

A long, arched pedestrian walkway with a person walking in the distance. The walkway is covered by a series of repeating arches supported by a central metal beam. The lighting transitions from warm yellow on the left to cool blue on the right. A person is walking away from the camera in the center of the path.

CAMBRIDGE – MILTON KEYNES – OXFORD CORRIDOR: INTERIM REPORT

NATIONAL
INFRASTRUCTURE
COMMISSION

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IN BRIEF

To succeed in the global economy, Britain must build on its strengths. The corridor connecting Cambridge, Milton Keynes and Oxford could be the UK's Silicon Valley – a world renowned centre for science, technology and innovation. But its future success is not guaranteed.

The Commission's central finding is that a lack of sufficient and suitable housing presents a fundamental risk to the success of the area. Without a joined-up plan for housing, jobs and infrastructure across the corridor, it will be left behind by its international competitors. By providing the foundations for such a strategy, new east-west transport links present a once-in-a-generation opportunity to secure the area's future success.

A LACK OF HOUSING AND CONNECTIVITY ARE PUTTING FUTURE SUCCESS AT RISK

The Cambridge-Milton Keynes-Oxford corridor faces a chronic undersupply of homes made worse by poor east-west transport connectivity. Two of the least affordable cities in the UK lie within the corridor, and the area as a whole has consistently failed to build the number of homes it needs.

That shortage puts sustained growth at risk. It is already increasing costs for businesses and diminishing their ability to attract employees at all levels – including the recruitment and retention of globally mobile talent.

A JOINED-UP STRATEGY LINKING INFRASTRUCTURE AND HOMES

Investment in infrastructure, including enhanced east-west transport links, can help to address these challenges, but it must be properly aligned with a strategy for new homes and communities, not developed in isolation. This means local authorities working in partnership, and with national government, to plan places, homes and transport together. Current governance mechanisms are not sufficient to deliver the step-change in strategic leadership and collaboration needed.

A ONCE-IN-A-GENERATION OPPORTUNITY

Planning for East West Rail and the Oxford-Cambridge Expressway should be taken forward urgently. These are once-in-a-generation investments that will deliver substantial national benefits and, if designed properly, can provide the foundations for the corridor's long-term prosperity: unlocking housing sites, improving land supply, and supporting well-connected and sensitively designed new communities, whilst bringing productive towns and cities closer together.

This corridor is a national asset, that competes on the world stage and can fire the British economy – but only with an integrated and ambitious strategy to deliver new homes, connectivity and opportunities can it realise its full potential.

In the second phase of this study, the National Infrastructure Commission will work with local and national government, and other stakeholders, to put this strategy in place.

THE GROWTH CORRIDOR



Cambridge and Oxford are two of the least affordable places to live in the United Kingdom, with **house prices double the national average**.

The Cambridge - Milton Keynes - Oxford corridor is home to

3.3m people

and some of the most productive, successful and fast-growing cities in the United Kingdom.



The Commission's central finding is that a lack of sufficient and suitable housing presents a fundamental risk to the success of the area. Without a joined-up plan for housing, jobs and infrastructure across the corridor, it will be left behind by its international competitors. By providing the foundations for such a strategy, new east-west transport links present a once in-a-generation opportunity to secure the area's future success.



Governance

Local authorities, Local Enterprise Partnerships, government departments and national delivery agencies should work together to develop proposals for the joint governance arrangements required to deliver infrastructure and housing.



Rail

Government should commit to delivering the Western Section of the East West Rail project before the end of 2024, bringing forward **£100m** of funding to avoid delay, and commit up to **£10m** in development funding to continue work on the Central Section.



Road

Government should commit **£27m** to the end of 2018/19 to fund the next phase of work on the Oxford-Cambridge Expressway study.





EXECUTIVE SUMMARY

The National Infrastructure Commission (NIC) has been asked to provide the government with proposals and options to maximise the potential of the Cambridge- Milton Keynes- Oxford corridor as a single, knowledge-intensive cluster that competes on a global stage, protecting the area's high quality environment, and securing the homes and jobs that the area needs.

Over the past eight months the Commission has engaged with a range of stakeholders from across the corridor including local authorities, Local Enterprise Partnerships (LEPs), universities and Whitehall departments. This has included evaluating around 80 responses to a call for evidence which sought to gather views on current challenges, proposed interventions and the vision for the corridor.

This interim report presents the Commission's assessment of the key challenges facing the corridor. It sets out how the NIC will work over the next year to help tackle these challenges. The report also sets out a number of shorter term recommendations which it believes the government should implement whilst the Commission's second phase of work is underway.

The Commission's central finding is that a lack of sufficient and suitable housing presents a fundamental risk to the success of the area. Without a joined-up plan for housing, jobs and infrastructure across the corridor, it will be left behind by its international competitors. By providing the foundations for such a strategy, new east-west transport links present a once-in-a-generation opportunity to secure the area's future success.

A LACK OF HOUSING AND CONNECTIVITY ARE PUTTING FUTURE SUCCESS AT RISK

The Cambridge-Milton Keynes-Oxford corridor is home to 3.3 million people and hosts some of the most productive, successful and fast growing cities in the United Kingdom, as well as world leading universities, knowledge intensive high-tech firms and highly skilled workers. The area is a hugely valuable asset to the UK as a whole. Its universities, businesses and technology clusters have a global reputation and compete on the world stage.

The success of the area has fuelled exceptionally strong demand for housing across the corridor and in its key cities, which has not been matched by supply. Lack of housing supply is leading to high house prices and low levels of affordability, for both home ownership and private rental. The ratio of median house prices to earnings is 13:1 in Cambridge and 12:1 in Oxford making them two of the least affordable cities in the UK.

This situation is exacerbated by poor east-west transport connectivity and limited 'last mile' capacity into certain centres and other employment locations. In contrast to strong north-south radial links extending from London, east-west trips across the corridor are difficult, slow and unreliable. As a result, commuting between key hubs on the corridor is almost non-existent and the area does not function as a single labour market.

Meeting the corridor's housing and connectivity needs is a significant financial and planning challenge. It will require radical thinking to enable new and expand current settlements at the scale needed. Crucial to this will be creating settlements that build on the attributes that make the corridor an attractive place to live and work. This will require different approaches to infrastructure and development in different locations. This could include the densification of existing towns and cities, the development of substantial urban extensions, or the construction of wholly new settlements. It may require all of these things.

Sustainable communities need to be supported by the right infrastructure. This includes the immediate, local connections into specific sites and developments, as well as the broader transport links that connect homes to jobs and services, allowing people to access the wider economy and supporting their quality of life. It also includes utility, flood and digital networks.

Infrastructure and housing must be planned together. The current development of new strategic east-west links, particularly if combined with other more targeted local infrastructure improvements, provides an opportunity to achieve this and prepare an ambitious long-term strategy for the development of the corridor.

A JOINED-UP STRATEGY LINKING INFRASTRUCTURE AND HOMES

To maximise the benefits of significant new infrastructure investment, local stakeholders will need to demonstrate collective strategic leadership, often across administrative borders. This includes developing a shared vision for the corridor and a strategic plan for its development that commands the support of government and wider stakeholders.

If taken forward as part of a wider strategy for planning and housing, new investment in transport infrastructure within the corridor has the potential to:

- Better link homes to employment, opening up both major strategic sites and smaller local sites for high quality housing development.
- Co-ordinate patterns of new development, creating focused opportunities to build new communities around transport hubs and interchanges.
- Create inclusive liveable places, connecting people and communities with opportunities for work and leisure.
- Mitigate congestion in city centres.

- Provide a catalyst to private investment, unlocking broader local and national benefits.
- Increase land values, allowing local authorities and government capture a share of uplifts to support infrastructure investment.

A strategy for infrastructure and homes will also need to be linked to the area's strategy for skills and social infrastructure as well as the UK's wider industrial strategy. The Commission has not examined skills and social infrastructure as part of this study but recognises their importance alongside physical infrastructure to economic success.

The Commission recognises that through partnerships such as the East West Rail consortium, England's Economic Heartland and the Fast Growth Cities group, progress has been made in this area. Going forward, the challenge remains to create a strategic plan or plans with consistent support across the corridor, encompassing planning, transport and funding.

Recommendation 1: Local authorities, Local Enterprise Partnerships, government departments and national delivery agencies, should work together to develop an integrated strategic plan for infrastructure, housing and jobs across the corridor.

- The plan should provide a framework for cross-corridor economic and transport strategies and for strategic spatial plans which, when combined, enable a step-change in housing provision and connectivity.
- The plan should also ensure that options for funding infrastructure are fully integrated into the strategy.
- The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.

A new vision for how future communities and major new infrastructure projects are designed and developed will need to inform this strategy if it is to win widespread support. This will need to respect the character of the diverse areas that make up the corridor.

Recommendation 2: The quality of infrastructure design and its impact on maintaining and enhancing the character of the built environment should be central to any strategic plan for the area.

- As part of the next stage of its work, the Commission will continue to work with urban planners and the design community to understand how infrastructure can enable new and expanded settlements which incorporate the highest standards of design and place making.

In addition to strategic planning, it is crucial for success that joint governance structures can be formed that support collective decision making.

Leadership on different issues will be required at different spatial scales. While collaboration on strategic transport infrastructure is likely to require collaboration at the whole corridor level, leadership on strategic spatial planning, may require local authorities to collaborate around a travel to work area or across clusters of housing market areas. The delivery of specific new transport and housing sites may require different institutional structures again, for example new development corporations focused on exploiting the potential around key transport hubs and interchanges

To succeed, any new model for strategic leadership must be built from the ground up through an inclusive process. Given the importance of the corridor to the UK economy, national government must recognise its stake in the success of this work.

Recommendation 3: Local authorities, Local Enterprise Partnerships, government departments and national delivery agencies, should work together to develop proposals for the joint governance arrangements required to deliver co-ordinated planning.

- This work should build on and strengthen existing cross-corridor collaborations and should consider the potential for formal joint governance mechanisms (e.g. joint committees, combined authorities, sub-national transport bodies, or the creation of unitary authorities). These should include consideration of future devolved powers, freedoms and financial flexibilities.
- The work should also consider the full range of delivery mechanisms capable of accelerating housing growth, including looking at the potential for new development corporations to accelerate and drive delivery.
- The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.

A ONCE-IN-A-GENERATION OPPORTUNITY

The East West Rail project and the proposals for an Oxford-Cambridge Expressway present a unique opportunity to develop a multi-modal transport spine for the corridor – delivering substantial national benefits and providing a foundation for the area’s long-term development.

These schemes have significant benefits, including:

- Completing ‘missing links’ within the national rail and road networks – improving resilience by connecting radial routes from London; providing relief to congested routes in the south-east and midlands, and enabling wholly new connections between England’s towns and cities, ports and airports.
- Improving and diversifying the labour supply of existing city economies – bringing productive towns and cities closer together; expanding travel to work catchments, and reducing the impact that pressures in local housing markets have on firms’ ability to recruit and retain people at all levels of their business.

- Meeting projected increases in travel demands driven by population growth and planned housing development.

But this is only part of the story. Through joined-up planning, these schemes also have the potential to unlock major new sites for housing, to improve land supply, and to enable the development of well-connected and sensitively designed communities. Without integration into wider spatial strategies for the corridor they risk not addressing the factors that are holding back growth on the corridor.

The first section of East West Rail between central Oxford and Bicester is due to fully open in December this year. The government has committed to complete the second section of the line between Oxford and Bedford via Bletchley by 2024 – but there is a risk of the project being further delayed, to avoid this, it is important that elements of the work are accelerated so that its construction can dovetail with that of HS2.

Recommendation 4: The government should commit to delivering the Western Section of the East West Rail project before 2024 (the end of the rail industry’s Control Period 6).

- **To achieve this, the government should bring forward £100m in funding to accelerate design and development, and commit construction monies as necessary to:**
 - **avoid abortive cost (subject to the development process demonstrating rigorous disciplines in planning, cost management and value management); and**
 - **integrate construction of the East West Rail Western Section with work on HS2.**
- **To fully maximise the benefits of the project local authorities should recognise the potentially transformational benefits of East West Rail and develop and agree, working with national government, an ambitious strategy for housing development and delivery around stations and station towns.**
- **The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.**

For the Expressway, and the Central Section of East West Rail between Bedford and Cambridge the Commission recognises more development work is needed before the schemes can be finalised and firm decisions on prioritisation and delivery can be taken. For both schemes, this work must be progressed in a way that maximises opportunities to bring forward high quality housing development, creating places where people want to live which are well-connected to jobs and services while still delivering improvements to national connectivity.

Recommendation 5: The government should commit up to £10m in development funding to continue work on the Central Section of the East West Rail link.

- **Government should provide clear guidance that a core objective for the development of this scheme should be to support the provision of new housing and connect it to local and regional labour markets.**
- **Local partners and national government should work together to develop a plan for the Central Section which links development work on the East West Rail Central Section to options for local housing development.**
- **Government should explore the potential for alternative delivery and financing mechanisms for the railway. This should include consideration of how third party contributions could be leveraged.**
- **The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.**

Recommendation 6: The government should commit £27m to the end of 2018/19 to fund the next phase of development work on the Oxford-Cambridge Expressway study, allowing the detailed design process to begin as soon as possible.

- **Highways England should work with relevant local authorities to develop and assess the potential Expressway options and develop a proposal which maximises the scheme’s potential to unlock housing growth and connect it to local and regional labour markets, alongside delivering wider benefits.**
- **The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.**

The full potential of East West Rail and the Expressway cannot be realised without investment in its wider road and rail network. It is encouraging, therefore, that LEPs and local transport authorities are already working together through the England’s Economic Heartland partnership to define a cross-corridor transport strategy.

