



# Route Update Report

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We're encouraging people to read and review this report digitally to reduce the need for unnecessary print. If you'd prefer a printed copy, then this can be ordered free of charge by clicking here: <https://ewr-ws.apsmos.com>

# Route Update Report

# 1





Cambridge station

# Summary of the Route Update Report

**East West Rail (EWR) is a once-in-a-generation opportunity to connect people and businesses in the communities between Oxford, Milton Keynes, Bedford and Cambridge. The railway would open up new journeys, cut travel times, ease congestion on local roads and bring more jobs within reach of people living locally.**

The corridor, which runs from Oxford through Milton Keynes and Bedford to Cambridge, is also an economic artery that makes the UK a global leader in life sciences, technology and innovation, with the potential to create jobs, drive growth and attract investment for the entire country. The region has huge potential but is currently constrained by poor transport connectivity – restricting people’s opportunities and holding back progress. EWR – also termed the Project - would be key in addressing this constraint, unlocking the area’s potential and enabling sustainable growth.

## What is the purpose of this Route Update Report?

This report provides an update on three crucial elements:

### Chapter 7

#### Route Preferences

Section-specific updates on plans for the railway infrastructure and how they've developed since the 2021 public consultation. This includes the preferred route alignment between Bedford and Cambridge and the reasons why this has been chosen.

### Chapter 8

#### Route-wide matters

Issues that have impact across the whole of EWR such as how trains would be powered, how the Project would perform environmentally and some of the ongoing considerations for freight services, embankments and viaducts. It also covers the customer service and operational issues in the 2021 consultation.

### Chapter 9

#### What happens next

The next stages of the Project as we continue to develop our plans. This includes what further decisions are needed before we can finalise our detailed proposals and submit an application for development consent to the Secretary of State.

## What other information is being published?

Alongside this report, we're publishing several other related documents.

These include:

- The 2021 Consultation Feedback Report (CFR), which provides an overview of our response to the feedback raised during this consultation.
- The Economic and Technical Report (ETR), providing information on the technical analysis carried out since the 2021 consultation, as part of the Affordable Connections Project (ACP).
- The 2021 Need to Sell Consultation Feedback Report, which provides an overview of our response to the consultation on the Proposed Need to Sell Property Scheme.
- The guide to the Proposed Need to Sell Property Scheme which, taking into consideration the feedback received during the 2021 consultation, sets out our scheme to support those property owners potentially impacted by EWR.



For a full list of the reports and publications relating to this route update announcement, and to download or to request copies of documents, please go to [eastwestrail.co.uk/routeupdate](https://eastwestrail.co.uk/routeupdate)

## How has the Project developed since the 2021 consultation?

In 2021 the East West Railway Company (EWR Co) consulted with the public on nine potential route alignment options for the proposed railway line between Bedford and Cambridge. We also wanted to understand people's views on the entire route between Oxford and Cambridge.

The quality and volume of feedback was excellent. We received almost 10,000 responses and, within these, over 160,000 individual matters were raised.

Since the consultation closed, we've reviewed this feedback and used it to help guide our developing plans to design a railway that best meets the needs of communities across the entire region.

### To help us do that, we have:

Considered every comment received during the 2021 consultation and carried out further analysis based on what we heard. In this, we've looked again at those areas of most concern to people, including how we best serve Bedford and how the proposed new railway should approach Cambridge.

Carefully considered the cost and affordability issues that underpin a project of this size and complexity, recognising the wider economic climate.

Reviewed in detail the way in which our proposals can best meet the core purpose of East West Rail – connecting people and businesses and unlocking economic growth.

Held further meetings with local residents, community groups, political representatives, local authorities, business leaders, industry peers and other stakeholders to gain an understanding of the widest possible breadth of views.

In the coming months we'll carry out more work on the proposals. We'll then present further details as part of a statutory consultation on the proposals which we expect to take place in the first half of 2024.

## An overview of the Route Preferences

Following a review we've undertaken of the Strategic Case for EWR, we're proposing a revised service pattern of: four trains per hour from Oxford, two of which would progress to Milton Keynes and two would continue to Cambridge; a further two trains per hour travelling between Bedford and Cambridge; plus a service between Bletchley and Bedford. We are exploring whether this service could be replaced by extending one of the Bedford to Cambridge trains to Bletchley to further improve connectivity for communities in the Marston Vale.

In the paragraphs below we provide an update for each part of the route.

### Increasing rail capacity between Oxford and Bicester

Oxford station does not yet provide enough capacity to accommodate the full set of planned EWR services. Network Rail is already planning work at Oxford station both in the short and medium term, and we're working with them to ensure an integrated solution that both supports EWR services and wider growth ambitions in the area. To be sure that EWR could operate should the full Network Rail schemes not be completed as expected, we're also working with them on a number of EWR specific enhancements as a contingency.<sup>1</sup>

At Oxford Parkway and Bicester Village stations, we're exploring whether further work would be needed to accommodate EWR services.

### Maintaining connectivity at London Road in Bicester

London Road level crossing in Bicester is a vital route for people to get into the town centre on foot, by bicycle, public transport and car. Once all EWR services are introduced on the line, the barriers are expected to be down for a significant portion in every hour.

At the 2021 consultation we suggested six concepts, and thanks to the feedback we received and ongoing work, we've been able to rule out five of these. We've yet to confirm a preferred solution as we're continuing to consider options for the crossing that keep the town connected and minimise inconvenience. As part of this, we're considering how the crossing could be safely kept open for local traffic.

For pedestrians and cyclists, we're giving further consideration to either a bridge or underpass close to the existing crossing. For motorists, building a new road bridge in a town centre location is not straightforward, so finding the right location for a new road bridge which enables easy access to the town centre is our priority for the next stage of design work.

### Improving services and reducing disruption along the Marston Vale Line

At the 2021 consultation we explained that it's not possible to introduce a fast and frequent service between Oxford and Cambridge without making a significant investment in the Marston Vale Line (MVL). Also, the current infrastructure has not had significant upgrades for decades, which has affected reliability. The communities it serves have grown considerably over time<sup>2</sup> and lack the reliable connections they need to centres of education and employment in Bedford, Milton Keynes and beyond.

We've looked further at the potential number of passengers that could use stations on the MVL and we believe that three trains per hour (tph) would meet this need, rather than the four to five tph that we set out previously. At the next stage we'll consider all three services together in identifying the best timetable and stopping pattern for communities along the line of the railway.

This change in frequency allows us to maintain the benefits of EWR, and requires less construction work to upgrade the line, which would reduce disruption to local communities and passengers, as well as reducing cost.

We're also suggesting capping the line speed below the 100mph originally proposed, but above the current speed of 60mph. This would reduce disruption in residential areas, but still provide a faster service than currently available.

Combined with our updated view on frequency, the lower line speed means that some level crossings – for example at Woburn Sands and Lidlington – could still meet the appropriate safety standards and so could be retained. This would be one of the many ways we'd maintain local connectivity across and between communities.

The reinstatement of the second track at Fenny Stratford is still required, as is the short length of additional track to dual track the railway in the Bedford St John's area.

### A new station for Bedford Hospital

The railway at Bedford St Johns is unable to accommodate the proposed EWR train services, as there's only one track on this part of the railway and only one platform at Bedford St Johns station<sup>3</sup>, which limits capacity. The track is also on a very tight curve, limiting the train speed to 15mph.

We propose to relocate the existing Bedford St Johns station closer to Bedford Hospital. This would provide a better location that's more convenient for patients, hospital staff and visitors, while also allowing us to improve the alignment of the railway into Bedford station.

### Serving central Bedford and connecting with the wider rail network

Bedford station is already an important transport hub for the region, providing a gateway into the town centre and easy connections to Thameslink and East Midlands Railway (EMR) services on the Midland Main Line (MML). Introducing EWR services would strengthen the hub and support local aspirations<sup>4</sup> for more jobs, prosperity and growth. Improvements to Bedford station would contribute to the regeneration of the area immediately around the station, as well as the centre of Bedford.

We looked again at alignments that pass to the south of the town or re-use parts of the former alignment of the closed Varsity Line, but these alternatives have significant environmental impacts and cause loss of public open space. For example, a route re-using the former Varsity Line in Bedford would pass through Priory Park, which has protected status. Therefore, we've concluded that the preferred alignment from the 2021 consultation, passing through Bedford station and to the north of the town along the MML, remains the best option for Bedford.

We propose to redevelop the station to take account of the required capacity and new infrastructure needed for EWR services and in doing

so help support the local authority's plans for regeneration in the Station Quarter.

After extensive work<sup>5</sup> to test whether we can run services on the existing MML without building additional tracks, we've concluded that we need an additional two tracks north of the existing Bedford station. This is to ensure EWR could provide a reliable service which does not conflict with other trains.

To construct these new tracks, we'd need to acquire some properties near the current railway boundary. At the last consultation we thought we might need to acquire up to 97 residential properties, but we've continued to challenge the design in this area and believe this figure is now reduced by a third, to 65. Even though we've reduced the number of impacted properties we continue to look for ways to further limit the impact of EWR in this area, and we're launching a scheme to help homeowners in this area with immediate effect.

Further information on the Proposed Need to Sell Property Scheme can be found in chapter 8 of this report and full eligibility criteria can be found at: [eastwestrail.co.uk/needtosell](https://eastwestrail.co.uk/needtosell)

## Connecting Bedford and Cambourne

To deliver a service between Bedford and Cambourne, we would need to build a new railway in this section. In the 2021 consultation we presented a range of possible route alignment options for where the railway line could be located.

Using feedback from the last consultation and further studies, we've concluded that one of our emerging preferences in 2021, Alignment 1 (see Figure 15), provides the best option for the majority of its length. We believe the identified environmental impacts can be mitigated and that this alignment would have the least visual impact for local communities. It would also serve a new station at Cambourne North, maximising economic opportunities for the town.

Our analysis also showed us that a station near Tempsford (part of Alignment 9 (see Figure 15) would have greater advantages compared to a station at St Neots South (part of Alignment 1). A Tempsford station would be better located to enable a new community to grow, including opportunities to improve biodiversity and give more people

access to green spaces. There would also be more opportunity at Tempsford to design the railway so that it could be at the centre of the local travel network including good walking, wheeling for those using mobility aids and cycling routes.

Considering the above points, we've concluded that the best option is to follow the route of Alignment 1 for most of the route, but we have an emerging preference for a local variation so we can provide a new station at Tempsford. We refer to this new route as Alignment 1 (Tempsford variant).

## Connecting more people with opportunities in Cambridge

At the last consultation, we expressed our preference for a southern approach into Cambridge, serving the Cambridge Biomedical Campus via the new station at Cambridge South. We've looked again at this approach and compared it with a northern approach and one that serves Cambridge North station.

We've been able to make meaningful improvements to the northern option which we previously considered, particularly in terms of reducing the need for two additional tracks on the existing railway, which would significantly reduce its cost. We've also been able to make material improvements to the impact of the southern approach, by reducing the need for and height of embankments and viaducts through South Cambridgeshire.

We've concluded that, despite the northern approach potentially being a cheaper option than the south, it doesn't deliver the same economic benefits.

Life sciences have grown around the world at an unprecedented rate over the past two decades, and Cambridge Biomedical Campus is a driver for economic growth, creating high value jobs and attracting investment. It brings together that 'triple helix' of the public and private sectors, combined with academia, which characterise the most successful life sciences clusters around the globe. It's also part of a wider life sciences cluster growing south of Cambridge. These circumstances aren't matched in the north.



In addition, there are three times as many jobs within walking distance of Cambridge South station compared to Cambridge North. The existing transport network is also more congested in the south, making it harder for existing employees to get to work, and limiting further job creation.

We considered whether it would be possible to serve Cambridge South station taking the northern approach but concluded that this would reduce the frequency of trains and extend journey times, including likely requiring passengers to change trains, to an unacceptable level. It would make it harder for people living in Bedford, the Marston Vale or near St Neots/Tempsford to access the jobs at the Biomedical Campus – and therefore it wouldn't deliver the economic opportunity that underpins the case for EWR.

Having reviewed all the consultation feedback and following this extensive further study our conclusion remains that approaching Cambridge from the south is the best solution for the city, the region and – given the global opportunity at the Biomedical Campus – for the whole of the UK too. Approaching Cambridge from the south also means that EWR does not take up the existing capacity on the rail network north of the city, leaving this option available for others in the future.

## An overview of route-wide matters

In the paragraphs below we provide an update on matters which have influenced our thinking across the whole route.

### Reducing the impact of embankments and viaducts

During the 2021 consultation, we presented outline details about where the new railway might need to be 'on embankment/viaduct' along its southern approach to Cambridge and presented the 'reasonable worst case' scenario. Our work since the consultation has helped us to identify potential opportunities to reduce or remove viaducts and embankments. We believe we could remove or reduce the height of approximately half the embankments or viaducts (by length) compared to what was shown at the consultation. This work will be developed further and we'll provide details for comment at the statutory consultation.

### Powering the trains

We're focused on delivering a net zero carbon railway. We're continuing to evaluate a range of technological solutions for powering our trains and we'll share more information at the statutory consultation.

### Considering freight

EWR's primary purpose is to support economic growth as a passenger railway – to connect lives and unlock opportunities. Alongside this, and noting that some freight already runs on sections of our route, we're considering whether EWR might also support new freight opportunities as part of delivering wider economic growth. These opportunities would need to be balanced against the required investment and also the impact to local communities. When it opens, our railway is likely to enable up to two additional freight trains per day in each direction from Oxford to Bletchley, and another two from Cambridge to Oxford. This would take nearly 70,000 HGV journeys off the road each year, and the volume of additional freight trains would be unlikely to exceed this level without significant further investment, both on EWR and elsewhere on the rail network.

## What are the next steps?

In the weeks immediately following this announcement, we'll be holding public information events and meeting stakeholders across the route, to answer questions anyone may have about the detail of the published documents or any other aspect of EWR. You can find out more information about public events at [communityhub.eastwestrail.co.uk](https://communityhub.eastwestrail.co.uk)

Our team will continue to work on designs, and we'll present the next stage of proposals at the statutory consultation which we expect to take place in the first half of 2024. This consultation will be carried out in accordance with Section 42 of the Planning Act 2008. Guidance on the scope of this consultation can be found on the Planning Inspectorate's website: [infrastructure.planninginspectorate.gov.uk](https://infrastructure.planninginspectorate.gov.uk)

We'll publicise the statutory consultation widely and encourage anyone with an interest in EWR to take part in this exercise, which will provide detail of the proposals currently being developed for the preferred route alignment and remaining sections of the route between Oxford and Cambridge. It'll also provide more detail on the specific technical and operational proposals, their associated environmental impacts, and how these would be mitigated, as well as the Project's land requirements.

Once we've considered all views on these proposals, we intend to prepare a Development Consent Order application in accordance with the requirements of the Planning Act 2008. The proposals in the application will be subject to a full assessment of potential impacts on the environment and sensitive habitats to ensure these are properly understood and that suitable mitigation measures are proposed to be put in place.



Millennium Park Nature Reserve, Marston Moretaine

### Section Appendix

<sup>1</sup> Oxford Rail Corridor Study <https://www.networkrail.co.uk/running-the-railway/our-routes/western/oxfordshire/>

Network Rail's Oxford Corridor Phase 2 scheme - <https://www.networkrail.co.uk/running-the-railway/our-routes/western/oxfordshire/oxford-corridor-phase-2/>

<sup>2</sup> ONS Towns and Cities growth index <https://www.ons.gov.uk/visualisations/dvc646/map2/index.html>

<sup>3</sup> EWR source: <https://eastwestrail.co.uk/the-project/bletchley-to-bedford/overview-and-status>

<sup>4</sup> Bedford Masterplan 2018 [https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/Corby/core-documents/nr\\_55.pdf](https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/Corby/core-documents/nr_55.pdf)

<sup>5</sup> Appendix 12, Economic and Technical Report Appendices [www.eastwestrail.co.uk/economicandtechnicalreport-appendices](https://www.eastwestrail.co.uk/economicandtechnicalreport-appendices)

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# Introduction



# 2

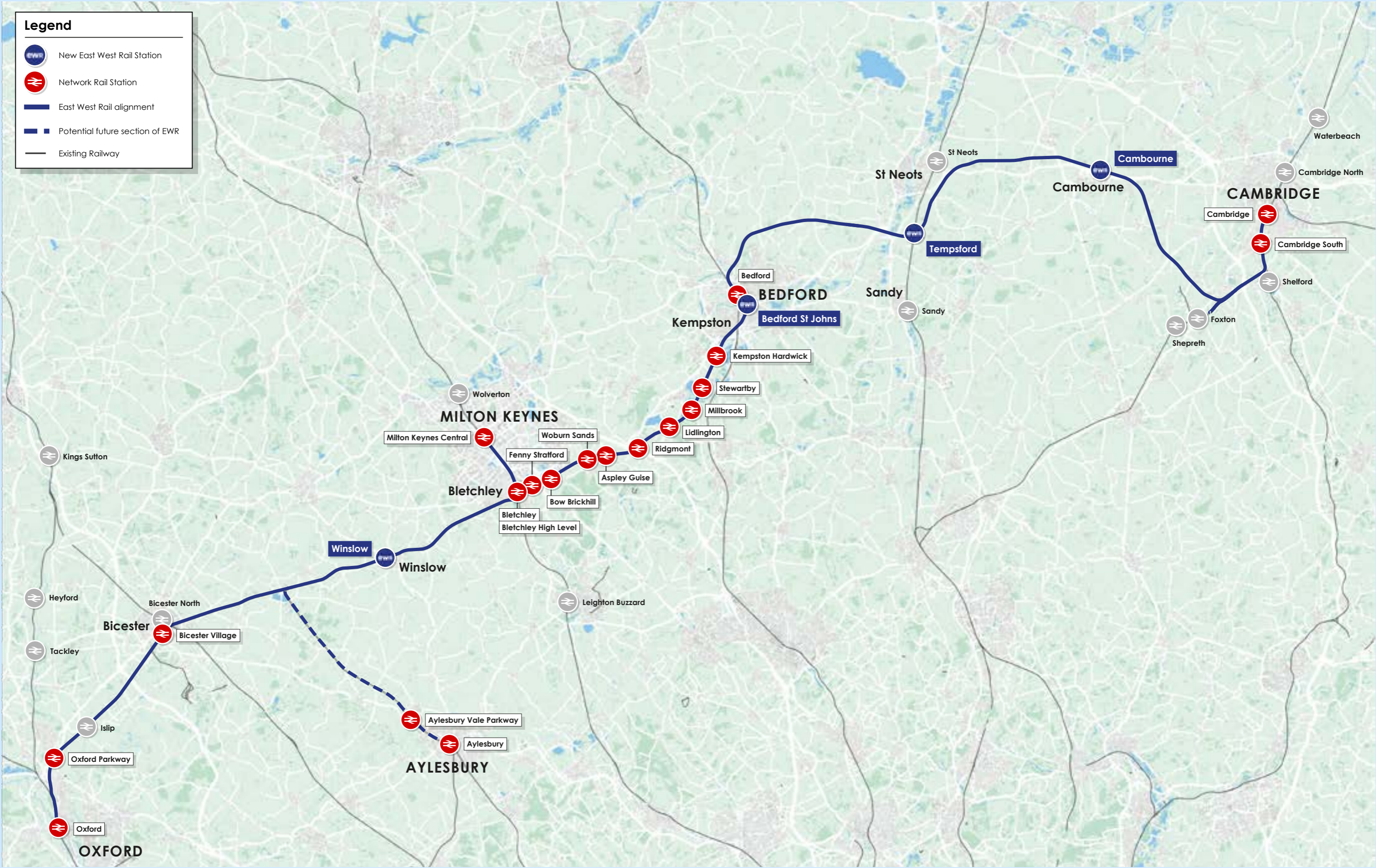


Figure 1 - Map of East West Rail preferred route

## What is East West Rail?

**East West Rail (EWR) is a new transport link connecting communities from Oxford, Milton Keynes, Bedford and Cambridge. East West Rail would unlock economic growth, and make it easier, cheaper and greener to get around the region and beyond by:**

- Bringing back into use a section of railway between **Bicester and Bletchley**. Once open in 2025, communities would benefit from regular services running from Oxford to Milton Keynes.
- Refurbishing the existing railway between **Bletchley and Bedford** – known as the Marston Vale Line – and improving how the stations along this part of the route can best serve their communities.
- Building a new rail link between **Bedford and Cambridge** to bring faster and better long-term connectivity to these areas, as well as building two new stations at Tempsford and Cambourne.

### **In addition:**

- An existing section of railway between **Oxford and Bicester** has already been upgraded, and this work was completed in 2016. By making improvements to existing stations to make sure they're fit for the future, this would increase customer capacity and provide people living, working and visiting the area with fast and reliable train services.

## The history of EWR

**The original plans for EWR were developed by the Department for Transport (DfT), Network Rail and the East West Rail Alliance following a major upgrade of the existing railway line from Oxford to Bicester which was completed in December 2016.**

In 2018 the DfT created the East West Railway Company (EWR Co) to develop the East West Rail project and plan a railway with customers and communities at its core.

Our job at EWR Co is to bring fresh thinking to the next stages of the Project. We're responsible for planning the section of EWR between Bletchley and Cambridge and taking a route-wide look all the way from Oxford to Cambridge and beyond. We're also responsible for overseeing the East West Rail Alliance as it continues to deliver work between Bicester and Bletchley.

Trains continue to run on the section of the line between Oxford and Bicester, though further work is required to enable EWR services to run alongside those already in place.

In this report, we explain the outcomes of the work we've been doing since the close of the 2021 consultation. In that time, we've taken all of the feedback received during the consultation into consideration, carried out a review of the strategic need for the Project, and considered whether the benefits could be delivered in a more affordable way. We've also continued to undertake further environmental and technical studies to better understand the potential effects of our plans. This has allowed us to update our proposals for the whole route between Oxford and Cambridge, including an update on the new section of railway required between Bedford and Cambridge. Over the following pages we explain the reasons for the decisions we've made and give details of what happens next.

## The Strategic Case for EWR

**EWR would connect both people and businesses in the towns and villages between Oxford, Milton Keynes, Bedford and Cambridge. It would open up new journeys, cutting travel times, easing congestion on local roads and bringing more jobs within reach of local people.**

This new railway connection is central to the UK's economic recovery, enabling long term sustainable growth. The region that runs from Oxford through Milton Keynes to Cambridge is the economic artery that makes the UK a global leader in life sciences, technology and innovation which creates jobs and attracts investment for the whole country. It's an area of huge potential – but the area is held back by poor transport connectivity that restricts people's opportunities and constrains growth, risking the UK's long-term international competitiveness.

The Economist<sup>6</sup> singled out the region as the top priority for investment in the UK. Capitalising on its world-leading universities, the region played a pivotal role in creating the world's first Covid-19 vaccine. It's also pioneering new technologies in energy, aerospace and automotive, as well as the artificial intelligence, agri-tech and fin-tech industries. The area has the potential to turbocharge the UK economy, adding £100+ billion extra GVA by 2050<sup>7</sup>, and securing the UK's future as a world leader in science and technology. Its track record also means it's a source of resilience for the UK economy, making us better able to withstand economic shocks when they occur.

Oxford, Cambridge and Milton Keynes have delivered impressive growth in recent years<sup>8</sup>, exceeding most forecasts. However, whilst they are top performers on both growth and productivity by UK standards, there remains significant potential across the region yet to be unlocked.

We're developing a formal Business Case in line with Government guidance which will present the evidence that has shaped the Strategic Case for the railway. While the Business Case is still in development and won't be completed until we've obtained the required consent for the Project, our work to date has emphasised how the case for EWR is not focused solely on Oxford and Cambridge, but that the areas in between are key to deliver the Government's aspirations for economic growth too. Milton Keynes, for example, is a key location for new business formation, has strengths in logistics and finance, and is in the top eight cities for start-ups in the country<sup>9</sup>, top 11 for patent applications and top five for concentration of high tech and digital SMEs<sup>10</sup>. Bedford has attractive property prices<sup>11</sup> and a highly educated labour force, though it also suffers from pockets of deprivation<sup>12</sup>. It has plans to redevelop the town centre<sup>13</sup>, making the area more attractive to businesses and workers.

As it stands, the future growth of Oxford and Cambridge is very constrained - businesses need access to a wider pool of talent and the space to expand.

