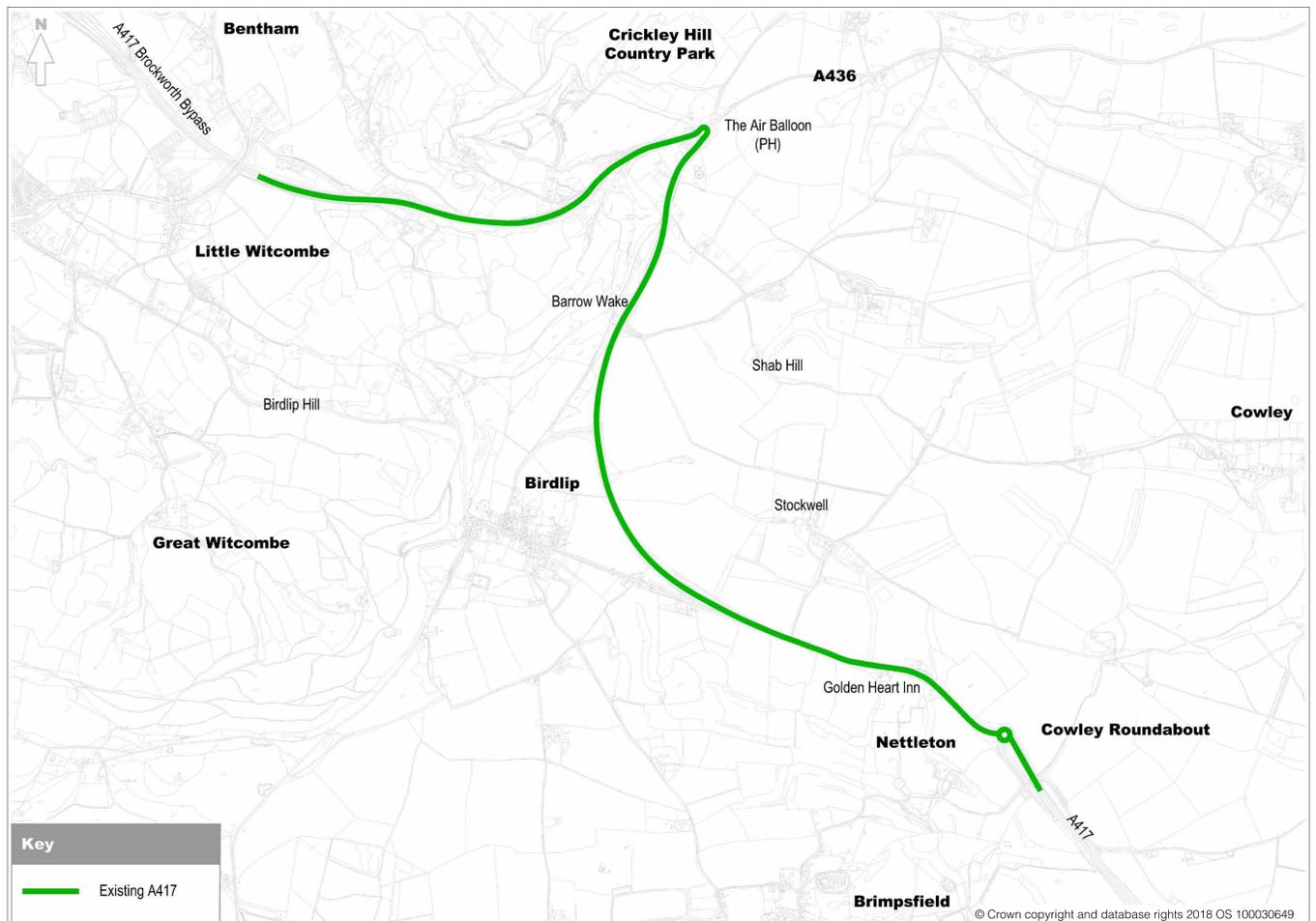
Steep slopes and poor visibility mean that lots of collisions are seen along this stretch of road

The story so far

Over the years, there have been numerous attempts to improve the A417 Missing Link. For various reasons, including affordability and changes in investment priorities, these have never come to fruition. However, in recent years, the case for improvement has become more compelling – to improve safety, support the economy, ease congestion and reduce pollution.

The Government's Road Investment Strategy acknowledges that any new solution for the A417 Missing Link would need to take into account *“both the environmental sensitivity of the site and the importance of the route to the local economy.”*

The challenging shape of the landscape, and the highly sensitive nature of the Cotswold escarpment, means that there is no easy solution for improving this section of road.