The delivery of new homes and communities must be a core objective of this strategy. This means prioritising and progressing schemes that enable smart, sustainable communities, alongside those which improve connectivity and create jobs. LEPs and local authorities have prioritised a number of such schemes in recent bids into the Local Growth Fund. National and local government must work together, with the private sector, to secure resources for key schemes and enable their prompt delivery.

Maximising the benefits of East West Rail will also require new thinking from local authorities on first/last mile connectivity, and on the connections between suburban and rural populations and city centres. Most towns and cities across the corridor have city centre strategies in place, but these will need to be strengthened to reflect and enable the long-term requirement for housing growth.

There can, of course, be no “one-size-fits-all” approach to realising these aims. What works in Cambridge may not be appropriate in Milton Keynes, and solutions for Milton Keynes may not work for Oxford and Oxfordshire. However these approaches will need to factor in the wider cross corridor strategy developed as part of

recommendation 1 and the emerging thinking on East-West Rail and the Expressway as set out in recommendations 5 and 6.

Recommendation 7: In order to maximise the benefits of new strategic infrastructure and to ensure that urban centres across the corridor continue to function effectively - Local Authorities, Local Enterprise Partnerships, government departments and national delivery agencies, should work together in each centre to define a set of credible, coherent and co-owned city centre transport strategies.

- These strategies may build on existing plans, but also ensure that national and regional level schemes are properly integrated into local thinking.
- These strategies should be consistent with partners' wider work to develop a plan for the corridor that maximises its potential to support housing growth.
- This should include realistic proposals on funding and financing and any consideration of any devolved powers, freedoms or financial flexibilities.
- The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.

The recommendations outlined in this interim report, represent an important step in this project. They reflect the Commission's assessment of the key challenges facing the Cambridge - Milton Keynes - Oxford corridor and actions that need to be taken now to further develop strategically significant projects. The recommendations also express the Commission's desire to work with local authorities, LEPs and national government to tackle these challenges.

While the Commission's work thus far has been on gathering and reviewing evidence, phase two of the project will see it play a more active role in the corridor - encouraging new thinking on joined-up strategic planning, governance, infrastructure financing and place-making over the next year.

The long-term success of the corridor will, of course, depend upon the sustained efforts of local and national government, on the continued success of businesses within the corridor, the commitment of investors, and the quality of its universities. The Commission's own work within the corridor will be time limited. The Commission will, therefore, use its final report and its recommendations to government in late 2017, to set out its view on:

- The institutions that will strengthen governance across the corridor, by integrating planning and infrastructure decisions and driving delivery, to maximise the benefits of infrastructure investment.
- The design and phasing of new east-west transport links, and associated housing and development sites.
- Design principles for infrastructure, and associated development, to ensure that it is effectively integrated into the local environment and meets the needs of residents and communities.

- Measures to enhance local connectivity and reduce congestion to enable better journeys within the key urban centres in the corridor and to provide wider access to major new road and rail links.
- Priorities for any additional, non-transport infrastructure investment needed to unlock housing and support growth.
- Financing and funding mechanisms to unblock current barriers to the delivery of housing and infrastructure.

In developing and delivering these recommendations, the Commission will promote and build upon the best ideas from within the corridor itself - testing these through constructive challenge. It will also seek to balance the need for new plans and proposals that align to local needs, circumstances and preferences with the imperative for developing the corridor as driver of national prosperity.

PART ONE: THE CORRIDOR

The Cambridge-Milton Keynes-Oxford corridor has a major role to play in the future of the UK economy. Towns and cities across the corridor are amongst the most successful and fastest growing in the UK, making a substantial, and increasingly important, contribution to UK income and to national tax revenues. The success of these places matters, not just to those who live and work in the corridor, but to national prosperity.

- 1.1 The importance of the corridor is a reflection of the assets it holds. With the exception of London, no other part of the country hosts such powerful a combination of:
 - World leading universities and research institutes – Oxford and Cambridge Universities rank consistently amongst the top 4 in the world, and Cranfield University is a global leader in engineering disciplines.
 - Globally competitive business clusters – the area has a concentration of businesses in the scientific research and development, life sciences, pharmaceuticals, high-tech manufacturing, performance technology and motorsport sectors. An estimated 419,000 people across the corridor are employed in the knowledge economy.¹
 - Highly-skilled workers – Oxford and Cambridge have the most highly qualified workforces in the country, more than 60% of workers are qualified to degree level, compared to a national average of 36%. Milton Keynes and Northampton have seen sustained growth in degree-level qualifications – below 20% of workers were qualified to this level in the mid-1990s compared to over 30% in 2015.²
- 1.2 The corridor competes with locations across the globe to attract talent and investment. In considering where to base their operations, businesses with global reach may consider this corridor alongside areas such as Boston MA or the San Francisco Bay Area. If the UK is to succeed in the global economy, it must invest in the continued success of this

“we have not yet achieved the full extent of our economic potential – our comparators are the highest performing knowledge-based economies around the world.”

Local Enterprise Partnerships, Joint response to NIC Call for Evidence

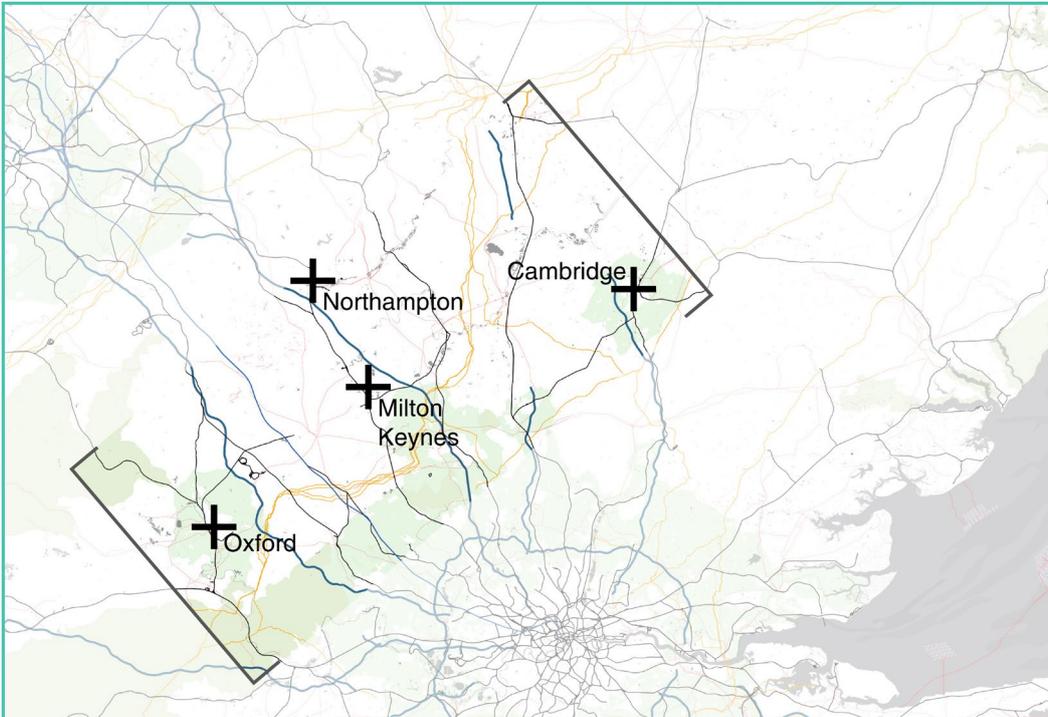
corridor, sustain its competitiveness and develop its role at the heart of the UK knowledge economy. In addition - workers in the cities are highly productive, workers in Milton Keynes and Oxford are 23% and 14% more productive than the UK average respectively.

THE ECONOMIC GEOGRAPHY

- 1.3 Stretching around 130 miles from Cambridgeshire, via the south-east midlands to Oxfordshire, the Cambridge-Milton Keynes-Oxford corridor forms a ribbon around the north and west of London's green belt. At 3.3 million people, the area has a population of similar size to that of Silicon Valley California, but is just over twice its size (c.3,900 square miles compared to c 1,850 square miles).³ The corridor encompasses Daventry and Wellingborough to the north and is bounded on its southern fringe by Luton, Stevenage and Aylesbury Vale.
- 1.4 The area does not function as a single joined-up economic corridor. The success of Cambridge owes little to the success of Milton Keynes. Growth in Milton Keynes, in turn, has been secured quite independently of growth in Oxford. Rather than a connected cluster of fast-growing places, Cambridge, Milton Keynes and Oxford have developed as distinct city economies, each positioned on different radial routes around 50 miles from London.
- 1.5 The lack of a distinct corridor is reflected in the fact they do not form either a coherent housing market area or a travel to work area (TTWA). Rather, the corridor comprises a number of overlapping TTWAs including those centred on Bedford, Stevenage, Luton, Northampton, and Aylesbury.
- 1.6 The corridor is not currently served by high-quality end-to-end transport links. Its principal transport arteries run north to south through the area, providing strong links to London, the midlands and the north of England. (e.g. the M40, M1, A1, and A14/M11). The largest urban areas within the corridor are all served by direct and frequent rail services into London with journey times of less than 60 minutes and are all within an hour's drive of an international airport. In contrast, journey times between the towns and cities within the corridor are often poor, and in many cases the only rail option is to travel into London and out again.
- 1.7 Although the populations of the cities in the area are relatively small in comparison to other UK locations, Cambridge, Milton Keynes and Oxford are important international and regional centres of employment. They all experience high levels of net in-commuting and have relatively large labour market catchment areas.⁴
- 1.8 The majority of land in the corridor is not constrained by Green Belt, national parks or Sites of Special Scientific Interest (SSSIs). The areas of highest demand and highest land values – notably Oxford and Cambridge – are, however, exceptions to this, being encircled by large Green Belts and, in the case of Oxford, a large flood plain. This has dispersed employment and

population growth out of their centres, to the ‘Science Vale’ between Abingdon and Didcot, and to ‘Silicon Fen’, south of Cambridge. Since the 1980s, the majority of employment growth in the Cambridge economy has been located across the surrounding districts and not within the city.⁵

Figure 1: The Cambridge-Milton Keynes-Oxford Corridor



Source: 5th Studio

DRIVERS OF SUCCESS

1.9 The success of the corridor and its significance to the UK economy has been driven by a range of factors, linked primarily to its people and their ideas.

- **Innovation** – nine of the UK’s top 100 (and two of the top ten) high growth tech firms are located in the corridor, despite the area accounting for just 5.1% of the population.⁶

In 2014, 102 patents were granted by the UK Intellectual Property Office per 100,000 population in Cambridge compared to the UK average of 6.⁷

In the Cambridge Innovation Cluster, 64.6% of new companies had a life span of greater than five years, whereas the national survival rate over the same period has been just 41.7%.⁸ In a recent Centre for Cities report, the only two UK cities in the European top 20 for innovation were Oxford and Cambridge.⁹

- **Entrepreneurship** – in 2016, Northampton had the second highest number of new business start-ups per 10,000 residents in the UK outside London.¹⁰ Milton Keynes was the UK’s fastest growing city both in terms of employment and output (GVA) over the period from 1981 to 2013.¹¹

Universities within the corridor have a clear track record in commercialising research and developing successful enterprises. There are high profile examples across the work of Cambridge, Oxford and Cranfield.

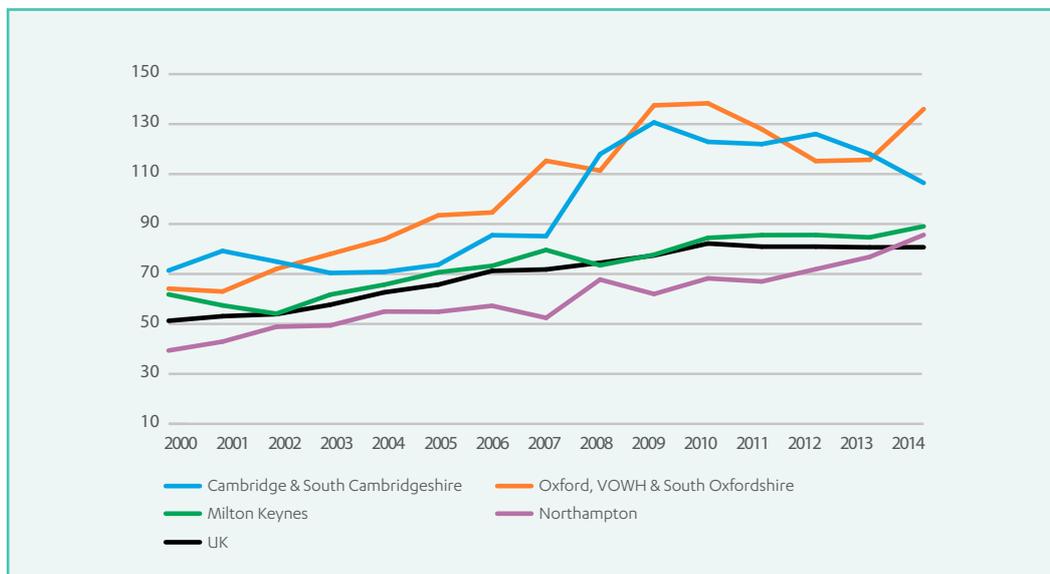
- **High skills** – Across the corridor, residents are better qualified on average than in the UK, with 40% holding a degree.¹² In the cities of Oxford and Cambridge, this increases to 60.2% and 61.3% respectively.¹³ Cambridge has recently been identified by Centre for Cities as having the highest concentration of highly skilled residents across the continent.¹⁴

1.10 This combination of innovation, entrepreneurship and high skilled labour has enabled the area to become highly productive. Overall Milton Keynes has the highest productivity per worker across the corridor, almost 25% higher than the national average.¹⁵ However, in key sectors such as high technology manufacturing, the innovation of Oxford and Cambridge begins to show through, with the workers in these industries shown to be more productive than their counterparts elsewhere in the country.