A key reason for the constraint is that journeys from places such as Milton Keynes, Bedford and Cambourne to Oxford and Cambridge can take longer than they should because of congested roads and a lack of public transport.

Without good connectivity, the economic growth that's happening in Oxford, Cambridge and Milton Keynes isn't able to spread across the region, whether that's through people being unable to commute, or businesses being unable to expand to new locations.

East West Rail is needed because it would unlock constraints in Oxford and Cambridge, as well as opening up opportunities and spreading prosperity elsewhere along the line of route.

## The benefits of investing in EWR

**The East West Rail Project is designed to deliver positive outcomes for communities, businesses, the environment and the UK economy. In summary, EWR would:**

### Cut travel times and bring more jobs within reach of local people

East to west public transport is currently inadequate. For instance, it can take nearly an hour to travel just nine miles by car from Cambourne to the centre of Cambridge in the morning rush hour, or around 50 minutes by bus. Travelling with EWR would reduce this to just 15 minutes. The journey from Bedford to Cambridge would be reduced from an approximate 75 minute journey by car or 90 minutes by bus, to just 35 minutes by train. EWR would considerably expand the number of people within commuting distance of high quality jobs in the region. The region supports over three million jobs<sup>14</sup> overall and by joining up the currently siloed individual jobs markets, whether in logistics in Milton Keynes, agri-tech in Central Bedfordshire, or life sciences in Oxford and Cambridge, EWR would make all these jobs more easily accessible for everyone living in the region.

### Open up new areas for businesses to grow

Growth in Oxford and Cambridge is constrained. Connecting them with the fast growing and less constrained towns and cities in between, such as Milton Keynes and Bedford, would make these areas more appealing to people who want to start and grow all types of businesses. It would help attract and retain the best talent in the region and bring businesses closer to their supply chains, workers, research sectors and other sectors, creating wealth and jobs for an area of over 3.95 million people<sup>15</sup>.

### Improve quality of life

Affordable, reliable and faster public transport would mean less time spent in traffic and less air pollution resulting from congestion, improving quality of life for local people. It would also mean people can choose to live in a more affordable area within an easy commute,

rather than having to pay premium house prices that often involve long commutes. This is particularly important for key workers. Housing costs in Oxford and Cambridge are the highest in the country outside London, which makes it more difficult for businesses to attract talent. In fact, in 2022, house prices in Cambridge peaked at 13.3 times the local average earnings, higher than London's 12.5 and the national average of 8.13<sup>16</sup>. The region does have more affordable areas, such as Bedford and Milton Keynes, but in order for people to be able to take advantage of this, connectivity must be improved.

### Ease congestion

By offering rail travel as an alternative, EWR would help to ease traffic on local roads. It would also give people more choice, offering more sustainable ways to travel and opportunities to relax or work while travelling.

### Open up new journeys

EWR would offer new journeys to local communities because of its key intersections with most of the UK's main rail lines – including the East Coast Main Line, Midland Main Line, West Anglia Main Line and West Coast Main Line. With easy interchange, people from across the route could get to international airports at Luton and Stansted, or visit cities across the UK such as Birmingham, Bristol, Manchester, Derby and Leeds, and enjoy multiple connections into London.

### Provide a greener way to travel

Travelling by rail is more environmentally friendly than travelling by road. EWR would help take cars and lorries off local roads, resulting in cleaner air, safer roads and less congestion. EWR would be a new, environmentally sustainable way to travel across the region, and the aim is to become a net zero carbon railway.

## Unlock inward investment locally, and for the benefit of the whole UK

The region already adds more than £110billion<sup>17</sup> to the UK's economy every year. Both Oxford and Cambridge are in the top 25 cities around the world for venture capital investment<sup>18</sup>. Research<sup>19</sup> <sup>20</sup> carried out in this part of the UK is creating high value jobs elsewhere in the country too. As EWR unlocks the constraints on growth and enables world leading sectors to expand, it would attract increased investment locally, which would be felt not just in Oxford, Milton Keynes, Bedford and Cambridge but across the country too.

## Provide employment

Delivering the line between Oxford and Bletchley/Milton Keynes is currently employing around 1,000 people and supports a further 500 in the wider supply chain, contributing an estimated £1.1billion into the local economy in 2021/22. For later stages of the EWR, this could grow to over 8,000 jobs.



Support for the Project is high, with **over 70% of local residents surveyed supporting the development of a new transport connection between Oxford and Cambridge**. There is also strong support for the Project from businesses and universities in the area, including AstraZeneca, Oxford University Science Park, the University of Cambridge, Confederation of British Industry and Advance Research Clusters, as well as Local Enterprise Partnerships across the route.

In the final weeks before publication, the proposals are subject to a cross-Government approval process. This is a standard step when making recommendations or decisions of national strategic, financial or operational importance – ensuring the final positions contained within them are agreed across each government department.

## Section Appendix

<sup>6</sup> Zanny Milton Beddoes (Editor of The Economist) speaking on: BBC (2022). How to Boost Britain's Economic Growth. Best of Today. Radio 4

<sup>7</sup> When in 2021 values uplifted from £85bn (2011 prices) presented in the NIC report using the HMT GDP deflator (from Jan 23 TAG Databook). National Infrastructure Commission (2017). Partnering for Prosperity: A new deal for the Cambridge-Milton Keynes-Oxford Arc. <https://nic.org.uk/app/uploads/Partnering-for-Prosperity.pdf>

<sup>8</sup> Government's OxCam Ambition: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/799993/OxCam\\_Arc\\_Ambition.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/799993/OxCam_Arc_Ambition.pdf)

<sup>9</sup> 66.43 start-ups per 100,000 people in 2020. Centre for Cities (2020). Cities Data Tool. Business Start-ups and Closures (per 10,000 population) 2020. ONS, Business Demography. ONS, Population Estimates. <https://www.centreforcities.org/data-tool>.

<sup>10</sup> Bidwells (2022). Radical Capital. Supercharge the Arc.

<sup>11</sup> Jan 23 average property price approximately £50k higher than U.K. Although, it's about average for the East of England region. <https://landregistry.data.gov.uk/app/ukhpi/browse?from=2022-01-01&location=http%3A%2F%2Flandregistry.data.gov.uk%2Fid%2Fregion%2Fbedford&to=2023-01-01&lang=en>

<sup>12</sup> Most LSOAs of Bedford rank above a "7" in the deprivation index (not very deprived) – however, some areas are 2s and 3s. <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019>

<sup>13</sup> Bedford Masterplan Report 2018 [https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/Corby/core-documents/nr\\_55.pdf](https://gat04-live-1517c8a4486c41609369c68f30c8-aa81074.divio-media.org/Corby/core-documents/nr_55.pdf)

<sup>14</sup> NIC: Partnering for Prosperity (2017) <https://nic.org.uk/app/uploads/Partnering-for-Prosperity.pdf>

<sup>15</sup> Census 2021 data <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationandhouseholdestimatesenglandandwalescensus2021>

<sup>16</sup> ONS - Housing affordability <https://www.ons.gov.uk/peoplepopulationandcommunity/housing/bulletins/housingaffordabilityinenglandandwales/2022#housing-affordability-in-england-and-in-wales>

<sup>17</sup> Office for National Statistics (2021). Regional gross domestic product: Enterprise regions. Gross Domestic Product (GDP) chained volume measures (CVM) annual growth rates.

<sup>18</sup> [Venture capital funding by city 2019 PowerPoint Presentation \(dealroom.co\)](https://www.dealroom.co.uk/ventures/venture-capital-funding-by-city-2019)

<sup>19</sup> [Oxford University's economic impact | University of Oxford](https://www.ox.ac.uk/economic-impact)

<sup>20</sup> [Cambridge University's economic impact](https://www.cam.ac.uk/economic-impact)



# Your response to the 2021 consultation

# 3



# Your response to the 2021 consultation

**In 2021 we undertook a 10-week consultation on our emerging proposals for East West Rail. This was the second opportunity for people to share their thoughts on our infrastructure proposals and we also sought feedback on a number of topics related to the operation of the railway and the customer experience.**

To enable people to focus on the area of the railway that mattered most to them the consultation was broken down into six geographical sections. Broadly, these were:

- **Oxford to Bicester**
- **Bletchley and the Marston Vale Line**
- **Bedford**
- **Clapham Green to The Eversdens**
- **Harlton to Hauxton**
- **The Shelfords to Cambridge station**

In addition, we asked a specific question about our preference for EWR to approach Cambridge from the south and set out information about why a northern route into the city was not our preference.

In parallel, we also ran a separate 10-week consultation on proposals for a non-statutory property purchase scheme - the Proposed Need to Sell Property Scheme. The scheme could support eligible property owners whose ability to sell their property is affected by the publication of proposals for East West Rail. You can read our response to your feedback in the NTS Consultation Feedback Report, which can be found at [eastwestrail.co.uk/needtosell](https://eastwestrail.co.uk/needtosell).

The 2021 consultation was delivered with the backdrop of the Covid-19 pandemic, which regrettably restricted opportunities for face-to-face engagement. Therefore, to ensure that information was available as widely as possible and people could participate and engage flexibly, we offered many innovative ways for people to take part, including:

- **Virtual consultation rooms** – these provided detailed information on each section of the consultation including access to all consultation documents and maps.
- **Online public events** – we held 18 online events for communities from Oxford to Cambridge.
- **Live chat events** – we held a series of 16, two-hour live chat sessions via the virtual consultation rooms so that participants could discuss key topics directly with members of the Project team.
- **Dedicated phone line** – a telephone line was available throughout the consultation period to enable people to speak to the Project team.

We also sent hard copies of the documents to local elected representatives from local parish and ward councillors, to the MPs across the route, as well as to anyone else who requested them.



Figure 2 - Participation in the 2021 consultation

We received almost 10,000 responses to the 2021 consultation. The consultation generated over 160,000 individual comments, all of which we've read and considered.

↗ A summary of the feedback received during the consultation, our responses to the matters that were raised and how these have been taken into consideration by the Project team can be found in the Consultation Feedback Report [eastwestrail.co.uk/consultationfeedbackreport](http://eastwestrail.co.uk/consultationfeedbackreport)

### Directly affected land and property owners

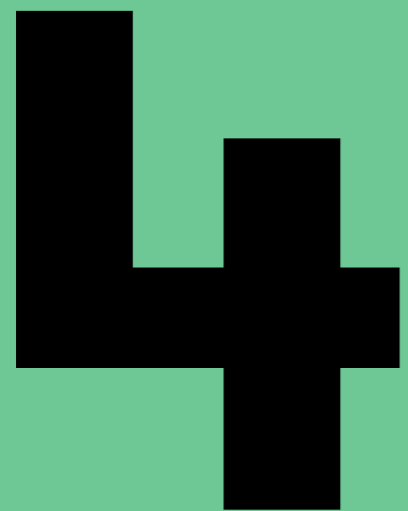
Immediately prior to the start of the consultation we sent an information pack to all owners of land or property who we identified might be directly affected by our proposals. This included details of our consultation on the Proposed Need to Sell Property Scheme. We wrote to all landowners to offer meetings and followed up. We've ensured that we have been available to speak to landowners should they want to meet with us.

During the consultation we had online meetings or telephone conversations with over 200 potentially directly affected land and property owners and their agents or advisors, to explain the potential implications of our proposals, discuss the next steps in the Project's development and answer any questions.



AstraZeneca, Cambridge Biomedical Campus

# Engagement since the consultation



# Engagement since the consultation

**We've continued to have conversations and build relationships with our stakeholders following the 2021 consultation. Listening to and understanding the views of people living and working in the communities EWR would serve is fundamental to the way the new rail connection is designed, built and operated. As we moved out of Covid-19 restrictions, we were able to provide people with opportunities to meet with us in person as well as continuing with online engagement.**

## The local community

In spring 2022 we contacted over 450 homeowners and occupiers in the area north of Bedford station to offer one-to-one meetings. A total of 45 meetings took place.

Between May and October 2022, we hosted ten face-to-face public information drop-in events across the route. Nearly 1,500 people attended the events, which provided an opportunity for communities to speak to members of the Project team. They also helped us to better understand people's aspirations and concerns about our proposals.

## Local representatives

We've delivered quarterly meetings with 15 Local Representatives Groups (LRG) spanning the whole route. The groups include county, town and parish councillors, and representatives from EWR Co.

Since the LRGs were launched in February 2022, over 65 meetings have taken place. These are open forums for discussion, with presentations on key topics from subject matter experts from across EWR Co and offer another way for communities to connect with our team through their locally elected representatives. People can stay up to date with what's happening in each group by visiting the Community Hub on the EWR website: [communityhub.eastwestrail.co.uk](https://communityhub.eastwestrail.co.uk)

## Businesses, industry and academia

Since the close of the 2021 consultation, we've met with nearly 50 different stakeholders within business, industry and academia. This has helped us grow our understanding of the challenges they face and learn how EWR could best support their organisations and their wider industries.

## Political stakeholders, statutory bodies and local authorities

We've met with 17 MPs and elected members and officers representing 13 local authorities across the route. This engagement has included site visits where our team members walked parts of the route to hear first-hand from local MPs and councillors. These meetings were arranged to gain a more in-depth understanding of the views of the communities they represent and to discuss any queries raised on behalf of their constituents.

We've also met with six statutory bodies consisting of the Environment Agency (two meetings), National Highways (30 meetings), Natural England (15 meetings), Historic England (three meetings), the RSPB (two meetings) and the Bedfordshire Local Nature Partnership (one meeting).



Any new suggestions and comments received during our engagement since the close of the consultation have been taken into consideration by the Project team. Further information can be found in Chapter 13 of the 2021 Consultation Feedback Report. [eastwestrail.co.uk/consultationfeedbackreport](https://eastwestrail.co.uk/consultationfeedbackreport)

# The Affordable Connections Project: an explanation

# 5



# The Affordable Connections Project: an explanation

**In December 2021, the Department for Transport (DfT) and EWR Co agreed that we should set up the Affordable Connections Project (ACP). This was driven by two factors. First, a drive for lower costs, reflecting the impacts of Covid-19; and secondly a focus on ensuring the benefits could be supported through local leadership.**

The ACP therefore considered whether there remained a strategic case for investing in EWR and if there were solutions which could deliver the majority of the expected benefits of EWR at a lower capital cost to the taxpayer.

This section provides a summary of the ACP. Please note, alongside this Route Update Report, we've also published the Economic and Technical Report (ETR) detailing results of the ACP. You can view this document and the full list of the other information being published, download documents, or request copies at [eastwestrail.co.uk/routeupdate](https://eastwestrail.co.uk/routeupdate)

From the outset of the ACP, we took a fresh look at the potential options for connecting Oxford, Milton Keynes, Bedford and Cambridge. In the 2021 consultation, our proposals were based on parameters set out in the DfT Sponsor's Requirements and EWR Co's response to them, known as the Project Wide Output Specification. Together, these formed the Project Objectives. As part of the ACP,

relaxed requirements these Project Objectives, to ensure we considered a wide range of alternatives. In fact, our initial long-list exercise resulted in a total of over 170 ACP options. We then undertook a sifting process, considering the credibility, expected cost, transport effectiveness and attractiveness to passengers of each option. We derived a shortlist which informed the identification of 10 option families for analysis. The option families reflected both: (a) a range of transport modes, from heavy rail to light rail to guided bus and an emerging proposal for an Autonomous Very Rapid Transit (AVRT) system; and (b) a series of routes, from our emerging preferred alignments in the 2021 consultation, to different approaches at Bedford and Cambridge, as well as revisiting the alignment of the original Varsity railway.

In parallel with developing our option families, we also tested the strategic need for the Project. We undertook a Theory of Change analysis alongside traditional transport appraisal modelling for the entire Oxford to Cambridge area. Our work identified where focussing investment could deliver especially strong benefits. This highlighted that Cambridge in particular has been growing rapidly, and given global trends in the sectors where it has strengths (such as life sciences) this momentum could be expected to continue. We identified that 80,000 new jobs could be created in Cambridge by 2050, an increase of over 40% and worth £4 billion to the Cambridge economy based up GVA per worker<sup>21</sup>. However, we also identified that this growth was likely to be constrained as there was insufficient space for businesses to expand to create these jobs, and there was insufficient access to the labour market to fill these roles.

We're continuing to invest in improvements to the railway between Oxford and Bletchley and this report also sets out how we'd enhance that route yet further. However, there are no existing rail links between Cambridge and the centre of the Oxford to Cambridge area, which also assisted us in focussing our study.

In Cambridge, housing is already expensive and there are limited opportunities to expand the city, as it's surrounded by green belt. In addition, existing transport connections are poor and already congested, especially to the west, which means that the city's catchment area to access skilled workers is limited. In short, our Theory of Change began by setting out that, without action, the Cambridge economy was going to overheat, growth would stall, and

given how internationally competitive these sectors are, businesses and investment would likely head to competitor locations abroad. We identified that a similar issue existed in Oxford.

Our Theory of Change then established that to solve this problem, and to release these constraints on growth, new transport links were necessary to allow businesses to expand geographically, spreading new jobs and prosperity to a wider catchment area. Increasing the number of people within easy reach of the high value jobs being created in Cambridge, as well as other established centres in the region such as Oxford and Milton Keynes, will be critical to unlocking the region's potential for transformational economic growth, capitalising on existing strengths in knowledge-based industries.

We then used our Theory of Change to understand the reach and capacity needed from a new transport link, alongside the potential for it to take advantage of new communities, in order to be able to sustain the growth opportunity we'd identified. With our Theory of Change, we also identified the related benefits of a new transport link in terms of higher productivity, delivered through reduced living costs and increased agglomeration, which drives innovation and efficiencies via increased business collaboration and shared labour pools. The attractiveness of the area to top talent and investors can also be increased through better connectivity, expanding the number and range of opportunities within easy reach of those who live there.

We applied our Theory of Change outputs to assess the option families that we had identified. We found that only a heavy railway could provide the necessary capacity and travel times to expand catchments that would unlock growth to a sufficient level, even if it was a more expensive transport mode. It should be noted that through the ACP, we also identified savings to reduce the cost of the railway and re-examined route alignments that appeared to be cheaper.

At this stage in the ACP, we had reached a short list of four heavy rail options – centred around our preferred alignment from the 2021 consultation, but with two different approach options at both Bedford and Cambridge. These included alternatives that were also reflected in the feedback we received during the 2021 consultation. To that end, we agreed with the DfT an updated ACP objective to consider the option families in light of our established Assessment Factors, so far as appropriate. This helped to ensure consideration

of the full range of factors – including the environment for example – and to derive a single preferred option. That analysis is set out in more detail in the Economic and Technical Report [eastwestrail.co.uk/economicandtechnicalreport](http://eastwestrail.co.uk/economicandtechnicalreport), as well as summarised in the Route Preference section of this report, which can be found on page 52.

A key insight from our work on Theory of Change and through the ACP allowed us to establish an updated service pattern for EWR, what we've termed the 4-3-4 pattern, which underpins our preferences for infrastructure along the route. This is four trains per hour from Oxford, two of which would progress to Milton Keynes and two would continue to Cambridge; a further two trains per hour, travelling between Bedford and Cambridge; plus a service between Bletchley and Bedford, which could be replaced by extending one of the Bedford-Cambridge trains to Bletchley to further improve connectivity for the Marston Vale. The total number of trains needed between Bedford and Cambridge to meet the predictions in the Theory of Change was determined to be four each hour – two originating in Oxford and two originating in Bedford.

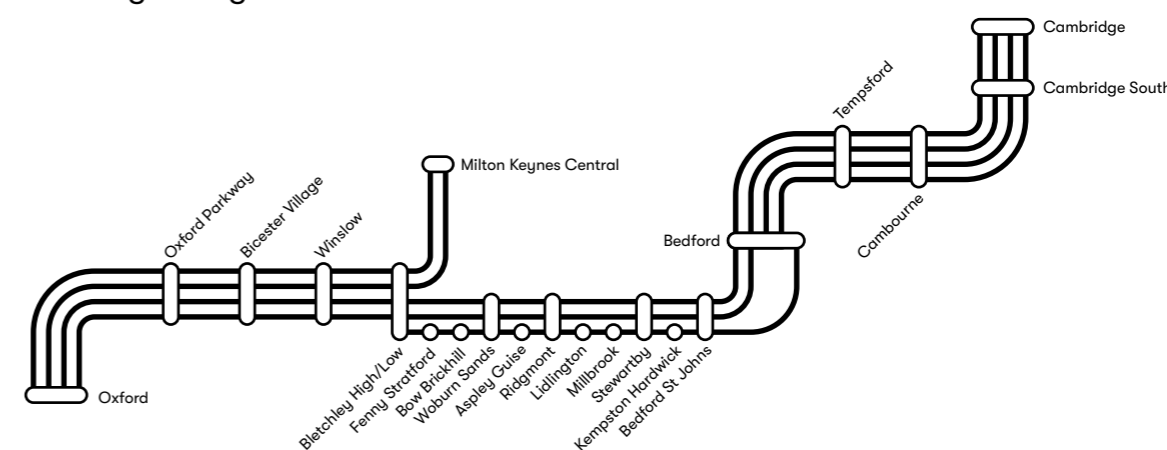


Figure 3 - The proposed train service pattern showing a south approach to Cambridge

Overall, the ACP concluded that there remains a compelling strategic case for EWR. Indeed, it has strengthened the case and demonstrated that there is scope to deliver the transformational change that the Project promises at a lower cost than that presented at the 2021 consultation.

## Section Appendix

<sup>21</sup> See page 87 of Economic and Technical Report [eastwestrail.co.uk/economicandtechnicalreport](http://eastwestrail.co.uk/economicandtechnicalreport)



# Updates to our proposals

6





# Updates to our proposals

**This section explains the decisions we've made about the route and the service that EWR would deliver. We've made some changes to the proposals we presented in 2021 and these are outlined below.**

**The updates take account of:**

- Feedback received during and since the 2021 consultation.
- Further technical and environmental work.
- The analysis undertaken as part of the Affordable Connections Project.

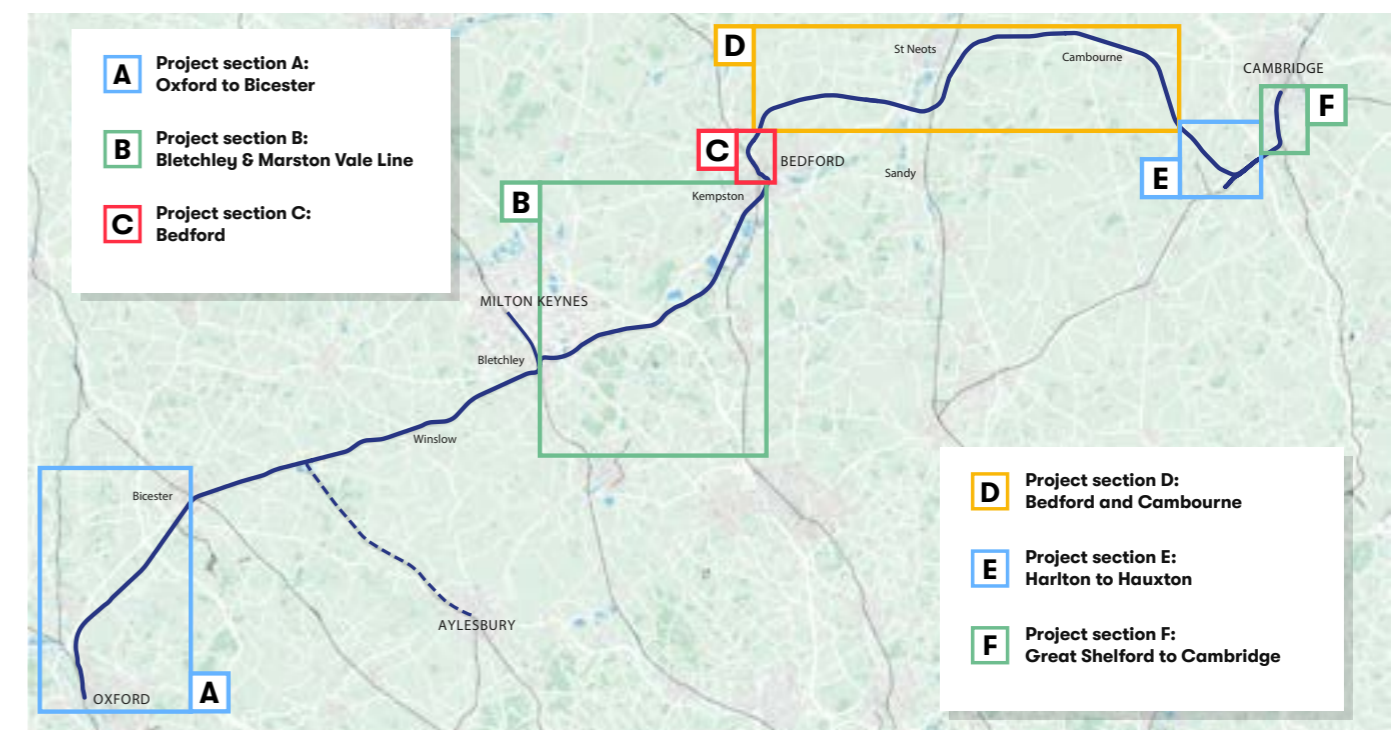


Figure 4 - Map of full route broken into sections and where information on these can be found within this report

# Route Preferences

# 7





Tracklaying in progress, Bicester to Bletchley

# Route Preferences

## Oxford station

Work is already being carried out at Oxford station by Network Rail, but further work would be needed to enable the full EWR service. We'll present additional information about the particular works we propose to undertake at the statutory consultation which we expect to take place in the first half of 2024.

