ENGLAND'S ECONOMIC HEARTLAND

Connecting People, Transforming Journeys

Regional Transport Strategy

BEDFORD BOROUGH COUNCIL

BUCKINGHAMSHIRE COUNCIL

Cambridgeshire County Council

Central Bedfordshire

Hertfordshire

Luton

MK milton keynes council

Northamptonshire County Council

OXFORDSHIRE COUNTY COUNCIL

PETERBOROUGH CITY COUNCIL

Swindon BOROUGH COUNCIL

Buckinghamshire Thames Valley | LOCAL ENTERPRISE PARTNERSHIP
THE ENTREPRENEURIAL HEART OF BRITAIN

OxLEP driving economic growth

SEMLEP South East Midlands Local Enterprise Partnership

swindonwiltshire Local Enterprise Partnership

CAMBRIDGESHIRE & PETERBOROUGH COMBINED AUTHORITY

England's Economic Heartland brings together the region's Local Transport Authorities in a strategic partnership that works with the region's local enterprise partnerships to provide leadership on strategic infrastructure.
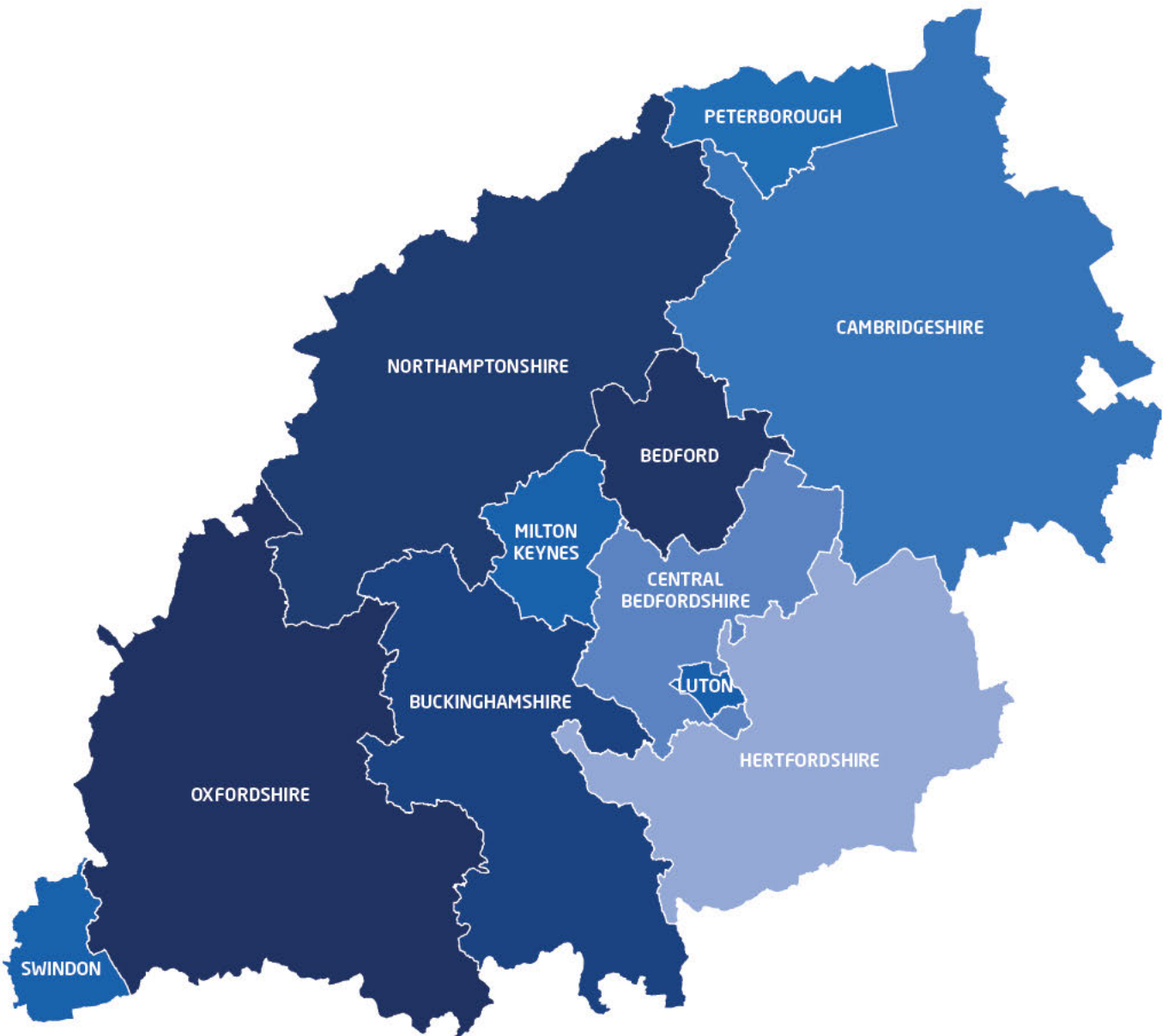
In April 2021 Northamptonshire will have two unitary councils: West Northamptonshire and North Northamptonshire.

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Cycling in Welwyn Garden City

FOREWORD

England's Economic Heartland's world class economy, powered by science and technology innovation, is a national asset, with our universities and businesses at the forefront of fighting the COVID-19 virus and leading the economic recovery.

Encompassing the entirety of the Oxford-Cambridge Arc – a national economic priority for the Government – our region is a net contributor to the Treasury.

It has the potential to deliver even more. However, we must ensure that growth is sustainable. It must leave our environment in a better place than it was before and respond head-on to what is still the biggest long-term issue facing us: climate change.

As a country we are committed to achieving net zero carbon no later than 2050. However, throughout the development of this strategy the message has been loud and clear – we need to be more ambitious when it comes to our transport system – and we need to achieve net zero carbon sooner.

Drawing on the insight provided by our regional evidence base, it is clear we need to do things differently when it comes to the way we plan for and invest in our transport system. It cannot continue to be 'business as usual'.

We believe that by harnessing the strengths inherent in our region we can achieve the step change in approach required for our transport system to enable growth and achieve net zero carbon.

This strategy has been informed by our programme of technical work, taken forward in collaboration with our partners within the Heartland and Government. It has been shaped by the responses received through two rounds of public engagement that captured the views of our partners, stakeholders, residents and businesses, alongside the Integrated Sustainability Appraisal which was undertaken in parallel with the strategy's preparation.

It is ambitious in nature, challenging the region to achieve a net zero carbon transport system by 2040.

The strategy sets out how we can use that ambition to support a green economic recovery. We will work with our business and research communities to harness the Heartland's world-leading expertise in clean, green and smart technologies to enable solutions that benefit our residents and give the region a competitive edge in global markets.

The strategy sets out how we can reduce our reliance on the private car by investing in strategic public transport infrastructure, alongside investment in digital infrastructure to better connect our communities, and how that needs to be complemented by investment in active travel measures locally.

And it sets out how we need to ensure that our freight and logistics needs continue to be met, but in a way that reduces its environmental impact.

We have seen first-hand the scope to increase our use of flexible and remote working and the benefit this brings to our transport system. It demonstrates how we can do things differently – that the assumptions underpinning our approach to transport planning can change. We need to embed change when it comes to travel choices and behaviours, to bring individual networks together to form a transport system that is accessible to all, and which offers choice, flexibility and reliability to the user.

The need for change is compelling. As a region we are committed to delivering that change. Our focus must now be on turning words into actions. The strategy will require investment – from Government, from our partners and from the private sector.

We will work in support of our partners to secure the support from DfT that will enable the priorities in our investment pipeline to be delivered. We will continue to work with our partners to ensure we have the capacity and capability necessary to develop detailed schemes that are ready for delivery. Working together we can realise economies of scale and efficiencies that will enable us to do more with the funding available.

Our strategy is bold in its ambition for our transport system. It provides a pathway forward for our residents, communities and businesses. It makes the case for investment in the right infrastructure and services that will enable the region to plan with confidence and certainty for the future.

**Mayor Dave Hodgson,
Chair, Strategic Transport Forum**

February 2021

A ONCE-IN-A-LIFETIME OPPORTUNITY FOR REAL CHANGE

Our Ambition

1. England's Economic Heartland is an economic powerhouse, home to world-leading universities and innovators. It is blessed with a natural, historic and built environment that makes it an attractive place to live, work and play.

2. We will harness these attributes to the benefit of both our existing communities and future generations. Investment in our transport system will continue to be essential in order to enable growth. At the same time, we must change the way in which we plan, develop and deliver that investment.

3. Lack of capacity within our current transport system acts as a constraint on growth and reduces resilience and reliability, all of which impacts productivity. Lack of choice in travel options act as a constraint for those seeking access to services and opportunities. And we know that the environmental impact of our transport system is unacceptable, with carbon emissions significantly above the national average and growing faster.

4. We need to, and can, do better. This Transport Strategy provides the step-change in approach required to seize the opportunity to deliver the transport system our residents and businesses expect. It supports a green economic recovery and enables growth, whilst preserving and enhancing our natural, historic and built environment, creating opportunities for residents no matter their individual circumstances, and, crucially, responding harder and faster to climate change.

5. Our ambition is simple: **To support sustainable growth and improve quality of life and wellbeing through a world-class, decarbonised transport system which harnesses the region's global expertise in technology and innovation to unlock new opportunities for residents and businesses, in a way that benefits the UK as a whole.**

6. This ambition is deliverable. It requires a shared commitment between our partners in the region and national government, and bold decision making that puts people and the environment at its centre. It looks to realise synergies with other policy areas which have a major impact on the way people travel, including spatial planning and the provision of wider infrastructure and services such as digital, utilities, education and health.

7. This Transport Strategy sets the policy framework, supported by an initial investment pipeline, that will deliver our ambition. It is guided by four key principles:

    - Achieving net zero carbon emissions from transport no later than 2050, with an ambition to reach this by 2040
    - Improving quality of life and wellbeing through a safe and inclusive transport system accessible to all which emphasises sustainable and active travel
    - Supporting the regional economy by connecting people and businesses to markets and opportunities
    - Ensuring the Heartland works for the UK by enabling the efficient movement of people and goods through the region and to/from international gateways, in a way which lessens its environmental impact.

8. There is now a once-in-a-lifetime opportunity to shape the future of transport in ways that might otherwise have taken many years to achieve.

9. The COVID-19 pandemic accelerated trends that were already well established: trends that have arisen because of the choices we're making as consumers. We have seen the considerable scope for the business community to increase its use of flexible and remote working while continuing to function and provide services. These changes have significant implications for our transport system by changing the nature of travel demand.

10. This opportunity is amplified by ongoing wider changes in societal expectations and attitudes. Changes to the way in which businesses provide services and opportunities are having their own influence. The traditional town centre continues to change as a consequence of changes in retail business models, driven by consumer choice. Business delivery models used by most retail, commercial and professional service companies continue to undergo significant and rapid change, enabled by the digital economy.

11. This Transport Strategy is designed to harness the opportunity for change. It recognises that successful place-making requires a whole-system approach; one that is driven by an ambitious vision of the future and which 'joins-up' public sector policy to deliver agreed outcomes.

12. Implementing this Strategy will challenge some existing assumptions. Some long-standing proposals may no longer be the right solution if we are to realise the Heartland's economic potential in ways that deliver on the legal requirement to achieve net zero carbon. But while the means by which we achieve it may change, fundamentally we need to continue to invest in connecting people and places with services and opportunities.

A National Priority: the Oxford – Cambridge Arc

13. A significant part of the Heartland has been identified by the Government as a national economic priority – the Oxford to Cambridge Arc. This designation builds on the National Infrastructure Commission's 2017 report: *Partnering for Prosperity – a new deal for the Cambridge – Milton Keynes – Oxford Arc.*

14. Whilst the Commission acknowledged that the region is home to some of the UK's most productive and fast-growing cities, it warned that its continued success cannot be taken for granted. Just as a business requires constant investment to maintain its competitiveness, so a regional economy requires continual investment in its infrastructure and services to remain competitive. The publication of the Arc Economic Prospectus in October 2020 set out the critical importance of investment in infrastructure in enabling the area to realise its potential as a leading global innovation economy.

15. The Commission highlighted how by bringing the strengths of individual areas together there is the long-term potential to transform the region into a world-leading economic area, one that acts as a hot bed for innovation. The Government has recognised that such transformation requires a need to plan for, and deliver, substantial additional infrastructure ahead of the arrival of planned growth, including the necessary transport infrastructure, utilities, digital connectivity, health and education.

16. The critical importance of infrastructure linkages beyond the Arc was highlighted by the Commission. England's Economic Heartland's geography – which extends beyond the Arc to include Swindon and Hertfordshire – ensures that the critical importance of wider economic and infrastructure linkages is fully reflected in the planning and delivery of strategic infrastructure, to the benefit of all residents, communities and businesses across the Heartland, not just those within the Arc.

17. The development of this Strategy has been informed by the work of the Heartland partners, including that undertaken as part of the Oxford – Cambridge Arc initiative. England's Economic Heartland provides leadership on strategic transport infrastructure in support of the Arc, working closely with other Arc related activity.

18. The Government has set out its commitment to develop a long-term spatial framework for the Arc. This Strategy, which is underpinned by a comprehensive Regional Evidence Base that reflects planned growth, will form a key input into the Government's work. Through its active involvement with Arc related activity, England's Economic Heartland will contribute to 'joining-up' the broader policy agenda to a common objective.

Robotics engineering developed at the Joint European Torus nuclear fusion experiment at the Remote Applications in Challenging Environments centre in Culham

Our Five-point Plan of Action

19. 'Business as usual' will not get us where we need to be. A step change is required. In order to deliver on our ambition and meet the expectations of our residents, communities and businesses, this Strategy sets out how the region will:

1 **Focus on decarbonisation of the transport system by harnessing innovation and supporting solutions which create green economic opportunities**

Our current pattern of travel and consumption of resources is not compatible with delivering the legal requirement to achieve net zero carbon emissions by 2050. The scale of planned growth increases the need for a step-change in our approach, as does the desire across the Heartland to achieve net zero earlier.

We will work with the region's business community to harness the Heartland's world-leading experience in clean, green and smart technology to enable solutions that deliver the decarbonisation of our transport system.

We will do this by prioritising investment not just on the basis of value for money, but for its contribution towards achieving net zero, as well as wider sustainability and environmental goals.

The focus provided by the four Grand Challenges in the Government's Industrial Strategy will be used to maximise the opportunity for innovation-led solutions and businesses to support sustainable growth and provide the UK economy with a competitive edge in global markets.

And we will harness the region's capacity to use 'living laboratories' at scale as the means of developing, trialling and subsequently adopting solutions that provide the user with choice, secures modal shift, and which create green economic opportunities in their own right.

2 **Promote investment in digital infrastructure as a means of improving connectivity**

Digital infrastructure allows us to 'connect' with a service, be it to better plan a journey through the use of intelligent transport systems, journey planning technologies or removing the need to travel at all.

Our modelling shows that a realistic pathway to decarbonisation includes a highly connected transport system – one that provides better transport information to the user, enables better management of the network and supports rapid deployment of connected and autonomous vehicles.

Travel is a derived demand. What we have seen in response to COVID-19 is the extent to which our demand for travel can be shaped and changed. We have seen how the assumptions underlying our approach to transport planning need to change to reflect wider changes within society. This creates the opportunity to do things differently when it comes to the planning, development and delivery of our transport system.

We need to plan for improved digital connectivity being integral to the way companies operate and services accessed. Planning for our future transport needs must factor in the ways in which the shape and scale of travel may be changed by investment in digital connectivity. Our transport system needs to be viewed as part of a wider system of connectivity – one that embraces both physical and digital access when identifying future infrastructure requirements.

The transformative potential of improved digital connectivity to reduce the need to travel is particularly strong in rural areas, where digital services have traditionally been poor (for example, according to Ofcom, only 44% of rural premises in England have access to 4G, compared to 87% in urban areas), yet where there is often a high reliance on journeys by private car (according to census data, 64% of residents living in the Heartland's predominantly rural districts normally drive themselves to work, compared to an average of 55% across England and Wales).

Our approach will ensure the Heartland seizes the opportunity for change – change in work patterns, change in travel patterns, change in our approach to connectivity.

3 **Use delivery of East West Rail and mass rapid transit systems as the catalyst for the transformation of our strategic public transport networks**

Investment in transformational infrastructure – particularly East West Rail and mass rapid transit schemes such as those planned for Cambridgeshire and Milton Keynes, supported by high quality first last mile provision– is central to supporting the sustainable growth of the region.