The current route of the A417 between the Brockworth bypass and Cowley roundabout

Scheme vision and objectives

We have looked at a number of route options, including proposals which have been put forward in the past, assessing them against our vision and objectives which were developed in partnership with stakeholders, such as the Cotswolds Conservation Board and Gloucestershire County Council.

The scheme's vision: a landscape-led highways improvement scheme

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 Area of Outstanding Natural Beauty; 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.

Objectives for the scheme

Transport and safety: to reduce delays, create a free-flowing road network and improve safety along this stretch of the A417

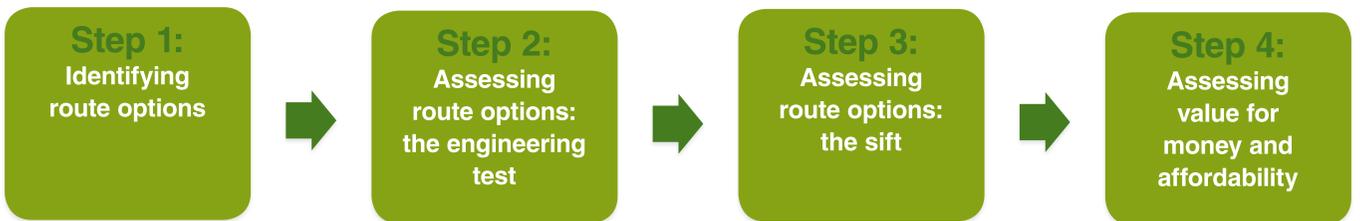
Environment and heritage: to reduce the impact on the landscape, natural and historic environment of the Cotswolds and, where possible, enhance the surrounding environment

Community and access: to reduce queuing traffic and pollution, improve access for local people to the strategic road network and support residents and visitors' enjoyment to the countryside

Economic growth: to help boost growth and prosperity by making journeys more reliable and improving connectivity

