LOCAL PLAN for Buckinghamshire

Baseline Transport Evidence for the Local Plan for Buckinghamshire and the Local Transport Plan 5

July 2024

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Summary

The purpose of this study is to provide an initial transport evidence base for the Local Plan for Buckinghamshire in line with the PPG guidance.

It takes into consideration synergies with the Council's other strategies and reflects changes in national transport policy; notably the shift away from predictive planning based on previous traffic patterns (termed 'Predict and Provide') towards a 'Decide and Provide' approach, which aims to provide a development path best suited to achieving a desired vision of the future.

Its findings have informed the 'Growth Scenarios' consultation and helped to identify gaps in the local plan evidence for further investigation, including future transport assessments requirements.

Chapter 1. A transport evidence fit for purpose

1. Introduction

1.1. This study seeks to provide baseline information relating to transport matters for the emerging Local Plan for Buckinghamshire. It sets out the various challenges and opportunities surrounding transport and explores how quality and availability of transport connections plays a key role in delivering sustainable growth.

2. Purpose of report

1.2. This study and its appendices set out the first phase of the transport evidence base to inform the development of the new Local Plan for Buckinghamshire (LP4B), as required by the national Planning Practice Guidance (PPG)[1].

1.3. The study considers the national context including policy requirements and guidance for the development of Local Plans as well as the impacts of the COVID pandemic. It reviews the Council's own policy documents and adopted guidance to set out the approach that the Council proposes to take to transport planning throughout the next plan period. The study also outlines the relationship between the emerging Local Plan and emerging Local Transport Plan (LTP5) as well as other key policy documents.

1.4. This study introduces a more holistic vision-led approach to transportation and integration of transport with land use planning, moving away from 'Predict and Provide' to 'Decide and Provide'[2]. This approach, backed by the Department for Transport (DfT) and National Highways (NH), relies on developing a vision for how transport is to be integrated into communities, and places greater emphasis on the provision of sustainable transport options within new communities.

1.5. Having set out the national and local policy requirements, the study considers the current constraints and opportunities specific to Buckinghamshire across a number of sectors, ranging from active travel and public transport to highways and freight.

1.6. Finally, the study then assesses the transport implications and opportunities of the emerging growth scenarios for the Local Plan. This information has informed the Growth Scenarios consultation (Summer 2024).

1.7. A concluding chapter sets out the outcomes of the initial transport evidence and makes recommendations for future evidence work and policy development in the Plan.

[1] Transport evidence bases in plan making and decision taking - GOV.UK (www.gov.uk)
[2] TRICS® Decide and Provide Guidance

3. National Context

National Policy and Guidance

3.1. The National Planning Policy Framework (NPPF)[3] paragraph 20 requires strategic policies to set out an overall strategy for the pattern, scale and design quality of places, and make sufficient provision for infrastructure for transport.

3.2. NPPF paragraph 34 requires plans to set out the contributions expected from development. This should include setting out the levels and types of transport infrastructure that will need to be delivered during the plan period. Such policies should not undermine the deliverability of the plan as a whole.

3.3. NPPF paragraph 74 states that the supply of large numbers of new homes can often be best achieved through planning for larger scale development, such as new settlements or significant extensions to existing villages and towns, provided they are well located and designed, and supported by the necessary infrastructure and facilities (including a genuine choice of transport modes). Working with the support of their communities, and with other authorities if appropriate, strategic policy-making authorities should identify suitable locations for such development where this can help to meet identified needs in a sustainable way. In doing so, they should: […] b) *ensure that their size and location will support a sustainable community, with sufficient access to services and employment opportunities within the development itself (without expecting an unrealistic level of self-containment), or in larger towns to which there is good access* […]

3.4. NPPF paragraph 108 states that transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

- the potential impacts of development on transport networks can be addressed;
- 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;
- opportunities to promote walking, cycling and public transport use are identified and pursued;
- the environmental impacts of traffic and transport infrastructure can be identified, assessed and considered – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
- patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places.

[3] National Planning Policy Framework - Guidance - GOV.UK (www.gov.uk)

3.5. NPPF paragraph 109 states that 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 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 considered in both plan-making and decision-making.

3.6. NPPF paragraph 110 states that planning policies should:

- 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;
- 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;
- *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;*
- provide for attractive and well-designed walking and cycling networks with supporting facilities such as secure cycle parking (drawing on Local Cycling and Walking Infrastructure Plans).

3.7. The Government has produced comprehensive Planning Practice Guidance for Transport Evidence bases in plan making and decision taking which is available here: Transport evidence bases in plan making and decision taking - GOV.UK.

3.8. It is important for Local Planning Authorities (LPAs) to undertake an assessment of transport implications in developing their local plan so that a robust transport evidence base may be developed to support the plan, its adoption, and reduce costs and delays in delivery of new development.

3.9. The transport evidence base should identify opportunities for encouraging a shift to more sustainable transport usage, where reasonable to do so, *and highlight infrastructure requirements for inclusion in infrastructure spending plans*.

Impacts of the COVID Pandemic

3.10. Overall traffic levels in Great Britain declined sharply in 2020 during the height of the pandemic followed by increases in 2021 and 2022. However, 2022 traffic levels remained

lower than 2016 levels and in 2023 remained below the pre-pandemic levels of 2019[4] (see Figure 1).

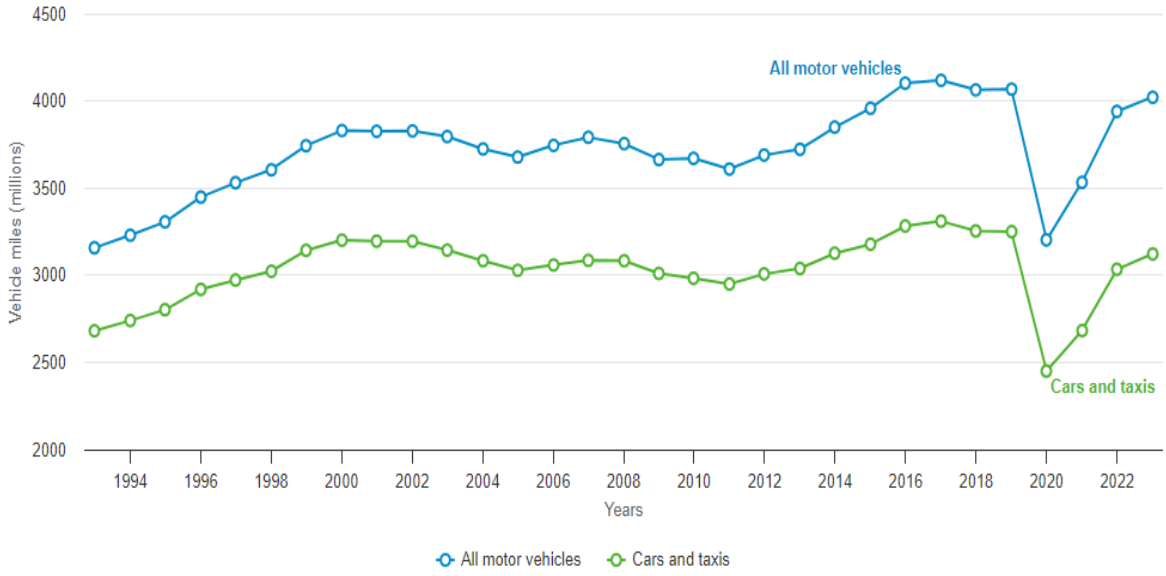

Figure 1. Annual traffic by vehicle type in Buckinghamshire, Source: DfT Road Traffic Statistics

3.11. Over the past year (June 2023 to June 2024), public transport mode usage (including National Rail, buses and TfL) has remained below pre-COVID levels, with national rail use remaining at around 80% in 2023 compared to 2020.

3.12. There were 3.4 billion local bus passenger journeys in England in the year ending March 2023. This was a 19.3% increase compared to March 2022 when bus use started to recover, although this remains 16.9% lower than the year ending March 2020. Bus service provision on the other hand has decreased slightly since the year ending March 2022 and stabilised at around 85% compared to 2020.

3.13. The 2020 boost in active travel has also declined but cycling trends including distance travelled are at similar levels to previous years. Walking is currently the only mode of transport where average trips per person are above 2019 levels. The average walking trips in 2022 increased by 14%, to 267 trips per person compared to 2021; the highest level recorded since 2006. Similarly, the amount of time people are spending travelling by walking has also increased by 26% compared to levels seen in 2012[5].

3.14. Cycling levels remain higher than in 2019, although not as high as the brief spike in cycle counts in 2020. However, 2023 levels are no higher than observed in the early 2010s following the Aylesbury Cycling Demonstration Towns programme.

[4] https://roadtraffic.dft.gov.uk/summary
[5] https://www.gov.uk/Government/statistics/walking-and-cycling-statistics-england-2022/walking-and-cycling-statistics-england-introduction-and-main-findings

3.15. The impacts of the COVID pandemic on travel behaviours and patterns are yet to be fully seen. However, the cultural shift to hybrid and homeworking means that there is more flexibility in when people travel leading to reduced disparity between peak and off-peak travel demand. The greater use of online shopping since the pandemic also means that shopping destinations in larger cities have become less significant with more people spending more time in their towns and neighbourhoods than before[6].

3.16. For Buckinghamshire, this means measures to encourage mixed land uses, active travel infrastructure improvements, public transport integration and placemaking considerations should be considered within the Local Plan in order to support these post COVID trends.

Decide and Provide

3.17. The traditional method of assessing transport impacts and determining the required mitigation is typically referred to as the 'predict and provide' approach. This methodology extrapolates existing transport behaviours and patterns into the future when assessing development and growth. This means that site design and 'mitigation' is then required, determined on the basis of the existing behaviour patterns.

3.18. Due to the current car dependent nature of our society the predict and provide approach tends to focus on a perceived need to increase highway capacity to allow for more motor vehicles, with larger and more complex junctions. Because of this focus on mitigating the impact of increasing motor traffic this approach does not readily consider pedestrians, cyclists and public transport users and so perpetuates a car dominant system, creating 'land hungry developments which have environmental and social disbenefits'[7].

3.19. In recent years, an alternative transport planning theory has emerged called 'Decide and Provide'. This approach is based on a more holistic view of the highway and transport network, allowing for transport planning to be more proactive and adaptative in meeting the challenges of land use and transport integration.

3.20. 'Decide and Provide' (also known as 'Vision and Validate') requires proposed development to assess their transport impact on the highway network, not solely based on previous travel patterns but also using vision led modelling to assess a range of possible growth scenarios, their impacts and potential mitigation options.

[6] https://www.theitc.org.uk/wp-content/uploads/2024/03/ITC-Impacts-of-the-Pandemic-Report-March-2024.pdf
[7] New report: Stepping off the Road to Nowhere - Create Streets

3.21. The TRICS Note on the Practical Implementation of the Decide and Provide Approach[8], describes it as deciding on a preferred future and providing a development path best suited to achieving it while accounting for uncertainty.

3.22. More recently, the UK Government's commitment to decarbonising the economy, changes in technology (e.g. the rise of micro-mobility, Demand Responsive Transport), increasing digital connectivity and the effects of the COVID pandemic on ways of working have drastically changed, and will continue to change, the way we travel. This behaviour change offers the opportunity for future Local Plan policy to reflect how people are choosing to access jobs, goods and services.

3.23. When considering new development, the implementation of a Decide and Provide approach enables land use and transport planners to prioritise and test proposals in such a way as to support and maximise the use of alternative transport modes and support behavioural trends in favour of sustainable transport. This approach would be particularly relevant for Local Plan proposals considering urban expansions or new settlements as it offers the opportunity to consider maximising walking, cycling and public transport from the outset in order to minimise the transport impacts of these developments.

[8] https://www.trics.org/img/trics%20dp%20guidance_web.pdf; TRICS (or Trip Rate Information Computer System) is used by transport planners in the UK to undertake transport assessments.

4. Study area: Spatial and Demographic Profile

4.1. The study area covers the administrative area of Buckinghamshire Council which covers the former districts of Aylesbury Vale, Chiltern and South Bucks and Wycombe District Councils (see Figure 2).

Figure 2 Map of Buckinghamshire Council showing main settlements and key road, cycle and future rail connections

4.2. As of the 2021 Census, Buckinghamshire has a population of 553,100, which represented a 9.5% increase since 2011[9] . This made Buckinghamshire the 5th most populous county in England. Population growth was lower than surrounding areas of Central Bedfordshire and Milton Keynes, which had high growth of 15.7% and 15.3% respectably, although higher than growth in Windsor and Maidenhead of 6.2%. The average population growth between 2011-2021 in the South East was 7.5%.