Securing the right service offer is crucial, given the varied work patterns of our communities and the need to unlock opportunities for all, including those in rural areas with limited access to the public transport network.

The offer to the travelling public must be of the highest possible standard – safe, clean and high quality, and accessible to all. We need to restore confidence, not just for the short-term, but the long-term.

We will champion the importance of ensuring our transport system is inclusive by design, allowing people to travel with confidence and ease through well designed physical infrastructure and accessible information to help aid journey planning. Information should be accessible to all ages and abilities.

4 **Champion increased investment in active travel and shared transport solutions to improve local connectivity to ensure that everyone has the opportunity to realise their potential**

Continued change in travel behaviour creates its own opportunities to repurpose our existing infrastructure in favour of public transport and active travel modes, but this must be done in a way that enables safe journeys and a sustainable future for our community as a whole.

We must seize the opportunity to fully integrate active travel into our daily routines with provision built in at the earliest opportunity for well designed, safe and accessible active travel.

The COVID-19 pandemic has shown the propensity for uptake in walking and cycling, particularly for leisure. We will harness the current enthusiasm for active travel, which has seen cycling levels at over 300 % increase in comparison to the previous year, with support for the development of Local Cycling and Walking Infrastructure Plans across the region to help build coherent networks of active travel infrastructure.

Incorporating green infrastructure in transport schemes and planning encourages uptake of active travel. Early integration of green infrastructure will not only improve connectivity but also help reduce the need to travel by bringing nature to people rather than bringing people to nature. This whole scale, holistic view of how we want our transport system to look and feel (and the additional benefits the approach can bring) will be at the forefront when planning our transport system.

5 **Ensure that our freight and logistics needs continue to be met whilst lowering the environmental impact of their delivery**

The rise in e-commerce, accelerated by COVID-19 and enabled by investment in digital infrastructure, is changing the way people access services and facilities. This in turn is having implications for the freight and logistics sector that need to be actively and positively planned for in partnership with the sector itself.

While the freight and logistics sector is essential for our businesses and communities, it is also one of the largest contributors to carbon emissions and potentially the most difficult part of our transport system to implement solutions to reduce emissions.

We are already seeing innovation across the region when it comes to servicing businesses and providing customers with novel ways of having their goods delivered – and we will build upon this.

And we will make the strongest case for investment in the capacity on our rail network to accommodate even more of the longer distance trunk movements of freight – not just to the benefit of the Heartland but the UK as a whole.

The rolling Chiltern hills

Climate Change and the Environment

20. As a region, our current pattern of travel and consumption of resources gives rise to both:

    • High carbon emissions – emissions from transport are higher than the national average, and the rate at which emissions is increasing is almost double the UK average; and

    • Poor air quality – the environmental implications at a local level of our current transport system is reflected by the number of Air Quality Management Areas in the region. There is a need for urgent action to address poor air quality and reduce the number of avoidable deaths. We will continue to support Local Authority partners deploying Ultra Low and Zero Emission Zones and share best practice across the region.

21. Government's commitment to bring forward the end to the sale of new petrol and diesel cars and vans to 2030 is welcomed. We also support Government's ambition to remove diesel traction on the rail network by 2040. However, the evidence is clear: these changes will be insufficient to ensure our region meets the legal requirement to be net zero by 2050. Further action is required to change the scale and nature of existing travel demand. The need for action is heightened further by the scale of the region's planned growth.

22. Whilst the legal requirement to achieve net zero by 2050 (and the region's ambition to achieve this ahead of the national target) serves as a key driver for change, it is part of a wider commitment, shared by the region and Government, to ensure that planned growth is delivered in a way that demonstrates net environmental gain. Net environmental gain is an emerging policy area but in the context of this strategy encompasses both natural capital and biodiversity net gain.

23. The Government's 25-year Environment Plan provides the context within which this strategy, and its implementation, must demonstrate its contribution towards leaving the environment in a better state than we found it.

24. The attractive natural, built and historic environment is a key factor in the region's success. Protecting and enhancing the natural environment through measures such as landscape led design, greening of the transport estate and applying a mitigation hierarchy to avoid impacts on biodiversity at the earliest point will help sustain the integrity and attractiveness of the Heartland's environment.

25. Access to the Heartland's rich natural, built and heritage assets need to be considered in the context of their surroundings and access by sustainable modes of transport to these places is expected to be prioritised as a result of this Transport Strategy. The Environment Bill contains the requirement for responsible bodies to create Local Nature Recovery Strategies through which specific plans for improving land management for nature will be set. It will be important to link plans for local transport schemes to their Local Nature Recovery Strategies.

26. It is in this context that all new transport-related development should protect and enhance the environment and be based on the principles of net zero carbon, net biodiversity gain, net environmental gain and contribute towards doubling the land actively managed for nature. We will work with partners to promote these principles within transport proposals. Such an approach is integral to the Government's ambitions for the Oxford-Cambridge Arc and are applicable throughout the Heartland.

27. By taking a whole system approach we will provide opportunities to engage with partners outside the transport arena. Opportunities to integrate sectors such as transport and water management can capture wider benefits for our communities and public finance by integrating sustainable drainage solutions and flood management risk at early points in scheme development.

28. Extreme weather events are the new normal. There is a need to invest in adapting our existing infrastructure assets to improve the resilience of our transport system and reduce the impact that disruption has on individuals (particularly the vulnerable), communities and businesses. We must continue to invest in the management and operation of our transport system as a whole so that when incidents occur, they can be dealt with in a timely and effective manner, including the provision of information to users across the transport system as a whole and to communities.

Inclusive by Design

29. Our approach to investment must ensure that our transport and digital infrastructure is inclusive and accessible to all, creating opportunities to enable individuals to realise their potential. It needs to provide the support for the more vulnerable within our communities, addressing not just physical barriers to connectivity but also issues such as affordability, loneliness and social isolation. And solutions need to reflect the cultural diversity of our communities.

30. Implementation of this Strategy will champion the principle of inclusive by design, ensuring people are able to travel with confidence and ease through well designed physical infrastructure and accessible information to help with journey planning. Information should be accessible to all ages and abilities. Service provision will be an important consideration, given our communities' varied work patterns and limited public transport provision in rural areas.

Whole System Approach

31. It is crucial there is a co-ordinated approach to shaping the future of our places, one that aligns decision making across policy areas to achieve a common vision of the future. By working with partners to adopt a vision-led approach to place-making at the local level, we will embed the philosophy of 'decide and provide'.

32. There is a need to invest in maintaining our existing infrastructure assets, deliver planned investment in additional capacity to meet future connectivity needs, and plan for the additional investment that enables sustainable growth, while at the same time preserving and enhancing our natural and historic environment and sustainable access to it.

33. For our transport system to meet the requirement to achieve net zero carbon emissions it is essential that future investment requirements for digital and utility infrastructure are considered alongside those for transport. Only by adopting a co-ordinated approach to the planning, development and implementation of strategic infrastructure will we deliver the connectivity the region needs to deliver sustainable growth.

34. The delivery of planned economic and housing growth represents an opportunity to realise benefits for both existing and new communities and businesses. However, this will be dependent upon investment in strategic infrastructure and services, complemented by investment in improved local connectivity, particularly public transport and active travel. Technological innovation in the transport sector will not on its own deliver net zero emissions, nor the wider ambition encapsulated by the place-making agenda. Decarbonising vehicles will not address concerns in relation to congestion on the network, nor the impact of that congestion on our communities and businesses.

35. In setting the long-term policy framework for our transport system this strategy both supports local authorities with the delivery of current Local Plan proposals and provides the context with which to plan for the sustainable development of our communities in the longer-term.

36. Linkages with decisions taken in other policy areas are significant in this context. Proposals that support the reimagining of our urban areas will create opportunities for further change in travel demand and behaviour. The application of a natural capital approach to the development of transport infrastructure will help create attractive transport corridors for both people and wildlife; maximise the positive impact of the transport soft estate; improve the quality of habitats; and encourage active lifestyles. It will also ensure that our future transport system has a positive benefit on air quality, water quality, flood risk management, soil quality and carbon sequestration.

The redeveloped Wellington Street in Swindon

37.   The need for strong political and business leadership in order to deliver transformational strategic infrastructure and services, was recognised in 2015 with the establishment of what became England's Economic Heartland (EEH).

38.   By working collaboratively on issues of strategic importance, the partners are better able to plan for:

   •   Strategic infrastructure issues and solutions that extend beyond any one single area

   •   Issues that are common to one or more local areas that benefit from a co-ordinated response

   •   The case for investment in strategic infrastructure that is strengthened by having a single voice at a scale that has influence and impact.

39.   Central to the work of EEH is the understanding that any consideration of strategic transport infrastructure and service requirements must also take into consideration the linkages with investment in digital infrastructure, both fixed and mobile, as well as utilities.

40.   In 2016 EEH established the Strategic Transport Forum, the Sub-national Transport Body for the region. Sub-national Transport Bodies are required by Government to produce a regional transport strategy setting out a framework for supporting growth and driving investment in the region.

41.   This Transport Strategy sets out the scale of the challenge we face, the need for change and the opportunities that exist to effect that change. It provides the policy framework that will enable all those with an interest in securing the future of the Heartland to work to a shared ambition that brings benefits to its residents, its businesses, its environment and the UK as a whole.

An Economic Powerhouse

42.   England's Economic Heartland is one of the world's leading economic regions. Its success is founded on science and technology innovation, powered by a network of world-leading universities and research centres. The universities of Oxford and Cambridge continue to be ranked in the top three universities in the world.

43.   More than one in 10 of the UK's knowledge sector jobs are located in the region's cutting-edge science parks, research institutions, businesses and incubators, creating an ecosystem of innovation and capability that is globally renowned.

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

45. Its economic success benefits not only the region's residents, but the UK more widely, with the Heartland being a net contributor to the Treasury. However, as the National Infrastructure Commission highlighted, our continued economic success cannot be taken for granted. Whilst the COVID-19 pandemic will have implications for the economic performance of the Heartland in the short-term, the underlying strengths of the Heartland economy make its continued economic success a national priority.

46. Notwithstanding the headline economic success, businesses continue to face a number of challenges:

    • In significant parts of the Heartland, productivity levels remain consistently below that of our global competitors, a consequence in part of increasing congestion on and reduced resilience of the transport system

    • Investment in enabling and supporting infrastructure takes longer to secure and deliver than planned, acting as a constraint on new economic opportunities developing as planned in a timely and cost-effective manner

    • The funds currently available to invest and maintain the existing infrastructure asset fail to keep pace with identified needs (including those as a consequence of planned growth), increasing the vulnerability of the transport system to disruption by incidents and extreme weather events.

47. The Local Enterprise Partnerships, through their Local Industrial Strategies, have identified the potential for the region's economy to grow by more than 70% by 2050.

48. Economic growth on this scale alongside the need to meet the legal target to achieve net zero carbon by 2050 (at the latest) will not be realised without a step change in the way our communities are planned and the way our infrastructure is delivered (including the level of investment).

Silverstone Park is at the centre of the Heartland's high performance technology cluster

A Quality Environment

49. The Heartland is blessed with a highly attractive environment – built and natural, urban and rural– which helps make it an attractive place for investment and delivers a desirable place to live and work. The full extent and quality of the Heartland's environment is captured in the baseline underpinning the Integrated Sustainability Appraisal (ISA).

50. Over 10% of the region is designated as being part of Areas of Outstanding Natural Beauty. The Chilterns on its own comprises 6% of the region's total area. A healthy, well-managed and accessible natural environment contributes to people's physical and mental health, and wellbeing. It is a significant factor in making the region an attractive location in which to do business.

51. The region also has a valuable historic environment, including a wealth of historic assets including Blenheim Palace World Heritage Site, around 1,390 Scheduled Monuments, 239 Registered Parks and gardens, over 370,000 listed buildings, and 1,191 Conservation Areas. They add distinctiveness, meaning and quality to areas; providing a sense of continuity and a source of identity. Historic places are also social and economic assets and can be used to support regeneration, place making and community development.

52. The ISA has been undertaken in parallel with the development of this strategy thereby ensuring that the policy framework is informed by the needs and opportunities presented by the Heartland's environment.

At the Heart of the UK

53. The Heartland's location within the United Kingdom makes our relationship with neighbouring regions of great strategic importance, both in terms of economic linkages and as part of the wider transport system that connects other regions and national with the UK's global gateways.

54. Investing in the operational resilience and capacity of the Heartland's transport system will not only ensure its continued economic success, but in providing enhanced inter-regional connectivity it will make a significant contribution to the levelling up of the UK economy.

55. Delivery of HS2, whilst not immediately benefiting the Heartland, will create opportunities to reallocate the capacity on the traditional rail corridors, initially the West Coast Main Line, and latterly the Midland Main Line and East Coast Main Line. Set within the context of the East West Main Line, this create opportunities to repurpose the way in which the railway network connects centres of economic activity in ways that are not constrained by the legacy of our Victorian forebears. In particular it creates opportunities to strengthen the connectivity between the Heartland and the Midlands to the benefit of both economies.

56. Whilst the relationship with London will continue to be of strategic importance, investment in strategic linkages that avoid the need to travel through London will realise benefits for the UK as a whole, including London where the removal of transiting services will create its own opportunities to reallocate existing capacity to enable sustainable growth.

57. In addition, investment in improved inter-regional linkages that cross through London will continue to be important in realising economic benefits across the wider South East. In this regard, the opportunities presented by Crossrail 2 are significant and are viewed as being of strategic importance.

58. In order to realise these opportunities, we will continue to work closely with adjoining Sub-national Transport Bodies, and with Transport for London, to ensure the implementation of this strategy realises benefits for the wider UK economy.

A Vision that is Evidence Led

59. The development of this strategy has been informed by a comprehensive Regional Evidence Base, one that enables us to understand the current state of our transport system, as well as capturing the opportunities presented by the scale and distribution of planned growth across the Heartland.

60. The Regional Evidence Base, which has been built from the bottom up, comprises a number of detailed pieces of work, all of which are available to the Heartland partners, both within the region and nationally:

   • GIS-based Databank – containing information on known plans for growth (economic and housing). The databank is updated annually using information supplied by local planning authorities and local enterprise partnerships

   • Policy Scenario Model – a regional model that is used to assess the relative implications of alternative scenarios. The model has the ability to consider both alternative development scenarios (scale and distribution of future growth) and alternative policy scenarios. Its back-casting ability enables the interventions required to achieve a particular outcome to be explored

   • Population Segmentation – part of the output from a technical study linked with our First Mile/Last Mile project, this provides insight into the behaviours of the region's residents in a way that complements this strategy's user-centred focus

   • Pathway to Decarbonisation – making use of the National Infrastructure Systems Model (NISMOD) to inform this strategy's approach to de-carbonising our transport system

   • Passenger Rail Study – a baseline assessment of the Heartland's rail network and levels of service, providing an evidence-led review of existing rail infrastructure and identifying where strategic connectivity gaps exist

   • Opportunities Mapping – mapping the scale and geographical extent of planned growth (economic and housing) against the backdrop of today's current situation

   • Technical Studies – the output of technical work commissioned to explore specific aspects of our transport system.

