



OXFORD TO CAMBRIDGE EXPRESSWAY STRATEGIC STUDY

Deliverable 1 – Examination of the Strategic Case for New Expressway East-West Road Links

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Oxford to Cambridge Expressway Strategic Study

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Client

Highways England / Department for Transport

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1 Executive Summary

1.1 Introduction

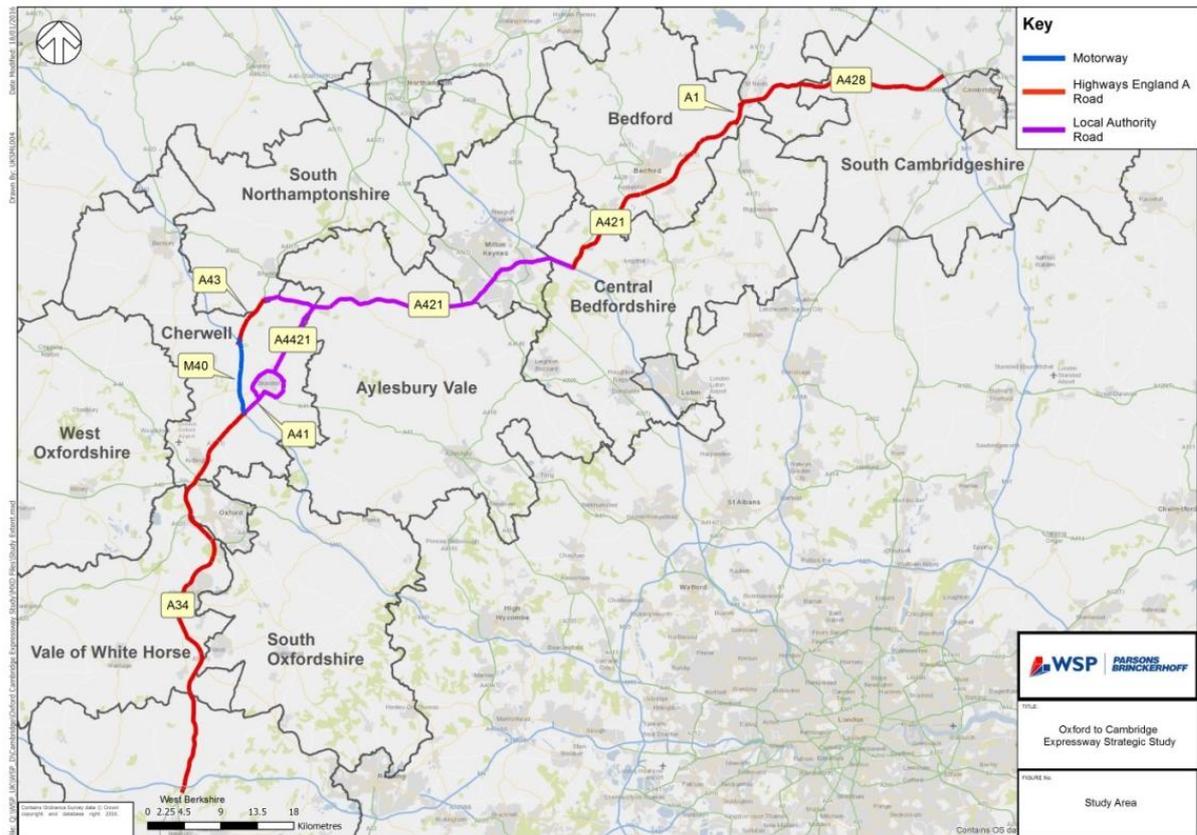
- 1.1.1 The 'Oxford to Cambridge Expressway Strategic Study' is sponsored by the Department for Transport (DfT) and undertaken by Highways England on their behalf. WSP | Parsons Brinckerhoff, CH2M, TRL and Steer Davies Gleave were commissioned to undertake the study.
- 1.1.2 The requirement for this study was set out in the first Roads Investment Strategy (RIS), published in December 2014, which announced a programme of new Strategic Studies to explore options to address some of the Strategic Road Network's (SRN) large and complex challenges. The results of these high-level studies will inform the second RIS. The Strategic Studies are:
- Northern Trans-Pennine Study;
 - Trans-Pennine Tunnel Study;
 - Manchester North-West Quadrant Study;
 - A1 East of England Study;
 - Oxford to Cambridge Expressway Study; and
 - M25 South-West Quadrant Study.
- 1.1.3 This strategic study demonstrates that there is a strong case for transport interventions within the broad arc defined by the study area. Such interventions would improve east-west connectivity, build transport network resilience and promote economic growth. Study area transport interventions are expected to improve economic productivity, thus supporting jobs and growth across the local and regional areas as well as the country as a whole. Interventions in the corridor could provide opportunities at three functional levels:
- Strategic: the role of the corridor in the context of the national rail and strategic road network;
 - Regional: supporting significant growth planned along the corridor and the contribution that these areas have to the UK economy and international markets; and
 - Local: sections of the corridor will have potential positive impacts in their own right, such as access between homes and jobs.
- 1.1.4 There is expected to be around forty percent increase in travel demand by 2035, with associated worsening of congestion on the existing primary east-west road route, resulting in reduced journey time reliability and increased journey times. Interventions in the corridor would address this and have a positive impact on local, regional and national economic performance, contributing strongly to the UK Gross Domestic Product (GDP). When combined with similar performance across the rest of the corridor there is significant potential to deliver economic growth and uplift to the benefit of the UK.
- 1.1.5 The Governments investment strategy for the SRN for the period 2015 to 2020 identifies the existing weak connection between Oxford, Milton Keynes and Cambridge and the need for an Expressway that connects the three settlements to help promote knowledge based economic growth. It is anticipated that existing roads will form much of the Expressway; however gaps along the network need to be addressed, particularly the section between the M1 near Milton Keynes and the M40. This would complement other national infrastructure projects including East West Rail (EWR).

