

HS2 and Ellesborough Road: the full story



By Richard Byford, with Murray Cooke

By the time you read this, the “temporary” traffic lights on the Ellesborough Road diversion may finally have been removed, eight months after the road was opened for traffic. But beyond them, the enormous concrete slab over the blocked-off part of Ellesborough Road, installed this year at presumably great effort and public expense, is going to be removed after only four months’ use.



The slab was intended as part of a temporary route for dump trucks hauling about 1 million tonnes of spoil from the cutting works near Great Missenden north along the HS2 route to build up the embankments at Stoke Mandeville. The slab was needed to protect utility services running underneath Ellesborough Road which had not been moved.

However, wetter winter weather brings movements to a halt as the trucks just churning up the mud on the rest of the haul road. Now the constructor EKF is going back to its original plan of digging the HS2 track cutting through Ellesborough Road and using that as the ‘haul road’ once the remaining utilities are diverted this winter.

The unexpected and unscheduled problems with the cutting at Ellesborough Road are holding up the whole HS2 construction programme between Wendover Dean and Stoke Mandeville. This means the works and disruption locally will carry on for even longer than planned, and the public costs are spiralling.

How did it get to this? We thought it would be a good time to record the history of the works and describe what we know of the plans for this small focus of chaos.

A gap in HS2 planning?

The gap through the Chilterns leading to Wendover has probably been in use as long as people wanted to move from one part of the country to another. When bronze age travellers met up with others travelling east or west on Icknield Way, the most difficult thing might

have been stopping their herd of sheep while a chariot went past. It stayed like that even when the railway arrived in the 1890s: It would have been little trouble to temporarily divert a horse-drawn carriage or pedestrian around where they were building the Great Central Railway to Manchester.

By the second half of the 20th century, civilisation became dependent on wires and pipes for electricity, telephones, mains water and sewerage. By 1965 there were heavy-duty National Grid pylons with 400 kV cables at Wendover, and several other electricity and telephone cables running east-west across the bridge over the railway. The construction of the Wendover bypass had its challenges, but at the time they were easily overcome by routing them all over the new combined rail and bypass overbridge.

In 2010 the idea of running a high-speed railway route through the ‘Wendover Gap’ was proposed. Other routes had been considered and many organisations argued against the route through Wendover because of the damage it would cause to the natural landscape. At various times, the possibility of running the railway entirely in tunnels through the Chilterns Area of Outstanding Natural Beauty (AONB) and was considered and eventually dropped, in favour of the current arrangement, based on cost and technical difficulties.

Given what we know now about the structure of the Coombe Hill aquifer, the cost of the building the green tunnel, the viaducts and restoration of the landscape, it might be argued that that it was an inappropriate decision, and the objectors were right.

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History of the Ellesborough Road cutting

From an early stage the plan was to include a 'green' cut-and-cover tunnel below Ellesborough Road, which implied demolition of some of the cottages which dated back to 1877 or earlier. A 'route optimisation' study in 2010 considered classic tunnelling under Ellesborough Road on cost grounds and moved the line about 20 metres west to avoid disruption to the Ian Rennie Memorial Wood. Dismissal of the option for a conventional tunnel under the road proposed by various organisations were further rejected by a House of Commons Select Committee, based on evidence submitted by HS2 including cost and engineering issues.

During 2015 HS2 plans were made to move about 1million tonnes of clay and chalk material north from the Chilterns to other parts of the route in Aylesbury Vale. MPs directed HS2 to create a temporary diversion road to the north of the houses which would close Ellesborough Road to traffic for "a few weeks" as it was brought into use. This timescale was wildly optimistic.

The subsequent House of Lords Select Committee in 2016 specifically decided to reject discussion of more tunnelling for Wendover. Following Royal Assent of the HS2 legislation in 2017 a 'design and build' contract was given to CEK JV (a joint venture between Carillion, Eiffage and Kier) to review the scheme design and work out how they would build the line.

The problem with regards to HS2 and Ellesborough Road, is not that the train will be running quite deep under the road. It is the fact that during construction, they must keep the construction trench open for several years without interrupting the utility services above or the flow of traffic along the road.

At Ellesborough Road they concluded that all utility services would need to be diverted while the 18-metre-deep cutting was made through the road. They were also concerned about the narrow width of land available for their use as defined in the Act, which precluded creating a site access road and separate Dump Truck 'haul road' alongside the railway works. Their conclusion was that the temporary diversion road should incorporate a "Bailey bridge" above the works, so that dump trucks travelling north/south would not interfere with east/west public traffic on Ellesborough Road. The bridge was also designed with ducts to handle diverted utility services over the works.