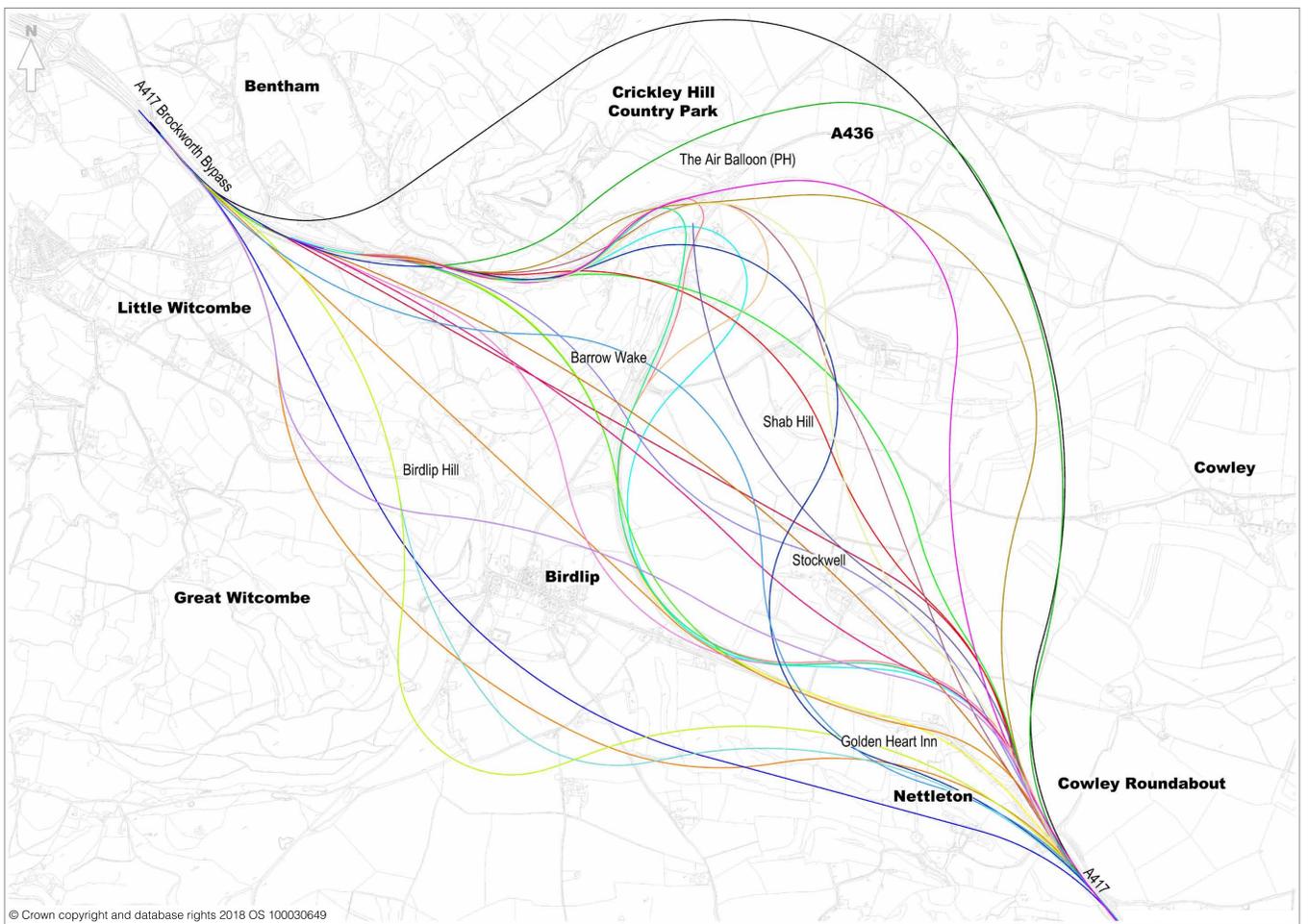
Identifying our proposed options

Over the last 18 months, we have considered a wide range of options and gradually narrowed them down using four broad steps:



Step 1: Identifying route options

Around 18 months ago, we started early assessment work to identify possible route options. This work identified 30 possible route options.



The initial 30 route options between the Brockworth bypass and Cowley roundabout

Step 2: Assessing route options: the engineering test

The next step was to review the 30 options in engineering terms to ensure we only took forward options which improved on the quality of the existing road and can be realistically delivered.

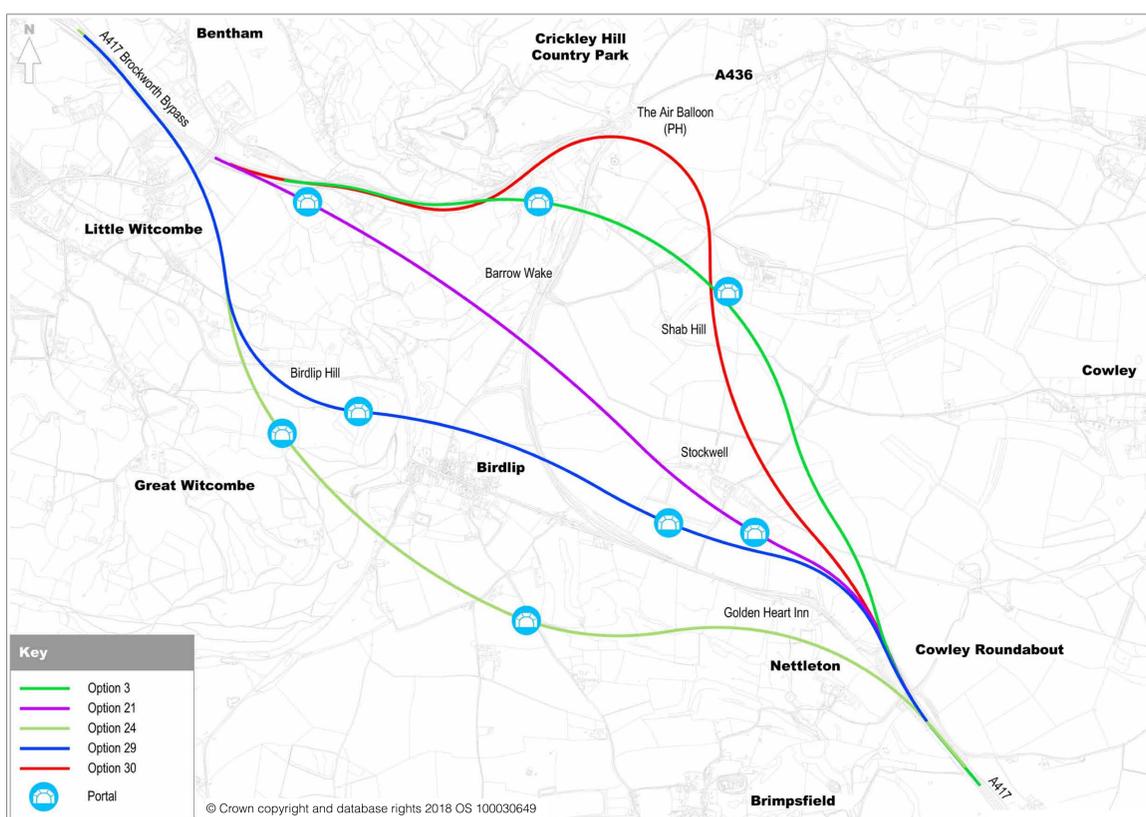
As a result of this test, 10 of the initial 30 route options were discounted and 20 moved on to Step 3.