61. In grounding this strategy in a detailed understanding of the here and now, we have ensured that it complements and supports the work underway at the local level, and within the sub-regional Growth Boards and the emerging spatial framework.
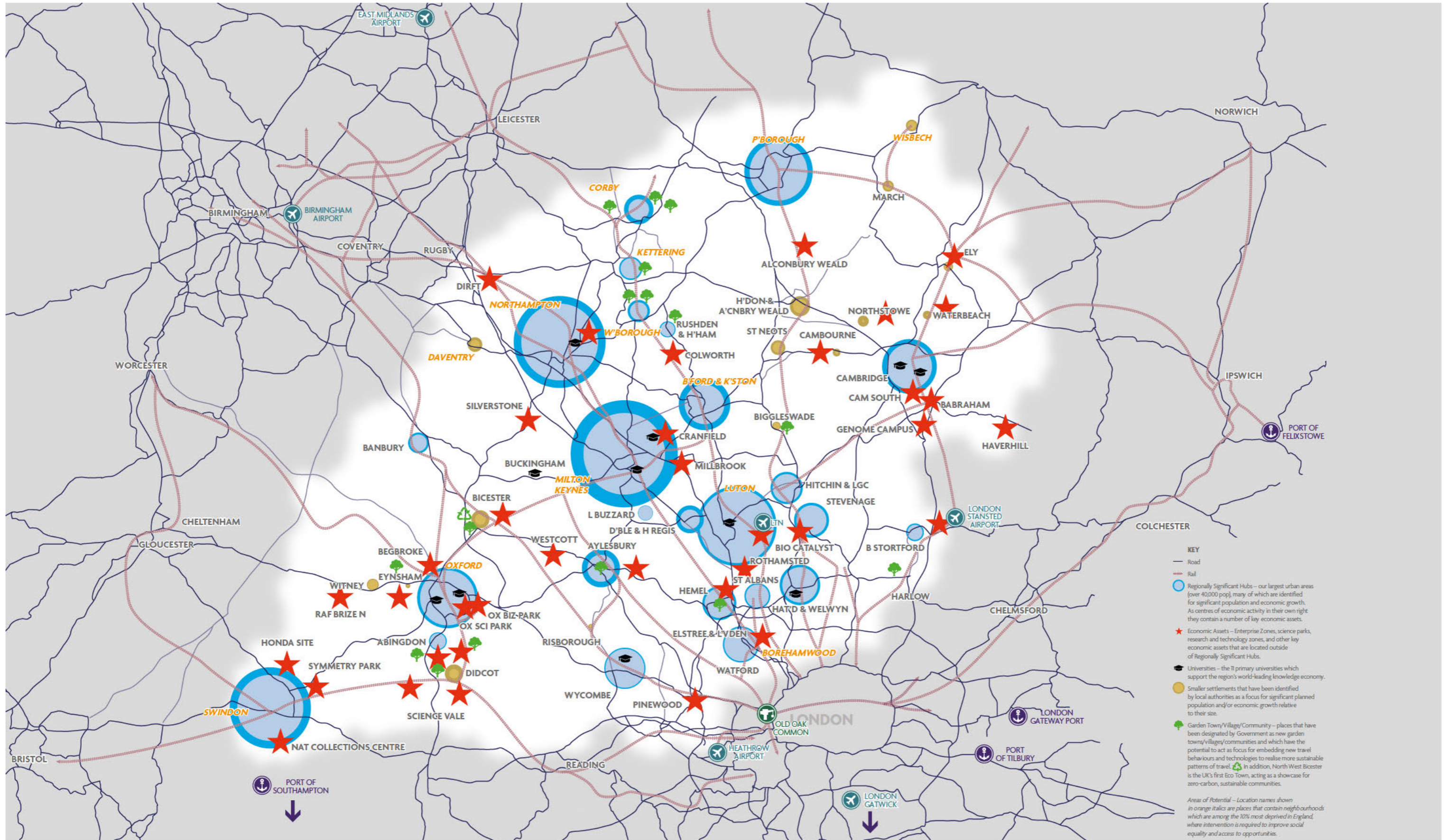
A Region with Challenges

62. The requirement to achieve net zero carbon emissions is a key driver for this strategy. The scale of the challenge facing the Heartland in this regard is captured by the Regional Evidence Base. In 2017 total CO_2 emissions in the Heartland stood at 28,834kt in 2017, equivalent to 8% of the UK total. In addition, CO_2 emissions have fallen at a slower rate than the national average – 17.4% compared to 21.7% between 2012-2017.

63. Transport-related emissions are a particular challenge, rising 10% between 2012-2017, compared to 5% nationally. In 2017 transport emissions equated to 47% of the Heartland's total carbon dioxide emissions, compared with 37% nationally. And with transport emissions increasing at a faster rate than elsewhere (9.4% between 2012 and 2017 compared to the UK average of 4.9%) there is a clear need for action. More generally, the current approach to the delivery and management of the transport system is unsustainable, as demonstrated by the number of Air Quality Management Areas declared within the region. These figures reflect the fact that across the Heartland people are more likely to travel longer distances to work than the national average, and with over 67% of the workplace population travelling to work by car (compared to 60% nationally). They highlight the importance of seizing the opportunity created by changes arising from more flexible work patterns.

64. The Heartland is home to 5.1m people, approximately 9% of the total population of England. And whilst the region has a number of centres of significant economic activity, it also has a large number of small and medium sized market towns and large rural areas resulting in a diverse range of transport needs, opportunities and challenges. As a result, around 35% of the region's population live in small market towns and rural hinterlands, significantly above the national average. Whilst overall the region is an economic success, there are significant areas of social inequality and deprivation, where opportunities for individuals to realise their full potential are limited. Within rural communities the connectivity options, both physical and digital, available to residents and businesses are often limited, giving rise to implications that extend beyond the transport sector.

65. Over 812,000 people in the region live in the top third most deprived local authority areas of England – accounting for 15% of the region's population. The implications of failing to address inequality are only too evident: within Oxford for example, life expectancy amongst young adult males varies by 15 years across the city.

66. Improving access to opportunities for individuals is fundamental to helping address issues of inequality, bringing with it consequential improvements in health and wellbeing, as well as making a significant contribution to the economic success of the region.

67. We continue to work closely with transport operators (including the EEH Bus Operators Association), local enterprise partnerships and local authorities to ensure that measures to create opportunities for individuals are taken forward in such a way as to support the requirements of this strategy.

68. We will also use our understanding of the diversity of the region's population to develop, design and implement solutions that align with the specific needs of our communities.

Places of Strategic Importance

69. Across the region there are a number of centres of economic activity that our partners view as strategic assets and where investment in strategic infrastructure is required. At the same time, the Regional Evidence Base highlights areas where investment in strategic infrastructure is required as part of a commitment to level up opportunities across the Heartland.

70. Through the implementation of this strategy we will prioritise the need to invest in strategic infrastructure that supports the continued success of existing economic assets, as well as those communities with the greatest potential to improve social equality. The Places of Strategic Importance will be reviewed on a biennial basis to ensure they still reflect the reality of the region.

    • Regionally Significant Hubs – our largest urban areas (over 40,000 pop), many of which are identified for significant population and economic growth. As centres of economic activity in their own right they contain a number of key economic assets.

    • Economic Assets – Enterprise Zones, science parks, research and technology zones, and other key economic assets that are not located in Regionally Significant Hubs.

    • Universities – the 11 primary universities which support the region's world-leading knowledge economy.

    • Smaller settlements that have been identified by local authorities as a focus for significant planned population and/or economic growth relative to their size.

    • Garden Towns/Villages – places that have been designated by Government as garden towns/ villages and which have the potential to act as focus for embedding new travel behaviours and technologies to realise more sustainable patterns of travel. In addition, North West Bicester is the UK's first Eco Town, acting as a showcase for zero-carbon, sustainable communities.

    • Areas of Potential – places that contain neighbourhoods which are among the 10% most deprived in England, where intervention is required to improve social equality and access to opportunities.

KEY

— Road

---- Rail

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🌳 Garden Town/Village/Community – places that have been designated by Government as new garden towns/villages/communities and which have the potential to act as focus for embedding new travel behaviours and technologies to realise more sustainable patterns of travel. In addition, North West Bicester is the UK's first Eco Town, acting as a showcase for zero-carbon, sustainable communities.

Areas of Potential – Location names shown in orange italics are places that contain neighbourhoods which are among the 10% most deprived in England, where intervention is required to improve social equality and access to opportunities.

Freight and Logistics

71. All too often the freight and logistics sector is overlooked in transport strategies. This strategy recognises that actively planning for and meeting the freight and logistics needs of the business community are pre-requisites for economic and environmental success.

72. The digital economy has changed the scale and nature of logistics, both in terms of business to business activities and business to end user. Notwithstanding this, catering for and managing the flow of freight associated with the deep-sea container traffic transiting through the UK's global gateway ports at Felixstowe, London Gateway and Southampton remains a key strategic priority for the Heartland.

73. The clusters of national distribution centres located within the region are a key part of our economy and a strategic asset for the UK.

74. Civilian airports located in or near the Heartland are a vital part of the UK's freight network. Heathrow Airport is the UK's biggest port by value, handling over 1.70 million metric tonnes of cargo per annum. East Midlands Airport is the UK's second busiest airport for freight, handling around 320,000 tonnes of cargo per annum. Stansted Airport handles 260,000 tonnes of cargo per annum, making it the third busiest UK airport for freight. RAF Brize Norton in Oxfordshire, home to the RAF's heavy lift aircraft, is the primary airport for the UK military and is the air bridge for all overseas deployments, making it a UK strategic asset.

75. Notwithstanding the importance of the freight and logistics sector, its environmental footprint is significant and requires action.

76. The use of conventional road vehicles is increasingly under scrutiny because of their environmental and social impact. We will work with the freight and logistics sector to develop and deploy innovative solutions that enable the servicing and support needs of the business community and public to be met in ways that respond to our environmental responsibilities, locally and nationally.

A heavy goods vehicle passes the Waterside Theatre in Aylesbury

Engagement and Consultation

77. The development of this strategy has involved two rounds of engagement with the wider community.

78. In July 2019 the publication of the Outline Transport Strategy started a conversation with the region's communities and businesses about their expectations of and ambitions for our transport system. The views gathered formed an important part of our evidence base, providing an insight on the key issues that our residents and businesses consider this strategy needed to address.

79. A consultation on the draft Transport Strategy was held from July to October 2020. The comments received in more than 200 responses from partners, residents and organisations indicated a high level of overall support for the strategy, as well as providing specific proposals that have further strengthened the document.

80. Both the engagement and the consultation highlighted increased acceptance within our community of the need for change and the need to do so at pace, particularly with regards to decarbonisation.
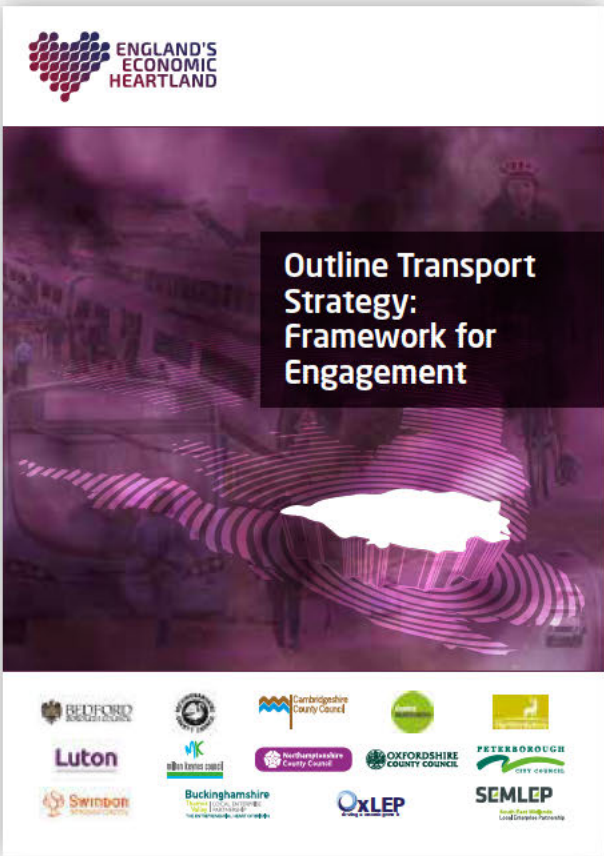
81. Our current pattern of travel and consumption of resources is not compatible with our ambition to achieve net zero carbon emissions ahead of 2050, nor with the need to ensure the long-term sustainability of the region. It is necessary to effect a change in travel patterns; both by reducing the need to travel and by achieving changed travel behaviours and patterns of demand, including reducing reliance on the private car.

82. The response to the COVID-19 pandemic has highlighted the extent to which rapid and widespread use of digital connectivity can act as an effective and efficient means of maintaining business activity. It also illustrates the extent to which change can be achieved at pace when the circumstances require it and providing the imperative for change is compelling.

83. The Paris Agreement enshrines a commitment to restrict the increase in global average temperature to 'well below' 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.

84. The UK Government is under a duty to ensure that the net UK carbon account for 2050 is at least 100% lower than the 1990 baseline (the 'net zero target' which was enshrined into law in June 2019).

85. Transport is now the largest sector for UK greenhouse gas emissions (28%), of which road transport accounts for over 90%.

Pathways to Decarbonisation

86. The policies set out in this strategy have been informed by the outcome of work commissioned to identify the possible pathways to decarbonisation by 2050. The outcome of that work has reinforced the need for bold decision making and long-term planning.

87. Our approach looks to build on the Government's policy as set out in the Department for Transport's Decarbonising Transport: Setting the Challenge in which the Secretary of State sets out that:

"Public transport and active travel will be the natural first choice for our daily activities. We will use our cars less and be more able to rely on a convenient, cost-effective and coherent public transport network."

88. It also builds on the fact that the majority of our local authority partners have passed resolutions declaring a 'climate emergency' and have targets to deliver organisational net zero emissions by 2030.

Autonomous vehicle testing at RACE in Culham

89. Harnessing this level of ambition and building on the outcome of our work on pathways to decarbonisation, we will support the implementation of this strategy through the development of a Decarbonisation Road Map for our transport sector by the end of 2021.

90. Decarbonisation requires a step-change in the way we view and plan connectivity. The factors considered and policies set out in this strategy contribute towards the wholesale change required. Taken together, they will set us on the path to meeting our ambitions.

91. This strategy has been prepared on the basis that there will be a transition to 100% zero-emissions cars, light goods vehicles (LGVs), heavy goods vehicles (HGVs) and public service vehicles (PSVs, for example buses and coaches) by 2050. In addition, delivering this ambition will require the delivery of:

    i) A highly connected future, one that enables our transport system to provide better transport information to the user, better management of the transport network, and the rapid deployment of connected and autonomous vehicles. This pathway will build on a step change in the provision of digital access and services to the home – allowing for a significant increase in home working and a significant change in travel patterns

    ii) A policy-led behavioural shift by which decision makers at all levels agree to deploy policy levers specifically designed to reduce the number of car trips. This will require the application of measures designed to reduce the need to travel. In parallel, it requires a commitment to ensure local communities have real choice in the way they travel – with bus, rail and active travel options being attractive and viable alternatives to the private car.

92. The approach set out in this strategy is deliverable and viable. By primarily reducing the need to travel, focusing on modal shift and supporting the deployment of mass rapid transit and active travel, it highlights an affordable alternative to traditional, large-scale road projects that take many years to plan, fund and deliver.

93. We are committed to working with partners to implement the required actions within this strategy as they develop proposals that are consistent with the legally binding commitment to reach net zero emissions by 2050. Further, we are committed to supporting partners as they respond to any future changes in legislation relating to new infrastructure proposals. Together with partners we will monitor and review policies, programmes and infrastructure proposals for compliance with the need to deliver carbon reduction.

94. We will prioritise, as part of delivering this strategy and working with both public and private sector partners, the delivery of the digital infrastructure required to support the decarbonisation of our transport system. This will facilitate the establishment of a highly connected, intelligent transport system. It will allow vehicles and services to operate efficiently around the region, making better use of emerging and established technologies, enabling the Internet of Things (IoT) and big data analytics to manage our transport networks as a single system. Delivering on digital infrastructure will enable us to realise the potential of Intelligent Transport Systems (ITS) and connected (and autonomous) vehicles to grow innovation in our transport system.

95. We will also actively promote the opportunities created by change in the scale and nature of travel demand to repurpose our existing infrastructure assets (with their embedded carbon) so they give priority to active travel and public transport, primarily through bus and coach services.

96. We will work with our academic partners and local enterprise partnerships, to ensure we harness the capability of our knowledge-intensive economy to develop new user-focused services that directly reduce our carbon emissions.

Decarbonising our Transport System

Policies

1. In identifying future investment requirements we will prioritise those which contribute to a reduction in car journeys in line with the recommendations delivered by the UK Climate Assembly: to facilitate a reduction in the number of private car journeys by a minimum of 5% per decade (of total traffic flow compared with 2019).

2. We will support and plan for the decarbonisation of the road fleet, working with the private sector, the energy sector, local authorities and Highways England to ensure the infrastructure required to support a zero-emission fleet (including buses, public transport and freight) is available.

3. We will support and plan for the decarbonisation of the rail network with priority given to securing:

   • Completion of the Midland Main Line electrification

   • Delivery of East West Rail as an electrified route

   • Infill electrification schemes that enable electric haulage of rail freight services, in particular those to/from the international gateway port of Felixstowe and to/from national and regional distribution centres

   • Electrification of the Chiltern Main Line between Birmingham and London Marylebone.

97. A continued and focused approach is required to ensure that all the drivers of change that support a decarbonised, highly connected, demand-managed, transport system are utilised. The region's transport decarbonisation roadmap will be the mechanism for achieving this.