- 1.1.6 Investment in strategic transport interventions contributes to economic performance by delivering user, productivity, investment and employment benefits. Interventions in the study area will generate user-benefits, comprising journey time and vehicle operating cost savings as a result of reduced congestion on the network.
- 1.1.7 Transport investment will lead to productivity benefits for firms and workers as transport improvements support economic interactions between firms and firms and consumers. Study area interventions will enable firms to reach wider markets, support the growth of the knowledge rich service sectors clustered in Oxford, Milton Keynes and Cambridge and increase the catchment area of employees able to access these productive centres of activity. Finally, transport investment can alter patterns of private sector investment by making locations more attractive for investment.
- 1.1.8 Transport investment within the study area will deliver wider economic benefits, including increasing labour market catchment areas, supporting the expansion of the knowledge intensive clusters in Oxford, Milton Keynes and Cambridge and encouraging firms and workers to locate within the study area.
- 1.1.9 The regional Local Enterprise Partnerships (LEPs) and England's Economic Heartland Strategic Alliance recognise greater economic benefit can be achieved by investing in the transport system on a wider strategic basis. Interventions that improve east-west connectivity and deliver more reliable journey times between the functional economic areas will positively support the future economic growth potential of these nationally important knowledge-based economies and the wider regional growth aspirations.
- 1.1.10 England's Economic Heartland Strategic Alliance has identified this study as one of its strategic transport priorities. England's Economic Heartland recognises the strategic importance of the study corridor, linking the expanding, strong dynamic, innovative knowledge-based economies of Oxford, Milton Keynes and Cambridge.

1.2 Study Area

- 1.2.1 The geographical scope of the study area focuses on the broad arc from Didcot – Oxford – Milton Keynes – Bedford – Cambridge. The primary road route within the study area linking these conurbations is formed of the A34, M40, A43, A4421, A421 and A428. A map of the approximate geographical scope of the study area along with the primary east-west route ('the route') that is examined in this study is shown in Figure 1-1.

