

East West Rail: Strategic Narrative

DRAFT: FOR CONSIDERATION



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Executive Summary

Introduction

This report has been co-commissioned by England's Economic Heartland (EEH) and East West Railway Company to produce a 'Strategic Narrative' setting out the case for delivering the proposed East West Rail (EWR) scheme in full, and thus connecting one of the UK's most important economic regions with a modern strategic rail network.

The Business Case for individual Connection Stages is being produced by East West Rail Railway Company, however there is a requirement for a single Strategic Narrative that sets out the potentially transformational impact of delivering the complete EWR scheme between Oxford and Cambridge, including a link to Aylesbury.

This Strategic Narrative presents the case for EWR through a series of themes, demonstrating the multifaceted transformational impact EWR will have across the Heartland region.

Improving connectivity

The EEH region is an important contributor to the UK economy, and the region performs above the national average in terms of economic growth, whilst the overall size of the regional economy is over £160bn in terms of GVA (Gross Valued Added) per annum. The region is home to world-class clusters of high value knowledge sector businesses and jobs. The region has a wealth of life science parks, research institutions, and world-leading Universities.

The region is polycentric and its economic activity is spread across a number of hubs. Oxford, Cambridge, Milton Keynes, Northampton, Swindon, Peterborough and Luton are the region's major economic centres. The region also comprises a wider set of overlapping travel to work areas including those centred on Bedford, Aylesbury, High Wycombe, Watford and Stevenage.

The region's transport network currently focuses on north-south connectivity, restricting the collaboration and agglomeration potential of the region's key sectors and businesses. To travel between most of the region's most important economic, education, and leisure hubs is extremely difficult by rail, and often involves travelling in and out of London.

There is a strong base of evidence, developed by both local and national organisations and authorities, that identifies connectivity as a major constraint on delivering economic growth in the region, as well as limiting the progress towards the sustainability and net-zero objectives of the Heartland. Limited highly skilled labour supply, commercial and residential prices and supply, and high travel costs have all previously been attributed to the region's current transport offer.

The impact of delivering EWR in full on the region's connectivity would be transformational. It would take just over 90 minutes to travel between Oxford and Cambridge, and less than an hour travel between Bedford and Cambridge, and Oxford and Milton Keynes.

(hh:mm)	Existing rail, maximum journey time	EWR journey time
Oxford – Cambridge	03:05	01:35
Oxford – Bedford	03:20	01:00
Cambridge – Bedford	02:05	00:30
Oxford – Milton Keynes	02:20	00:45
Cambridge – Milton Keynes	02:25	1:25
Bedford – Milton Keynes	02:10	00:45
Aylesbury - Cambridge	03:05	tba
Bedford - Aylesbury	02:40	tba

Delivering economic growth and innovation

The region's key industries of life sciences, advanced manufacturing, digital, and future energy make it a key part of the UK's innovation ecosystem. Whilst the region's economy has historically performed well, and accounts for approximately 9%¹ of England's economic output, there is untapped potential across the region. The economy of the Heartland operates in a global market, competing for investment from locations such as San Francisco, Boston, and Berlin. Yet, in parts of the Heartland business productivity remain below that of global competitors, partly down to congestion and a lack of resilience in the region's transport network.

Improving transport connectivity in the EEH region will make the region even more attractive both to international investment and international high skilled workers, who may otherwise decide to invest and work in one of the region's international competitors.

Delivering EWR will open up new opportunities for businesses to grow, boost productivity, and drive British innovation in high-value industries. The benefits of EWR are not restricted to the region, as removing the constraints on the Heartland's economy will allow the region to make a significant additional contribution to national economic output. The region's specialist industries including advanced manufacturing and pharmaceuticals support supply chains embedded across the UK, not just the Heartland region. For example, one of country's biggest pharmaceutical companies conducts research activity around Cambridge, and manufacturing and distribution activities take places in the North West of England. Delivering growth for businesses in the EEH region will be felt across the country.

Connecting skills and talent

For economies of their size and importance, Cambridge, Oxford, and Milton Keynes all have lower than average levels of commuting into city centres. Improvements to connectivity from surrounding communities and between the hubs of the region are required to make the high value employment opportunities available to the region's population.

¹ [Levelling Up Narrative, England's Economic Heartland](#)

The specialist high-value businesses across the Heartland need a wide catchment area from which skilled labour across all levels of the economy can travel for work and business. There are plans for transformational employment growth in towns and cities across the region and a fit-for-purpose sustainable rail network is required to support and deliver these ambitions. Without the transformational connectivity improvements delivered by EWR, the region's transport network will continue to act a constraint on realising these high growth ambitions.

Good placemaking

East West Rail has the potential to support sustainable communities, putting sustainable transport at the heart of development and travel choices in the region. The proposed EWR route strongly aligns with allocated sites in local plans across the region.

House prices in parts of the region have become unaffordable for most of the population, the ratio of median house prices to earnings is 13:1 in places like Cambridge and 12:1 in Oxford² making them two of the least affordable cities in the UK, to live and work. EWR will provide new connections from existing residential communities to the education and high value employment opportunities in the region's economic centres.

Parts of the urban areas in the Heartland are amongst the most deprived parts of the country and EWR would help 'level up' the parts of the region that require it most. There are ambitious plans for regeneration in several of the urban centres of the Heartland, including Bedford and Bletchley. Delivering EWR and making these centres key transport nodes will support these plans.

Net zero

The EEH region has an ambitious objective to reach net zero carbon emissions as early as 2040. Emissions from transport are 30% higher³ than the UK average and if the net zero target is going to be met, transformational levels of modal shift are required across the heartland.

EEH and local partners support EWR being delivered as a fully electrified line to deliver the maximum decarbonisation impact for passengers at the point of use. The transformational connectivity improvements delivered by EEH could act as a catalyst for modal shift and encourage sustainable and active modes of transport to be used for the first and last mile of journeys, which aligns with national and rail industry decarbonisation targets.

² [Partnering for Prosperity: A new deal for the Cambridge-Milton Keynes-Oxford Arc, National Infrastructure Commission](#)

³ <https://www.englandseconomicheartland.com/our-work/decarbonising-transport/>

1 Context and background of East West Rail

Background of EWR

1.1 East West Rail (EWR), by providing a direct strategic rail link between Oxford and Cambridge and intermediate destinations, sits at the heart of the region’s long-term plan for sustainable transport across the geography. The scheme is designed to help achieve the region’s social, economic, and environmental objectives by providing a viable rail option to travel east-west across the EEH geography.

The scheme

1.2 EWR, as currently proposed, is a rail link between Cambridge in the east of the region and Oxford in the west. As well as the two cities at either end of the route, it would also serve the key economic, education, and leisure hubs of Bedford, Bletchley, Milton Keynes, and Bicester. EWR would also serve Aylesbury via a link to the ‘core’ EWR route. Services would call at a number of smaller intermediate stations including new stations at Cambourne, Winslow, and one in the Sandy/St Neots area around which high levels of residential and employment growth are planned. The route has been designed to cater for the region’s polycentric nature and provide a sustainable and convenient transport connection to some of the most important hubs of the Heartland region.

1.3 The headline journey times that EWR could deliver, and a comparison of how they compared to existing rail journey times are presented in Table 1.1:

Table 1.1: Post-EWR journey times

(hh:mm)	Existing rail, maximum journey time	EWR journey time
Oxford – Cambridge	03:05	01:35
Oxford – Bedford	03:20	01:00
Cambridge – Bedford	02:05	00:30
Oxford – Milton Keynes	02:20	00:45
Cambridge – Milton Keynes	02:25	01:25
Bedford – Milton Keynes	02:10	00:45
Aylesbury - Cambridge	03:05	tba
Bedford - Aylesbury	02:40	tba

Source: East West Railway Company

1.4 The scale of improvement to rail connectivity that EWR will deliver through this journey time improvements is transformational according to the recognised definition in transport

modelling. The scale of change has the potential to deliver significant improvements to productivity for workers and businesses, whilst opening up a much wider pool of skilled labour for high value businesses in the EEH region. The journey time improvement is enough to present new opportunities to travel for education and training for the region's population, thus helping to secure the growth in skills required to deliver economic growth across the region.

Business Case development

1.5 The East West Railway Company's scheme is currently at different stages of delivery across the breadth of the scheme:

- Connection Stage 1:
 - Oxford to Bicester: Services already run between Oxford and Bicester after a significant upgrade of the line was completed in late 2016. However, in order to achieve the desired frequency of four trains-per-hour, additional infrastructure work is required along this section of the route. East West Railway Company's proposals for this section were part of the 2021 non-statutory consultation.
 - Bicester to Bletchley: Reconstruction of the Varsity Line is currently being carried out by the East West Rail Alliance and overseen by East West Railway Company.
- Connection Stage 2:
 - Aylesbury to Milton Keynes: The link which would allow direct services to run between Aylesbury and Milton Keynes is still at planning stage.
 - Bletchley to Bedford: Options for the refurbishment of the Marston Vale line between Bletchley and Bedford are currently being considered by East West Railway Company and will form part of the statutory consultation expected to be carried out mid-2022.
- Connection Stage 3 and beyond:
 - Bedford to Cambridge: An entirely new route between Bedford and Cambridge is required for this section of EWR. Following non-statutory consultation on this section five possible routes have been shortlisted. This section of route includes new stations between St Neots and Sandy (either in Tempsford or St Neots South) and another to serve Cambourne.
 - Beyond Cambridge: In their Transport Strategy EEH confirmed their support for an East West Main Line which could run from Norwich and Ipswich through to Bristol and South Wales, with EWR sitting at the core of this strategic rail link. This is also the ambition of the East West Main Line Partnership. The pre-Strategic Outline Business Case for the section east of Cambridge (the Eastern Section) is currently being produced by the East West Main Line Partnership. This report focuses on the section for which the East West Railway Company has responsibility, between Oxford and Cambridge and including the link to Aylesbury. However, extending the line beyond Oxford-Cambridge is acknowledged for both its transformational value to the wider region and UK, and also in strengthening the strategic case for the Oxford-Cambridge section.

Introduction

- 1.6 In this chapter we present the strategic need for the complete Oxford – Cambridge EWR scheme. This articulation of the need for EWR has been informed by three sources of data and information:
- A review of the published literature and evidence that either makes the case for EWR or demonstrates how EWR contributes to local, regional, and national strategic objectives. This includes national, regional, and local strategy and business case documentation, is summarised in attached Appendix A – Literature Review.
 - A programme of stakeholder engagement undertaken by Steer and EEH as a part of this commission. We have interviewed members of transport and planning teams from the local authorities across the EEH geography to understand the local importance attached to the delivery of EWR, and how the scheme aligns with and has influenced local plan making; and
 - A mapping exercise to understand how the proposed EWR route and stations align with existing local housing and economic plans. This analysis informs the strategic need for EWR presented in this chapter and is explained in further detail in Chapter 4 of this report.
- 1.7 We have structured the need for intervention under a number of themes which represent the most common and significant topics in the existing evidence base and feedback received from local stakeholders along the route. Under each theme we have summarised the need for intervention before exploring each theme and the evidence that underpins them in more detail.

Delivering economic growth and innovation

The Heartland's economy

- 1.8 The EEH region is a high-value and high-growth economy with national and international importance. The Heartland economy has grown at rates higher than the UK national average, and the region is a hub for high-value, knowledge-intensive employment of an international scale.
- 1.9 The size and significance of the region's economy, as well as its significant potential employment and economic growth, is well-recognised internationally, nationally, regionally, and locally. Central government's recognition of the region demonstrates its national and international significance. The Department for Transport acknowledged and demonstrated their support for the wider economic and business benefits of EWR through the publication of the business case for Phase 2 of the Western Section of EWR between Bicester, Aylesbury, and Bedford, which concluded that the proposed options met all of the strategic objectives of the scheme, including "providing a sustainable transport solution to support economic growth in the area".
- 1.10 EEH's Transport Strategy⁴ for the region demonstrates the region's role as an 'economic powerhouse', citing the region's economic foundation as its track record in delivering science and technology innovation, supported by a network of world-leading universities and research centres.