98. We will work with Government to ensure the implementation of this strategy is consistent with the ambition set out in Decarbonising Transport – Setting the Challenge. Through our Travel Hierarchy we look to make active travel and public transport the first choice for travel.

99. Working with partners, we will look to ensure the transport implications of decision making across all policy areas – including but not limited to land-use planning – are taken into account. The continued evolution of business models for the delivery of services within the public and private sectors will have implications for future travel demand. Understanding those implications as part of the decision-making process will be critical if we are to achieve net zero emissions. As part of this commitment we will work with regional and national partners to support the deployment of green infrastructure and low carbon services to enable residents to make better, low carbon travel choices.

The Hamptons - new housing development in Peterborough

100. The commitment to support the reduction in the number of car journeys is necessary in order to achieve net zero emissions. Given the scale of planned growth this will ensure that overall traffic do not go beyond current levels. The current target of 5% decade on decade reduction in trips will deliver a 15% reduction in the total trips by 2050 but it is likely that up to a 30% reduction in trip rates may be required to deliver decarbonisation and improved network performance. We will review the target set out in Policy One following publication of the DfT's Transport Decarbonisation Plan and completion of our Decarbonisation Roadmap for Transport.

101. We will work with partners to identify and implement local policies that will redress the decline in average private vehicle occupancy and encourage the deployment of new mobility solutions to increase the efficiency of passenger movement. We support improved access to shared mobility assets include electric vehicle car clubs, ride share schemes and better access to shared micro mobility solutions where appropriate.

102. Improved digital connectivity will be a key component in achieving the ambitions of this strategy. It will reduce residents' need to travel, enable more flexible/remote working and improve access to employment and opportunities. We will work with our utilities partners to accelerate the delivery of improved digital connectivity. This includes innovative new approaches to delivering digital connectivity at scale, both through the deployment and reinforcement of physical fibre connectivity, and new approaches to "Over the Air" delivered by 5G and emerging satellite technologies.

103. Electrification offers a significant opportunity to decarbonise our transport system. We will continue to support the deployment of renewable energy generation in our region and beyond, as well as the opportunity to deploy at scale new technology such as Vehicle to Grid and Hydrogen Electric Vehicles. Delivering the utility infrastructure required to support such initiatives will require partnership to ensure it is achieved at pace and at a scale that achieves economies of scale.

104. We will build on the leadership being provided by Milton Keynes, Oxfordshire, and Cambridgeshire and Peterborough on electrification of the local transport network and use that knowledge to see it applied more widely across the region. We will work with infrastructure owners in the energy sector to ensure this is enabled by the necessary investment in electricity supply and distribution networks.

105. Lessons learned in our region about the deployment of enabling infrastructure for Ultra Low Emission Vehicle and the behaviour of users is already shaping national policy. We will continue to support our partners to scale this activity.

106. Implementation of this strategy requires a commitment to a regional approach to the provision of infrastructure for alternative fuels. Substitution of internal combustion engine vehicles for zero emission vehicles will make a positive contribution towards reducing carbon emissions. However, it will not address wider concerns that arise from overall volumes of vehicles in our communities and poor journey time reliability for intra-urban connectivity.

107. Whilst electrification of the road fleet is supported, it needs to form part of a co-ordinated approach to investment in improved local connectivity. More than half of car journeys in our region are under five miles and through this strategy we are committed to supporting partners to deploy new infrastructure and services that supports modal shift, particularly focusing on these shorter journeys.

108. Electrification/decarbonisation of our road fleet must be taken forward as part of an approach that seeks to reduce the overall number of vehicles in our urban areas and cutting the number of car trips made across the region.

109. We will work with the rail sector to build on their traction decarbonisation business case to develop a rolling programme of electrification for our rail infrastructure. The timescales associated with the planning, development and implementation of electrification projects makes the need for a rolling programme of electrification an urgent requirement if this part of the transport system is to realise its contribution towards achieving the net zero requirement.

110. Priority will be given to the early electrification of those key rail corridors that are essential for strategic rail freight movements, reducing the carbon emissions of existing movements. This approach will improve the business case in support of long-distance freight by rail compared with road haulage, the latter being a particular concern in terms of its carbon emissions.

111. As the sole remaining non-electrified main line route serving London, we will continue to work with Network Rail, Midlands Connect and TfL to prepare the business case in support of a long-term solution for the Chiltern Main Line.

112. On those routes where electrification is not a practical or viable solution, we will work with the rail sector to identify alternatives that decarbonise the rail network, including hydrogen and emerging battery solutions.

Mobility of the Future

Policies

4 We will work with infrastructure owners and operators to ensure that proposals brought forward for the development of the transport system reduce reliance on the private car by considering the needs of users on the basis of the following Travel Hierarchy:

i) Active travel modes (pedestrians and cyclists)

ii) Enabling access to services and opportunities without the need for motorised travel

iii) Public transport and shared modes (bus, scheduled coach and rail)

iv) Low emission/ zero carbon private vehicles, and two-wheeler vehicles including motorcycles

v) Other Motorised modes.

All proposals to be prepared on the basis that they provide inclusive and accessible travel options for all users and take account of relevant national and local design standards – for example, walking and cycling.

5 In identifying future investment requirements, we will prioritise proposals on the basis of value for money, their contribution towards achieving net zero carbon targets, and their contribution to wider sustainability, environmental net gains and health outcomes.

6 New transport development in the region should conserve and where possible enhance the natural, built and historic environment.

7 We will aim for zero deaths on the Major Road Network by 2040.

8 We will continue to work with partners, universities, operators, and the private sector to leverage our regional 'living laboratories' to trial innovative solutions and apply new business models at scale.

113. Additional measures over and above those already being taken forward are required to decarbonise our transport system. Measures are required to both reduce the need to travel and reduce the reliance on the private car.

114. Given that travel is a derived demand, it is essential that the planning and development of our transport system is co-ordinated with wider policy considerations, including but not limited to land use planning.

115. Ensuring that local communities and businesses can safely and efficiently access the services and facilities they need is an important contributory factor to managing future travel demand. Access to good quality services and facilities locally can both help reduce the length of journeys and encourage greater use of active travel modes. Integrating transport and land use planning and increasing digital connectivity to services will create additional opportunities to effect long-term change in travel patterns.

116. Considering the needs of users in accordance with the Travel Hierarchy when developing proposals will help ensure that future investment actively encourages a modal shift. In this way, the hierarchy will facilitate an increase in investment in local measures that improve the health and well-being of individuals and help reduce the environmental footprint of our transport system. It also supports partners wishing to pursue the application of 'vision zero' principles at the local level.

117. The hierarchy of modes needs to be equally applied to the existing infrastructure asset. Investment in maintaining the asset offers the opportunity to apply the hierarchy to repurpose the available space in favour of modes that support a more sustainable pattern of development.

118. This strategy assumes that proposals brought forward for investment will incorporate measures for all levels of mobility so as not to exclude people who are unable to participate in active travel. Where new mobility services are deployed, all possible efforts will be made to ensure equitable access and inclusivity for all transport users. Infrastructure should take account of relevant national and local design standards.

119. The response to the COVID-19 pandemic highlighted the extent to which more flexible/remote working has the capability to enable a significant proportion of the regional economy to function without the need for travel. Through this strategy we seek to build on this experience in support of its ambitions. Concurrently, this strategy takes account of how the continued growth of e-commerce and changing work patterns continues to impact both the need to travel and the nature of future demand. The increase in local services, in particular local delivery services, has the opportunity to reduce both the need for and length of trips.

120. Walking and cycling is already a significant part of our overall transport system, particularly in Oxford and Cambridge. We support the conclusion of Andrew Gilligan's report for the National Infrastructure Commission – Running out of Road – that outlines the need for investment in our region to unlock low carbon economic growth. Through the Travel Hierarchy and Local Cycling and Walking Infrastructure Plans, we will work with partners to ensure walking and cycling levels continue to grow across the region.

121. The transport system plays a key role in allowing communities to access, and to reduce severance to, green spaces. We support the creation of a pan-regional network of greenways which enhance opportunities for walking and cycling. These off-road walking and cycling routes provide attractive links rich with vegetation, connecting people to the natural, built and historic environment. Their design incorporates the natural environment helping to bring people closer to nature, often linking urban areas to more rural locations. Greenways also provide opportunities for wildlife corridors and enhancement of biodiversity. The Waddesdon Greenway project, connecting Aylesbury Vale Parkway and Waddesdon Manor is an example.

122. We are committed to working with our partners and the walking and cycling charity, Sustrans, to improve the national cycle network, making it segregated wherever possible. This includes maximising the potential of an Oxford-Cambridge 'Varsity Way' segregated cycling and walking route as a 'green spine' across the Heartland: one that can act as a focal point for developing a region wide network of cycle routes.

123. We support the proposed Bedford to Milton Keynes Waterway Park, a 26km canal connecting the Grand Union Canal at Campbell Park in Milton Keynes to the head of navigation of the River Great Ouse at Kempston, west of Bedford. The project, led by the Bedford & Milton Keynes Waterway Trust, will help support sustainable growth by improving options for active travel, supporting the creation of new wildlife habitats, as well as supporting a more varied and attractive built environment, while also providing significant economic benefits.

124. Interurban and local bus travel continues to be an essential part of our transport system, providing many with their primary means of access, as well as providing an alternative to the private car. Unlike rail, and unless segregated, the reliability of bus and coach services is dependent on a well-performing road network. Through our Travel Hierarchy, we will put the needs of the bus at the forefront of our approach to connectivity, and our associated investment plans.

125. It remains important to ensure that investment proposals continue to offer good value for money. We will use an evolution of our multi-criteria framework, originally developed to identify investment priorities for the Major Road Network programme, as the basis for ensuring that investment priorities taken forward into the investment pipeline are consistent with this strategy's vision and principles.

126. Individual investment proposals will continue to be considered on their own merits. However, our approach also ensures that, where appropriate, a scheme's contribution as part of a wider package of measures is also considered. It is often the cumulative benefit of a co-ordinated package of investment that needs to be captured.

127. As we develop our shift in the appraisal process, we will work with the Government to build on the outcomes of their 'Green Book' review and with other funding decision makers to ensure that the appraisal of investment proposals reflect the importance of wider sustainable development principles as well as achieving the net zero target.

128. Through early partnership working to establish an understanding of heritage assets present, new transport developments are expected to protect and enhance heritage assets, maintaining their significance, character and sense of place.

129. For the natural environment new transport infrastructure is expected to assess environmental gains and losses systematically and define targets for biodiversity, natural capital and environmental net gains with the intent of achieving net gains across locally important natural capital and associated eco-systems.

130. In line with the United Nations Sustainable Development Goals to be achieved by 2030, we will champion safe, accessible and sustainable transport systems for all, expanding public transport with special attention to the needs of those in vulnerable situations, women, children, people with disabilities and older people.

131. We will prioritise a safe transport system. Where safety or perceptions of safety impair our ability to improve connectivity we will work with infrastructure owners and operators to address this using a safe system approach, where networks are designed to reduce the risk of accidents occurring, and where they do occur, reduce the severity of injuries.

132. Safety remains the first imperative for infrastructure operators such as Highways England and informs design principles, road standards, operational procedures and investment decisions. Improvements in safety technology and intelligent management of the Strategic Road network (SRN) result in reductions in the numbers of people killed or injured on the SRN with a 'Zero Harm' goal of bringing the number of people killed or seriously injured to a level approaching zero by 2040. We will look to match this target for the local authority-owned Major Road Network.

133. The use of data analytics is driving the growth in user-focused services, typically accessed via smart phones. We will continue to build on the leadership being provided within the region on the deployment of user-focused services. Through our Innovation Working Group we will use that knowledge to scale this capability across the region on a consistent basis, establishing better data sharing and interoperability.

134. As a focus for science and technology-based innovation in the UK, we are working with partners, particularly our universities and research facilities, to maximise the use of 'living laboratories' as a means of trialling innovation in the region at scale and at pace. And we will work with the private sector to develop proposals that encourage the scaling up of trials to the regional level at the earliest opportunity.

135. The region is a leader in the development of the technology associated with the use of electric vehicles and connected autonomous vehicles, technology that has the potential to be a key part of our transport system moving forward. The work underway in Oxfordshire, Cambridgeshire and Milton Keynes provides the region with access to experience on which it can build.

136. Delivering new approaches, ownership and business models that facilitate access to transport will be a key part of the transition to net zero. Mobility as a Service (MaaS), Car Clubs, demand responsive transport (DRT) and shared mobility (including micro mobility) will be supported where appropriate. As new forms of mobility emerge and are tested, we will review the Travel Hierarchy to ensure it continues to be relevant/ fit for transport users.

137. The availability of fixed and mobile digital infrastructure is central to enabling the region to exploit its leadership in innovation in the transport sector to the full. Not only is digital infrastructure critical to the collection and use of the data underpinning user-focused services, it also offers the potential to help reduce the need for travel in the first place.

138. Harnessing the potential of our business community in the development of new solutions and businesses will not only benefit the region, it will also provide the UK with a competitive edge.

139. Improving east-west connectivity provides the overriding transformational opportunity for our region, also unlocking opportunities to improve north-south connectivity.

140. Taken together this will transform what is currently a series of discrete functional economic areas and housing markets, creating a better connected and interrelated region, delivering agglomeration benefits for businesses and levelling up opportunities for the region.

141. Maximising the benefits and opportunities arising from the investment in strategic infrastructure is at the heart of realising our ambition for the region. The clarity provided on the future development of our transport system will enable partners to bring forward proposals for their communities with greater confidence. In this way it will enable our economic potential to be realised and the region's future housing needs to be met.

The East West Main Line

Policies

9   We support the delivery of the East West Rail project (including the 'eastern' section from Ipswich and Norwich to Cambridge), with the expectation that Oxford to Bletchley/ Milton Keynes is open by 2025, with links to Bedford and Aylesbury to follow at the earliest possible opportunity thereafter, and Oxford-Cambridge delivered no later than 2030.

10   We will work with the East West Railway Company, Network Rail, neighbouring STBs and local partners to identify opportunities to realise the longer-term potential of the East West Main Line in support of economic activity and planned housing growth.

11   We will work with partners, the East West Railway Company and Network Rail to ensure that where the East West Main Line intersects existing main lines the opportunity is taken to establish regionally significant transport hubs. Priority will be given to developing proposals in the following locations:

- Oxford Stations
- Bicester Stations
- Aylesbury Station
- Milton Keynes/Bletchley Stations
- Bedford Midland Station
- East West Rail/East Coast Main Line
- Cambridge/ Cambridge South Stations.

142. The historical dominance of London within the UK economy means most of our region's strategic transport linkages are radial in nature, centred on the capital. However, travel patterns across the Heartland are more complex and emphasise the importance of improving the connectivity more generally between our places of strategic importance.

143. Delivery of a strategic railway connecting East Anglia, with central, southern and western England is the shared strategic ambition of the local authorities comprising the East West Rail Consortium. East West Rail has been at the heart of the region's strategic priorities for 25 years.

Work underway on East West Rail at Bletchley station

144. The core focus for the East West Main Line is to achieve a step-change in east-west connectivity, linking Ipswich and Norwich with Cambridge, Milton Keynes, Oxford and beyond that towards Swindon and onwards to Bristol and South Wales.

145. The East West Railway Company is planning East West Rail in three 'connection stages':

    1. Oxford to Bletchley/ Milton Keynes; and Aylesbury to Milton Keynes

    2. Oxford to Bedford

    3. Oxford to Cambridge.

146. From its inception in 1995, the East West Rail Consortium has also promoted the 'Eastern Section', linking to Ipswich and Norwich from Cambridge. We will continue to work with the East West Rail Consortium and Transport East to develop and promote proposals that will deliver the 'Eastern Section' at the earliest opportunity.

147. Though each section of East West Rail brings with it benefits to the communities it serves, the full transformational benefit will only to be realised through the creation of the East West Main Line in full.

148. The East West Main Line will, for the first time, offer a fast, reliable, and attractive rail link across and within our region that will have a competitive advantage over the private car. The benefit of the East West Main Line lies not just in the improved connectivity between those urban areas it directly serves, but also in the opportunity created where the route crosses the radial main lines centred on London. Removing the need for rail users to travel through London will additionally provide some relief to rail services on the radial main lines to/from the capital.

149. Identifying these points as regionally significant rail interchanges creates opportunities to offer users a range of new rail-based journeys. Our baseline of the existing rail network provides the foundation on which to work with the rail sector and identify the measures required to make those options real. Central to this will be the principle of journey options requiring no more than one-stop interchange.