Figure 1-1: Study Area



1.2.2 The primary east-west corridor functions as an important regional commuter route into the major urban areas of Oxford, Milton Keynes and Cambridge, an important sub-regional route linking local communities along the corridor as well as interfacing with a number of national strategic routes including the M4, M40, M1, A1, A14 and M11. The various SRN interface points are considered to be of significant regional importance as these national strategic routes facilitate principal freight access, connecting with wider economic regions of the United Kingdom.

1.3 Study and Stage 1 Objectives

- 1.3.1 The strategic aim of this study is to investigate the case for linking existing roads and creating an Oxford to Cambridge Expressway, which would create a high-quality link between Oxford and Cambridge, via Bedford and Milton Keynes.
- 1.3.2 The study will identify options for a new strategic Expressway corridor and upgrading existing routes, with the aim to improve east-west connectivity within the study area, build network resilience and support economic growth.
- 1.3.3 The study will identify options that can feasibly be constructed and appraise the strategic, economic, safety, environmental, operational benefits and impacts for each of the options, making recommendations regarding a preferred option(s).
- 1.3.4 Key to forming a judgement will be the wider economic costs and benefits of different options, in particular their impacts on the local labour/product markets and the economic geography of the study area. The assessment of the wider economic costs and benefits will provide an understanding of how the options can act as an enabler of the Local Authority and LEP growth plans within the study area. The study specific objectives are identified in Table 1-1.

Table 1-1: Study Objectives

NUMBER	STUDY OBJECTIVES
1	Review previous study work, relevant available data, and current investment plans to understand current performance and constraints of the existing road infrastructure, and confirm the strategic case for considering further investment.
2	Identify feasible options for improving and/or providing new road links within the study area that improve east-west connectivity to create an Expressway standard route between Oxford, Milton Keynes and Cambridge.
3	Understand the benefits and impacts resulting from the provision of a new strategic east-west corridor, to further inform the strategic and economic case for investment in new road infrastructure in the study area. The benefits assessment will consider congestion-relief, reliability, safety, and environmental outcomes of constructing a new strategic east-west route. The study will consider a range of individual and combined investment proposals.
4	Understand the wider socio-economic benefits that result from the strategic transport options, including improved economic productivity and investment and employment benefits.
5	<p>Have reference to and reflect wherever possible the key findings of the proposals being developed by other studies in the south including EWR, High Speed 2 (HS2) and the A1 East of England strategic study to understand the interdependencies between the potential options arising from this study and the other strategic transport proposals. This study will have reference to and include:</p> <ul style="list-style-type: none"> • Understanding the implications of the timing and phasing of potential schemes; and • Identification of opportunities for synergy or optimal sequencing of major road and rail works involved in, and options for mitigating strategic risks arising from, major complex projects being undertaken within the same function geography potentially within the same Roads Period.

1.3.5 This is the Executive Summary of Stage 1 of the study, the objectives of which are to:

- Understand the current and future context/conditions within the study area, including a review of previous studies, current policy, travel patterns, road congestion and capacity, safety, journey times, public transport options, environmental and physical constraints, future development, socio economics and labour markets; and
- Establish the need for intervention through the preparation of a robust body of evidence to demonstrate the requirement for development of an appropriate improvement scheme.

1.4 Key Findings

- 1.4.1 The key issues that affect how the primary east-west corridor can support the economic future of the communities along the route as well as the wider regional economic findings in relation to Stage 1 of the study are summarised in Figures 1-2 to 1-5.