⁴ [Connecting People, Transforming Journeys, England's Economic Heartland](#)

- 1.11 The Strategy reports that one in 10 of the nation’s knowledge sector jobs are located in the region, and in terms of economic growth the consistently outperforms the national average:

“The Heartland economy was valued at more than £163bn in 2018. Economic growth (as expressed by GVA) has consistently outstripped the UK average: with GVA growth of 25% recorded in the five-year period between 2013 and 2018 (compared to the UK average of 20%).”

- 1.12 In regional and local evidence, substantial weight is given to the relationship between the delivery of EWR and economic and business growth in the region. The Oxford-Cambridge Arc Economic Prospectus includes rail in the areas of infrastructure investment required to achieve the five ‘innovation investment areas’ across the region which include “business growth and commercialisation” and “skills”.
- 1.13 Through engagement with stakeholders, it is clear that the role of EWR in achieving local economic growth objectives is of strategic importance. Milton Keynes Council’s Covid19 Economic Recovery Plan⁵ sets out short, medium, and long-term policies to help support economic recovery following the pandemic. EWR features as part of one of the long-term plans, as a part of cementing Milton Keynes’ role as a ‘key player’ in the Oxford – Cambridge region.
- 1.14 Stakeholders frequently cited the attractiveness of EWR as a reason why businesses choose to invest in their geographies, with reports of businesses already relocating to the area because of EWR.

Constraints on economic growth

- 1.15 Despite the strong foundations and recent growth in the Heartland’s economy, the region’s businesses face a number of constraints on future economic growth. In some parts of the region productivity is below levels enjoyed by international competitors, including Silicon Valley and Boston/Cambridge in the USA, with similar sector specialisms, and the funding and delivery timescales of enabling infrastructure has not kept pace with Heartland’s economic potential.
- 1.16 The region’s transport network is one of these constraints on growth. Reliability and congestion issues on key parts of the road network has, in places, stifled economic growth and the region lacks a strategic east-west rail link that businesses can use to help grow productivity and the catchment area for the highly skilled and specialist workforce they need.
- 1.17 Improving transport connectivity in the EEH region will make the region even more attractive both to international investment and international high skilled workers, who may otherwise decide to invest and work in one of the region’s international competitors.

⁵ [Covid19 Economic Recovery Plan, Milton Keynes Council](#)

1.18 Within the Oxford-Cambridge Arc Economic Prospectus⁶ under the ‘Connectivity’ priority area, rail connectivity east-west across the region is cited as: “essential to deliver the agglomeration effects of better connectivity.....in a sustainable way.”

1.19 Central government has recognised that “a lack of transport and utilities infrastructure in different towns and cities can hold back the area’s growth and sustainability”⁷ .

1.20 In the strategic transport strategy for the region, EEH have assessed the region’s existing transport constraints further and found that businesses across the region face the following constraints on growth:

-
- “In significant parts of the Heartland, productivity levels remain consistently below that of our global competitors, a consequence in part of increasing congestion on and reduced resilience of the transport system
 - Investment in enabling and supporting infrastructure takes longer to secure and deliver than planned, acting as a constraint on new economic opportunities developing as planned in a timely and cost-effective manner
 - The funds currently available to invest and maintain the existing infrastructure asset fail to keep pace with identified needs (including those as a consequence of planned growth), increasing the vulnerability of the transport system to disruption by incidents and extreme weather events.”⁸
-

1.21 The pressures on the region’s transport network and the impact they have on economic growth are recognised locally across the geography, and not just in regional and national evidence. Local authorities across the EEH geography recognise the need for the region’s economy to be better connected from a transport perspective. Throughout our programme of stakeholder engagement, a recurring theme was the recognition of transport, and rail specifically, in supporting economic and business growth.

1.22 For example, Central Bedfordshire’s 2050 Vision⁹ includes a desire to ‘broaden and build’ the high value sectors across their geography, but recognises infrastructure is required to ‘unlock’ the area’s economic potential by providing access to education and employment opportunities.

1.23 In our engagement sessions authorities across the EEH region recognised the need for clusters of high value employment to be adequately connected across boundaries for the region to reach its economic potential.

⁶ [The Oxford – Cambridge Arc Economic Prospectus, Oxfordshire LEP](#)

⁷ [Creating a vision for the Oxford-Cambridge Arc, HM Government](#)

⁸ [Connecting People, Transforming Journeys, England’s Economic Heartland](#)

⁹ [Central Bedfordshire 2050, Central Bedfordshire Council](#)

- 1.24 Stakeholders also stressed the national importance of the economies of the EEH region. For example, productivity in Milton Keynes is 27% above national levels, and the city is the second most productive city in the UK outside of London¹⁰. However, stakeholders felt that the lack of east-west rail connectivity was a major gap in the region's connectivity and is a constrain on economic growth across the region.

Benefits to the rest of the country

- 1.25 The potential for EWR to generate economic growth is not restricted to the region, as removing the constraints on the Heartland's economy will allow the region to make a significant additional contribution to national economic output.
- 1.26 Industries including advanced manufacturing have supply chains that spread not just across the Heartland region, but across the UK, and so the benefits of delivering growth in the Heartland will be felt across the country. For example, AstraZeneca, one of the UK's most successful businesses, conducts much of its research activity around Cambridge but manufacturing and distribution is undertaken in the North West of England, it employs nearly 8,000 people, 3,600 in Cambridge and over 4,000 in the North West¹¹, contributing over £1.4bn to GVA in total.

Connecting skills and talent

- 1.27 A crucial element in delivering economic and business growth is providing residents across the EEH region access to a variety of labour markets. Economic and employment hubs in the Heartland currently attract lower than average numbers of employees commuting into town and city centres, partly due to constraints on the region's transport network.
- 1.28 Buckinghamshire Council's¹² review and refresh of the Economic Case for EWR¹³ found that employees in the south east and east travel further to work on average than all other regions of England and Wales, which demonstrates the need for strategic long-distance connectivity to, from, and between the key labour markets across the EEH region.
- 1.29 The analysis underpinning the refreshed economic case also found that conurbations across the region, including Oxford, Milton Keynes, have a lower proportion of workers travelling into the centres than the national average. The commentary accompanying the analysis cites poor transport links as a contributing factor to this.
- 1.30 The region's specialist industry, including the knowledge sector and high value science and innovation businesses, require access to highly skilled and specialised workers to continue to grow and remain competitive on an international level. The current transport network is a constraint on the size of the catchment area for regular commuting and business trips to, from and across the region.

¹⁰ [Local Economic Assessment 2019, Milton Keynes Council](#)

¹¹ [UK-Brochure-2020-2021.pdf \(astrazeneca.co.uk\)](#)

¹² The work referred to here was commissioned by the authority then called Buckinghamshire County Council. Buckinghamshire County Council was replaced by Buckinghamshire Council in April 2020.

¹³ East West Rail Economic Case Refresh, Arup on behalf of Buckinghamshire County Council

- 1.31 Stakeholders across the region were keen to emphasise that the specialist nature of the industries which are crucial to realising the region’s economic potential means that a wider labour market catchment is required than other, less specialist, industries. Crucially, this feedback was provided not just from authorities along the Oxford – Milton Keynes – Bedford – Cambridge corridor, but also authorities in the wider EEH region.
- 1.32 As the economy of the region and its industries grow, the employment catchment of those industries will grow. There are plans for significant employment and economic growth across the region, however the existing transport network will be a ‘bottleneck’ for delivering this growth.
- 1.33 An example of this is Bletchley which sits at a strategically important location adjacent to Milton Keynes, and approximately halfway between Oxford and Cambridge. The Milton Keynes Strategy for 2050¹⁴ states that Bletchley will become a popular business base as knowledge intensive jobs in the region grow. However, the Strategy assumes that Bletchley will be linked to both Cambridge and Oxford by rail, which it is not currently.
- 1.34 The ability of EWR to provide greater access to employment opportunities was frequently cited as one of the biggest sources of benefits that the scheme will deliver to the EEH region, a view that is evidenced in the analysis of local plans and the EWR catchment area in Chapter 4 of this Strategic Narrative.
- 1.35 Stakeholders along the route reported that if EWR is not delivered, opportunities for residents to access high-value employment for residents in the region will be restricted. Local authorities were clear that they see a direct link between the delivery of EWR and delivering employment growth targets in their geographies.
- 1.36 There are several specific sites along the route, including various sites along the Marston Vale Line between Bletchley and Bedford, that local authorities have assigned particular importance of the delivery of EWR to.
- 1.37 By bringing places like Northampton and Luton within half an hour or less of an EWR station and the transformational connectivity opportunities the network offers, the employment and economic benefits of EWR will not be constrained to the stations on the route itself. Several of the stations and communities that will benefit from indirect rail connections through EWR have the potential to generate synergies with the key industries of the region. Pharmaceutical and advanced manufacturing companies in Stevenage for example will be within a 30-minute rail journey away from the east-west connectivity delivered by EWR.
- 1.38 Authorities which do not sit directly on the EWR route spoke of the potential for EWR to open up a wider catchment area for employment in the region’s high value industries, with the potential impact extending to stations and communities on the various existing north – south rail lines that EWR will connect into. As explored further in Figure 6.1 and the section-specific maps in Chapter 4 of this Narrative, stations including Northampton, Wellingborough, Banbury, and Didcot will all be within a 30-minute rail journey of an EWR station, and the transformational journey time benefits the scheme will deliver.
- 1.39 The same authorities commented that EWR has the potential to deliver transformational impacts on the direction that the EEH region ‘faces’ in terms of employment opportunities.

¹⁴ [Milton Keynes Strategy for 2050, Milton Keynes Council](#)

Traditionally the EEH region, particularly southern parts including Hertfordshire, Buckinghamshire and Bedfordshire have looked towards London for employment opportunities which involve regular commuting via rail. Stakeholders were of the view that EWR could shift the focus of these parts of the region to employment in Cambridge, Oxford, Milton Keynes, and other parts of the EEH region.

