

Is there light at the end of the tunnel?

By Richard Byford

If you are interested in HS2 you may have seen the news that Mark Wild, CEO of HS2, announced the initial conclusions of his work to 'reset' the project. The headline was that the cost of HS2 may go up to £102.7 billion, and it may not open to passengers until 2039. But what does this mean for Wendover, Stoke Mandeville and the surrounding areas?

Wild acknowledged that this would be a huge disappointment to taxpayers and the affected communities. He said, "From the budget set in April 2020, it was £42 billion or £43 billion. The numbers have doubled in five years." He spoke at a progress update session to a Commons Select committee on 20 May.

The national media made a bad-news story out of the cost and schedule announcement but omitted some details. In the meeting, these were explained as the 'worst case', with the estimated cost and completion ranging from £87.7 to £102.7 billion and completion between Old Oak Common and Birmingham's Curzon Street between 2036 and 2039.

He and his team have been working to establish a detailed baseline since he took up the job fifteen months before the meeting. He took on the role after successfully completing a similar task on Crossrail (now called 'The Elizabeth Line'). His focus has been on establishing future needs and status of the project, rather than looking into past failures. In the update meeting, he was careful not to criticise people involved in the past, though he made comments about counter-productive practices and approaches he has changed.

What about Wendover and Stoke Mandeville?

You may well imagine that HS2 is all about digging holes, moving earth around and building big concrete structures. That's how it has been in Wendover for the past five years. This civil engineering phase is the first stage of building the railway, and the most disruptive.

Civil work is scheduled to be finished by the summer of 2029, at which point all structures should be complete, the green tunnel backfilled, and all spoil material placed into its final position. Most construction compounds will be removed, areas restored, and final landscaping and planting completed. The

