

Topic Paper 8

Improving Connectivity and Movement

February 2019

Purpose

1. The purpose of this Topic Paper is to provide background information on the subject of connectivity and movement in relation to the development of the Oxfordshire Plan 2050. Further versions of these Topic Papers may be produced at later stages in the Plan making process.

Introduction

2. The main consultation document for this first stage in the preparation of the new Joint Statutory Spatial Plan for Oxfordshire (“The Oxfordshire Plan 2050”) summarises the overarching context for the new plan by highlighting some of the key transport conditions, circumstances and challenges in Oxfordshire.

3. The purpose of this Topic Paper is to provide some additional, supporting strategic-level information on planning for connectivity and movement in Oxfordshire. The paper is in three parts.

- i) The first part documents the current state of play and future direction of transport planning in (and affecting) Oxfordshire, in terms of policy and strategy-making and the delivery of the key transport infrastructure which will be necessary to support and facilitate growth in the county over the next 30 years;
- ii) The second part of the paper considers how potential new strategic development opportunities in Oxfordshire will be identified and assessed from a transport perspective, to help inform decisions about the scale and location of future growth in the Oxfordshire Plan; and
- iii) The third and final part of the paper articulates what a future long-term Vision for transport in Oxfordshire might look like, having regard to the key drivers for change that now bear upon the county

Part 1: Planning for Transport and Movement in Oxfordshire

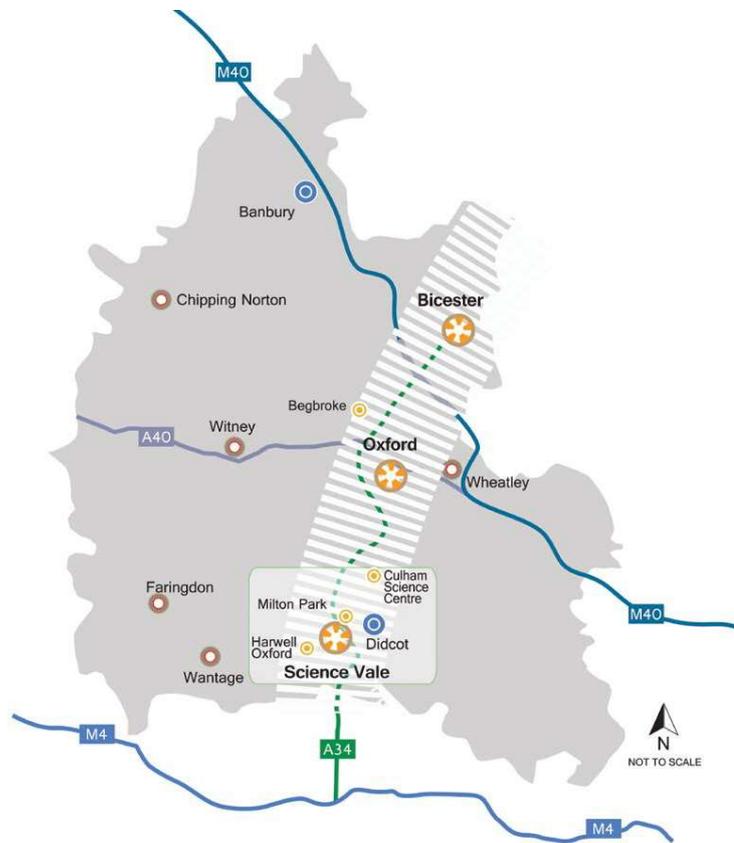
Connecting Oxfordshire: Local Transport Plan 2015-2031

4. As the Local Highway Authority for Oxfordshire, the County Council has a duty to prepare a document known as a Local Transport Plan¹ (LTP). Known locally as “Connecting Oxfordshire”, the present version of the plan was adopted in 2015 and sets out the

¹ [Connecting Oxfordshire: Local Transport Plan 2015-2031](#) (Oct 2015) Oxfordshire County Council

County Council's policies and strategies for developing the transport system in Oxfordshire to 2031. It was developed with input from Oxfordshire's District and City councils, local businesses, MPs and stakeholder groups and through extensive public consultation.

5. The document also has regard to the ambitions of the Oxfordshire Local Enterprise Partnership in its Strategic Economic Plan for Oxfordshire and the aspirations of the England's Economic Heartland (EEH) strategic alliance (see later in this paper). Hence, it identifies transport schemes that will support the critically important "Knowledge Spine" that runs through the county from Didcot and the Science Parks of the south (Science Vale) through Oxford to Bicester and beyond. Home to some of the greatest concentrations of knowledge-based employment in the



country, the Spine builds on the large research and business parks driven by university and innovation-led growth supported by the public sector and infrastructure investment.