Good placemaking

Inclusive growth

- 1.40 The region's strategic location in the centre of the country, strong economy, and high-quality local environment means it has become an increasingly attractive place to live. Demand for housing has grown, and houses have been built at levels higher than the national average, but pressures remain.
- 1.41 The constraint on housing is not limited to the quantum of housing available, but there are also significant issues around house prices in the region. This not only restricts the quantum of economic and employment growth but also limits how inclusive it can be.
- 1.42 The region's local plans set out the requirement for the right mix of housing to cater for all parts of society and help the regional economy meet its potential. Accommodation is required to attract international highly skilled workers, whilst also accommodated young families and newly qualified professionals transitioning from education to employment.
- 1.43 Feedback from local stakeholders along the route confirmed that without improvements to the transport network across the region, there is not the opportunity to create sustainable communities. Representatives from Bedford Borough and Central Bedfordshire Councils were particularly clear on the infrastructure constraints they are currently faced with.
- 1.44 For the benefits of economic growth to be felt by all residents of the EEH region, parts of the geography require 'levelling up.' There are several instances of communities in the region ranking as some of the most deprived parts of the country. These are clustered in urban conurbations in the centre of the region, including parts of Northampton, Wellingborough, Bletchley, Bedford, and Luton.
- 1.45 Transport will play a pivotal role in supporting these communities by providing access to employment and education opportunities, particularly for those older, or with mobility issues or without access to a car and are not already served by public transport connections to the region's economic and education hubs.
- 1.46 Historically rail usage has been linked with higher income levels, and for any future investment in rail to address equity issues the route and operation needs to be planned to serve all communities, not just those with higher income levels.
- 1.47 These urban 'pockets' of deprivation are often also those most negatively impacted by constraints on the existing transport network. Congested road networks and the severance, noise pollution and air quality issues associated with them, are often worst in urban parts of the region. The quality of life of residents of these areas could be positively impacted by investment that eases some of the existing constraints on the region's transport network.
- 1.48 Previous EWR Business Case evidence has cited high levels of deprivation in parts of the region as a part of the socio-demographic characteristics of the EEH area. Atkins' GRIP 4 Business

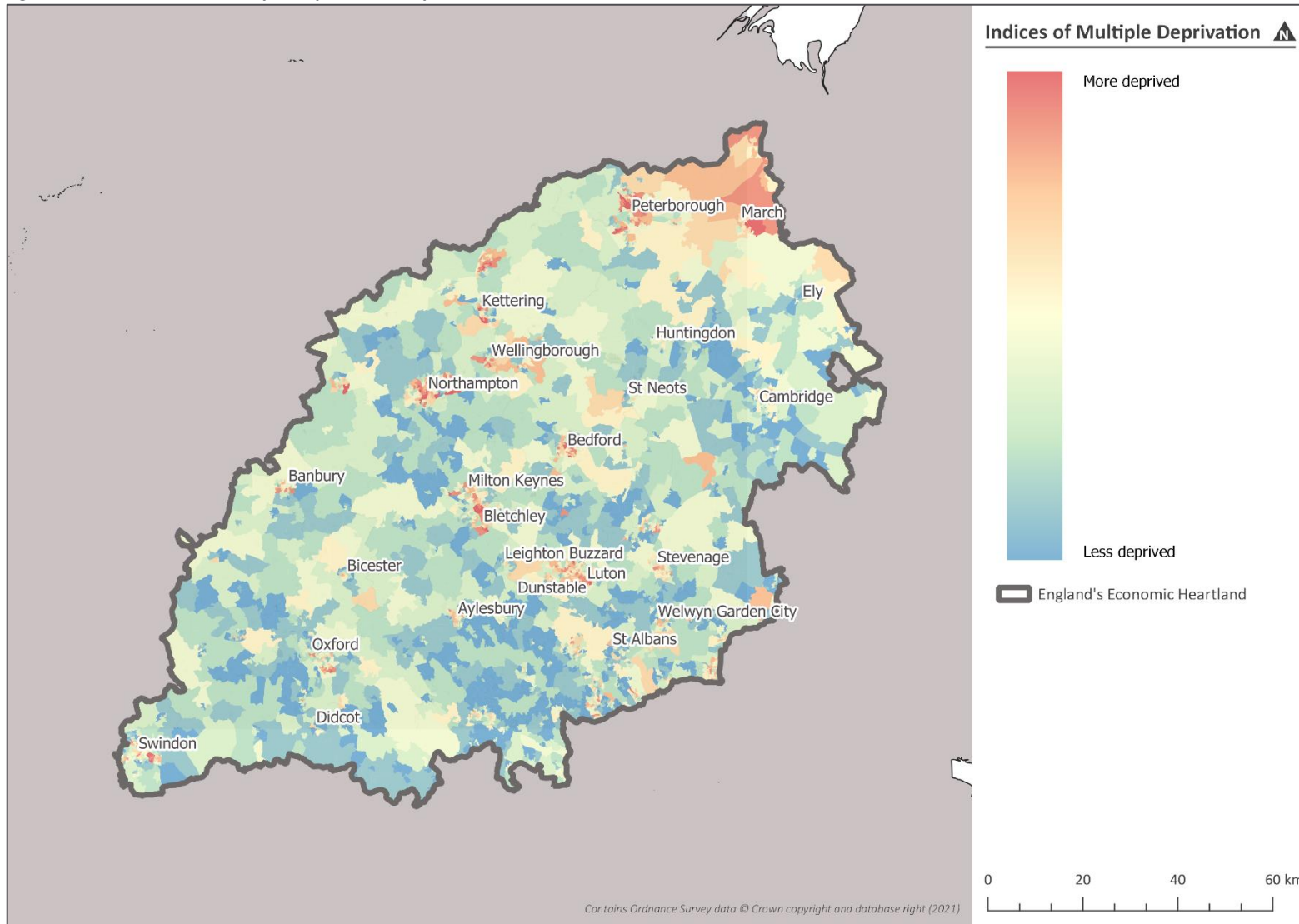
Case¹⁵ listed Bedford, Milton Keynes, and Bletchley as parts of the region which exhibit 'pockets' of high deprivation.

- 1.49 The 2019 Indices of Multiple Deprivation (IMD) data is mapped in Figure 1.1. By this measure the EEH region is characterised as a geography where large parts of the region, in terms of area, rank as some of the lowest levels of deprivation in the country. However, parts of the more densely populated urban areas in the region are suffer from acutely high levels of deprivation despite often neighbouring some of those areas with that are some of the least deprived by the IMD measure. Substantial portions of Bletchley, Bedford, Luton, Oxford, and Northampton are amongst the most deprived parts of the country.¹⁶

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¹⁵ East West Rail GRIP 4 Outline Business Case, Atkins on behalf of the East West Rail Consortium

Figure 1.1: EEH Indices of Multiple Deprivation Map



Supporting regeneration

- 1.50 At a local level, there are major ‘place based’ plans for regeneration of several of the urban centres across the region. The adopted Milton Keynes Local Plan¹⁷ covering 2016 to 2031 includes a strategic objective which seeks the regeneration of Bletchley town centre.
- 1.51 Across the EEH region there are allocated sites for future housing and employment developments. These include sites at Bourn Airfield and sites near St Neots in the east of the region, Marston Vale, and several sites in and around Milton Keynes/Bletchley in the centre, and sites in Bicester and south of Oxford in the west. As well as the quantum of dwellings or jobs delivered as a part of these sites, they will need an appropriate level of ‘place making’ policies including transport links to ensure these new communities become an integrated part of the region, connected together in a sustainable way.
- 1.52 From a transport perspective, several of the stakeholders consulted as part of this study raised road congestion in urban areas as an existing issue in their geography. For example, the road network to, from, and around Aylesbury suffers from significant congestion issues. Significant improvements to the road network as well as rail connections are required to ensure Aylesbury can deliver its growth commitments in the way they were planned for.
- 1.53 Delivery of a transformational regional rail scheme like EWR can trigger wider changes in travel behaviour and patterns. Residents and employees may switch to walking or cycling to and from rail stations instead of driving for the whole journey. This will help to relieve the congestion issues frequently cited by local authorities and deliver ‘place-based’ outcomes for local communities along the route. Generating significant levels of modal shift can deliver a suite of socio-economic and environmental benefits including local air quality improvements and reducing noise pollution

Net zero

- 1.54 The EEH region has a target to reach net zero carbon emissions by 2040, as stated in the EEH Transport Strategy¹⁸. This is an ambitious target and significant investment, and behaviour change will be required to meet it. Transport has a significant role to play in achieving this aim, and the role of transport is frequently cited in local evidence on pathways to decarbonisation.
- 1.55 The EEH Transport Strategy is clear that existing travel patterns are not compatible with the region’s net zero ambitions.
- 1.56 The relationship between transport and achieving net zero objectives is particularly strong in the EEH geography. There are five separate reasons¹⁹ why a step-change in the approach to transport carbon emissions are required, focussing on how transport related carbon emissions are a particular challenge in the EEH region, relative to the rest of the UK:

1. The Heartland accounts for approximately 10% of the UK’s carbon emissions from surface transport and are 30% higher than the UK average (2005-2020).

¹⁷ [Plan:MK 2016 – 2031, Milton Keynes Council](#)

¹⁸ [Connecting People, Transforming Journeys, England’s Economic Heartland](#)

¹⁹ <https://www.Englandseconomicheartland.com/our-work/decarbonising-transport/>

2. Cars are the greatest contributor to surface transport emissions within the Heartland. They account for 59% of emissions, while HGVs (Heavy Goods Vehicles) and vans account for 38%.

3. There are substantial variations in surface transport emissions, and their sources, across the authorities within EEH. This reinforces the need for localised analysis and targets.

4. Recent rates of decarbonisation prior to the COVID-19 pandemic will be insufficient to reach most decarbonisation targets. Continuing the 2017 to 2019 trend means transport would only be approximately 50% decarbonised by 2050.

5. The decarbonisation brought about during COVID-19 indicates the scale of change needed. The level in emissions reduction brought about by the pandemic is similar to the change expected by approximately 2025 under the Climate Change Committee's pathway.

1.57 Local support and appetite for improving the sustainability of transport throughout the region was a recurring theme in engagement with local stakeholders. Local authorities frequently presented a local need for sustainable transport interventions that don't place further pressure on already congested road networks. Rail interventions would contribute to relieving existing road congestion by providing an alternative mode of travel.

1.58 Transport-related emissions and a "major programme of transformation in infrastructure" are specifically noted in the Ox Cam Arc's Environmental Principles. An electrified EWR scheme or as a minimum the sections Bletchley to Cambridge is a priority for local authority leaders and is also one of the priority policies in the EEH Transport Strategy. This is based upon the expectation that the costs of construction would be reduced, provide a more immediate carbon saving, and minimise any inconvenience to the travelling public if electrification were included as part of current EWR proposals, rather than retrofitting in later years.

1.59 Whilst electric private vehicles are likely to play a key role in the region and country realising their decarbonisation objectives, EWR will have the unique ability to alleviate congestion issues parts of the region currently experience whilst also improving local air quality and reducing transport-related carbon emissions.

Overcoming transport constraints

1.60 The region's transport network and the connectivity it offers plays a role or influences each of the themes that make up the need for intervention described in this chapter. Specifically, in the EEH geography, a lack of a comprehensive east to west rail offer plays a significant role in the constraints and challenges described in this chapter.

1.61 This argument has been made in several pieces of existing evidence reviewed as a part of this work²⁰:

Difficulties in accessing labour are exacerbated by poor east-west transport connections. Rather than connecting the...principal employment centres, the strategic road and rail network reinforces their connections with London – the dominant market in the south east:

- it is not possible to travel by rail directly between the four main rail stations within the area – Oxford, Milton Keynes, Bedford and Cambridge. The only way to travel between Oxford and Cambridge by rail in less than three hours is via London;
- there is no continuous, high-quality road connection between Cambridge, Milton Keynes and Oxford – existing roads suffer congestion and average speeds between the region’s main centres are low; and
- the main public transport link across the area is provided by the X5 coach service. This takes nearly three and a half hours to travel between Oxford and Cambridge.

Commuting between key hubs in the region is almost non-existent and the area functions as a series of distinct labour markets.

²⁰ [Partnering for Prosperity: A new deal for the Cambridge-Milton Keynes-Oxford Arc, National Infrastructure Commission](#)

1.62 In terms of journey time competitiveness with car, the existing public transport for strategic intra-regional journeys is poor. Indicative journey times for pairs of origins/destinations are shown in Table 1.2.

Table 1.2: Indicative journey times by car and rail for key EEH hubs

	Car		Rail		Bus	
	Min	Max	Min	Max	Min	Max
Oxford – Cambridge	01:50	03:10	02:30*	03:05*	03:30*	05:15*
Oxford – Bedford	01:15	02:20	02:20*	03:20*	02:20	03:00
Cambridge – Bedford	00:45	01:30	02:00*	02:05*	01:15	02:10
Oxford – Milton Keynes	00:55	01:40	01:20*	02:20*	01:25	02:05
Cambridge – Milton Keynes	01:00	01:50	02:00*	02:25*	02:45*	03:50*
Bedford – Milton Keynes	00:26	00:50	01:00*	02:10*	01:30	01:30

Source: East West Railway Company

1.63 In addition to being slower than travelling by car in most of the journeys illustrated in Table 1.2, rail journeys often require more than one interchange and involve travelling in and out of London. Stakeholders frequently reported that the need for travelling in and out of London is damaging for the perception of travelling by rail in their geography.

