A417 Missing Link

A landscape-led road improvement scheme

How we're tackling climate change

The national picture

The UK has committed to being a net zero economy by 2050. To deliver a net zero economy, our roads must be net zero too - they are an integral part of our transport system and will continue to be important as they are a convenient, low cost and practical way to travel to see family, to travel to work and to deliver goods around the UK.

We have an ambitious programme to put roads at the heart of Britain's net zero future and are taking fast action in three areas to achieve:

- net zero for our own operations by 2030
- net zero for maintenance and construction by 2040
- net zero road user emissions by 2050

More information about our net zero highways plan can be found at **https://nationalhighways.co.uk/netzerohighways/#plan**

At a project level

This project will improve local air quality and reduce pollution caused by congestion.

We have considered its effect on the climate as part of our Environmental Impact Assessment. Our assessments can be found in Chapter 14 of our Environmental Statement and conclude that the project will not have a material impact on the governments' ability to meet its carbon targets.

We reduced the carbon footprint of this scheme when we updated the original design in 2020, but we will also reduce this further during construction and maintenance of the new road, which will help us meet our ambitious net zero targets.

Design

The scheme has been carefully designed to minimise carbon emissions, for example, in 2020, we changed the gradient of the A417 as it climbs the escarpment near Crickley Hill. We previously proposed to reduce the gradient from 10% to 7% but changed this to 8% to reduce the amount of soil and rock that needs to be dug out and transported, and the need for 1,200 metres of large retaining walls. We've also changed the design of our bridges and excluded road lighting, which will further reduce the impact of the schemes.

Construction

During construction, we will set strict carbon reduction targets of at least 10% for our contractor, which is in line with our Net Zero Highways Plan.

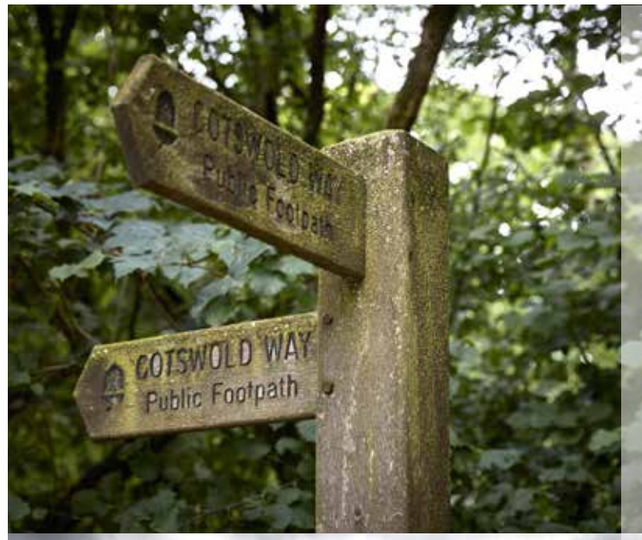
Where possible we will also:

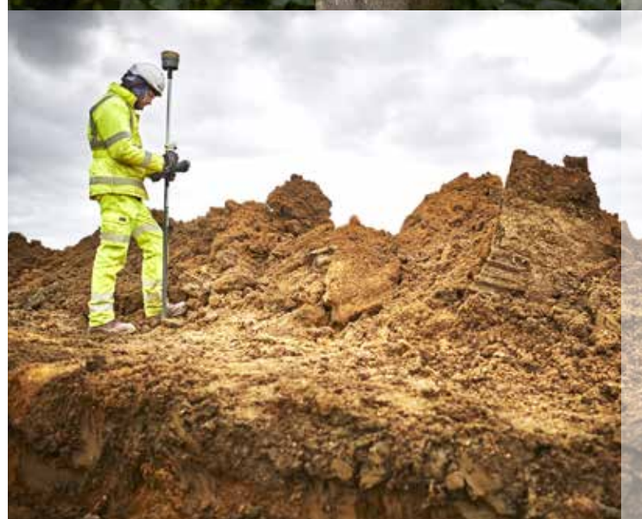
- use renewable or low carbon energy generation at construction compounds
- use low carbon plant equipment and vehicles
- use low carbon materials or materials that absorb carbon dioxide
- use low carbon construction techniques
- source recycled or secondary materials from the local area.

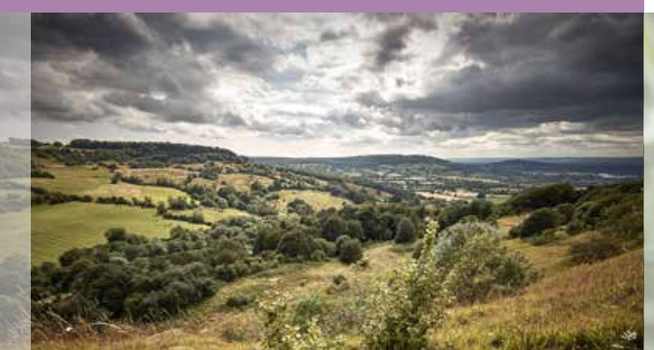
Operation and maintenance

User emissions will be cut radically as the UK phases out the sale of new petrol and diesel vehicles from 2030 and hybrid vehicles from 2035.

Emissions arising from our operations and maintenance activities will be radically reduced via energy efficiencies and the use of electric vehicles, renewable energy tariffs, and renewable energy generation at our sites.







Design

Total carbon savings

40,000 tonnes of CO^2

CO_2

35% carbon reduction

10,000

tonnes of CO^2 saved thanks to the elimination of most retaining walls

28,000

tonnes of CO^2 saved following changes to bridge designs

2,000 tonnes of CO^2 saved as a result of reduced excavation and HGV movements

Eliminated **1 million** cubic metres of earthworks

HGV movements reduced by approx. **487,200** over the 28 month construction period

HGV movements reduced by approx **580** a day

Construction

Projected construction emissions estimated at

74,114 tonnes of CO^2

10%

Reduce projected construction emissions by 2025

Reduce projected construction emissions by a further **40-50%** between 2025 and 2030

All construction plant and compounds

Net zero

by 2030

Operations and maintenance

100% of our electricity supplied through certified renewables tariff

55% reduction in user emissions by 2030

90% reduction in user emissions by 2040

Our vehicle fleet will be **100%** electric by 2030

40-50% reduction in maintenance emissions by 2030 and net zero by 2040

Net zero road transport by 2050