4.3. Buckinghamshire saw an overall population density increase of +9.5% between 2011 to 2021, although it continues to remain at a low overall density of 353 persons per square mile[10]. The 2021 Census data follows the expected trend of higher densities in the urban centres of Aylesbury, High Wycombe, and some of the smaller towns of Chesham, Amersham and Marlow.

4.4. Buckinghamshire has a median age of 40, which reflects a similar median age in North Hertfordshire (40), and wider England (42). The age structure of Buckinghamshire generally follows the England and Wales trend, although with a slightly lower proportion in the 30–39 year-old category. The largest population group was the under-16s followed by 50–59 year-olds and 70+ year olds, reflecting a diverse age structure. From Census data[11], the largest changes in age groups in 2011 to 2021 period were in the older age categories, with a 37% increase in 70 to 74-year-olds, and 27% increase in 55 to 59-year-olds.

4.5. There was a reduction in the number of households without access to a car or van between 2011 to 2021 by 1.1 percentage points across all of Buckinghamshire[12]. The average percentage of households without access to a vehicle across the entire county was 11.5%. Figure 3 identifies that across the rural areas of Buckinghamshire, car ownership levels are very high, with only 4 to 7.5% of households without access to vehicles in rural areas. Only within the urban centres, with higher populations, is car ownership notably reduced. This is mainly located in Aylesbury, High Wycombe and Amersham.

4.6. Emissions from transport are a primary contributor to poor air quality across the county. There are currently 9 Air Quality Management Areas[13], most of which are on local roads or motorways. The Council is in the process of reviewing some of these on the basis of air quality improvements over the past five years[14]. Maps of the current AQMA sites in Buckinghamshire, and a more detailed analysis of the issues, can be found in Appendix A

[9] Buckinghamshire population change, Census 2021 – ONS
[10] Population density - Census Maps, ONS
[11] Build a custom area profile - Census 2021, ONS
[12] Car or van availability - Office for National Statistics (ons.gov.uk)
[13] Air quality management reviews and annual reports | Buckinghamshire Council
[14] https://yourvoicebucks.citizenspace.com/environment/air-quality/

(Atkins - Initial Transport Impact Assessment, section 6.2 on Air Quality). An interactive map of the air quality monitoring sites can also be found here.

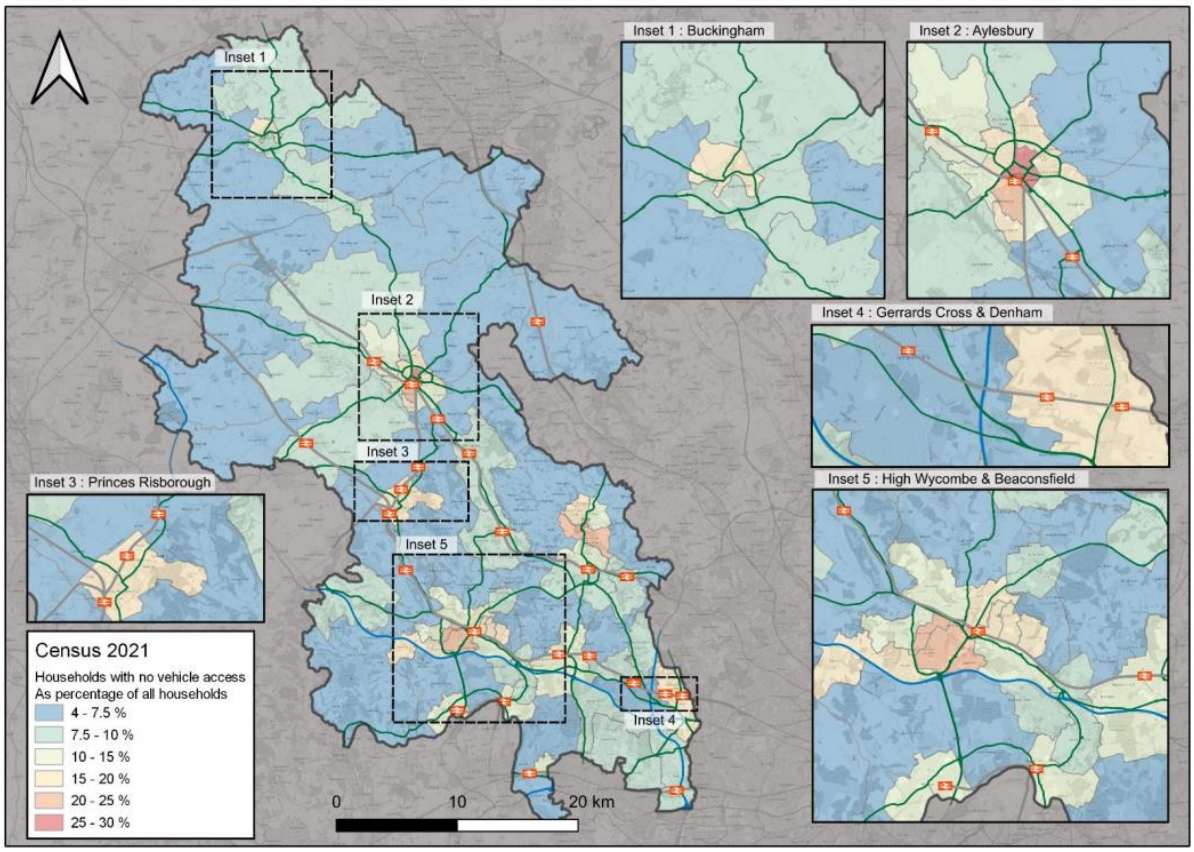

Figure 3: Percentage of households without access to a car at the Major Super Output Area (MSOA) level

5. Local Plan for Buckinghamshire

5.1. The Local Plan for Buckinghamshire (LP4B) will guide where new development and associated infrastructure will go in the future. It will also set out how future growth will contribute to addressing the challenges of climate change and nature recovery. The Plan period will be at least 15 years from adoption (assumed to be 2045), in line with national requirements.

5.2. The LP4B sits within a wider context of other national and local strategies and technical evidence. Consideration of these wider strategies and evidence will feed into the Plan's development at various stages, forming a sound basis for growth allocations in the county.

5.3. The Council will consult on 'Growth Scenarios' for the Local Plan in summer 2024 – this report sets out the transport implications of each of the proposed scenarios (see chapter 3) and forms part of the baseline evidence base for the LP4B.

5.4. The diagram below seeks to illustrate the relationship between various key documents relating to the emerging transport evidence covered in this study.

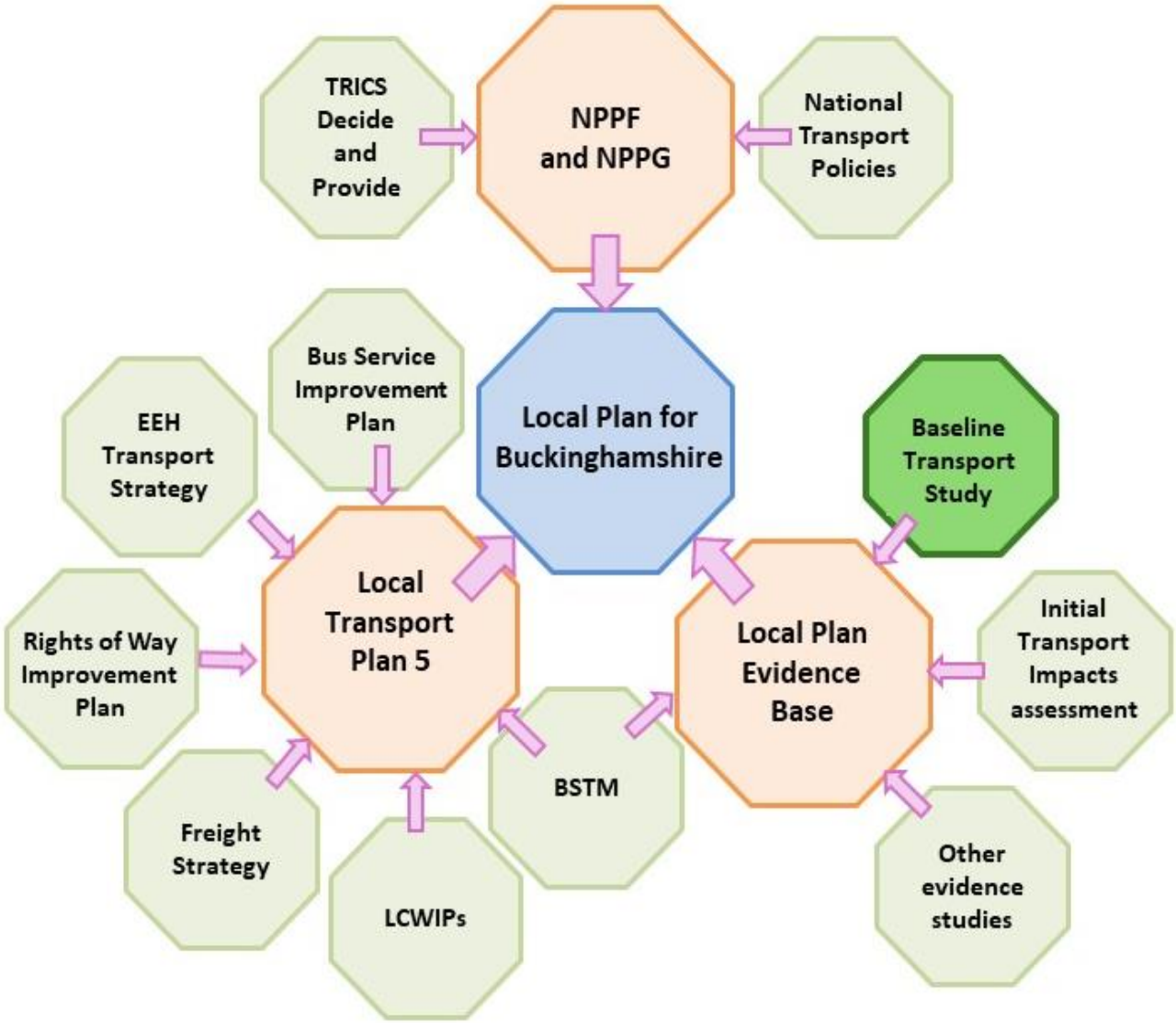

Figure 4. Transport evidence base – policy context

6. Approach to preparing transport evidence for the Local Plan

6.1. The National Planning Practice Guidance on " Transport evidence bases in plan making and decision taking - GOV.UK (www.gov.uk)" sets out the tests to be met to produce robust sound transport evidence when preparing a Local Plan.

6.2. It specifies that there are three stages for evidence:

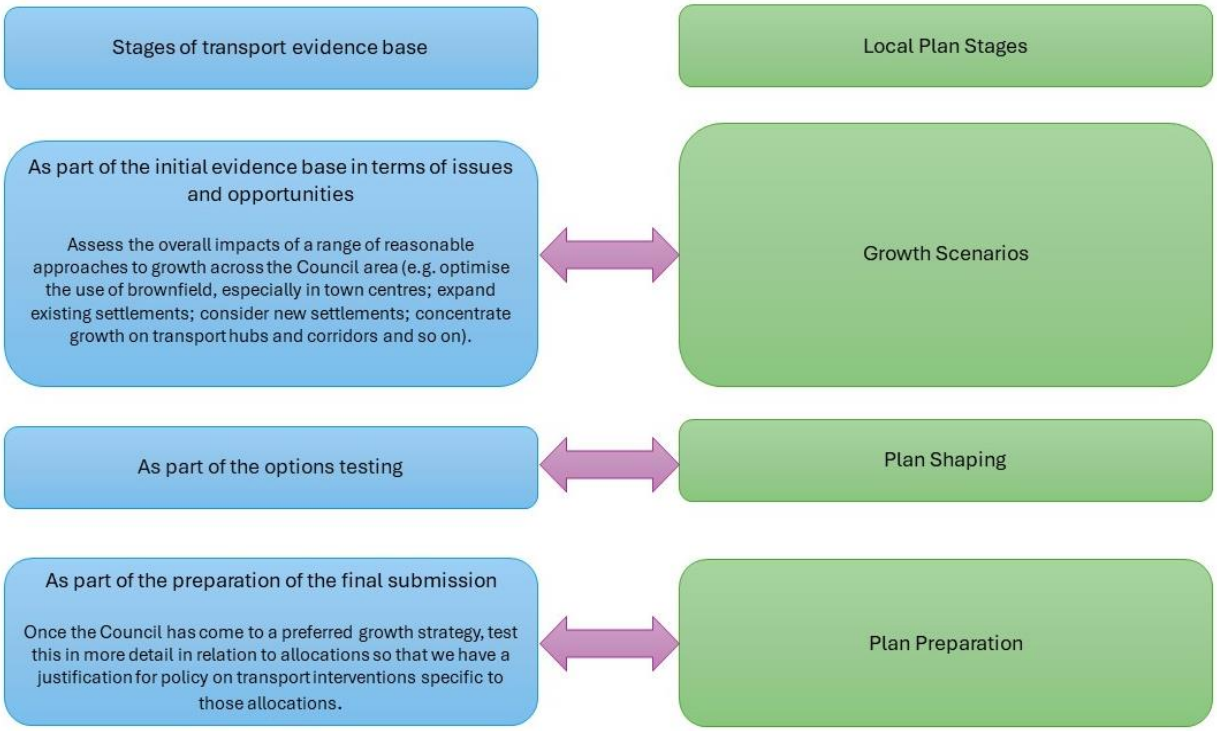

Figure 5 Transport evidence requirements at different Local Plan stages

6.3. The PPG sets out the key issues which should be considered in developing a transport evidence base. These include the need to:

- assess the existing situation and likely generation of trips over time by all modes and the impact on the locality in economic, social and environmental terms;
- assess the opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport;
- highlight and promote opportunities to reduce the need for travel where appropriate;
- identify opportunities to prioritise the use of alternative[15] modes in both existing and new development locations if appropriate;

[15] Alternatives to the private car (e.g. walking, wheeling, cycling, scooters, public transport)

- consider the cumulative impacts of existing and proposed development on transport networks;
- assess the quality and capacity of transport infrastructure and its ability to meet forecast demands; and
- identify the short, medium and long-term transport proposals across all transport modes[16].