1.64 This view is reported in the Network Rail East West Main Line Strategic Statement:

“This rail system largely replicates the regional road transport issues considered above. Journeys taken from east to west and vice versa are likely to involve interchange and a combination main line service, resulting in both complicated and difficult journeys for passengers. A journey from Swindon to Bedford for example, will take around 2 hours and 20 minutes and involve taking a service from Swindon to Paddington, transferring to the London Underground, and taking a service from St Pancras to Bedford. This is not competitive with a road journey which takes less than two hours.”²¹

1.65 If the EWR scheme is delivered in full as proposed in the East West Railway Company’s latest plans for the scheme²² it will deliver a transformational step-change in east to west rail connectivity across the EEH region. The journey times delivered by EWR will be a significant improvement on the existing rail connections and the requirement to travel in and out of London will be removed.

1.66 For the first time in the region since the Varsity Line closed, rail will be competitive, and often quicker, than travelling by car and will become a viable option for regular commuting,

²¹ [East West Main Line Strategic Statement, Network Rail](#)

²² [Project Overview, East West Railway Company](#)

business, education, and leisure trips. EWR has the potential to generate transformational levels of modal shift by attracting private car users to travel by rail instead.

- 1.67 The urban centre-to-urban centre will bring the EEH region in line with several of its international economic competitors and provide businesses with the travel network they require for sustainable and inclusive economic growth.
- 1.68 The indicative journey times that would be delivered by the scheme as currently proposed are shown in Table 1.3.

Table 1.3: Post-EWR journey times

	Existing rail		EWR	
	Max journey time	Interchanges	Max journey time	Interchanges
Oxford – Cambridge	03:05	2 to 3	01:35	0
Oxford – Bedford	03:20	2 to 3	01:00	0
Cambridge – Bedford	02:05	1	00:30	0
Oxford – Milton Keynes	02:20	1 to 2	00:45	0
Cambridge – Milton Keynes	02:25	2	01:25	1
Bedford – Milton Keynes	02:10	1 to 2	00:45	1
Aylesbury - Cambridge	03:05	2	tba	tba
Bedford - Aylesbury	02:40	3	tba	tba

Source: East West Railway Company

- 1.69 The Passenger Demand Forecasting Handbook (PDFH)²³ is the industry-standard collation of research and guidance on forecasting rail demand. PDFH advises that demand responses to journey time improvements greater than 30% cannot be forecast using traditional elasticity-based forecasting approaches. Given the journey time improvements offered by EWR are greater than this (approximately a 50% reduction for Oxford – Cambridge and 75% for Cambridge – Bedford), from a rail service level perspective it is reasonable to describe EWR as a ‘transformational’ scheme.

²³ More information on the PDFH can be found [here](#)

- 1.70 As well as the measurable journey time benefits presented in Table 1.3, EWR would deliver a step change in the perception of rail along the route. A network of fast, direct services between the region’s centres and smaller communities is a significant improvement on having to travel in and out of London as is currently required.
- 1.71 The potential transformational impact of EWR is not restricted to the ‘core’ route of Oxford – Milton Keynes/Bletchley – Bedford – Cambridge. The route would be connected to the West Anglia Main Line, East Coast Main Line, Midland Main Line, West Coast Main Line, and Great Western Main Line, which, through interchanges, would spread the connectivity benefits wider than just the EWR route itself. Residents of towns and cities including Northampton, Kettering, Wellingborough, and Peterborough would be within a 30-minute rail journey of an EWR station. This potential benefit of EWR is explored in more detail in Chapter 4 of this report.
- 1.72 Representatives from local authorities including Peterborough City Council, Hertfordshire County Council, West Northamptonshire, and North Northamptonshire all recognised and were supportive of the wider connectivity EWR can deliver.
- 1.73 In addition to the scheme which is currently being proposed EWR has the potential to be a catalyst for a wider transformational ‘East West Main Line’. Network Rail published their strategic statement for the East West Main line²⁴, which describes a vision for direct rail services which connect a wider network of towns and cities than the existing proposed EWR. The geographic area for this wider Main Line is illustrated in Figure 1.2:

Figure 1.2: Network Rail East West Main Line Geographic Area



²⁴ [East West Main Line Strategic Statement, Network Rail](#)

Source: Network Rail

- 1.74 The core EWR scheme as is currently being proposed sits at the centre of this strategic vision for a wider East West Main Line. The infrastructure improvements and construction of entirely new alignments and stations are the 'building blocks' for future improvements which could transform rail connectivity across a wider geography than the EEH region.
- 1.75 In the longer term, the core EWR route and the wider East West Mainline could provide new transport connections to and from South Wales and East Anglia. Opening up connections to these new destinations would further open labour markets for businesses both in and outside of the EEH region.
- 1.76** Local authorities across the region reported that the wider connectivity to non-rail modes was an important benefit of EWR. Specifically, Luton Airport could benefit from connections to several new locations because of EWR, increasing the catchment area for both passengers and employees at the airport. The airport is currently developing long term expansion plans which would see annual passengers increasing up to 32 million. Through convenient interchange at Bedford station, EWR would open up a wider catchment area to the east and west of the region which could access the airport using rail.

2 Objectives and Theory of Change

Introduction

- 2.1 In this chapter we present the Strategic Objectives of EWR, as previously defined by the Department for Transport and Network Rail and use a 'Theory of Change' to show how EWR aligns with these Objectives whilst also addressing the Need for Intervention presented in this report.

Strategic Objectives of East West Rail

- 2.2 The Strategic Objectives for Phase 2 of East West Rail between Bicester and Bedford are presented in East West Railway Company's Outline Business Case²⁵ for the scheme:

“• Improve east-west public transport connectivity through rail links between Oxford, Bicester, Bletchley/Milton Keynes, and between Aylesbury, Bletchley and Milton Keynes

- Meet initial forecast passenger demand through new and reliable train services
 - Stimulate economic growth, housing, and employment through new and reliable train services
 - Contribute to improved inter-regional passenger connectivity and journey times;
 - Maintain current capacity for rail freight and appropriate provision for anticipated future growth
 - Consider and plan for future demand and economic growth; and
 - Provide a sustainable transport solution to support economic growth in the area.”
-

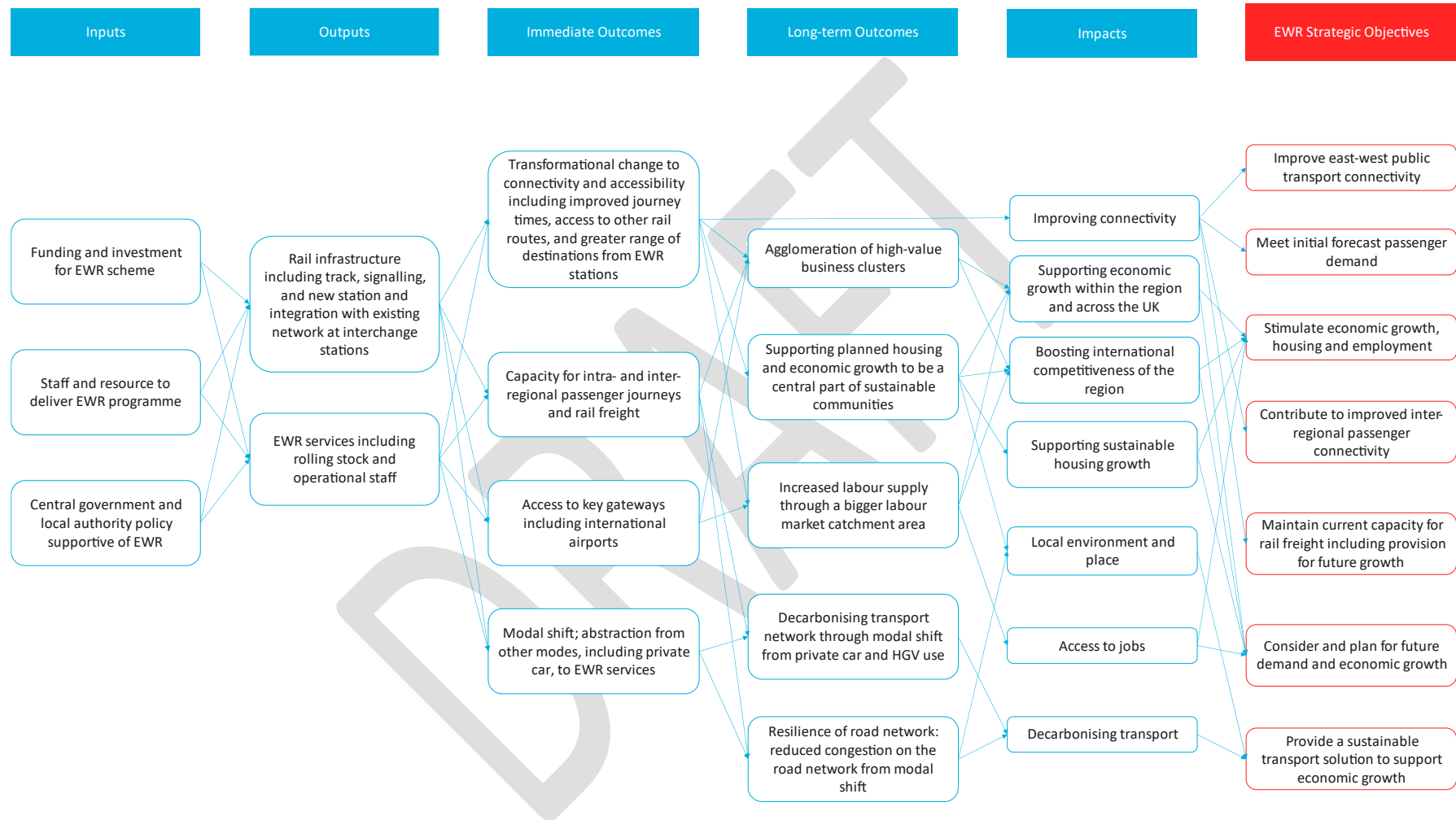
²⁵ [East West Rail – Phase 2, Outline Business Case, East West Rail Company](#)

We have developed a logic map, presented as Figure 2.1, that shows a Theory of Change of how EWR can address the need for intervention. Working backwards from the themes that make up the need for intervention, we first identified what outcomes would help realise them and then how inputs and outputs would lead to these impacts.

- 2.3 Figure 2.1 shows that the inputs into EWR, primarily funding and resourcing but also supporting national and local policies, are what is required to deliver the outputs which are the physical infrastructure and services running on the route. These outputs deliver the immediate outcomes which focus on the connectivity and capacity the scheme will offer, as well as the modal shift as passenger switch from other modes to EWR.
- 2.4 The immediate outcomes in time will deliver the long-term outcomes which take longer to build up but are of significance in terms social, economic, and environmental outcomes when they are realised. In the case of EWR the long-term outcomes are the positive economic, place making, and decarbonisation outcomes of the scheme.
- 2.5 These long-term outcomes then deliver the impacts which align with the themes identified in the Need for Intervention within this report. These impacts also closely aligned to East West Railway Company's Strategic Objectives for the scheme.