Figure 1 The Knowledge Spine
 (Source: Fig 2 *Connecting Oxfordshire: Local Transport Plan 2015-2031* Oxfordshire County Council)

6. This Spine has more recently been embraced as a fundamental component of the Oxford-Milton Keynes-Cambridge Arc initiative promoted by the National Infrastructure Commission (see later).

7. Notwithstanding the above, Connecting Oxfordshire is primarily a plan for the entire county; it therefore includes policy priorities and proposals for the whole of Oxfordshire, providing a basis for securing transport improvements to support development and manage movement countywide.

8. The current plan is based around the following three overarching themes:

- a. Supporting Growth & Economic Stability;
- b. Reducing Emissions; and
- c. Improving Quality of Life.

9. Under the first theme, the Plan sets out policies and proposals to maintain and improve existing transport connections in the county; to optimise all available transport capacity through innovative network management; to increase journey time reliability; and to minimise public transport journey times.

10. Under the second theme, the Plan seeks to minimise the need for travel; to reduce the proportion of journeys made by private car (by making other modes of travel more attractive); to influence the location and layout of new development; and to reduce per capita emissions from transport in Oxfordshire.

11. Under the third and final theme, the Plan looks to support social inclusion by, for example, improving access to jobs, services, education and training; to protect and enhance the environment; and to improve public health and well-being by reducing casualties and increasing provision for walking and cycling.

12. Reflecting these three themes, key elements of “Connecting Oxfordshire” are:

- a) Providing an efficient highway network, including enhancements and improvements to capacity on key strategic routes;
- b) Area & Route Strategies² for parts of the county where significant growth is proposed and/or where there are particularly pressing and complex transport issues to be addressed, namely:
 - Oxford
 - Science Vale
 - Bicester
 - Banbury
 - Witney
 - Carterton
 - A40
 - A420
- c) Maintaining and improving existing transport infrastructure;
- d) A strategy for freight movement that focuses on suitable routes and increases the movement of freight by rail;
- e) Measures to increase the usage of public transport;
- f) Development of mass transit solutions on the busiest routes and the wider bus network;

² [Area Strategies; County and Corridor Strategies](#), Oxfordshire County Council

- g) Prioritisation of rail investment (against a forecast of a significant increase in demand);
- h) Improved integration of rail and bus networks and better access to local stations via enhanced provision for cycling;
- i) Integrated strategic land use and transport planning;
- j) Development of new Walking and Cycling Strategies;
- k) Improving health and well-being, by reducing carbon usage and by giving encouragement to 'Active Travel' and the use of Low Emission Vehicles; and
- l) Seeking out and securing funding from a variety of sources (both national and local) to help deliver the above

13. The County Council is now proposing to revisit the above plan and prepare a refreshed version, with work commencing on this in Spring 2019. The proposals and outcomes in that new document will both inform and be dependent on spatial options identified in the Oxfordshire Plan 2050, as well as the wider transport and movement ambitions for the Oxford–Milton Keynes-Cambridge Arc and England's Economic Heartland (further information about initiatives in these wider areas is detailed below).

14. The refreshed plan will also have close regard to initiatives currently being developed by Highways England for the strategic A34 corridor - which are likely to include a number of key, safety-related interventions - as well as the implications for that corridor on decisions yet to be taken about the route of the Oxford-Cambridge Expressway scheme (see para 36 below).

The Oxfordshire Infrastructure Strategy (OxIS)

15. The Oxfordshire Growth Board agreed to commission an Oxfordshire Infrastructure Strategy³ (OxIS) in May 2016 to identify and cost up the key infrastructure that will be necessary to support long-term growth in the county, based on a snapshot of planned developments as proposed in District Local Plans at that time. The Stage 1 OxIS report was published in April 2017 and Stage 2 in November 2017.

16. The Stage 1 report evidenced the infrastructure required to support this growth, estimating a total infrastructure cost of £8.96 billion, with a gap of £8.45 billion, excluding annual revenue requirements and maintenance costs.

17. The Stage 2 report involved consultation on the assumptions made in Stage 1, made various revisions in the light of those assumptions and developed a Multi Criteria Assessment tool to enable a prioritisation process for strategic infrastructure schemes.