6.4. The outcome could include assessing where alternative allocations or *mitigation measures would improve the sustainability, viability and deliverability of proposed land allocations (including individual sites) provided these are compliant with national policy as a whole.*

6.5. The PPG also sets out the key issues the key aspects that should be addressed in the Local Plan's transport assessment. This list is not exhaustive, and there may be additional issues that are important to consider locally. This includes[17]:

- all current transport issues as they affect all modes and freight covering, for example, *accessibility, congestion, mobility, safety, pollution, affordability, carbon reduction* across the whole Plan area and, within relevant areas of the Plan, including existing settlements and proposed land allocations;
- the potential options to address the issues identified and any gaps in the networks in the short, medium and longer term covering, for example, accessibility, congestion, mobility, safety, pollution, carbon reduction;
- the locations of proposed land allocations and areas/corridors of development and potential options for the provision of sustainable transport and transport networks to serve them;
- *solutions to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport;*
- the scope and options for maximising travel planning and behavioural change; and
- accessibility of transport nodes such as rail/bus stations to facilitate integrated solutions.

6.6. The transport assessment should be produced at a Local Plan level in partnership with all relevant transport and planning authorities, transport providers and key stakeholders. It may be appropriate for the transport assessment to cover an area wider than the Local Plan at least initially given the size of some travel to work areas. This process should help to identify any potential measures that may be required to mitigate negative impacts.

[16] PPG Paragraph: 003 Reference ID: 54-003-20141010
[17] PPG Paragraph: 005 Reference ID: 54-005-20141010, Revision date: 10 10 2014

Proportionality of evidence for the Local Plan

6.7. As we will set out later in this report, we know that the road network in our main towns – Aylesbury, High Wycombe and Chesham – is congested, especially during peak times on main arterial routes. This is mainly due to high levels of car dependency in Buckinghamshire and the constrained highway network, with limited opportunities to increase capacity. Heavy traffic flows and congestion impede bus journey times and reliability and make active travel environments near/ on our roads less safe and attractive.

6.8. It is expected that a growing population, and increasing economic growth and prosperity will continue to increase traffic levels leading to more congestion on key corridors and within key urban centres in Buckinghamshire.

6.9. It is clear that sustainable transport measures are expected to play a key role in delivering our transport and growth ambitions, at the relevant scale. Given these factors, we have chosen to take a Decide and Provide approach to developing our transport evidence (see Decide and Provide, section 3) and establishing what infrastructure investment we wish to see delivered for Buckinghamshire in order to achieve our LP4B and Local Transport Plan vision.

Integration of the Local Plan for Buckinghamshire with LTP5

6.10. As set out above transport issues should be considered from the earliest stages of plan-making and development proposals. As a new unitary authority, the Council has an unprecedented opportunity to combine the evidence required for the LP4B and the new Local Transport Plan (LTP5).

Local Transport Plan 5

6.11. Every local authority in England outside London has an obligation to produce a Local Transport Plan for their area. A Local Transport Plan (LTP) assesses an area's transport needs and challenges and sets out different ways in which they will be addressed.

6.12. Buckinghamshire current LTP4[18] was adopted in 2016. LTP4 provides a high-level approach to transport, covering all types of transport and looking ahead to 2036. It includes policies relating to planning for future growth and development. LTP5 will be the fifth transport plan for Buckinghamshire. It will set out the ambitions, policies and plans for delivering transport improvements across the county until 2045.

6.13. A key difference between LTP4 and LTP5 is that the Department for Transport (DfT) now requires a primary focus on decarbonising transport, initiated by the DfT's Transport

[18] https://www.buckinghamshire.gov.uk/parking-roads-and-transport/our-local-transport-plan/

Decarbonisation Plan[19]. This included a commitment to revive the LTP process in England with a new statutory guidance expected for Local Transport Authorities. This guidance was expected to set out the DfT's ambition for:

- Councils to be ambitious, in order to maximise their overall transport funding allocation;
- Improving cycling and walking conditions;
- Improving bus services;
- Delivering electric vehicle charging points; and
- Setting Quantifiable Carbon Reduction (QCR) targets.

6.14. The LTP guidance which was due to be published in 2023 has been delayed and the publication date is currently unknown. In the meantime, Buckinghamshire Council is coordinating the development of LTP5 with LP4B to ensure that our plans for transport are integrated with land use planning ambitions. This will also ensure that we secure the required transport infrastructure through development sites/developers and will support our future transport requirements.

LTP5 Vision and Objectives

6.15. Early work undertaken for the emerging LTP5 has included a review of the existing transport network and baseline evidence. This work has informed this report and also supported the development of an overarching vision and 3 strategic objectives, as described below:

LTP5 Vision:

It will be easier for all of our residents to get to work, school or college, to shop, use public services, or visit friends or leisure destinations.

For journeys in our towns, people will be able to choose to travel on foot, by bicycle, on public transport or by car. Local journeys by all modes will be of good quality, reliable and affordable.

In our more rural areas travelling on foot, by bicycle or by public transport will be better and safer than it is now. However, being able to travel by car will continue to be important where there are fewer alternatives.

We will have reduced our transport carbon emissions as a smaller share of journeys will be made by car, a larger share of vehicles will be powered by sustainable energy sources, and the need to travel longer distances will be reduced.

[19] DfT's Transport Decarbonisation Plan https://assets.publishing.service.gov.uk/media/610d63ffe90e0706d92fa282/decarbonising-transport-a-better-greener-britain.pdf

Our local neighbourhoods and public places will put the health and quality of life of people first including reducing noise and pollution from traffic.

LTP5 Objectives:

1. Connecting our economy

The productivity of local businesses; ability to attract investment; and access to opportunities for all residents are enhanced by fast, efficient, and reliable transport connections.

The policy themes that will support this objective are:

a) Reduced delays and unreliable journey times caused by congestion and roadworks.
b) Viable active travel and public transport options to local economic and employment centres, key services and leisure facilities.
c) Faster and easier journeys to London, the Midlands and within the South East.
d) Sustainable travel options are integral to new developments.
e) The transport networks are well-maintained and prepared for the effects of adverse weather resulting from climate change.

2. Decarbonising our transport system

Carbon emissions from transport in Buckinghamshire (excluding motorways) are within our 2025-2050 carbon budget and are on track to reach net zero by 2050.

The policy themes that will support this objective are:

a) Digital connections and access to more local services reduce the need for travel.
b) Walking, wheeling, and scooting are safe, viable options for shorter local journeys, especially those in urban areas.
c) Travel by public transport is a viable and attractive alternative for residents, including to new housing and employment sites.
d) Use of low and ultra-low emission vehicles is affordable and convenient.
e) Biodiversity on and adjacent to transport networks is enhanced.

3. Building places for people

Streets, neighbourhoods, and rights of way are designed to put the needs of people first, and to be safe and accessible for all.

The policy themes that will support this objective are:

a) Local neighbourhoods and high streets are protected from rat running.
b) Traffic noise and air quality impacts on communities are minimised.
c) Neighbourhoods and local centres are walking and cycling-friendly, putting the needs of vulnerable road users first and creating vibrant places.
d) Street design is of high quality and meets the needs of all users of the space.

e) Improved road safety for pedestrians, cyclists, equestrians and motorcyclists.

f) Rights of Way which support the needs of all users, including mobility and visually impaired users.

6.16. A public consultation on the transport vision and the three objectives was undertaken in parallel with the LP4B vision and objectives consultation, in Spring 2023. A further consultation is due to take place once the main LTP5 document has been developed.

6.17. Links between the emerging Local Plan objectives and emerging Local Transport Plan 5 objectives are mapped in Figure 6 below:

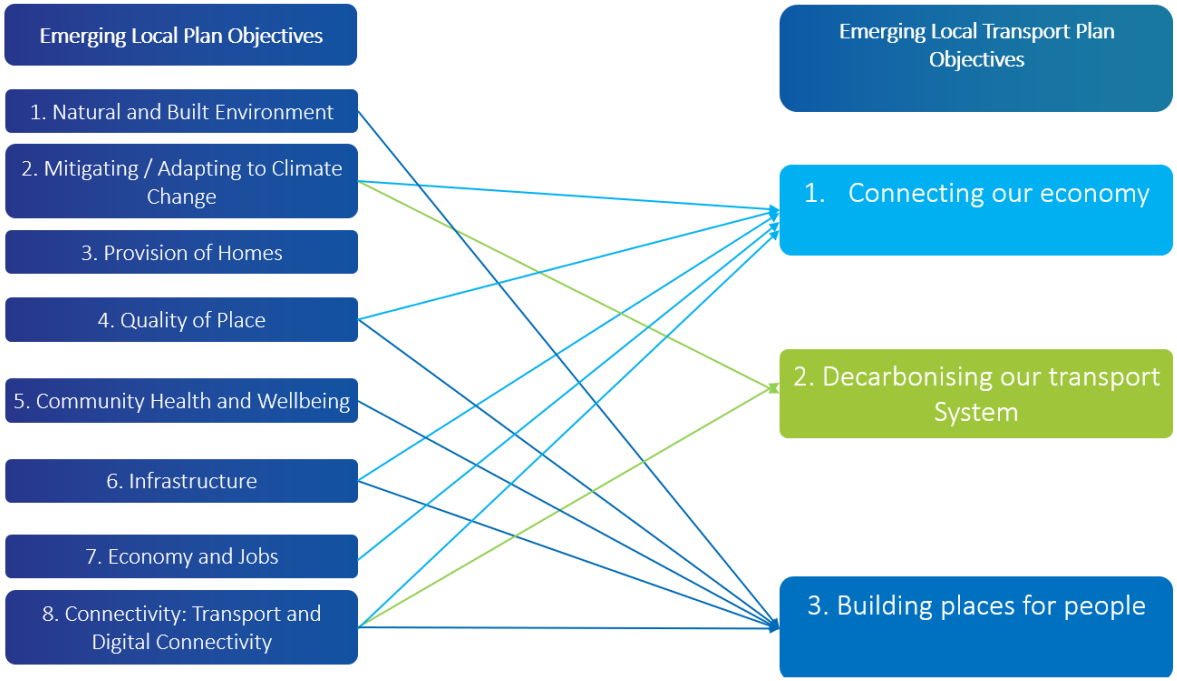

Figure 6. Mapping LP4B and emerging LTP5 Objectives

Considerations for the Local Plan

6.18. The Local Plan will shape the pattern of development in the coming decades and in order to make positive impact on society, tackle climate change, and support economic growth it will need to consider how it can maximise opportunities for the use of sustainable transport options.

6.19. To do this, the Local Plan will need to:

1. Make strong links with Local Transport Plan objectives;
2. Clearly state the essential, as opposed to aspirational, transport needs required to support development (described as 'critical'/'necessary'/'desirable' infrastructure within a Plan);

3. Shape transport infrastructure through development – e.g. identify sites which will be dependent on new infrastructure and ensure the delivery of new infrastructure is an explicit policy requirement within the Plan;
4. There are high levels of 'through traffic' (journeys that do not start or end in the county), especially along east corridors. Development proposals will need to take into consideration how growth will impact these corridors;
5. Set the tone for what we expect developers to provide in terms of public transport/active travel, including expected design standards and whole route solutions that align with the LTP5 vision;
6. Allocate sites on the basis of public transport accessibility: minimising motor vehicle trips and future road maintenance liability;
7. Where development is of a scale/location that would support new local public transport services, some identification of the likely commerciality of these services (or whether these would need ongoing funding support);
8. Consider how rail can play a part in larger developments and access to services;
9. Design needs to consider internal trips/walkability between and within sites, particularly to key services such as schools, hospitals, post offices etc.; and
10. Avoid over-reliance on the Community Infrastructure Levy for delivery of site-specific transport schemes – this is directed to support council wide infrastructure funding priorities.