Although the design and build contracts were in place, the pace of progress was constrained by the Covid epidemic and the outcome of the Oakervee review, commissioned by the Department for Transport, which considered 'whether and how' to proceed with HS2. Following the February 2020 announcement from the prime minister Boris Johnson that HS2 would go ahead, plans were put in place to demolish the Ellesborough Road buildings in early 2021.



Soon after the elephant moved on, the bats moved in.

Unfortunately, by then bats had taken advantage of the compulsory purchase of the buildings by roosting in them, so they could not be knocked down until much later that year.

Construction of the diversion road and bridge started. The reality of rerouting the utility services then became apparent, with the various organisations surveying where their cables and pipes were probably located, followed by trial holes to see what was actually in place. These all involved road closures, and yet more were needed as new underground duct routes were created to cope with the diversions. The gas mains, electricity cables, British Telecom and Virgin Media services were successfully migrated from mid 2023, prior to the diversion road being opened to public traffic in April 2024.

Thames Water, however, pointed out that its sewer pipe would not function over the new bridge, as the altitude at the east end would not allow sewage to flow above the A413 and Chiltern Railway line.



The engineering solution adopted was to build a second, smaller Bailey bridge parallel with the south side of Ellesborough Road, to carry the sewer and water main at their original altitude and downward slope. A large hole was excavated to the southern side of Ellesborough Road, on the western edge of the memorial garden, which was sheet piled for protection, and the additional bridge was constructed. When migration of the utility services was started, it was discovered that the mains water, sewerage and BT services were





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intractably intertwined, that it would not be possible to complete the move in time.



The second utilities-only Bailey bridge. Photo: Murray Cooke

The 'Mass Haul'

The original construction plan was for the cutting through Ellesborough Road to be excavated to full depth as soon as the traffic had been diverted onto the new road. This would allow dump trucks to move spoil stockpiled from excavation at Great Missenden to worksites north of Wendover.

About a million tonnes of chalk, clay and soil excavated from the North Tunnel Portal at Great Missenden and cutting either side of the Wendover Dean viaduct would need to be moved to places further north, where it could be used, for example, to cover the green tunnel and form embankments. This is normal practice and on smaller projects in the past, it would have been carried out using tipper trucks over public roads. The only reasonable solution for the enormous volume of material in this case was to take it along a dedicated haul road, crossing the A413 via a conveyor belt at Small Dean Lane, where it would be stockpiled and then reloaded onto dump trucks for onward carriage north.

More construction setbacks

With project timescale pressure to start the 'mass haul' the contractors concluded that they could not wait for the cutting to be opened so they decided to run their 100 tonne (fully laden) trucks over the top of the existing part of Ellesborough Road, then down a steep slope to run under the Bailey bridge that carries the public road diversion.

To avoid damage to the remaining water pipes, a thick concrete slab was created over Ellesborough Road, and the spoil movement started in August 2024. This required removal of the new utility services bridge in April, which had only been installed two months previously. The 18-metre-deep hole over which it had been built



Dump truck driving over the slab. Photo: Murray Cooke

also needed to be backfilled and the ground consolidated. Since August, the steady stream of dump trucks going over Ellesborough Road, up and down the steep incline and under the Bailey bridge, have indicated the extent of the movement of materials required across HS2 around the Wendover area.



The Mass Haul begins. Photo: Murray Cooke

However, wetter weather has brought this to a halt, and now EKFB plans to remove the slab after only four month's use, and go back to its original plan to make the cutting.

Back-tracking

The haul road is affected by the weather, and gets churned up by the trucks following heavy rain. The disruption involved means that the mass haul programme will be suspended for the winter, probably between November and April. During this time, EKFB will be reinstalling the utility service bridge to allow Thames Water to divert their pipes. This will then allow it to revert to the previous plan and dig the trench all the way under Ellesborough Road, before the restart of the mass haul in the spring of 2025.

We are then expecting the new cutting to be used by the dump trucks for the rest of 2025, followed by the installation of the roofed-over "Green Tunnel" pre-cast concrete shell and backfilling to restore the previous landform during 2026.

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*A green tunnel that has already been constructed elsewhere on the route of HS2.
The design of the Wendover Green Tunnel may be slightly different.*



Photo: HS2

Minor snags, major delays

Utility companies have not always responded very quickly to requests from EKFB (HS2's main contractor) for cooperation in re-routing their services. The High Speed Rail (London – West Midlands) Act 2017 gives HS2 Ltd draconian powers to do almost anything it wants in the areas where the railway will go – on many occasions overriding the powers of local authorities and countering their demands. However, the utility companies have similar powers, and tend to carry out requests from HS2 at times when they fit in with their own plans.