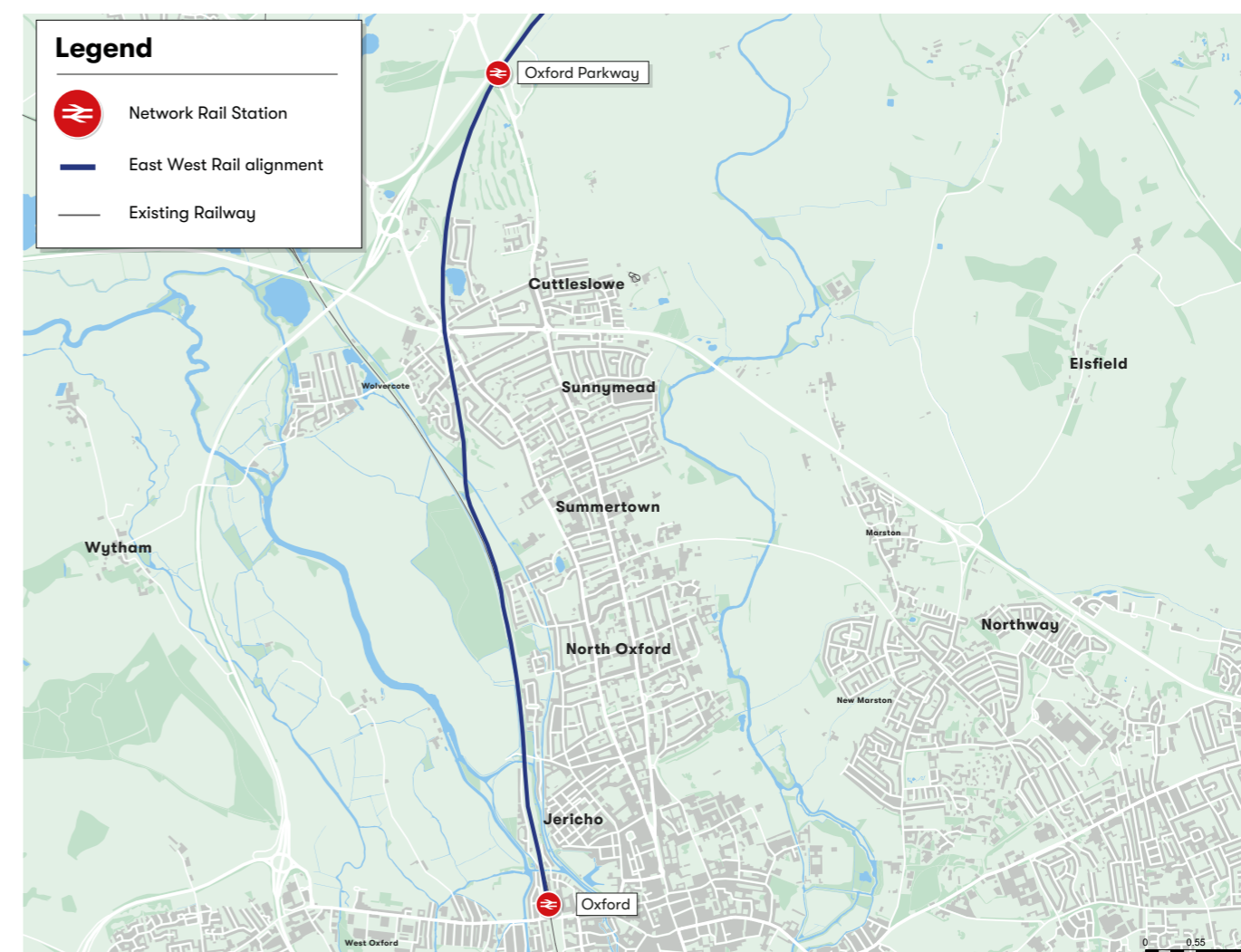


Figure 5 - Map of existing route from Oxford station to Oxford Parkway

A major upgrade of the existing railway line from Oxford to Bicester was completed in December 2016<sup>22</sup>, and services are already running on this section of the line (operated by Chiltern Railways). However, further work would be needed to enable the full EWR service of four trains per hour, which are required to meet projected passenger numbers. This would better connect businesses and academia in Oxford with their current and future workforce and help people in Oxford to access opportunities across the region.

To increase capacity in the area, improvements would need to be made at and around Oxford station. The 2021 consultation included proposed improvements to Oxford station including the addition of new platforms to increase the number of trains that could use the station; new infrastructure south of the station and improvements to the station itself.

A new platform and entrance on the western side of the station are already being delivered as part of Network Rail’s Oxford Corridor Phase 2 scheme<sup>23</sup>. These would improve capacity, accessibility and

passenger experience for all those using the station and would also help to accommodate the increase in passengers generated by EWR.

Network Rail is also currently considering proposals to reopen the Cowley Branch Line<sup>24</sup> to passenger services. This scheme would enable additional capacity for trains to change direction (turn back) south of Oxford station and would also facilitate EWR services. However, should the Cowley scheme not progress or not be possible to integrate in the required timescales for our Project, we would need to develop a turn back facility south of Oxford, which would be complementary to the Cowley proposals.

Further trackwork within the railway corridor may also be required between Oxford station and Oxford North Junction to help increase capacity on this section of line, and we’re working with Network Rail to better understand this. We will provide further information on our proposals for Oxford station at the statutory consultation, especially taking account of the progress that Network Rail is making with its own proposals. →

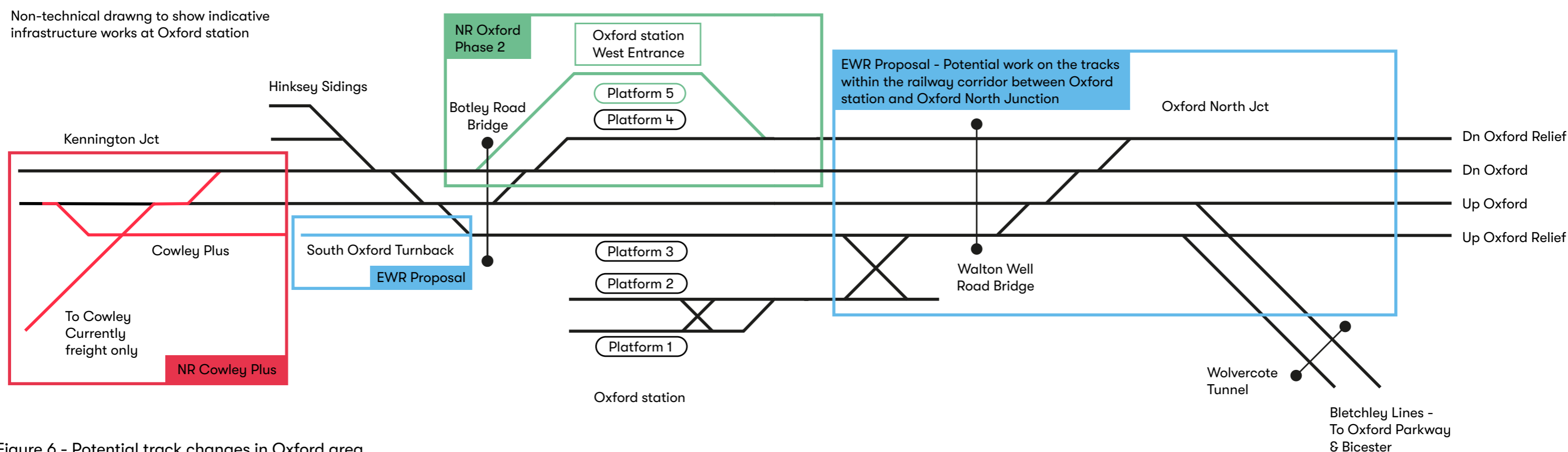


Figure 6 - Potential track changes in Oxford area

## Oxford to Bletchley, including Bicester and the London Road level crossing

**Work to construct the railway between Bicester and Bletchley is underway and DfT is currently in the process of procuring an operator to run these services from 2025.**

Potential improvements to Oxford Parkway and Bicester Village stations are still being considered. We're also conducting further work to identify the best option for London Road level crossing in Bicester. We'll decide upon our proposals and consult upon them prior to any application for powers to construct the new rail link.

We're considering what work is required at Oxford Parkway and Bicester Village stations to serve the additional passengers resulting from the new EWR services. One of the main considerations is how to improve access to both stations via more sustainable forms of transport as this would affect any need for the expansion of the existing parking at these stations.

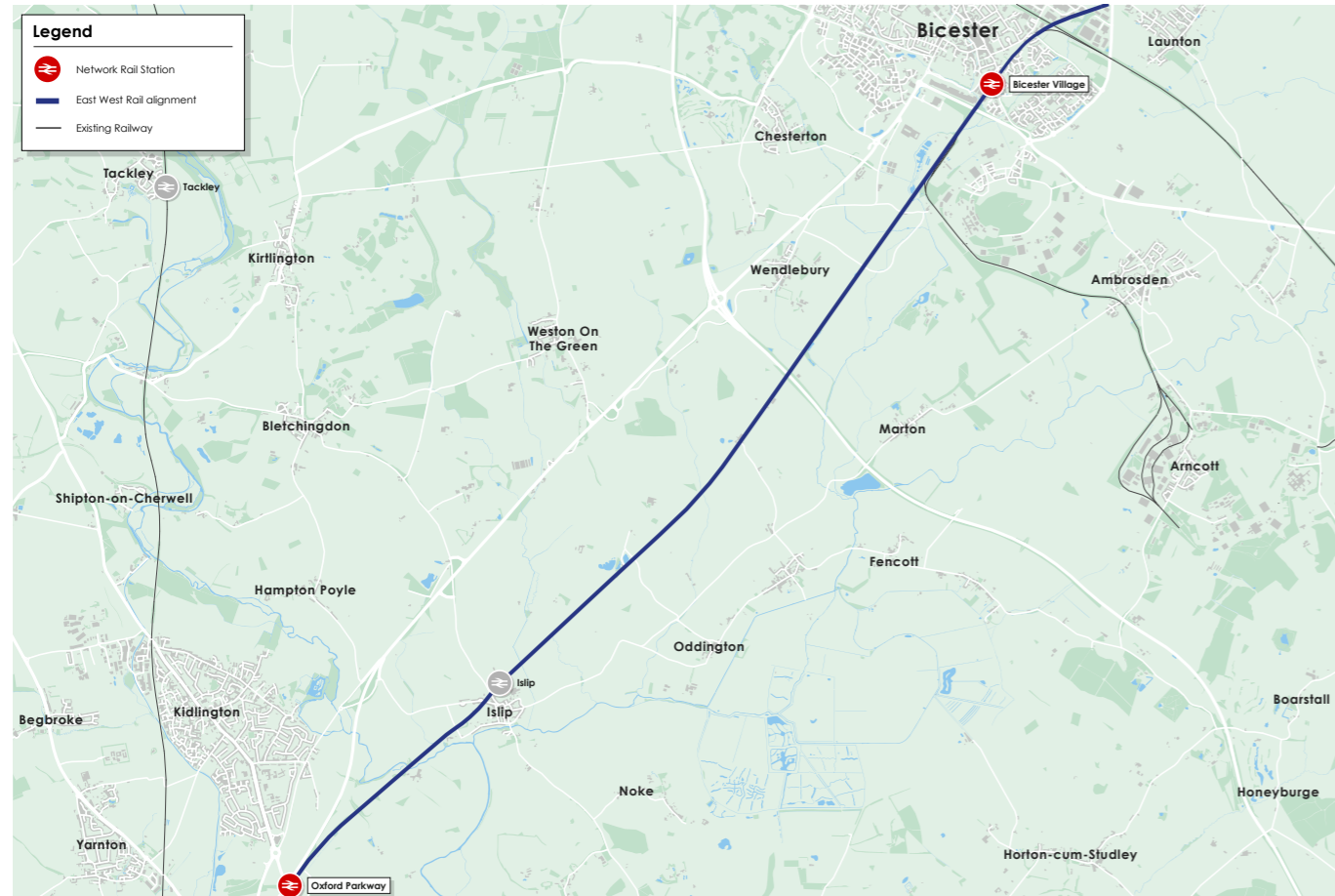


Figure 7 - Map of the existing route from Oxford Parkway to Bicester

We're also continuing work to identify the most suitable locations for passing loop between Oxford and Bletchley which would allow faster trains to overtake slower stopping services safely.

Further information on any proposed changes at Oxford Parkway and Bicester Village stations, and the locations of the proposed passing loop, will be presented at the statutory consultation.

### London Road level crossing, Bicester

At the 2021 consultation we presented six concepts for the London Road level crossing. Based on an anticipated service pattern for EWR trains, all involved closing the current crossing to motorised vehicles and providing alternative ways for vehicles, cyclists and pedestrians to cross the railway. These concepts were designed to improve safety, enable a faster and more reliable train service, and reduce traffic disruption.



Figure 8 - Map of the area around the London Road level crossing

### The six concepts presented at the 2021 consultation:

1. **Accessible bridge for non-motorised users**
2. **Road underpass at London Road**
3. **Road bridge at London Road**
4. **Road underpass alongside London Road**
5. **Road bridge alongside London Road**
6. **Alternative road crossing locations**

Through careful consideration of options, and engagement with local stakeholders, we're aiming to present the best solution which would reduce local impacts and enable services which would deliver significant benefits for people across the region.

All concepts presented design, construction and affordability challenges. Construction of either a bridge or an underpass within the town, whether at or near the level crossing, would pose significant difficulties, for example access to nearby roads and properties would be affected and work would be disruptive to the town. This could require acquisition of land and property and would most likely require alterations to nearby roads, changing the routes available to local people. Also, the completed crossing would have the potential to be highly intrusive in terms of visual impact, especially if a vehicular bridge is provided, as it would need to be a significant structure in order to provide the necessary headroom for trains passing beneath. However, the feedback received during the 2021 consultation expressed the local community's strong desire to maintain the link between the southeast of Bicester and the facilities in the town centre, keeping the level crossing open.

If the level crossing were to be retained in its current form when EWR services to Bletchley, Bedford and Cambridge begin, the barriers would be down for a significant period each hour. The exact barrier down time depends on the number of trains using the crossing. Our assessments to date suggest that with four additional EWR trains per hour, a likely barrier down time of between 25 and 40 minutes in each hour could be the result (with a worst-case scenario of 50 minutes). This would cause

increased waiting times and congestion in the area and the likelihood of greater misuse of the crossing, which is dangerous to users. This is explained further within the Economic and Technical Report.

Balancing the impact of the anticipated lengthy and frequent closures with the impacts of constructing a replacement road crossing of the railway, we're seeking to develop an alternative solution and are not progressing with Concepts 1,2, 3, 4 or 5 as presented at the 2021 consultation.

Listening to your feedback, our work on an alternative solution is focussing on three aspects:

#### 1. **Identification of the most suitable location for an alternative road bridge**

We're working with local stakeholders to identify a suitable location for a new road bridge and are considering alternatives to the south and east of the current crossing using elements of Concept 6 presented during the 2021 consultation and subsequent design work. If a new road bridge is identified as the most suitable option, we're exploring the feasibility of using a type of bridge that's constructed off-site and then moved into position using a crane to minimise disruption. Proposals for the crossing of the railway will be presented at the statutory consultation.

#### 2. **Investigating the potential to maintain the existing crossing for local traffic**

As we develop our proposals for operating EWR, we're investigating service patterns on this section of the line, as well as possible enhancements at the level crossing. This may provide the potential to keep the existing London Road level crossing open for local traffic. This would most likely require highways works in the vicinity of the crossing to discourage use by non-local traffic.

### 3. Investigating ways to maintain connectivity for pedestrians and non-motorised traffic

Based on the feedback to the 2021 consultation, we know how important it is to maintain connections for pedestrians and cyclists.

We're considering the following options:

- An accessible overbridge for pedestrians and cyclists at or near the current London Road level crossing.
- An accessible underpass for pedestrians and cyclists at or near London Road level crossing.
- An accessible overbridge for pedestrians and cyclists at another location.



We're undertaking further feasibility studies and technical assessments of the three aspects described above to identify our preferred option for Bicester London Road level crossing and we'll present our findings for comment at the statutory consultation, which we expect to take place in the first half of 2024.



New platforms at Bletchley station



## Bletchley to Bedford – The Marston Vale Line (MVL)

**We've considered the work necessary at Bletchley station. We've also carried out further work to understand how many trains per hour would be needed to meet the expected passenger numbers between Bletchley and Bedford, as well as the speed of trains on this section of the route.**

This is helping us to respond positively to the feedback we received from the local community during the 2021 consultation and reassess the changes to existing infrastructure that would be needed on the MVL.

We've also reviewed the extent of work required to the existing track between Bletchley and Bedford. The reinstatement of the second track at Fenny Stratford is still required, as is the passing loop, for which the exact location has yet to be identified.

### Bletchley and Bletchley station

**As part of EWR Connection Stage One, the East West Rail Alliance is expanding Bletchley station and work is underway to add two new platforms, as well as creating a new footbridge to link the new platforms with the rest of the station.**

At the 2021 consultation we explained that we were considering a range of further improvements to Bletchley station. For example, altering or replacing the current footbridge, enlarging the car park and creating a new eastern entrance. We continue to review opportunities for further improvements. We're working closely with Milton Keynes Council and Network Rail to support the development of a vision and masterplan for the area, including a potential eastern entrance to the station, which could be transformational for Bletchley. We'll need to consider the funding implications for such an option.

We remain committed to working with the local authority and other local stakeholders to improve connectivity between the existing station

and the surrounding area, and to develop our understanding of how an enhanced public realm, as well as opportunities to engage in active travel, could support this.

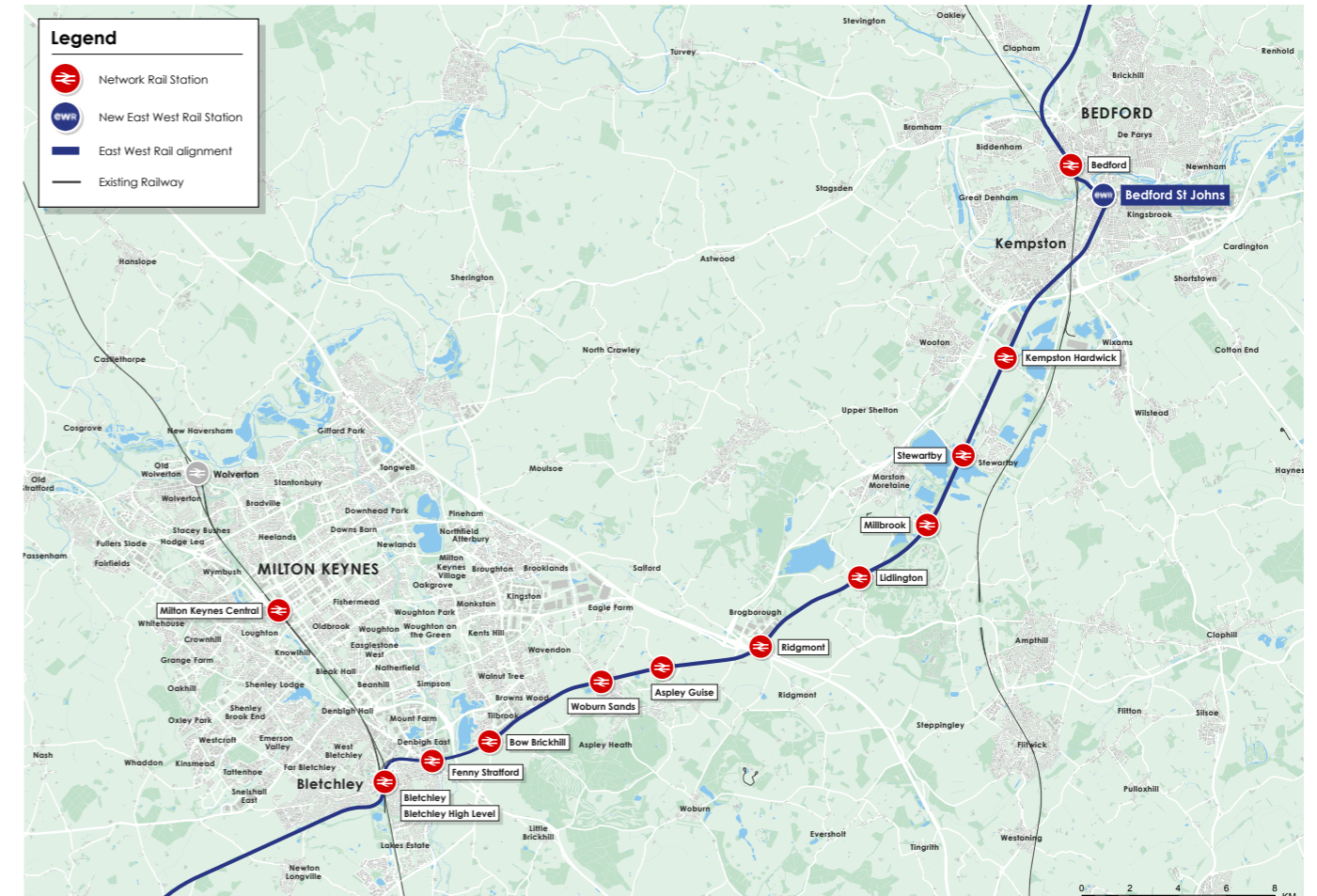


Figure 9 - Map of the route from Bletchley to Bedford

## The Marston Vale Line (MVL)

The line, which runs between Bletchley and Bedford, was first built in 1846 and continued to operate after the original Varsity Line closed in the 1960s. In recent years, the Marston Vale Line Community Rail Partnership has worked proactively to engage local people with the railway and promote the rail line. However, the underlying infrastructure has not seen significant investment for decades, and the communities it serves have changed and grown considerably over that time. The current passenger service has been suspended since December 2022, although freight services continue to run on this line.

At the 2021 consultation we presented an option that would have required significant intervention to enable EWR services to operate. We set out two concepts for future train services and stations on the MVL that would provide improvements to the existing railway and stations between Bletchley and Bedford. Both of these concepts would need extensive infrastructure renewal to raise the line speed of the railway to up to 100mph, potentially including a lengthy closure of the railway to enable works to be carried out.

### 1. **Concept one would retain the existing hourly service that stops at all intermediate stations and introduce fast limited-stop Oxford to Cambridge services alongside it. This means there would be five trains per hour on the MVL, as follows:**

- Four fast trains per hour, which would stop each way at Woburn Sands and Ridgmont stations only.
- An additional hourly stopping service, calling at all 10 intermediate stations.

### 2. **Concept two would be five new merged stations on the Marston Vale Line. All five would benefit from at least two EWR services every hour, and some would have four. This would mean more communities would have access to more frequent and faster services, direct to more locations:**

- Two stopping trains every hour between Bletchley and Cambridge, calling at all five new stations.

- Two faster Oxford to Cambridge trains every hour, only stopping at Woburn Sands and Ridgmont when travelling between Bletchley and Bedford.