England's Economic Heartland's Transport Strategy: Connecting People, Transforming Journeys

6.20. England's Economic Heartland (EEH) is a sub-national transport body bringing together 11 Local Transport Authorities (LTAs) from the region (see Figure 7). As one of seven sub-national transport bodies, it is required to produce a transport strategy for its region and advise the Government on transport infrastructure investment priorities for the area.

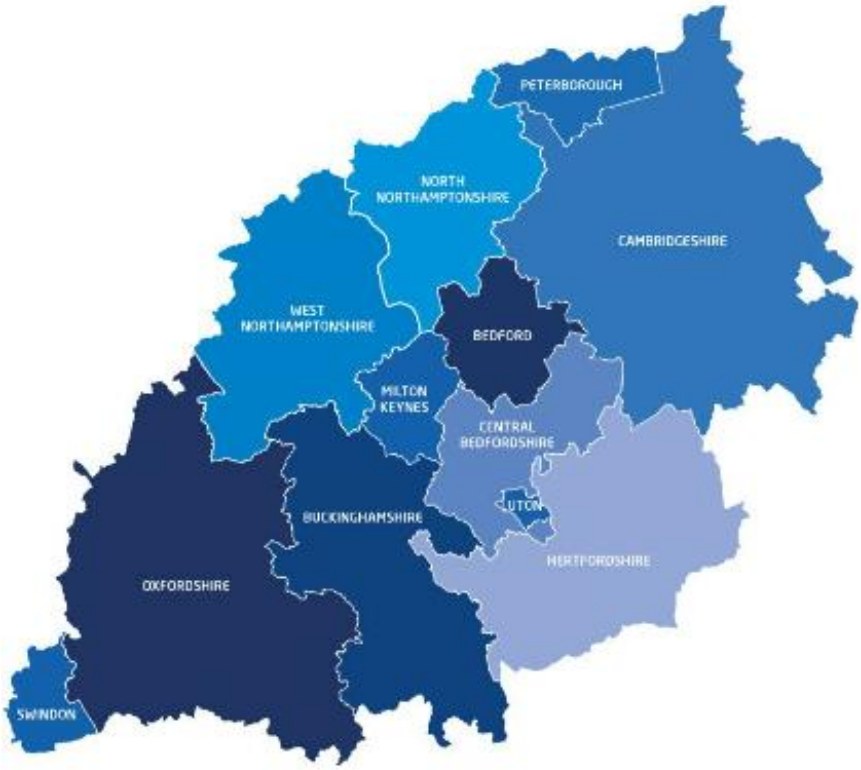

Figure 7 EEH Regional Map

6.21. EEH produced its transport strategy in 2021[20] which provides the region and Government with an evidence-based, vision-led framework focused on enabling economic growth and delivering a net zero transport system by 2040.

6.22. The transport strategy is guided by the following 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, emphasising 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.

6.23. It includes policies that will:

- Harness the region's expertise in clean technologies to deliver a greener transport system.

[20] https://www.englandseconomicheartland.com/our-work/our-strategy/

- Use investment in East West Rail and mass transit systems as a catalyst for transforming public transport across the Heartland.
- Champion digital technologies to make transport smarter.
- Improve local and rural connectivity.
- Support the freight sector while reducing its environmental impact.

6.24. To deliver the transport strategy, EEH are developing an evidence base that shows what the most effective connectivity solutions are for key corridors across the region. This work is being done through a series of Connectivity Studies[21], three of which (Southern East West Movements, Thames Valley-Northampton and Oxford-Milton Keynes) affect Buckinghamshire.

6.25. These connectivity studies identify interventions that will form a key part of the investment framework for the EEH region. The interventions identified within Buckinghamshire (see Appendix E) align with the Council's own policies and will be echoed and supported within LTP5 and the LP4B.

Preparing the initial transport evidence

6.26. Given the context set out above, the initial transport evidence for the Local Plan has focused on two strands:

1. **A review of challenges, issues and opportunities facing transport in Buckinghamshire**

6.27. A desktop study to set out the issues, challenges and opportunities that need to be addressed by the Local Transport Plan (LTP5) and provide supporting evidence and analysis to inform the LTP and Local Plan development process.

2. **A quantitative review of highways performance and carbon emissions using the Buckinghamshire Strategic Transport Model (BSTM)**

6.28. As we want to establish a baseline for the whole county, we have carried out an initial transport impacts assessment using the Buckinghamshire Strategic Transport Model (BSTM). This initial assessment has forecast the possible transport impacts of housing and employment growth if delivered as set out in the existing former Buckinghamshire districts Local Plans and existing planning commitments made by the former district Councils or by Buckinghamshire Council.

[21] https://www.englandseconomicheartland.com/our-work/connectivity-studies/

6.29. The findings identify key areas of congestion and capacity constraint within the highway network in Buckinghamshire. This helps us identify where interventions are essential in order to unlock further growth and has helped us understand the transport implications of the different approaches to growth considered in section 3.

Chapter 2. Current transport issues and future challenges and opportunities

This section focuses on the current transport issues facing Buckinghamshire and identifies future opportunities and challenges, defined by transport mode and prioritised from most to least carbon efficient.

7. The Sustainability Hierarchy

7.1. A place-based decide and provide approach to planning focuses on developing transport solutions that create better places and healthier, happier, more resilient communities. These objectives are critical to good planning and also deliver wider benefits in relation to decarbonisation, housing growth and nature recovery.

7.2. This approach to developing a Plan hierarchy is summarised in the 'Sustainable Accessibility and Mobility (SAM) Framework'[22], a tool created to help planners and designers prioritise interventions in the following order:

1. Substitute Trips: Replace the need to travel beyond your community (e.g. by providing jobs opportunities adjacent to housing)
2. Shift Modes: For longer trips, use active, public and shared forms of transport (e.g. bus and rail, car clubs).
3. Switch Fuels: For any trips that must be made by car, ensure the vehicle is zero emission.

7.3. Figure 8 outlines what the SAM Framework means for developments.

[22] RTPI | Net Zero Transport: the role of spatial planning and place-based solutions

What does this mean for developments?

The shaping of developments and supporting transport assessments now need to adapt to recent policy changes in order to comply and secure planning consent in accordance with an objective led vision.

- Reducing the need to travel
- Reducing the need to travel significant distances
- Development of comprehensive sustainable transport strategies
- Greater priority for active travel modes and reducing car-led infrastructure
- Higher density developments / improved plot efficiencies
- Potentially reduced upfront investment in physical infrastructure
- Improve Quality of Life and Longer Development Value
- Earlier S106 discussions – cost based model
- Greater data analysis to support the delivery of future sites
- Adaptive Phased Approaches being implemented for large schemes – where the strategy for the first phase of development is fixed; with the strategy of future phases to be subject to monitoring.

Sustainable Accessibility and Mobility (SAM) Framework

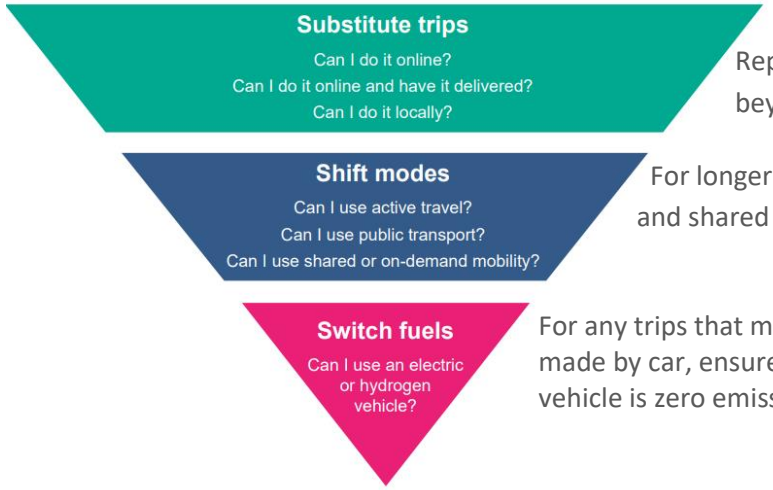

Figure 8. Sustainable Accessibility and Mobility (SAM) Framework

8. Sustainable modes of travel

Active Travel

8.1. 'Active travel' refers to journeys made by active modes, including walking, cycling and wheeling. 'Wheeling' includes wheeled mobilities, such as wheelchairs, mobility scooters and adapted cycles.

8.2. Providing facilities that support active travel is essential in creating sustainable places. This has been given prominence nationally with increased funding provision for infrastructure alongside higher technical design standards.

8.3. In 2022, Active Travel England (ATE), a new government agency, was established to support local authorities' active travel capabilities and administer capital and revenue funding for active travel schemes. ATE's objective is for 50% of trips in England's towns and cities to be walked, wheeled or cycled by 2030.

8.4. Since June 2023 ATE has been a statutory consultee on all planning applications for developments equal to or exceeding 150 housing units, 7,500 m2 of floorspace or an area of 5 hectares. Buckinghamshire Council has also secured over £875k of funding from ATE to support the planning and development of future active travel infrastructure schemes and the promotion and monitoring of recently delivered active travel infrastructure.

8.5. The Council also manages Public Rights of Ways (PRoWs) [23]. There are also some paths, known as permissive paths which are allowed by landowners but are not public rights of way. PRoWs and permissive paths support better health and wellbeing by providing places to exercise and connect urban areas to the countryside, creating key access routes for active travel and leisure in new developments. They also play a valuable role as green corridors for people and nature.

8.6. There are 2084 miles (3353 km) of public rights of way in Buckinghamshire:

- 81% are public footpaths
- around 18% are bridleways
- 1% are restricted byways and Byways Open to all Traffic (BOATs)[24]

Opportunities and challenges

8.7. The active travel and PRoW network continually evolves in order to meet needs such as an increasingly diverse and aging population (with greater health needs). However, there are several challenges associated with implementing and expanding the network. These include:

[23] The mapping network | Buckinghamshire Council

[24] Byways Open to All Traffic (BOAT) can be used by everyone, including motor vehicle drivers.

- The availability of active travel infrastructure varies across the county, with several areas currently having limited or no dedicated infrastructure, particularly between settlements;
- The existing network does not provide a consistently safe, inclusive and attractive network that is able to be used by people of all ages and abilities;
- The geography (and rural nature) of Buckinghamshire can make walking, wheeling and cycling journeys challenging, although electrically assisted bikes (e-bikes) can reduce these issues;
- Physical barriers, such as railway lines, motorways and main roads can create severance for walking, wheeling, and cycling journeys;
- There is often limited public highway land available in which to readily accommodate new infrastructure for different transport modes (such as dedicated cycle lanes);
- Buildings (such as key employment, transport hubs, education establishments) need to have appropriate facilities for sustainable travel (e.g. secure bike storage, changing rooms etc.);
- The maintenance of highway assets, including active travel infrastructure, is a challenge for local authorities. Ringfenced capital funding from government is often available for infrastructure, but funding is much scarcer for ongoing maintenance or repairs to existing infrastructure; and
- There are fewer resources to deliver the Rights of Way service which usually relies on volunteers and parish councils to maintain it. As a result, there can often be confusion for customers as to where maintenance responsibilities lie as well as variations in standards across the network.

Local Cycling and Walking Infrastructure Plans (LCWIPs)

8.8. The importance of LCWIPs is set out national Government policy (Cycling and Walking Investment Strategy, 2017) which outlines an overall ambition to "make cycling and walking the natural choices for shorter journeys, or as part of a longer journey". Local authorities are encouraged to develop LCWIPs in order to have an evidence base that can be used to inform and strengthen the case for future investment.

8.9. Complementing the existing town-level LCWIPs[25] for High Wycombe, Aylesbury and Buckingham, which identify cycling, walking and wheeling improvements at the local level, the Council is in the process of developing a Buckinghamshire Local Cycling and Walking Infrastructure Plan (LCWIP). This will establish future priorities for a comprehensive walking and cycling network across Buckinghamshire.

[25] Local Cycling and Walking Infrastructure Plans
https://www.buckinghamshire.gov.uk/parking-roads-and-transport/walking-cycling-and-wheeling/plans-to-improve-walking-cycling-and-wheeling/local-cycling-and-walking-infrastructure-plans/

8.10. This LCWIP will identify opportunities for strategic connections between settlements and to key destinations including employment, education, public transport hubs and networks, town and village facilities, countryside and visitor attractions as well as neighbouring authority areas[26].