150. The transformational benefit of the East West Main Line to the region, its residents and businesses, will be enhanced further by ensuring it is delivered as a digitally enabled corridor, one that provides improved digital connectivity for both passengers and communities close to the rail corridor.

151. The commitment by Government to deliver the Oxford to Cambridge sections of East West Rail represents a first step in realising the full benefit of this transformative link for the region and beyond. Building on the confidence generated by the work of the East West Railway Company, we will work with local authorities to ensure that the opportunities created by this investment are used to shape the location of future economic and housing growth proposals.

152. The longer-term potential of the East West Main Line to support planned growth and encourage further shift in passenger and freight movements on to the railway will require additional investment in its capacity and capability (see also Realising the Potential for Rail Freight section below). We will work with the East West Railway Company and Network Rail to develop the longer-term potential of the East West Main Line over and above that of the current proposal.

Improving East West Connectivity

Policies

12 We will prioritise improvements to east-west connectivity to support economic activity and planned housing growth, including:

   i) A northern corridor that links north Oxfordshire, Northamptonshire, and Peterborough, providing more direct passenger transport connectivity across the northern Heartland

   ii) A southern corridor that links Buckinghamshire with Hertfordshire, providing an orbital passenger transport route between the Chiltern Main Line and West Anglia Main Line.

13 We will work with Western Gateway and Network Rail, Highways England and public transport operators to develop proposals that strengthen connectivity between Swindon/Oxford and the South West and South Wales in support of economic activity and planned growth.

14 Taken forward by our programme of connectivity studies, we will identify proposals that strengthen east/west connectivity within the following areas:

- Oxford-Milton Keynes
- Peterborough-Northampton-Oxford
- Oxford – Didcot – Swindon
- Watford-Aylesbury-Bicester-M40
- North Northamptonshire
- Oxford – M40 junctions.

153. The output from the opportunities mapping, supported by other technical studies, illustrates the extent to which east-west connectivity acts as a constraint on the Heartland realising its economic potential.

154. Building on that output, the findings of the Phase 1 Passenger Rail Study identified two additional east west corridors where improved connectivity will support the delivery of planned economic and housing growth:

- A northern corridor that links north Oxfordshire, Northamptonshire and Peterborough which provides more direct connectivity across the northern Heartland, potentially by rail

- A southern corridor that links Buckinghamshire with Hertfordshire and parallels the southern border of the region providing an orbital route of London between the Chiltern Route and West Anglia Main Line, potentially by rail.

155. The opportunities mapping also highlights the strategic importance of improving connectivity between Oxford and Swindon to the benefit of the economies of both centres, with improvements to both rail and road corridors required. Indeed, the National Infrastructure Commission in its report identified the need to use improved east-west connectivity in our region as the catalyst for strengthening linkages westward to the South West and South Wales. We will work with the rail sector to ensure that the benefit of investment in the East West Rail project extends through to Didcot Parkway and onward towards Swindon/Bristol and Southampton.

156. The output of the Oxfordshire Rail Corridor Study has made the strategic case for investment. We are supportive of its recommendations to strengthen connectivity on the North Cotswold Line and of the need for improvements to suburban rail services centred on Oxford, including the upgrade of the Cowley Branch Line for passenger use, as well proposals for a new Grove Station.

157. Implementation of this strategy will involve taking forward a programme of multi-modal connectivity studies. The purpose of these studies, co-designed and taken forward with local partners, will be to identify the strategic questions relating to connectivity in each study area (both in the present and as a result of planned growth), to agree the outcomes required of the transport system and to then identify the investment required to achieve those outcomes. Opportunities created by transformational public transport schemes will be incorporated into analysis for relevant corridors. Connectivity study outputs will feed into the Investment Pipeline associated with this strategy.

What remains of the old Varisty line in Swanbourne which will be reopened by East West Rail

158. A key strategic priority is the need to improve connectivity between Oxford and Milton Keynes. This has been identified as the first of the connectivity studies to be commissioned, a reflection of the strategic importance of this issue for the region as a whole.

159. We will continue to engage with, and where appropriate, support partners undertaking study work on regionally important corridors, for example, the A505 corridor from Luton across to Cambridge.

Improving North-South Connectivity

Policies

15 We will work with Government, Network Rail, Highways England, public transport operators and Oxfordshire County Council to develop a long-term solution to challenges on the Didcot – Oxford – Bicester/ Banbury corridor.

16 We will work with Network Rail, Government and adjoining Sub-national Transport Bodies to maximise the allocation of released capacity on the classic network as a result of HS2 to benefit connectivity within the region.

17 We will work with Government, Network Rail, adjoining STBs and partners to develop a solution that improves connectivity on the London – Luton – Bedford – Wellingborough-Kettering – East Midlands corridor.

18 We will work with the Cambridgeshire and Peterborough Combined Authority, Cambridgeshire County Council and Peterborough City Council alongside Network Rail and Government to support the priorities identified in the Cambridgeshire Rail Corridor Study and we support the delivery of Cambridge South Station by 2025 and aspirations for services to/from a new station at Wisbech.

19 We will work with partners, including Government and Highways England to develop a long-term solution to the challenges of the A1 (East of England) corridor.

20 We will work with Government and Network Rail to develop a long-term solution to the challenges on the London – Bishop's Stortford – Cambridge Corridor.

21 Taken forward by our programme of connectivity studies, we will identify proposals that strengthen north/south connectivity within the following areas:
- London – Buckinghamshire – MK – Northampton
- Luton – Milton Keynes – Daventry
- Luton – Bedford – Northamptonshire
- Northampton – Milton Keynes.

160. The Heartland's principle transport arteries run north to south, providing linkages with London, the Midlands and the north of England. Being located at the heart of England, these corridors perform a nationally significant role in enabling flows of people and goods to reach centres of population within and beyond our geography.

161. Continued investment in north-south strategic corridors is vital to long-term economic success of the Heartland as well as the rest of the UK. Strengthening physical connectivity along these corridors is essential to enable growth in our places of strategic importance, whilst delivering additional resilience for people and freight that utilise these routes as part of longer distance journeys.

162. Delivering a decarbonised transport system requires a multi-modal approach in identifying future infrastructure needs, one that will be taken forward by working collaboratively across multiple infrastructure operators to identify solutions that are consistent with this strategy.

163. In several instances, the benefit of transformed east-west connectivity also creates consequential opportunities to improve north-south connectivity.

164. Building on the output from the opportunities mapping and taking into consideration the views of partners made in response to the engagement on the draft strategy, a series of strategic rail corridors have been identified. These will be the focus of more detailed work as part of the implementation of this strategy:

- *Swindon/Didcot – Oxford – Bicester/Banbury*: this corridor forms part of the Southampton – Oxford – West Midlands corridor, the significance of which is exemplified by the pressures placed on both the rail corridor and the A34 corridor. A long – term solution to the challenges of supporting the economic opportunities within Oxfordshire is required, one that also accommodates longer-distance movements

- *Northampton – Milton Keynes-Bletchley – Aylesbury – High Wycombe – Old Oak Common*: the combination of delivery of East West Rail and HS2 creates opportunities to develop a new regional service linking these regionally significant centres with key economic opportunities and allowing easier access to Heathrow Airport and HS2, supported by the provision of a twin-track solution between Aylesbury and Princess Risborough

- *Luton – Bedford – Wellingborough – Kettering – East Midlands*: forms part of the Midland Main Line along which improved connectivity is important to support planned growth, as well as to strengthen the economic linkages with the East Midlands to mutual benefit.

- *Watford – Milton Keynes – Northampton*: On the assumption that the principle inter-city services between London and Birmingham will be better served by HS2, there is an opportunity to improve intra-regional connectivity between the key towns of Watford Junction, Milton Keynes and Northampton.

Cambridge North Railway Station

165. In the longer-term completion of HS2 will create opportunities to reallocate capacity on the existing (classic) rail network to strengthen connectivity where it is required, including the West Coast Main Line, the Midland Main Line and East Coast Main Line. We will continue to work with Network Rail and adjoining Sub-national Transport Bodies to maximise the benefit of such opportunities for the region.

166. A particularly significant corridor is the A1. This corridor has some of the oldest sections of dual carriageway on Highways England's Strategic Road Network and its current operation has significant impacts on those living along its route. Highways England in its A1 (East of England) study has identified the extent of the challenges facing this corridor. Identifying a long-term solution and securing the commitment to deliver that solution is an issue of strategic importance given the role of this corridor both regionally and nationally and given the potential implications for longer-term growth.

Transforming Intra and Inter Regional Journeys

Policies

22 We will prioritise investment in the development of public transport-based solutions when improving intra-regional connectivity between places of strategic importance.

23 To realise our decarbonisation commitments while supporting economic growth, we will expect infrastructure owners to ensure that all new strategic infrastructure investment is designed as digitally enabled corridors.

24 We will support investment in the Strategic Road Network and Major Road Network where this meets one or more of the following criteria and is consistent with wider environmental objectives:

   a. Protects and enhances the existing infrastructure asset

   b. Delivers a solution to an identified problem on the existing infrastructure asset

   c. Enables access to new economic opportunities and/or housing growth.

   d. Enables delivery of sustainable transport linkages such as public transport and active travel improvements.

25 We will, working with Network Rail, Highways England and public transport operators, identify the level of service required between places of strategic importance to achieve improved intra-regional connectivity. The levels of service will be reviewed on a biennial basis.

167. Investing in improving connectivity between our places of strategic importance is important to support our business community. Such investment will realise opportunities to 'level up' across the Heartland to the benefit of our residents, improve access to skills pools for our businesses and support improvements in productivity, quality of life, employability, education and participation.

168. Where there is a need to improve intra-regional connectivity, we will prioritise investment in public transport solutions, complemented by investment in improved local connectivity.

169. However, this strategy also recognises that there will continue to be a need to invest in our highway network in order to enable planned growth to be delivered. At the regional level this means continuing to invest in the Strategic Road Network (owned and operated by Highways England) and the Major Road Network (owned and operated by Local Highway Authorities).

170. We will work collaboratively with Highways England to ensure that the Heartland's investment priorities are reflected in each five-year Road Investment Strategy.

171. We will work collaboratively with our Local Highway Authorities to ensure the Major Road Network reflects and supports the ambitions of this strategy and that investment priorities are taken forward.

172. Where investment in the highway network is taken forward, we will expect scheme promoters to determine how the use of additional capacity is allocated in line with our Travel Hierarchy.

173. Investment in our highway network will be particularly important where it supports one or more of the following criteria:

- It is required to protect and enhances our existing infrastructure asset thereby improving network resilience and productivity for businesses

- It is required to provide a solution to an identified problem on the existing infrastructure asset, particularly where this is required to the delivery of planned growth

- It is required to enable access for new economic opportunities or to enable planned housing or economic growth

- It is required to enable delivery of sustainable transport linkages such as public transport and active travel improvements.

174. A transport system of the future must consider the role and function of the highway network. Given the level of ambition and expectation amongst users and wider communities with regards to decarbonisation, it is clear our highway network needs to be future proofed. This will be achieved through rapid and widespread adoption of new and emerging technologies, together with investment in digital infrastructure that is available to users beyond the highway network. Integration between modes should be key in planning the network.

175. Investment in our highway network needs to be taken forward in accordance with good design principles in order to provide an attractive and usable active travel network, one which addresses local concerns about community severance. Investment in the maintenance, operations and targeted enhancements of the existing highway network which addresses areas such as safety, air quality and pinch points will provide opportunities to address known concerns in ways that help minimise environmental impact.

176. Our programme of connectivity studies reflects the need to develop a package of measures to support economic and housing growth opportunities. Through them we will work with partners to ensure that the travel implications of longer-term ambitions for local communities are reflected in our future infrastructure requirements.

CONNECTING PEOPLE

177. Connecting people to the opportunities and services they require will help them to realise their potential. The economy of the Heartland is dependent on a thriving labour market where people can move and access jobs across the region, but as our Regional Evidence Base shows, our current approach to connectivity is not sustainable.

Artists impression of Cambridge metro CAM

178. Many people with poor connectivity are denied choice, with implications for health and wellbeing, and contributing to social isolation.

179. While land-use planning is a key driver in determining the longer-term nature of place, changes to the business delivery models (in both the public and private sector) can, and do, have significant implications for the scale and nature of future travel demand in the short to medium-term.

180. Our current approach to connectivity can also have significant implications for social isolation, contributing to people having poor access to local services or activities, such as jobs, learning, healthcare, food shopping or leisure. Lower income households may be restricted in their ability to afford transport, or unable to rely on bus routes running to the right places. Age and disability can also stop people driving and using public transport.

181. Increasingly connectivity can be achieved digitally, as an alternative to physical links. This can create new opportunities for individuals by providing them with access to jobs and services, whilst reducing the need to travel.

182. Notwithstanding the rise of the digital economy, residents and businesses will continue to need access to services and other supporting facilities (including social infrastructure) that requires travel. This reinforces the importance of proposals coming forward that ensure the transport system is designed to be affordable and accessible for all.

183. The removal of barriers to travel – be that physical, financial, technological or societal – is a key priority for this strategy. By embracing a user-driven approach, one based on a deeper understanding of the behaviours of individuals, we will be better able to deliver tailored solutions that address the needs of our communities.

184. Critical to the implementation of this strategy is ensuring that our transport system is inclusive in its design and accessible for all.

185. Research by disability charity Leonard Cheshire estimates that nationally, a fully accessible rail system could help more than 50,000 people with work-limiting disabilities into employment, benefiting not only the individual, but the economy more widely and the Government. Improved accessibility on public transport and active travel also benefits other users, most notably older people and young families, increasing their ability to maintain mobility and better quality of life.

186. When planning new infrastructure, we must continue to challenge ourselves to ensure the needs of disabled people are properly taken into account. In developing policies and prioritising investment, we expect proposals to demonstrate their compliance with the Government's Inclusive Transport Strategy.

187. We support Leonard Cheshire's national campaign for all rail stations to be fully accessible by 2030 and we will work with our partners to realise this ambition. Going forward, we champion the use of transport technologies and services to ensure our transport system is genuinely inclusive to the benefit of society.

188. The polycentric nature of the Heartland means that the existing pattern of movements is complex. This makes it even more important to ensure that the solutions put forward for investment are tailored to local needs. The information held in the Regional Evidence Base provides an invaluable insight that will support partners in the development of those solutions.

189. But transport solutions alone will not create an accessible, affordable, decarbonised transport system. There is much that the public sector as a whole can do to create the conditions that enable healthy place making and more sustainable patterns of activity – from the framework that it sets out in Local Plans to the ways it plans for and delivers services for residents and businesses. Likewise, the policy frameworks used by Government to plan for and deliver its services have a significant effect on the need to travel.

190. Putting consideration of decarbonisation, digital connectivity, and active travel at the centre of a first mile/last mile approach will ensure the needs of the user and our environment are at the heart of investment decisions.

191. This strategy seizes the opportunity to embrace this approach. We will work collaboratively with our partners and use our convening role to help embed the principles of transport orientated development principles as part of the Local Plan process. Application of the best practice set out in documents such as the Chartered Institution of Highways and Transportation's (CIHT's) Better Planning, Better Transport, Better Places should not just be restricted to new developments but used more widely to ensure continuity of approach between existing and new infrastructure.

192. The Travel Hierarchy in this strategy sets the framework for connecting people. Working with partners, operators, Government and local decision makers, such as local planning authorities, implementing this strategy will require a collective commitment to maximise the use of the levers available to put connectivity of users and the environment around us at the forefront of future decisions.

193. In support of this strategy we have developed a tool that enables us to work with our partners to plan and deliver tailored and specific first mile/last mile transport solutions. Utilising the Experian Mosaic dataset, it provides an understanding of the characteristics of the region's population at a micro level. When coupled with accessibility and population data, it provides a powerful insight into existing journey patterns as well as individuals' and communities' propensity for change to sustainable or active forms of travel. In this way we will enable the development of investment proposals that are bespoke to the needs of the local community, increasing the likelihood of their success.

Sustainable, Healthy Places

Policies

26 We will work with local planning authorities and local enterprise partnerships to align decision making on strategic infrastructure with that associated with land use planning and economic development in order to enable growth that is sustainable for the long-term.

27 Working with partners and operators, we promote the development and delivery of high-quality public transport and segregated mass transit systems. Initial priority will be given to supporting the delivery of Mass Rapid Transit in the following locations:

- Cambridgeshire Autonomous Metro
- Milton Keynes Rapid Transit
- The A414 corridor in Hertfordshire
- Oxford sub-urban network – Bus rapid transit and Cowley branch line.