³ [Oxfordshire Infrastructure Strategy](#) (Nov 2017) AECOM

18. Work on a refreshed OxIS is due to commence in Spring 2019 involving the County, City and District Councils. This will take account of the progress that has been made in the intervening period with the Oxfordshire Housing & Growth Deal infrastructure programme and associated Housing Investment Fund bids (see below), as well as other relevant workstreams, strategies and plans. It will also reflect changes in Local Plans including site allocations and trajectories.

19. Subject to the outcome of the above exercise, the future provision and timing of key transport infrastructure improvements will be critical in assessing the potential capacity and broad locations of the further growth opportunities that will be proposed in the new Oxfordshire Plan 2050 (see Part 2 of this paper).

The Oxfordshire Housing & Growth Deal

20. In November 2017, Oxfordshire's County, District and City Councils signed a Housing and Growth Deal with Central Government, the main purpose of which is to facilitate a major step change in the delivery of new homes in Oxfordshire. The Deal allocates £215m of funding to Oxfordshire of which £150m is for infrastructure to support housing delivery, £60m for provision of affordable housing and £5m in capacity funding (the latter committing the Oxfordshire authorities to the production of the Oxfordshire Plan 2050). A programme⁴ for the £150m infrastructure funding has since been agreed, based on a review of priorities which will be reflected in the proposed refresh of OxIS (refer above).

Further funding opportunities

21. In February 2018, the Government awarded 5 Oxfordshire schemes Housing Infrastructure Fund (HIF) Marginal Viability funding, subject to further assessment. At the time of writing Oxfordshire was still awaiting the outcome of the further assessment. The schemes are:

- Cherwell District - Howes Lane Tunnel (£6,700,000);
- Oxford City - Blackbird Leys District Centre (£3,750,000);
- Oxford City - Oxford North (Northern Gateway) - (£10,000,000)
- Oxford City - Osney Mead Innovation Quarter (£6,090,000)
- Vale of White Horse District - Wantage Eastern Link Road - (£7,717,989)

22. Oxfordshire County Council is also through to the next stage of bidding for an apportionment of Government's HIF Forward Funding. If successful this would provide vital funding of £350m for strategic infrastructure associated with Didcot Garden Town and Oxfordshire Cotswolds Garden Village.

Oxfordshire Rail Corridor Study

⁴ [Year One infrastructure projects](#)

23. This Study⁵ is being jointly funded by the Department for Transport (DfT), Oxfordshire Growth Board and other partners, and is being undertaken by Network Rail. It will look at the movement of people and goods across the rail network in Oxfordshire, with particular emphasis on how rail can support growth and development across Oxfordshire and the wider region and inform strategic decisions.

24. The study will continue throughout 2019 and is in two stages - an initial strategic study followed by more detailed consideration of investment priorities to support growth and potential service patterns, including proposed new stations such as Grove and Begbroke, and enhancements at Culham. A specific workstream is considering the reopening of the Cowley Branch Line and is being taken forward alongside the initial strategic study phase. The first phase of the project is due to be completed by summer 2019.

Innovation and Digitalisation in “Smart” Oxfordshire

25. With its global academic offer and the presence of many leading-edge research and development organisations and advanced technology businesses, Oxfordshire is at the very forefront of developing innovative solutions to some of the complex transport challenges which face the developed world, many of which employ state-of-the-art technologies pioneered in the local area.

26. The rolling-out of these initiatives may be expected to radically transform movement and communications in Oxfordshire within the next 30 years. The new Oxfordshire Plan, with its long-term time horizon of 2050, will provide an appropriate platform to facilitate and capture the potential of these technological advances in the planning of new development.

27. A key enabler of innovation in Oxfordshire, as elsewhere, will be continuing advances in *digital* connectivity – advances which may also be expected to have a positive effect on reducing the need to travel. As indicated in Topic Paper 3 (Economy), over 96% of premises in the county currently have access to superfast broadband and considerable efforts are now being made to accelerate the roll-out of full fibre connectivity. In line with the requirements of the National Planning Policy Framework, the Oxfordshire Plan will look to support the expansion of all electronic communications networks, including next generation mobile technology (such as 5G) and full fibre broadband connections.

Healthy Place-Shaping in Oxfordshire

28. The concept of healthy place-shaping rests on the premise that significant population level benefits can be derived if multiple determinants of health such as housing infrastructure, environmental services and economy are specifically planned and coordinated with health and wellbeing in mind. Transport options, digital connectivity and

⁵ [Oxfordshire Rail Corridor Study](#) (Mar 2018) Network Rail

the choice of which transport modes are prioritized, are key determinants of health and wellbeing. These 'wider determinants' significantly influence:

- Physical activity/inactivity levels;
- Risk of loneliness and social isolation - in both rural and urban contexts
- Levels of exposure to traffic generated noise and air pollution
- Number of people killed and seriously injured whilst using the highway network
- Ability of patients, staff and emergency services to access health and care infrastructure and services

29. Socio-economically disadvantaged communities are more likely to be negatively affected by one or a combination of these issues. A key public health priority is to reduce health inequalities that these issues generally compound.