Figure 1-2: Summary of the Route Standard and Function

- The primary study area east-west road route linking Oxford, Milton Keynes and Cambridge is of variable standard with gaps in Expressway standards on sections of the A34, A43, A421 and A428.
- The route passes through the built-up urban area of Milton Keynes which has a high frequency of at-grade roundabout junctions.
- Sections of the route interchange with and form important strategic routes for freight traffic. The primary east-west route provides access the M4, M40, M1, A1, M1, A14 and M11 TEN-T freight routes. The A34 which forms part of the primary east-west route is a comprehensive TEN-T freight route and accommodates a relatively high proportion of HGV movements.
- The route provides an important regional and sub-regional function, linking the fast growing Oxford, Milton Keynes and Cambridge functional economic areas. These functional economic areas generate substantial in-commuting flows, including from a number of local communities located along the route (Didcot, Abingdon, Bicester, Buckingham, Bedford, St Neots and Cambourne). The roads forming the route therefore provide an important transport connection for commuters and business users accessing the major employment centres (Oxford, Milton Keynes and Cambridge) as well as providing local communities with access to services and amenities.
- Due to the current lack of east-west transport connectivity, there are low levels of strategic long distance movements along the primary east-west route within the study area, including between Oxford, Milton Keynes and Cambridge.

- 1.4.2 This strategic study has demonstrated that the primary east-west route is formed of roads of variable standard which perform important regional, sub-regional and local functions including providing an important freight route (A34) between the southern coastal ports and the SRN. The importance of regional, sub-regional and local connectivity into and between the nationally important functional economic regions of Oxford, Milton Keynes and Cambridge support the strategic case for intervention, ensuring that the east-west route does not constrain the future economic growth potential of these regions.
- 1.4.3 Currently there is a lack of east-west connections across this part of the UK, north of London and south of the Midlands. Transport interventions across the broad Oxford to Cambridge arc would address this missing link in the national infrastructure.
- 1.4.4 Whilst the study area benefits from good radial connections into London, the Midlands and the North of England, east-west connectivity is poor, and capacity constraints occur along key roads, such as the M1, A34, A421 and A428 resulting in congestion and unreliable journey times. Congestion, unreliable journey times and poor connections to national and global markets constrains competitiveness, reduces business efficiency and increases business costs due to less productive employees.

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- 1.4.5 Transport constraints are identified by England's Economic Heartland and the study area LEPs as a key challenge to delivering housing and employment growth. Road congestion, limited capacity on the rail network, poor east-west connectivity and limited public transport are identified as barriers to future economic growth and prosperity. Furthermore, international competitiveness within high-tech and science based knowledge industries is restricted, as excellent connectivity is a vital pre-requisite for growth.
- 1.4.6 The evidence base shows low levels of interaction between the main urban areas within the study area due to existing travel times between the main conurbations. There is a very low commuter travel demand for longer-distances trips within the study area, for example between Oxford and Cambridge, and Oxford/Cambridge to Milton Keynes and vice versa. There are also only two percent of journey to work end to end trips through the corridor. This is as a direct result of a lack of any strategic infrastructure and the route being unattractive to all types of journey. New transport infrastructure could address this, and in particular potentially reduce the current unattractive journey times between Cambridge and Oxford, of over two and half hours by road and rail by an hour or more. This equivalent to being able to travel between Oxford and Milton Keynes in around 45 minutes and a similar time between Cambridge and Milton Keynes. This is in line with transport and economic performance guidance where a journey time of up to 45 minutes is acknowledged as encouraging wider economic benefits to occur in terms of productivity and investment benefits, allowing skilled workers to access jobs and improving business to business connectivity.
- 1.4.7 The study area has experienced substantial growth in population. There has been population growth of ten percent within the study area in the past ten years, two percent above the national average. Economic analysis shows that Cambridgeshire, Oxfordshire and Milton Keynes are home to expanding, strong, dynamic, innovative and successful knowledge based economies generating greater value added per hour worked than the national average. For example, within Milton Keynes, Gross Value Added (GVA) per hour worked is approximately seventeen percent higher than the UK average. These high performing economies contribute disproportionately towards economic output and as such investment in strategic transport infrastructure is essential to drive their economic growth to the benefit of the functional economic areas and the UK as a whole.