“the success of the Cambridge economy has been driven by having a world-class research university with the right mindset and conditions that enable the successful commercialisation of research.”

Cambridge Ahead
Joint response to NIC
Call for Evidence

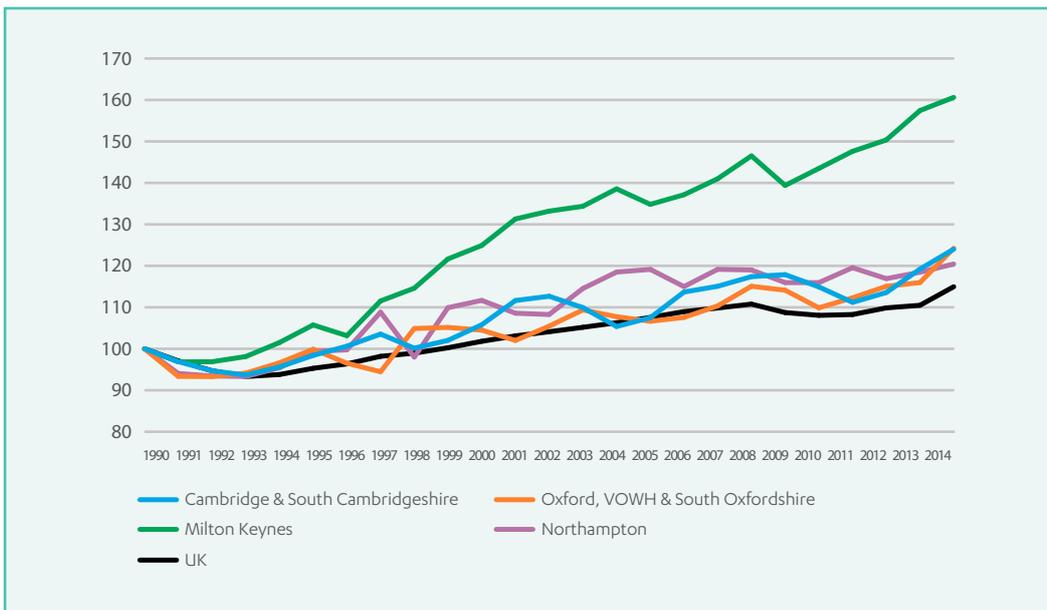
Figure 2: Real High-tech Manufacturing Productivity (£000 per person employed, 2011 prices), 2000 – 2014



Source: Cambridge Econometrics. Note: Vale of White Horse (VOWH)

- As a result of these factors, the corridor has sustained high levels of job growth and population growth and high land values over a long period.
- Job growth has been particularly strong in Milton Keynes which has seen its population grow by 39% between 1990 and 2013, but employment grew by 51%. Indeed, between 2004 and 2013, Milton Keynes as a city had the strongest job growth of any UK city.¹⁶ Oxford and Cambridge have also seen rates of growth in employment which have been ahead of the national average.

Figure 3: Employment Growth index (1990 = 100)



Source: Cambridge Econometrics. Note: Vale of White Horse (VOWH)

- 1.11 As a response to the growth in employment, the area has experienced comparatively high population growth, growing from 2.7m people in 1990 to 3.3m today, an increase of 22%. Milton Keynes alone has doubled in size since 1981, growing since that date by the size of Cambridge, a rate of expansion nearly five times the English average. Over the same period, Northampton grew by 34%, doubling the national average.¹⁷
- 1.12 Sustained growth has also led to high land values. For example the value of residential development land that is fully serviced with infrastructure within the urban fringe of Cambridge is currently priced in excess of £2m per net developable acre, compared with values in most of the midlands and northern parts of England of between £300,000 and £800,000 per acre, albeit with higher values in the highest demand areas of these markets.¹⁸

CASE STUDY

High performance technology and motorsport cluster¹⁹

The area around Silverstone is home to significant business activity across the field of high performance technology and motorsport. Formula One teams including Red Bull Racing (in Milton Keynes), Mercedes AMG Petronas (Brackley) and Sahara Force India (Silverstone itself), as well as household names including Cosworth (Northampton) and Prodrive (Banbury and Milton Keynes) are found in this cluster. There also are many less visible firms operating within supply chains for motorsport series and increasingly developing products, services and know-how across the spectrum of high performance technology.

This cluster was the focus of a major research project which was commissioned by MEPC²⁰, published in May 2016. Through detailed company case studies, the study found several instances of collaborative relationships, of different forms, extending east-west across parts of this geography *despite* the limitations of the transport infrastructure.

One example of this is Cosworth, a high performance engineering company which is one of the most iconic businesses known internationally for its engines – in the cluster based in Northampton for over fifty years. Today, Cosworth has two major UK sites – one in Northampton and one in Cambridge which focuses on the importance of software systems and data. They tap into very different labour markets and provide complementary specialisms, all of which are branded as “Cosworth”.

These examples of collaboration and synergy have not been engineered through policy and they certainly have not been facilitated by connectivity, but they have been powerful and effective nevertheless. They point to the latent potential that could exist across this geography.

THE FUTURE

- 1.13 The corridor’s future growth will be important to the UK’s long-term economic prosperity. Accelerating economic growth in this area’s globally competitive clusters, will yield benefits to the national economy - higher levels of productivity can be expected from concentrated activity in high value sectors.
- 1.14 Based on current trends in development, population and local economic growth – the area could see job growth of 335,000 to 2050, increasing economic output by £85bn. But realising the full potential of the corridor will require more than replicating past performance. Analysis prepared for the Commission suggests that the economic potential of the area is greater than this. It suggests that the area could support a further 700,000 jobs by 2050, increasing GVA by £163bn.²¹
- 1.15 There is, of course, no guarantee that this potential will be realised. Past success is no guarantee of future economic performance and there are already signs that the corridor’s sustained growth is testing the limits of local infrastructure. The Commission’s view, backed by overwhelming consensus amongst local partners, is that key constraints on future growth are a lack of sufficient, suitable and affordable housing and weaknesses in the transport infrastructure required to connect cities in the area to each other and to labour supply.
- 1.16 Local authorities and LEs across the corridor have presented a vision of the corridor as forming a globally competitive, knowledge-intensive, economic cluster. The Commission agrees that, in order to make progress towards this vision, there will be a need to invest in infrastructure to accommodate and support forecast population growth, improve transport connections and, above all, accelerate the delivery of new and high-quality homes and communities.

“[housing supply] is already acting as a brake on the economy - and certainly will in the future both on the sustainability of our business and university research sector to attract staff at all levels and on the quality of life of local residents, especially their ability to live close to where they work.”

**Oxfordshire LEP,
response to NIC Call for
Evidence**

Partners see the corridor as having the potential to form a global cluster but in order to achieve that there is a need to invest in infrastructure to accommodate and support forecast population growth 1,600,000 (25% increase) between 2016 and 2051; accelerate the delivery of an additional 1,000,000 homes (37% increase).

**Local Enterprise
Partnerships, Joint
response to NIC Call for
Evidence**



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TO LET

PART 2: A LACK OF HOUSING AND CONNECTIVITY ARE PUTTING FUTURE SUCCESS AT RISK

Despite building faster than the national average for the past decade, and despite recent increases in the number of housing completions, the corridor is not building enough homes to meet current and future needs. The under-supply of homes in some areas is reaching crisis point.

- 2.1 Between 2012 and 2015 the average number of homes built each year in the corridor was 12,250. This is 3,700 fewer than required to deliver on local plan commitments and 7,900 fewer than objectively assessed need. This suggests a 65% increase in average annual delivery is needed to address unmet need. This shortfall in supply is greatest in some of the corridors' most pressured local housing markets.
- 2.2 The shortfall in new homes reflects the fact that:
 - Local Plans do not adequately quantify genuine housing need.
 - Local Plans across the corridor do not make provision for enough homes to meet locally assessed housing need.
 - Rates of housing delivery fall significantly short of these plan commitments.
- 2.3 The gap between housing need, targets and delivery is summarised in figure 4 below.

Figure 4: Difference between housing need, plan commitments and delivery in the corridor

| Objectively assessed need (OAN) in study area | Sum of local plan targets across study area | Difference between OAN and local plan targets | Average annual delivery (2012-15) | Difference between OAN and avg. annual delivery (2012-15) |
|---|---|---|-----------------------------------|---|
| 20,135 | 15,926 | 4,209 | 12,250 | 7,885 |

Source: Savills

- 2.4 However, analysis prepared for the Commission suggests that objectively assessed need (OAN), as determined by local authorities' Strategic Housing Market Assessments (SHMAs) under the National Policy and Planning Framework (NPPF) underestimates long-term demand. The undersupply of homes is likely, therefore, to be even greater still.

THE CAUSES OF UNDERSUPPLY

- 2.5 This undersupply of new homes reflects weaknesses in mechanisms for assessing local needs; a lack of co-ordination between planning authorities; and on land supply.

Assessing local housing needs

- 2.6 Objective assessments of housing needs for each local authority are, under current planning policy, determined through Strategic Housing Market Assessments (SHMAs). However, the assessment methodologies adopted by local authorities can be conservative and can mask high levels of unmet need. Local authorities are often not consistent in their approach to calculating need and many run modest economic and household projection scenarios that result in lower assessments. This is a national issue, but of particular relevance to the study area given high levels of demand for housing.
- 2.7 In 2015 the government established the Local Plan Expert Group (LPEG) with a remit to consider how local plan making can be more effective and efficient. LPEG has recommended the adoption of a new and consistent methodology for assessing housing need, which would remove much of the discretion currently afforded to local authorities. Analysis produced for the Commission suggests that the adoption of LPEG methodology would alone increase raw national household projections by 22% and lift national housing need figures by over 40,000 homes per year.

A lack of co-ordination between planning authorities

- 2.8 A fragmented local planning process, which does not always support localised cross boundary co-operation or strategic spatial planning, can undermine local incentives for larger scale development.
- 2.9 Positive steps have been taken to assess and deliver housing across the corridor, but local planning authorities do not consistently work together to plan and deliver across political boundaries. The lack of obligation to do so can result in under-delivery and potentially sub-optimal locations for housing development.

- 2.10 When planning for their housing need local authorities must accommodate new homes within their own boundaries unless they can persuade neighbouring authorities to accommodate them. Under current planning policy local authorities have a ‘duty to cooperate’ with one another over strategic cross-boundary planning matters, but there is no duty to agree. This can be a problem when urban areas with tight political boundaries simply lack the space to provide for their own housing need.
- 2.11 Oxford, Cambridge and to a lesser extent Milton Keynes are in this position. An ambitious Oxfordshire SHMA has been produced which brings together five local authorities. A similar exercise has been undertaken in Cambridgeshire to produce the Cambridge sub-region SHMA. This is a welcome step in strategic planning but falls short of what is needed for delivery.
- 2.12 Oxfordshire provides a clear example of the difficulties of coordination across local authorities. Oxfordshire’s 2014 SHMA found that Oxford city needs to build 1,400 homes a year on average in the 20 years to 2031 (a total of 28,000). But the city has the land supply to deliver fewer than half of this total; 15,000 of these homes will need to be accommodated elsewhere in the county.
- 2.13 A recent review by the Oxfordshire growth board (a joint committee of the six Oxfordshire local authorities) came up with proposals for how this shortfall should be distributed between local authorities (which also require Oxford to take on a greater share). Negotiations are proving very difficult and agreement has not been reached with all parties. However, Oxfordshire is not unique in encountering these problems.
- 2.14 Stakeholders have also commented on lack of connection between economic and land use planning through Local Plans. Economic planning is undertaken by Local Enterprise Partnerships (LEPs) and is often underpinned by independent economic forecasting models. Local Plans are undertaken by local planning authorities, district or unitary authorities, and draw on other sources, including DCLG household projections. Despite the best efforts of local partners, Local Plans are not always aligned with LEP Strategic Economic Plans²².