30. With the above in mind, the preparation of the Oxfordshire Plan 2050 will embrace collaborative working between the County, District and City Councils and other relevant organisations to encourage modes, transport and connectivity options and spatial layouts and environmental services that promote health and wellbeing. This will build on work already underway, which is being overseen by an Active and Healthy Travel Steering Group and associated Partnership Forum.

31. Further information on how building strong and healthy communities relate to the Oxfordshire Plan is in Topic Paper 5⁶.

The Oxford-Milton Keynes-Cambridge Arc

32. An extensive corridor, broadly running from Oxford, through Milton Keynes, to Cambridge but encompassing a wide surrounding hinterland that includes the whole of Oxfordshire, has been identified by Central Government as a major national economic and housing growth initiative, where up to 1 million homes, together with supporting wealth-generating and ancillary development are to be delivered by 2050. The project is being led by the National Infrastructure Commission (NIC)⁷, in conjunction with the local authorities across the Arc and a range of other key stakeholders.

⁶ Topic Paper 5 - Strong and Healthy Communities (Feb 2019), Oxfordshire Plan 2050

⁷ [Partnering for Prosperity: a new deal for the Cambridge-Milton Keynes-Oxford Arc](#) (Nov 2017) National Infrastructure Commission

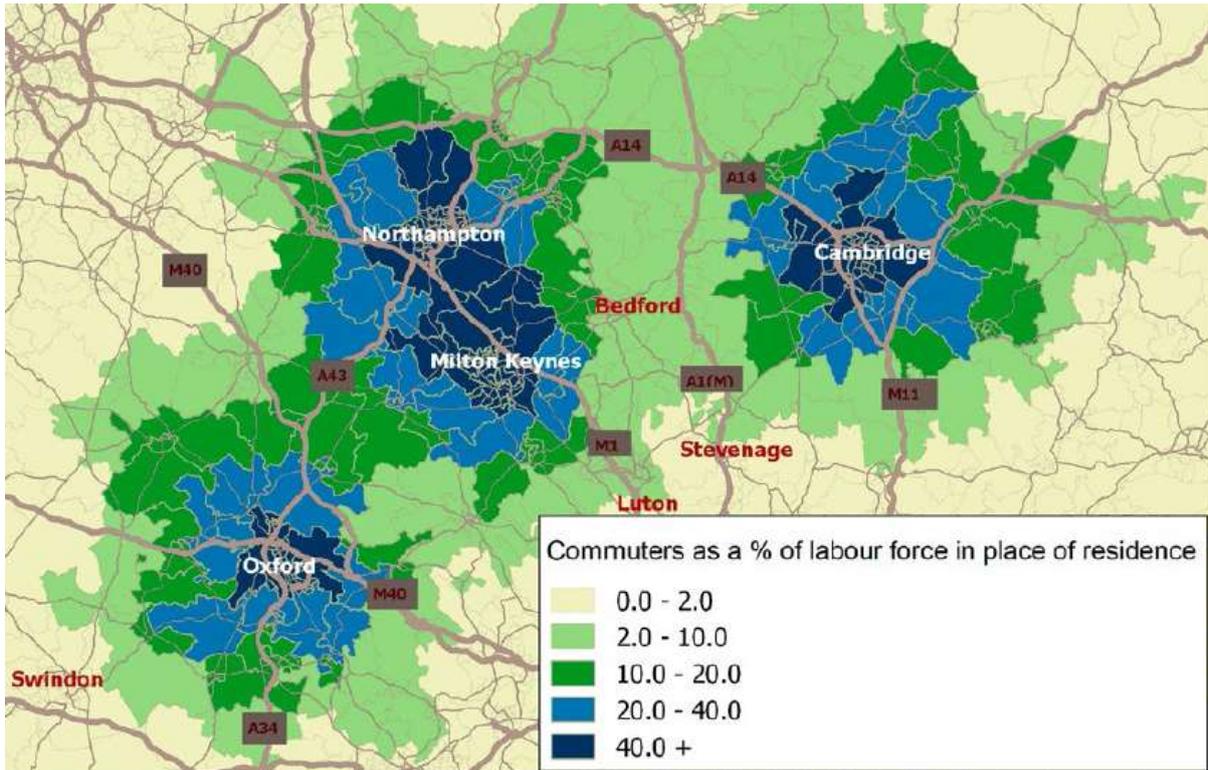


Figure 2 *Commuting as a percentage of the labour force across the Cambridge-Milton Keynes-Oxford arc (Source: Fig 9 Partnering for Prosperity: a new deal for the Cambridge-Milton Keynes-Oxford Arc National Infrastructure Commission)*