8.11. Together these LCWIPs will help to inform active travel access and design requirements for development sites, ensuring they are connected into the wider network.

Public Rights of Way (PRoW)

8.12. The Countryside and Rights of Way Act 2000 requires all highways authorities in England and Wales to publish a Rights of Way Improvement Plan (ROWIP). This should set out how the public rights of way meets the needs of the public, including those who do not use the network and those with mobility problems or sight impairments.

8.13. Buckinghamshire Council's ROWIP (2020-2030)[27] sets out how it will support more people in walking, address equestrian needs, improve accessibility and respond to housing growth.

8.14. A public consultation carried out in 2019 revealed that making sure development did not harm the rights of way network and brought benefits was the highest priority of Buckinghamshire residents.

8.15. New developments provide the opportunity to improve access, both within and outside the development boundary. Local Plan proposals will need to fully consider the needs identified in the ROWIP, ensuring that existing paths are protected with no net loss of access. Developers should be expected to minimise disruption to PRoW during construction and any arising impacts would need to be limited or addressed through the provision of alternative routes.

8.16. Changes which result from housing growth need to bring benefits that allow new and existing residents easy access to the countryside, prioritising planning proposals that enhance the existing PRoW network and accessible green spaces.

Local Transport Note (LTN 1/20)

8.17. LTN 1/20 provides guidance and good practice standards for designing high quality and safe cycle infrastructure. Funding for new cycle infrastructure is conditional on delivering the high standards expected and schemes are subject to inspection by ATE.

[26] https://www.buckinghamshire.gov.uk/parking-roads-and-transport/walking-cycling-and-wheeling/plans-to-improve-walking-cycling-and-wheeling/the-buckinghamshire-greenway/

[27] https://www.buckinghamshire.gov.uk/environment/countryside-and-public-rights-of-way/public-rights-of-way/rights-of-way-improvement-plan-2020-to-2030/meeting-buckinghamshires-needs/

8.18. The active travel network in Buckinghamshire is lacking in design consistency when compared to the LTN 1/20 standards. However, the five core design principles of LTN 1/20: Coherent, Direct, Safe, Comfortable and Attractive are being integrated into the Buckinghamshire LCWIP. This will assist us in ensuring best practice is adhered to within development sites.

Helping people to choose active travel

8.19. The forthcoming LP4B site allocations will offer opportunities to support the national and local ambition to make cycling and walking the natural choice for short journeys or as part of a longer journey and increase uptake by people of all ages and abilities.

8.20. This can be achieved by:

- Connecting new developments to existing networks (identified by the relevant LCWIP and ROWIP);
- Bridging the gap between where people live and their local services in areas where public transport is currently unavailable or limited;
- Supporting onward connectivity by public transport by facilitating travel to public transport hubs; and
- Considering the willingness and ability of landowner/developer consortia to deliver an integrated network.

8.21. Initial work has been undertaken using TRACC (see Appendix C) to determine areas of Buckinghamshire which are within good walking, cycling and bus distances of key locations. As we move towards site selection further analysis is expected to be carried out using the DfT's new connectivity tool[28], a web-based app that generates a national measure of any place's connectivity.

8.22. The following are key strategic active travel projects currently under development that must be considered within the LP4B and LTP5:

- The Buckinghamshire Greenway.
- The Aylesbury Gardenway.
- Active travel infrastructure associated with existing and forthcoming larger developments, such as the expansion of Pinewood Studios.
- Active Travel England funded projects (e.g. Railway Walk, Buckingham).
- Canal towpath upgrades.

[28] https://www.gov.uk/Government/publications/land-use-and-transport-planning-dft-science-advisory-Council-paper/land-use-and-transport-planning-dft-science-advisory-Council-paper

- Management of declining assets supporting active travel where upgrades have not yet obtained funding (e.g. Old Stoke Road Bridge in Aylesbury).

Public transport

Buses

8.23. Most bus services in Buckinghamshire are run commercially by bus operators without a contract with the Council. These bus operators vary in size and are based both within Buckinghamshire and in neighbouring LTAs.

8.24. There are some instances in which Buckinghamshire Council subsidises services that are deemed necessary to support local communities. These subsidised services are run by operators under a contract with the Council.

8.25. There are also two community transport operators with registered bus services, in the Winslow and Princes Risborough areas. While Chiltern and South Bucks Dial-a-Ride provide services to those unable to use any of the other public transport services available.

8.26. Bus networks tend to be much denser in urban areas, in particular High Wycombe, Aylesbury and Amersham. Figure 9 below shows a summary of the bus route networks in Buckinghamshire.

Demand Responsive Transport (DRT)

8.27. Demand Responsive Transport (DRT) is a flexible bus service that provides shared transport to users who can specify their desired location and time of pick-up and drop-off. This contrasts with traditional bus services which are bound to fixed routes and timetables. Passengers typically use apps to request vehicles to and from any local destination, and operators can calculate the most efficient routes in real-time and provide accurate pick-up and drop-off times via an app.

8.28. DRT services are designed to complement fixed route public transport services and improve mobility in low-density areas and at low-demand times of day, filling the gap where journeys cannot be walked or cycled, and users do not have access to public transport or a car to access a destination or service. It is important that DRT services are integrated into the local transport network including active travel network to be effective.

8.29. Buckinghamshire has introduced a DRT trial in High Wycombe (Pick Me Up) as part of a pilot scheme funded by the Government's Rural Mobility Fund to trial DRT in rural and suburban areas of England. By passenger numbers the 'Pick Me Up' scheme is the most successful RMF funded DRT service in the country.

8.30. A second RMF funded DRT service is planned to start in Aylesbury in Summer 2024, benefiting residents in villages around Aylesbury, including Aston Clinton, Weston Turville, Stoke Mandeville, Weedon, Hartwell and Bishopstone, by providing a convenient and affordable travel option to supplement existing public transport services.

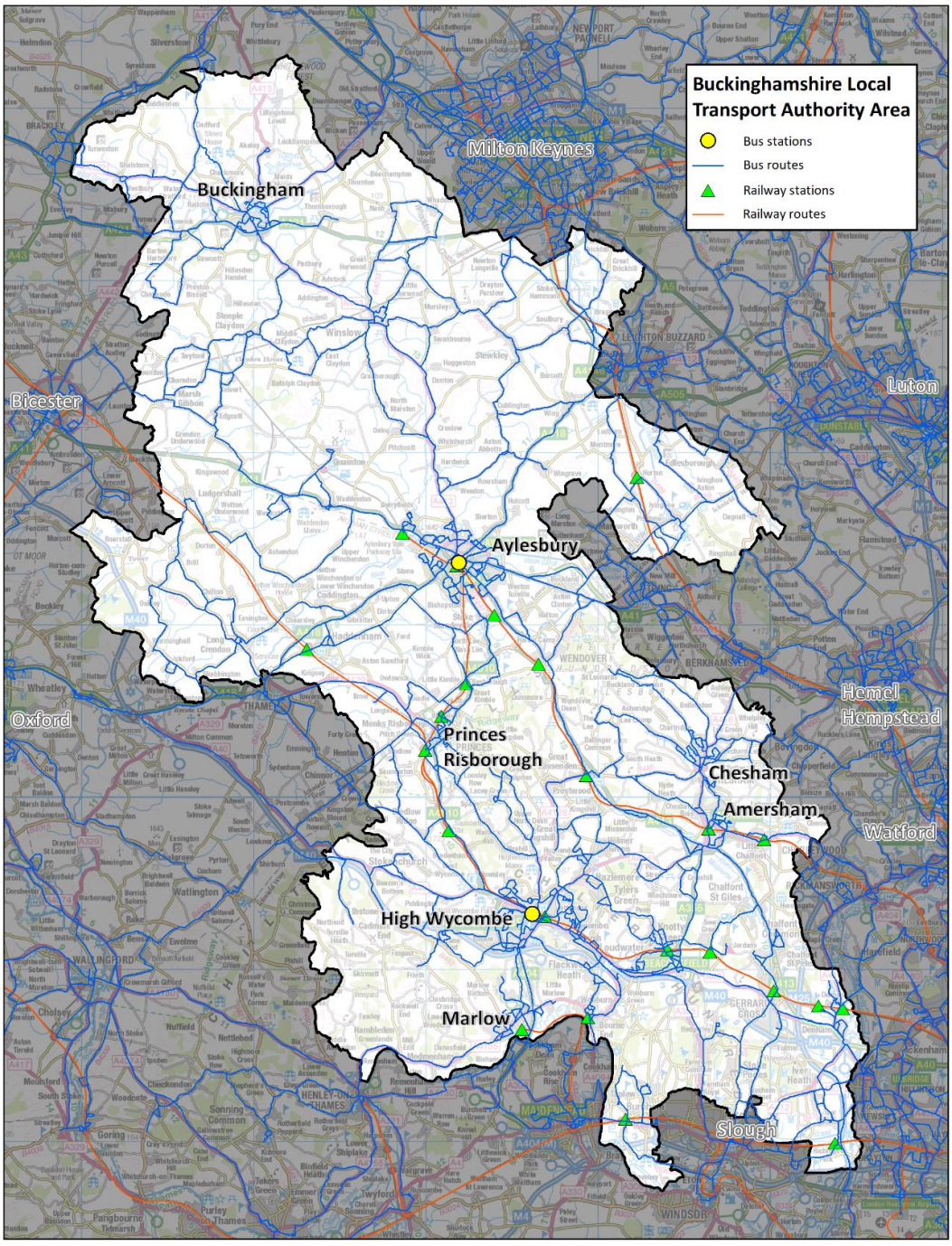

Figure 9. Buckinghamshire bus route network, 2024

Opportunities and challenges

8.31. Buckinghamshire Council plans to establish buses as a key travel mode in Buckinghamshire, providing connectivity and accessibility to all with safe, reliable, and regular bus services. This commitment is outlined in the Bus Service Improvement Plan[29] (BSIP) which has identified 3 key challenges:

[29] https://buckinghamshire-gov-uk.s3.amazonaws.com/documents/Bus_Service_Improvement_Plan_dAQhGbV.pdf

- Rural nature of the county means that there are high levels of car ownership and dispersed population. The DfT's Annual Bus Statistics[30] show that there was an 18% reduction in overall patronage between 2015/2016 – 2019/2020. However, bus route coverage remained broadly similar during this period.
- Since COVID, there has been some recovery in total patronage with the number of passengers in 2022/23 nearly double that of 2020/21. Compared to other authorities, the recovery in patronage has been slow and has been slower for concessionary bus pass users.
- The impact of traffic congestion on journey times puts further pressure on funding of services.

8.32. Buckinghamshire Council did not receive Government funding for buses following publication of our BSIP in 2021. However, work is ongoing to secure funding in the future and in the meantime, a joint effort between the Council and bus operators to improve bus services for passengers has been established through an Enhanced Partnership Scheme[31]. Many of the projects in this scheme will be dependent on funding and resource availability.

8.33. Some of the opportunities being explored include:

- Planning bus accessibility in new developments and integrating services into road layouts from the outset. Lessons can be learnt from poor design and planning in existing developments such as Fairford Leys, Buckingham Park and Berryfields.
- Aylesbury Bus Station redevelopment to help increase capacity at this key interchange point between bus and rail. There is an existing policy requirement for this set out in the Vale of Aylesbury Local Plan (VALP).
- Bus service connectivity between settlements and rail/bus stations, including the new East West rail station at Winslow.
- Bus priority measures on arterial routes in Aylesbury and High Wycombe to improve punctuality and reliability.
- Increasing the frequency of services, which could include the introduction of further demand responsive transport (DRT) services.
- Supported by the new Enhanced Partnership we will submit bids to future rounds of the Zero Emission Buses: Regional Areas Fund (ZEBRA) to support the electrification of the bus network.
- Improving passenger experience by focusing on safety and security. This would include enhanced vehicle quality, improved bus stops and stations, and enhancing accessibility for vulnerable users.

[30] DfT Bus Statistics https://www.gov.uk/government/collections/bus-statistics
[31] https://buckinghamshire-gov-uk.s3.amazonaws.com/documents/Bus_Enhanced_Partnership_Plan_and_Scheme_2024.pdf

- Improvements to key strategic routes which serve important destinations such as hospitals, schools, airports, leisure and tourist destinations.
- Improved and simpler ticketing schemes including multi-operator ticketing, flexible and discount tickets. This would go hand in hand with comprehensive real time passenger information at stops and stations.

8.34. The purpose of the DRT pilot schemes is to understand whether these services can become commercially viable, offering an affordable and viable alternative to link communities which are not support by the regular bus network. If successful, it could be a model for how some bus services may be provided in other parts of Buckinghamshire in the future.