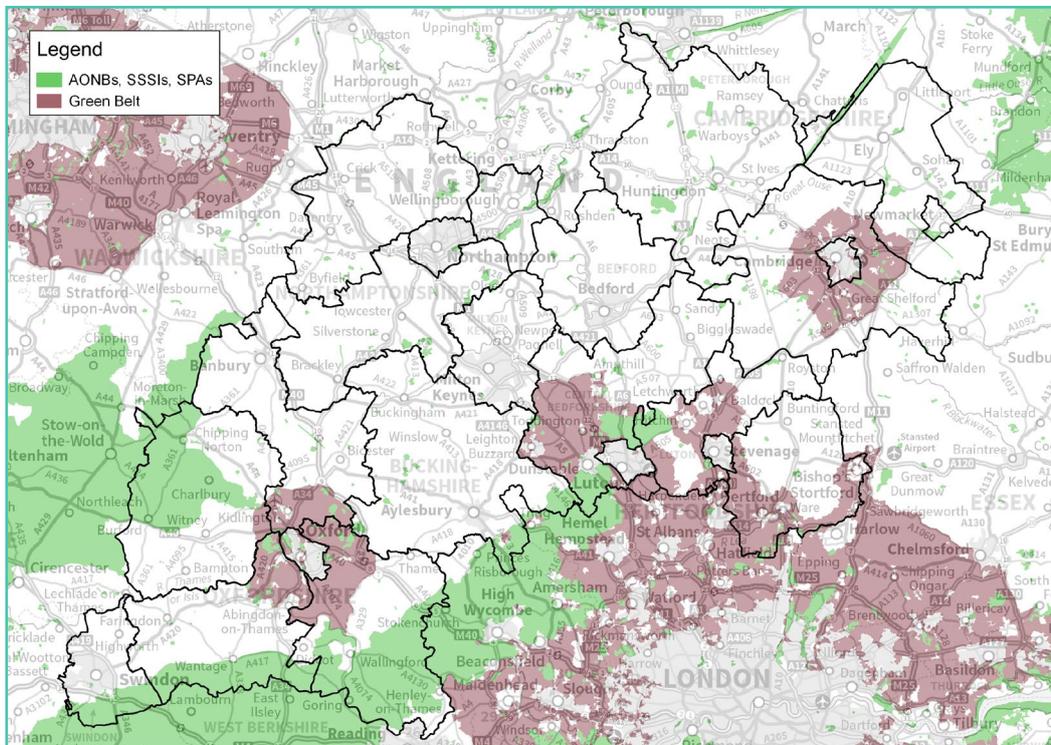
“Frequently, the ‘duty to cooperate’ for authorities to work together on strategic cross-boundary issues is failing...

...The Luton/Central Bedfordshire example has seen both Authorities objecting to each other’s Local Plans such that Central Bedfordshire had to withdraw its first two attempts at Local Plans in 2011 and 2014 following adverse Inspector’s Reports, and proposes another version in 2017. Luton is persevering with a Local Plan in 2016, but without any agreement where its overspill growth in Central Bedfordshire is to be located.”

**Arnold White Associates,
response to NIC Call for
Evidence**

Constraints on land supply

Figure 5: Environment and planning constraints across the corridor



Source: ONS Ordnance Survey

- 2.15 Although the majority of land in the corridor is unconstrained by formal designations of Green Belt, national parks and Sites of Special Scientific Interest (SSSIs), the areas with the highest need – notably Oxford and Cambridge – have very constrained land supply. Natural barriers, such as flood plains, also limit land supply. This pushes up land values, house and rental prices, making housing less affordable. Satellite development outside the Green Belt often requires substantial investment in transport infrastructure to ensure new homes can connect with major towns. Some sites might also require investment in infrastructure such as flood defences and drainage to become viable.
- 2.16 Rapid growth has taken place around Oxford, Milton Keynes and Cambridge over the last 10 years and many of the best connected sites²³ have already been developed. The shortage of development-ready land is at its most acute in the Oxford-Swindon market where there is only 2.8 years' worth (20,000 homes) at the application stage.²⁴

2.17 However, research conducted for the Commission has identified more than 300 potential development sites across the corridor which, with investment in enabling infrastructure, could have capacity for some 400,000 homes. Of these sites, only 14% are currently under construction and 65% are yet to apply for or receive planning permission.²⁵ The development and delivery of infrastructure will have an important role to play in releasing these sites, and realising their potential.

Funding contributions from development

- 2.18 It is an established principle that new developments should contribute to the local infrastructure that supports development and makes land viable. The primary tools used by local authorities are Section 106 (S106) agreements and Community Infrastructure Levy (CIL). Milton Keynes has also historically used a tariff system (see box below), although this is no longer consistent with the legislative framework.
- 2.19 S106 agreements can pool resources across a maximum of five sites but cannot be used to mitigate wider costs that can arise from multiple developments. Evidence from the corridor submitted to the Commission suggests that although seen as effective for the delivery of affordable housing, S106 agreements need to be negotiated on a case-by-case basis, their negotiation is expensive, time-consuming, and often seen by developers as lacking transparency.²⁶
- 2.20 Although CIL aimed to provide a more straightforward process (no negotiations are required and a flat rate for developers is applied), it has been criticised for its lack of flexibility and transparency. Only nine of the local planning authorities in the area have a charging schedule in place.²⁷ The government is currently undertaking a review of CIL. The Commission will examine the outcome of this review alongside other options for developer contributions and land value capture mechanisms which can contribute to infrastructure funding as part of the second phase of this study.

CASE STUDY

Milton Keynes Tariff

The Milton Keynes Tariff is an example of coordinated planning between developers and public sector partners. It also provided certainty of funding and delivery of strategic infrastructure for large development sites in the period between 2006 and 2015.

The Milton Keynes Partnership was set up by Milton Keynes Council in 2004 to support the growth of new developments (15k dwellings) in the Urban Development Area on the edge of the city up to 2016. The Partnership produced a Growth Prospectus: a plan for the economic and social infrastructure assets deemed necessary for the delivery of these developments. These were estimated to cost over £1.67 billion.

The Milton Keynes Tariff was designed to capture a portion of the land value uplift arising from the grant of planning permission in order to part-fund the delivery of the infrastructure investments set out in the Growth Prospectus. The rest was paid for by pooling additional sources of public money.

The Tariff was set as a fixed contribution of £18.5k per new dwelling and £260k per hectare of employment space from developers, totalling about £310 million (in 2005 prices – contributions are inflation adjusted over time) to be fully collected within 10 or 15 years from the grant of an implementable planning consent, depending on the size of the development. Developers were also required to provide affordable housing in line with the Council requirements. In exchange, the planning authority committed to spending the revenue from the Tariff on the infrastructure needed for the development in a timely way.

The conditions for the Tariff were agreed by landowners and developers in a Framework Agreement, which removed the costly and time-consuming negotiations linked to S106 agreements. The Tariff also allowed Milton Keynes Council to pool contributions across many different sites, in contrast to S106 Agreements. By borrowing from English Partnership, the Milton Keynes Partnership was able to act as banker and forward fund the developments.

According to Milton Keynes Council, this Agreement provided the community with certainty of funding and developers with certainty of development costs and transparency as to how the Council spent the proceeds. Following the CIL (Amendment) Regulations 2015, the Tariff can no longer operate for new development applications, to which standard S106 negotiations apply.

Enabling infrastructure

2.21 Difficulties with securing the basic infrastructure necessary for housing development have been reported across the corridor. Utility companies, local authorities and developers are not always effectively co-ordinated. Utility providers' investment plans and local authorities' Local Plans are not often aligned, causing significant delays in development²⁸. Research for the Commission found that poor utilities provision is often perceived as a major barrier to the delivery of new housing sites, particularly the provision of water and electricity. One national housebuilder reported that 10-15% of all their sites had serious utility connection issues that were constraining the rate at which homes could be built. The Commission will examine these issues in more detail as part of phase two of the study.

“The affordability crisis is a major concern to employers including major employers and businesses, the universities, NHS and services where the rising costs of living, commuting and lack of available affordable housing as barriers to staff recruitment and retention.”

Oxford City Council, response to NIC Call for Evidence

HOUSING AFFORDABILITY

- 2.22 The undersupply of housing matters. Sustained increases in demand for homes – driven by population growth and job growth – has led to high house prices and low levels of affordability, for both home ownership and private rental.
- 2.23 The corridor contains some of the most expensive housing in the UK. Average prices in Oxford and Cambridge, at £429,000 and £443,000 respectively²⁹ are roughly double that of the national average of £218,000.
- 2.24 This is leading to housing in many areas of the corridor becoming increasingly unaffordable. The ratio of house prices to earnings is 13:1 in Cambridge and 12:1 in Oxford, this compares to the national average of 8:1. In total 17 of the 22 local authorities in the study area have higher than average affordability ratios.
- 2.25 Affordability in the private rental sector is also stretched. 16% of households in the study area, roughly in line with the UK average. But, a high proportion of these are concentrated in urban centres, particularly Oxford and Cambridge (30% and 28% of households), reflecting high demand and the dense student populations. In Milton Keynes, central MK9 postcodes have 40% higher rental values than the district average, indicating that demand for housing in the city centre is outstripping supply.³⁰

“Housing in and around the city remains unaffordable for many employees, particularly those on lower pay ... Many workers have sought housing in the more affordable towns and villages further away from the city, but this has put stress on the transport network leading to slower than average journeys and congestion in the city.”

Greater Cambridge Partners, response to NIC Call for Evidence

2.26 Private rented properties are unaffordable to the average family in Oxford, Cambridge and Milton Keynes. For example, the rent on a three-bed property in Oxford equates to almost half the median income of a family with one full-time and one part-time salary, whereas 30% of median household income is considered to be the affordability threshold for rented accommodation. An average two-bed property in Oxford is only just affordable to a couple each working full-time and earning a median salary (this is above the upper quartile for household income).³¹

2.27 This crisis of affordability puts sustained growth at risk. It is already increasing costs for businesses and diminishing their ability to attract employees at all levels – including the recruitment and retention of globally mobile talent. Businesses and universities in Oxford and Cambridge report difficulties in recruiting workers’ and housing both support staff and academics. The University of Oxford has found that its post-doctoral staff, key actors in cutting-edge research and innovation, are spending up to two-thirds of their earnings on rent.

2.28 What holds for housing, also holds for commercial and industrial property. Office property demand has grown faster than supply, leading to increasing prices: In Oxford and Cambridge there have been sharp increases in asking rents for office space (of 13% and 18% over the last two and a half years respectively.) Similarly, there has been a sharp drop in the proportion of total stock available for rent.³²

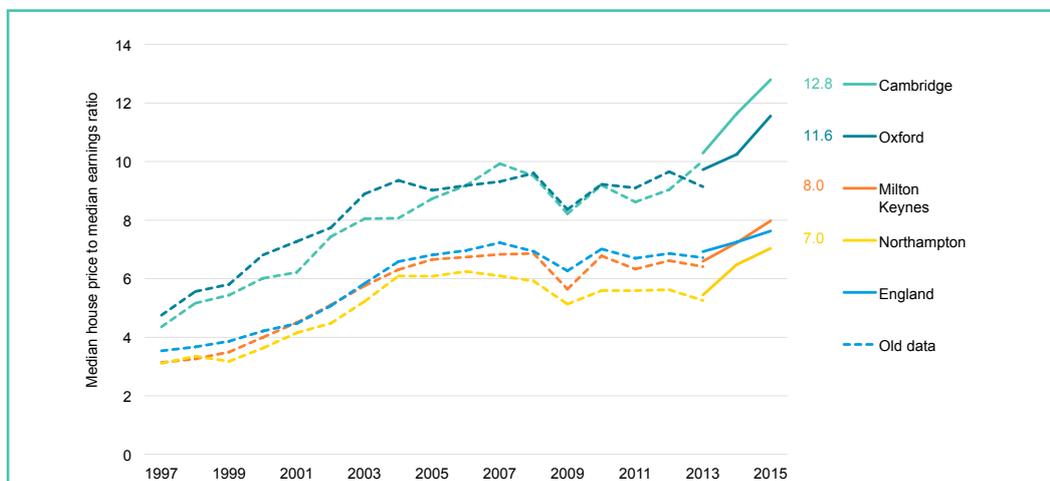
“in Oxford and Cambridge...house prices prohibit the attraction and retention of staff and students. This, in turn, has adverse consequences for the businesses in the area who fail to employ and retain the necessary skilled staff.”

Joint submission from six leading Universities on the corridor, NIC Call for Evidence

A survey of 386 Oxford SMEs by Ipsos Mori (2015) showed the cost of living (58%), commuting (23%) and purchasing a house (32%) were real barriers to staff retention.

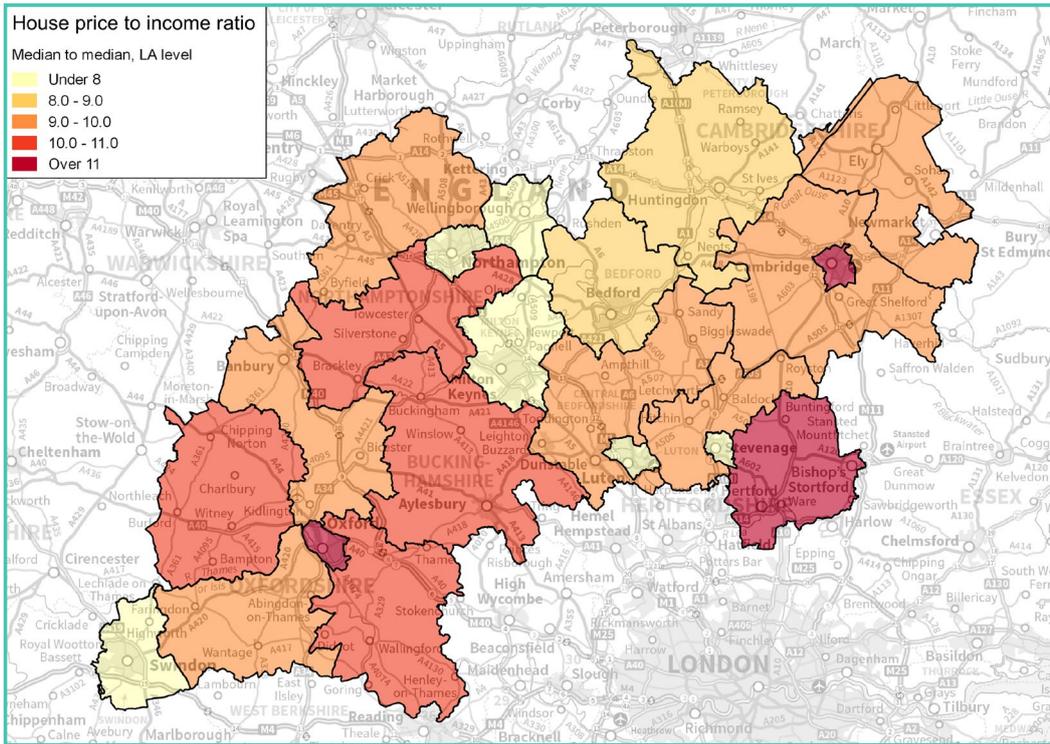
Oxford City Council, response to NIC Call for Evidence