Figure 1-3: Summary of the Current Route Performance

- The public transport alternatives to the primary east-west route are limited resulting in high and unattractive journey times. Currently there is no direct rail link between, Oxford, Milton Keynes and Cambridge. EWR has a committed scheme to provide a rail connection between Bicester and Bedford (by 2022). However, there is no committed scheme to deliver a rail link from Bedford to Cambridge.
- The X5 (linking Oxford, Milton Keynes and Cambridge) provides an important commuter service between urban conurbations along the route. The journey time reliability of the X5 and local bus routes is affected by congestion on the primary east-west route during peak travel periods.
- Due to the lack of public transport alternatives, residents within the study area have a high car dependency and are reliant on the local and strategic road network to access jobs and services. The socio-economic demographic of the study area population consists of a high proportion of employed, highly educated, highly skilled and well paid professionals who have greater propensity to travel further to access the range of high value and skilled employment opportunities, than the national average.
- There has been substantial levels of traffic growth on sections of the route between 2010-2014. The A421 Expressway has experienced significant levels of traffic growth (41percent) from 2010-2014. The A421 (Milton Keynes to the A43), A428 Expressway and A43 have also experienced substantial levels of traffic growth (13 percent-19 percent) during this period.
- There are a number of pinch points along the primary east-west route that suffer from congestion which impacts on journey times and reliability including:
 - **A34:** Tidal congestion inbound to Oxford in the morning and outbound in the evening, and between the Marcham and Milton interchanges;
 - **A4421/A421 (A43 to M1):** East and westbound delays and low journey speeds on the single carriageway sections;
 - **Black Cat Roundabout:** Congestion on the A421 and A1 approaches to the roundabout; and
 - **A428 (A1 to A1198):** East and westbound delays and low journey speeds on this single carriageway section including significant delays on approach to the Caxton Gibbet roundabout.
- The A34 and the non-expressway standard sections of the A421 and A428 suffer from congestion, journey time reliability and highway safety issues. The serious and slight severity average accident rates per billion vehicle kilometres for the A421 and A428 single carriageways sections are substantially higher when compared to the Expressway standard sections of the route.
- Highways England data shows the A1 north of the Black Cat roundabout and the single carriageway section of the A428 east of the A1 suffer from a journey time reliability of 65 percent or less.
- There are environmental issues in the study area including:
 - Congestion on the existing route impact on Air Quality and Noise, especially in populated areas;
 - Scheduled monuments, Listed Buildings and Listed Parks and Gardens exist along the route that may affect the development of route realignment or dual carriageways;
 - The North Wessex Downs Area of Outstanding Natural Beauty, and Oxford, London Area and Cambridge Greenbelts may constrain the development of new road solutions; and
 - Protection of areas of Natural and Geological interest as well as the water environment is likely to affect route proposals and construction processes.

- 1.4.8 Stage 1 of the study has identified that the existing public transport alternatives within the study area are poor, offering limited east-west connectivity. Sections of the primary east-west road route have experienced substantial traffic growth, including the A421 Expressway around Bedford and the A428 Expressway towards Cambridge. Journey times and journey reliability are affected by a number of congested sections along the route including the A34, approaches to the A1 Black Cat Roundabout and the single carriageway sections of the A421 and A428. Delays on the primary east-west road route as a result of congestion inhibit strategic connectivity and result in additional costs borne by businesses due to constraints on business efficiency, investment and access to local, regional and global markets.
- 1.4.9 The current performance of the A34, A421 and A428 non-expressway sections is constraining housing and economic growth within the study area, and therefore there is a strong case for investigating interventions which could improve the performance of the corridor as an essential link for regional connectivity and economic growth.
- 1.4.10 Interventions in the study area will support the ambitious LEP and Local Authority growth plans. Within the study area, the total number of dwellings is predicted to increase by 230,000 over the next plan period to 2031, with 15 percent growth to 2021. Over a similar period to 2031 the growth in jobs is over 270,000. The corresponding increase in population is around 400,000 people within the study area over the period. To deliver this level and growth and seek to encourage new growth it is crucial to consider appropriate interventions that address challenges and provide a resilient transport network for the future.
- 1.4.11 There is a forecast growth in trips of 32 percent-40 percent by 2035 travelling along the primary east-west route which will result in a substantial increase in congestion, journey time delay and journey time variability without investment in new strategic infrastructure. For example the A34 serves a number of functions. It is an important commuter route into Oxford and the Science Vale, as well as a national and European freight route. If left unchecked the congestion and unreliability of journeys could waste an extra £22 billion worth of time, and add an extra £10 billion in annual costs to business, by this time (Roads – Delivering Choice and Reliability, Department for Transport).
- 1.4.12 The economies of Cambridge, Oxford and Milton Keynes and the wider study area can be considered strong, with high employment rates and economies primarily consisting of well-paid, productive jobs. Much of this success can be ascribed to their strengths in the 'knowledge economy': high-value, high-skill jobs in knowledge-intensive sectors such as life sciences, advanced manufacturing and scientific research. To enable future growth it is essential to overcome the restricted access to labour markets and improve business connectivity and while there is low unemployment and high GVA across the areas there is a lack of local skills for prevalent types of employment. This is also linked to the location of affordable housing.