33. There are a range of key transport-related initiatives, strategies and projects planned or underway that seek to help realise the growth ambitions for the Arc. These include East -West Rail, the Oxford to Cambridge Expressway and England’s Economic Heartland’s Transport Strategy⁸.

East West Rail

34. East-West Rail is a major infrastructure project to establish a strategic railway line across the corridor, linking Oxford and Cambridge via Bicester, Milton Keynes (at Bletchley) and Bedford. The route within Oxfordshire has been established and the Oxford to Bicester section (Phase 1) opened in 2016. The Western Section of the route (Oxford-Bletchley) is proposed to be open by 2023, subject to the outcome of a Public Inquiry in 2019. Complementing the installation of the new line, funding is currently being

⁸ Co-terminus with a large part of the Arc, stretching from Swindon to Cambridgeshire and from Northamptonshire to Hertfordshire, a strategic alliance called “England’s Economic Heartland” (EEH) brings political and business leaders together in a collaborative partnership with a shared commitment to realise the economic potential of the Arc and surrounding areas. EEH also operates as the Strategic Transport Forum for the area and works closely with the NIC and Government on matters concerning transport and movement. For further information about EEH, see: <http://www.Englandseconomicheartland.com/Pages/home.aspx>

pursued to enable high capacity fibre/ 5G infrastructure to be installed throughout the length of East-West Rail so that it benefits surrounding areas as well as passengers.

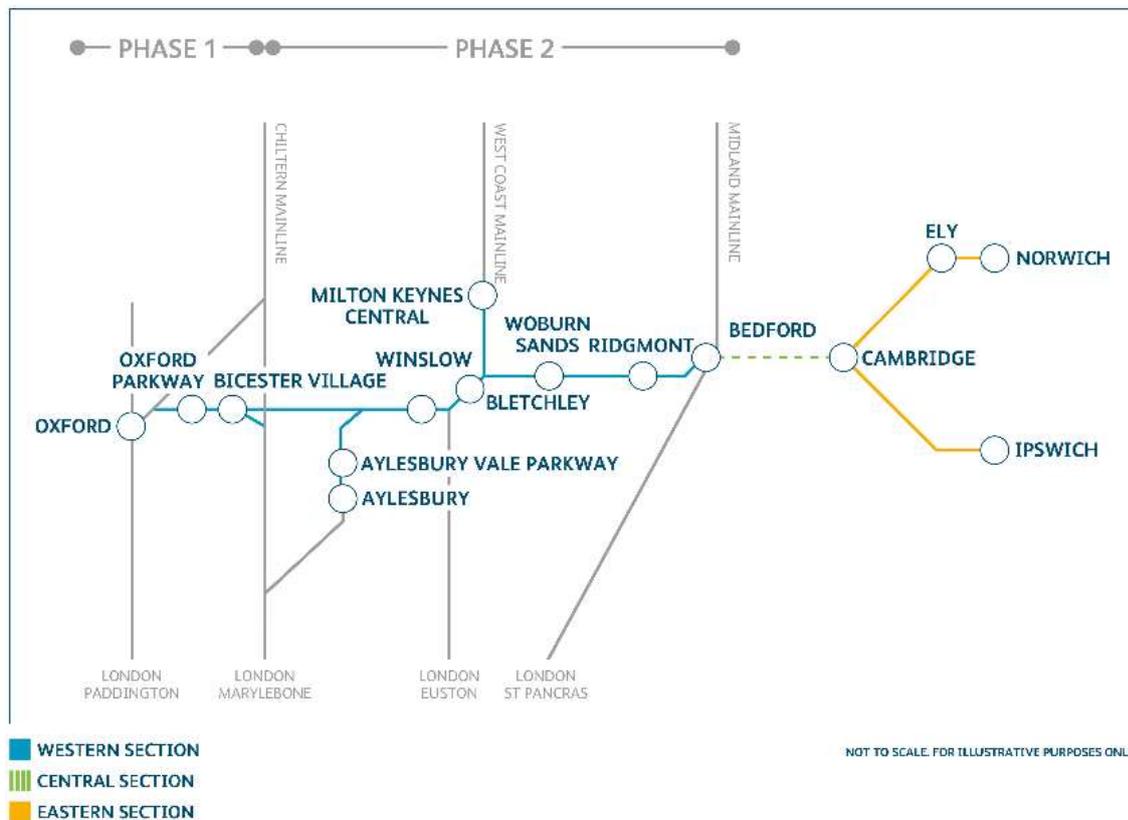


Figure 3 East West Rail phases
(Source: *East West Rail*, Network Rail)