Figure 6: Change in affordability ratios in the study area



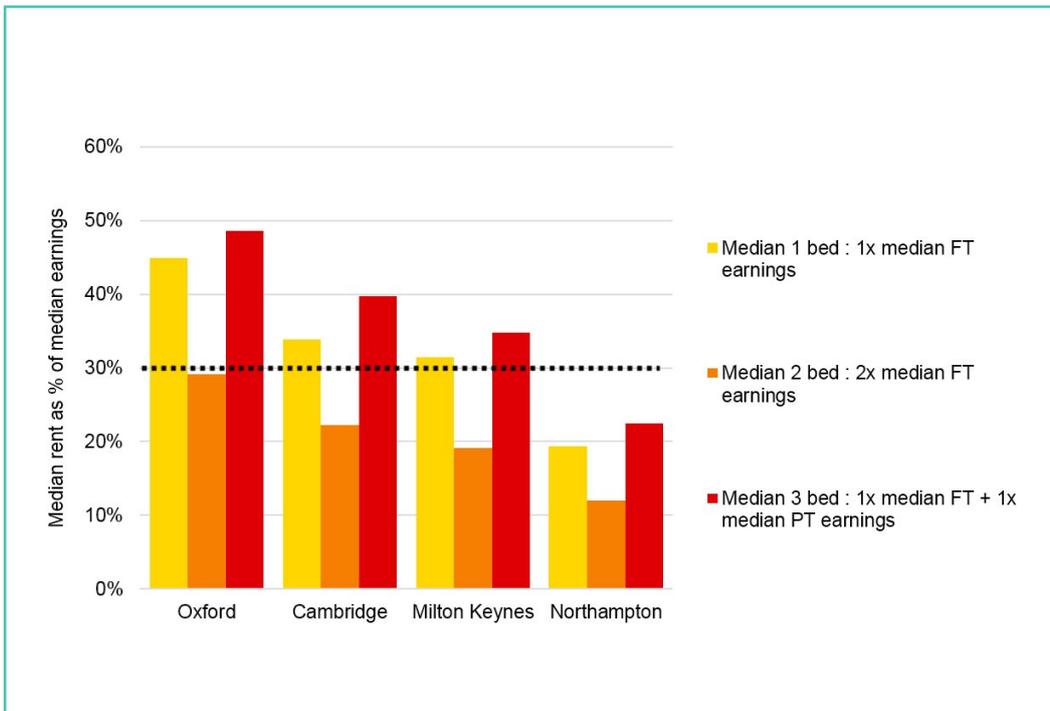
Source: Savills

Figure 7: Ratios of median house prices to median earnings



Source: Savills

Figure 8: Rental affordability for various typical household types (whole district areas)

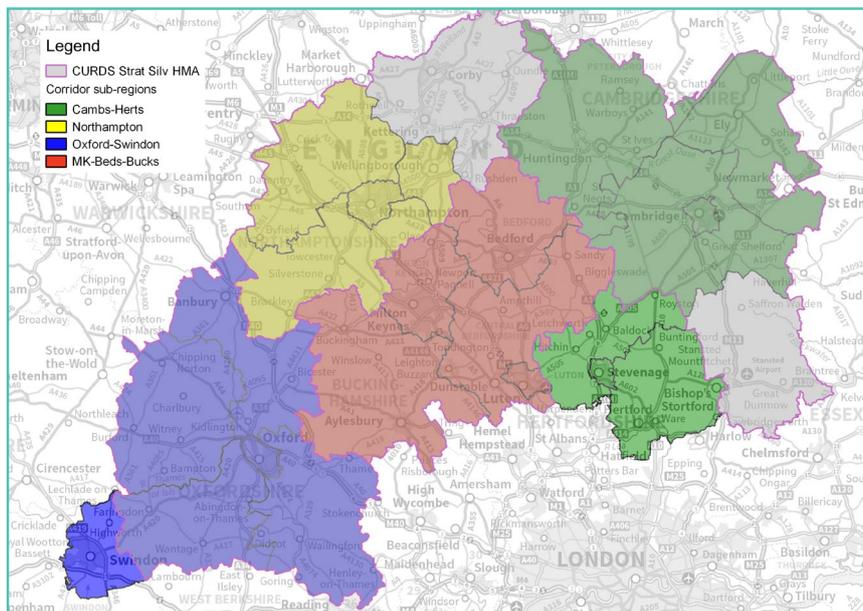


Source: Savills. Note: Full Time (FT), Part Time (PT)

HOUSING MARKETS

- 2.29 Outside the most unaffordable urban centres, there is a high level of variation in house prices and affordability across the corridor with some areas being significantly more affordable. For example, average prices in Wellingborough, at £173,000, are below the national average of £218,000.
- 2.30 But poor connectivity and long travel distances between the most and least affordable areas of the corridor, undermine its ability to operate as a single housing market. Research undertaken to support this study has identified four distinct Housing Market Areas (HMAs) within the corridor (see figure 9 below). This has far reaching implications for future development patterns within the corridor. It suggests that, even with improvement in connectivity which bring disparate areas closer together, meeting the housing needs of the corridor will require improvements in housing delivery in each HMA. Boosting housing supply in the corridor's more affordable areas will not necessarily be sufficient to tackle issues of undersupply and affordability in its more pressurised housing markets. Tackling these issues, therefore, means recognising genuine housing need, planning to meet this need and delivering these plans across the corridor.

Figure 9: Strategic Housing Market Areas within the corridor



Source: Savills.

THE ROLE OF INFRASTRUCTURE

- 2.31 Transport infrastructure can play a crucial role in overcoming constraints on housing supply and joining up housing and job market areas. By better linking homes to employment it can open up previously unviable land for development and connect disparate housing markets. Many existing sites for development, such as former MOD sites, and urban extensions

that ‘jump’ the Green Belts of Oxford and Cambridge require substantial infrastructure investment to connect them with existing settlements and to make them attractive and desirable places to live.³³

- 2.32 Despite good quality north-south transport links, strategic east-west connectivity within the corridor remains poor. Local stakeholders have made this clear through their engagement with our call for evidence³⁴ and this is supported but the analyses of traffic flows, commuter movements and network pressures.
- 2.33 There is no continuous, high-quality road connection between Cambridge, Milton Keynes and Oxford, or between the housing market areas illustrated above.³⁵ Existing roads suffer congestion and average speeds on journeys between key centres are low. Road connectivity is undermined further by congestion at the intersection of intercity and city centre road networks.³⁶
- 2.34 The main public transport link via road across the corridor is using the X5 coach service, which takes 3 hours and 35 minutes to make the journey from Oxford to Cambridge, and 1 hour 50 to make the journey to Milton Keynes from Oxford or Cambridge. This journey can also suffer further delay during peak times.³⁷
- 2.35 East-west rail connectivity is more limited still. The only connections are between Bedford and Bletchley and, following the opening of a new rail link and two new stations in 2015, between Oxford Parkway and Bicester Village (with services continuing into London Marylebone). It is not, therefore, possible to travel by rail directly between the four main rail stations within the arc: Oxford, Milton Keynes Bedford and Cambridge. The only reliable way to travel between Oxford and Cambridge by rail in less than three hours is via London.³⁸
- 2.36 The limitations of the available east-west transport options, and the presence of London as the dominant market in the south-east of England, mean that there are very low levels of commuting between Oxford, Cambridge and Milton Keynes themselves, and negligible long distance, east-west travel across the corridor.³⁹ The proposals that are under development for East West Rail and for an Oxford-Cambridge Expressway are designed to address these weaknesses.
- 2.37 Transport investment can also play a crucial role in co-ordinating development – focusing opportunities for new housing and communities around transport hubs and interchanges. But to do this effectively, transport infrastructure and housing must be planned together. These new strategic east-west links could provide an opportunity to achieve this but only if they are supported by an ambitious long-term strategy for the development of the corridor.



PART 3: A JOINED-UP STRATEGY LINKING INFRASTRUCTURE AND HOMES

PLANNING ACROSS BOUNDARIES

Tackling the housing deficit will require different interventions in different places. In many cases this will require new approaches to meet future housing need in the area. This means planning on a larger scale than has previously occurred and might include the development of urban extensions, densification of existing settlements or the construction of wholly new settlements. It may require all of these.

- 3.1 Investment in transport infrastructure – whether in strategic east-west transport connections, local road and rail schemes or new models of city centre transport – will play a crucial role in enabling these different forms of development. Investment in transport infrastructure has the potential to:
- Better link homes to employment, opening up both major strategic sites and smaller local sites for high quality housing development.
 - Co-ordinate patterns of new development, creating focused opportunities to build new communities around transport hubs and interchanges.
 - Create inclusive liveable places, connecting people and communities with opportunities for work and leisure.
 - Mitigate congestion in city centres.
 - Provide a catalyst to private investment, unlocking broader local and national benefits.
 - Increase land values, allowing local authorities and government capture a share of uplifts to support infrastructure investment.

- 3.2 But to realise these benefits, and maximise the impact of committed and planned transport schemes on housing supply, infrastructure must be conceived, designed and developed as part of a strategic, cross-corridor plan for new homes, jobs and communities. The core aim of this strategic plan must be to better meet current and future housing needs: improving land supply and accelerating the development of well-connected and sensitively designed new communities.
- 3.3 Developing such a plan will require a step-change in collaboration and commitment at all levels of government. It will require a fundamental shift in the scale at which local authorities collaborate on planning and infrastructure. A new model of strategic leadership will be required, bringing local authorities and national government together to:
- Develop a strategic plan for transformative, large scale development that integrates new homes, jobs and infrastructure.
 - Identify financing instruments to effectively overcome constraints for investor and developer involvement and funding approaches to maximise the viability of projects.
 - Ensure that ‘once-in-a-generation’ transport projects such as East West Rail and the Oxford-Cambridge Expressway unlock land and accelerate the development of new communities, whilst bringing productive towns and cities closer together.
- 3.4 Developing an effective plan will also require partners to learn the lessons of the past. Studies commissioned on the ‘Oxford-Cambridge Arc’ in the 2000s proposed the establishment of a joined-up new strategy for the Arc overseen by a permanent steering group.⁴⁰ A subsequent study proposed the appointment of an Executive Director – working across three of England’s now dissolved Regional Development Agencies – to deliver a coherent strategy for the arc.⁴¹ But neither initiative proved successful. Research prepared for the Commission identified the principal challenges as disjointed leadership; cross boundary working; a lack of resources; and interest of “the two ends” – previous initiatives were not enthusiastically supported by stakeholders in Oxford and Cambridge who, at the time, saw more benefit in developing links with London than with other parts of the Arc.

“without better east-west communications the area’s growth will be constrained to north-south routes which, although of great importance, cannot on their own help the area achieve its full potential”

Joint submission from six leading Universities on the corridor, response to NIC Call for Evidence

- 3.5 In the second phase of this study the Commission proposes to work with local authorities, LEPs and national government to build on these previous initiatives, developing a strategic, cross-corridor plan for homes, jobs and infrastructure that optimises transport connections and, in so doing, maximises housing delivery.
- 3.6 The success of a strategic plan for homes, jobs and infrastructure will depend on authorities' appetite and ability to:
- Articulate a clear strategic vision for the development of the corridor – and its component parts – that defines shared economic aspirations, plans for strategic corridor-wide infrastructure, and a strategic spatial framework for the delivery of regionally significant development sites.
 - Involve potential developers and potential investors in the development of this vision, using this as a platform for the development of strategic long-term partnerships.
 - Consider the full range of delivery mechanisms capable of accelerating housing growth, including options for development corporations, focused, for example, on key transport hubs and interchanges.
 - Develop mechanisms to efficiently fund supporting infrastructure, with responsibility distributed appropriately across government, local authorities and private sector stakeholders (including developers and land-owners).

Recommendation 1: Local authorities, Local Enterprise Partnerships, government departments and national delivery agencies, should work together to develop an integrated strategic plan for infrastructure, housing and jobs across the corridor.

- **The plan should provide a framework for cross-corridor economic and transport strategies and for strategic spatial plans which, when combined, enable a step-change in housing provision and connectivity.**
- **The plan should also ensure that options for funding infrastructure are fully integrated into the strategy.**
- **The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.**

PLANNING FOR SUCCESSFUL PLACES

- 3.7 The Commission also recognises that when developing infrastructure and housing, plans must take into account the different characteristics of settlements and the importance of retaining the individuality, sense of place and quality of life that have made these different locations attractive places in which to live and work.

- 3.8 The Commission therefore wants to examine how different types of development can be planned to deliver significant new housing across the corridor drawing on domestic and international examples and best practice, and to examine the role of infrastructure in enabling such development. This could include looking at densification urban extensions, and new garden towns, cities and villages. The Commission is keen to understand the capacity of different forms of development to deliver quality housing and a built environment which maintains and enhances quality of life for communities.
- 3.9 The Commission is working with urban planners and the design community to understand how infrastructure can enable new and expanded settlements which incorporate the highest standards of design and place making. This piece of work will conclude in the first half of 2017 in order to influence the second phase of the project.