### Level crossings

Alongside these two concepts we also reviewed the 31 level crossings on the MVL. Network Rail already has permission to close 12 of these crossings, which we would intend to implement. At the 2021 consultation we presented our proposals to close all the remaining level crossings on the MVL to ensure a safe and reliable train service, and replace them with between 16 and 19 new bridges or underpasses together with new links to existing bridges.

### Work done since the 2021 consultation

Feedback from the 2021 consultation showed that people were concerned about the speed of trains through residential areas, the level of disruption during construction of the renewed infrastructure, and the loss of connectivity due to the proposed closure of level crossings and stations. The work undertaken as part of the ACP has allowed us to make progress in addressing these concerns, while still seeking to deliver benefits of more frequent services to more destinations.

### Frequency of service

The assessments undertaken as part of the ACP found that the predicted demand for travel between Bletchley and Bedford could be met by three trains per hour, rather than the four or five per hour as was originally proposed. We also validated this in the context of the Theory of Change for the region as a whole.

This is still a three-fold increase in services with three trains per hour – one roughly every 20 minutes. The proposed services on the MVL would be two Oxford to Cambridge trains each hour, plus a service between Bletchley and Bedford. We're doing further work to consider how customer needs would best be met through these train services – for example, we're exploring whether the third service should be replaced by extending one of the Bedford-Cambridge trains to Bletchley to further improve connectivity for the Marston Vale. In all circumstances

however, by limiting the increase in frequency to three trains per hour, we're able to achieve significant benefits whilst gaining other positive impacts too – including a material reduction in cost.

### Line speed

The work undertaken as part of the ACP has allowed us to reconsider the speed EWR trains would travel on this section of the route. Currently the line speed on the MVL is 60mph. We originally intended to increase this to up to 100mph to improve journey times but as the line speed increases so does the level of engineering work needed to achieve it. We're now looking at speeds of less than 100mph and working to understand how we can strike a balance between journey times – and therefore benefits to customers - and the associated infrastructure costs. We also want to understand the maximum achievable speeds, taking into account acceleration and deceleration between stations and how this could influence the extent of work needed.

### Level crossings

The outcomes of the ACP, particularly the reduction in line speed and frequency, have enabled us to reconsider each of the level crossings along this section of the route to see where a potential reduction in train services per hour and line speed could allow us to keep crossings open to maintain safe connectivity for communities, manage engineering impacts, and reduce the cost to the taxpayer.

Table 1 below provides an indication of which level crossings could remain open and which we're proposing to close. Further information on the rationale behind our current proposals can be found in the Economic and Technical Report [www.eastwestrail.co.uk/economicandtechnicalreport](http://www.eastwestrail.co.uk/economicandtechnicalreport)

Each level crossing will be subject to further design development, risk assessment and traffic assessment, together with detailed consideration of any diversion routes where closure remains a possibility. More information on our plans for the level crossings on the MVL will be presented at the statutory consultation which we expect to take place in the first half of 2024.

Table 1 - Summary of our current proposals for level crossings on the Marston Vale Line

Name	Current crossing type	2021 consultation options	ACP proposal	Reasoning
<b>Fenny Stratford</b>	Highway – CCTV	Vehicles: Close crossing and provide one of the following: diversion routes, options for a new link road north of crossing. Pedestrians: options for diversion or a bridge.	Retain as a CCTV crossing.	Reducing the proposed increase in line speed and the train frequency to three trains per hour would reduce risk compared to the proposals presented at the 2021 consultation and potentially enable us to retain the crossing rather than create new link roads and diversions. This would reduce community severance within Fenny Stratford.
<b>Bow Brickhill</b>	Highway – CCTV	Close crossing and provide one of the following: new online bridge, with new link road between Caldecotte Lake Drive. And Bradbourne Drive, New offline bridge/underpass (three offline options presented).	Retain as a CCTV crossing.	Reducing the proposed increase in line speed and the train frequency to three trains per hour would reduce risk compared to the proposals presented at the 2021 consultation and would potentially enable us to retain the crossing rather than install a new bridge. Traffic use is high, with the Red Bull campus and Caldecotte in close proximity, although alternative routes are available. Modelling will be needed to confirm this is acceptable.

Name	Current crossing type	2021 consultation options	ACP proposal	Reasoning
<b>Browns Wood</b>	Footpath – FPW	Close crossing and provide new bridge or underpass (three options presented).	Close & divert to Pony crossing.	Use of the crossing is low, diversion to Pony bridleway (below) adds approximately 600m to a journey (or six minutes at an average walking pace).
<b>Pony</b>	Bridleway – FPGT	Close crossing and provide a new bridge or underpass (three options presented).	Upgrade to a MSL crossing (a miniature warning light/ miniature stop light crossing).	Use of the crossing is low. Reducing the proposed increase in line speed and the train frequency of three trains per hour would reduce risk compared to the proposals presented at the 2021 consultation and would potentially enable us to retain the crossing rather than install a bridge or underpass.
<b>Woodleys Farm</b>	Occupation – UWCT	Closed and diverted to new road crossing close by, or close and provide a new private bridge crossing.	Close and extinguish crossing rights.	Use of the crossing is low. Further assessment will be undertaken regarding the private crossing requirements. Network Rail has already obtained authorisation for the closure of the crossing.

Name	Current crossing type	2021 consultation options	ACP proposal	Reasoning
<b>Fisherman's Path</b>	Footpath – FPW	Closed and diverted to new road crossing/ private bridge crossing in proximity to Woodleys Farm.	Close with no re placement.	Use of the crossing is low. An alternative would be to redirect users to Woburn Sands level crossing. Network Rail has already obtained authorisation for a temporary diversion through Woburn Sands level crossing. Further assessment will be undertaken regarding diversions of the crossing.
<b>Woburn Sands</b>	Highway – CCTV	Two options: Remain open; closure with an offline road bridge to the west of Woburn Sands connecting between Newport Road and Bow Bricknell Road, pedestrians diverted to new bridge at former School Crossing.	Retain as a CCTV Crossing.	Reducing the proposed increase in line speed and the train frequency to three trains per hour would reduce risk compared to the proposals presented at the 2021 consultation and potentially enable us to retain the crossing rather than create a new road crossing. This would avoid highly intrusive infrastructure in this urban location.
<b>Mill Farm</b>	Footpath – FPW	Two options: closed, diverted to new bridge at former School Crossing; or a new footbridge.	Close and divert footpath back to Woburn Sands level crossing.	Use of the crossing is low.
<b>Sewage Farm</b>	Footpath – FPW	Closed and close footpath.	Close and divert footpath.	Use of the crossing is low.

Name	Current crossing type	2021 consultation options	ACP proposal	Reasoning
<b>Aspley Guise</b>	Highway – CCTV	Two options: closed, offline road bridge to the east (near Old Manor Farm level crossing) of Aspley Guise; closed with no replacement and diversion routes.	Retain as a CCTV crossing.	Reducing the proposed increase in line speed and the train frequency of up to three trains per hour would reduce risk compared to the proposals presented at the 2021 consultation and potentially enable us to retain the crossing. This would avoid intrusive infrastructure or potential community severance from closure.
<b>Old Manor Farm</b>	Footpath – FPW	Two options: closed and new road bridge or new pedestrian bridge.	Close and divert footpath to Aspley Guise.	The level of use of the crossing is low.
<b>Berry Lane</b>	Occupation – UWCT	Two options: close and new access road from new road bridge; or diversion via access tracks.	Close and diversion via access tracks.	Proposals are as one of the options presented at the 2021 consultation. Network Rail has already obtained authorisation for the closure of the crossing.
<b>Long Leys</b>	Accommodation – UWC	Close and diversion via access tracks.	Close and diversion via access tracks.	Proposals as presented at the 2021 consultation. Network Rail has already obtained authorisation for the closure of the crossing.

Name	Current crossing type	2021 consultation options	ACP proposal	Reasoning
<b>Husborne Crawley No.6</b>	Footpath – FPS	Close and two options: diversion via access tracks or new footbridge.	Close and diversion via access tracks.	Use of the crossing is low. Proposals are as one of the options presented at the 2021 consultation. Network Rail has already obtained authorisation for the closure of the crossing.
<b>Matey Boys</b>	Accommodation – UWC	Close and two options: diversion via access tracks or new footbridge at Husborne Crawley 6.	Close and diversion via access tracks.	Use of the crossing is low. Proposals are as one of the options presented at the 2021 consultation. Network Rail has already obtained authorisation for the closure of the crossing.
<b>Husborne Crawley No. 10</b>	Footpath – FPW	Close and new footbridge, new ramps connecting to A507, or divert to new footbridge at Ridgmont.	Close and extinguish footpath.	Use of the crossing is low. Further assessment will be undertaken regarding a diversion via access tracks linking to Ridgmont level crossing. Network Rail has already obtained authorisation for the closure of the crossing.
<b>Ridgmont</b>	Highway – CCTV	Close and divert traffic, option of a pedestrian footbridge (connected to Husborne Crawley).	Retain as a CCTV crossing.	Reducing the proposed increase in line speed and the train frequency to 3tph would reduce risk compared to the proposals presented at the 2021 consultation and potentially enable us to retain the crossing.

Name	Current crossing type	2021 consultation options	ACP proposal	Reasoning
<b>Broughton End</b>	Footpath – FPS	Close and divert to Forty Steps crossing.	Close and divert to Forty Steps.	Proposals as presented at the 2021 consultation.
<b>Forty Steps</b>	Footpath – FPS	Close, new online underpass.	Upgrade to a MSL crossing.	Use of the crossing is low. Reducing the proposed increase in line speed and the train frequency to three trains per hour would reduce risk compared to the proposals presented at the 2021 consultation and potentially enable us to retain the crossing, as an underpass raises potential issues due to a high-water table in this location.
<b>Playing Field</b>	Footpath – FPS	Close and divert to new road bridge or underpass east of crossing.	Close and divert to Forty Steps.	The 2021 consultation proposals at this crossing were to close and divert east to new crossing point. The crossing would now divert to Forty Steps instead.
<b>Lidlington</b>	Highway – CCTV	Two options: remain open; or close with offline bridge west of Lidlington and footbridge at crossing.	Retain as a CCTV crossing.	Reducing the proposed increase in line speed and the train frequency to three trains per hour would reduce risk and potentially enable us to retain the crossing. This would retain connectivity within the village. Additionally, retention of the crossing would reduce the need for the railway to bypass the village.

Name	Current crossing type	2021 consultation options	ACP proposal	Reasoning
<b>Piling Farm South</b>	Footpath – FPK	Close and divert footpath.	Close and divert footpath.	Proposals as presented at the 2021 consultation. Network Rail has already obtained authorisation for this work.
<b>Marston Rd</b>	Highway – AHB	Close crossing and provide new bridge.	Upgrade to an MCB-OD crossing.	Reducing the proposed increase in line speed and the train frequency to three trains per hour would reduce risk compared to the proposals presented at the 2021 consultation, and potentially enable us to retain the crossing. Use of the crossing is low. Noting there are industry proposals to close this crossing, we'll work closely with Network Rail to understand these and agree the way forward.
<b>Millbrook</b>	Highway – CCTV	Close and provide either a new bridge or underpass (three options presented).	Retain as a CCTV Crossing.	Reducing the proposed increase in line speed and the train frequency to three trains per hour would reduce risk compared to the proposals presented at the 2021 consultation and potentially enable us to retain the crossing. The level of usage of the crossing is low.

Name	Current crossing type	2021 consultation options	ACP proposal	Reasoning
<b>Green Lane</b>	Highway – CCTV	Close and provide either a new bridge or underpass.	Retain as a CCTV Crossing.	Reducing the proposed increase in line speed and the train frequency to 3tph would reduce risk compared to the proposals presented in the 2021 consultation and potentially enable us to retain the crossing. The level of usage of the crossing is low.
<b>Stewartby Brickworks</b>	Occupation – CCTV	Close with no replacement.	Close with no replacement.	Proposals are as presented at the 2021 consultation. Network Rail has already obtained authorisation for this work.
<b>Wootton Broadmead</b>	Highway – CCTV	Close and provide new bridge. (Two options presented).	Retain as a CCTV Crossing.	Reducing the proposed increase in line speed and the train frequency to 3tph would reduce risk compared to the proposals presented in the 2021 consultation and potentially enable us to retain the crossing. Use of the crossing is low.
<b>Wootton Village</b>	Footpath – FPS	Close and provide new footbridge.	Close and divert to Kempston Hardwick.	Use of the crossing is low.

Name	Current crossing type	2021 consultation options	ACP proposal	Reasoning
<b>Kempston Hardwick</b>	Highway – AHB	Close and provide new bridge (three options presented).	Upgrade to a MCB-OD Crossing.	Reducing the proposed increase in line speed and the train frequency to three trains per hour would reduce risk compared to the proposals presented at the 2021 consultation and potentially enable us to retain the crossing. Use of the crossing is low. Noting there are industry proposals to close this crossing, we'll work closely with Network Rail agree the way forward.
<b>Woburn Road</b>	Footpath – FPW	Close and provide new footbridge (two options presented).	Close with no replacement.	Use of the crossing is low. Noting there are industry proposals to close this crossing, we'll work closely with Network Rail agree the way forward.
<b>Bedford Carriage Sidings (staff crossing, not publicly accessible)</b>	Accommodation – UWC	Options for crossing to be developed at later stage.	Options for crossing to be developed at later stage.	Proposals as presented at the 2021 consultation. Works in Bedford area (described below) will affect this crossing and options.

## Stations

Feedback from the 2021 consultation was relatively evenly split in relation to the two concepts for services and station stops on the MVL. While members of the public showed slightly more support for Concept 1, our statutory consultees preferred Concept 2.

We've also investigated whether providing new stations would deliver the most benefit to local communities and the region and have sought to understand where enhancements to existing stations would be needed to meet safety standards and provide a sufficient level of service. We're continuing to work with local stakeholders to help us identify the best solution for communities along this section of the route, which we'll present at the statutory consultation.

## Marston Vale Line infrastructure

As described above we've carried out further work to understand how many trains per hour would be needed between Bletchley and Bedford to meet the expected passenger numbers to service both the MVL and the whole route, as well as considering the speed of trains on this section of the route. This is helping us to reassess the changes to existing infrastructure that would be needed on the MVL. We believe that, through these changes, we would no longer need to lift and relay track over the full length of the MVL but could ensure the suitability of the line through targeted repairs and enhancements.

At the 2021 consultation we identified that we'd need to reinstate the second track alongside the section of single-track railway at Fenny Stratford, east of Bletchley, to increase capacity and allow for the additional EWR services. The need for this additional section of track has not changed.

We also identified the need for a passing loop in the vicinity of Ridgmont station to allow faster trains to overtake slower stopping services safely. A passing loop would still be required, but in light of the other changes we're proposing, we're now doing further work to assess where this should be located. We'll provide further details at the statutory consultation.

# Bedford St Johns station and serving Bedford town centre

**We've tested our previous conclusions that it's beneficial to serve Bedford town centre, and that this requires a route along the Midland Main Line, continuing north through Bedford station and on towards Cambridge. After undertaking work to consider alternatives for connecting central Bedford to EWR destinations, including the use of the former Varsity Line, we found these had a number of disadvantages when compared to our emerging preferred option as presented at the 2021 consultation.**

We've confirmed our preference to relocate Bedford St Johns station, to serve Bedford Hospital more directly.

While we still think we need to increase the number of tracks in the existing railway corridor north of Bedford station from four to six, we've been able to reduce the number of properties likely to be impacted by refining our proposals.





Figure 10 - Map of the approach to Bedford, Bedford St Johns and Bedford station

### Our emerging preferences at the 2021 consultation

The decision for EWR to serve Bedford town centre directly along the Marston Vale Line, via Bedford St Johns and Bedford station, and then the Midland Main Line (MML) north of Bedford station for services towards Cambridge, was made in 2020 when we selected our preferred route option.

We made this decision because we believe this route would maximise the benefits of the Project and best serve communities in Bedford town centre. It would provide a fast and reliable service, maximising connectivity to employment and leisure opportunities in Bedford town centre and across the route all the way to Cambridge and Oxford. It would also support plans to regenerate Bedford and maximise rail-based interchange opportunities with the wider railway network, notably Thameslink and MML.

At the 2021 consultation we identified an emerging preferred option to construct two additional tracks on the MML north of Bedford station, dedicated to EWR services. These would be built to the eastern side of the existing railway lines, increasing the number of tracks in this area from four to six. The addition of the two proposed new tracks on the MML would require the acquisition of land alongside the existing railway and would result in the acquisition of 97 residential properties.

### Work done since the 2021 consultation

People told us we should reconsider our decision for all EWR trains to serve Bedford town centre directly because of impacts on residents and that we should consider whether a different way of connecting the centre of Bedford to EWR along some or all of the former Varsity Line should be adopted.

As part of the ACP, we looked at whether our emerging proposals were the most cost effective option to unlock the benefits of EWR services to Bedford. We also took into consideration the feedback received during the 2021 consultation and ongoing community engagement activities in this area. We looked at:

- Whether we should re-open our decision that all EWR trains should serve Bedford town centre directly.
- If serving the town centre remained our preferred option, would it be possible to do so using an alternative route instead of the passing through Bedford station before continuing to the north along the MML.
- If we continued to prefer the MML route, whether four or six tracks were needed north of Bedford station, as well as the options for Bedford St Johns and Bedford station itself.

## Serving Bedford town centre

Serving Bedford station strengthens its function as a regional transport hub and allows easier access directly to the employment and leisure opportunities in the town. It supports local aspirations for access to more jobs, prosperity and growth, with improvements to Bedford station contributing to the regeneration of the area immediately around the station, and the centre of Bedford more generally. The station at Bedford also provides the best onward connectivity to destinations like Luton Airport, Nottingham and Derby on Thameslink or EMR. For these reasons, serving Bedford town centre remains our preferred approach.

## Considering alternatives to serve central Bedford

While we've confirmed that serving Bedford town centre remains our preference, we reconsidered whether an alignment passing to the south of Bedford might also achieve this and be a better option than our preferred alignment going through Bedford station.

To avoid a northern route out of Bedford, it was suggested we could re-use the Varsity Line. A three-way junction would be required to serve Bedford station and the town centre. This would enable access from the MVL and from Bedford station to the Varsity Line. Services could either travel to and reverse at Bedford or straight through, stopping only at a station close to Bedford St Johns.

We looked at the two most promising alignments that we identified through our further work in detail:

- **Varsity Hybrid alignment:** This alignment option would pass to the south of the town. It would relocate Bedford St Johns station further east and would make use of part of the route of the former Varsity Line.
- **Varsity Hybrid via A421 alignment:** This option would be similar to the Varsity Hybrid alignment above, however, when travelling east it would more closely follow the A421, aiming to limit impacts on the environment. →

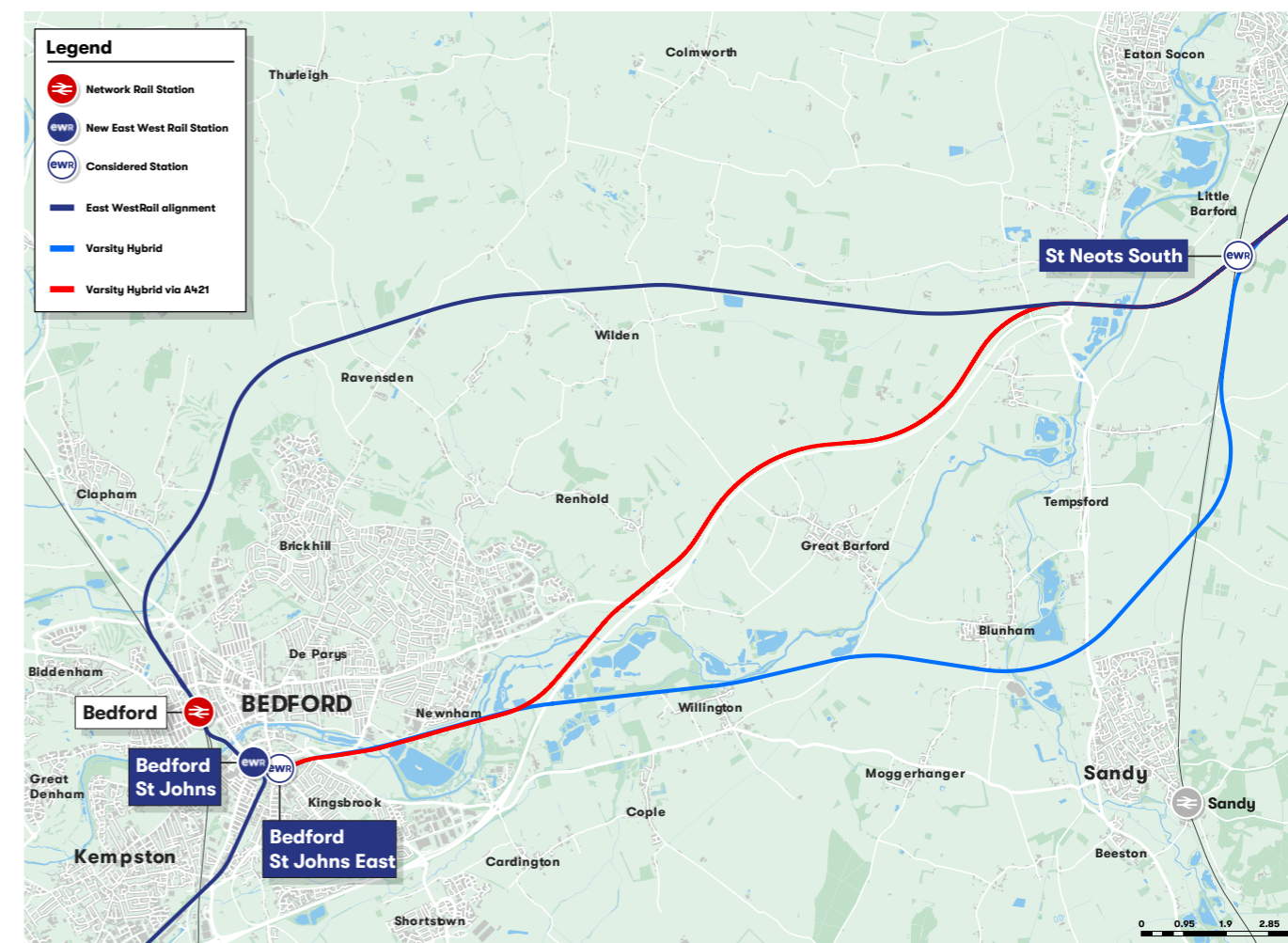


Figure 11 - Alternative approaches to Bedford

## Impacts on the environment and established amenities

Since its decommissioning as a live railway, the Varsity Line to the east of Bedford and its surroundings have taken on other uses and changed in character. The track bed of the Varsity Line is now used in part as a cycleway and is a key feature within the Priory Country Park through which it passes. To use this as a live railway again would involve the construction of new infrastructure for a modern railway, require the track to be raised higher above the flood plain of the River Great Ouse and have significant environmental impact as well as loss of amenity for the local community. In addition, as a public open space the Priory Country Park has protected status, making it more challenging to acquire land for the railway.

Siting EWR on the Varsity Hybrid alignment would be likely to result in the loss of high-value and priority habitat for wildlife and several designated County Wildlife Sites would also be at risk of impact and

loss, including St John's County Wildlife Site in Bedford. This option would also need to overcome a significant number of sensitive and complex environmental constraints including contaminated historic landfill sites, the highest quality agricultural land, and nationally significant heritage assets.

### Impact of increased flood risk

The former Varsity Line lies in the flood plain of the River Great Ouse to the south of Bedford. To bring the line back into use, and to comply with modern regulations, the track would need to be elevated. If constructed as an embankment, this would create a barrier within the flood zone and, without sufficient mitigation, would increase the risk of flooding in Bedford. Mitigating this risk would require the construction of viaducts in sensitive areas. It could also have additional potentially significant impacts, for example, the creation of compensatory flood storage would have further impacts on land use, including the possible loss of wildlife habitats. The presence of heavy engineering such as viaducts in the country park would be likely to affect its amenity and character as well as having potential for material visual impacts.