Oxford to Cambridge Expressway

35. The proposed Oxford to Cambridge Expressway will form a strategic multi-modal transport spine for the Oxford-Milton Keynes-Cambridge Arc, along with East-West Rail. The preferred corridor for the Expressway (not due to open before 2030) was announced by Highways England in September 2018. Options for the route itself are being developed for consultation in Autumn 2019, with a decision expected in 2020.

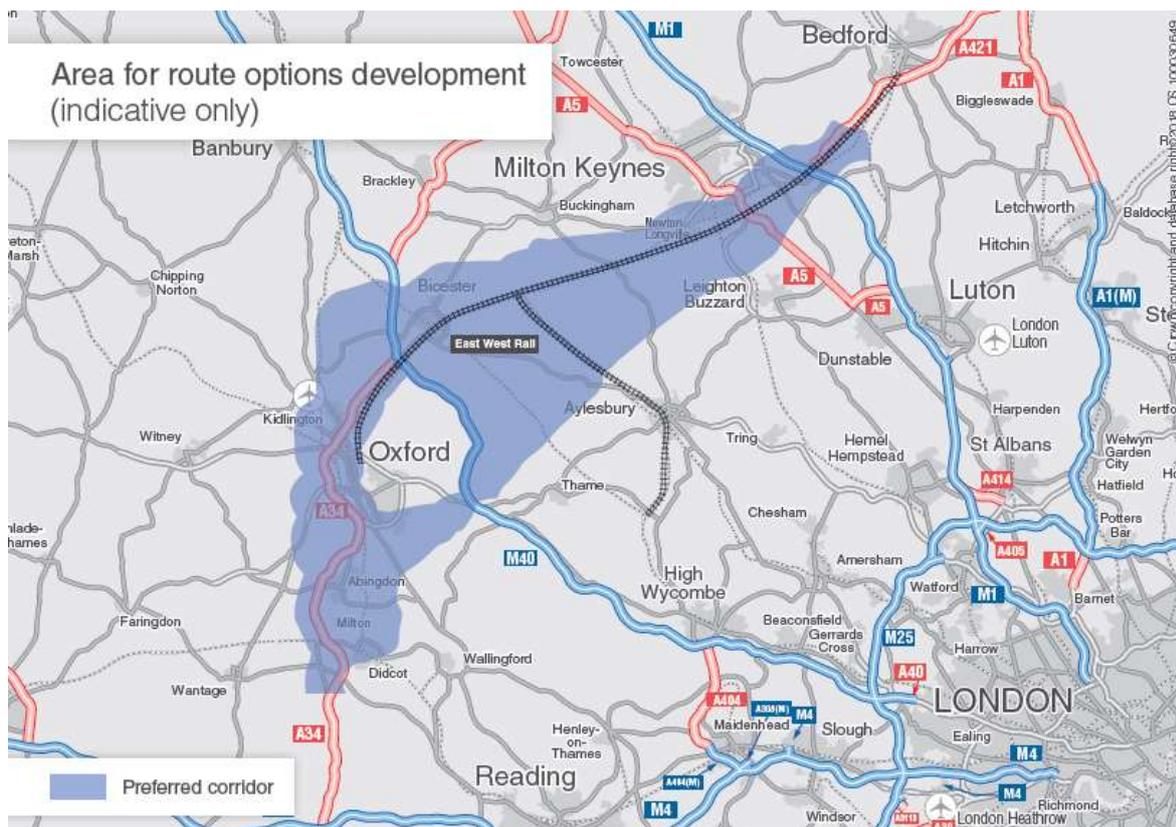


Figure 4 The Expressway Preferred Corridor
 (Source: [Oxford to Cambridge Expressway: The Preferred Corridor](#), Highways England)

England's Economic Heartland Transport Strategy

36. England's Economic Heartland (EEH) Transport Strategy will establish the transport vision and the means to achieve it for this part of the Arc, consistent with an overarching ambition to deliver a zero-carbon transport situation by 2050. Oxfordshire's refreshed Local Transport Plan will be framed in the context of it. The Final Strategy is due Spring 2020. As part of this process EEH are developing modelling tools which will examine the impacts of existing and future growth and different policy scenarios (e.g. the introduction of local congestion charging) on strategic and major road networks to 2050. It is currently a prototype, in development, which EEH will be validating and testing during 2019.