An example of this is where UK Power Networks was asked to move a high voltage cable, which was encased in concrete, exactly where the diversion road goes right as you leave the bridge going towards Ellesborough. The result is that for eight months, traffic leaving Wendover in both directions has had to queue at 'temporary' traffic lights on the bridge. During evening rush hours, traffic backs up in

the single-carriage section because of the congestion on Pound Street, as a result of vehicles from South Street having priority at the roundabout by Dobbins Lane.

Another anomaly is the traffic lights further up the old Ellesborough Road which appear to be controlling all the traffic visiting the frontage of the five houses in what is now a cul-de-sac, created to allow the railway cutting works. This aids the passage of a couple of bin lorries and a few delivery vans during most weeks. The lights were made necessary by the fact that the old road is still designated as the B4009, and as so the major road traffic cannot join it without being under the control of traffic lights or give way lines.

Eventual restoration

Bucks Council has indicated that it expects HS2 to remove the temporary road and bridge as part of the land restoration requirements

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in the HS2 Act. However, the six houses demolished as part of the cutting works will not be replaced. The area above the tunnel will simply be landscaped. It is not yet clear what is going to happen to the diverted utility services, and if it will take a further 18 months to reinstate their original routing to allow removal of the Bailey bridge. Our current expectation is that the Ellesborough Road works should be completed by the end of 2028.

Update: Other HS2 news

Ellesborough Road

During October two new electricity substations were brought into service each side of the railway cutting. This is progress, but UK Power Networks still need to remove the old transformer so that both lanes of the new diversion road can be brought into use and the traffic lights removed. As we go to press, EKFB has put up notices that the road will be closed from 25 to 29 November, which indicates that the electrical work (including the cable removal) will be completed then and hopefully the road will re-open without the traffic lights.

Small Dean Viaduct

During November there were a series of night time closures of the A413 to allow the installation of the final pier for the viaduct. The current plan then involves closing the A413 for one day on Friday 31 January, when the viaduct deck will be slid across the road. The Chiltern Railway line will then be closed over the weekend of 1 and 2 February to allow the deck to be pushed to its final destination.



Bacombe Lane diversions

Work has been continuing on building a temporary link road from the Ellesborough Road end to the houses on Bacombe Lane. A new water main is being installed at the same time.

On completion Bacombe Lane will be closed from the South Street end to beyond the HS2 works, to allow the Green Tunnel cutting to be excavated in the new year. The existing right of way will also be rerouted over the link road. Eventually, after the Green Tunnel is completed, Bacombe Lane will be restored to run over the tunnel and the link road will be removed again.



We understand that revised diversions signs for the paths are being produced, as the existing ones are well out of date and misleading.

Wendover's other tunnel

Work has started in the big hole next to Bacombe Lane to build a storm drain culvert. An 800m long, 2.4 metre diameter pipe will be tunnelled by mining, with spoil removed by a crane at Bacombe Lane.



Photo: Keith Hoffmeister

This will lift the mined material up from the tunnel works in a caisson access shaft which is now being excavated, and will eventually become a storm water cistern.



Photo: Keith Hoffmeister

This storm drain tunnel is expected to take about a year to build. It will run from the south portal of the Green Tunnel at Bacombe Lane to roughly the old cricket ground north of Ellesborough Road. It will then connect into a box culvert that will be installed in an excavated trench, and then finally into a pipe that goes to a drainage pond west of the line, close to Wellwick Farm. The complete length of the storm water drain will be about 2km.

HS2 and DfT

Louise Haigh, the new Transport Secretary, has been getting to grips with the state of the HS2 project, and instituting new management oversight in an attempt to control the costs involved. She appears to have convinced the Chancellor to fund the tunnelling to Euston. This is needed to run a sensible number of trains per hour, given the limitations of the Old Oak Common station.

We're expecting that this means the procurement of the 'Railway Systems' (such as the track and signalling) will now go ahead for Phase 1, but the rumoured extension of the railway north to Crewe was not committed in the October 30 Budget.

Meanwhile HS2 Ltd is having a significant internal reorganisation following the last Government's decision to scrap the project north of Birmingham, and we are still trying to get an official forecast of when the works will be completed at Wendover. Our unofficial guess is that the civil engineering may actually continue until 2028.

Issues with HS2?

If you're affected by the construction activity, please contact the HS2 Helpdesk team on 08081 434 434 (which is available 24 hours a day) or email hs2enquiries@hs2.org.uk to get your issues resolved. It helps if you have photographic evidence and please get a complaint reference number so that we can follow up issues as needed.