Step 3: Assessing route options: the sift

We then assessed each route using a Department for Transport approved assessment method which measures five factors:

- **Strategic** – how it will address the problem
- **Economic** – the economic, environmental and social impact
- **Managerial** – the deliverability of a route in terms of construction and management throughout its lifespan
- **Financial** – the cost to build and affordability of each option
- **Commercial** – the value for money, or benefit to cost ratio, of each option

This method, however, did not allow for the scheme's landscape-led vision and objectives to be taken in to account. We therefore adapted this method so that we could rank each option and score it against how strongly it meets the vision, objectives and the factors above. As a result of this work, five options were taken forward for further assessment work. These were options 3, 21, 24, 29 and 30.



The five route options at the end of Step 3

Step 4: Assessing value for money and affordability

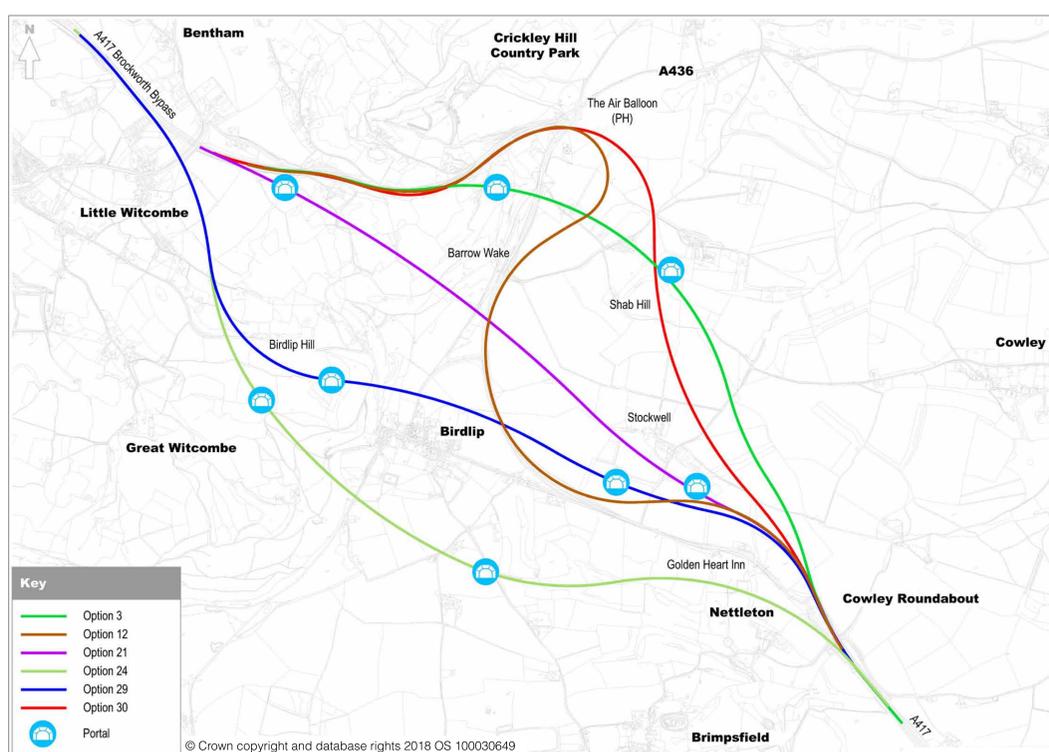
Results from Step 3 suggested that the tunnel options (Options 3, 21, 24 and 29) would bring greater landscape benefits, but would not offer value for money and be over the cost range allocated for the scheme (£250 million - £500 million). The surface option (Option 30) was the most affordable of the five options.