Figure 1-4: Socio-Economic Summary

- There has been rapid population growth, averaging 8.7 percent across the study area from 2001 to 2011, with a corresponding increase in the number of dwellings by 9.1 percent.
- There are high employment levels in the study area, particularly across the three functional economic regions of Oxford, Cambridge and Milton Keynes. Employment rates reach as high as 80 percent within some rural local authorities compared to a national average of 72.9 percent, with correspondingly low unemployment rates.
- There is a strong reliance on knowledge-intensive sectors in Cambridge, Oxford and Milton Keynes, such as scientific research and advanced manufacturing relative to the national average.
- The strong, dynamic and innovative knowledge-based economies centered on Oxford, Milton Keynes and Cambridge contribute disproportionately towards the national economic output, with higher average hourly wages and greater proportions of the workforce employed in managerial, professional and technical occupations.
- These are highly productive economies, with high GVA per hour worked (in Milton Keynes 17 percent greater than the national average) and median hourly wages (South Cambridgeshire is 28 percent greater than the national average).
- Based on the greater proportion employed in knowledge industry occupations, it is estimated that those employed in these sectors have a greater propensity to travel, both in terms of number and length of trips.
- There are high levels of car ownership, especially in rural areas - 84 percent have access to at least one car, compared to a national average of 74 percent.

- 1.4.13 Stage 1 of the strategic study has identified that the study area has historically experienced high levels of population and dwelling growth, particularly in Cambridge, Milton Keynes and Oxford. These three regions knowledge-based economies have high employment rates, well paid, educated and mobile workforces.
- 1.4.14 Firms within the 'knowledge economy' benefit greatly from economic agglomeration, relying on recruiting workers with highly specific skill sets to work within localised clusters of economic activity. Worsening transport links will undermine the effective density of the cities along the corridor, and limit the extent to which the productivity benefits generated through proximity to competitors and collaborators can be achieved.

Figure 1-5: Growth Agenda

- Ambitious housing and employment growth plans have/are being set by the LEPs and Local Authorities within the study area with approximately 235,000 new dwellings and 270,000 new jobs to be delivered in the future.
- A number of strategic developments are planned along the east-west corridor including expansion of Cambourne and Bourn airfield in Cambridgeshire, urban extensions to Bedford and Milton Keynes, the towns along the A34 corridor in Oxfordshire and Bicester Garden City.
- High levels of growth in travel demand are forecast in Cambridgeshire, Milton Keynes, Aylesbury Vale, and Central Bedfordshire by 2041.
- Traffic flows are forecast to grow across the east-west corridor network by 32 percent-40 percent by 2035. However there is significant uncertainty in forecasting traffic growth into the future.
- Sections of the A34 to the south and around Oxford, M40 Junctions 9 to 10, the single carriageway sections of the A421 and A428 and the A421 Expressway are all forecast to be operating overcapacity by 2035 if no improvements to the strategic transport network are provided.
- A number of local, regional and national transport improvements are proposed in the study area. The potential to integrate east-west transport interventions with national (EWR and HS2), regional and local infrastructure schemes is essential to the regional and national growth agenda and creating wider opportunities for growth and economic performance.