8.35. Most DRT services are currently subsidised by the RMF or local transport authorities and most are continuing to face severe financial pressures. Continued funding could be secured through section 106 agreements or use of the Community Infrastructure Levy to ensure new developments are linked to important facilities and services.

8.36. In larger scale developments, there may be opportunities for developers to provide 'whole route' sustainable transport solutions to encourage behaviour change and establish commercially viable schemes. In developments where whole route solutions are not appropriate, or in smaller scale developments other options should be explored, such as allocating developments on/around existing public transport routes.

8.37. Buckinghamshire Council's BSIP refresh describes all the bus improvement schemes that have been delivered by 2023/24, what is programmed for delivery in 2024/25 and the ambitions/priorities for delivery in 2025 and beyond subject to funding availability. The Local Plan growth allocations should consider how development can support the planned improvements and expansion of the bus network as outlined in the BSIP.

Rail

8.38. Planned growth is expected to result in additional demand for travel. There is potential for some of those new journeys to be made by rail, particularly in areas where rail offers an advantage over the car travel in terms of journey time, cost and convenience.

8.39. Rail services will be particularly attractive for access to and from new developments where parking at the destination is limited (e.g. London), where there is significant traffic congestion, or for longer journeys.

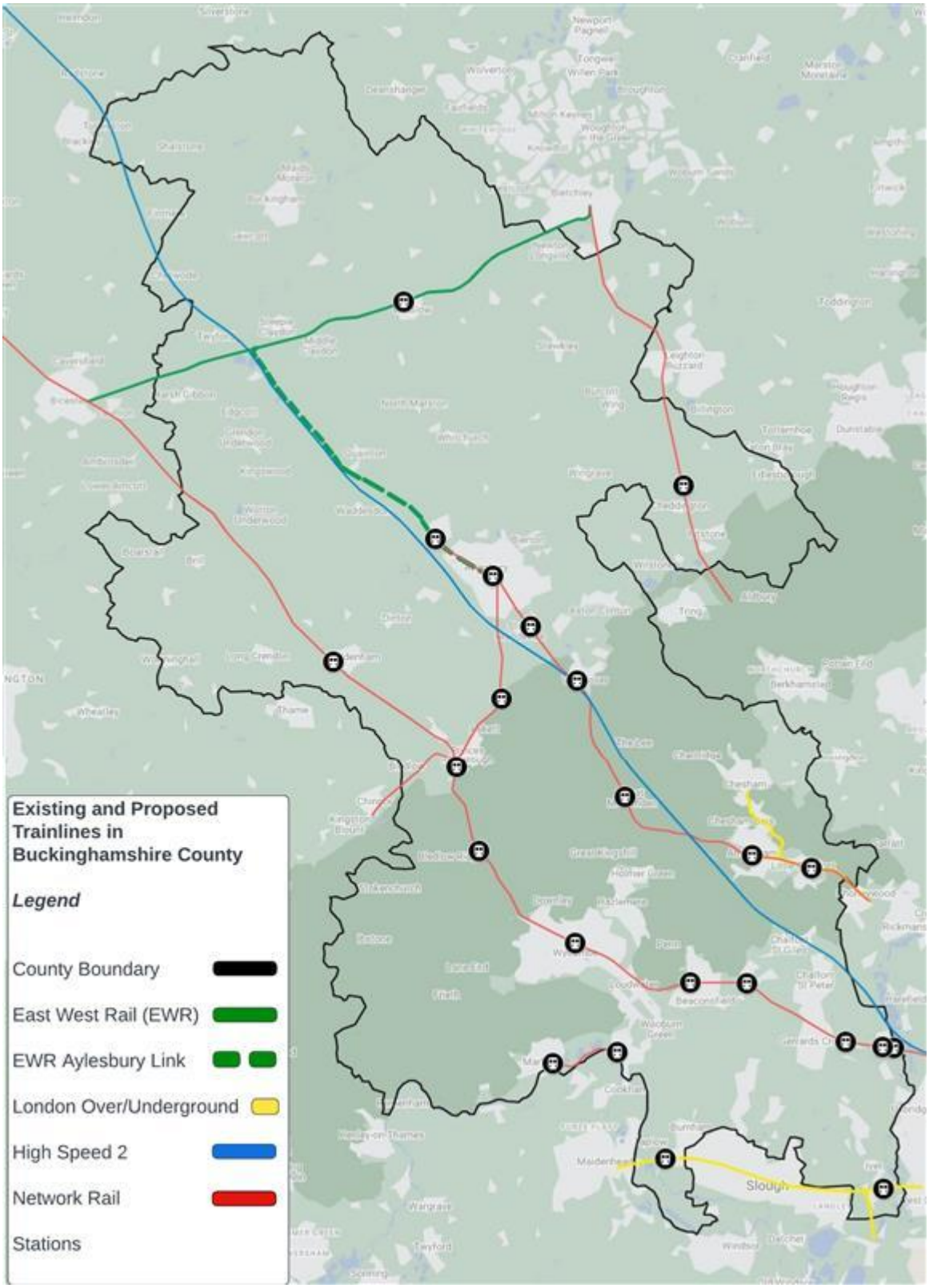

Figure 10 Map of Buckinghamshire's existing and future railway connections

8.40. The main heavy rail lines that are available or planned in Buckinghamshire are:

Chiltern Railways

8.41. Most of Buckinghamshire's railway stations are located on the Chiltern Main Line, which runs between London Marylebone and Birmingham Snow Hill. In addition to the Chiltern Main Lines, there are two branch lines which are used by Chiltern Railways that continue on the mainline to reach London Marylebone. These two branch lines are the Oxford-Bicester line (calling at Haddenham and Thame Parkway) and the Aylesbury-Princes Risborough Line (which has two additional calling points at Monks Risborough and Little Kimble).

8.42. The London – Aylesbury Line via Amersham provides an outer- suburban service partly using London Underground infrastructure (Metropolitan Line) with some trains continuing to/from Aylesbury Vale Parkway. The Metropolitan Line also serves Chesham and Amersham station as part of the London Underground service.

Great Western Main Line

8.43. Southern Buckinghamshire is touched by the Great Western Main Line which connects London with the southwest of England and Wales, calling at two Buckinghamshire stations: Iver and Taplow. Bourne End and Marlow are also served by a branch line connected to this route via Maidenhead. In addition, the Elizabeth Line stops at Iver and Taplow on the route to Reading.

West Coast Main Line

8.44. The West Coast Main Line only covers small parts of eastern Buckinghamshire, with one station serving the village of Cheddington between Leighton Buzzard (Central Bedfordshire) and Tring (Hertfordshire).

East West Rail

8.45. A new rail line, East-West Rail (EWR), is currently under construction. It will cross the north of Buckinghamshire with a station at Winslow (due to open in 2025). It will provide services between Oxford and Milton Keynes or Bedford.

8.46. There is a freight-only line in use from Aylesbury Vale Parkway to Claydon, serving the Energy from Waste facility at Greatmoor. Under the EWR Transport and Works Act Order it had been intended that the freight-only line would be upgraded and rebuilt for passenger service as part of the EWR project to provide a link to Aylesbury. However, this is not currently part of the scheme under construction.

High Speed Rail (HS2)

8.47. HS2 currently under construction, passes through Buckinghamshire but with no stations in the county.

Opportunities and Challenges

8.48. The Initial Impact Assessment report (see Appendix A) suggests that future transport work for the Local Plan and LTP5 should consider more detailed analysis of potential trip patterns from growth sites, and review future capacity on relevant rail services, to further inform the maximisation of sustainable travel options and existing/planned capacity.

8.49. The share of new development-related journeys using rail will be affected by:

- The proximity of the development to a station;
- Whether the rail services link the development to key attractors such as employment and retail hubs;
- Service frequency; and
- Rail capacity (for example the likelihood of getting a seat).

8.50. Some of the rail investment priorities for Buckinghamshire include:

1. The East West Rail – Aylesbury Link;
2. Electrification of the Chiltern Main Line, as well as more general route upgrades;
3. Connecting the Chiltern Main Line via High Wycombe to Old Oak Common station, to provide an alternative London terminus; and
4. Western Rail Link to Heathrow, which is currently awaiting funding before proceeding.

East West Rail – Aylesbury Link

8.51. The Aylesbury Link was originally included in the 'western section' of the EWR route, but it was not included in the subsequent 2021 EWR capital funding announcement. Since then, the route remains unfunded and its delivery is uncertain. Figure 11 shows the EWR rail route including the Aylesbury Link.

8.52. The housing allocations in the VALP were determined on the basis of improved rail access via EWR. The Aylesbury Link was expected to provide a sustainable transport option for nearly 16,000 new homes that were to be built by 2033.

8.53. The Aylesbury Transport Strategy[32] considered the expected increase in rail journeys due to the implementation of the EWR Aylesbury Link and recommended taking advantage of the route to reduce car journeys across the town. In the event the Aylesbury

[32] Aylesbury Transport Strategy, produced for Buckinghamshire County Council, 2017: https://buckinghamshire-gov-uk.s3.amazonaws.com/documents/aylesbury-transport-strategy-final-jan-17_RAQe8Wk.pdf

link is not delivered, it is certain that there will be additional pressure placed on already-stretched road infrastructure in Aylesbury.

8.54. EEH Transport Strategy also states that the delivery of strategic public transport schemes such as EWR are the catalysts to improving the public transport system and the shift towards low carbon modes of travel.

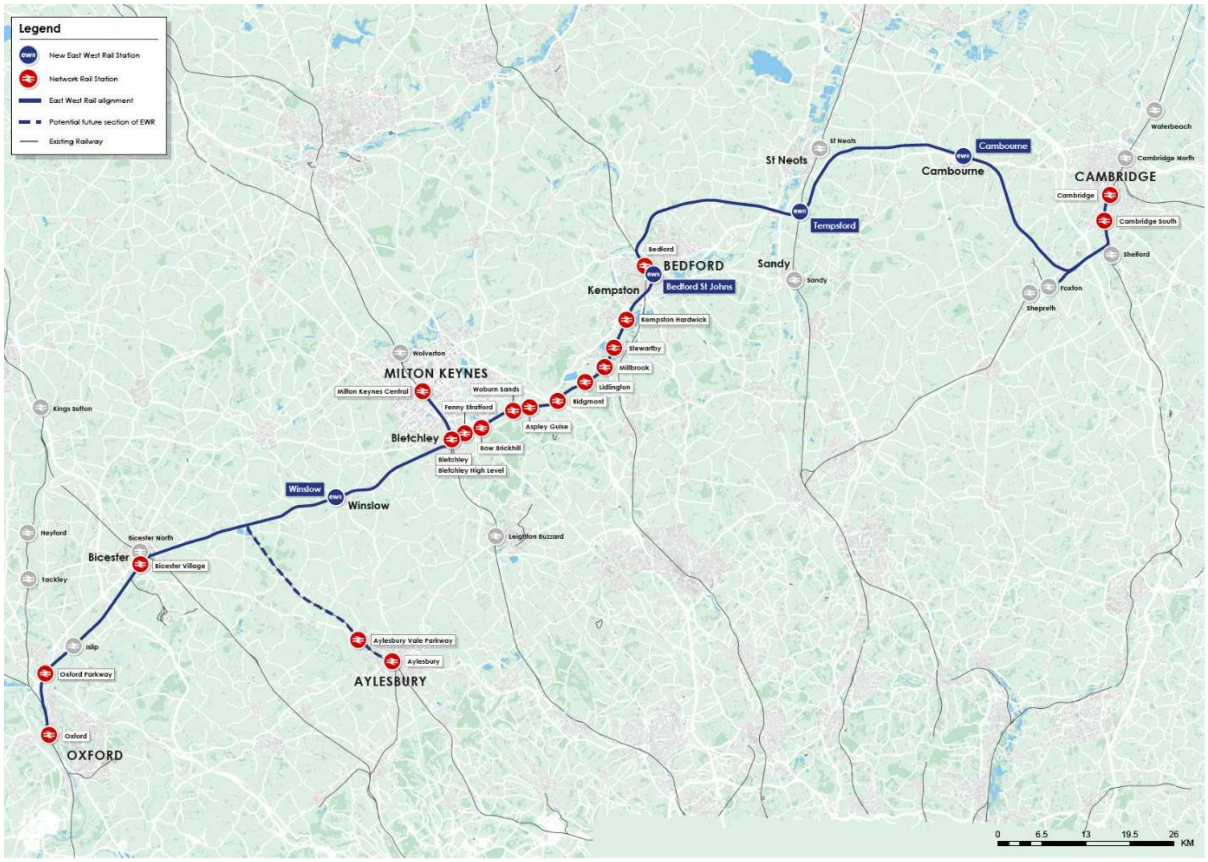

Figure 11. East West Rail route map including Aylesbury Link, Source: East West Rail

8.55. Buckinghamshire Council and EEH are working to make the case to Government that this connection to Aylesbury represents value for money. A refreshed economic case for the construction of the link has been proposed highlighting the following key benefits:

- Improved collaboration between innovation clusters in the area, particularly space, life sciences and electronics;
- Improved labour market matching, providing professional occupations with sustainable transport options and a wider range of high-skilled job opportunities; and
- Supporting other industries with better access to specialist engineering and advanced manufacturing services.