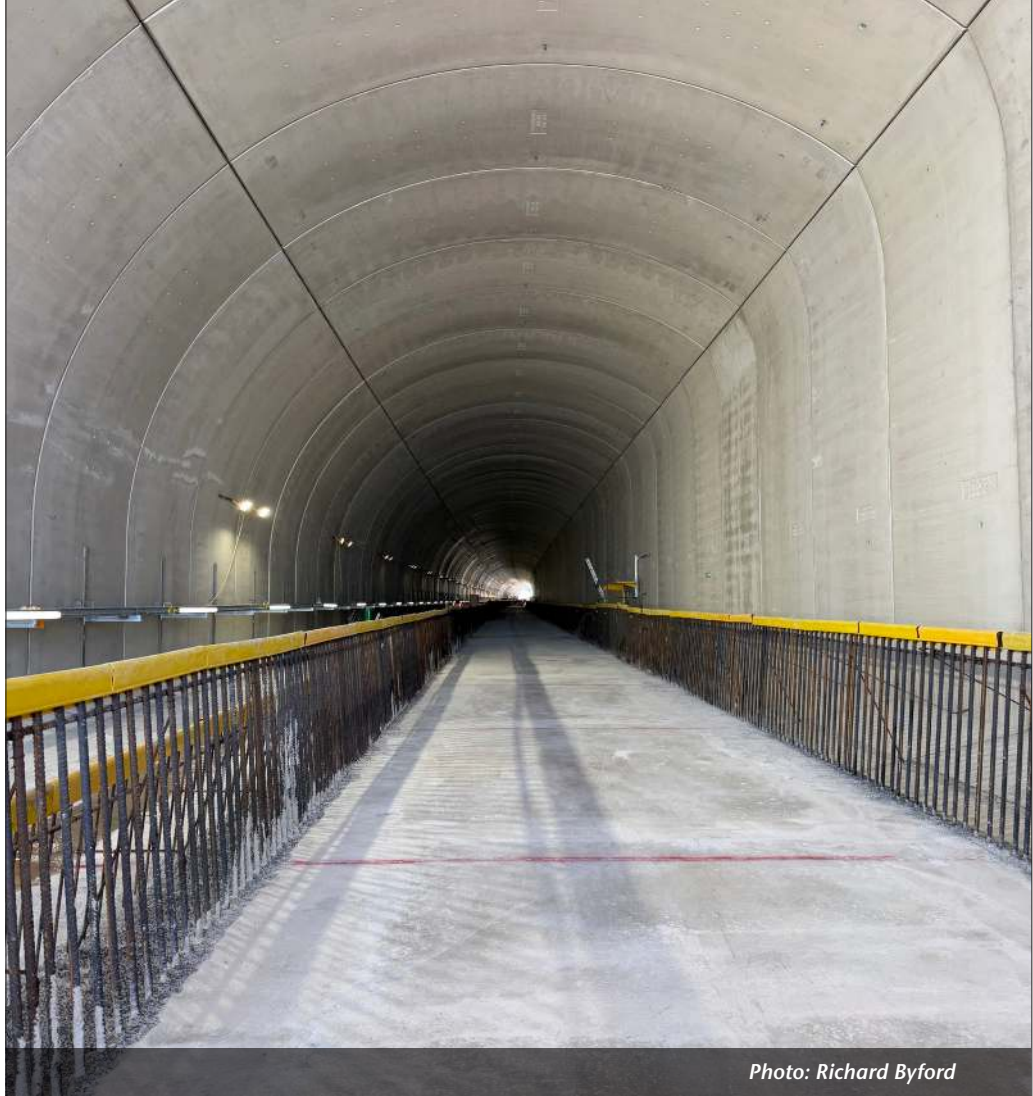


Photo: Richard Byford

worst of the visual impact of HS2 on the local area should be over, and the area should start to recover.

The civil work completion date of 2029 depends on the weather. There is still work to move spoil and reshape the landscape. Dump trucks used for moving spoil between excavations and stockpiles – and vice versa – can only be used between the end of March and October when the haul road is dry. Last year was a good one in that respect. The estimate of completing civils before 2029 is realistic and includes a reasonable allowance for bad weather.

Ellesborough Road has always been a pinch point, because the cutting is narrow, and all site construction traffic has had to go under the Bailey Bridge, not being allowed on public roads. Large lorries in the area have been carrying pre-cast concrete components from Derbyshire, or crushed rock, and other materials 'imported' to the site from one of the railheads inside the M25.

All spoil that is destined to be used north and south of Ellesborough Road is already

there. Spoil needed to make up the Small Dean North Embankment between the viaduct and Bacombe lane will be carried over the road and railway by trucks going over the viaduct itself. By the time you read this, the conveyor system that crossed the road just beyond the viaduct just outside Wendover will be being dismantled. This will include overnight closures (8.30 pm to 5.30 am) scheduled from Friday 3 July to Thursday 9 July. Some of the concrete barriers from along the side of the road will also be removed.

Changing the view

Over the next three years, the landscape around HS2 will change. In many cases, it will be restored to its former levels, but in some cases, the land shape will change permanently.

From Great Missenden to the Rocky Lane, high land on the edge of hills will have been cut through and other areas raised by building embankments.

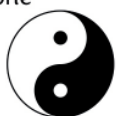
The Wendover Dean viaduct, halfway between Wendover and Great Missenden, will

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be the most conspicuous construction. Others include bridges over HS2 for minor roads, bridleways, and footpaths.

The road coming into Wendover from the south will look different. To get the rail track up to the deck level, it will be on a new embankment over the Rocky Lane underbridge, growing higher as it reaches the viaduct.

The location of the track, noise barriers, and other elements will be slightly higher than they are now. Being on the western side of the road, this should not cut out much light from the road, but it will cast some shadow over the road, especially in winter when the sun is low in the morning.

The trackbed on the Wendover side of the viaduct, where HS2 starts running parallel to the Wendover bypass, will be on an embankment. The noise barrier will be visible from the area of St Mary's church, but an earth rampart and the existing trees will hide much of it. This embankment then gets lower until, as it nears Bacombe Lane, it enters the green tunnel.