- 1.4.15 Stage 1 of the study has identified that the study area local and regional development plans include ambitious housing and job growth targets. Improved transport links are an important prerequisite to achieving the ambitions set out by the LEPs along the corridor. Without transport interventions the forecast increase in travel demand will significantly increase delays and congestion on the existing primary east-west route, creating further barriers to growth, and constraining the LEPs ambitions for new jobs and homes along the corridor.
- 1.4.16 The corridor is home to some of the strongest local economies in the UK, improvements in regional connectivity are vital to ensure that transport does not constrain future economic growth. Longer and less reliable commutes would, in effect, lead to the labour pools shrinking. Study area residents will find it increasingly difficult to access opportunities in Cambridge, Milton Keynes and Oxford respectively, undermining the ability for companies to recruit and retain staff. In the longer term, households may choose to relocate closer to employment opportunities, placing pressure on the local housing market. Alternatively, businesses may choose to relocate to locations which support a deeper pool of labour, and which have better links to suppliers and customers.
- 1.4.17 Investment in study area east-west corridor interventions will act as an enabler for the delivery of new jobs, homes and wider economic benefits, directly supporting the growth aspirations of the LEPs and Local Authorities. Improved east-west connectivity will deliver more reliable journey times between local and regional urban centres, ensuring that transport connectivity does not constrain the future economic growth potential of the study area.
- 1.4.18 Improved transport linkages will expand the pool of labour available to firms along the corridor, and lead to greater benefits through economic agglomeration. Firms will be able to better match workers with specific skills to employment opportunities and increased proximity of firms will stimulate greater economic interaction and knowledge spill-over effects. Businesses in the corridor will become more competitive at both a national and international level, and the corridor will be better able to compete globally for highly mobile investment.

1.5 Need for Intervention

- 1.5.1 This study has identified that there is currently a lack of east-west connectivity across this part of the UK north of London and south of the Midlands. The evidence demonstrates the potential for improving strategic connectivity by addressing this missing link in the national infrastructure.
- 1.5.2 Failure to address the challenges identified in this study, and invest accordingly in east-west transport links within the study area, is likely to constrain economic growth along the Oxford to Cambridge corridor, and preclude the significant development opportunities highlighted by the LEPs. In the absence of transport interventions, congestion along the existing highway network is expected to intensify, leading to increased journey times for commuters and businesses.
- 1.5.3 This study has demonstrated that there is a lack of strategic east-west transport connectivity across the study area. The existing primary east-west road route performs important strategic functions, connecting urban conurbations and employment centres, accommodating freight movements and providing access to national freight routes.
- 1.5.4 This study has identified that sections of the primary east-west road route currently suffer from congestion during the peak travel periods, resulting in journey time variability and delays, which inhibit strategic connectivity and constrain economic development in key growth areas including the Oxford, Milton Keynes and Cambridge functional economic areas.
- 1.5.5 Within the study area local and regional authorities are planning for substantial levels of population and job growth. In particular, substantial housing and job growth in Cambridge, Oxford and Milton Keynes functional economic areas is required to support their expanding, strong, dynamic, innovative and successful knowledge based economies which contribute disproportionately towards the national economic output.
- 1.5.6 The local, regional and national authorities have identified that congestion, unreliable journey times and poor east-west connectivity are barriers to delivering future housing development and economic growth within the study area. If strategic east-west transport improvements are not delivered, traffic growth on the existing primary road route is predicted to result in additional sections of the network operating over-capacity during the peak travel periods, further increasing journey time variability and delays. Delays as a result of increased congestion will be a cost borne by businesses, further restricting business efficiency, investment and access to local, regional and global markets.
- 1.5.7 In order to flourish, collectively knowledge-based sectors depend upon high quality support from 'enabling' sectors such as financial and professional services and other business services which are predominantly, but not exclusively, located in London. As a consequence, existing high-quality radial transport links into London allow firms located along the Oxford to Cambridge to access world-class support in London and improved east-west connectivity along the corridor, such as journey times of around 45 minutes between Oxford/Cambridge and Milton Keynes could enable such support in the corridor, further boosting economic growth.
- East-west transport interventions could therefore address:
 - Limited commuting/interaction between Oxford and Cambridge (each has zone of influence) and the urban and rural areas in between;
 - Improved connectivity along the Oxford to Cambridge Expressway corridor is likely to increase the number of people commuting between local areas and may lead to better matching between skills and employment opportunities; and
 - Improved connectivity is likely to deliver increased economic interaction (with associated impacts on trade, specialisation, productivity etc.) between the local areas.