Recommendation 2: The quality of infrastructure design and its impact on maintaining and enhancing the character of the built environment should be central to any strategic plan for the area.

- **As part of the next stage of its work, the Commission will continue to work with urban planners and the design community to understand how infrastructure can enable new and expanded settlements which incorporate the highest standards of design and place making.**

BETTER DECISION MAKING

- 3.10 Success in turning plans into reality will depend on the various partners' willingness and ability to take collective decisions that impact across the corridor.
- 3.11 At present, responsibility for spatial planning and local transport is fragmented across 17 district councils, 5 unitary authorities and 5 county councils. Each holds sovereignty over these issues within their own area. This matters because, if an integrated strategic plan, developed through a process of informal collaboration, is to be adopted by local authorities across the corridor, it will need to be formally ratified through 27 separate governance processes. This requirement is likely to limit the pace with which any strategic plan can be agreed, its transformational potential and, in all likelihood, its ability to deliver regionally significant housing development.
- 3.12 The development of any integrated strategic plan must, therefore, be progressed alongside work to develop new governance structures that enable strategic leadership and collective decision-making. The aim should not be to undermine local authorities' role as leaders of place, but to allow for formal collective decision-making at scale, and to enable the development and delivery of a cross-corridor strategic plan without the need to have this ratified by each local authority.

Recommendation 3: Local authorities, Local Enterprise Partnerships, government departments and national delivery agencies, should work together to develop proposals for the joint governance arrangements required to deliver co-ordinated planning.

- **This work should build on and strengthen existing cross-corridor collaborations and should consider the potential for formal joint governance mechanisms (e.g. joint committees, combined authorities, sub-national transport bodies, or the creation of unitary authorities). These should include consideration of future devolved powers, freedoms and financial flexibilities.**
- **The work should also consider the full range of delivery mechanisms capable of accelerating housing growth, including looking at the potential for new development corporations to accelerate and drive delivery.**
- **The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.**

- 3.13 Cross-corridor governance does not necessarily require a single, overarching decision-making body for the corridor as a whole. Leadership on different issues will require governance at different spatial scales. For example while collaboration on strategic transport infrastructure is likely to require collaboration at the whole corridor level, leadership on strategic spatial planning, may require local authorities to collaborate around a travel to work area, or across clusters of housing market areas. Enabling the efficient delivery of a new strategic plan may require different institutional structures again with, for example, development corporations focused on major sites or on key transport hubs and interchanges.
- 3.14 To succeed, any new model for strategic leadership and governance must be built from the ground up. It is encouraging therefore that local authorities across the corridor have worked collaboratively as part of the East West Rail Consortium and, more recently, the Fast Growth Cities group. It is also encouraging that upper-tier authorities and LEPs from across the corridor have established the England's Economic Heartland Strategic Alliance, and that they are working together to evolve this partnership into a Sub-National Transport Body.
- 3.15 The England's Economic Heartland Strategic Alliance could provide a helpful platform for the development of a cross-corridor transport strategy and of the governance mechanisms required to support strategic decision-making on these issues. However, the development of a sub-national transport body will not, on its own, be sufficient to integrate plans for homes, jobs and transport infrastructure. Securing progress will, therefore, require partners to go further in developing a model for cross-corridor leadership. It is vital that any such model reflects the role of district, borough and city councils in local planning.



PART 4: A ONCE-IN-A-GENERATION OPPORTUNITY

STRATEGIC EAST- WEST CONNECTIVITY

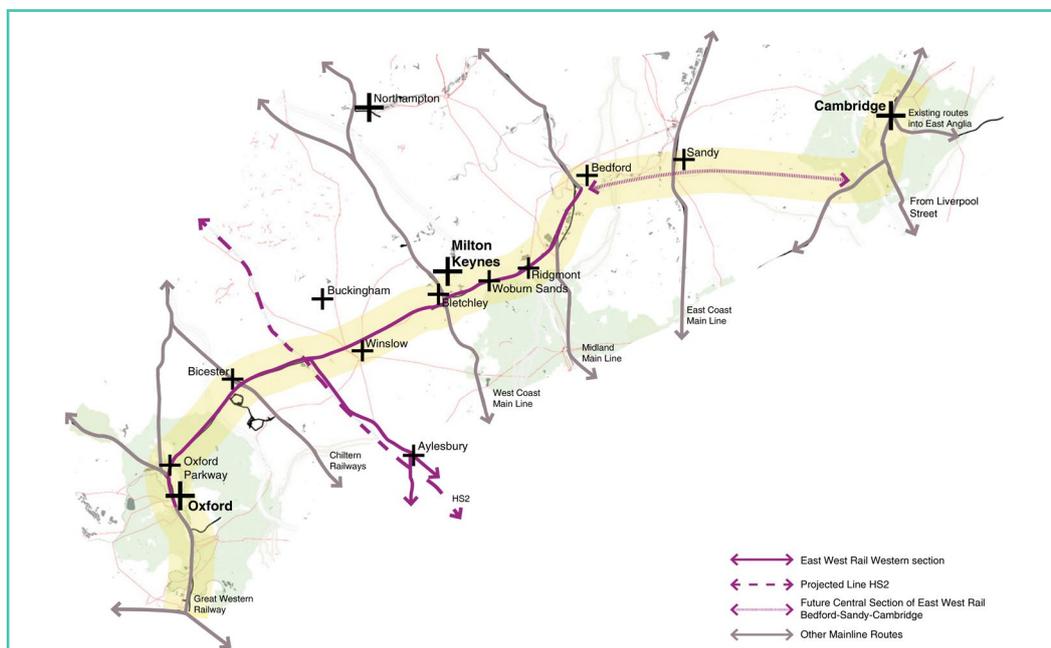
By creating new and improved road and rail links across the corridor, the East West Rail (EWR) project and the Oxford-Cambridge Expressway present a unique opportunity to develop a multi-modal transport spine for the corridor – delivering substantial national benefits and providing a foundation for the area’s long-term development.

- 4.1 Supporters of these schemes recognise that their value lies less in enabling end-to-end journeys between Oxford and Cambridge, and more in the role they play in:
- Completing ‘missing links’ within the national rail and road networks – improving resilience by connecting radial routes from London; providing relief to congested routes in the south-east and midlands, and enabling wholly new connections between England’s towns and cities, ports and airports.
 - Improving and diversifying the labour supply of existing city economies – bringing productive towns and cities closer together, expanding travel to work catchments, enabling deeper collaboration between specialised firms, and reducing the impact that pressures in local housing markets have on firms’ ability to recruit and retain people at all levels of their business.
 - Meeting projected increases in travel demands driven by population growth and planned housing development.⁴²
- 4.2 But this is only part of the story. These schemes can play a transformational long-term role in tackling the corridor’s housing crisis. They have the potential to unlock major new sites for housing, to improve land supply, and to enable the development of well-connected and sensitively designed new communities.
- 4.3 But realising the full potential of these schemes will require a new approach to their design, development and delivery – an approach that explicitly links the development of these schemes to the development of new places and new communities.

TRANSFORMATIONAL PROJECTS: EAST WEST RAIL

4.4 The East West Rail (EWR) project ultimately aims to re-establish the 67 mile rail link between Cambridge and Oxford which was closed in 1967 and, in so doing, enable in the longer term rail services to be introduced between East Anglia, central and southern England. Initially backed by the East West Rail Consortium – a group of local authorities and businesses – the project has taken a phased approach. Reinstating the section between Bicester and Bletchley – allowing services to run between Oxford, Aylesbury and Bedford has been part of the national delivery programme since 2011.

Figure 10: East West Rail



Source: 5th Studio

East West Rail Western Section (Oxford to Bedford)

4.5 Government has committed to deliver the Western Section of the EWR project. The first phase will be completed in December 2016, enabling journeys from central Oxford via Bicester to London Marylebone. Phase 2 of work on the Western Section will involve upgrading and re-instating lines and infrastructure between the key stations on the EWR route, and around the Claydon junction. Current plans also include a new station at Winslow. Prior to the Hendy review, local stakeholders anticipated delivery of the Western Section by 2019, but this is now unlikely to be delivered until 2022-24.

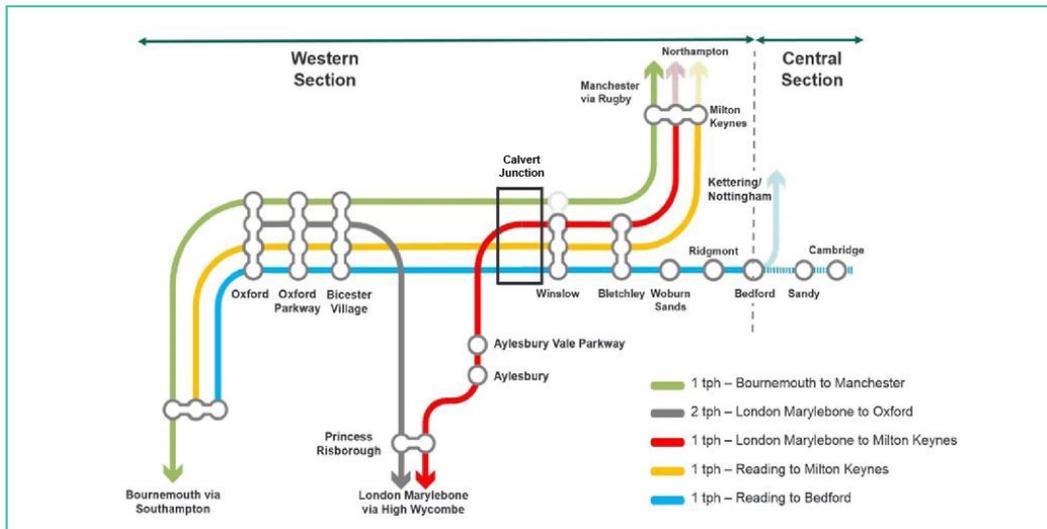
4.6 The Western Section is expected to:

- Improve local connectivity and expand labour market catchments across towns and cities within the Oxford - Milton Keynes - Bedford corridor (for example journey times between Milton Keynes and Oxford could be reduced from around two hours to just 41 minutes).
- Improve connections between cities in the corridor and other cities in the UK – the range of destinations connected to EWR stations will more than double, and 41 out of 65 UK cities will be only one change away⁴³.
- Enabling rail-based commuting as a meaningful alternative to road use.

4.7 Once the Western Section of the EWR project is completed it would enable direct journeys between:

- London Marylebone and Oxford (via Bicester Village and Oxford Parkway)
- Bedford and Oxford (continuing to Reading)
- Milton Keynes to Oxford (potentially beginning at Northampton and continuing to Reading)
- Milton Keynes to Aylesbury (potentially beginning at Northampton and continuing to London Marylebone)
- The south coast (via Southampton) to Manchester, with the potential for stops/connections at Oxford, Oxford Parkway Bicester Village and Winslow.

It is envisaged that these service developments can be made without impacting upon existing local stopping-services on the Marston Vale line between Bedford and Bletchley.

Figure 11: Potential passenger services from opening of full EWR Western Section

Source: Department for Transport

- 4.8 The EWR Western Section enjoys near universal support amongst local stakeholders, but the strategic and economic benefits of the scheme transcend the Cambridge-Milton Keynes-Oxford corridor:
- Linking the Great Western Main Line, Chiltern Main Line, West Coast Main Line and Midland Main Line in an east to west arc, allowing interchange without routing through London.
 - Providing flexibility and resilience, enabling alternative diversion routes, and providing relief to some of the most congested southern sections of the radial routes from London.
 - Enable journeys from England's south coast ports to the midlands and northern transport hubs, providing additional capacity required by the rail freight market and a diversionary route for freight traffic between Southampton, the midlands and the north.
- 4.9 The Department of Transport's business case for the scheme confirms that the EWR project's Western Section represents good value for money, and that the economic benefits of running core services, including cross-country services, could be around four to five times greater than the costs incurred.⁴⁴
- 4.10 While these analyses support the case for advancing the EWR Western Section, they do not fully capture the potential of the scheme in tackling the corridor's housing crisis – providing a catalyst to the development of new homes and communities, and co-ordinating new development around transport interchanges.
- 4.11 Similarly, while many local plans assume the delivery of the EWR project, they do not all fully reflect the transformational potential of new rail connections (see case study below). Uncertainty over the delivery of the EWR scheme has undermined local stakeholders' confidence

with knock-on impacts on planned development and investment. Submissions to the Commission’s call for evidence suggest that some local plans may have made provision for lower levels of housing growth than would have been the case had planning authorities been more certain of EWR’s delivery schedule.⁴⁵ Greater certainty around EWR, especially delivery timescales, should provide a platform for planning authorities to look ahead with confidence.

CASE STUDY

The potential for development at new station towns

Not all current and developing local plans seek to maximise the potential of new stations, proposals for development around the Oxford Parkway Station is a case in point. Cherwell District Council has adopted a plan which concentrates development around Bicester (18,893 new homes between 2011 and 2031), Banbury (14,425 new homes between 2011 and 2031) but states that “there will be no strategic housing growth at Kidlington” - the village immediately north of the Oxford Parkway Station. This reflects green belt restrictions around the area, and the council’s view that “the local plan’s housing requirements and development strategy can be achieved without the need for a strategic review of the Green Belt in the District.”⁴⁶

Winslow Station may provide another example. Aylesbury Vale District Council has identified a requirement for house numbers in Winslow to increase by 50% (1,063 new homes) but it is also considering Winslow as the location for a new settlement of up to 6,000 new homes. In its Draft Plan, the Council has indicated that a similarly sized urban extension at Haddenham might be ‘marginally preferable’, but is consulting on the ‘general principle of a new settlement at *either* Winslow or Haddenham.’⁴⁷ Given the scale of the housing crisis facing the corridor, there could be a strong strategic case for pursuing development at both locations – even if this means over-delivering on locally assessed housing need.