As a result of this, we then assessed the other surface options to see if there were any other more affordable options that may be deliverable within the scheme's cost allocation.

Two of the surface routes were discounted because of the visual impact they would have on the landscape. After this assessment work, it was clear that surface route Option 12 met the scheme's objectives and affordability criteria.

This process left us with six shortlisted options:

- **Option 3** – a 0.6-mile tunnel option (green route on map)
- **Option 12** – a 4-mile surface option which has also been called the Brown Route under previous attempts to find a solution for improving this stretch of road (brown route on map)
- **Option 21** – a 1.8-mile tunnel option (purple route on map)
- **Option 24** – a 0.9-mile tunnel option (light green route on map)
- **Option 29** – a 1-mile tunnel option (blue route on map)
- **Option 30** – a 3.4-mile surface option (red route on map)



The six route options

Our assessment of route options

To understand the opportunities and impacts of each of our six options, we assessed:

- Traffic impact** - to varying degrees, all six options would reduce delays, and improve journey times and reliability along the A417.
- Road safety** - to varying degrees, all six options would have a positive impact on road safety and help reduce the number of incidents on the strategic road network.
- Environmental impact and opportunities** - surface options have more of a visual impact on the landscape when compared with tunnel options. However, the landscape benefits brought about by tunnel options were not as great as expected because of the need to keep the existing A417 open for the connection with the A436 and tunnel portals.
- Social impact assessment** - by retaining existing routes, or providing new ones for pedestrians, horse riders and cyclists, we expect all six options would have a positive impact on physical activity and wellbeing compared with the existing A417.
- Value for money and cost** - Option 30 is the only route to offer positive value for money, meaning that the return on investment is estimated to be higher than the initial cost. All other options would see us make a loss on taxpayers' investment. The table below contains further information:

	Option 3 (tunnel)	Option 12 (surface)	Option 21 (tunnel)	Option 24 (tunnel)	Option 29 (tunnel)	Option 30 (surface)
Most likely cost (in millions)	£875m	£465m	£1,625m	£1,210m	£1,240m	£485m
Return on investment*	79 pence	68 pence	47 pence	54 pence	56 pence	£1.04
Value for money rating	Poor	Poor	Poor	Poor	Poor	Low

* for every £1 spent improving this stretch of road, this is the amount the taxpayer would expect to get back.