The Varsity Hybrid via A421 alignment was developed to find ways to avoid or reduce impacts arising from the Varsity Hybrid alignment. Primarily, this option avoids using the disused Varsity Line to the east of the A421. It avoids impacts on a Grade 1 listed building and a Scheduled Ancient Monument at Willington, as well as a further Scheduled Ancient Monument at Danish Camp, and would avoid potential impacts on communities at Blunham and Willington. However, impacts to the west remain including impacts on the Priory Country Park, the flood plain and a number of Scheduled Ancient Monuments including the site of Newnham Priory, Octagon Farm Neolithic and Bronze Age mortuary complex, and 'The Docks' medieval moated site and dock in Willington.

These environmental constraints are illustrated in figure 12. →

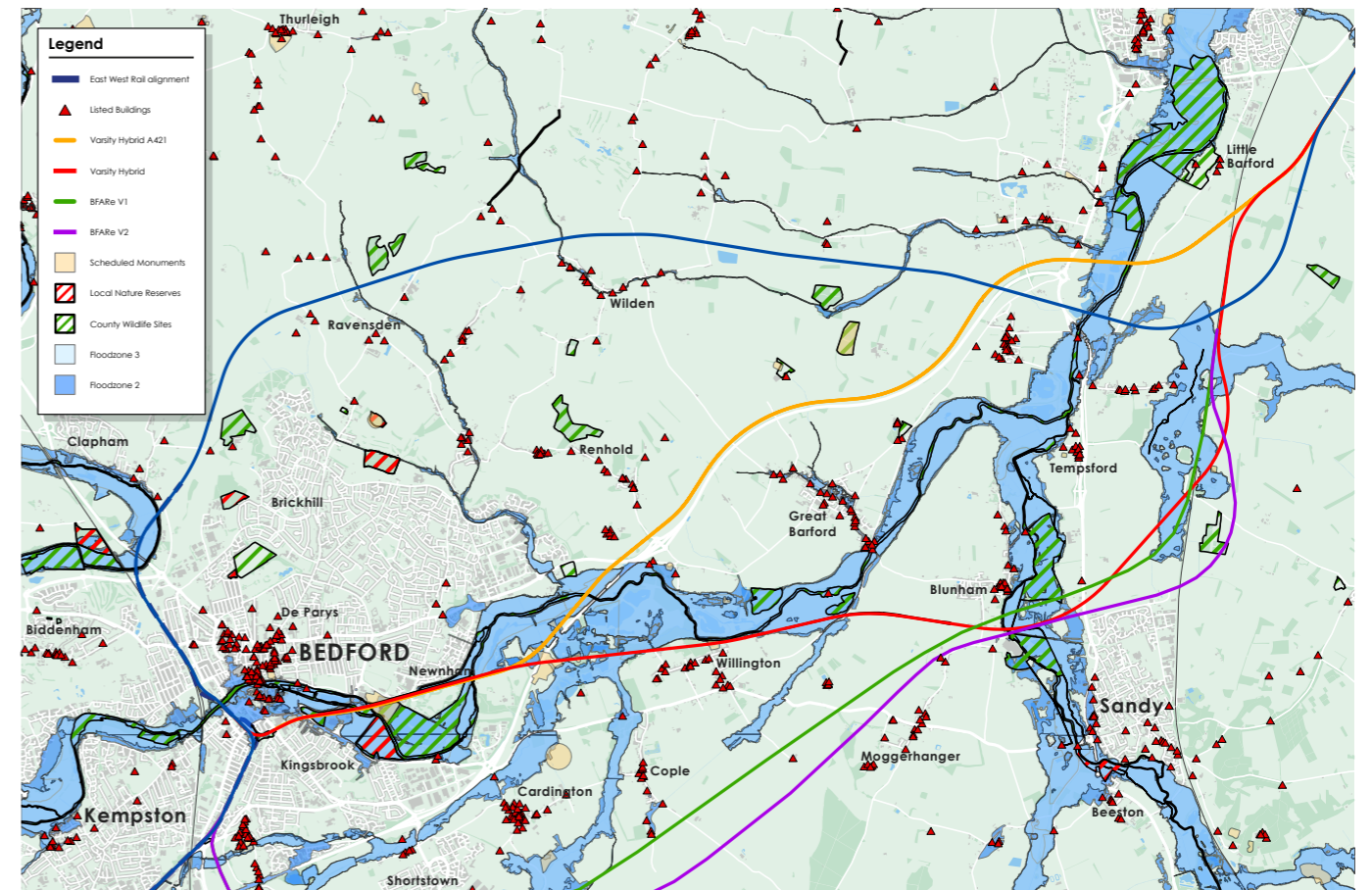


Figure 12 - Varsity Hybrid alignments and environmental risks and constraints

### Impact on connectivity

Both Varsity Hybrid alignments would reduce the number of services reaching Bedford station each hour in comparison with the proposals set out at the 2021 consultation. This would limit the benefits of EWR for workers, residents and businesses in the town centre, it would limit the onwards connections for Cambridge services, and it would reduce the opportunity for convenient onward connections to destinations further afield.

### Impact on Bedford St Johns station

For both Varsity Hybrid alignments, Bedford St Johns station would need to be relocated to serve through trains, which wouldn't stop at Bedford station, as well as trains serving Bedford station. The station would be relocated to the three-way junction. Trains serving Bedford station would enter from the south, terminate and then reverse direction. There are three potential options for the relocation of Bedford St Johns station as shown in Figure 13. →



Figure 13 - Map showing potential locations for Bedford St Johns station

1. **A north option for the station** would require trains to reverse at either Bedford St Johns or Bedford station, significantly increasing end-to-end journey times and the attractiveness of the EWR service for passengers wishing to travel beyond Bedford.
2. **A south option for the station** would be further away from the town centre and Bedford Hospital. This would reduce the benefits of siting the relocated station in south Bedford. Also, to prevent extended journey times due to reversing moves, through trains between Oxford and Bedford wouldn't pass through Bedford station. This would significantly reduce rail-based interchange opportunities with the wider network.
3. **An east option for the station** is the best for Varsity Hybrid alignments as it would have the least impact on the level of service offering at Bedford. However, it's still located further from the town centre, and more passengers would have to change trains to reach Bedford station (as the station wouldn't be on the line from Oxford into Bedford station). This option would likely require commercial property acquisition, affect the local bus garage facility and affect a retail park.

Following the assessment of the evidence, we've concluded that while these Varsity Line alignments may be cheaper to build and provide shorter travel times for some journeys, the challenges are significant – not least the impacts on the environment, which we've concluded are unacceptable.

For Varsity Line alternatives, to provide a journey time attractive to passengers, through trains would bypass both Bedford St Johns and Bedford stations. This would significantly reduce connectivity for Bedford town centre and undermine the ability for passengers to interchange with EMR and Thameslink trains at Bedford station. A new EWR station south of Bedford wouldn't resolve these issues as this would require trains to enter into and then reverse out of Bedford station, again increasing journey times. Overall, the southern alignments don't perform as well as alignments which use the MML, and we've again concluded that the emerging preferred alignment from the 2021 consultation remains the best option for Bedford.

We've therefore considered the options set out for our preferred alignment at Bedford St Johns, Bedford station itself and on the route north out of the station.

## Bedford St Johns station

During the 2021 consultation we presented two options to relocate Bedford St Johns station.

### Option 1: Relocating Bedford St Johns to the west, closer to Bedford Hospital between Amphill Road and Cauldwell Street.

Cauldwell Street bridge would need to be rebuilt (as is the case with Option 2 below), as it's not high enough for our trains to pass under. This new railway alignment would use the existing railway bridge over the River Great Ouse.

### Option 2: Relocating Bedford St Johns to the south on the existing railway alignment close to Amphill Road/Elstow Road pedestrian link bridge.

This new railway alignment would require a new railway bridge over the River Great Ouse and the rebuilding of Cauldwell Street bridge.

Option 1 was identified as our emerging preferred option during the 2021 consultation because it performed better in respect of cost, environmental impact, and consistency with local plans. It would also provide easier access from the station to Bedford Hospital and good access to local schools.

We reconsidered both options in light of the feedback received during the 2021 consultation and as part of the ACP, and Option 1 remains our preference. The feedback from the 2021 consultation demonstrated support for this option with respondents expressing the view that it would be better connected as it's closer to existing bus routes, within walking distance of the town centre and Bedford station, and close to the hospital. We'll present more detailed proposals for further comment at the statutory consultation which we expect to take place in the first half of 2024.

### Bedford station

Bedford station is already an important transport hub in the region. Whilst patronage is high, the station itself is tired and dated. The introduction of EWR services creates a rare opportunity for the station and supporting infrastructure to be upgraded to a standard suitable for a modern transport hub. It would need a range of improvements to provide sufficient platform capacity for the proposed number of train services, complemented by improvements to the building to meet passengers' needs. Improvements to Bedford station would assist in unlocking further growth opportunities for the town centre, maximising benefits from EWR for local businesses and residents.

In the 2021 consultation we set out our emerging preference for redeveloping Bedford station. Trains approaching the station from the south would use the existing railway bridge across the River Great Ouse, assuming our emerging preferred option at Bedford St Johns was built. Our proposals included:

- Building the station at a new location on the existing railway estate, north of Ford End Road Bridge.
- Building a new entrance to the station and public plaza which would create a much better link between the station and the town centre.

- Construction of three new platforms for EWR services.
- Consideration of a new footbridge connection from the station to the Queen's Park area to the west of the station.

We reconsidered our proposals for Bedford station in light of the feedback received from the 2021 consultation and as part of the ACP. Our emerging preference to improve the existing station facilities has not changed except that we don't propose to provide a western access to the station to connect with the Queen's Park area as it wouldn't substantially improve EWR services but would incur significant costs. However, we would consider opportunities for third party funding to support such an enhancement.

The 2021 consultation feedback demonstrated support for the emerging preference on the grounds that it would enable improvements to the station, provide better opportunities for town centre regeneration and bring economic benefits to Bedford by helping to improve regional connectivity.

In the 2021 consultation we identified several commercial and residential properties with direct links to Ashburnham Road that may be affected and subject to demolition. Properties potentially affected included a doctors' surgery, the Pentecostal Church, the tyre centre, the Polish community centre and some private residences. Further work will be undertaken at the next stage of the design to minimise the area of land required for the construction of Bedford station as well as the footprint of the proposed station building, and to refine platform geometry and arrangement, with a view to minimising the impact on homes and businesses in the Ashburnham Road area.

### North of Bedford station

The emerging preferred option presented at the 2021 consultation had trains passing through Bedford station and heading north along the existing MML until diverging east, crossing the A6 and the River Great Ouse.

At the 2021 consultation we identified an emerging preferred option to construct two additional tracks on the MML, dedicated to EWR services. These would be built to the eastern side of the existing railway lines north of Bedford station, increasing the number of tracks

from four to six. This would accommodate a service pattern of four trains per hour at 15-minute intervals. The introduction of additional tracks would allow EWR trains to operate independently of other services, ensuring a reliable timetable for passengers.

We recognise that a six-track option would affect homes and businesses in the north of Bedford. Feedback from the 2021 consultation told us that the potential for demolition of homes was particularly concerning to residents and the wider community, so to avoid this we reconsidered the potential to deliver the benefits of a six-track option using the existing network with a four-tracks option.

We undertook a comparison between the two options, summarised in the table below.

Assessment factor	Six-track option (requires construction of two additional tracks)	Four-track option
<b>Capacity</b>	Two additional tracks would provide a reliable four trains per hour EWR service without adversely impacting the timetable and performance of other train services using Bedford station because EWR services would run on entirely separate tracks to the MML services.	The four-track section of the MML that runs through Bedford has been identified by as one of currently five congested infrastructure sections of the network. Additional timetable and performance modelling was undertaken, which compared additional infrastructure requirements at Bedford station to increase capacity. This modelling indicated that reliance on the existing four tracks would reduce the resilience of both EWR and MML services. This is a consequence of how train movements are distributed across the hour. Freight and passenger services on the MML are largely fixed in their paths because they have to reach other parts of the network at the right time, which impedes EWR's ability to slot in between them.

Assessment factor	Six-track option (requires construction of two additional tracks)	Four-track option
<b>Performance</b>	Two additional tracks would allow separation of EWR and MML operations, which would avoid performance risks for both MML and EWR.	EWR services cannot be introduced without works to the existing tracks and, even after this work, we believe the use of four tracks would present an unacceptable risk of service delays and reliability of EWR services when introduced. Additionally, early timetable proposals for a station at Wixams, as promoted by Bedford Borough Council, are likely to further increase risks due to increased platform occupancy time at Bedford station, which further constrains capacity on the slow lines.
<b>Future growth</b>	Two additional tracks would enable future growth of non-EWR and EWR services through Bedford.	Operating the EWR services on the existing four-tracks would significantly constrain growth of EWR, Thameslink and freight in the longer term.
<b>Impact on properties</b>	37 residential properties and one commercial property likely to be acquired and/or demolished, 28 residential properties may lose part of their garden or parking area.	No demolition of residential or commercial properties would be required.
<b>Construction</b>	While there would be necessary safety restrictions, the segregation of the two new EWR lines would allow construction activities to be located away from the live railway and the required activity on the live railway kept to a minimum – which would reduce the impact on existing services.	It's anticipated that the delivery of this option would require more work on the live railway between Bedford station and Bedford North Junction, which would cause some disruption to existing services.

Assessment factor	Six-track option (requires construction of two additional tracks)	Four-track option
<b>Connectivity</b>	The ability for customers to change between EWR and MML/Thameslink services, would allow them to travel from Bedford to London and South Coast, or to the East Midlands and Yorkshire. This is the same for both options.	
<b>Cost</b>	Proposals for a four-track infrastructure option have been estimated to be largely the same as a six-track option in terms of estimated costs and infrastructure needs. The savings gained from not having to build additional tracks and not acquiring properties for the six-track alignment would be offset by the need to build additional infrastructure at Bedford station for the four-track option.	
<b>Cost risk</b>	Not applicable to the six-track option to a level greater than the Project as a whole.	There are particular and material cost risks associated with the potential need for extensive re-signalling of the Bedford area for the four-track alignment and potential compensation costs to train operators due to potential service disruption arising from increased work on the live railway. If these cost risks materialise, accommodating EWR services on the existing four-track would be more expensive in terms of capital costs than building the additional two tracks to the east of the existing railway.
<b>Flood risk</b>	Where the route crosses the River Great Ouse, a proposed viaduct could mitigate potential flooding impacts and maintain flood resilience. This is the same for both options.	
<b>Biodiversity</b>	There would be a temporary impact on important wildlife habitats, but these habitats could be reinstated underneath the proposed viaduct to minimise any long-term effects on biodiversity. This is the same for both options.	

Assessment factor	Six-track option (requires construction of two additional tracks)	Four-track option
<b>Parking</b>	Impact on Bedford station, resulting in the potential loss of station car parking. This is the same for both options. The extent of this impact and the most appropriate means of reinstating any lost parking will be considered at the next stage. Regard will be given to active travel and change between transport modes in determining the need.	

Table 2 - Summary of our assessment of four and six track options north of Bedford station

Following reconsideration of the four- and six-track options to the north of Bedford station, our preference remains the use of six tracks. We believe this is the only viable option that supports EWR trains serving Bedford town centre because of the current level of congestion on the existing four tracks:

- The current four-track MML north of Bedford station has been formally designated as ‘congested infrastructure’ by Network Rail, one of only five such designations in Great Britain. This is due to the high volume of traffic currently passing through or, at Bedford station, platform occupation times blocking lines and preventing other services from running. This is prior to the significant uplift in services that would be provided by EWR or without consideration of the potential expansion of other operator services or changes to freight service levels.
- It’s extremely difficult to fit all of the planned new EWR services into the timetable onto the slow lines of the current four-track MML. This is because the timetable is driven by constraints further afield, for example timing of the Thameslink services through central London, and the requirement to weave existing freight services through the station area on specifically timed paths because of high occupancy of the platforms by the Thameslink services. If the lines north of Bedford are shared between EWR and non-EWR services, these constraints mean that Thameslink and freight services would likely be prioritised because of the need to reduce knock-on effects across the wider network, increasing the performance risk to EWR.

- It would be possible to create some additional capacity through the delivery of an Up Fast platform at Bedford for EMR services. However, this would only reduce the interactions and impacts of the EMR services on the constraints of the slow lines and would do little to mitigate the interactions between freight, Thameslink and EWR when assessed over the whole day.
- A four-track option would also constrain future growth of passenger and freight services on the MML in the Bedford area, requiring further substantial upgrades to the railway network in the future. The level of investment already made to increase capacity on the MML would be negated as this sharing of the infrastructure with the four-track option creates a new point of congestion on the route.
- The four-track design shares roughly 900m of the MML on the slow lines only. This would be very difficult to both signal and maintain effectively within such a short section without detrimental impacts on the speeds and effective flow through both the approach to the station and platforms. There would also be a loss of operational resilience to both the MML and the EWR route as full flexibility and access between the fast lines, slow lines and the EWR junctions and route would not be possible. This would add in a significant constraint to the operation of EWR at a mid-point of the route, with no alternatives or diversions available.
- There would be reduced benefits and challenges to long term viability of the proposed Wixams station if EWR proceeded on the basis of four-track, as a key strategic and operational aim of this Project is to lengthen the station turnaround and platform dwell times at Bedford of the Thameslink services and this would exacerbate the performance risks and growth constraints on the freight flows through the station and impacts on the capacity available to EWR.

### Properties north of Bedford station

We recognise the impacts of the six-track option on local residents and businesses.

Through design development, we've reduced the overall number of properties that are likely to be directly affected by the construction of two additional tracks from 98 (97 residential properties and one business property) identified at the 2021 consultation, to 66 (65 residential properties and one business property) now, and we'll continue to seek further opportunities to refine our proposals to limit the amount of land we would need.

Table 3 below summarises the number of properties we now believe are likely to be directly affected and how we've managed to reduce this impact.

	2021 consultation	2023 design	Difference
<b>Residential properties likely to be acquired and/or demolished</b>	53	37	-16
<b>Residential properties may lose part of their garden or parking area</b>	44	28	-16
<b>Commercial properties likely to be acquired and/or demolished</b>	1	1	0
<b>Total number of properties likely to be acquired/demolished or lose part of land</b>	<b>98</b>	<b>66</b>	<b>-32</b>

Table 3 - Impact of our proposals on land and property



To the north of this area, we'd also be likely to acquire some land at the UK Power Networks substation and Alexander Sports Centre.

We're aware of the significant effect our proposals would have on those people whose homes and businesses may be affected by the construction of the new lines. We'll continue to talk to those people potentially directly affected by our plans in this area and will work to reduce the impact of our proposals as far as practicable. Further information on the support available for people whose land or property is potentially directly affected by our proposals can be found at [eastwestrail.co.uk/planning/land-and-property](https://eastwestrail.co.uk/planning/land-and-property)

We'll provide further details of our developed proposal for how we serve Bedford town centre at the statutory consultation which we expect to take place in the first half of 2024.

## Connecting Bedford and Cambourne – choosing the preferred alignment

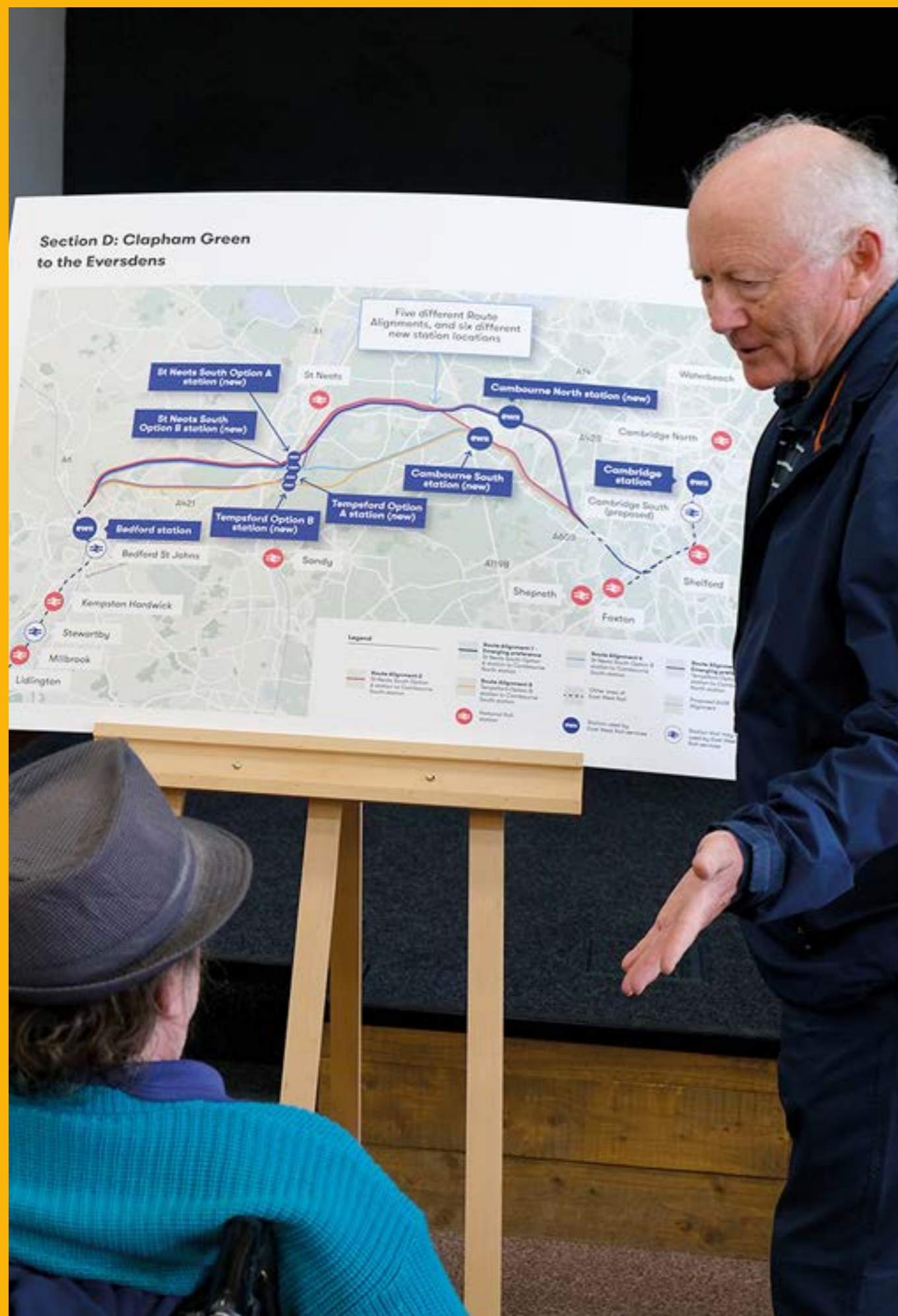
**We've reviewed the feedback from the 2021 consultation and undertaken further analysis to conclude that one of our emerging preferences from 2021, Alignment 1, performs better than all other alignments we've considered for this section of the route.**

We've also identified a significant opportunity for economic growth around the interchange station between EWR and ECML. We've assessed that a station at Tempsford should be preferred to one at St Neots South, even though it's not served by existing designs for Alignment 1. Therefore, we've developed a local variation of Alignment 1, which has many of the benefits of that alignment, but also enables a new station at Tempsford. This variant is referred to as Alignment 1 (Tempsford variant) and it will now be taken forward for further development.

### Our emerging preferences at the 2021 consultation

At the 2021 consultation we presented five shortlisted alignment options for comment: Alignments 1, 2, 6, 8 and 9, which, between them, included six new station location options: St Neots South Option A and B, Tempsford Option A and B, and Cambourne North and Cambourne South. Of the alignments, 1 and 9 were identified as our emerging preferences:

- **Alignment 1** would travel northeast from Bedford, pass north of Ravensden, Wilden and Roxton and serve a new St Neots South Option A station. From the St Neots South station, the alignment would follow the proposed A428 Black Cat improvement scheme and the existing A428 on the north side of the road, passing north of Croxton and Eltisley, to reach a new station located north of Cambourne.
- **Alignment 9** would travel northeast from Bedford, pass south of Ravensden, Wilden and Roxton and would continue east to serve a new Tempsford Option A station. From Tempsford the alignment would follow the A428 Black Cat improvement scheme and the existing A428 on the north side of the road, passing north of Croxton and Eltisley, to reach a new station located north of Cambourne.