37. A critical expectation of the NIC, of direct and fundamental relevance to the preparation of the Oxfordshire Plan, is that locations for a series of new and expanded settlements be identified across the Oxford-Milton Keynes-Cambridge Arc, consistent with the Government's stated housing ambitions for this area (see above).

38. The local authorities of Oxfordshire have recently made a submission⁹ to the NIC, showing how their current plans, projects, strategies and initiatives for transport and

⁹ [Oxfordshire 2050 - a vision for the future](#) (2017) Oxfordshire County Council

movement planning in the county could evolve into a wider vision for the Oxford-Milton Keynes-Cambridge Arc to 2050.

Part 2: Identifying and assessing the impacts of future growth

Identification

39. The Oxfordshire Plan 2050 will be a key overarching spatial development blueprint for the county and as such, it will provide a broad indication of where further major growth will be delivered in Oxfordshire over the next thirty years.

40. Decisions about the above will need to have due regard to a range of different considerations, from the social and the economic to the environmental, but amongst these, issues of transport, movement and the need to minimise unnecessary carbon usage will be critical.

41. From the point of view of transport and movement, a key starting point in the identification and subsequent assessment of additional areas for long-term growth in Oxfordshire will be the advice set out in the National Planning Policy Framework (NPPF)¹⁰. In July 2018, the Government published an updated version of the NPPF, the parts of which that will be of the most relevance to the matters considered above and below are as follows:

102. Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

- a) the potential impacts of development on transport networks can be addressed;*
- b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;*
- c) opportunities to promote walking, cycling and public transport use are identified and pursued;*
- d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and*
- e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.*

103. The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine

¹⁰ [NPPF](#) (July 2018) MHCLG

choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.

104. Planning policies should:

- a) support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities;*
- b) be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned;*
- c) identify and protect, where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development;*
- d) provide for high quality walking and cycling networks and supporting facilities such as cycle parking (drawing on Local Cycling and Walking Infrastructure Plans);*
- e) provide for any large-scale transport facilities that need to be located in the area, and the infrastructure and wider development required to support their operation, expansion and contribution to the wider economy. In doing so they should take into account whether such development is likely to be a nationally significant infrastructure project and any relevant national policy statements; and*
- f) recognise the importance of maintaining a national network of general aviation airfields, and their need to adapt and change over time – taking into account their economic value in serving business, leisure, training and emergency service needs, and the Government’s General Aviation Strategy.*

42. The Oxfordshire Plan will be consistent with the NPPF and, in common with all other development plans in the country, a raft of local considerations will also be relevant in the identification and assessment of new growth areas in Oxfordshire from a transport and communications perspective. By no means an exhaustive list, these will include:

- i) The legacy of (and progress with) existing development commitments and proposals as set out in Local and Neighbourhood Plans and other, speculative, planning applications which have received permission. By virtue of their associated infrastructure improvements and enhancements, some of these existing commitments and proposals may offer the potential for further tranches of sustainably-planned growth in the second half of the Oxfordshire Plan 2050 period;

- ii) The transport implications of major development proposals outside but impacting upon Oxfordshire, including schemes in adjoining parts of the Oxford-Milton-Keynes-Cambridge Arc and, to the other side of the county, the Eastern Villages Expansion Area at Swindon;
- iii) The additional capacity that will be opened-up by the significant new, strategic-scale infrastructure projects that are currently progressing in and around Oxfordshire. Prime amongst these, will be the infrastructure associated with the Oxford-Milton Keynes-Cambridge Arc, most notably East-West Rail (Phase 1 of which is already in operation) and the proposed Expressway, which will together create a new, state-of-the art multi-modal corridor for this nationally-important growth area;
- iv) The outcomes of the current Connectivity Study for the Arc, which (during 2019) will consider and appraise long-term development scenarios within the East West Rail/Expressway corridor and its adjoining hinterlands to the north and south;
- v) Any additional capacity that may be released by new strategic infrastructure in Oxfordshire that is currently the subject of bids into the HIF Forward Fund;
- vi) The ability of new growth areas to adequately fund such additional transport infrastructure as they may make necessary;
- vii) The production of a refreshed Local Transport Plan for Oxfordshire, which will establish a new, long-term transport strategy/vision for the county consistent with its economic and environmental aspirations. It will be produced in parallel with the Oxfordshire Plan 2050 during 2019 and each will seek to inform the other.;
- viii) The refreshed Oxfordshire Infrastructure Strategy (OXiS), which will also be produced in 2019, and which will provide an updated assessment of requirements across a wide spectrum of infrastructure types, including transport, to support long-term growth in the county; and
- ix) The implications of advances in digital/communications technologies for the way in which people, goods and services may be expected to move around - or otherwise - over the next thirty years.