Overall conclusions on sifting and assessment process

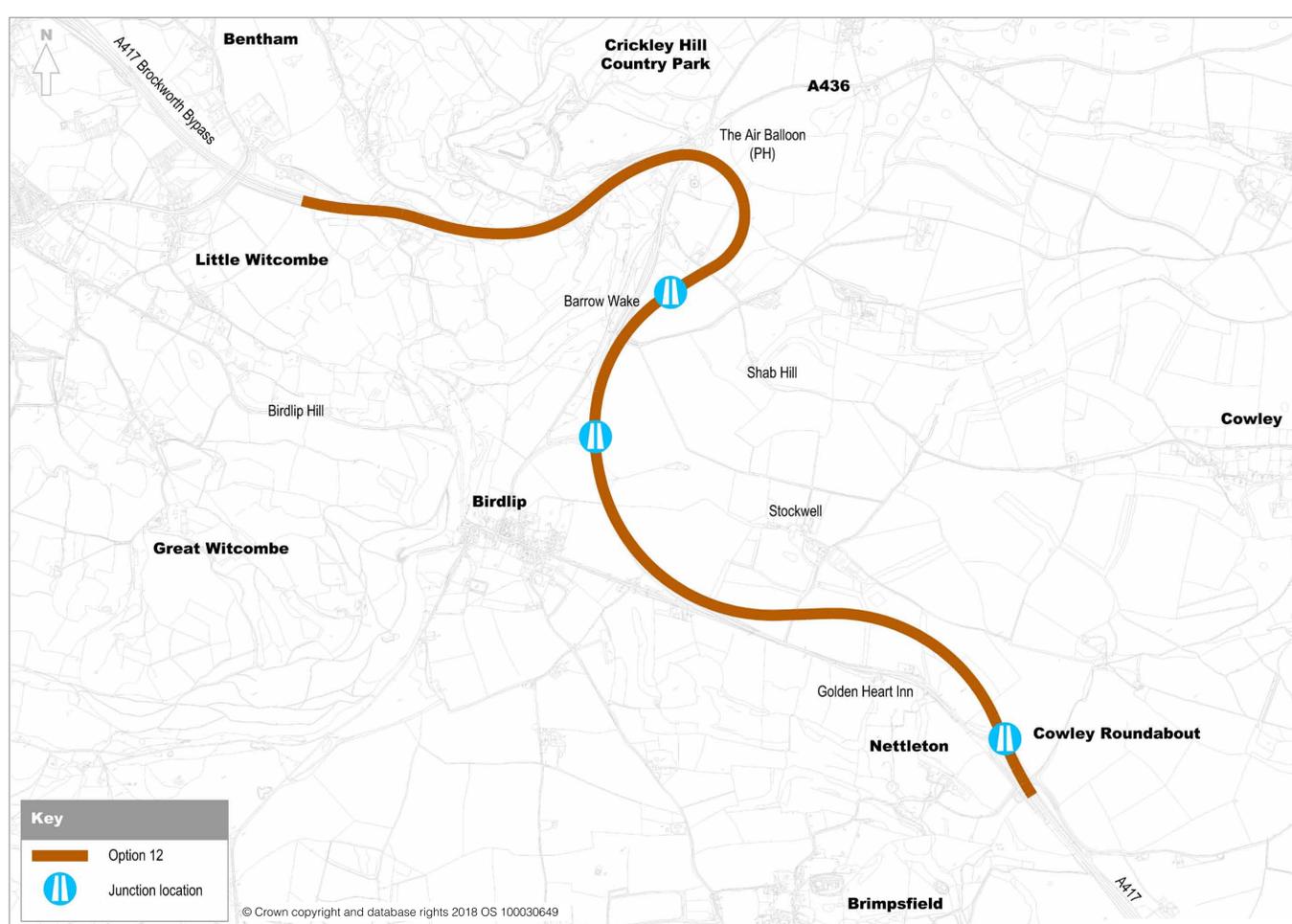
After the four step process of identifying and refining possible route options, we have concluded that the tunnel options provide better opportunities to reduce the impact on the landscape. Tunnel options would, however, still have an adverse environmental and visual impact due to the need for tunnel portals and link roads to the existing A417. The existing A417 and A346 would be retained.

Tunnel options demonstrate poor value for money. That means that when their benefits are weighed against their significant cost, they would not offer a return on their investment for taxpayers. All of the tunnel options that we identified are above the allocated cost range for the scheme of £250 million to £500 million. While Option 12 (a surface route) also offers poor value for money, it falls within the cost range for the scheme.

To ensure that affordable routes that fall within the allocated cost range for the scheme are taken forward, we are presenting Option 12 and Option 30 as our proposed route options.