Network Rail level crossing closures

8.56. In Buckinghamshire, there are 70 level crossings. As level crossings reach the end of their life cycle Network Rail are upgrading/renewing infrastructure on a risk basis, to

achieve the maximum possible reduction in risk of accidents. Since the start of their risk reduction program in 2010, Network Rail have closed more than 1,300 crossings. Due to the age of these level crossings, the communities most affected by crossing closures are usually well established and are often subsequently inconvenienced by severance and diversions of public rights of way (PRoW).

8.57. Any development that is likely to impact the level and type of traffic on a level crossing would need to secure appropriate traffic mitigation measures in collaboration with Network Rail. This can often affect the direction/design of the development.

8.58. Where there are planned level crossings closures and major development is proposed such as urban expansions this may involve new routes across the railway in the form of underpasses or footbridges alongside active travel improvements on the existing road network to ensure sustainable connectivity to the existing settlement.

Micromobility

8.59. Micromobility refers to a range of small, lightweight vehicles operating at speeds typically below 25 km/h (15 mph) and driven by users personally. Micromobility devices include bicycles, e-bikes, electric scooters, electric skateboards, shared bicycle fleets, and electric pedal assisted bicycles.

E-scooter trials

8.60. To support a 'green' restart of local travel during the COVID pandemic and to help mitigate reduced public transport capacity the DfT made regulations allowing limited trials of rental e-scooters.

8.61. The trial period was originally scheduled to end on 31st March 2022, but this was extended to November 2022, May 2024 and more recently, the trial period was extended by a further two years to 31st May 2026.

8.62. Buckinghamshire hosts three of the national e-scooter trials in Aylesbury, High Wycombe, Princes Risborough. The schemes are managed by Zipp Mobility (acquired by Zeus scooters) at zero cost to the Council.

8.63. The DfT published a comprehensive National Evaluation of e-scooter trials in 2023[33]. These findings showed that rental scheme e-scooter users were most likely to have walked their journey if an e-scooter had not been available (42% of trips), followed by using private motor vehicle (21%), or taking public transport (18%). Locally, surveys

[33] https://assets.publishing.service.gov.uk/Government/uploads/system/uploads/attachment_data/file/1128454/national-evaluation-of-e-scooter-trials-findings-report.pdf

undertaken via the Zipp Mobility app in July 2022 and August 2023 revealed that 18% of customers stated they would have travelled by car.

8.64. As of January 2024, over 327,000 trips had been taken on e-scooters covering a total distance of just over 507,000 miles (815, 938 km) locally. This equates to 31.2 tonnes of carbon saved over the lifetime of the three schemes.

E-bikes

8.65. The Council introduced e-bikes to complement the trial schemes in Aylesbury and High Wycombe in July 2023. 50 bikes were split between Aylesbury and High Wycombe but were quickly withdrawn due to exceptionally high rates of theft and vandalism. Zipp will be relaunching the e-bikes in 2024 with enhanced security features.

Opportunities and Challenges

8.66. The data from the e-scooter trials show that e-scooters are already providing a sustainable travel solution for local journeys. The 2022 National Travel Survey[34] also revealed that 60% of car trips were under 5 miles (8 km) and as typical distances of e-scooter trips range between 1-5 miles (1.6 to 8 km), there is a clear opportunity for e-scooters to replace car journeys and ease congestion.

8.67. The Local Plan and LTP5 should therefore consider their role as a convenient and quick active travel mode for short distances and a connection for first/last mile trips should be considered as part of a multi modal approach to sustainable development.

8.68. However, other concerns highlighted by DfT[35] relate to non-observance of the rules and e-scooters replacing walking trips rather than replacing car trips and therefore not contributing to transport decarbonisation objectives. It is therefore imperative that e-scooter journeys should be used to replace private car journeys and plug the gaps in the transport system where public transport and active travel are not feasible.

8.69. Throughout the trial period, the Council has received regular reports of e-scooters being used for anti-social behaviour and that their presence feels threatening to others, particularly more vulnerable people, who are trying to travel within the same space. Zipp Mobility have also experienced multiple issues with vandalism and theft leading to a withdrawal of some services. Additionally, privately-owned e-scooters which are illegal on both roads and in pedestrian areas, including within the designated trial areas, continue to increase in numbers.

[34] https://www.gov.uk/Government/statistics/national-travel-survey-2022/national-travel-survey-2022-mode-share-journey-lengths-and-trends-in-public-transport-use

[35] https://assets.publishing.service.gov.uk/media/64e4a5de3309b7000d1c9c41/national-evaluation-of-e-scooter-trials-findings-report.pdf

8.70. There is currently no official update on the long-term legalisation of e-scooters.

8.71. As demand for micromobility increases there creates a need for dedicated parking spaces for these vehicles which will need to be accommodated in new development sites. The most suitable locations for these are: public transport hubs such as train and bus stations; shopping centres; schools and leisure destinations. However, it is important to create a balance with other modes of transport for the greatest positive impact.

Car Clubs

8.72. Car parking provision is a useful tool in managing driver's behaviour, use of the kerbside space and traffic congestion in town centres.

8.73. Car clubs are short-term car rental services that allow members access to locally parked cars which charge by the minute, hour, day or distance. Car clubs may also include other types of vehicles such as vans.

8.74. There are different car club operating models including commercial car clubs (e.g. Co-Wheels, Enterprise or Hertz); peer-to-peer car clubs which offer privately owned vehicles for hire (e.g. Getaround, Hiyacar or Karshare); and community car clubs which are run by local groups and can include lift sharing schemes.

8.75. Car clubs offer a new model of mobility for Buckinghamshire as an alternative to private car ownership. The car club market is innovating rapidly with new operators and operation models taking car clubs from a niche service to a mainstream transport option. CoMoUK the national organisation for shared transport's research highlights considerable growth in the shared cars sector with 767,899 registered members as of March 2023 an increase of 38% since 2020[36].

8.76. The LTP4 car club policy (14) promotes car clubs and proposes the integration of car clubs in new developments through planning agreements. It also suggests that public transport services should offer fare incentives for car club members and communities should explore partnership opportunities to introduce car clubs.

8.77. The High Wycombe Transport Strategy (HWTS)[37] also highlights the aspiration for car clubs in the town, setting a requirement for car clubs to be introduced in new developments.

[36] https://www.gov.uk/Government/publications/car-clubs-local-authority-toolkit/car-clubs-local-authority-toolkit
[37] https://www.buckinghamshire.gov.uk/parking-roads-and-transport/transport-policies-strategies-and-plans/transport-strategies/high-wycombe-transport-strategy/

Opportunities and Challenges

8.78. Car clubs operating from dedicated parking bays need Traffic Regulation Orders (TROs) and parking permits to allow exclusive car club use and legal access to parking bays. TROs and parking permit costs are often subsidised by the Council to incentivise car club implementation and derisk the operators' startup costs. Consideration should also be given to the potential loss of parking revenue from the 'loss' of parking bays (car clubs are often in high traffic areas).

8.79. It is expected that an increasing number of development schemes within the Council area will start to include car clubs and other shared transport options (e.g. bike share, Demand Responsive public transport etc.) to support people in choosing sustainable transport alternatives. CoMoUK provides valuable guidance on incorporating car clubs into new developments through the following recommendations[38]:

- Create people-centric neighbourhoods with shared transport and sustainable transport at the heart of planning policy.
- Early engagement with operators to build in shared transport strategies in new developments.
- Marketing and incentivisation of shared transport to new residents to embed new behaviour.
- Using planning conditions as mechanisms for funding e.g. suitable space allocation, electric vehicle infrastructure or initial vehicle costs.
- Replacing higher parking provision with car clubs by using chargeable parking permits to tackle spill over parking.

8.80. EV vehicles and in turn EV car clubs have recently had unprecedented support from the Government. Specifically, DfT's zero emission vehicle (ZEV) mandate sets a requirement for 22% of new cars sold in 2024 to be zero emission rising each year up to 100% by 2035. Manufacturers will also be able to earn bonus credits for zero emission vehicles sold to car clubs, incentivising car club implementation.

8.81. Isolated stand-alone car clubs are rarely viable therefore developments need to be of a large scale although smaller developments could be considered where it is possible to enable access to a wider audience e.g. housing development close to business locations or urban area extensions.

8.82. Despite support for car clubs in existing policies, there are currently no standards for their provision in Buckinghamshire. Targeted roll out of car club schemes across the county have also largely fallen behind largely due to the lack of dedicated funding,

[38] https://assets-global.website-files.com/6102564995f71c83fba14d54/6230798c0eedd6b324670851_CoMoUK%20New%20Developments%20Guidance.pdf

support programmes and policy guidance. Work has started to develop a countywide guidance for car clubs which will be aligned with existing policies and form part of the LTP5 and Local Plan evidence base.

Mobility Hubs

8.83. There is an opportunity to bring together all the sustainable transport modes discussed in this chapter in a highly visible, safe and accessible space. These spaces, which are known as 'Mobility Hubs', are co-located alongside public realm improvements and community facilities. Mobility hubs can make urban spaces work more efficiently by using less space for private cars, and more street space for bicycles, scooters, walking, play and social activities.

Opportunities and Challenges

8.84. CoMoUK has published a suite of evidence showcasing the benefits that mobility hubs can offer including:

- Mobility hubs that are located within easy reach of homes can facilitate modal shift towards public transport and active travel.
- New developments with mobility hubs enable reduced parking provision which can reduce developer costs and make more land available, particularly in constrained areas such as town centres.
- Mobility Hubs provide a central location for shared transport, including car clubs and EV charging infrastructure.
- In rural areas, bus and rail services are typically limited and sparsely located. There are also fewer transport choices that cater to the first/last mile connection to and from stations. Mobility Hubs can offer the missing link by connecting these services.
- Allows young people, the elderly and those with disabilities or those with lower income who cannot access private mobility to access to a choice of transport to suit their needs.
- Additional facilities such as co-working space and a café could allow people to make more productive use of their time, reducing the negative impacts of interchange time.

8.85. Currently, there is not a best-practise approach to the location assessment of mobility hubs. The scale of mobility hub infrastructure varies depending upon the location of the hub and local needs (rural/urban, or first/last mile). CoMoUK provides a mobility hub accreditation standard[39] which recommends six components that can be brought together in different combinations. These are:

- Choice of sustainable transport modes
- Accessibility

[39] https://www.como.org.uk/mobility-hubs/accreditation

- Ease of switching between modes
- Safety
- Practical features e.g. rest stops, parcel access points
- Public realm enhancements

8.86. EEH have recently developed of a Regional Location Assessment Tool for Mobility Hubs which will support the identification of the most suitable location for hubs across the region and highlight the locations that would benefit from the increased connectivity. EEH have also offered support to local authorities who wish to pursue the development of mobility hubs and evidence gathered from ongoing work in the region will be used to inform the Local Plan. The Council is also exploring the need for policy on the implementation of mobility hubs in Buckinghamshire.

9. Highways

9.1. Buckinghamshire Council is responsible for managing and maintaining the highway network within Buckinghamshire, with the exception of the Strategic Road Network (SRN) and private roads.