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Figure 2.1: EWR Theory of Change



3 Supporting sustainable communities

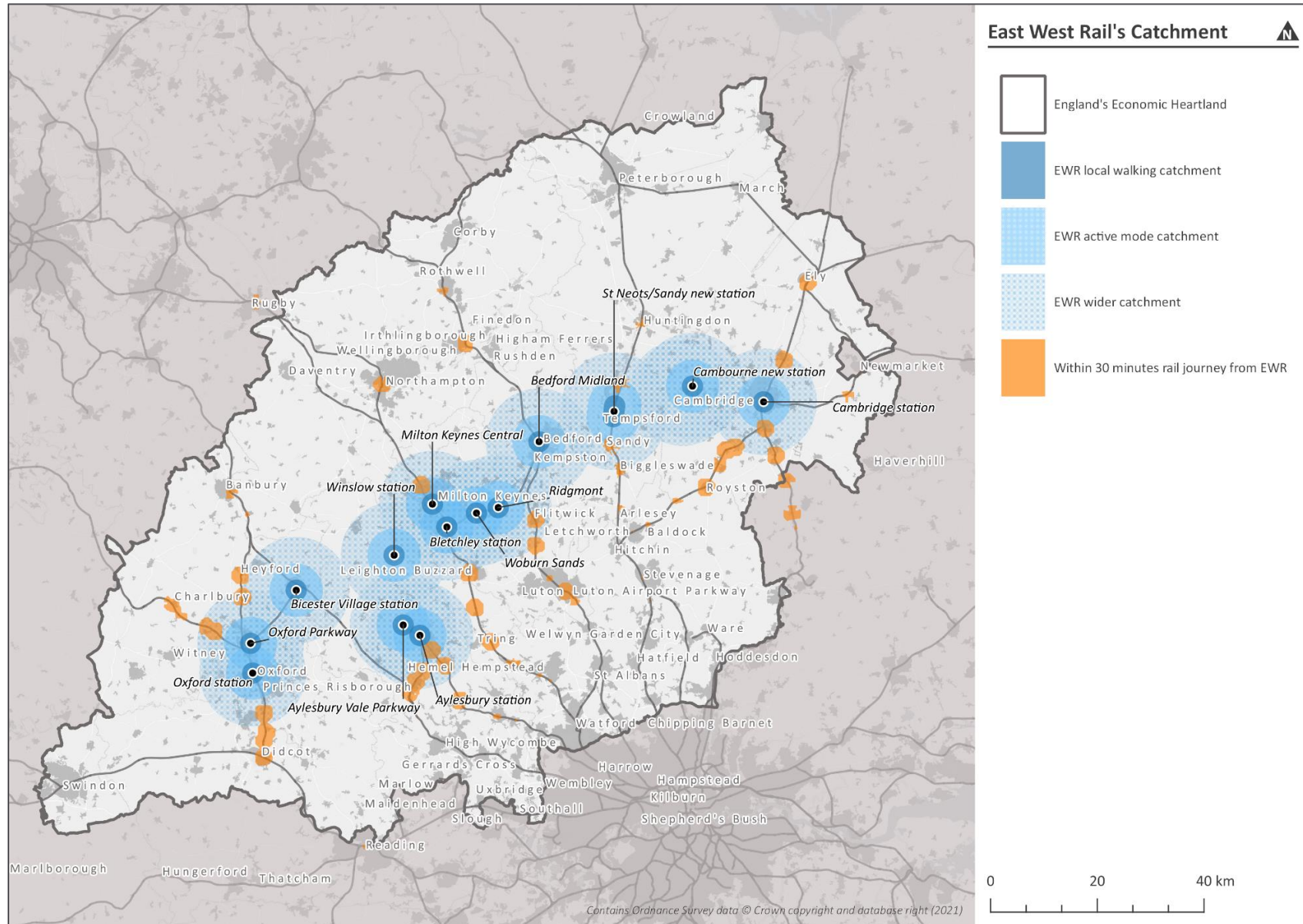
Introduction

- 3.1 In this chapter we present analysis of the catchment area of the proposed EWR route and the opportunities for sustainable end-to-end journeys and how it aligns and supports housing and employment developments included in adopted local authority local plans along the route.
- 3.2 We have used data on the size and locations of developments in local plans across the EEH geography as well as assumptions on what the catchment area of EWR stations are likely to be. The analysis' key output is a series of maps which show how the catchment of EWR and an estimate of communities that could fall within the catchment of EWR station with the right first last mile connections in place.
- 3.3 First, we discuss the catchment of the route as a whole, including the catchment of stations which are not directly on the EWR route, and then present a section-by-section analysis of the scheme.

East West Rail's catchment

- 3.4 East West Rail has the potential to support sustainable communities, putting transport at the heart of development and travel choices. The proposed EWR route serves large and densely populated existing communities and economies across the region, and as evidenced later in this chapter, also strongly aligns with allocated sites in local plans across the region.
- 3.5 Figure 1.1 illustrates the EWR route and stations as is currently being proposed. The map shows approximate catchment areas for the existing and proposed stations that make up the route. Catchment areas demonstrate how communities along the route will be able to make East West Rail a core part of their journeys going forward. For the purposes of this analysis, we have assumed three catchment areas per station:
- A 2km radius around each station that represents a short distance to walk, cycle, or other 'active' modes; and
 - A 5km radius around each station that represents medium station distance using active modes or shared mobility modes.
 - A larger 10km radius around each station that represents longer station distance by using private car, bus, or other shared mobility modes.
- 3.6 The sizes of these catchment areas have been agreed in discussion with East West Railway Company to align with catchment areas that have been used in the demand forecasting exercises feeding into the East West Railway Company business cases.

Figure 3.1: Whole EWR route and catchment area*



- 3.7 As would be expected the stations with greatest density of housing and employments in their catchments currently are those in the biggest urban conurbations on the EWR route, namely Oxford, Milton Keynes, Bletchley, Bedford, and Cambridge.
- 3.8 The biggest increases in employment levels are focussed on these stations too. Bicester Village and Ridgmont have the highest percentage increases in the number of jobs in their catchments, with Cambourne and Oxford Parkway also set to experience relatively high increases.

Wider catchment of EWR

- 3.9 The map also shows a third type of catchment area (shaded in yellow), and that is the catchment of EWR via existing rail services. The populations that live or work in these areas are those that can walk to an existing rail station, travel on an existing rail service, and reach an EWR station within 30 minutes including the walk to the station. These catchments have been calculated to show the transformational journey time benefits of EWR are not restricted to the 'core' route itself.
- 3.10 Several of the conurbations in the wider catchment of EWR are also those classified as 'Places of Strategic Importance' by EEH. As centres of economic activity in their own right they contain a number of key economic assets. Examples of the Places of Strategic Importance that are in the wider catchment of EWR include Wellingborough and Northampton.
- 3.11 Currently, a rail journey from Wellingborough to Cambridge would involve approximately one hour and 45 minutes travelling on two separate trains in and out of London, including an interchange between Kings Cross and St Pancras stations. After EWR is delivered the journey could be made in less than 45 minutes travel time, via a convenient interchange at a redeveloped and improved Bedford station.
- 3.12 Similarly travelling by rail between Didcot and Milton Keynes currently requires over an hour spent on two different rail services, with an interchange between Paddington and Euston most likely made using London Underground services. Using EWR services the journey could be made in approximately an hour via one interchange at Oxford.
- 3.13 Both of these examples are journeys which are currently uncompetitive with travelling by car, and rail does not offer an attractive journey proposition for regular commuting, business, education, or leisure trips. EWR would bring these journeys, and several others much closer, and often below, to the equivalent journey time by car and opens up a much wider catchment area for regular journeys to be made by rail.
- 3.14 The following section provides more detailed mapping of each section of East West Rail, including the existing stations on other lines that will benefit from EWR's delivery.

Table 3.1: Existing and future housing and employment developments within current local plans in EWR's catchment (Source: Experian Mosaic, EEH, and BRES data)

	Current homes		Housing numbers in local plans**		Current employment levels***		Additional employment based on local plans	
	2km	5km	2km	5km	2km	5km	2km	5km
Aylesbury	23,576	38,339	896	15,167	35,469	46,432	-	4,534
Aylesbury Vale Parkway	5,138	29,618	3,553	6,025	5,143	39,106	344	344
Bedford	21,500	55,687	4,027	8,503	30,825	61,805	42	4,460
Bicester Village	9,771	16,901	4,173	12,831	16,392	19,920	14,459	15,134
Bletchley	13,564	49,624	1,033	10,453	15,907	78,393	-	1,776
Cambourne North	3,791	7,464	4,504	7,542	3,858	7,818	2,105	4,593
Cambourne South	3,606	7,421	3,594	7,428	4,028	6,517	1,989	4,593
Cambridge	22,764	62,266	1,986	11,109	63,100	136,035	415	7,286
Milton Keynes Central	13,497	68,724	3,502	14,610	49,066	116,641	-	622
Oxford	11,460	57,415	1,403	7,657	49,862	105,484	-	709
Oxford Parkway	5,182	21,876	2,776	6,352	3,545	26,541	709	709
Ridgmont	391	6,051	-	8,735	1,299	11,823	1,040	3,776
St Neots South (Option A)	548	15,147	-	4,065	1,343	13,436	-	951
St Neots South (Option B)	57	12,463	-	4,065	756	11,650	-	1,239
Tempsford (Option A)	181	9,445	-	105	721	10,361	-	288
Tempsford (Option B)	174	8,490	-	105	681	9,801	-	288
Winslow	2,322	3,946	720	720	1,166	2,299	-	-
Woburn Sands	4,009	19,886	6,390	8,955	4,435	47,621	-	1,925

*Where a household or job is in more than one station's catchment they have been counted for both stations. Hence it would not be appropriate to report or interpret a total of the figures above as it would include double counting.

** These future housing numbers are sourced from Local Plans from throughout the corridor and are not speculative predictions.

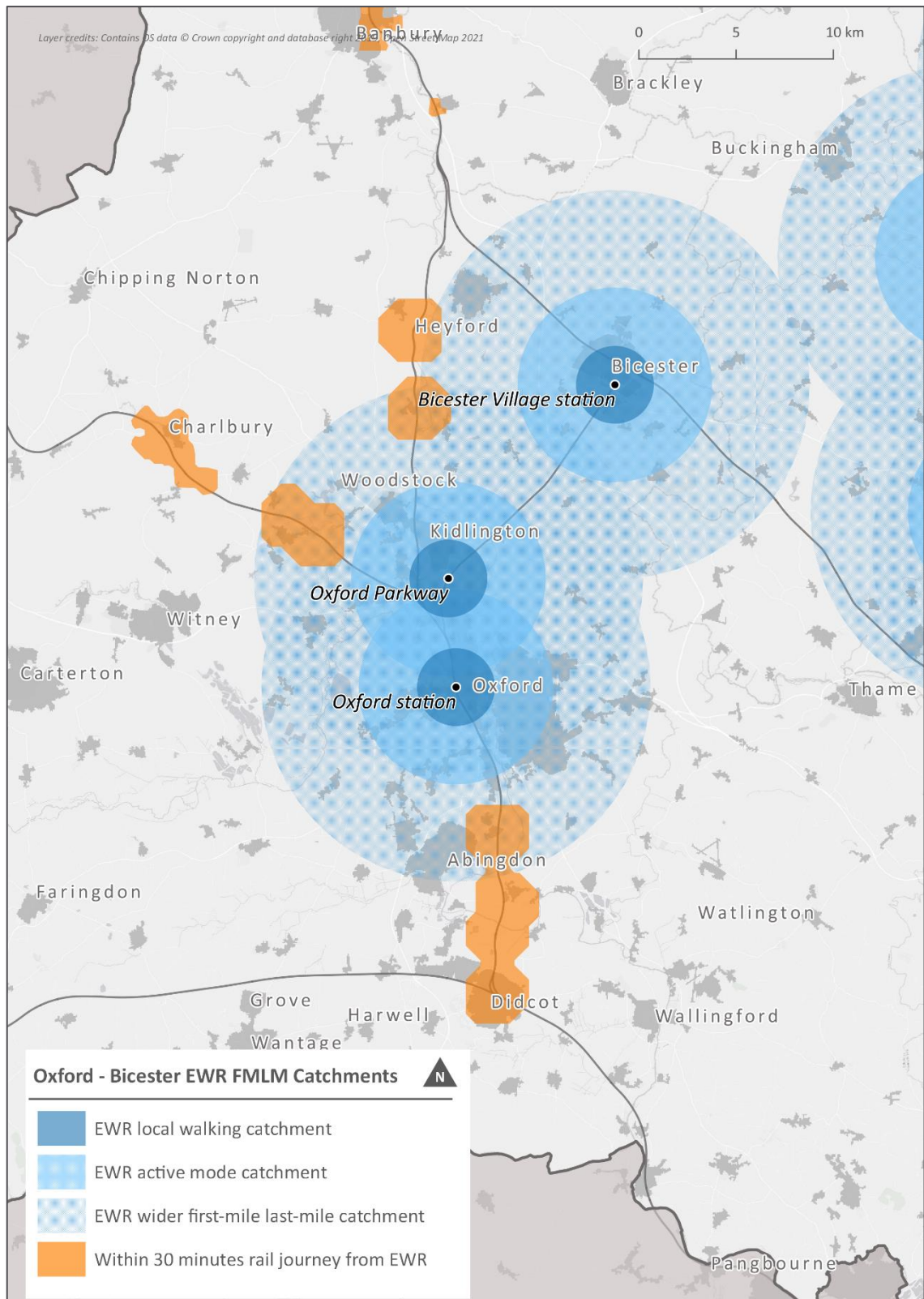
***The BRES data used to calculate these figures is produced at an LSOA level. LSOA's do not align with the station catchments used in this analysis. The number of jobs reported here are pro-rated based on the portion of each LSOA which overlaps with the station catchment areas.