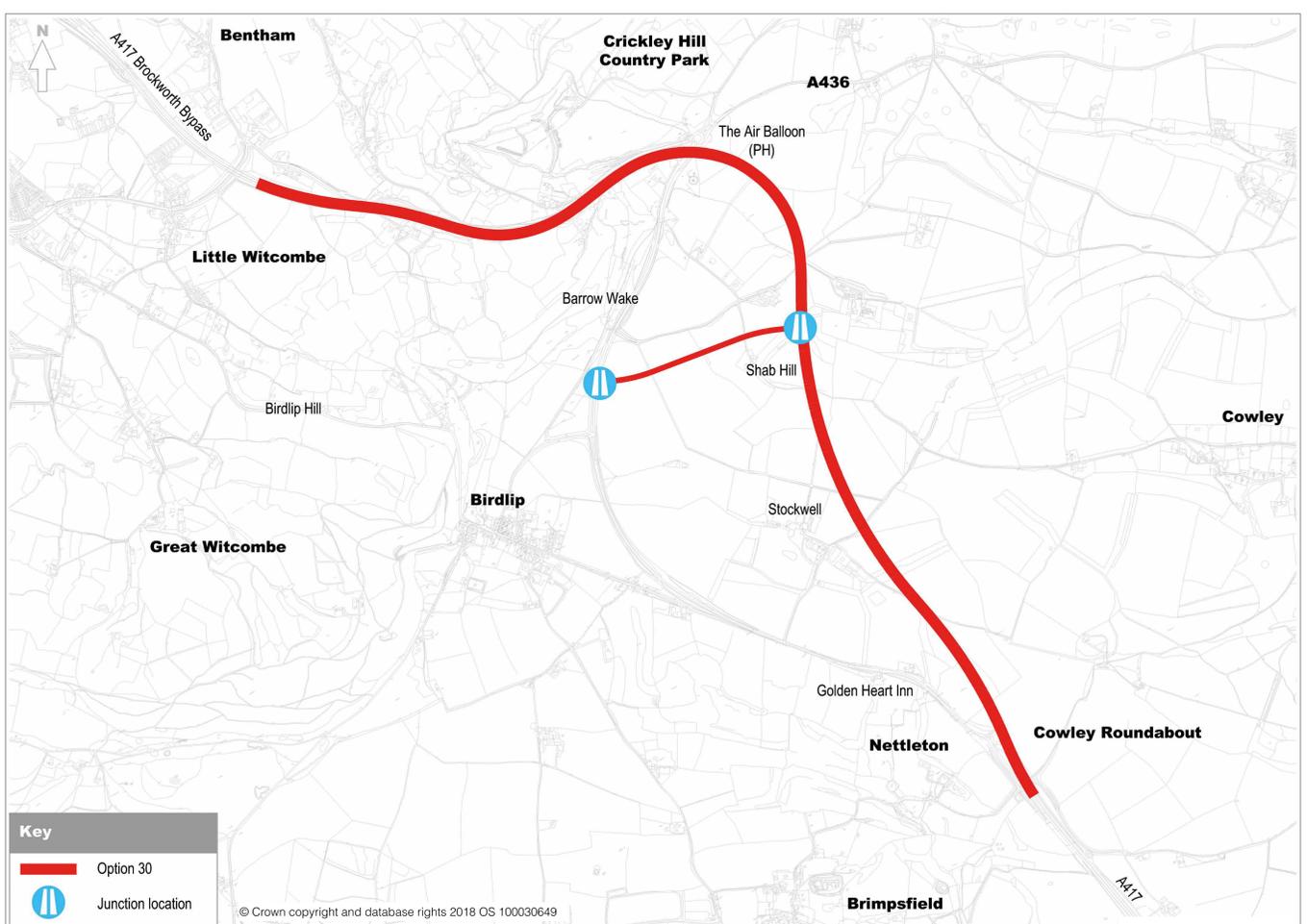
Option 12: an overview

- A 4-mile surface route reusing sections of the existing A417 on Crickley Hill and Birdlip
- New sections of road will be built at Nettleton and Emma's Grove
- Three new junctions – one at Cowley roundabout, one on the existing A417 close to the B4070 junction and one to the north of Barrow Wake
- Three lanes going up Crickley Hill and two lanes coming down.



Option 30: an overview

- A 3.4-mile surface route following the alignment of the existing A417 at Crickley Hill with less of a slope
- A new section of road will be built through Shab Hill to the east of the existing A417 and re-joining the existing road near Cowley roundabout
- Two new junctions – one at Shab Hill and one on the existing A417 close to Barrow Wake with a link road in-between
- Three lanes going up Crickley Hill and two lanes coming down.



A further assessment of our proposed options: transport and safety

Transport and safety	Option 12	Option 30
Journey time savings	Option 12 is 4-miles long, resulting in marginally longer journey times than option 30.	Option 30 is a 3.4-mile long surface route, bringing significant savings to journey times.
Capacity	Both routes will increase capacity on this section of the A417, helping to improve journey times and reliability.	
Safety	Both options will improve visibility compared with the existing A417, which should result in a decrease in the number of collisions along the route.	
Safety	Option 12 includes a very sharp bend to the east of Emma's Grove Scheduled Ancient Monument. Combined with a steep slope, this is likely to require a reduced speed limit (potentially 40 or 50mph) and other measures to manage safety such as average speed cameras.	Option 30 includes a sharp bend to the east of Emma's Grove Scheduled Ancient Monument but this would not impact the speed limit for the dual carriageway. Option 30 would have a 70mph speed limit.
Connectivity and junction arrangements	Option 12 has two new split level junctions and one standard junction. These will provide access to the A417 for neighbouring communities.	Option 30 has one new split level junction and a second junction to connect the new route to the existing one close to Barrow Wake. These will provide access to the A417 for neighbouring communities.
Disruption during construction	<p>During construction, both route options will require traffic management along the existing A417 and other local roads.</p> <p>At this early stage in the development of the scheme, it is anticipated that Option 12 would create more disruption compared with Option 30 because of the length of carriageway that uses the existing route, together with the construction of an additional split level junction close to the B4070 junction at Birdlip.</p>	