These development strategies, and the decisions taken by these local authorities are rational and satisfy the requirements of the national planning framework. But while these strategies may meet locally assessed housing need, they do not maximise returns on the substantial national investment in the EWR project. Nor will they help deliver the step-change required in cross-corridor development required to address its housing crisis.

The challenge for local authorities, therefore, is to work together, and with national government, to maximise the potential of EWR in addressing corridor-wide housing needs in a way which recognises the unique character of the locations that it serves.

- 4.12 Given the strong strategic and economic case for the EWR Western Section, and its potential to unlock a step-change in housing development, the Commission believes that the project should proceed without further delay.
- 4.13 Work to develop the remaining elements of the Western Section is only part funded within Network Rail's current 'Control Period' (Control Period 5 (2014-2019)). Network Rail is resourced, within this period, to develop a single option for the route, and to develop options for a delivery strategy. Funding for Control Period 6 (2019-24), where detailed design and construction is planned to be undertaken – has yet to be confirmed.
- 4.14 The EWR project's complex interaction with HS2 also presents a risk of further delay:
- The planned route of HS2 crosses EWR in two places and runs alongside the existing route from Aylesbury to the Calvert junction.
 - There is an HS2 construction base at the Calvert Junction, which will serve as a maintenance base once construction is complete.
 - There is also a waste site near the Calvert junction which is likely to enable the disposal of excavated material from arising from the construction of HS2.
- 4.15 Given the need to access the Calvert construction/maintenance base and the waste disposal site, the HS2 programme assumes that rail access to the junction will be available at all times via the EWR route (either via Oxford or via Aylesbury).
- 4.16 The HS2 project will blockade sections of the EWR route from 2018 to 2022. The Oxford - Bletchley section will be blockaded in the Calvert area until September 2020, to allow HS2 to develop a new alignment of existing track across the high-speed line. The Aylesbury - Calvert Junction section of EWR will then be blockaded between September 2020 and September 2022. This will allow for the construction of the HS2 track to the south of Calvert Junction.
- 4.17 If detailed scheme design for the EWR project was advanced, and if the EWR project had the permissions and a clear commitment to fund construction, then an integrated work programme could be developed allowing EWR and HS2 to be built between Aylesbury and Calvert at the same time. But without an integrated work programme, the only option for EWR would be to take possession of the Aylesbury - Calvert line after the HS2 blockade is lifted: blocking the line again and delivering an operational rail service from c.2025 at the earliest. This would also preclude the EWR route being used for HS2 construction waste, leading to a material increase in HS2 costs.

4.18 There are, however, options available for accelerating the development of the EWR Western Section and enabling integration with the HS2 programme. Network Rail and HS2 are working together positively to explore these. By bringing forward funding of £100m into Control Period 5 for work on detailed design, obtaining powers/permissions and giving an early commitment to fund construction (subject to rigorous planning, cost and value management), the construction of Phase 2 could begin as early as 2019 – in time to align with HS2’s blockade of the Aylesbury - Calvert Junction section, and allowing the Western Section of EWR to be completed early in Control Period 6. This should also provide local planning authorities with the confidence to plan for more ambitious housing development – reflecting the transformational impact that East West Rail will have on their communities.

Recommendation 4: The government should commit to delivering the Western Section of the East West Rail project before 2024 (the end of the rail industry’s Control Period 6).

- To achieve this, the government should bring forward £100m in funding to accelerate design and development, and commit construction monies as necessary to:
 - The NIC should work with local partners and national government to develop a plan for the central section that maximises its potential to support housing growth.
 - In taking forward this work, government should explore the potential for alternative delivery mechanisms, linking development work on the EWR central section to options for local housing development.
- To fully maximise the benefits of the project local authorities should recognise the potentially transformational benefits of East West Rail and develop and agree, working with national government, an ambitious strategy for housing development and delivery around stations and station towns.
- The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.

East West Rail Central Section (Bedford to Cambridge)

4.19 The EWR Central Section is the most difficult and costly part of the route to reinstate – currently estimated at c. £2bn. The former railway between Bedford and Cambridge (via connections with the East Coast Mainline) has been dismantled and the land disposed of. Government has not committed to fund this element of the EWR project, and it is currently anticipated that, if funded, the Central Section could be operational from the early 2030s.

- 4.20 Early study work, sponsored by Network Rail, the EWR Consortium and DfT, has identified a single corridor that would offer best value in the development of this section: running from Bedford to Cambridge via Sandy.⁴⁸ As well as enabling rail journeys between Oxford and Cambridge in little over one hour, the development of this corridor could provide a catalyst for development to the south of Bedford, at Sandy, and around Addenbrooks on the south side of Cambridge.
- 4.21 If government and local stakeholders were to explore these opportunities, there will be a need to ensure that complementary work on the wider transport network allows for this. For example, opportunities for development at Sandy are enabled by its place on the East Coast Mainline, but are constrained by a stretch of the A1 that is currently subject to a DfT sponsored strategic study. It will be important to ensure that any new thinking on the Sandy area builds on the findings of this study and influences any future scheme development work. It will also be important to consider the development of the Oxford –Cambridge Expressway and at its intersection with the A1 north of Sandy, and proposed schemes for the development of stations at Addenbrooks and in the Bedford area.
- 4.22 Local and national government should work together to explore options for linking the process for developing and selecting route options with opportunities to secure additional housing development across these areas. As well as undertaking engineering assessments and economic impact studies, real-time negotiations on land-assembly could ensure that each routes' ability to unlock housing development is considered explicitly alongside standard transport criteria. A government commitment to develop the Central Section may help de-risk potential development and allow partners to capture a greater share of any planning gain for investment in the rail scheme and/or local infrastructure.
- 4.23 Given its potential to unlock growth, there is a good case for advancing work on the EWR Central Section. But if this work were to be taken forward as described above, the development process is unlikely to mirror the standard Network Rail GRIP process. The EWR Central Section may, therefore, present an opportunity for government to explore alternative delivery mechanisms, linking rail and development schemes, and involving local planning authorities, land owners, developers and the rail industry. Scoped in this way, the development of the Central Section may provide an opportunity to draw upon the creativity of the market and explore contestability in rail infrastructure delivery.

Recommendation 5: The government should commit up to £10m in development funding to continue work on the Central Section of the East West Rail link.

- **Government should provide clear guidance that a core objective for the development of this scheme should be to support the provision of new housing and connect it to local and regional labour markets.**

- **Local partners and national government should work together to develop a plan for the Central Section which links development work on the East West Rail Central Section to options for local housing development.**
- **Government should explore the potential for alternative delivery and financing mechanisms for the railway. This should include consideration of how third party contributions could be leveraged.**
- **The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.**

East West Rail - Eastern Section (Cambridge to East Anglia)

4.24 The Eastern Section of the EWR project is based on the use of existing railway lines that currently support hourly services from Cambridge to both Ipswich and Norwich. The EWR Consortium are undertaking a study examining the potential benefits of enhancing existing rail services along existing routes, including links to the east coast ports. The findings of this study are expected in early 2017. The findings of this study are expected in early 2017. The Commission will consider the findings of the study as an input to phase two of its work.

TRANSFORMATIONAL PROJECTS: OXFORD - CAMBRIDGE EXPRESSWAY

4.25 The concept of a strategic east-west expressway standard road link across the Cambridge-Milton Keynes-Oxford corridor has been explored as part of the Department for Transport's Strategic Studies programme. The programme has presented sound evidence on the benefits that the Expressway could deliver, suggesting that it could:

- play a key role as part of the UK's national road infrastructure by:
 - Improving connectivity between nationally strategic routes including the M4, M40, M1, A1, A14 and M11 – reducing journey times between Oxford and Cambridge, and delivering benefits for road users (including freight operators) and reducing environmental costs.
 - Providing relief to congested routes elsewhere in the national network, including the M4 - M25 - M11 to the south, and the A14 - M6 – M42 - M5 route to the north of the expressway.⁴⁹
- support the continued success of the economies across the Cambridge-Milton Keynes-Oxford corridor:
 - A new expressway standard route could substantially reduce journey times between the cities, and towns across the corridor.

Journey times of less one hour could be achieved between Oxford and Milton Keynes at peak times – the same journey today would take around 1hr 40 mins. Journeys between Milton Keynes and Cambridge could be undertaken in 36 mins, a saving of around 10 mins on current journey times. This would, in effect, expand these cities' labour market catchment areas.⁵⁰

- By helping to reduce journey times, tackle congestion and improve reliability relative to the existing road connections, the Expressway would deliver benefits to road users, reduce journey times and vehicle operating costs, improve productivity.
- help accommodate increased demand for road travel:
 - Local authorities and developers have identified the capacity of the current east-west route as a constraint on local growth. Analysis suggests that without intervention, key sections of the route will be operating beyond capacity by 2035. This affects the A34 to the south and around Oxford; the M40 Junctions 9 and 10; the single carriageway sections of the A421 and A428; and the expressway section of the A428.

4.26 While sound, these analyses underplay the potential benefits that national investment in an expressway scheme could deliver in tackling the corridor's housing crisis. Just as future phases of the EWR project could unlock large scale developments in east of the corridor, the concept of an expressway creates significant opportunities in the west. There are major gaps in existing road infrastructure, particularly between the M1 at Milton Keynes and the M40, and filling these could require new roads in greenfield locations. If taken forward, such links could open up new sites, and provide a focal point for the development of new communities.

4.27 The Department for Transport has identified a series of broad corridor-level options for the development of the expressway between Milton Keynes and Oxford. They have also developed a series of 'sub-options' for the expressway route in the Oxford area. These are illustrated in figure 12 below.

4.28 Each option has the potential to unlock development in different areas, whether south of Milton Keynes; in Buckingham; around Aylesbury, or along the route of East West Rail. Options around Oxford could see improvements to the A34, or could see any expressway routed south of the city.

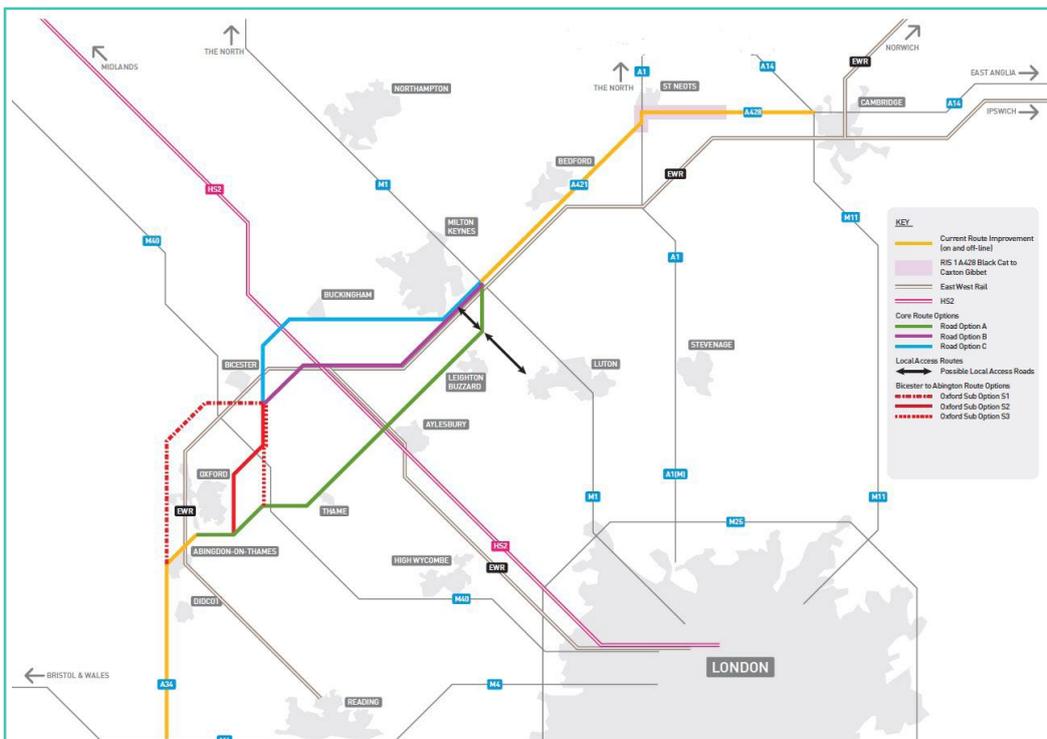
4.29 East of Bedford, the Government has already committed to key improvements in the expressway route these are being delivered under its current Road Investment Strategy.⁵¹ These improvements will, in effect, establish an expressway standard route between Milton Keynes and Cambridge.

4.30 The Oxford-Cambridge Expressway remains a concept at this stage.

However its potential benefits, both in terms of improved journeys and new housing, justify its continued development. Work to develop route options, undertake cost-benefit analyses and develop a clear business case should begin as soon as possible and should be aligned with work on the central section of East West Rail, so that any conflicts or synergies between the schemes can be identified and explored.

4.31 As this work is taken forward, the delivery of new homes and communities should be recognised as a core objective of the scheme. The importance of this objective should be reflected in work to develop and assess route options. It is vital that national and local government work together to develop expressway options as part of a wider plan for jobs, homes and infrastructure. If they succeed in doing so, the scheme's business case will be all the more compelling.