Catchments by section

Oxford to Bicester

- 3.15 Figure 3.2 illustrates the catchment of Oxford, Oxford Parkway, and Bicester as EWR stations as well as neighbouring stations that have a catchment of less than 30 minutes away from an EWR station.
- 3.16 As detailed in the previous section there are high levels of development, primarily residential, allocated in local plans in the catchment areas of all three EWR stations on this section. The biggest clusters of development are in the Headington and Cowley parts of suburbs to the east and south of Oxford and in various locations around Bicester.
- 3.17 EWR will generate a large 'indirect' catchment on this section of the route, with the stations south and north of Oxford on the Cherwell Valley line set to benefit from the connectivity EWR will bring. One of these is Didcot Parkway, around which a high level of residential and employment growth is allocated in the relevant local plan.
- 3.18 The catchment of EWR will extend as far as Banbury to the north of Oxfordshire. There are a number of allocated sites in the immediate vicinity of Banbury station that would experience significantly improved west to east rail connectivity post-EWR.

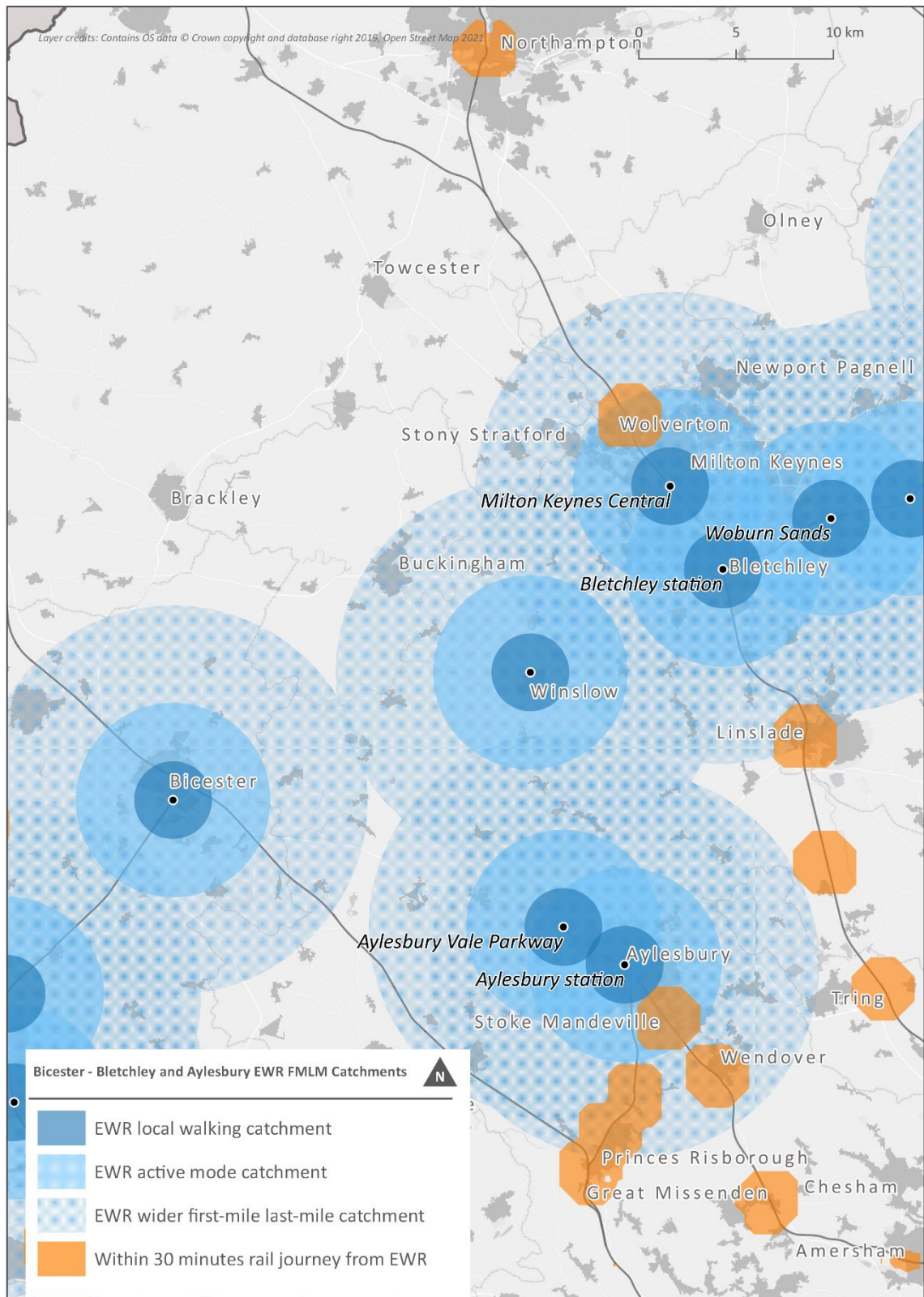
Figure 3.2: Oxford to Bicester EWR catchment area



Bicester to Bletchley, and Aylesbury

- 3.19 Figure 3.3 overleaf shows the catchment of EWR stations between Bicester and Bletchley/Milton Keynes, as well as the two stations in Aylesbury which are proposed to be served by a branch of EWR.
- 3.20 Local planning has allocated over 15,000 new dwellings and over 4,500 new jobs as a part of developments within a 5km radius of Aylesbury station. As previously described, stakeholder engagement revealed local stakeholders attribute a high level of importance to the delivery of EWR in full, including the link to Aylesbury to support the developments being delivered with sustainable travel at their core. Housing and economic proposals of this scale have been set out in local plans in good faith that they would be met with the necessary investment in improved road and rail links, notably the ring road around Aylesbury and East West Rail.
- 3.21 Aylesbury will also serve as an important interchange location for the stations to the south of Aylesbury on the London – Aylesbury Line as well as the connection to Princes Risborough. Princes Risborough station is the most significant station in this area in terms of local planning, with over 2,000 dwellings planned to be within 30 minutes of EWR via Aylesbury station.
- 3.22 Similarly, stakeholders have confirmed that housing growth planned in the catchments of both Bletchley and Milton Keynes stations place similarly high levels of importance to EWR being delivered.
- 3.23 This part of the section includes one of the proposed new stations on EWR in Winslow. New communities are being developed in the immediate catchment around the new station, and the local authority described Winslow serving as a hub station for nearby communities when EWR is delivered.
- 3.24 The West Coast Mainline will spread the impact of EWR via Milton Keynes and Bletchley. Northampton is served by a frequent service that takes approximately fifteen minutes to/from Milton Keynes, and as is shown in the map overleaf, a sizeable portion of the town centre would be a less than 30-minute walk and train journey away from EWR services at Milton Keynes and Bletchley. The map also shows the importance of Northampton as a whole in terms of future local plans. To the south of Bletchley, Leighton Buzzard and to a lesser extent Tring and Berkhamsted are also within a reasonable catchment of EWR services.

Figure 3.3: Bicester to Bletchley, and Aylesbury EWR catchment area



Bletchley to Bedford

- 3.25 Figure 3.3 overleaf shows the catchment of EWR stations between Bletchley and Bedford. This section of EWR will use the existing Marston Vale line which runs between Bedford and Bletchley. The exact plans for the line and its stations post-EWR are still being developed by East West Railway Company²⁶.
- 3.26 Plans along the Marston Vale line include up to 6,000 dwellings, and a number of new employment sites.
- 3.27 As described in previous sections of this strategic narrative, there are plans for redevelopment of Bedford Town centre, and our stakeholder engagement confirmed that EWR is a crucial piece of transport infrastructure in Bedford's plans going forward.
- 3.28 Similar to the West Coast Main Line on the Bicester – Bletchley section of EWR, the Midland Mainline will spread the catchment area to a number of important stations north and south of the EWR route itself. Luton is currently extremely well-connected to Bedford via frequent Thameslink and East Midlands Railway services. In addition to the town centre and the high levels of planned growth, Luton Airport is connected to Bedford via the same services and will be within half an hour's journey of EWR services. The increased catchment of the airport because of EWR was cited as a supporting factor in the plans for expansion of the airport, both for passengers and employees, in stakeholder engagement sessions.
- 3.29 To the north, Wellingborough is just over ten minutes away from Bedford travelling by train and hence a large portion of the town centre will be within half an hour of EWR services. There are high levels of housing and employment growth planned for Wellingborough, particularly in the Stanton Cross area which is short walk away from Wellingborough station.