A further assessment of our proposed options: environment and heritage

Environment and heritage	Option 12	Option 30
Noise	It is anticipated that both options would have a positive impact on reducing noise compared with the existing A417 but there would likely be some negative effect on other areas along the route. Option 12 performs slightly better than Option 30 in terms of noise reduction.	
Air quality	Both options are predicted to improve air quality at properties within the Birdlip Air Quality Management Area. There would be a slight increase in greenhouse gas emissions within the overall area as a result of an increase in vehicle numbers, but Option 30 would have less of an impact than Option 12 because it is shorter.	
Visual impact	Options 12 and 30 are both surface routes which mean they will have an adverse effect on the landscape and impact the overall scenery in this area. Widening the existing route corridor through the sensitive escarpment at Air Balloon roundabout will minimise the impact on the escarpment elsewhere.	
Land take	Option 12 would require less land than Option 30 because it follows the existing A417 more closely.	There is an opportunity to remove parts of the existing A417 with Option 30 which would bring some environmental benefits. Further work will need to be undertaken to assess this opportunity at a later stage of the project.
Historic environment	The setting of important historic features would be largely unaffected by both options. Both options could impact Emma's Grove scheduled monument during construction, the setting of Crickley Hill Camp scheduled monument and the rural setting of some other listed buildings to the east of the existing A417. Further work will need to be undertaken to assess the extent of this impact and identify any possible mitigation.	
Biodiversity	Both options could negatively impact wildlife populations, including nesting birds and bats, in the area and reduce available habitat. They also have the potential to adversely affect the Crickley Hill and Barrow Wake Sites of Special Scientific Interest. Further work will need to be undertaken to assess the extent of this impact and identify any possible mitigation.	

A further assessment of our proposed options: community and access

Community and access	Option 12	Option 30
Impact on neighbouring communities	Both options are likely to have a positive impact on journey times and reliability overall because they convert an existing single-lane carriageway into a modern dual carriageway with free flowing junction improvements. This should have a positive impact for neighbouring communities by reducing rat-running and providing better access from local roads to the strategic road network.	
Impact on pedestrians, cyclists and horse riders	We would seek to maintain existing rights of way and, where possible, explore opportunities for providing new ones for pedestrians, horse riders, cyclists and other non-motorised road users.	

A further assessment of our proposed options: economic growth

Economic growth	Option 12	Option 30
Cost to build	£465 million	£485 million
Return on investment*	68 pence	£1.04
Value for money rating	Option 12 would not offer a positive return on investment, meaning it has a poor value for money rating.	Option 30 would deliver a positive return on investment but it is still considered to offer low value for money.
Support economic growth	Option 12 would provide a free-flowing, reliable route which would help support the economy in Gloucestershire and the wider region. However, Option 12 will have a reduced speed limit at the top of Crickley Hill which will result in slightly longer journey times.	Option 30 would provide a free-flowing, reliable route which would help support the economy in Gloucestershire and the wider region.

* for every £1 spent improving this stretch of road, this is the amount the taxpayer would expect to get back.

Conclusions

Having looked at Option 12 and Option 30 in detail, Option 30 presents greater opportunities to meet the objectives for the scheme by:

- improving safety
- supporting the economy
- easing congestion and pollution
- making the route more convenient for its regular users
- improving the wellbeing of those who live near it
- offering value for money for taxpayers' investment

The assessment shows that Option 30 performs better than Option 12 and is therefore our proposed solution for the A417 Missing Link.

What happens next

We are committed to making sure our proposals bring long-term benefits for local communities and all road users. This consultation is your first opportunity to give us your views on our proposals.

We will use feedback from this consultation to help us choose a preferred route. After we have selected our preferred route and before we submit an application to build the scheme, we will hold a second consultation to get your views on more refined proposals.

A nationally significant project

Because of its size, the A417 Missing Link scheme will be classified as a Nationally Significant Infrastructure Project (NSIP). NSIPs are major infrastructure developments, and include projects such as power plants, large renewable energy projects, new airports, airport extensions and major road projects.

Applications to build these types of projects are submitted to the Planning Inspectorate who examine the application on behalf of the Secretary of State for Transport, rather than the local planning authority. The Secretary of State for Transport makes the final decision on consent and consent is granted by a Development Consent Order (DCO).

We will ask for feedback at certain stages during the development of the project. We have already had discussions with some environmental bodies and elected members in the area. This public consultation on route options is the first opportunity to input into the project.