Where further transit systems are identified, we will work with partners to maximise their potential and deliverability.

194. We will work with our partners to maximise the impact of the Travel Hierarchy to inform land use planning decisions, prioritisation of investment, scheme design, and through improving the integration of travel modes (including digital).

195. Rail stations and stops on mass transit systems have the potential to be the focus for a transport-oriented development. To realise this potential, investment in strategic infrastructure must be complemented by investment in measures to improve local connectivity as part of a co-ordinated package.

196. Investment in dedicated infrastructure to support buses and other mass transit systems can have a similar catalytic effect where it can be demonstrated that there is the potential to secure its long-term sustainability.

197. In addition, bus, coach and emerging new forms of mass transit form the bedrock of the public transport system. Measures to encourage co-ordination between strategic public transport locations, including mobility hubs, must be supported by onward local bus services, both to residential areas and areas of economic activity within the surrounding urban area. Where possible, and in line with the Travel Hierarchy this should be supported by investment that repurposes the existing infrastructure in favour of such measures.

198. Across the region, we will work with bus operators, through the EEH Bus Operators Association, to develop a long-term plan to support the role of scheduled bus and coach services. In order to achieve the ambitions of this strategy It will be important to maximise the potential of existing and new forms of mobility, including digital service and information provision, in a way that creates a single public transport system for communities. Shared modes including car-clubs and shared micro-mobility (including e-micro mobility) have an important role to play, however the success of these modes will be their interoperability with a wider public transport system.

Improving Local Connectivity

Policies

28 We will support the establishment of 'mobility hubs' as locations where interchange between travel modes will be prioritised. We will work with public transport operators and the Government to enable frictionless, affordable travel using a combination of travel modes.

199. Across the region there is a high prevalence of communities with low population densities – both within our urban areas and more widely amongst small market towns and their surrounding rural hinterlands.

200. At the same time, the growth in user-focused transport services enabled by digital connectivity, and facilitated by the spread of contactless payment, continues to transform the opportunities for public transport to create new integration, ticketing and timetabling options, all of which enhance the user experience.

201. Interchange between modes of travel can introduce 'friction' into the journey. Users seek reassurance that the interchange will be convenient, predictable, reliable and safe, as well as being supported by appropriate facilities on site.

A bus stop outside St Albans City Station

202. Mobility hubs are locations where demand for movement can be concentrated in a way that supports local public transport services, primarily via bus provision, ensuring greater opportunity to run services where they otherwise may not have been viable. Park and ride facilities are an example of mobility hubs, but they could also be a viable way of improving local connectivity between district centres in larger urban areas.

203. The establishment of 'mobility hubs' that serve local communities within a larger urban area offers the opportunity to offer 'frictionless' interchange between modes, primarily bus, rail and active travel. In addition, mobility hubs provide an opportunity for integrated planning of modes, integrating not just public transport but future mobility solutions and a comprehensive network of pedestrian and cycling routes. Adequate provision at hubs will be needed for disabled parking, drop-off zones and taxi provision.

204. Onward connectivity from the hubs into local communities creates opportunities to encourage active travel to/from local public transport services. These should be considered as part of a comprehensive approach to improving local connectivity in areas of regional significance.

Rural Connectivity

Policies

29 We will work with partners to develop tailored solutions for our smaller market towns and rural areas that improve access to services and opportunities, including options for centres of mobility.

205. With 34% of the Heartland's population living in small market towns and their hinterlands, connectivity for our rural communities is a strategic issue.

206. In our rural areas, a frequent and conventional bus service is becoming increasingly difficult to provide. However, the wider social and economic benefits of local and regional bus services make it essential that we continue to work with Government, local partners and the EEH Bus Operators Association to create an accessible and future-ready bus network across the region. Innovation and digital solutions have a key role to play in bus and coach services of the future.

207. Connectivity for our rural communities face several challenges, including:

- Access to digital connectivity, which is critical for businesses, yet the cost of its provision in rural areas can be a barrier to making the investment required to provide expected levels service

- The digital economy, which is encouraging new business models for consumer goods and new ways of accessing services and facilities, can add to the pressures facing retail services in our small market towns

- Traditional business models for providing public transport in rural areas are increasingly unsustainable, leading to the reduction, and in some instances, removal, of services.

208. When considering the connectivity needs of our rural communities, context is important. Where a town acts as commuter settlement for a larger regionally significant hub this results in a concentrated flow of movements that are predictable and capable of sustaining local public transport services. A similarly sized town that is free-standing is more likely to perform as a sub-regional centre for its rural hinterland. The resulting pattern of movements is more varied and disparate, making the case for traditional solutions harder to sustain.

209. Although the scale of their application will be different, the concept of 'mobility hubs' offers the opportunity to concentrate demand for travel in ways that support connectivity to adjoining urban areas or areas of economic opportunity. Mobility hubs in rural areas will need to reflect the needs of the community and can help support the provision of other services by offering a focus for concentration of demand at one point. However, the creation of mobility hubs in rural areas will also provide access to facilities and local services that could help reduce isolation and the need to travel.

210. Investment in digital connectivity in rural areas will enable businesses to operate more efficiently and provide opportunities to conduct business remotely, thereby reducing the need for travel. In addition, digital connectivity offers the potential for innovative solutions to be developed where there remains a need to travel. Where there is a travel need that is to be met, opportunities to make provision for and encourage the use of low-carbon travel choices should be prioritised.

The village of Glapthorn in Northamptonshire

London Luton Airport from the air

Connecting to Global Markets

Policies

30 We will work with infrastructure owners/operators, Network Rail, Highways England and government to improve surface access by public transport to international airports in order to reduce the environmental footprint of their operations, with priority given to:

- Luton Airport – with a focus on improving travel opportunities via services on the Midland Main Line, and ensuring the right level of service and capacity on the Direct Air Rapid Transit service (DART)

- Heathrow Airport – with a focus on improved interchange and connectivity via the Old Oak Common transport hub, and through delivery of Western Rail Link to Heathrow

- Stansted Airport – with a focus on improved travel opportunities via services on the West Anglia Main Line between Cambridge, Stansted, Bishops Stortford and London.

31 We will work with relevant Sub-national Transport Bodies, as well as Network Rail and Highways England, to prioritise the development of proposals that enable improved connectivity along the key inter-regional corridors: priority will be given to identifying solutions to future needs on the following corridors:

- Swindon/Southampton – Reading – Didcot/Oxford – West Midlands

- London – Watford – Luton – Bedford – Northampton-East Midlands.

211. As one of the world's leading economic regions our continued success is dependent upon being connected globally.

212. Notwithstanding the growth in digital connectivity, the physical access provided through the UK's international gateways – most of which lie outside our region – continues to be fundamental to the ability of our business community to retain its global competitiveness.

213. Whilst addressing emissions from aviation are not considered to be in the scope of this strategy, the measures being taken to achieve a sustainable aviation industry are supported. The work of the region's universities to develop and deploy alternative fuel technology demonstrates the economic opportunity that exists to decarbonise the aviation sector.

214. This strategy actively encourages investment in improved, decarbonised surface access connectivity that addresses and reduces the environmental impact of international gateways, in particular:

    • *Luton Airport* – located within the region, a focus for European services and a key hub for private business aviation services in Europe. Delivery of the Direct Air Rapid Transit (DART) will improve connectivity between Luton Airport Parkway Station and the airport. Improving travel opportunities via national rail services stopping at Luton Airport Parkway is key to reducing the need to travel to the airport by private car

    • *Heathrow Airport* – located within London, the UK's global hub airport and a key gateway for business travellers and international visitors with interests in our region. Realisation of the potential to develop a new regional rail service linking Northampton – Milton Keynes/Bletchley – Aylesbury – High Wycombe – Old Oak Common will represent a step change in public transport connectivity for those requiring access to Heathrow Airport. Delivery of the Western Rail Link to Heathrow will improve connectivity for large parts of the Thames Valley, including Oxfordshire and Swindon.

    • *Stansted Airport* – located just outside the region and one of Europe's fastest growing major airports. Delivery of improvements to the West Anglia Main Line (as promoted by the West Anglia Main Line Taskforce) has the potential to unlock significant economic potential along the London-Stansted-Cambridge Corridor (the Innovation Corridor).

215. We will work with adjoining Sub-national Transport Bodies and Network Rail to assess the need for improved surface access to the other international gateways that support our region including Birmingham Airport, East Midlands Airport and St Pancras International. Swindon acts as a gateway between the Heartland and the South West and South Wales and we will work with adjoining Sub-national Transport Bodies to improve connectivity along this corridor to the benefit of economic activity in both regions.

Realising the Potential for Rail Freight

Policies

32 We will work with Network Rail and all relevant Sub-national Transport Bodies to develop proposals that increase freight on the rail network with priority given to the following corridors:

- Felixstowe to Nuneaton
- East West Main Line
- Southampton to West Midlands
- West Coast Main Line (Inc. Northampton Loop).

33 We will work with Network Rail and all relevant Sub-national Transport Bodies to maximise the conveyance of construction materials by rail with priority given to the following corridors:

- Midland Main Line – providing access into the region from aggregate sources in the Midlands
- Great Western Main Line – providing access into the region from aggregate sources in western England and Wales.

216. Our evidence base has highlighted that freight and logistics is one of the largest contributors to carbon emissions. It is also potentially the most difficult to implement solutions to reduce emissions.

217. Encouraging greater use of rail for freight and logistics will provide additional resilience for the business community, while also acting on the need to achieve net zero.

218. Rail is most effective when hauling loads between medium and long distances. Our study of the freight and logistics sector identified that a high proportion of road-based freight involves trips over 200-300km. Many of these movements are prime candidates for a shift to rail for the trunk haulage, with the final stage of the journey being delivered by vehicles powered by electricity or other low carbon fuels.

219. Unlocking the opportunity to grow the market for rail freight requires investment in infrastructure to provide the capacity and resilience to enable it to be a more attractive offer for logistics companies.

220. The Heartland is uniquely placed to benefit from growth in use of rail freight given it is at the heart of the 'Golden Triangle' for logistics with many of the world leading distribution companies already operating national distribution centres here. Our strategic infrastructure already accommodates significant freight flows linked with international gateways at Felixstowe, Southampton and London Gateway, with shippers forecasting long-term growth in these flows in response to economic growth and the use of global supply chains. Forecasts for the sector consistently predict strong growth for intermodal freight and construction materials.

221. The 23 active rail freight terminals in our region already handle a mixture of containerised freight, construction materials, domestic waste, automotive and metals. The provision of additional floor space served by rail freight terminals increases the attractiveness and competitiveness of rail versus road haulage.

222. Demand for rail freight is forecast to grow exponentially in the long-term, driven by continued growth in deep-sea shipping markets, particularly at the Port of Felixstowe. Investment in the capacity of the Felixstowe branch line will enable 47-48 trains per day in each direction, however longer-term there is a need to increase this further to at least 60 trains per day.

223. Bottlenecks on the Felixstowe-Nuneaton line mean that a significant proportion of containerised freight travels south along the Great Eastern Main Line, across North London and onward to multiple destinations. This leads to conflict with the need to provide additional capacity for rail passenger services, particularly along the North London line. The need to integrate rail passenger services between Shenfield and London along the Great Eastern Main Line as the full Crossrail service becomes operational will only exacerbate the need for additional rail freight capacity along the key corridors for rail freight movements.

224. The constraints on rail connectivity between Felixstowe and the Golden Triangle of Logistics places additional pressure on our strategic road infrastructure, with consequential implications for their operation and carbon emissions. Investment in rail freight will realise benefits on the strategic road network.

225. Delivery of the Ely Area Capacity Enhancements currently planned will provide some additional capacity on the Felixstowe to Nuneaton corridor. However, further investment in and electrification of that corridor will be required if rail freight is to realise its full potential. In addition, the East West Main Line has the potential to act as a catalyst for transformational change in the rail freight offer by:

- *Providing alternative routing*: trains operating between the Port of Southampton and Daventry International Rail Freight Terminal (DIRFT) could use the East West Main Line and thereby avoid the need to operate via Birmingham or London. Trains serving the Port of Felixstowe could use the East West Main Line avoiding the need to traverse the heavily congested North London Line

- *Enabling rail delivery of construction materials*: as the transformational infrastructure investment at the heart of our region, the East West Main Line has the potential to enable delivery of aggregates by rail to freight terminals in our region. It offers the opportunity to directly support the delivery of planned growth in ways that reduces the pressure on local roads and deliver wider environmental benefits in the process

- *Growth in intermodal rail freight*: given the role East West Main Line has to play in supporting the realisation of economic opportunities there is the potential to develop new freight handling facilities along the corridor thereby providing businesses and communities with quicker access to goods, as well as providing new business and employment opportunities in their own right.

226. The need to meet the increased demand in construction materials required to enable delivery of planned growth within the region is another market where the scope for rail growth is significant. Making additional capacity available on the Midland Main Line as a strategic rail freight corridor is of regional significance.

227. In the west, containerised freight from Southampton, serving Daventry and the West Midlands, is constrained by capacity issues between Didcot and Oxford, and along the West Coast Main Line. In addition, construction materials moved into the region from the Mendips and Wales make the Great Western Main Line a second strategic rail freight corridor for the region.

228. We will continue to work with the freight and logistics sector, along with Network Rail and the East West Railway Company to develop detailed proposals that will enable the potential for rail freight to be realised. Given the strategic nature of the rail freight movements we will work closely with adjoining Sub-national Transport Bodies and London to promote and prioritise investment in enabling infrastructure.

Specific opportunities that this strategy prioritises include:

- Identifying required enhancements along the Felixstowe to Nuneaton corridor, particularly between Bury St Edmunds and Ely, and in the Leicester area to increase capacity

- Exploring the potential benefit of providing a chord at Manton that would offer a route serving Felixstowe that would avoid the need to transit London

- Exploring the potential for an east-north chord at Bletchley between the East West Main Line and the West Coast Main Line would again offer a route serving Felixstowe which would avoid the need to transit London

- Understanding the nature of existing capacity constraints between Bletchley and Milton Keynes and their possible infrastructure solutions, both pre and post HS2 to ensure freight requirements are taken fully into consideration.

Starship robots in Milton Keynes

Symmetry Park in Swindon

Strategic Rail Freight Interchanges

Policies

34 We will support the development of Strategic Rail Freight Interchanges where they support the ambitions of this strategy and their impact on the transport network can be suitably managed.

229. Realising the full potential of the rail network to accommodate additional rail freight requires the availability of rail connected warehousing. These facilities range in size from Strategic Rail Freight Interchanges to smaller intermodal facilities.

230. The shortage and cost of land-supply for industrial storage and distribution in London may see more companies relocating their distribution centres in the Heartland.

231. We will work with partners and the freight and logistic sector to identify the need for additional Strategic Rail Freight Interchanges where they support the overall ambition of our region.

Daventry International Rail Freight Terminal

A freight train passes through Corby railway station

Supporting Road Freight

Policies

35 We will work with Highways England, local highway authorities, local planning authorities and the freight sector to ensure that strategic corridors for road freight and logistics are fit for purpose: priority will be given to the following corridors:

- The M25/M1
- The A34 and M40 north of Oxford
- The A1 corridor (north of Huntingdon)
- The A14
- The A508 into Northampton.

36 We will work with Highways England, local highway authorities, local planning authorities and the freight sector to use improved planning and the application of innovative solutions to reduce the impact of freight on the environment, in terms of carbon emissions and its impact on communities living in and around freight corridors.

37 We will work with Highways England, local highway authorities, local planning authorities and the freight sector to address the need for secure overnight lorry parking and their associated facilities.

38 We will work with local transport authorities, local planning authorities and the freight and logistic sector to ensure the local servicing and support needs of the business community are met.

232. This strategy acknowledges that road haulage will remain an important part of the freight and logistics sector moving forward.

233. We will work with Highways England, local highways authorities and the freight sector to ensure the key parts of the Strategic Road and Major Road Networks continue to support the movement of road haulage and thereby minimise the impact of road freight on local communities. A key issue in this regard is ensuring the provision of adequate overnight parking for lorries and the associated facilities.

234. While the Strategic Road and Major Road Networks are crucial to the long-distance movement of road freight, movement of goods to, and around urban centres is vital for the retail, leisure and cultural sectors. Failure to account for these requirements in the development of the local transport system will lead to increased congestion, deterioration in air quality and difficulties for businesses to operate efficiently. We recognise that with the scale of growth planned, there will be an increase in the demand for logistics space and that provision for such requirements will need to be addressed.