## Work done since the 2021 consultation

### Confirming our preference for a new station north of Cambourne

Since the 2021 consultation, we've undertaken further development work on these options, taking on board feedback received during the 2021 consultation. This established that Alignments 1 and 9 remained our preference for the following reasons:

- Both support a new station north of Cambourne. A station at Cambourne South would, when compared to a station at Cambourne North, require a greater level of mitigation to protect environmental and heritage assets in the area, including scheduled monuments and listed buildings, areas of woodland and priority habitats as well as County Wildlife Sites and the Cambourne Local Nature Reserve. From a planning perspective, this would place greater constraints upon development at Cambourne South than at Cambourne North. Alignments serving Cambourne North are therefore currently assessed as likely to perform better in relation to housing and economic growth than alignments serving Cambourne South.
- A station north of Cambourne wouldn't be expected to constrain development to the north of the A428, although it would be separated from the village of Cambourne.
- Routes serving a Cambourne North station would run alongside the A428 potentially allowing the Project to benefit from a shared travel corridor, meaning it could cover a route used regularly to connect people to places. This could also help to reduce some adverse impacts of the Project. Visual changes to the landscape could be concentrated in the A428 corridor rather than in areas not already subject to development.

For the reasons above, we've not progressed with Alignments 2, 6 and 8, which would serve a station to the south of Cambourne.

We're continuing to work with local stakeholders to identify the most suitable location for the proposed new station north of Cambourne.

## Confirming our preference for Route Alignment 1 and a new station at Tempsford

Having established a preference for Cambourne North, we looked again at Alignments 1 and 9, also taking into consideration feedback received from the 2021 consultation, to assess which performed best.

Alignment 1 (serving St Neots South and Cambourne North) was found to continue to perform better overall. Alignment 9 (serving Tempsford and Cambourne North) would lead to the village of Roxton becoming encircled by dual carriageways and the new railway, which would increase the impact on local residents, cut off the village from the open countryside to the south and adversely affect the setting of local heritage assets, including the listed A1 bridge over the River Great Ouse. Alignment 9 was also assessed as likely to have greater impacts on the environment and was more expensive than Alignment 1.

However, following further review of the opportunities associated with a station at either St Neots or Tempsford, it emerged that a station at Tempsford would be expected to have greater potential for development to support significant economic growth than a station at St Neots, further enhancing our understanding in this area from the 2021 consultation.

We've concluded that a station on the ECML near Tempsford would perform better than a station at St Neots South even though both locations would be capable of supporting roughly the same amount of new housing and commercial development. However, the Tempsford station would:

- Be more likely to enable this development to come forward due to the more consolidated landownership in the vicinity.
- Facilitate the re-use of the former RAF Tempsford site, achieving better brownfield over greenfield land usage.
- Be expected to achieve greater accessibility for more people due to a lower degree of severance caused by the new A428 dual carriageway, which would be likely to directly impact a development at St Neots; building on the opportunity to strengthen integration of active travel modes.

- Be preferable in place-making terms because it would avoid the risk of the new settlement coalescing with the built-up area of St Neots.
- While the Tempsford location does have a greater interaction with floodplains, which would restrict the availability of some areas of land for development, it may well support enhanced place-making and opportunities to enhance biodiversity through the creation of a wetland reserve and green spaces within easy reach of the community.

On these grounds our preference is for Alignment 1 for most of its route, but also for a new station to be developed at Tempsford.



Figure 14 - Map of the route from Bedford to Cambourne

## Alignment 1 (Tempsford variant)

Having established that Alignment 1 performs better than Alignment 9, but that a station at Tempsford is expected to perform better than a station at St Neots, we developed a local variation of Alignment 1 between Colesden and Little Barford to enable delivery of a station at Tempsford. The varied section is shown by the red line on the plan below. We refer to the route which incorporates this variation as Alignment 1 (Tempsford variant). This is approximately 1km longer than Alignment 1 and would pass north of Ravensden and Roxton, south of St Neots, and between Roxton to the south and Black Cat Junction to the north. The alignment would then cross over the ECML at an approximate location similar to the Tempsford Option A station location, before continuing on the same route as Alignment 9.

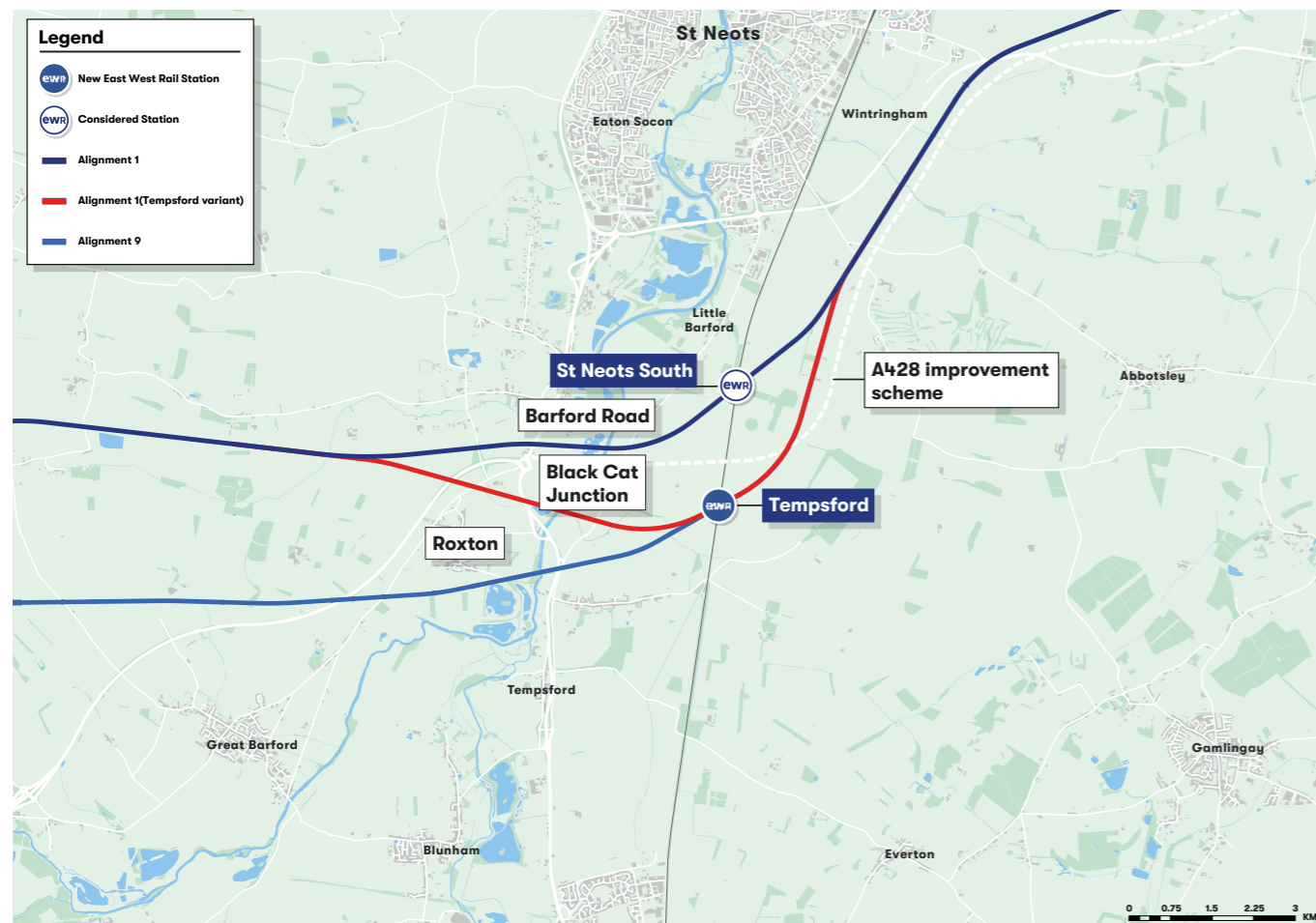


Figure 15 - Illustrating Alignments 1, and 9, and showing the Tempsford variant

We found that Alignment 1 (Tempsford variant) wouldn't be materially different in environmental terms from Alignment 1. There are minor differences in potential impacts where the route deviates from Alignment 1, namely that one additional heritage asset would

potentially be impacted and slightly more priority ecological habitat affected by the new variant. However, on balance, the Tempsford variant is considered to perform similarly to Alignment 1.

Alignment 1 (Tempsford variant) would eliminate the encirclement of Roxton and mitigate the impact on the setting of heritage assets that would have been caused by Alignment 9. Alongside this, it would provide a new station at Tempsford and still enable the benefits of Alignment 1 elsewhere on the route to be secured, thereby performing better than Alignment 9 in terms of environmental impact and cost.

These findings, which also confirmed the viability of Alignment 1 (Tempsford variant) as an option, allowed us to assess its performance against Alignment 9 in its entirety, which enabled us to decide not to progress Alignment 9 further, while safeguarding the option of a Tempsford station.

As such, we've identified Alignment 1 as our preferred route for the majority of its length but have an emerging preference for the localised variation of the route to serve a new station at Tempsford. Therefore, we intend to take Alignment 1 (Tempsford variant), which serves Cambourne North and Tempsford, forward for further surveys, environmental assessment and design development. This will help us understand how best to minimise impacts and ensure that this option performs as well as possible.

Alignment 1 (Tempsford variant) may be subject to adjustment and refinement as a result of our ongoing assessments and design development work. We'll provide further details at the statutory consultation on the design that we propose to include in our application for development consent to enable you to comment on our proposals.



We're working closely with other projects in the area including the National Highways A428 Black Cat improvement scheme to explore opportunities between our projects. Running EWR parallel to the A428 could manage impacts within an existing and developing travel route. Visual changes to the landscape could be concentrated within the same area as the A428 rather than areas that are currently relatively untouched by infrastructure development.

## Approach to Cambridge and Cambridge station

**Following feedback from the 2021 consultation, and through the ACP, we've carried out more work to reassess both the northern and southern approaches to Cambridge. Our analysis shows that both approaches are technically viable, and the northern approach has some merits. For example, it now has an estimated lower cost due to work we've done to optimise its design.**

Our preference, however, remains a southern approach because it better achieves the benefits predicted through the Theory of Change by serving the Cambridge Biomedical Campus, which is an unparalleled centre for life sciences of global importance. As a result, the southern approach is more likely to unlock the constraints on the Cambridge economy, create jobs, attract investment and deliver growth in the national interest.

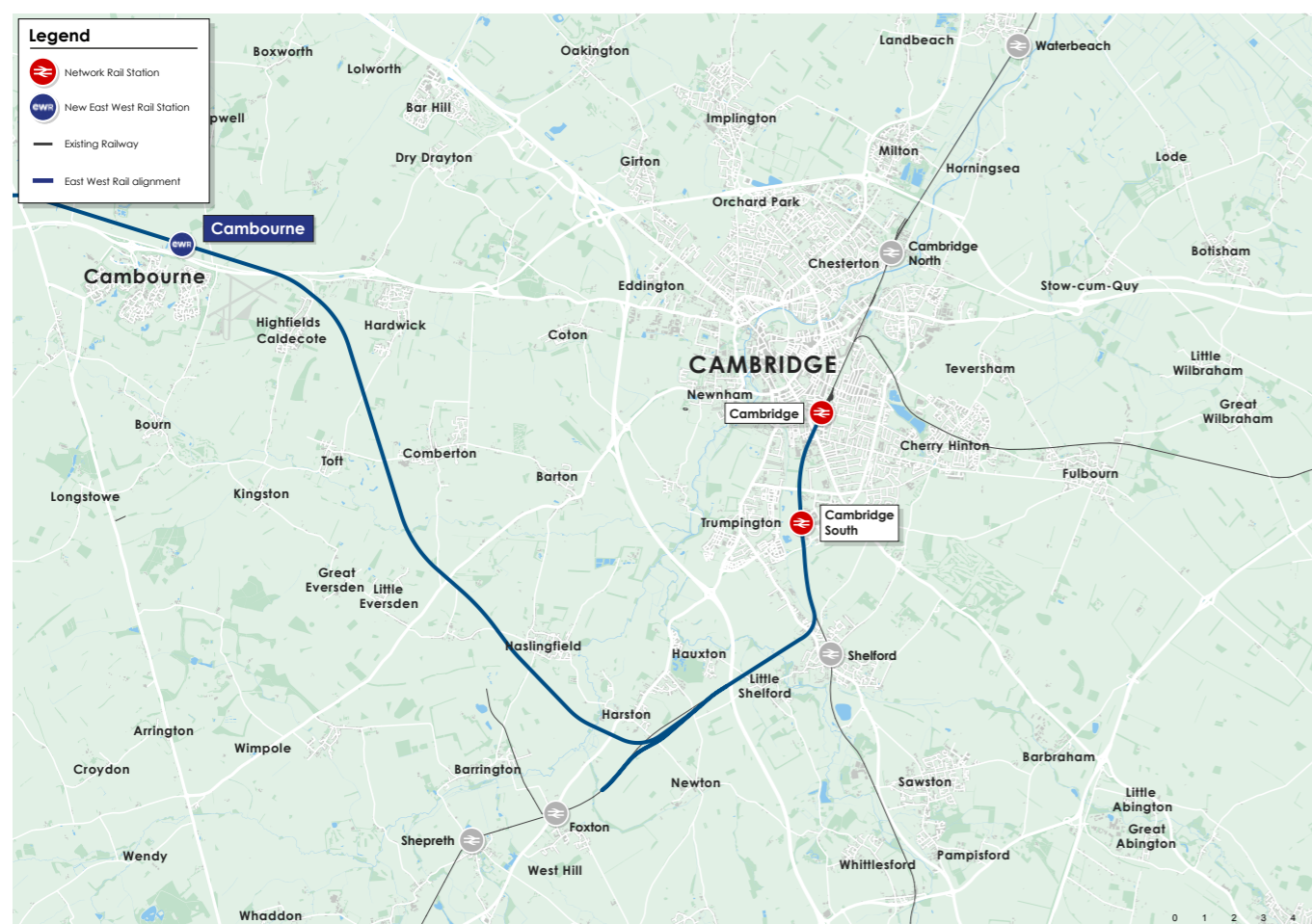


Figure 16 – Approach to Cambridge

### Our proposals at the 2021 consultation

At the 2021 consultation, we set out our proposals for the new railway to approach Cambridge from the south. The proposed alignment would leave Cambourne and continue south-east, passing to the south of Haslingfield and Harston villages, at which point it would merge with the Shepreth Branch Line via a grade-separated junction at Hauxton, and then join the West Anglia Mainline (WAML); this would also require either improvements to, or closure of, Hauxton level crossing. Between Little Shelford and Hauxton, services would stop at the new Cambridge South station, located next to the Cambridge Biomedical Campus, and then proceed north to Cambridge station.

Many responses to the consultation suggested that the decision to approach Cambridge from the south should be re-opened and that EWR should instead approach Cambridge from the north, stopping at Cambridge North before proceeding to Cambridge station. We had already considered such a route earlier in the design process but discounted it because we concluded that it did not align as well with the strategic objectives for the Project. In addition, the option considered would have required the construction of significantly more infrastructure, including expanding the WAML between Cambridge North and Cambridge stations to four tracks (compared to the current two tracks). This would have required the acquisition and demolition of significant numbers of residential and commercial properties.

Taking this feedback on board, and in line with the review we undertook on the strategic need for the Project and the case for the railway as part of the ACP, we reconsidered the need to connect to Cambridge (Cambridge South station in particular) and revisited the options to achieve this, including a northern approach to Cambridge.

### Work done since the 2021 consultation

#### The opportunity for the Oxford to Cambridge region, and Cambridge's pivotal role

The Oxford to Cambridge area plays a significant role in the national economy, contributing £120 billion in Gross Value Added (GVA) to the economy every year<sup>25</sup>. It has the potential to become an economic supercluster, bringing together complementary specialisations across

the region, which would bring an additional £4billion GVA<sup>26</sup> per annum to the economy based on Cambridge's growth alone<sup>27</sup>.

Life sciences is a key high-growth industry nationally and within the region. It's strategically important for the UK, generating an annual turnover of over £89billion in 2020 and directly employing 268,000 people<sup>28</sup>. The UK government recognises the importance of increasing investment in life sciences research and its ambition is to make the UK the most attractive place in Europe to invest in and establish life sciences businesses, which it committed to in the March 2023 budget<sup>29</sup>.

Cambridge is a particularly important node in the knowledge economy, and especially in relation to life sciences. It hosts the largest and most successful life sciences cluster in Europe.

It's therefore imperative to focus on connecting EWR to Cambridge, which plays a leading role<sup>30</sup> in the UK in the innovation, life sciences and technology sectors and provides the best opportunity to support growth in life sciences, in turn helping realise wider economic growth in the region.

Constraints to economic growth are very significant in Cambridge, which suffers from high property prices<sup>31</sup>, a lack of appropriate commercial space and skills shortages at all levels within the labour market. As explained in more detail within the Economic and Technical Report, forecasts predict that 80,000 new jobs can be created in Cambridge by 2050 but that this growth is constrained by the existing transport network, especially to the west of the city, which is preventing people from accessing these opportunities.

Addressing the Cambridge constraints could also unlock two further opportunities. The Cambridge Biomedical Campus already has 17,000 jobs within easy reach of the future Cambridge South station<sup>32</sup>. Therefore, immediate productivity benefits could be enabled by EWR, as the new connection would help facilitate access for this workforce, boosting productivity in turn for both existing and future jobs. It could also enable densification of development on the existing site, further strengthening the potential for agglomeration.

## The case for the south of Cambridge, and Cambridge South station

The Cambridge South area has particular significance in realising the potential for growth in life sciences. Hosting the most successful and largest life-sciences cluster in Europe, seven of the world's top 20 pharmaceutical companies (by revenue) have a presence in the Cambridge biomedical cluster, with six of them located in South Cambridge<sup>33</sup>.

The Cambridge Biomedical Centre itself is one of the world's leading employers and clusters of healthcare, biomedical research and healthcare education. It's an attractor for investment into the UK and home to AstraZeneca, which contributes over £2bn to the economy every year and nearly £300m to the exchequer<sup>34</sup>. It's also part of a wider cluster, being close to other key research and development sites located south of Cambridge: Granta Park, Babraham Research Campus and Wellcome Trust Genome Campus. However, the transport network in the south of Cambridge is not as well developed as that in the north, where the proximity to the A14 facilitates access to the Cambridge Science Park and the potential area to be developed. The science park is also served by a guided busway, segregated from general traffic.

Fostering a triple helix model of private, public and academic presence, investment and collaboration necessary to drive forward growth, this clustering can attract more businesses and investment. This would drive more value through agglomeration, deliver combined benefits such as shared labour pools and supply chains and increase opportunities for innovation and collaboration.

We recognise that there are also growth opportunities in the north of Cambridge. New development is proposed at Cambridge airport and on the north-eastern fringe of the city between the Cambridge Science Park and Cambridge North station. However, this area does not feature the same dynamics required to enable the growth potential that would be possible in south Cambridge, lacking the triple helix characteristics of private sector, public sector and academic presence. Whilst the Cambridge Science Park also hosts a variety of innovative businesses, including those in the biomedical field, it's significantly more remote from other critical hubs such as those south of Cambridge, so has less scope to contribute to – and therefore achieve

the potential benefits from – wider clustering.

Furthermore, significant areas of new development have already been approved or are allocated in the area to the north of Cambridge, including between the Cambridge Science Park and Cambridge North station<sup>35</sup>. However, these are already being promoted independently of EWR. Therefore, the scope for EWR to catalyse this development is more limited than in respect of the opportunities south of Cambridge.

Unlocking constraints in growth therefore requires solutions that would unlock growth at the Cambridge Biomedical Campus and south Cambridge area, through direct EWR connectivity to the new Cambridge South station.

### Reconsidering the approach to Cambridge

As part of the work undertaken since the consultation, and taking account of the feedback received, we've renewed consideration of a northern approach to Cambridge option, as well as continuing to develop our thinking on the approach from the south.

The revision to the overall service pattern for EWR, as well as reconsideration of the need to operate trains at an even interval of every 15 minutes, as assumed for the 2021 consultation, provided the opportunity for a revised northern approach option to be developed. This option would leave Cambourne and continue north-east, passing to the south of Oakington and then to the north of Histon village. The route would join the WAML north of Milton and continue to Cambridge station, stopping at Cambridge North on the way. Owing to the change in timetabling requirements associated with a changed service pattern, it would no longer be necessary to four-track the WAML north of Cambridge station, so no additional land would be required.

Both a northern and southern approach to Cambridge could allow four EWR trains per hour to operate to and terminate at Cambridge station with similar journey times from the west, although the southern approach offers a more robust, even interval timetable for the customer and slightly shorter journey times to Cambridge station owing to it being slightly shorter in length. Beyond this, both approaches could also, in theory, serve the new Cambridge South station; however, the ability of the rail network to do this effectively would be different, as explained below.

## Assessing the northern and southern approaches to Cambridge

### Impact on developments

Both northern and southern options would connect to a station north of Cambourne, diverging on their approach to Cambridge just east of the proposed Cambourne station. Neither approach precludes the potential for an additional intermediate station to be included between Cambourne and Cambridge, should a case for this be generated and funding identified. However, such a stop is not material to the performance of either option.

EWR services on a northern approach could serve Cambridge North station, which is the closest railway station to the Cambridge Science Park on the north-eastern fringe of the city. However, the majority of the science park, including its future development, is located more than a 15-minute walk from the station. Since a 15-minute walk (or less) is an accepted duration for connectivity on foot, the Cambridge Science Park wouldn't be easily served by the Cambridge North station, meaning that EWR wouldn't maximise accessibility in this location.

By comparison, almost the entire Cambridge Biomedical Campus (including the potential expansion being considered as part of the emerging Greater Cambridge Local Plan process) would be within a 15-minute walk of Cambridge South station. This means that jobs at the Cambridge Biomedical Campus – both existing and future – could be more accessible than jobs at the Cambridge Science Park.

### Traffic congestion and connectivity

Traffic congestion is a particular issue for Cambridge and has increased dramatically in the last decade. Both northern and southern approaches offer an opportunity to reduce traffic congestion in Cambridge. However, there is heavier congestion in southern Cambridge compared to the north of the city, and the guided busway and local bus routes are at capacity. This leads to slower, less reliable road journey times to the Cambridge Biomedical Campus for workers, visitors, patients and others. If rail links are further improved, this

could encourage people to choose alternatives to road journeys to access the campus, in turn potentially releasing car park space for higher value research facilities. That would enable denser development opportunities at the Cambridge Biomedical Campus.

### Future capacity and service extensions

Recognising the wider aspirations for further connectivity in the East Anglia region, it was important to consider how both approaches might impact the ability for additional services to run through Cambridge in future. To inform our understanding, we focused our analysis on the aspirations to provide one additional service to Ipswich, Norwich and Peterborough (totalling three additional services north of Cambridge). We also considered the ability to extend EWR services beyond Cambridge (although it should be noted that extensions east of Cambridge are not currently within the scope of this Project).

Each of these services would supplement the existing hourly services from Cambridge to these destinations, although it wouldn't be possible for these extra services to run without making further enhancements to other parts of the rail network.

The infrastructure for both the northern and southern approaches were found to have the potential to support one extra train per hour to Ipswich and at least one extra train per hour to Norwich or Peterborough. Beyond this, a northern approach would also support a third additional train to run (to Norwich or Peterborough), whereas a southern approach would require further enhancements to the north of Cambridge to facilitate this.

A northern approach option, however, wouldn't be able to extend to Cambridge South station without significant enhancements to the track to the south of Cambridge and leading up to the new Cambridge South station. To provide connectivity to all three Cambridge stations with a northern approach, we considered the potential to extend up to two existing network services from the London area, replacing two of the four EWR services, to Cambridge North and onto the EWR route, terminating at either the new Tempsford or Bedford station. While possible, this option was found to have a number of disadvantages and was therefore not favoured:

- The option wouldn't deliver the full required connectivity to Cambridge South station, as only two trains would call per hour.
- At peak times, these services are extended from Cambridge North to Ely. If they were instead to operate onto EWR, splitting of services may be required at Cambridge or Cambridge North stations, to continue onto both the EWR route and Ely, or substitution of the Ely services altogether, resulting in the reduction of capacity to Ely and increased journey times.
- London-bound services are operated by electric trains, of a length longer than that considered by EWR. This means that electrification of the Milton Junction to Tempsford or Bedford sections would be necessary, as well as the potential extension of platforms to accommodate this rolling stock. This would significantly increase the cost of the Project.
- The option also increases operational and performance challenges due to the risk of service disruption further south on the WAML being imported onto EWR, leading to consequential delays and potential cancellation of the extended services.