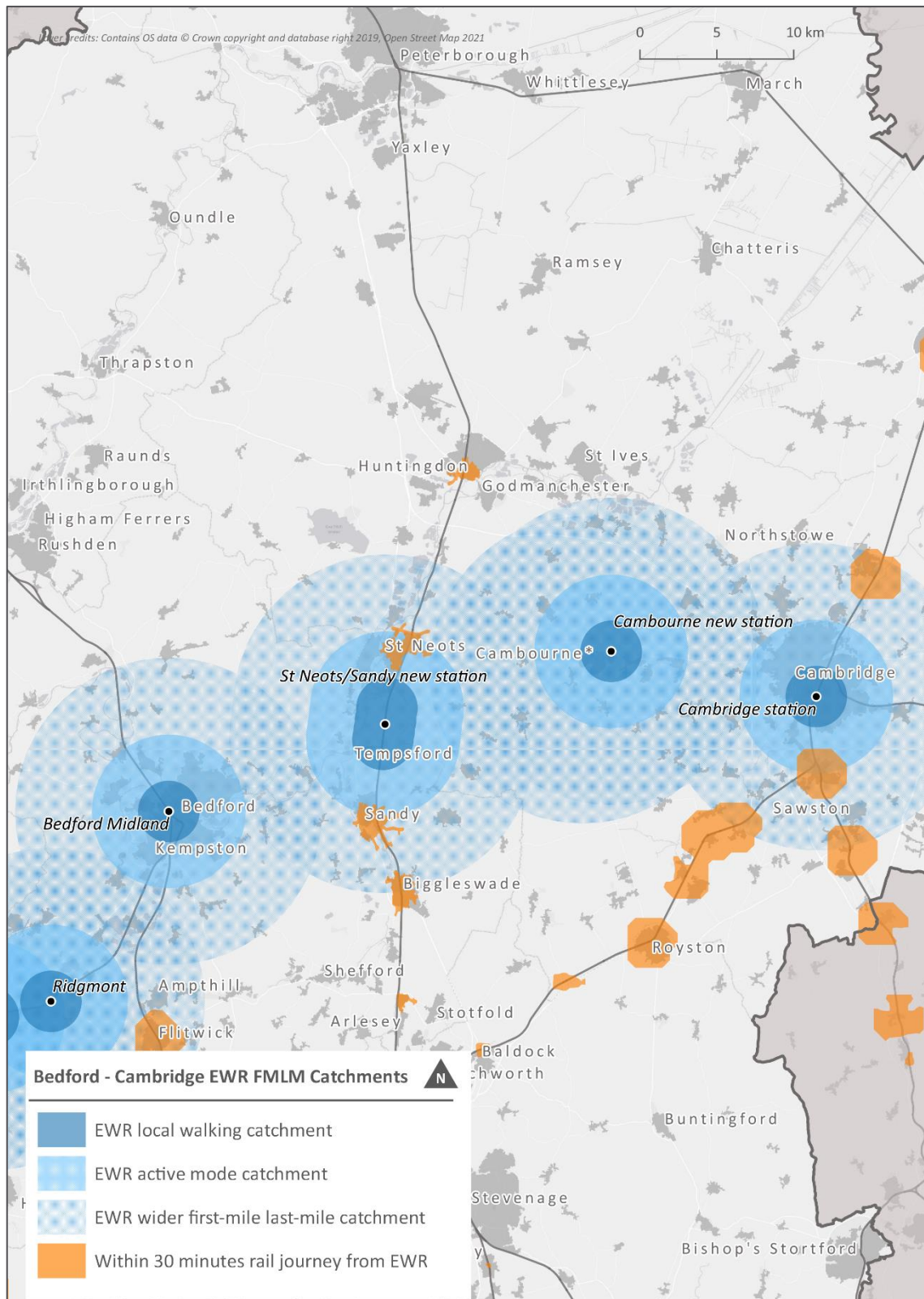
²⁶ For more information on the proposals for the Marston Vale line please see East West Railway Company's consultation materials [here](#).

Bedford to Cambridge

- 3.30 Figure 3.4 overleaf shows the catchment of EWR stations between Bedford and Cambridge. This section includes two new stations, one in the Sandy/St Neots area and one serving Cambourne to the west of Cambridge.
- 3.31 The new station would serve the villages of Tempsford and Great Barford and the new station would also serve as an interchange between EWR and East Coast Mainline services with stations including Biggleswade and Huntingdon set to fall within EWR's wider catchment area.
- 3.32 As can be seen on the map overleaf, development is planned to expand the town of Cambourne. Whilst uncertainty over the delivery of EWR means that allocated sites were not directly attributed to EWR during previous local plan development, stakeholder engagement on Cambourne confirmed that EWR could be transformational in terms of the sustainability of the development in and around Cambourne.
- 3.33 High levels of employment growth are planned or underway in Cambridge and its suburbs, including in the area surrounding Addenbrookes hospital which is in the catchment of a proposed Cambridge South station which is being developed separately of East West Railway Company's proposals.

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Figure 3.5: Bedford to Cambridge EWR catchment area*



*The locations of proposed new stations in the Sandy/St Neots area and at Cambourne shown here are indicative and should not be referenced as the actual planned locations of the stations.

Appendix A – Literature Review

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Number	Title	Author	Publication date	Nature of document	Summary / Themes
1	<u>EEH Regional Transport Strategy</u>	England's Economic Heartland	2021	Strategy document	<ul style="list-style-type: none"> • Catalyst for transformation of strategic public transport networks and for strengthening links to the Southwest and South Wales. • Supporting sustainable regional growth. • Need to unlock opportunities for all, including those in rural areas with limited access to public transport network. • Connectivity between centres of economic activity, e.g., EEH and the Midlands. Range of new rail-based journeys. • Avoiding the need to travel through London. • Decarbonising the transport network → reduction in car usage as EWR offers a fast, reliable, and attractive rail link. • Unlocks opportunity to improve north-south connectivity. • Better connected region – agglomeration benefits for business and levelling up opportunities for the region. • Realising economic potential and meeting future housing needs. • Opportunities for strategic interchange with traditional main lines. • Longer-term potential of East West Main Line → catalyst for change in rail freight offer: <ul style="list-style-type: none"> – Providing alternative routing

					<ul style="list-style-type: none"> – Enabling rail delivery of construction materials – Growth in intermodal rail freight
2	<u>Transport East Draft Transport Strategy</u>	Transport East	November 2021	Strategy document	<ul style="list-style-type: none"> • Faster and more reliable connections within and between growing towns, cities, and business clusters. • Eastern Section of EWR would support growth potential of the cities it serves, and development along key corridors, e.g., Norwich-Cambridge Tech Corridor. • Connections with wider UK economic centres. • Reduce journey times between key urban areas. • Relieve crowding on rail services via London. • Relieve highway congestion. • Unlock major development sites due to sustainable transport connections. • EWR could open further opportunities to connect to Stansted and Colchester, as well as onward improvements for coastal locations in Norfolk and Suffolk. • EWR Eastern Section could create potential to improve connections to both Stansted and Norwich airports.
3	<u>Arc Economic Prospectus</u>	Local Enterprise Partnerships	October 2020	Economic prospectus	<ul style="list-style-type: none"> • Need for investment from Government to better connect and realise potential of the region. • Investment in rail connectivity will provide environment for innovation initiatives to flourish and sustain growth in network of sites and priority sectors. • East-west connectivity → EWR should

					<p>be delivered immediately to deliver agglomeration effects of better connectivity.</p> <ul style="list-style-type: none"> • Electrification and digitisation of rail infrastructure to meet de-carbonisation transport objectives.
4	<u>Arc environment principles</u>	Environment Working Group, Oxford-Cambridge Arc	March 2021	Vision document	<ul style="list-style-type: none"> • EWR not explicitly mentioned. • Principles that will inform developing plans in the Arc. • Transport activities support the goal of net zero carbon at an Arc level by 2040. • Using existing or new transport corridors for maximum environmental benefit. • Design of transport corridors should deliver net biodiversity gain, net environmental gain, and net zero carbon. • Zero emission public transport investment.
5	<u>EEH First / Last Mile International Best Practice Review</u>	WSP and Steer	December 2019	Technical report	
6	<u>EEH Passenger Rail Study (Phase 1)</u>	Network Rail		Technical report	<ul style="list-style-type: none"> • Economic growth in Aylesbury Vale. • Economic growth and development between Bedford and EWR connected locations. • Connectivity: <ul style="list-style-type: none"> – Bicester to key economic centres. – Huntingdon and St Neots to economic hubs. – Between Oxford and Cambridge (economic and HE (Highway's England) centres).

					<ul style="list-style-type: none"> – Between Milton Keynes, Aylesbury and Oxford. • In some cases, improved GJTs to EEH nodes due to EWR Central and Western Sections removing an interchange. Bringing many locations within 1 interchange. • Access to main lines, e.g., Aylesbury via an interchange at Bletchley. EWR provides better access to Birmingham International Airport via WCML at Bletchley. • Competitive with road travel. • EWR Central Section - less reliance on London to reach rest of EEH. • EWR as a catalyst for electrification for the rest of EEH network.
7	<u>Milton Keynes Future 2050</u>	Milton Keynes Council	January 2021	<i>Final, not draft</i> Strategy document	<ul style="list-style-type: none"> • Connectivity to the West Coast Mainline at Bletchley and Milton Keynes Central. • Opportunity for economic growth at Bletchley due to links to Cambridge, Central Milton Keynes, and Oxford. • Jobs in Bletchley, an upcoming business base, more accessible from Oxford and Cambridge. • Development of new communities, beyond urban Milton Keynes, dependent on transport links, i.e., development around train stations.
8	<u>Milton Keynes Council – Adopted Local Plan (2016-2031)</u>	Milton Keynes Council	March 2019	Local Plan	<ul style="list-style-type: none"> • EWR provides potential future development opportunities. • Improvement to east-west links and support for more sustainable transport strategy.

					<ul style="list-style-type: none"> • Bletchley town centre – development of mixed-use sites around Bletchley railway station. • Regeneration of Central Bletchley – EWR will place Bletchley at the intersection of strategic east-west and north-south rail routes, linking centres of economic activity. EWR as catalyst for new investment in Bletchley. • Improving connectivity between Bletchley and Milton Keynes. • Increase connectivity in Milton Keynes.
9	<u>Central Bedfordshire 2050 - Vision Document</u>	Central Bedfordshire Council	September 2020	Vision document	<ul style="list-style-type: none"> • Aim to broaden and build high-value sectors – improving skills – partly through transport. • EWR infrastructure important in planning how growth is accommodated – new and existing communities, housing, business, education, and work.
10	<u>Central Bedfordshire Council Local Plan 2015 - 2035</u>		July 2021	Local Plan	<ul style="list-style-type: none"> • Timing, service, route selection, location of railway stations will impact scale and location of future development (housing), and growth potential that could be accommodated. • Connectivity (inc. upgrade to Ridgmont station and potential new station north of Sandy) – potential for business and housing growth. • Reliable network of east / west (and north / south) transport routes → improves access to local services and facilities. • Marston Vale New Villages – mixed-use

					<p>development – to deliver public transport routes and segregated cycling routes that link to EWR stopping station and employment areas.</p> <ul style="list-style-type: none"> • Improves sustainable transport options.
11	<u>Bedford Borough Council – Local Plan 2030</u>	Bedford Borough Council		Local Plan	<ul style="list-style-type: none"> • Well-connected development opportunities both within and beyond the borough. • Planning and delivery of strategic growth aligned to delivery of infrastructure schemes such as EWR. • Improved east-west connectivity improves quality of life due to better accessibility. • Promoting sustainable transport modes and reducing congestion around the town centre and key strategic routes.
12	<u>Bedford Rail Strategy</u>	SLC Rail Limited	November 2019	Strategy document	<ul style="list-style-type: none"> • Catalyst for regeneration of Bedford Town Centre. • Economic benefit of EWR in terms of GVA (additional economic activity). • Increased connectivity for new residents. • EWR puts Bedford at the centre of the technology arc across the South Midlands, to maximise economic and social potential. • If Central Section route goes through Bedford Midland station, it would unlock opportunity for Bedford to be a national and international hub for business (connectivity to East Midlands).
13	<u>DfT: The Case for East West Rail</u>	Department for	December 2018	Report	<ul style="list-style-type: none"> • Improving public transport connectivity.