Testing

43. Whilst the above are some of the main transport factors that will come into play in the identification of new broad strategic growth areas in the Oxfordshire Plan 2050, it will nonetheless be necessary to ensure that the areas in question will perform satisfactorily in “the real world” in terms of their impacts on the transport networks and systems of Oxfordshire and its many towns and villages. This “testing” of potential new growth areas will be carried out in a variety of ways:

- i) Firstly, it will employ the accumulated knowledge and expertise of officers of the Local Highways Authority (Oxfordshire County Council), who routinely appraise and advise the District and City Councils on planning applications and emerging Local Plan proposals, having regard to national and local standards and guidance on issues concerning highways safety, road/junction layouts and access arrangements etc;
- ii) Secondly, it will have regard to the expert advice received from key consultees such as Highways England and transport operators on the implications of further growth proposals for their areas of interest, for example the strategic road network and rail/bus service provision;
- iii) Thirdly, it will involve the use of a dedicated forecasting transport “model” to predict likely trip generation from proposed development areas in terms of volumes and flows of traffic on the highway network; and
- iv) Finally, feedback from wider public and stakeholder consultation on draft proposals at the key stages of the Oxfordshire Plan’s preparation will be important factors to be considered and reflected in necessary revisions and refinements of the document.

44. The strategic alliance for England’s Economic Heartland (EEH) is currently in the process of developing new transport modelling tools which will examine the impacts of growth on strategic and major road networks throughout the Oxford-Milton Keynes-Cambridge Arc. Working closely with Local Enterprise Partnerships and Local Planning Authorities across the region, the tools will enable the implications of alternative policy scenarios (to 2050) to be considered and debated, as well as the impacts of existing and future housing and employment growth. This will in turn shape the development of the area's overarching transport and connectivity study.

45. To inform the next stage of consultation for the Oxfordshire Plan 2050, a series of options representing potential broad locations for further growth will be developed and then assessed for their transport implications, using a red/amber/green rating system, against a range of transport objectives. The outcome of this assessment (and the feedback from the consultation) will then inform the preparation of the draft Plan itself.

Part 3: Towards a new Vision for Transport in Oxfordshire

46. As mentioned in Part 2 of this paper, the Oxfordshire local authorities have recently made a submission to the National Infrastructure Commission (NIC) as an input to the development of a vision and strategy for the Oxford-Milton Keynes-Cambridge Arc. That submission is, however, equally relevant to the development of a new transport vision for Oxfordshire itself, based as it is on a detailed analysis of existing conditions and future opportunities in this area.

47. The future transport vision for Oxfordshire will be more fully developed in the forthcoming refresh of the Oxfordshire Local Transport Plan, but based on the submission to the NIC and other work carried out to date, key elements of this might include:

At the Economic Level:

- Enabling the county to play a leading role in the UK's designated National Growth Corridor (Oxford-Milton Keynes-Cambridge Arc);
- Further enhancing the successes, achievements and potential of the Oxfordshire "Knowledge Spine" and other strategic development corridors;
- Fostering innovation;
- Facilitating sustainable economic growth;
- Improving the safety, reliability, and resilience of the local network to maximise the productivity of goods, services and commuters.

At the Social Level:

- Reducing barriers to travel;
- Providing high quality and efficient transport options for all users;
- Increasing journey time reliability and end-to-end journey times;
- Requiring new developments to promote active travel, health and wellbeing;
- Facilitating a step-change in the delivery of new and affordable homes by providing infrastructure to support delivery;
- Enabling residents to achieve their full potential.

At the Environmental Level:

- Continuously reducing the negative impacts of the transport system;
- Minimising the impacts of transport on the built, natural and historic environment;
- The prioritisation of available infrastructure for space and resource-efficient transport modes;
- Utilising the potential of advances in, and the further rolling-out of, digital technologies to reduce the need to travel;
- The effective management of motorised traffic;
- A "net zero-carbon" transport system by 2050.