By comparison, a southern approach would enable all four EWR services to call at Cambridge South. This would bring the Cambridge Biomedical Campus within a realistic commutable distance of not only Cambourne, Tempsford and Bedford, but also EWR stations on the MVL, with estimated journey times from Stewartby and Ridgmont to Cambridge South of 45 and 51 minutes respectively. A southern approach would also support the ability to extend up to two EWR services per hour to Cambridge North station, subject to some further small enhancements, calling at all three Cambridge stations – and potentially beyond.

Whilst infrastructure may be sufficient, extensions of EWR services to provide further eastern connectivity to Norwich or Ipswich is not realistic with a northern approach. This would require EWR services to reverse at Cambridge or passengers would need to interchange with other services, unless the services bypassed Cambridge station altogether if the north facing Milton Junction chord were to also be delivered. It's to be noted that any extension to the east is wholly dependent on Network Rail enabling the necessary paths and capacity works on the rest of the WAML route.



## Impact on freight

Whilst we're still developing our freight strategy, we've considered how each approach might impact the potential for freight services to run over the EWR network.

The southern approach could allow freight trains to run onto the EWR route, subject to some potential infrastructure or operational solutions to provide the ability to regulate these services between passenger services, and availability on the wider network. To enable more than two freight trains per day per direction, it's considered that holding loops would be necessary, assumed to be required between Hauxton Junction and Coldham Junction, north of Cambridge station. Higher volumes of freight would also require other enhancements, both on EWR and the wider railway network.

A northern approach would require a north facing Milton Junction chord and a south to east avoiding line at Ely, to enable freight services to bypass Ely and Cambridge, for any level of freight to run.

## Environmental considerations

The revised northern approach is likely to cause fewer impacts to the environment compared to the northern approach set out in the Technical Report - Appendix F, published for the 2021 consultation. This is because this new northern option does not require significant construction works on the WAML, which would have resulted in impacts on communities and community facilities and is designed to be closer to current ground levels, reducing potential for landscape impacts. The revised northern approach may also perform better than the southern approach in terms of potential impacts on biodiversity, as it avoids sensitive habitats present for the southern approach, which would require mitigation.

Whilst we recognise that a southern approach would result in the new line being located closer to the Eversden and Wimpole Woods Special Area of Conservation (with its population of bats), we're confident that any potential effects on this site can either be avoided or would be capable of mitigation. A southern approach also locates the proposed line closer to the Mullard Radio Astronomy Observatory and we'll continue to engage with them to ensure appropriate mitigation is employed to ensure continued operations at the site.

On balance, the northern approach performs slightly better on environmental grounds, but our view is that this isn't definitive as we believe the southern approach offers an acceptable environmental solution and has other benefits.

## Cost and constructability

Our assessment of the northern approach is at a higher level, and so less mature, than a southern approach. A northern approach is potentially quicker to construct and is likely to cost less than a southern approach. The extent of work required is less, including less disruption to the existing network, though this impact would be offset by a longer period before commencing construction.

There remains significant uncertainty and a range of estimates for cost and delivery dates, meaning that the cost difference between the two options could be comparatively small. Due to the physically constrained, built-up geography within Cambridge and the interface with the live railway approaching Cambridge from either the north or the south, both options would present notable complexity and still have significant risk.

## Confirming our preference for the southern approach

A southern approach provides the only solution to fully unlock economic opportunities that can be realised through EWR. Our high-level investigations since the 2021 consultation indicate that a northern approach may potentially be cheaper to build and quicker to construct, and have less potential environment impact, but it wouldn't be an alternative to a southern approach in terms of economic growth. Whilst options to serve Cambridge South station using a northern approach perform poorly, the southern approach both serves Cambridge South station fully and provides an option to extend services to serve Cambridge North station directly, serving all three Cambridge stations, as well as locations further north and east. This is in line with stakeholder aspirations for future connectivity further east, although extensions east of Cambridge are not currently within the scope of this Project.

Finally, whilst the northern approach option does provide some additional capability for future growth in rail services north of

Cambridge, with most of the new capacity utilised by EWR, the southern approach option would leave open the maximum potential for a future increase in rail capacity to the north of Cambridge to support long term rail growth.

Considering the above, alongside the fact that the area to the south of Cambridge can benefit more from more direct EWR connectivity, we've concluded that the benefits of the southern approach outweigh the cost and delivery advantages of the northern approach. Despite these advantages, the northern approach would prevent EWR from achieving the Theory of Change. We're therefore confirming our preference for a southern approach to Cambridge.

We're continuing to refine the designs for the southern approach, and we'll present these for your comment at the statutory consultation which we expect to take place in the first half of 2024.

## Hauxton Junction

At the 2021 consultation we presented our emerging preference to build an offline grade-separated junction to connect the new railway to the Shepreth Branch Royston Line. Grade-separation means constructing a bridge or underpass to carry one line over the other rather than connecting the two railways at ground level. This wouldn't be the case if the junction were constructed online i.e. within the footprint of the existing railway.

The section of the existing railway that becomes redundant could be used for non-railway purposes, such as a footpath. Therefore, whilst an offline solution requires more land take for the period of construction, the net land take is similar for both an on and offline solution.

The construction of an offline grade-separated junction to connect the new railway to the Shepreth Branch Royston Line remains our preference.

## Section Appendix

<sup>22</sup> Sources via EWR page <https://eastwestrail.co.uk/the-project/oxford-to-bicester#:~:text=A%20major%20upgrade%20of%20the,on%20this%20section%20of%20line>

<sup>23</sup> Network Rail's Oxford Corridor Phase 2 scheme - <https://www.networkrail.co.uk/running-the-railway/our-routes/western/oxfordshire/oxford-corridor-phase-2/>

<sup>24</sup> [Cabinet approves £4.56m funding package to accelerate plans to reopen Cowley Branch Line to passengers | Oxford City Council](#)

<sup>25</sup> Office for National Statistics (2021). Regional gross domestic product: Enterprise regions. Gross Domestic Product (GDP) chained volume measures (CVM) annual growth rates

<sup>26</sup> Gross Value Added (GVA) measures the contribution to the economy of each individual producer, industry or sector ([www.gov.uk](http://www.gov.uk))

<sup>27</sup> EWR calculation based on 80k additional new jobs created from infrastructure intervention (see footnote below)

<sup>28</sup> Bioscience and health technology sector statistics 2020 - GOV.UK ([www.gov.uk](http://www.gov.uk))

<sup>29</sup> Spring Budget 2023 - GOV.UK ([www.gov.uk](http://www.gov.uk))

<sup>30</sup> [2019: A record year for VC investment in the UK. Dealroom.co \(2020\)](#)  
[Office for Life Sciences \(2021\). Life Sciences Vision](#)

<sup>31</sup> [Land registry: House Price Index](#)

<sup>32</sup> Population: The primary data source for employment is 2011 Census

<sup>33</sup> [Cambridge Biomedical Cluster Report 2022](#)

<sup>34</sup> [Cebr\\_Report\\_31082021\\_JFL\\_comments\\_010921 \(cambridge-biomedical.com\)](#)

<sup>35</sup> [Cambridge Local Plan 2018: Appendix B](#)

# Route-wide matters

# 8



# Route-wide matters

**As well as thinking about the route for the railway, we've been considering the overall objectives for EWR. This includes the kind of customer service and operations considerations in the 2021 consultation, and a range of issues such as:**

- How we can ensure our services would be accessible and inclusive for all potential customers.
- How our train services would be powered.
- How the Project would perform environmentally.
- Considerations being taken for freight services.
- Embankments and viaducts.
- How we'd manage the acquisition of any land required for the Project.

EWR Co continues to consider and action feedback received during the 2021 consultation in relation to the service and operations of the new railway in terms of station experience, on board services and staff interactions. We'll take account of the responses in the work we do to develop proposals and will set out how we've done this at the statutory consultation which we expect to take place in the first half of 2024.

## Inclusion and accessibility

**An important objective for us is to ensure that EWR provides an accessible, safe and simple option for everyone and to enhance the customer experience for those using EWR services. We want to make sure that all customers have a fantastic experience on the railway and raise standards for the industry by embedding the concepts of inclusive design into our developing plans.**

To ensure we can provide accessible and inclusive spaces, we'll pay particular attention to station surroundings and understand the variety of ways in which customers make their way to stations. This can make a significant difference to the customer experience, as can providing level-access from the street to the platform and the train wherever possible.

We're also thinking about the ways that we can design and develop our services to maximise their use by all, including disabled and older people.

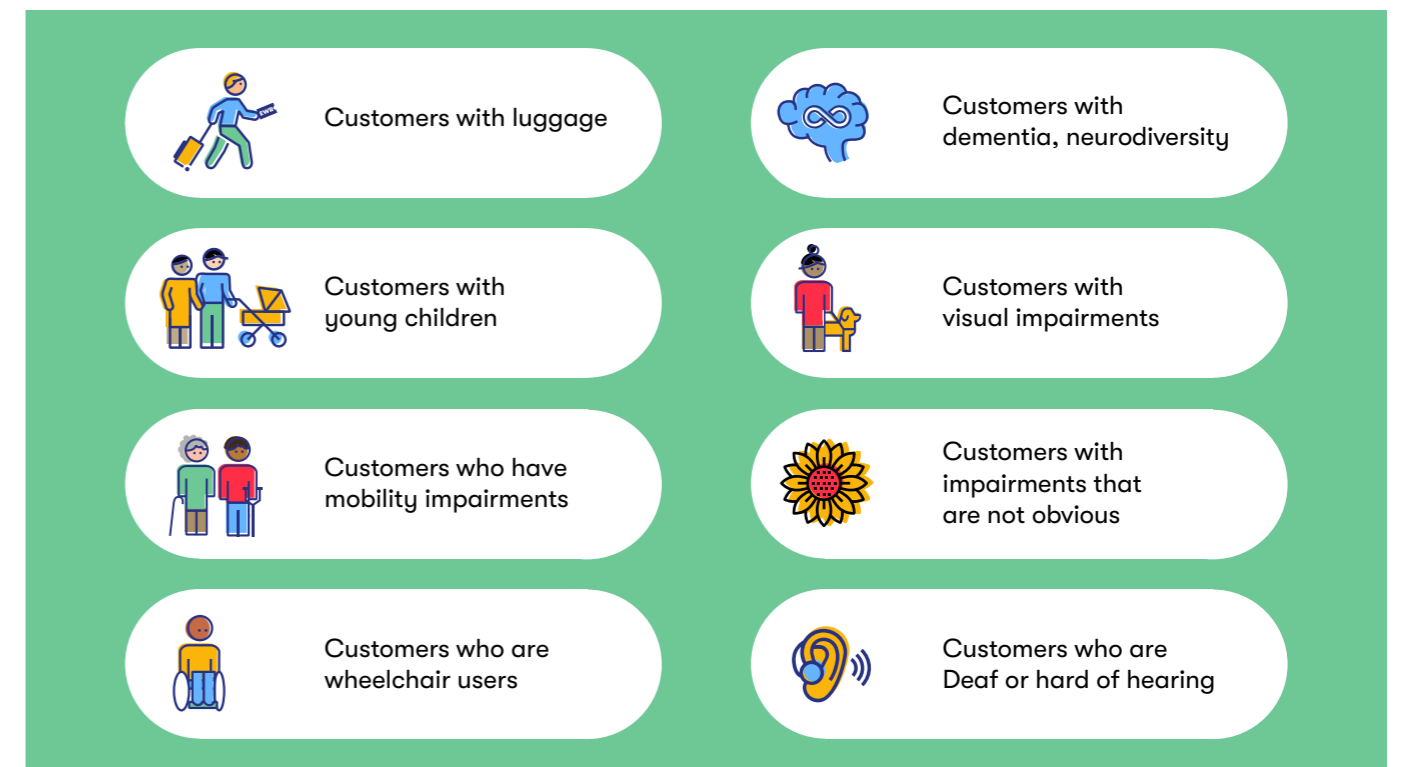


Figure 17 – Different customer needs that will be considered

We'll work to understand the impacts to communities and stakeholders of the work we do, particularly in relation to protected groups as set out in the Equality Act 2010.

We've set up an Accessibility Advisory Panel, made up of local disabled people who live along the route, to help us to better understand barriers to travel. We've set our panel up now to grow our insight and to develop a meaningful relationship with them as the Project progresses through design, construction and operational stages.

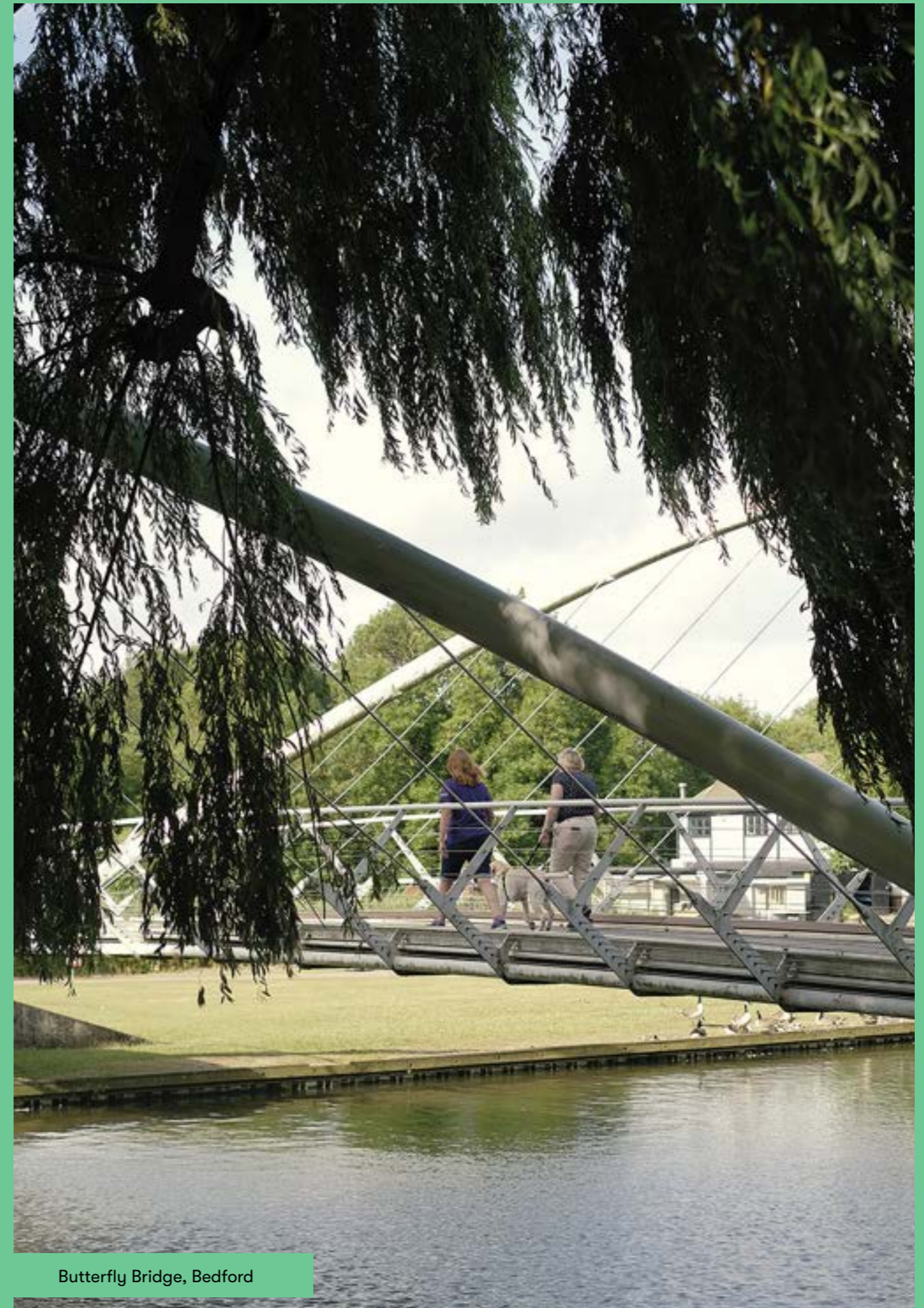
You can find more information about our approach to accessibility and inclusion a [eastwestrail.co.uk/planning/accessibility-and-inclusion](https://eastwestrail.co.uk/planning/accessibility-and-inclusion)

## Powering East West Rail (Traction)

**We're considering several ways we might power EWR trains, which align with the government aspirations and policy on decarbonisation, with the aim of delivering a net zero carbon railway.**

The decision about what technology we could use hasn't yet been made – for example, it could be conventional electric trains powered by overhead line equipment, or it could be other rapidly advancing technology such as battery power to help lower our carbon emissions.

Work to inform our traction power strategy is ongoing and further details will be presented at the statutory consultation.



Butterfly Bridge, Bedford

## Freight

**While we're focused on delivering passenger services to connect communities between Oxford and Cambridge, we're designing the railway to maintain the current rail freight capacity and make appropriate provision for reasonable future growth.**

The proposed route alignment covers a relatively small portion of the UK's freight network; however, this area does include connections to key parts of the wider network which do have potential for freight growth.

### Current freight on EWR

There are three main existing freight flows across the current route, which we're considering in our designs:

- The Oxford to Bicester part of the route currently sees some freight traffic between Oxford and Banbury Road.
- Freight traffic originating from the MML via the MVL, that connects to the WCML at Bletchley.
- The final section offers paths for freight from London to Quainton Road/Calvert via Aylesbury.

### Rail freight volumes on EWR

There is potential for EWR to provide an alternative, more efficient route for some existing freight flows from the ports at Felixstowe and Southampton, as well as potential to generate new flows by opening up new connections where these were previously not viable. We've been exploring these options and opportunities, weighed against further investment requirements and local community considerations.

Our work indicates that the volume of new freight flows over EWR would depend on additional investment taking place on the national network. As such, the current scope of EWR enables up to two new freight train paths per day per direction from Felixstowe, routed via Cambridge, through to Oxford and beyond, and around two new

freight train paths per day from Southampton, routed via Oxford, Bletchley and onto the WCML. Enabling these paths could replace over 70,000 HGV journeys on the roads every year. It would however require significant investment in other enhancements, both on EWR and elsewhere on the network for freight to exceed these levels.

We continue to develop EWR's freight strategy, and further updates will be provided at the statutory consultation.

You can find more information about our approach to freight at [eastwestrail.co.uk/freight](https://eastwestrail.co.uk/freight)



New track construction, Winslow

## Embankments and viaducts

### We're considering ways we can reduce or remove embankments and viaducts on East West Rail.

During the 2021 consultation, we presented outline details about where the new railway might need to be 'in cutting' or 'on embankment / viaduct' and displayed the 'reasonable worst-case scenario'. Following responses to this consultation which outlined concerns about the visual impacts, we looked at ways we could reduce the height of proposed embankments and viaducts – or remove them altogether.

The work we've been doing since the consultation has helped us to identify some potential opportunities to reduce or remove viaducts and embankments, by:

- Taking the railway under roads in cuttings instead of building viaducts over them.
- Making minor diversions to potential route alignments to allow the railway to be lowered.
- Diverting the roads over the railway on smaller overbridges instead of building viaducts over existing roads.

We believe these initiatives could allow us to remove completely or reduce the height of approximately 50% of the embankments or viaducts (by length) compared to what was shown in the 2021 consultation.

The design of the railway is progressing and details of our proposals for these features will be presented as part of the statutory consultation to allow feedback to be provided.

You can find more information about our approach to embankments and viaducts at [eastwestrail.co.uk/planning/embankments](https://eastwestrail.co.uk/planning/embankments)

## Environment and sustainability

### Protecting the environment is a fundamental part of our decision-making and we remain committed to the environmental principles we outlined as part of the 2021 consultation.

We've worked hard to ensure that we focus on avoiding impacts where possible through the design of alignments. That's why all the alignment options we presented in 2021 for the new railway from Bedford to Cambridge avoid directly impacting the most important environmental and heritage sites in the area, such as listed buildings and Sites of Special Scientific Interest (SSSI).

Through the ACP we've continued to consider the potential impacts on the environment and how these can be avoided. For example, in Bedford, we found that partial reopening of the Varsity Line would be likely to result in a range of impacts, including to designated sites. This supported continuing to favour a route to the north of Bedford.

We recognise that environment is just one consideration amongst a range; this is reflected in our use of Assessment Factors to support our decision making. Where impacts remain as a result of the new railway, like those relating to landscape, we'll continue to work hard to reduce these through sensitive design. More detailed information on this will be shared during our statutory consultation.

### Biodiversity

We're committed to delivering 10% Biodiversity Net Gain across the whole EWR Project. Building on the progress made in Connection Stage One (the section of the railway that would connect people between Oxford and Milton Keynes via Bicester and Winslow).

One way we're working to ensure we can achieve this, is through continuing to prioritise avoiding high value and priority habitats. In developing the route alignments for the 2021 consultation, we first undertook research to better understand the presence of ancient woodland in the area. As not all ancient woodland is mapped in the Natural England Inventory, we needed to look at historic mapping and

other records to better understand if unmapped woodlands could have the potential to be ancient.

By doing this we were able to develop alignment options which not only avoided directly impacting mapped ancient woodland but also potential ancient woodland which we had identified. This step will help us in delivering on our Biodiversity Net Gain ambition, through designing alignments that avoid the loss of this irreplaceable habitat.

We'll continue to work with key environmental stakeholders to share findings, listen and propose best practice and identify where we can support local and nationwide environmental objectives.

### Environmental surveys and assessments

To support both our Biodiversity Net Gain ambitions and wider environmental outcomes, we use environmental data to help us develop proposals that avoid, mitigate and compensate for potential impacts on the environment.

Since our last consultation we've been undertaking a programme of environmental surveys which continue to build our knowledge of the environment in the area.

The insights from this survey work will help us to develop the design of the Project and reduce the potential impact of our proposals on the environment.

Our survey work will continue throughout 2023 and 2024 and we'll publish the findings of our assessments in the Preliminary Environmental Information Report (PEIR) as part of the statutory consultation. This will provide an opportunity to review and comment on our findings. A full environmental impact assessment will be carried out before we submit our application for development consent, and the results will be presented in an Environmental Statement and associated documents that will be part of our application. Our application will also be subject to an assessment to determine whether it's likely to have an adverse impact on specially protected sites and habitats. You can find more information about our approach to environment and sustainability here [eastwestrail.co.uk/planning/environment-sustainability](https://eastwestrail.co.uk/planning/environment-sustainability)

## Homes, land and property

**Over the course of the Project, we'll need to survey, access and in some cases buy land to construct and operate the railway – which may include some residential properties.**

In identifying the preferred route, we've taken account of impacts on land and property owners and have sought to reduce these as part of our consideration of the overall effects of our proposals. As is typical for a project of this type, at this stage it's too early for us to know exactly what land we'll require for the railway and further design work and surveys need to be carried out. Changes to the design may be identified as a result of that work.

Once we've identified the land that needs to be included in our proposed application for development consent, we'll carry out further consultation with all directly affected land and property owners and provide more information about the design and its potential impacts. Then, as part of our planning process we would seek appropriate powers for compulsory acquisition of land and property needed for EWR. More information about the next steps for the Project can be found in the "What Happens Next" section of this report below.

This report has set out our current position on some of the key areas along the proposed route. We know that publishing our proposals could potentially affect people needing to sell their home or small business. There are legal provisions, known as statutory blight provisions, which in some circumstances can require the promoter of a major public infrastructure project to purchase property which has been devalued as a result of the project proposals where the owner has been unable to sell at market value. However, these statutory blight provisions only apply once an application for development consent has been submitted. More information can be found in the guide on the EWR Co website: [Guide to Statutory Blight Notices](https://eastwestrail.co.uk/planning/land-and-property)

To provide support for property owners before the submission of EWR's development consent application we've launched the Proposed Need to Sell Property Scheme. This scheme provides support to eligible property owners who have a compelling reason to sell their property



but are unable to do so except at a substantially reduced value because of EWR.