	<u>Western Section Phase 2</u>	Transport & East West Rail Company			<ul style="list-style-type: none"> Facilitate <i>economic</i> growth by helping to address potential <i>housing</i> and <i>transport</i> barriers Economic growth Linking knowledge-intensive clusters on the corridor. Corridor has combination of innovation, entrepreneurship, and skilled workforce. Housing EWR as an enabler to accelerate development and redevelopment schemes by providing connectivity and unlocking land. Allows more people to live and work in the region. Transport Reduced journey times between key economic centres on the corridor – currently require further journeys with interchanges. Alleviate congestion and allow the corridor to function as a single, integrated economic area. Wider effects on labour markets, investment, and supply chains. Freight benefits and cost savings from rail freight and indirect benefits of removing freight traffic from road network.
14	<u>EWR Company: EWR Bedford to Cambridge Preferred Route Option Report</u>	East West Railway Company	<i>Preferred route option announced January 2020</i>	Report	<ul style="list-style-type: none"> Rail journey from Oxford to Cambridge is via London – increased susceptibility to delay / cancellations East-west connectivity can help to realise productivity potential: <ul style="list-style-type: none"> Direct cost savings for businesses – reduced travel times so more time

					<ul style="list-style-type: none"> – in production / innovation – Reduced cost pressure on firms – no need to compensate employees for long journey times / high commuting costs – Increased labour supply – reduced commute times – Opportunities for higher wages if employees are more productive – Agglomeration benefits – density of economic activity • Rail connectivity vs. road network improvements: <ul style="list-style-type: none"> – Labour market more accessible for people who don't drive, spreading demand for housing outside towns and cities – Productive travel time for commuters, e.g., internet access – Journey time benefits • Preferred route facilitates onward connectivity to East Midlands and satisfies existing and future freight demand.
15	<u>EWR Consortium: Eastern Section Prospectus for Growth</u>	East West Rail Consortium	January 2019	Report	<ul style="list-style-type: none"> • Case for EWR Eastern Section: <ul style="list-style-type: none"> – Success of the Central Section is dependent on the Eastern Section. – Faster, more frequent, and more reliable links from West to East for business users or ongoing journeys. – Reduced journey times and increase reliability of intra-regional and local journeys.

					<ul style="list-style-type: none"> – Increased capacity for inter-regional journeys. – Enhance capacity for rail freight, especially from Felixstowe, which is expected to grow. – Reduced car dependency and carbon emissions – modal shift for commuter journeys. – Support key sectors and improve rail link between economic growth locations. – Provision for housing growth along the Eastern Section – Long journey times to west of Cambridge, e.g., Oxford requires an interchange at London. – Linking potential workforce with employment opportunities – Better links to other regions; the Midlands, the North, Scotland.
16	<u>National Infrastructure Commission: Partnering for Prosperity</u>	National Infrastructure Commission	November 2017	Report	<ul style="list-style-type: none"> • Provide a better service for existing residents across the arc. • Enhance connectivity across the arc, linking major economic centres. • Expand labour market catchment areas of key towns and cities. • Improve connections with key gateways, such as Heathrow. • Progress in developing strategic transport corridor connecting East Anglia to west of England and south Wales – national scale of passenger and freight movement.

17	East West Rail Economic Case Refresh Buckinghamshire County Council	Ove Arup & Partners Ltd	May 2014	Report (An update to the Oxford Economics Report)	<ul style="list-style-type: none"> • Areas served by EWR have a lower proportion of workers travelling into the area, partly due to poor transport links. • Increased accessibility for business and leisure passengers. Range of UK destinations reached from EWR with one change increases. • At a regional level (Southeast and East): <ul style="list-style-type: none"> – Public spending lower than national average – Less successful than other regions in generating new jobs – Rapid population increase creating the need for more employment opportunities – Large contribution to public finances – Fall in infrastructure investment below national average for the Southeast – Longer journeys to work than other regions • Wider impacts from running through services → freight traffic from Southampton to Midlands and northern intermodal terminals.
18	EWR Central Section Engineering Summary Report	Jacobs	February 2016	Report	<ul style="list-style-type: none"> • Summary of options assessment at Phase 2a and 2b • Strategic objectives specific to the EWR Central Section business case (defined by EWRC in developing conditional outputs): <ul style="list-style-type: none"> – improve east west public transport connectivity;

					<ul style="list-style-type: none"> – increase economic growth, prosperity, and employment within the South-East of England through improvements to east west rail links; – provide faster, more reliable and additional rail links from the west to Cambridge, Norwich and Ipswich; – improve journey times and reliability of inter-regional and commuter journeys; – increase capacity for inter-regional and commuter journeys; – maintain and enhance capacity for rail freight; and – contribute to tackling climate change
19	EWR GRIP 4 Outline Business Case Final Report – Executive Summary	Atkins Limited	July 2010	Executive Summary	<ul style="list-style-type: none"> • Western Section of EWR will enhance transport links between areas where significant growth in housing and employment has been planned. • Growth impacts: use of car, levels of congestion, and journey time unreliability. • Improving accessibility and connectivity. • Journey time benefits: <ul style="list-style-type: none"> – Increased competitive position = increased agglomeration – Increased labour participation = increased output • EWR will provide linkage between national rail routes, as well as between new developments and new

					stations/services. Linkages between main lines provide opportunities for developing new freight routes between Port of Southampton and destinations further North.
20	EWR GRIP 4 Outline Business Case Final Report – Non-Technical Summary	Atkins Limited	July 2010	Non-Technical Summary	<ul style="list-style-type: none"> Enhanced transport links between areas where significant growth has been planned – part of the South East Plan and East of England Plan, therefore delivering growth sustainably. Supporting infrastructure to enable planned development of housing and employment to be realised. Potential to improve accessibility and connectivity. Mode shift to rail: <ul style="list-style-type: none"> Improve highway network efficiency Reduce emissions, improve environment, quality of life and safety Attractive journey times Provide alternative to travelling to London for interchange. Enhance opportunity for, and efficiency and reliability of delivering rail freight.
21	EWR GRIP 4 Outline Business Case Final Report	Atkins Limited	July 2010	Report	<ul style="list-style-type: none"> Journey time savings compared to car or bus → reduces car traffic which improves highway efficiency / resilience and environment Potential for developing longer distance cross country passenger services. Linkage between four main rail routes provides opportunity for new freight

					<p>route to and from Port of Southampton.</p> <ul style="list-style-type: none"> • Other intervention objectives: <ul style="list-style-type: none"> – Improve access to / from study area to opportunities across the arc. – Faster and more convenient alternative for rail users to connect onto mainline radial routes out of London. – Improve overall utilisation and value to the rail industry. – Enhance opportunity for, and efficiency and reliability of delivering freight by rail.
22	EWR Central Section Conditional Outputs Statement Final Report	Atkins Limited	August 2014	Report	<ul style="list-style-type: none"> • Strategic objectives specific to EWR – Central Section business case (engineering summary) - see [2]. • Strategic role of EWR in a national context: <ul style="list-style-type: none"> – Unlock higher levels of housing growth required for the Southeast – constrained by lack of housing supply. – Alleviate labour market constraints in the Southeast. – Drive agglomeration benefits at key high value clusters – businesses looking to locate near each other. – Reinforce image of the 'Golden Triangle'. – Rebalance growth away from London economy. • Sub-regional context, at a LEP (Local

					<p>Enterprise Partnerships) level:</p> <ul style="list-style-type: none"> - Improved connectivity would make town centre sites more attractive for development / regeneration [Hertfordshire, Buckinghamshire & Thames Valley]. - Address decline in competitiveness by providing direct links to major employment centres [Hertfordshire]. - Relieve congestion on the road network by improved rail capacity [New Anglia, Southeast Midlands]. - Facilitate growth in major centres of Norwich and Ipswich. Improved links between these centres and Cambridge would create life sciences triangle. - Increase size of potential labour market catchment and address labour market issues [Greater Cambridge & Peterborough, Thames Valley Berkshire, Oxfordshire, Southeast Midlands]. - Concentrate high tech activities in accessible locations [Oxfordshire]. - Bringing forward housing delivery [Hertfordshire, Southeast Midlands].
23	EWR Central Section Conditional Outputs Statement Executive Summary	Atkins Limited	August 2014	Executive Summary	<ul style="list-style-type: none"> • Drivers for EWR Central Section: <ul style="list-style-type: none"> - Planned employment growth to 2031 within 'golden triangle' and 'Knowledge Arc'. - Business to business travel due to

					<ul style="list-style-type: none"> – major business trip ends. – Development opportunities near rail stations. – Existing long journey times causing low demand between locations on the arc. – Potential to unlock east-west movement demand. – Demand for enhanced labour market connectivity. – Mismatch between employment growth opportunities and labour market supply. – Over-reliance on London commuting. – Freight demands and pressures – additional capacity needed. – Growing Airport passenger demand to Luton and Stansted → surface access demand from passengers and employees.
24	EWR: The Economic Case for Investment	Oxford Economics	2011	Report	<ul style="list-style-type: none"> • Case for investment in the Western Section: <ul style="list-style-type: none"> – Delivering sustainable employment and housing growth. – More <i>attractive for businesses</i> and skilled labour to locate, making the area more <i>competitive</i>. – Maximising potential of existing rail networks and linking several growing centres of population. – Low carbon economy due to modal shift from road to rail. – Improving connectivity around

					<p>Oxford and Cambridge universities and <i>high-value</i>, export-intensive business clusters.</p> <ul style="list-style-type: none"> • Case for investment in the Southeast (as above in [1])
25	EWR Wider Economic Case: Refresh	Rail Expertise Ltd	November 2015	Report	<ul style="list-style-type: none"> • Updating trends identified in previous OE and Arup reports, based on Network Rail producing revised project costs and enhancing the scope. • Southeast and East still underperform relative to the nation in terms of public spending, infrastructure investment and employment growth. • New jobs generated by London have largely been filled by increased commuting from Southeast → EWR can boost job creation through opening up new travel and employment opportunities. • Strategic nature of route benefits long distance rail markets. • EWR route commuting travel patterns are relatively poorly developed (road and rail), notably between rural districts and main employment centres. • Growth in housing will have to be matched by growth in commuting. • Relieve pressure on existing road and rail links towards Thames Valley and London.
26	East West Main Line Strategic Statement	Network Rail	March 2022	Strategic Statement	<ul style="list-style-type: none"> • Statement is a long-term vision – suggests areas to further explore that will expand EWR scope. • Lack of a long-distance direct east to

					<p>west link.</p> <ul style="list-style-type: none"> • Significant flows into London to interchange → increased average commuting distances, and pressure at terminal stations and metropolitan infrastructure. • East West Main Line benefits based on attaining the following strategic outcomes: <ul style="list-style-type: none"> – Improved connectivity – Generating modal shift – Integration with existing network – Contributing to decarbonisation • Growth in rail freight will need to be accommodated. • EWR would make rail travel more competitive with road transport and encourage modal shift. • EWR connection on WCML at Bletchley could accommodate uplift in freight from Southampton, Bristol, and South Wales to key strategic freight sites in 'Golden Triangle' of logistics and North. • EWR needs to accommodate housing growth, e.g., in Aylesbury and Princes Risborough.
27	Oxfordshire Rail Corridor Study	Network Rail	June 2021	Strategic Report	<ul style="list-style-type: none"> • ORCS – integrated strategy for aligning major rail programmes that are seeking to introduce new services into Oxford. • Rail outputs required to support delivery of housing and jobs growth forecasts. • EWR (Oxford – MK – Bletchley) will provide extra capacity to meet forecast demand on Bicester – Oxford corridor, if

					<ul style="list-style-type: none"> operating by 2024. Improve connectivity across Oxford. Improve connectivity with inter-regional economic hubs.
28	Oxfordshire Rail Corridor Study: Completion and Next Steps	John Disley, Infrastructure Strategy & Policy Manager, Oxfordshire County Council	March 2021	Report	<ul style="list-style-type: none"> Upgrade to passenger services is required to support growth → introduction of EWR. Link growth hubs and existing strategic transport hubs. <p>Annex 4:</p> <ul style="list-style-type: none"> New journeys to stations towards Birmingham Moor Street and an improved service to Worcestershire. New opportunities for freight flows through Oxfordshire

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Steer project/proposal number

24182601

Client contract/project number

N/A

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Distribution

Client: EEH and East West Railway Company Steer: Project team

Version control/issue number

Draft v1.00
Draft v2.00
Draft v3.00
Draft v3.10
Draft v5.00

Date

23 May 2022
26 May 2022
1 July 2022
7 July 2022
7 September 2022

DRAFT