EKFB are making good progress on the main structure of the green tunnel. Most of it has been straightforward, but joining the two sides under the restricted height of the Bailey and nearby utilities bridges requires a purpose-made crane (see photo on the right).

Once the final pieces are in place, the backfilling beside and over the green tunnel will be completed. The Bailey bridge won't be removed any time soon: completion of the backfill, re-routing of utilities, and reinstatement of the original road may take another two years or more.

Beyond both ends of the existing prefabricated tunnel, EKFB will construct slightly flared structures with specially positioned apertures to reduce the sound created when trains enter and leave the tunnels. These acoustic portals will remain uncovered, but should be hidden by hidden from view from most angles. Both ends of the tunnel will have access points from the bypass and also low-height buildings to contain machinery and maintenance facilities.

Stoke Mandeville

From the northern (Stoke Mandeville) end of the green tunnel, the track will stay in a cutting until about 400m beyond the new Nash Lee Road bridge. Also in that cutting will be the Stoke Grove auto transformer station. Auto transformers will be sited every few kilometres along the track and regulate the power feed to the railway.

The railway will expand from two to four tracks for about 1km, over the area which was formerly the original village of Stoke Mandeville and St Mary's church. A substation (Nash Lee package) will be sited at the Stoke Road end. This area will be visibly shielded by trees, and between the Old Risborough Road and Marsh Lane, by earthwork banking.

Battles have been lost to HS2 in the past – Jones Wood is a notable case – but we expect EKFB to do a good job of restoring all other disturbed land to a state that it will eventually start to merge in with the natural landscape. The Wendover HS2 Mitigation Action Group, The Chiltern Society, various parish councils, and other groups have kept pressure on HS2 decision-makers over the years.

What happens after EKFB leaves?

When EKFB leaves, only the EK part of the consortium will demobilise. The 'FB' part, Ferrovia Construction and BAM Nuttall joint-venture, will start the next phase of HS2 under a different contract for the railway systems.

They will oversee the design and construction of the HS2 track infrastructure, manage construction logistics, and support the testing and commissioning phase. As the principal contractor, they will be responsible for most aspects of the railway from Old Oak Common to the terminus at Birmingham Curzon Street, including the design and construction of the Infrastructure Maintenance Depot at Calvert and substantial works at the northern end of the line.

The main strategic site for the installation of the railway in our area will be the Infrastructure Maintenance Depot (IMD) at Calvert, north of Aylesbury. It will initially serve as a construction railhead, using its connection to the existing rail network. This opens the possibility of long welded rail and concrete track slabs arriving by rail, rather than by road.

The railway

The sequence of installation will begin with the erection of the structures for the overhead catenary

systems, which will hold the cables supplying electricity to the trains. Once these are up, the track bed will be prepared ready for the placement of the pre-cast slabs that will hold the rails.

Railways have traditionally been laid on to wooden or concrete sleepers, over crushed rock ballast for drainage and to prevent movement during freezing conditions. Like most high-speed railways, HS2 will be using pre-cast slabs, made off site, except in the stations, where concrete will be poured directly.

At this point, the long welded rails will be put in place and joined into a continuous length using an in-situ high temperature process. Once the railway is usable, it will carry construction vehicles that will create troughs for cables. This will be followed by rigging the overhead power cables.

Lastly all the other line-side equipment will be put in place for signalling, control systems, communications and monitoring. Multiple teams will work on the route simultaneously, meaning that the installation of the railway and its associated control, power and communications system, could be installed in less than three years.

From the outside, the railway might look finished by about 2035, except for the absence of regular trains. Every element of the HS2 will need to be tested for safety, operational efficiency and maintainability. These processes could take another three years in total.

Hopefully, by then the communities along the line, the landscape and natural environment will have gone a long way in the process of adapting to the 'new normal'.



A specialist crane was built for the task of lifting the green tunnel segments into place where there is limited headroom. Photo: Ken Darvill

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