- 1.5.8 The potential to integrate east-west transport interventions with national (EWR and HS2), regional and local infrastructure schemes is essential to the regional and national growth agenda and creating wider opportunities for growth and economic performance.
- 1.5.9 Interventions that deliver improved east-west connectivity within the study area will therefore have a positive impact on travel reliability, network reliance and enhance future local, regional and national connectivity and support economic growth.
- 1.5.10 In summary interventions in the corridor could address issues at three functional levels:
- **Strategic** – the role of the corridor in the context of the national rail and strategic road network and an intervention will deliver economic benefits in the form of productivity and increasing the contribution to UK GDP;
 - **Regional** – addressing significant growth planned along the corridor and the contribution that this areas has to the UK economy and international markets by improving access to labour markets and business connectivity; and
 - **Local** – sections of the corridor will have potential positive impacts in their own right, such as access between homes, jobs and services.
- 1.5.11 The current and future performance of the primary east-west road route, together with the study area growth aspirations and other transport improvements, all make a strong case for investigating interventions which could improve the performance of the corridor as a strategic route and an essential link for local communities.
- 1.5.12 Interventions in the corridor could deliver the following benefits:
- Provide strategic east–west links, filling in the missing link in the road and rail network as there are no current strategic connections;
 - Address key constraints, such as environmental impact in local communities;
 - Promote further investment in the corridor and surrounding area;
 - Integrate with planned infrastructure (HS2, EWR and other road improvements) and create wider economic opportunities for growth;
 - Help facilitate significant planned housing and jobs growth;
 - Tackle significant current and future congestion and the network reliability worsening over time;
 - Provide interchange access to a number of national strategic roads including the M4, M40, M1, A1, A14 and M11;
 - Overcome the restricted access to labour markets and improve business connectivity;
 - Providing connections between homes and jobs, seeking to address the lack of affordable housing;
 - Overcome the potential negative impact on economic growth (and reduction in contribution to UK economy) from lack of and worsening performance of east-west connections; and
 - Seek to cater for some of the local infrastructure challenges, e.g. poor accessibility by all modes into urban centres.

1.5.13 The outline of the case for intervention in the study area is summarised below:

Key Points

- There is a lack of strategic east–west transport connectivity across this part of the UK;
- Sections of the existing primary east-west road route function as key national and regional freight routes (A34) and provide access to the national SRN network;
- Sections of the route provide important regional and sub-regional functions, linking communities along the route with the main functional economic areas and improving these sections will significantly improve access to labour markets;
- The current performance of the A34 and the non-expressway sections of the A421 and A428 are constraining its use, restricting labour catchments, regional connectivity and economic growth;
- Without strategic transport interventions the forecast increase in travel demand and traffic growth will significantly increase delays and congestion on the primary east-west route, constraining economic growth of the communities within the study area and the key growth areas of Oxford, Milton Keynes and Cambridge;
- There is a need for improved connections across the region and into main urban areas and local centres;
- Interventions will have a positive impact on travel reliability, network resilience, regional and local connectivity which is vital to support economic growth and enable the delivery of new jobs and homes; and
- This in turn will deliver economic benefits in the form of improved productivity. This will enable the area to contribute significantly to the national economy.

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