### What is the Proposed Need to Sell Property Scheme?

The Proposed Need to Sell Property Scheme is a non-statutory scheme that has been developed taking into account the feedback we received during the 2021 consultation. The Proposed Need to Sell Property Scheme is intended to address impacts on property market conditions that may result from the EWR Project. It supports eligible property owners who have a compelling need to sell but who have been unable to do so other than at a substantially reduced value because of the EWR Project. It enables eligible property owners to apply for their property to be purchased at its unblighted market value. The full eligibility criteria for the scheme and further information are available in the guide to the Proposed Need to Sell Property Scheme at: [eastwestrail.co.uk/needtosell](https://eastwestrail.co.uk/needtosell)

### Helping you through the process

We know the possibility that we may need to purchase your land and property may concern you. We'll follow these five principles to try to reduce the impact on you if you are potentially affected by the Project.

- **Keep you updated:** We'll keep you updated and informed throughout the Project as our proposals develop.
- **Act with respect:** We'll treat you, your land, property and personal data, and third parties acting for you with respect. We'll work collaboratively with you and any third parties acting for you.
- **Minimise land loss:** We'll discuss our proposals with you, so we understand and manage the potential impacts to you. We aim to minimise the impact our proposals may have on your land and property and mitigate any impacts we can't avoid where possible.

- **Fair compensation:** Where we'd need to acquire your land for the Project, we would compensate you fairly in accordance with the statutory compensation code and we would seek agreements with you.
- **Dedicated contacts:** Our dedicated, specialist land team is in place to ensure you have consistent and well-briefed contacts with the Project.

As we develop our land requirements, we'll get in touch with land and property owners to help them understand whether their land and property may be affected and the next steps.

We've published a series of guides for people whose land or property could be potentially affected by our Project at [eastwestrail.co.uk/planning/land-and-property](https://eastwestrail.co.uk/planning/land-and-property)



# What happens next?

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# What happens next?

**We still have work to do and are carrying out further surveys and investigations to help us design the Project in more detail. These will be vital in providing information for our assessments, which will underpin the information presented at the statutory consultation which we expect to take place in the first half of 2024, and our subsequent application to seek consent to build and operate the railway. As part of this work, you may notice some activity in your area.**

We'll develop our design based on feedback received from the two previous consultations and continuing environmental, economic and technical studies. There will be further opportunity for you to comment on our proposals during the statutory consultation.

Throughout the process we'll keep listening and talking to everyone with an interest in the Project. There will also be regular updates and information on our website [www.eastwestrail.co.uk](http://www.eastwestrail.co.uk)

## Future consultation

We plan to start the statutory consultation on the preferred route and associated infrastructure, such as stations and level crossings, in the first half of 2024 to give you a further opportunity to share your views with us. In the meantime, we'll continue to engage with our stakeholders and the local community to help us refine the design before inviting the public to submit further feedback. Consultation feedback will be carefully considered when finalising our proposals.

## Application for a Development Consent Order (DCO)

The Secretary of State has directed that the Project be treated as a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008. This means that we're required to make an application for a DCO to obtain permission to construct and operate the railway. You can find out more about the DCO process at [eastwestrail.co.uk/planning/route-to-construction](http://eastwestrail.co.uk/planning/route-to-construction)

The application will be made to the Planning Inspectorate who, on behalf of the Secretary of State for Transport, will appoint a panel (the Examining Authority) to examine the application. The examination will include consideration of the likely impacts of the Project on the environment and protected habitats. Following the examination, the Examining Authority will make a recommendation to the Secretary of State for Transport, who will decide whether to give consent for the Project.

Further information on the DCO process is available at [infrastructure.planninginspectorate.gov.uk](http://infrastructure.planninginspectorate.gov.uk)



### Further information and how to contact us

Visit our website for more information: [www.eastwestrail.co.uk](http://www.eastwestrail.co.uk)

### Get in touch

By email: [contact@eastwestrail.co.uk](mailto:contact@eastwestrail.co.uk)

By phone: 0330 1340067

By post: FREEPOST East West Rail

# Glossary and abbreviations

# 10

Term	Description
<b>ABH</b>	Automatic half barrier crossing
<b>ACP</b>	Affordable Connections Project
<b>AQMA</b>	Air Quality Management Area
<b>BNG</b>	Biodiversity Net Gain
<b>CCTV</b>	Closed Circuit Television
<b>CEMP</b>	Construction Environmental Management Plan
<b>CoCP</b>	Code of Construction Practice
<b>Defra</b>	Department for Environment, Food & Rural Affairs
<b>DfT</b>	Department for Transport
<b>DLUHC</b>	Department for Levelling Up, Housing and Communities
<b>DCO</b>	Development Consent Order
<b>EIA</b>	Environmental Impact Assessment
<b>ECML</b>	East Coast Main Line
<b>ES</b>	Environmental Statement
<b>ETR</b>	Economic and Technical Report
<b>EU</b>	European Union
<b>EWR</b>	East West Rail
<b>EWR Co</b>	East West Rail Company

Term	Description
<b>FPGT</b>	Bridleway level crossing that has gates and a telephone to enable those in charge of animals to contact the signaller before crossing
<b>FPK</b>	Footpath level crossing with kissing gates
<b>FPS</b>	Footpath level crossing with stiles
<b>FPW</b>	Footpath with wicket gates
<b>GTR</b>	Govia Thameslink Railway
<b>IRZ</b>	Impact Risk Zone
<b>LNWR</b>	London & North Western Railway
<b>LRG</b>	Local Representative Group
<b>MVL</b>	Marston Vale Line
<b>MML</b>	Midland Main Line
<b>NH</b>	National Highways
<b>NIC</b>	National Infrastructure Commission
<b>NTS</b>	Need to Sell Property Scheme
<b>NR</b>	Network Rail
<b>NNPS</b>	National Networks National Policy Statement
<b>NR</b>	Network Rail
<b>NSIP</b>	Nationally Significant Infrastructure Project

Term	Description
<b>ORR</b>	Office of Rail and Road
<b>OLE</b>	Overhead Line Equipment
<b>PEIR</b>	Preliminary Environmental Information Report
<b>PRoWs</b>	Public Rights of Way
<b>PWOS</b>	Project Wide Output Specification
<b>SAC</b>	Special Area of Conservation
<b>SBR</b>	Shepreth Branch Royston
<b>SPZ</b>	Source Protection Zone
<b>SSSI</b>	Site of Special Scientific Interest
<b>tph</b>	Trains per hour
<b>UWC</b>	User worked crossing
<b>UWCT</b>	User working crossing with telephone
<b>TWAO</b>	Transport and Works Act Order
<b>WAML</b>	West Anglia Main Line
<b>WCML</b>	West Coast Main Line

	Term	Description
<b>A</b>	<b>A428 Improvement Scheme</b>	The scheme promoted by Highways England to upgrade the A428 between Black Cat roundabout east of Bedford and Caxton Gibbet roundabout west of Cambourne.
	<b>Active Travel</b>	Making journeys in physically active ways - like walking, wheeling (using a wheelchair or mobility aid), cycling, or scootering.
	<b>Affordable Connections Project</b>	This is a review of the strategic need for the Project and to investigate solutions which could deliver the majority of the original scheme benefits and outcomes at a lower cost.
	<b>Air Quality Management Area</b>	An area designated by a local authority, where it believes the Government's objectives for air quality will not be achieved without additional interventions.
	<b>Assessment factors</b>	The factors used to assess and compare different options for the Project.
	<b>At-grade junction</b>	A railway junction where tracks cross at the same level. Also known as a flat junction.
<b>B</b>	<b>Bat gantries</b>	Purpose-built structures designed to act as linear features that will guide echolocating bats over transport corridors at a safe height above traffic.
	<b>Biodiversity Net Gain (BNG)</b>	An approach to development that leaves biodiversity in a better state than before the development took place.
	<b>Blight</b>	The term blight used in this document refers to generalised blight. Generalised blight is typically used to describe the actual or assumed depreciation in value of property which may be attributable to a proposed infrastructure scheme.
	<b>Blockade</b>	The closure of a rail route for an extended period (typically more than two to three days).

	Term	Description
	<b>Bridleway</b>	A route over which the public have rights to pass on foot, cycle and on horseback.
<b>C</b>	<b>Cambourne North</b>	The preferred option for a new station to the north of Cambourne.
	<b>Cambourne South</b>	Option for a new station to the south of Cambourne.
	<b>Capital costs</b>	Cost incurred during delivery of a project in purchasing buildings, land, construction works, and equipment as opposed to the costs of operating, maintaining or decommissioning the project.
	<b>Clean Air Strategy</b>	The government's clean air strategy sets out how it intends to reduce particulate matter emissions.
	<b>Clock-face timetable</b>	A timetable arranged so that trains arrive or depart at the same times in the hour, every hour (for instance at 10, 30 and 50 minutes past the hour).
	<b>Concept</b>	Referred to as the ways the line could be upgraded in various sections
	<b>Code of Construction Practice</b>	A public document which sets out the environmental management requirements for construction.
	<b>Compulsory acquisition</b>	A legal mechanism by which certain bodies (known as 'acquiring authorities') can acquire land without the consent of the owner.
	<b>Connection stage</b>	Work will be divided into three connection stages which relate directly to a full journey and not just a piece of track: Connection Stage One (CS1): Oxford - Bletchley and Milton Keynes (services may be first opened to Bletchley in a two-phased approach) Connection Stage Two (CS2): Oxford - Bedford Connection Stage Three (CS3): Oxford - Cambridge

	Term	Description
	<b>Conservation area</b>	An area of notable architectural or historic interest or importance in relation to which change is managed by law.
	<b>Construction Environmental Management Plan</b>	A working document that defines how a project will mitigate its potential impacts on the environment and local community during construction.
	<b>Cutting</b>	A passage that has been dug through high ground for a railway or road.
<b>D</b>	<b>Development Consent Order</b>	Order made by the relevant Secretary of State to authorise the construction, operation and maintenance of a nationally significant infrastructure project (NSIP). In relation to East West Rail, this would be the Secretary of State for Transport.
	<b>Department for Environment, Food &amp; Rural Affairs (Defra)</b>	UK Government department responsible for safeguarding our natural environment, supporting our world-leading food and farming industry, and sustaining a thriving rural economy.
	<b>Department for Transport (DFT)</b>	Government department responsible for the English transport network and a limited number of transport matters in Scotland, Wales and Northern Ireland that have not been devolved.
	<b>Department for Levelling Up, Housing and Communities (DLUHC)</b>	UK government department responsible for responsible for housing, communities, local government in England and the levelling up policy. Formerly Ministry of Housing, Communities & Local Government (MHCLG).
	<b>Door to door connectivity</b>	This includes local connectivity, smart ticketing and transport accessibility – all areas of significance when considering the door-to- door journey.
<b>E</b>	<b>Earthworks</b>	General term for the excavation and placement of soil, rock and other material; or for existing cuttings and embankments.

	Term	Description
	<b>East Coast Main Line (ECML)</b>	Railway line running from London King's Cross to Edinburgh through Sandy and St Neots.
	<b>Environmental Statement (ES)</b>	A document produced to support an application for development consent that is subject to Environmental Impact Assessment (EIA), which sets out the likely impacts on the environment arising from the proposed development.
	<b>East West Rail (EWR)</b>	A proposed new rail link, which would connect communities between Oxford, Milton Keynes, Bedford and Cambridge. This is the project.
	<b>East West Railway Company Ltd (EWR Co)</b>	Company set up by the Secretary of State for Transport to develop East West Rail. This is the Company, so we use "we, us and our"
	<b>Electrification</b>	The development of powering trains and locomotives using electricity instead of diesel or steam power.
	<b>Embankment</b>	A construction that allows railway lines to pass at an acceptable level and gradient through the surrounding ground that is composed entirely of soil or rock.
	<b>Embedded carbon</b>	The greenhouse gas emissions arising from the manufacture, transportation, installation, maintenance, and disposal of materials used in construction.
	<b>Environmental Impact Assessment</b>	A process by which information about environmental effects of a proposed development is collected, assessed and used to inform decision making. For certain projects, EIA is a statutory requirement, reported in an Environmental Statement.
<b>F</b>	<b>Fleet</b>	The rolling stock vehicles described in or required by Schedule 1.7

	Term	Description
	<b>Flood plain</b>	An area of low-lying ground adjacent to a river, which is subject to flooding
	<b>Flood risk / assessment</b>	An assessment of the risk of flooding from all flooding mechanisms, the identification of flood mitigation measures, and identification of actions to be taken before and during a flood.
	<b>Freight</b>	Goods transported in bulk by truck, train, ship, or aircraft.
	<b>Freight operating companies</b>	Companies which use the rail network in order to transport goods to their destination.
<b>G</b>	<b>Grade-separated junction</b>	A railway junction where tracks cross at different levels
	<b>Govia Thameslink Railway (GTR)</b>	Govia Thameslink Railway, a train operating company
	<b>Green belt</b>	A designation for land around certain cities and large built-up areas, which aims to keep this land permanently open or largely undeveloped.
	<b>Green bridge</b>	An artificial structure over road or rail infrastructure which is either vegetated or provides some other wildlife function.
	<b>Green corridor</b>	A thin strip of land that provides sufficient habitat to support wildlife, often within an urban environment, thus allowing the movement of wildlife along it.
	<b>Greenhouse gas</b>	Gases able to absorb infrared radiation emitted from Earth's surface and re-radiate it back to Earth's surface, thus contributing to the greenhouse effect. Carbon dioxide, methane, and water vapour are the most important greenhouse gases.

	Term	Description
<b>H</b>	<b>Highways England (HE)</b>	The Government body responsible for managing the Strategic Road Network in England.
	<b>HS2</b>	High Speed 2, the new railway line under construction between London and the West Midlands, and beyond.
	<b>Impact Risk Zone (IRZ)</b>	A zone around a Site of Special Scientific Interest used to make an initial assessment of the potential risks posed to that Site by development proposals.
<b>I</b>	<b>Indicative alignment</b>	The indicative, concept alignment within each Route Option used for the comparison of Route Options A to E in the previous stage of design.
	<b>Infrastructure maintenance depot</b>	A depot at which staff and equipment involved in maintaining rail infrastructure are based and from which maintenance operations are coordinated.
	<b>Interchange</b>	A station at which passengers may change between trains serving different routes and destinations.
<b>K</b>	<b>km</b>	Kilometres
<b>L</b>	<b>Level crossing</b>	A location at which vehicles and pedestrians may cross railway tracks at grade (at ground level). This definition includes accommodation crossings which provide access to specific properties; and crossings which are operated by their users rather than automatically.
	<b>Line speed</b>	The maximum speed at which trains can run on a given railway line, or section of line.
	<b>Listed building</b>	A building placed on a statutory list, because of its special architectural or historical interest, in relation to which change is managed by law.



	Term	Description
	<b>London &amp; North Western Railway (LNWR)</b>	Historic British railway company, an ancestor of the West Coast Main Line.
	<b>Local Representative Group (LRG)</b>	These 15 groups were established by EWR Co along the route and include councillors, parish and town councils, and representatives from EWR Co. They offer an open forum for discussions – a place to share information and informative content on key parts of the development process, ask questions and discuss local opportunities or emerging concerns.
<b>M</b>	<b>M</b>	Metres
	<b>Marston Vale Line (MVL)</b>	The existing line and services operating between Bletchley and Bedford.
	<b>Ministry of Housing, Communities &amp; Local Government (MHCLG)</b>	UK government department responsible for housing, community and local government matters in England.
	<b>Midland Main Line (MML)</b>	The main railway route between London St Pancras, Nottingham and Sheffield.
	<b>mph</b>	Miles per hour
<b>N</b>	<b>National Highways</b>	The government body responsible for managing the Strategic Road Network in England . Formerly Highways England.
	<b>National Infrastructure Commission (NIC)</b>	Executive agency responsible for providing the Government with impartial, expert advice on major long term infrastructure challenges facing the UK.

	Term	Description
	<b>National Networks National Policy Statement (NN NPS)</b>	Sets out the need for, and the Government's policies to deliver, development of nationally significant infrastructure projects (NSIPs) on the national road and rail networks in England, and will be the primary basis against which the Secretary of State for Transport will assess and determine a DCO application for a new railway pursuant to section 104 of the 2008 Act.
	<b>Nationally Significant Infrastructure Project (NSIP)</b>	A large-scale development (relating to energy, transport, water, or waste) of national significance that meets the thresholds set in Part 3 of the Planning Act 2008.
	<b>Need to sell Property scheme</b>	A scheme available to eligible property owners who have a compelling need to sell but have been unable to do so other than at a substantially reduced value because of the EWR project.
	<b>Network Rail (NR)</b>	Network Rail Infrastructure Limited, the organisation which owns the majority of the railway infrastructure in England.
	<b>Net zero carbon</b>	Net zero refers to achieving a balance between the amount of greenhouse gas emissions produced and the amount removed from the atmosphere.
	<b>Nitrogen dioxide (NO2)</b>	One of a group of gases called nitrogen oxides. One source of NO2 is from traffic emissions, as a result of burning fossil fuel in internal combustion engines.
	<b>Noise barrier</b>	Exterior structure designed to protect sensitive receptors from noise pollution.
	<b>Non-motorised users</b>	People travelling on foot, by cycle or on horseback; or by any other means which is not motorised.
<b>O</b>	<b>Office of Rail and Road (ORR)</b>	A non-ministerial Government department which is the economic and safety regulator for Britain's railways.

	Term	Description
	<b>Off-line option / Offline</b>	When the new junction is constructed outside of the footprint of the existing railway, which means we wouldn't have to close the existing railway for a long period of time to construct the new junction.
	<b>Overhead Line Equipment (OLE)</b>	The Overhead wires above railway lines, along with their supporting infrastructure, that typically carry electricity at 25,000 volts to power electric trains.
	<b>Operating costs</b>	Costs incurred in the day-to-day running of the railway.
	<b>Option</b>	In this report, 'option' is used to refer to a possible solution that has been considered and is being taken forward for further design and/or assessment.
	<b>Oxford-Cambridge Arc (the Arc)</b>	A region defined by the Government and the National Infrastructure Commission covering local authorities across the counties of Northamptonshire, Cambridgeshire, Buckinghamshire and Oxfordshire and the unitary authorities of Bedford, Central Bedfordshire, Luton, and Milton Keynes.
<b>P</b>	<b>PA 2008</b>	Planning Act 2008
	<b>Patronage</b>	Refers to the number of people using a transit service.
	<b>Passing loop</b>	A section of track used to allow one train to be passed by another train travelling behind it in the same direction.
	<b>Permitted Development Rights</b>	Development that may be carried out by certain categories of (for example) statutory undertaker (such as Network Rail) under deemed planning permission ("Permitted Development Rights"), for certain types of work. Permitted Development Rights also benefit other statutory undertakers.
	<b>Particulate Matter (PM10 and PM2.5)</b>	Fine particulate matter with an aerodynamic diameter of 10 microns or less and 2.5 microns or less, respectively.

	Term	Description
	<b>Platform dwell times</b>	The amount of time a train spends at a scheduled stop without moving.
	<b>Points</b>	A junction between two railway lines, that can be set to guide a train to or from either of those lines. Can also be referred to as a switch.
	<b>Possession</b>	Restriction of access to a section of railway for the purposes of maintaining or renewing infrastructure, at a particular location and for a particular period of time.
	<b>Preferred Route Option E</b>	The route option previously selected as the preferred area between Bedford and Cambridge in which to seek alignments in this phase of developing the project.
	<b>Preliminary Environmental Information Report (PEIR)</b>	A report to inform the statutory consultations on the likely significant environmental effects of the Project, so far as available to date.
	<b>Programme-Wide Output Specification (PWOS)</b>	A document containing detailed requirements for the project, agreed with the Department for Transport.
	<b>The Project</b>	The infrastructure, systems, rolling stock and organisational arrangements which need to be created or modified to deliver East West Rail and its intended outcomes.
	<b>Project section</b>	One of six geographical areas used to present infrastructure proposals for consultation.
	<b>Public Rights of Way (PRoWs)</b>	A way over which the public have a right to pass and repass.

	Term	Description
R	<b>Reference alignment</b>	The alignment option against which the performance of other alignment options is assessed.
	<b>Rolling stock</b>	Any vehicle that operates on, or intends to operate on, or uses a railway track, including any loading on such a vehicle, but excluding a vehicle designed for both on- and off-track use when not operating on the track. Rolling stock is a collective term for a large range of rail vehicles of various types, including locomotives, freight wagons, passenger cars, track machines and road-rail vehicles.
	<b>Route corridor, Route option and Route alignment</b>	Route Corridors are the broad areas within which the new railway might be located, identified as part of the initial 'sift' of possibilities in 2016. Within the preferred Route Corridor, several narrower Route Options were identified and a Preferred Route Option was announced in 2020. The Project is now at the stage of selecting a Route Alignment.
S	<b>Safety risk</b>	The risk of unsafe practices or situations occurring on the railway that may lead to accidents
	<b>Scheme</b>	A project or a group of projects being promoted or undertaken by a party or parties other than EWR Co with objectives which do not directly facilitate, but may be related to, East West Rail.
	<b>Scheduled Monument</b>	A historic building or site considered to be of national importance, placed on a list kept by the Government and requiring Government approvals for any works which might affect the Scheduled Monument.
	<b>Shepreth Branch Royston (SBR) Line</b>	The line that connects Cambridge to Hitchin via Shepreth.
	<b>Siding</b>	A short track at the side of and opening on to a railway line. They are usually used for stabling trains.

	Term	Description
	<b>Source Protection Zone (SPZ)</b>	A defined area around groundwater sources such as wells, boreholes and springs used for public drinking water supply. The purpose of SPZs is to provide additional protection to safeguard drinking water quality through constraining the proximity of an activity that may impact upon a drinking water abstraction.
	<b>Site of Special Scientific Interest (SSSI)</b>	The land notified as a SSSI under the Wildlife and Countryside Act 1981, as amended, as being of special interest by reason of its flora, fauna or geological or physiological features.
	<b>Special Area of Conservation (SAC)</b>	A designation under EU Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, also known as the Habitats Directive. The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds)
	<b>Statutory blight</b>	The term used to describe a situation where a property is blighted in a legal sense, such as where it is in a development plan or within land safeguarded for a specific purpose, for example the railway, or included within a compulsory purchase order.
	<b>Statutory consultation</b>	A stage of consultation which a promoter of a nationally significant infrastructure project is required to undertake, under section 42 the Planning Act 2008.
	<b>Stopping Pattern</b>	The order of station calls that are made by a train service in each direction along a route.
	<b>St Neots Option A station</b>	Option for a new station in the St Neots area. Both St Neots station options would be located to the south of St Neots. This would be in addition to the existing St Neots station.
	<b>St Neots Option B station</b>	Option for a new station in the St Neots area. Both St Neots station options would be located to the south of St Neots. This would be in addition to the existing St Neots station.
	<b>Strategic Road Network</b>	The core road network in England managed by National Highways.

	Term	Description
<b>T</b>	<b>Tempsford Option A station</b>	Option for a new station in the Tempsford area. Both Tempsford station options would be located to the northeast of Tempsford.
	<b>Tempsford Option B station</b>	Option for a new station in the Tempsford area. Both Tempsford station options would be located to the northeast of Tempsford.
	<b>Thameslink</b>	Train operator running services between the south coast of England, Bedford and Cambridge.
	<b>Theory of change</b>	A theory of change is a method that explains how a given set of interventions, is expected to lead to specific change in future outcomes, drawing on a causal analysis, based upon available evidence.
	<b>Track layout / track configurations / trackworks</b>	The number of railway lines that are present at a location including any sets of points that allow a train to move between different tracks.
	<b>Traction power</b>	The source of energy used for the movement of railway vehicles. This power source may be self-contained within the train such as diesel fuel or batteries, or may be provided externally such as electricity provided via Overhead Line Equipment.
	<b>tph</b>	Trains per hour
	<b>TWA 1992</b>	Transport and Works Act 1992
	<b>Transport and Works Act Order (TWAO)</b>	A Transport and Works Act Order made by the Secretary of State under the TWA 1992 alongside a deemed planning permission, allowing works to a railway or other transport project to be undertaken

	Term	Description
<b>U</b>	<b>Upfast platform Utility company</b>	A platform that serves a faster running train service. A company that owns equipment which carries and distributes water, electricity, gas or telecommunications. These commodities are collectively known as 'utilities'.
<b>W</b>	<b>West Anglia Main Line (WAML)</b>	The main railway route between London Liverpool Street and Cambridge.
	<b>West Coast Main Line (WCML)</b>	The main railway route between London Euston and Glasgow.
	<b>Wildlife corridors</b>	An area of habitat connecting wildlife populations, often used as bat flyways.

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