Figure 12: Oxford-Cambridge Expressway Options



Source: Department for Transport

4.32 Further work on the Expressway is not resourced beyond the current Strategic Studies programme. Investment will be required to enable work to progress. If resources were brought forward in 2017-18 then, subject to the development of a compelling strategic plan for the corridor that can inform national decisions on the prioritisation and phasing of both the Expressway and East West Rail schemes, construction could potentially begin before the end of the RIS 2 period (2024-25).

Recommendation 6: The government should commit £27m to the end of 2018/19 to fund the next phase of development work on the Oxford-Cambridge Expressway study, allowing the detailed design process to begin as soon as possible.

- **Highways England should work with relevant local authorities to develop and assess the potential Expressway options and develop a proposal which maximises the scheme’s potential to unlock housing growth and connect it to local and regional labour markets, alongside delivering wider benefits.**
- **The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.**

LOCAL TRANSPORT STRATEGY

4.33 The opportunity afforded to the corridor through the development of EWR and an Oxford-Cambridge Expressway will not be fully realised unless local authorities, business groups and other stakeholders can define a compelling and complementary plan for local connectivity. The success of local connectivity plans will depend on their ability to:

- Connect cities, towns and villages across the corridor to this multi-modal spine
- Unlock housing development;
- Enhance connectivity within cities by:
 - improving first/last mile connectivity between strategic routes, city centres and out of town business/science parks;
 - better linking suburban and rural populations with urban areas; and;
 - harnessing innovation to promote the adoption of new technologies, changes in travel behaviour, and modal shift.

Better connected cities, towns and villages

4.34 The Expressway is one road. EWR is one railway. But maximising the potential of the corridor will require a prioritised investment strategy for the corridor’s wider road and rail network. Any such strategy will need to balance local improvement schemes, enhancements to routes within the corridor, and investment in routes which connect its towns and cities to international gateways, London and the rest of the UK.

4.35 Local Enterprise Partnerships and transport authorities across the corridor are already working together to define such a strategy. Working together through the England’s Economic Heartland Strategic Alliance, they have collectively identified improvements to “critical infrastructure to support connectivity in particular to Enterprise Zones and growing business sectors” as a strategic objective that will enable future economic

growth.⁵² The commitment of these partners, working in collaboration, provides a powerful platform for the development of a cross-corridor transport strategy.

4.36 Given the challenges facing the area, the Commission encourages England's Economic Heartland Strategic Alliance to recognise the delivery of new homes and communities as a core objective of any cross-corridor transport strategy. In practice, this will mean prioritising the development of transport schemes that enable smart, sustainable communities, alongside those which improve connectivity, create and jobs. Based on independent analysis prepared in support of this study, the Commission believes there is a clear imperative for local authorities, LEPs and national government to work together to:

- Further develop new road links that can unlock development.

Priority links include the Northampton North-West relief road, the M1 to A6 link road, the A509 Wellingborough development link, improvements to the Cowley interchange on Oxford's eastern bypass, the Bicester south east perimeter road Stoke Mandeville outer link road (A413 to B443) and the Aylesbury north east link road.

Taken together these developments have the potential to unlock the potential for in excess of 20,000 new homes, whilst delivering wider benefits in terms of improved connectivity and new employment opportunities.

- Advance a new transport and connectivity strategy for Oxfordshire's Science Vale.

Priorities include the development of the Didcot Science Bridge and improvements to the A4130, measures to improve access to Culham Science Centre from both Didcot and Oxford, and the development of a new northern perimeter road in Didcot. As a package, these schemes could help unlock potential for a further 20,000 new homes across the Science Vale area.

- Collaborate on the scoping and resourcing of key studies to support future infrastructure development.

Key study work includes the Huntingdonshire Growth Capacity Feasibility and Implementation. This is expected to address constraints on the A141 corridor between Wyton and St. Ives and enable the early delivery of planned major development at Alconbury Weald & RAF Wyton - identifying solutions for the southern access to this site.

The A418 corridor study could open up new options for development. If undertaken, the study would examine the feasibility and development of options for the A329/A418 corridor between Oxford, Haddenham, Thame, Aylesbury and on to Milton Keynes and Luton.

4.37 As they work together to advance these schemes and others, local authorities, LEPs and national government departments should ensure that scheme appraisal and analysis of route options considers each scheme's potential to enable and unlock high-quality new development, and that each scheme's design maximises the potential for new homes, whilst ensuring efficient and effective connections between where people live and work.

ENHANCING CITY CONNECTIVITY

4.38 In the longer term, new thinking will be required at the local level on intra-city connectivity. The full potential of EWR and the Expressway cannot be realised without a stronger local approach to first/last mile connectivity, and on the connections between suburban and rural populations and city centres. Most towns and cities across the corridor have strategies in place, but these will need to be strengthened to reflect and enable the long-term requirement for housing growth.

4.39 The development of a robust city centre transport strategy will require strong local leadership and the support of local businesses and potential investors. The Commission's engagement with local stakeholders, suggests that there is no shortage of enthusiasm for practical innovation in city centre transport. Local authorities, businesses, community groups and private individuals have suggested a range of measures that could be actively explored in the development of long-term, local transport strategies. These include:

- Using under-utilised rural and suburban rail stations as rail-based park and ride hubs.
- Developing long-distance park and ride on the strategic and major route network to extend intra-city bus transit to those living outside large population centres.
- Creating bus-only corridors on radial routes into and out of city centres.
- The development of demand management mechanisms to manage the flow of private vehicles in city centres including, for example, congestion charging.
- Building overground and underground light-rail systems to serve the fastest-growing cities and their travel to work areas.
- Developing new park and ride models using autonomous vehicles – eventually removing privately owned, self-drive vehicles from city-centres.

4.40 These measures, if adopted, could mark a transformational shift in the way cities in the corridor function. They may, of course, require complementary mechanisms for raising revenue to fund the development and maintenance of new technology and infrastructure (e.g. work place parking levies and/or supplementary business rates). While these measures would represent a cost

to doing businesses, representations received by the Commission suggests that those with a long-term commitment to the success of their city – whether in the public, private or higher education sector – may be content to accept greater cost, if revenues enabled the delivery of a credible, coherent and forward looking transport strategy over which they felt ownership.

- 4.41 There can, of course, be no “one-size-fits-all” approach to realising these aims. What works in Cambridge may not be appropriate in Milton Keynes, and solutions for Milton Keynes may not work for Oxford and Oxfordshire. Local choices must be guided by analysis of projected transport flows, future needs and local preferences as well as by inherited patterns of historic development and extant urban geography. It is vital therefore that, within each city, local government, businesses, higher education and interest groups work together to define a jointly-owned vision for transport, and a clear strategy for realising this vision. This should include options for long-term funding and financing, and consideration of any devolved powers, freedoms or flexibilities that may be necessary to enable delivery.
- 4.42 The Commission recognises that some areas are well advanced in this, but that debate has stalled in others. Defining a strategy that is both meaningful and jointly owned will take time. Nevertheless, local partners can and should take the necessary first steps – working together to agree proposals on how they can work together to ensure any strategy is meaningful; reflects their cities distinctive character; meets long-term needs, can be funded, and can command support from all local stakeholders.

Recommendation 7: In order to maximise the benefits of new strategic infrastructure and to ensure that urban centres across the corridor continue to function effectively - local authorities, Local Enterprise Partnerships, government departments and national delivery agencies, should work together in each centre to define a set of credible, coherent and co-owned city centre transport strategies.

- These strategies may build on existing plans, but also ensure that national and regional level schemes are properly integrated into local thinking.
 - These strategies should be consistent with partners’ wider work to develop a plan for the corridor that maximises its potential to support housing growth.
 - This should include realistic proposals on funding and financing and any consideration of any devolved powers, freedoms or financial flexibilities.
 - The Commission will support this process as part of the second phase of the Cambridge-Milton Keynes-Oxford study.
- 4.43 The Commission’s recommendations on strategic transport, regional schemes and city centre transport interventions must be viewed alongside, and as supporting, its package of recommendations on corridor-wide strategic planning, place-making and governance.

4.44 If local and national governments are to realise the full benefits of transport investment, then strategic, regional and city centre schemes must be taken forward as part of a joined-up plan for jobs homes and communities. The development of these projects must inform this plan, and their design, phasing and delivery must be shaped to maximise its impact. If these links are not made, then the corridor will not address its housing crisis and may not realise its potential as a global centre for science, technology and innovation.

NEXT STEPS

4.45 The recommendations outlined in this interim report, represent an important step in this project. They reflect the Commission's assessment of the key challenges facing the Cambridge-Milton Keynes-Oxford corridor and actions that need to be taken now to further develop strategically significant projects. The recommendations also express the Commission's desire to work with local authorities, LEPs and national government to tackle these challenges.

4.46 While the Commission's work thus far has been on gathering and reviewing evidence, phase two of the project will see it play a more active role in the corridor – encouraging new thinking on joined-up strategic planning, governance, infrastructure financing and place-making over the next year.

4.47 The long-term success of the corridor will, of course, depend upon the sustained efforts of local and national government, on the continued success of businesses within the corridor, the commitment of investors, and the quality of its universities. The Commission's own work within the corridor will be time limited. The Commission will, therefore, use its final report and its recommendations to government in late 2017, to set out its view on:

- The institutions that will strengthen governance across the corridor, by integrating planning and infrastructure decisions and driving delivery, to maximise the benefits of infrastructure investment.
- The design and phasing of new east-west transport links, and associated housing and development sites.
- Design principles for infrastructure, and associated development, to ensure that it is effectively integrated into the local environment and meets the needs of residents and communities.
- Measures to enhance local connectivity and reduce congestion to enable better journeys within the key urban centres in the corridor and to provide wider access to major new road and rail links.
- Priorities for any additional, non-transport infrastructure investment needed to unlock housing and support growth.
- Financing and funding mechanisms to unblock current barriers to the delivery of housing and infrastructure.

4.48 In developing and delivering these recommendations, the Commission will promote and build upon the best ideas from within the corridor itself – testing these through constructive challenge. It will also seek to balance the need for new plans and proposals that align to local needs, circumstances and preferences with the imperative for developing the corridor as driver of national prosperity.

THE NATIONAL INFRASTRUCTURE COMMISSION



Chair

Lord Andrew Adonis

Lord Andrew Adonis was appointed as chairman of the National Infrastructure Commission on 5 October 2015. He was a member of the independent Armit्त Commission, which recommended an independent National Infrastructure Commission in 2013.

Andrew Adonis was formerly the Transport Secretary from 2009 to 2010, Minister of State for Transport from 2008 to 2009 and Minister for Schools from 2005 to 2008. He was Head of the No10 Policy Unit from 2001 to 2005.

Commissioners



Deputy Chair, Sir John Armit्त

Sir John Armit्त is Chairman of the National Express Group, the City & Guilds Group and Deputy Chairman of the Berkeley Group. Sir John is also on the Board of Expo 2020. Sir John was Chief Executive of Network Rail from 2002-2007, Chairman of the Olympic Delivery Authority from 2007-2014, a member of the Airports Commission from 2012-2015, and a member of the Board of Transport for London from 2012-2016.

Sir John was President of the Institution of Civil Engineers from 2015-2016, he is a Fellow of the Royal Academy of Engineering, the Institution of Civil Engineers and City and Guilds of London Institute and has received honorary doctorates from the universities of Birmingham, Imperial College London, Portsmouth, Reading and Warwick.



Tim Besley

Tim Besley is School Professor of Economics and Political Science and W. Arthur Lewis Professor of Development Economics at the LSE. He was a co-chair of the LSE growth commission and a member of the IFS's Mirrlees Review panel, and is currently Chair of the Council of Management of the National Institute of Economic and Social Research.



Demis Hassabis

Demis Hassabis was the co-founder and CEO of DeepMind, a neuroscience-inspired AI company, bought by Google in Jan 2014. He is now Vice President of Engineering at Google DeepMind and leads Google's general AI efforts.

The Rt Hon Lord Michael Heseltine CH



The Rt Hon the Lord Heseltine CH was a Member of Parliament from 1966 to 2001. He was a Cabinet Minister in various departments from 1979 to 1986 and 1990 to 1997 and Deputy Prime Minister from 1995 to 1997. He is founder and Chairman of the Haymarket Group, and most recently was appointed by the government as an advisor to the Secretary of State for Communities and Local Growth.

Sadie Morgan



Sadie Morgan BA (HONS), MA (RCA), FRSA is a co-founding director at the award-winning practice, dRMM Architects. She became the youngest and only third ever-female President of the Architectural Association in 2013. In March 2015, Sadie was appointed as Design Chair for High Speed Two (HS2) reporting directly to the Secretary of State.

Bridget Rosewell



Bridget Rosewell OBE, MA, MPhil, FICE is a UK economist, with a track record in advising public and private sector clients on key strategic issues. She is a founder and Senior Adviser of Volterra Partner and a non-executive director of Network Rail and of Ulster Bank. She was Chief Economic Adviser to the Greater London Authority from 2002 to 2012. She has been a member of several Commissions looking at the future of public services, cities, infrastructure and local finance.

Sir Paul Ruddock



Sir Paul Ruddock is Chair of Oxford University Endowment Management and Chair of the Oxford University Investment Committee. Sir Paul was a co-founder of Lansdowne Partners in 1998 and CEO of Lansdowne Partners Limited from 1998 to 2013 when he retired. From May 2007 to October 2015 he was Chair the Board of Trustees of the Victoria & Albert Museum as well as Chairman of the Gilbert Trust for the Arts. He is a Trustee of the Metropolitan Museum of Art, New York and a Fellow of the Society of Antiquaries.

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