235. We will support our local partners to make full use of Government funding to support road freight firms seeking to upgrade their vehicles or explore innovative ideas for reducing road freight such as urban consolidation centres or alternative fuel refuelling hubs.

236. As a centre of innovation in the UK we will harness the opportunity to trial new solutions that enable the servicing and support needs of the business community in our urban centres to be met. Priority will be given to the implementation of solutions that provide the required level of access whilst at the same time reducing the impact of freight and logistics on local communities and their environment.

The A5 Dunstable Northern Bypass

IMPLEMENTATION

A Mechanism for Change

237. This strategy is the foundation on which we will plan the strategic development of the region's transport system. Ensuring its policies are implemented will be key to its success.

238. The strategy sets out the need for change in order to deliver the vision for our transport system: change in the way we develop solutions to the issues to be addressed; change in the way we appraise the merits of individual proposals; and change in the way we plan for and deliver an investment pipeline.

239. It requires a whole-system approach which brings consideration of individual networks together as a single transport system: one that meets the expectations of its users – both individuals and businesses.

240. Ultimately, delivery of specific proposals will remain the responsibility of individual infrastructure owners and service providers. Implementation at the regional level complements and builds upon their role, providing added value in three ways:

    • Strategic influence – ensuring the regional voice shapes the development of national investment programmes, overseen by the Government and delivered by Network Rail, East West Railway Company and Highways England

    • Co-ordination – providing the mechanism for developing and implementing solutions which offer most benefit at a regional scale

    • Accelerating delivery – helping to ensure that schemes and initiatives which cross local authority boundaries are delivered efficiently and that the benefits for our communities and businesses are realised as soon as possible.

241. In bringing forward proposals for implementation it is important to take into account the opportunities and challenges created by decisions in other areas of public sector policy, including but by no means limited to consideration of proposals in the land use planning system. In addition, the choices made in respect of transport solutions need to support wider ambitions for place-making at the local level.

242. The COVID-19 pandemic has demonstrated the ability to achieve fundamental shifts in travel behaviour at scale and at pace. Change, driven by necessity and if applied consistently at scale, is not only possible, but deliverable providing the imperative is compelling.

243. The pandemic also highlighted the need to treat fixed and mobile digital infrastructure as integral components of a co-ordinated approach to providing individuals and businesses with access to services. Investing in the quality and resilience of digital networks will be crucial to sustaining long-term change in travel patterns (including a reduction in overall travel), and travel behaviours.

244. And in keeping with the whole-system approach, the need to decarbonise our transport system highlights the importance of the investment made in the utility infrastructure networks – in particular, electricity supply networks and/or other low carbon fuels – being aligned with investment in our transport system.

Harnessing Innovation

245. We will continue to harness the opportunity created by the Heartland being a centre for science and technology-based innovation. The Government's Industrial Strategy and its four Grand Challenges will encourage the development of new business models within the transport sector which both meet the need to improve connectivity and deliver environmental net gain.

246. We will build on the region's existing successes to continue to grow our global leadership as a region of innovation, particularly in the key sectors of high-performance technology, life sciences, creative and digital technologies and aerospace.

247. The business models operating in large parts of the retail and service sectors will undergo further change, most likely at an accelerated pace in the aftermath of COVID-19. We will use this as the opportunity to embed fundamental change in travel demand and travel behaviour to the benefit of individuals, their communities and businesses.

Creating Confidence, Providing Flexibility

248. Investment in strategic infrastructure requires a long-term commitment at national and regional level. Maintaining and repurposing our existing assets requires investment – both revenue and capital. Developing and delivering proposals takes time and typically extends over several political cycles.

249. Fundamentally our approach to implementation seeks to generate confidence:

   • For business investors – clarity that the transport system will provide access to the labour pool and to markets

   • For the local authorities – certainty that the investment required to support planned growth will be available

   • For local communities – reassurance that infrastructure will be delivered in a timely manner.

250. At the same time our approach is flexible enough to actively encourage new solutions and business models to come forward, and to do so at pace.

251. This is a key challenge facing the transport system as we transition from a traditional approach to investment to the one required to achieve our strategic ambitions of the region.

252. The timescales associated with strategic investment are such that proposals currently in the early stages of development may need re-evaluation in order to determine whether their benefits remain consistent with our strategic ambition. Where they are not, we will use our programme of connectivity studies to identify alternative proposals.

Connectivity Studies

253. Connectivity studies form a key part of this strategy's implementation.

254. The development of the programme has been shaped by the information held in the Regional Evidence Base, together with responses received from partners in response to the outline Transport Strategy. The programme identifies those parts of the region where we will work with partners to identify the strategic questions relating to connectivity in each study area (both in the present and as a result of planned growth), to agree the outcomes required of the transport system and to then identify the investment required to achieve those outcomes. Each study will be co-designed with partners. This will enable our partners to use the connectivity studies to identify the implications of future growth scenarios they are considering as part of their longer-term ambition for their communities.

255. The studies will also enable the transport implications of choices in other areas of public sector policy to be considered. This is particularly important where new models of service delivery are being considered that would have the potential to significantly change future travel demand.

The A6 bridge over the Great River Ouse in Bedford

Accelerating Delivery

256. Where the need for investment in our transport system has been established, we will continue to work with infrastructure owners and service providers to accelerate the delivery of that investment. This includes committed schemes included in Highways England's Road Investment Strategy, EEH's Major Road Network programme and Network Rail's investment pipeline.

257. We will work with Network Rail, the East West Railway Company and Highways England to ensure that their investment programmes reflect the needs of our region. Where those investment programmes include identified regional priorities, we will actively support these infrastructure owners as they take individual proposals through their statutory processes into delivery.

East West Rail will transform journeys in the Heartland

A Co-ordinated Approach

258. A key benefit of a regional approach lies in the ability to provide a clear, prioritised view of strategic transport investments and to do so in a way that ensures investment in individual networks is co-ordinated in order to deliver on a shared strategic ambition.

259. The co-ordination of investment is particularly important given the crucial role that digital infrastructure, and indeed utility infrastructure, has to play in realising the strategic ambition for our transport system.

260. We will work with all infrastructure owners to ensure that their long-term strategic planning activity is co-ordinated with our programme of connectivity studies. This will realise efficiencies and ensure we embed the need for a whole-system approach into our way of working across the region.

261. The programme of connectivity studies will ensure that regional priorities inform and shape the future development of strategic infrastructure networks that are the subject of cyclical reviews. These include:

- The Rail Network Enhancements Pipeline
- Highways England's Road Investment Strategy
- EEH's Major Road Network Investment Pipeline
- Future Rail Franchise Specifications (and their replacement)
- Digital Infrastructure
- Five-year Assessment Management Plans for utility infrastructure – in particular energy supply.

Students at the University of Northampton

262. The output from the connectivity studies – specifically the solutions identified – will establish the need for investment in infrastructure and services.

263. The investment pipeline will be updated with the outputs from the connectivity studies for subsequent development and delivery. It will be reviewed at least every five years. This will enable the region to ensure that its requirements shape the investment programmes of Highways England and Network Rail. It will also provide our partners with the confidence to allocate resources to develop detailed proposals for implementation.

Investment Pipeline

Strategic Issue	Infrastructure Opportunity
Electrification of the rail infrastructure (region-wide).	Decarbonisation of rail network (relevant for both passenger and freight services) – immediate opportunities: • Extension of Midland Main Line electrification • East West Rail – Oxford to Norwich/ Ipswich • Infill electrification schemes to enable electric haulage of freight services • Electrification of the Chiltern Main Line.
Digital Infrastructure provision – 5G and fibre connectivity (region-wide).	Provision of digital infrastructure delivers opportunities for business transformation, new business models to emerge – immediate opportunities: • East West Rail –Oxford to Cambridge and Aylesbury to Milton Keynes.
Electrification of road infrastructure (region-wide).	Investment in charging facilities required to support decarbonisation of vehicle fleet – significance increased by banning of new petrol, diesel and hybrid vehicles from 2030
Enhanced capacity for rail freight.	Four strategic corridors serve/cross the region: • Felixstowe to Nuneaton • East West Rail • Southampton to West Midlands • West Coast Main Line (including Northampton Loop). Two strategic corridors are important in terms of providing access for construction materials: • Midland Main Line • Great Western Main Line.

Strategic Issue	Infrastructure Opportunity
Improved connectivity (east west) – northern.	• A northern corridor that links north Oxfordshire, Northamptonshire, and Peterborough, providing more direct passenger transport connectivity across the northern Heartland.
Improved connectivity (east west) – middle.	Realisation of East West Rail's full capability – this will require: • East West Rail – Oxford to Cambridge and Aylesbury to Milton Keynes as planned represents minimum scheme • Cambridge South Station by 2025 • Cambridge to Norwich and Ipswich.
Improved connectivity (east west) – southern.	• A southern corridor that links Buckinghamshire with Hertfordshire, providing an orbital passenger transport route between the Chiltern Main Line and West Anglia Main Line.
Improved connectivity (north south) - western.	Enhanced rail connectivity between West Midlands – Oxford/Didcot – and onwards to Southampton. Improved service capacity on North Cotswold Line.
Improved connectivity (north-south) – central.	HS2 released capacity is the catalyst for enhanced regional connectivity. For example, linking Northampton – Milton Keynes/Bletchley – Aylesbury – High Wycombe – Old Oak Common and improved inter/intra-regional connectivity on the Midland Main Line. Enhanced rail connectivity between London-Luton-Bedford-East Midlands.
Improved connectivity (north-south) eastern.	Enhanced connectivity on the Midland Main Line – to include as a minimum restoration of services previously removed. New railway station at Wixams to support planned growth. Enhanced connectivity on the London-Bishop's Stortford-Cambridge corridor. Reopening of railway from March to Wisbech. Cross Rail 2 linking eastern Hertfordshire with Surrey via London.

Strategic Issue	Infrastructure Opportunity
Strategic Interchanges - delivery of East West Rail creates opportunities for strategic interchange with traditional main lines (with London termini): these interchanges offer both transport and economic opportunities.	Strategic Interchanges: • Oxford – with Great Western and Cross Country • Bicester Village – with Chiltern Main Line • Aylesbury – with Chiltern Main Line • Milton Keynes/Bletchley – with West Coast Main Line • Bedford – with Midland Main Line • Sandy/St Neots area – with East Coast Main Line • Cambridge/Cambridge South – with Anglian Main Line.
Mass Transit Systems.	Cambridgeshire – the CAM. Milton Keynes – Mass Rapid Transit. The A414 corridor in Hertfordshire. Oxford sub-urban network – Bus rapid transit and Cowley branch line.
Access to Strategic Gateways.	Improved connectivity by public transport: • Heathrow Airport: through Northampton – Milton Keynes/ Bletchley – Aylesbury – High Wycombe – Old Oak Common: and through Western Rail Link to Heathrow • Luton Airport – through enhanced services on Midland Main Line • Stansted Airport – through improvements on West Anglia Main Line.
Step Change in Local Connectivity.	Use pilot initiatives to work with partners to identify where the investment in strategic infrastructure offers the opportunity to effect significant change in local connectivity: • Aylesbury – linked with East West Rail, Garden Town and Enterprise Zone • Marston Vale Line – linked with East West Rail. Improvements to National Cycle Network and urban cycleways, including the development of high-quality cycleway (the Varsity Way) to form the backbone of a strategic cycleway across the region.

Strategic Issue	Infrastructure Opportunity
Area/Corridor Studies (connectivity studies).	Use connectivity studies to develop integrated package of measures that connect key strategic locations across the region. Priority areas for study work are: • Oxford – Milton Keynes • Peterborough – Northampton – Oxford • Swindon – Didcot – Oxford • London – Bucks – Milton Keynes – Northampton • Watford – Aylesbury – Bicester – M40 • Luton – Milton Keynes – Daventry • North Northamptonshire • Oxford – M40 junctions • Luton – Bedford – Northamptonshire • Northampton – Milton Keynes.

A girl cycling in rural north Buckinghamshire

Strategic Issue	Infrastructure Opportunity
Targeted investment in the highway network, as part of a system approach.	Investment, where required, in the Strategic Road Network (SRN) and the Major Road Network (MRN) to support all road users and future proof the network.
	Delivery of investment in the Major Road Network (as outlined in EEH's initial programme of investment in the MRN submitted to the DfT):
	• Bedford Western Bypass Dualling
	• Aylesbury Eastern Link Road
	• Ely to Cambridge A10 Dualling Improvements (LLM)
	• Ely to Cambridge A10 junction Improvements
	• A1139 University Centre Access, Peterborough
	• A10 Corridor Scheme, Broxbourne
	• Century Park Access Road Phase Two (LLM)
	• Vauxhall Way Improvements, Luton
	• A509 Isham Bypass
	• A43 Northampton-Kettering Phase Three.
	Investment in the Strategic Road Network, including delivery of the following commitments:
	• A47 Wansford to Sutton
	• A47 Peterborough to Wisbech
	• A45 Thrapston to Stanwick
	• A428 Black Cat to Caxton Gibbet improvements
	• A5 Towcester Relief Road
	• Upgrade to junction 25 of the M25.
	Support development and delivery of future proofed solutions in the following corridors:
	• A34 Oxfordshire (Didcot- Oxford – Banbury corridor)
	• M1 connections to Milton Keynes south (including M1 junction 13)
	• M11 junctions, Cambridge West
	• M40/A404 junction 4 High Wycombe
	• A1 East of England.

// Investment pipeline

Electrification of the rail infrastructure (region-wide)
- Extension of Midland Main Line electrification
- Infill electrification schemes to enable electric haulage of freight services
- Delivery of East West Rail – Oxford to Norwich/ Ipswich
- Electrification of the Chiltern Main Line

Digital infrastructure provision – 5G and fibre connectivity (region-wide)
Provision of digital infrastructure delivers opportunities for business transformation, new business models to emerge – immediate opportunities:
- East West Rail – Oxford to Cambridge and Aylesbury to Milton Keynes

Electrification of road infrastructure (region-wide)
Investment in charging facilities required to support decarbonisation of vehicle fleet – significance increased by banning of new petrol, diesel and hybrid vehicles from 2030.

Enhanced capacity for rail freight
Four strategic corridors serve/cross the region:
- Felixstowe to Nuneaton
- East West Railway
- Southampton to West Midlands
- West Coast Main Line (inc. Northampton Loop)

Two strategic corridors are important in terms of providing access for construction materials:
- Midland Main Line
- Great Western Main Line

Improved connectivity (east west) – northern
- A northern corridor that links north Oxfordshire, Northamptonshire, and Peterborough, providing more direct passenger transport connectivity across the northern Heartland.

Improved connectivity (east west) – middle
Realisation of East West Rail's full capability – this will require:
- East West Rail – Oxford to Bedford and Aylesbury to Milton Keynes sections as planned represents minimum scheme
- East West Rail – Bedford to Cambridge
- **CS** Cambridge South Station by 2025
- Cambridge to Norwich and Ipswich

Improved connectivity (east west) – southern
- A southern corridor that links Buckinghamshire with Hertfordshire, providing an orbital passenger transport route between the Chiltern Main Line and West Anglia Main Line.

Improved connectivity (north south) – western
Enhanced rail connectivity between West Midlands – Oxford/Didcot – and onwards to Southampton
Improved service capacity on North Cotswolds line

Improved connectivity (north-south) – central
HS2 Released Capacity is the catalyst for enhanced regional connectivity. For example, linking Northampton – Milton Keynes/ Bletchley – Aylesbury – High Wycombe – Old Oak Common and improved inter/intra-regional connectivity on the MML
Enhanced rail connectivity between London-Luton-Bedford-East Midlands

Improved connectivity (north-south) eastern
Enhanced connectivity on the Midland Main Line – to include as a minimum restoration of services previously removed
- **WX** New railway station at Wixams to support planned growth
Enhanced connectivity on the London-Bishop's Stortford-Cambridge corridor
- **MW** Reopening of railway from March to Wisbech
- **C2** Cross Rail 2 linking eastern Hertfordshire with Surrey via London.

SI Strategic Interchanges
Delivery of East West Rail creates opportunities for strategic interchange with traditional main-lines (with London termini): these interchanges offer both transport and economic opportunities.
- Oxford – with Great Western and Cross Country
- Bicester Village – with Chiltern Main Line
- Aylesbury – with Chiltern Main Line
- Milton Keynes/Bletchley – with West Coast Main Line
- Bedford – with Midland Main Line
- Sandy/St Neots area – with East Coast Main Line
- Cambridge/Cambridge South – with Anglian Main Line.

MT Mass Transit Systems
- Cambridgeshire – the CAM
- Milton Keynes – Mass Rapid Transit
- The A414 corridor in Hertfordshire
- Oxford sub-urban network – Bus rapid transit and Cowley branch line.

Access to Strategic Gateways
Improved connectivity by public transport
- Heathrow Airport: through Northampton – Milton Keynes/Bletchley – Aylesbury – High Wycombe – Old Oak Common; and through Western Rail Link to Heathrow
- Luton Airport – through enhanced services on Midland Main Line
- Stansted Airport – through improvements on West Anglia Main Line.

Step Change in Local Connectivity
LC Use pilot initiatives to work with partners to identify where the investment in strategic infrastructure offers the opportunity to effect significant change in local connectivity:
- Aylesbury – linked with East West Rail, Garden Town and Enterprise Zone
- Marston Vale – linked with East West Rail
- Improvements to National Cycle Network and urban cycleways, including the development of high-quality cycleway (the Varsity Way) to form the backbone of a strategic cycleway across the region.

Area/Corridor Studies (connectivity studies)
Please see separate map overleaf.

Targeted investment in the highway network, as part of a system approach
Investment, where required, in the Strategic Road Network (SRN) and the Major Road Network (MRN) to support all road users and future proof the network.

Delivery of investment in the Major Road Network (as outlined in EEH's initial programme of investment in the MRN submitted to the DfT):
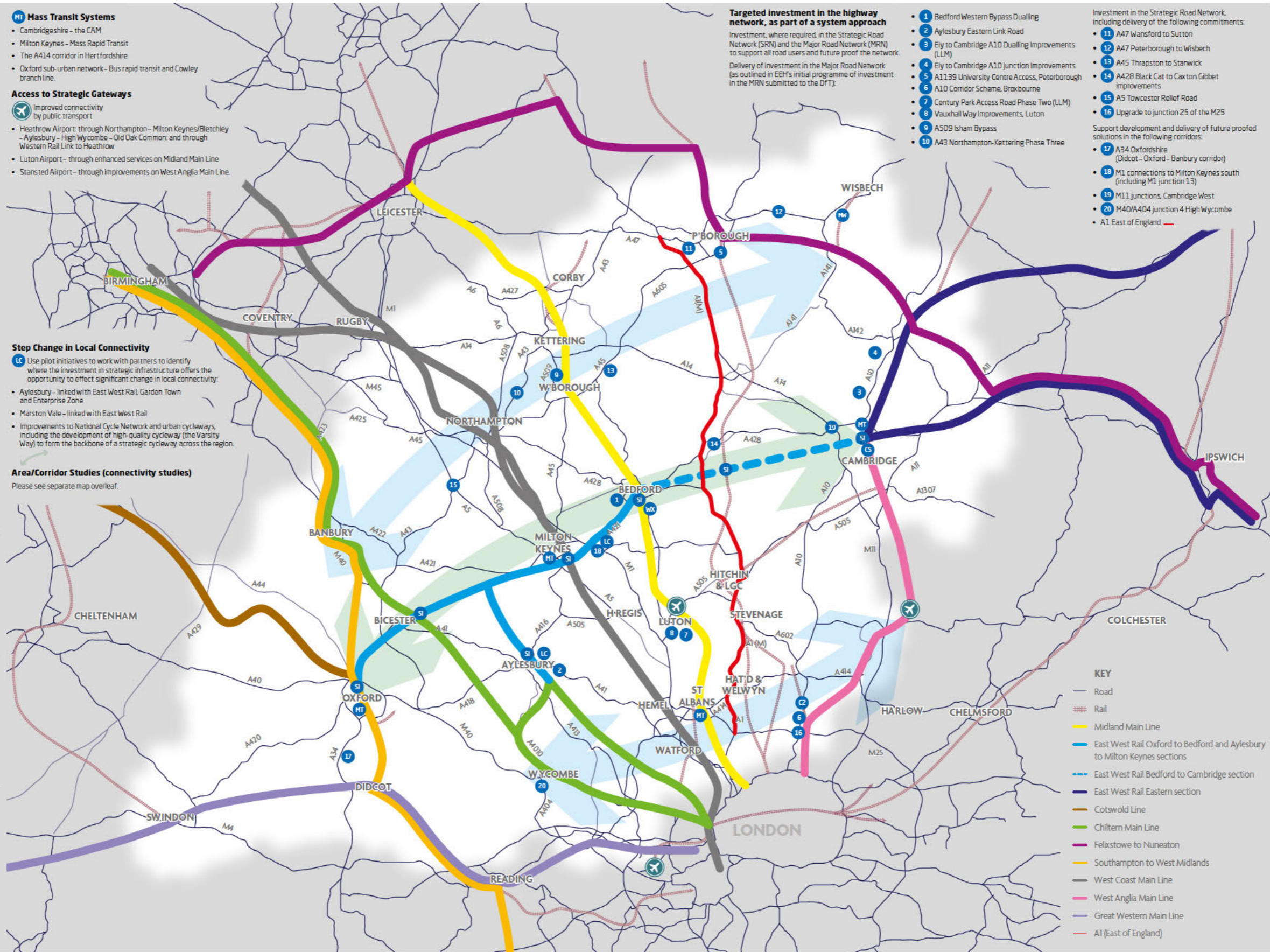
- 1 Bedford Western Bypass Dualling
- 2 Aylesbury Eastern Link Road
- 3 Ely to Cambridge A10 Dualling Improvements (LLM)
- 4 Ely to Cambridge A10 junction improvements
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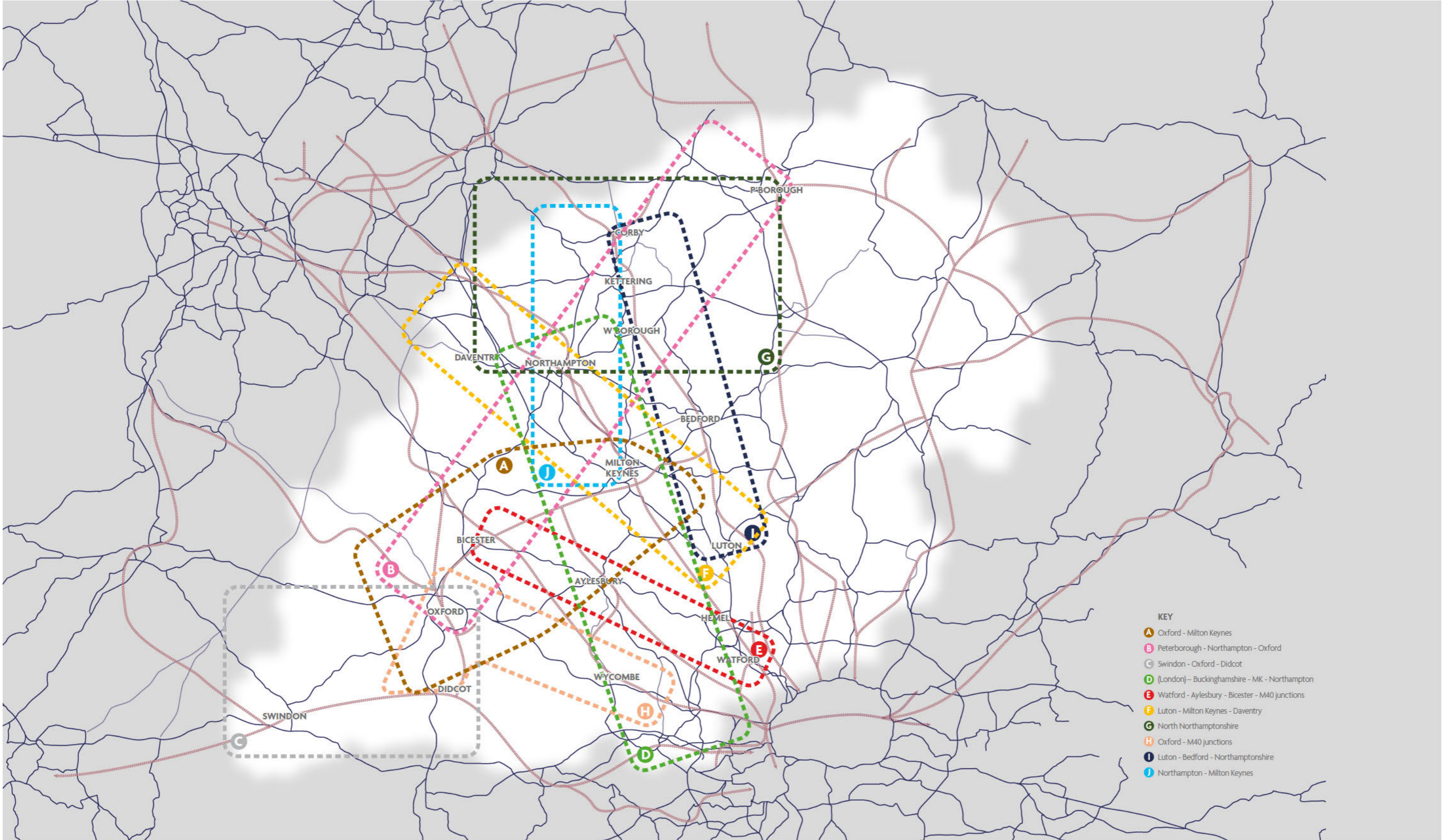- 10 A43 Northampton-Kettering Phase Three

Investment in the Strategic Road Network, including delivery of the following commitments:
- 11 A47 Wansford to Sutton
- 12 A47 Peterborough to Wisbech
- 13 A45 Thrapston to Stanwick
- 14 A428 Black Cat to Caxton Gibbet improvements
- 15 A5 Towcester Relief Road
- 16 Upgrade to junction 25 of the M25

Support development and delivery of future proofed solutions in the following corridors:
- 17 A34 Oxfordshire (Didcot – Oxford – Banbury corridor)
- 18 M1 connections to Milton Keynes south (including M1 junction 13)
- 19 M11 junctions, Cambridge West
- 20 M40/A404 junction 4 High Wycombe
- A1 East of England

KEY
- Road
- Rail
- Midland Main Line
- East West Rail Oxford to Bedford and Aylesbury to Milton Keynes sections
- East West Rail Bedford to Cambridge section
- East West Rail Eastern section
- Cotswold Line
- Chiltern Main Line
- Felixstowe to Nuneaton
- Southampton to West Midlands
- West Coast Main Line
- West Anglia Main Line
- Great Western Main Line
- A1 (East of England)

// Connectivity Studies

KEY

- **A** Oxford - Milton Keynes
- **B** Peterborough - Northampton - Oxford
- **C** Swindon - Oxford - Didcot
- **D** (London) – Buckinghamshire - MK - Northampton
- **E** Watford - Aylesbury - Bicester - M40 junctions
- **F** Luton - Milton Keynes - Daventry
- **G** North Northamptonshire
- **H** Oxford - M40 junctions
- **I** Luton - Bedford - Northamptonshire
- **J** Northampton - Milton Keynes

Capacity and Capability

264. A review of the infrastructure delivery process, undertaken in collaboration with our partners, identified several 'pinch-points' where lack of access to specialist skills and knowledge introduces risk into the development and delivery of individual projects. Experience suggests that more efficient management of programmes and scheme development could reduce overall costs by as much as 20%. Managing this risk will represent better value for money to the public sector, as well as creating greater confidence within the community that proposals will be delivered in a timely manner.

265. We will therefore establish a 'centre of excellence': a regional resource which will provide our partners with access to the specialist skills and support required to address the identified 'pinch points'. Access to this resource will support our partners realise efficiencies that will help accelerate the delivery of investment and reduce costs.

266. The establishment of a regional 'centre of excellence' accessible to all partners will ensure the knowledge and experience accumulated through the development of individual proposals is retained within the region. Enabling all partners to have access to that accumulated knowledge will enable the benefits to be applied more widely to their own proposals.

Delivery of the Pipeline

267. The region's investment pipeline establishes the need for investment in order to support the delivery of planned growth. Realising that growth will in turn be dependent upon securing the funding and/or finance to enable the region's investment priorities to be developed and then delivered.

268. A combination of public and private sector funding will be required, as will a mixture of capital and revenue investment.

269. Adopting a co-ordinated approach to the development of the investment pipeline and its delivery will realise efficiencies by enabling a more effective use of the resources available to develop proposals and secure required permissions.

270. The specialist skills and accumulated knowledge held within the regional 'centre of excellence' will supplement existing skills available to partners. This addresses the risks previously identified by our partners that are associated with the development and delivery of investment proposals.

Regulation

271. As part of whole system approach to the development of the region's transport system we will keep under review the need for change in the regulatory regime governing the sector.

272. Where our work identifies there is benefit in seeking a change, we will work with other Sub-national Transport Bodies and Government to make that case in a timely manner.

Investment Framework

273. This strategy provides clarity on where investment in strategic infrastructure and services is required to support the work of local authorities and growth boards as they look to plan and deliver planned growth in the longer-term.

274. It also provides the foundation for a conversation with institutional investors with regards to securing long-term commitments to invest in the region. We will work with the investment sector to develop a long-term investment framework, one that enables institutional investors to work with the region to secure the long-term strategic ambition of the region.

Monitoring and Evaluation

275. For the ambitions of this strategy to be implemented it is necessary to measure the policies and programme of activities set out within the Investment Pipeline against indicators of success. Monitoring and Evaluation will enable us to track, analyse and report on progress with implementation.

276. A series of indicators have been developed that will champion data-driven decision making and help understand the relationship between our interventions and their contribution to achieving our ambitions. Measuring progress in this way will inform and shape future work activity as required and allow us to address any unforeseen effects at an early stage.

277. The indicators set out below form the basis of our monitoring and evaluation framework and will be assessed and reported on an annual basis. Each indicator is aligned with the strategy principle it best supports. Further work will need to be undertaken with partners to baseline and confirm the specific datasets used to measure each indicator.

Principle	Indicator	Measure
Achieving net zero carbon emissions from transport no later than 2050, with an ambition to reach this by 2040.	Delivering a net-reduction in CO_2 emissions at 5-year intervals.	Baselining and measuring the region's aggregated CO_2 estimates.
Achieving net zero carbon emissions from transport no later than 2050, with an ambition to reach this by 2040.	Conserving and enhancing the natural and historic environment: 1) Conserving and enhancing the provision of ecosystem services from the region's natural capital and contributing to environmental net gain. 2) Conserving and enhancing the historic environment.	Baselining and measuring environmental assets and ecosystem services within the Arc.
Achieving net zero carbon emissions from transport no later than 2050, with an ambition to reach this by 2040.	An improvement in air quality arising from transport related vehicle emissions at identified sites.	Baselining and measuring air quality at identified sites.
Improving quality of life and wellbeing through a safe and inclusive transport system accessible to all which emphasises sustainable and active travel.	An increase in the number and percentage of journeys made by walking and cycling between 2-5k and public transport between 5k-60k.	Baseline and measure data at a regional level to measure method of travel to work by distance travelled.
Improving quality of life and wellbeing through a safe and inclusive transport system accessible to all which emphasises sustainable and active travel.	Greater levels of accessibility and inclusivity available to all transport users.	Undertake bespoke research with partners to develop appropriate measure.

Principle	Indicator	Measure
Supporting the regional economy by connecting people and businesses to markets and opportunities.	Reduced journey time variability of the strategically important road network.	Baseline and monitor journey time variability of the strategically important road network.
Supporting the regional economy by connecting people and businesses to markets and opportunities.	An increase in the number of people able to access fixed and mobile broadband.	Baseline and monitor digital coverage data.
Supporting the regional economy by connecting people and businesses to markets and opportunities.	A decrease in generalised journey time between the Heartland's key rail nodes.	Baseline and monitor journey time speed).
Ensuring the Heartland works for the UK by enabling the efficient movement of people and goods through the region and to/from international gateways, in a way which lessens its environmental impact.	Increase the number of rail freight movements and its market share.	Baseline and monitor rail freight volumes and percentage of freight moved by rail than by road.
Ensuring the Heartland works for the UK by enabling the efficient movement of people and goods through the region and to/from international gateways, in a way which lessens its environmental impact.	Reduction in time taken by public transport to international airports.	Baseline and monitor travel times to international airports.

ENGLAND'S ECONOMIC HEARTLAND

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