9.2. National Highways manage, operate and maintain the SRN in England through a five-year Roads Investment Strategy (RIS). The SRN, shown in Figure 12, consists of 4,500 miles (7,242 km) of motorways and major A roads, some of which run through Buckinghamshire including:

- M4 (between junctions 7 and 8/9)
- M25 (between junctions 17 and 15/4B)
- M40 (between Junctions 1, 6, 8 and 9)
- trunk roads (green backed signs) A404(T)
- A40(T) (from M40 J1 (Denham) – eastwards into London Borough of Hillingdon

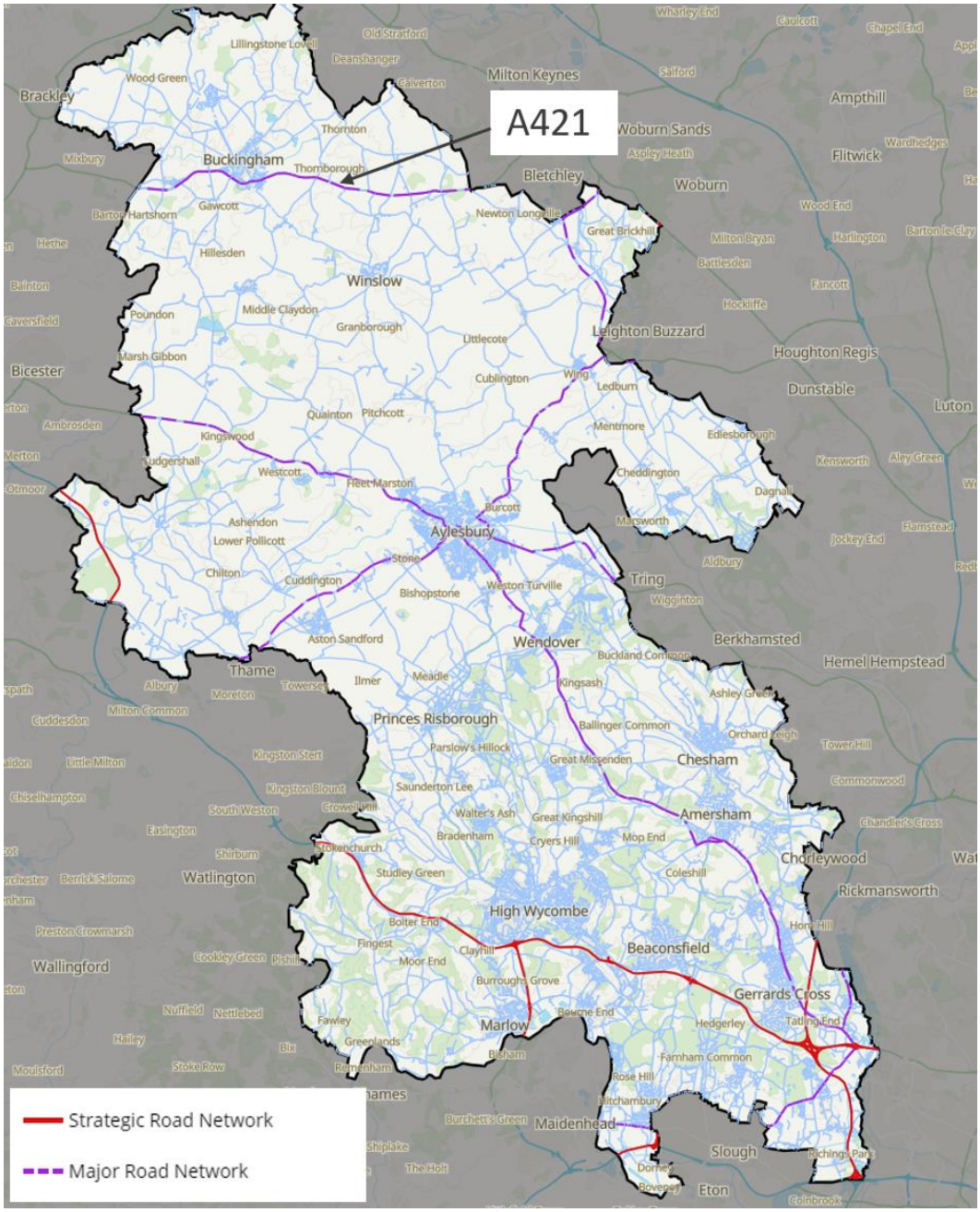

Figure 12. Map of Strategic and Major Road Network, showing location of A421 in Buckinghamshire

Traffic Forecasting

9.3. Buckinghamshire Council commissioned an Initial Transport Impacts Assessment of the highway network to inform whether there is sufficient capacity within the network to meet the forecast growth from site allocations in existing adopted plans and planning commitments.

9.4. The Buckinghamshire Strategic Transport Model (BSTM) was used to determine the performance of the highway network in the 2019 base year and for the Local Plan for Buckinghamshire (LP4B) 'Do Minimum' scenario, which has a forecast year of 2045. The

Do minimum scenario includes all committed developments within existing adopted local plans as well as existing background growth.

9.5. A sound modelling basis is needed to understand the impacts of growth from any new development or changes to road access. The BSTM model validation report demonstrates that the model has a good level of network detail, calibration and validation, and provides a suitable platform for assessing existing and future traffic conditions in Buckinghamshire. Further details on the BSTM are provided in the Local Model Validation Report, March 2023 in Appendix B.

9.6. The initial transport impact assessment identifies key areas of congestion in 2019 (the model's base year[40]) and 2045 (the extent of the LP4B and including all ('near certain' and 'more than likely' new transport infrastructure schemes) and from this we can understand the impact of traffic growth on air quality and carbon emissions. This helps us to understand our traffic challenges, issues and options for consideration in the development of the Local Plan.

9.7. A 2045 'Do Nothing' scenario (with no committed sites included) was also considered as an alternative comparator year. This was not modelled as it was felt that zero growth in the area was not a realistic scenario and so its assessment would not provide value for money.

9.8. At this stage the BSTM does not include a variable demand (VDM) element (analysis of changes in travel demand resulting from a change in the transport system), or consideration of public transport or active modes. This means that this assessment only considers the routing of a pre-determined number of vehicle trips on the highway network. The Council is currently in the process of upgrading the model to include VDM, and this version will be used to test potential site allocations.

Key findings

9.9. The section below presents a summary of key findings from the Initial Transport Impacts Assessment report. It describes the forecast performance of the highway network in 2019 and 2045 based on model outputs from the BSTM. For the detailed assessment, see Appendix A - Initial Transport Impacts Assessment (Atkins, March 2024).

[40] 2019 has been chosen as the base year for the BSTM to prevent interference from the impact of the 2020 COVID pandemic and the construction of 2 Nationally Significant Infrastructure Projects: High Speed 2 and East West Rail since this time.

2019 base year

9.10. Traffic volume was forecast to be highest within the main towns (Buckingham, Aylesbury, High Wycombe and Amersham) and on routes to/from these locations. Figure 13 shows the traffic volume on major roads in the morning and evening peak hours.

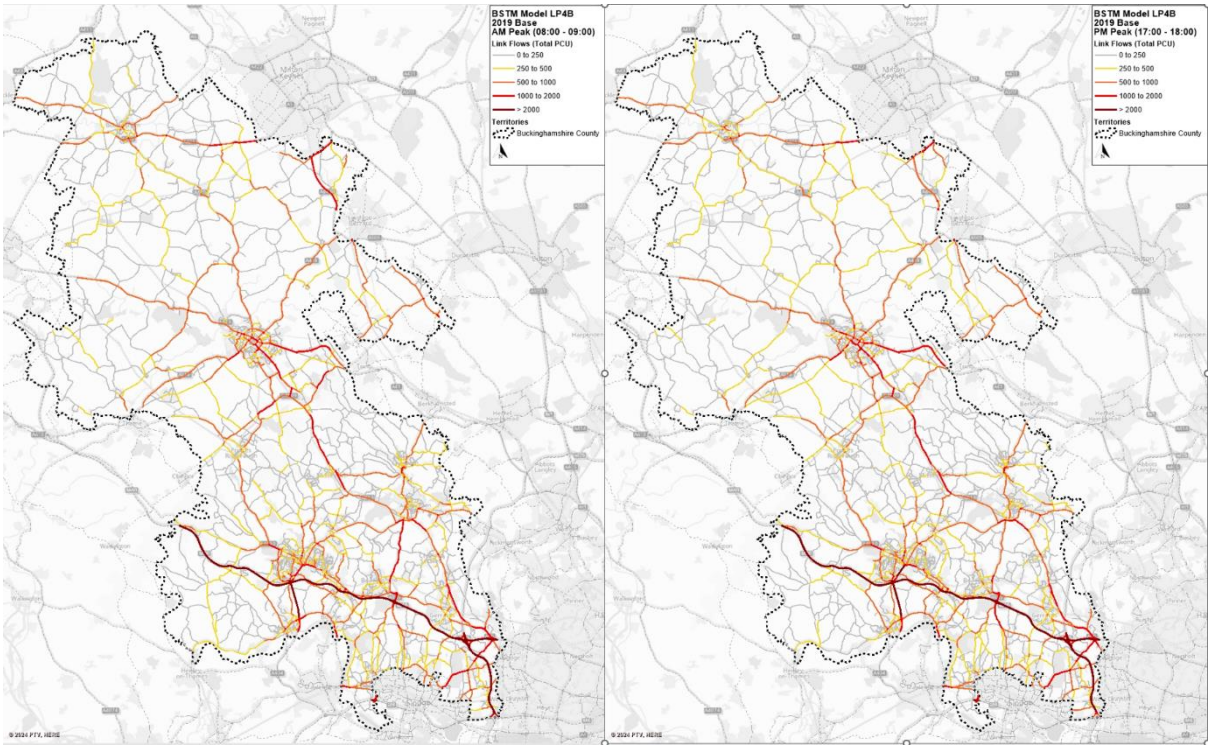

Figure 13 Traffic volume: 2019 AM and PM peak hour

9.11. To understand journey times in Buckinghamshire, 18 locations with the highest populations and the highest traffic volumes on major roads were selected. The average journey time by all routes between two locations (links) was then extracted from the model.

9.12. The difference between the modelled journey times and free flow journey times (the duration it takes to travel on a road without encountering delays) was used to identify journeys with the largest forecast delays. The top 10 journeys with the largest forecast delays in the morning and evening peak hours are shown in Figure 14, notably routes into Aylesbury and out of High Wycombe suffer the most delays.

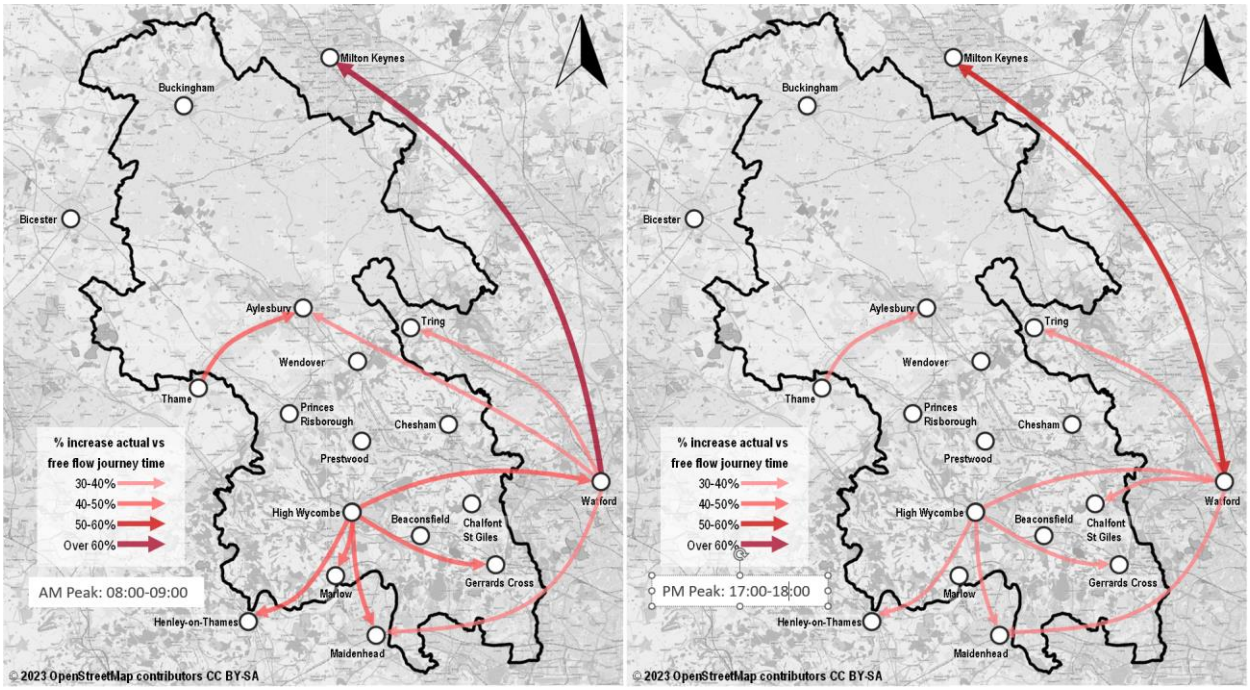

Figure 14. Top 10 journeys with largest forecast % delays in 2019 base year AM and PM peak hour

9.13. To identify the causes of delays between these 18 locations, the volume to capacity (V/C) ratio of the connecting links and junctions was calculated. This helps us to understand whether delays are being caused by a high number of vehicles on limited road space. A link or junction with a V/C of greater than 85% will see a significant reduction in speed while a V/C of 100% is considered to be at capacity.

9.14. Figure 15 shows that there are links approaching capacity or over capacity (shown in dark red), leading to delays in the morning and evening peak hours.

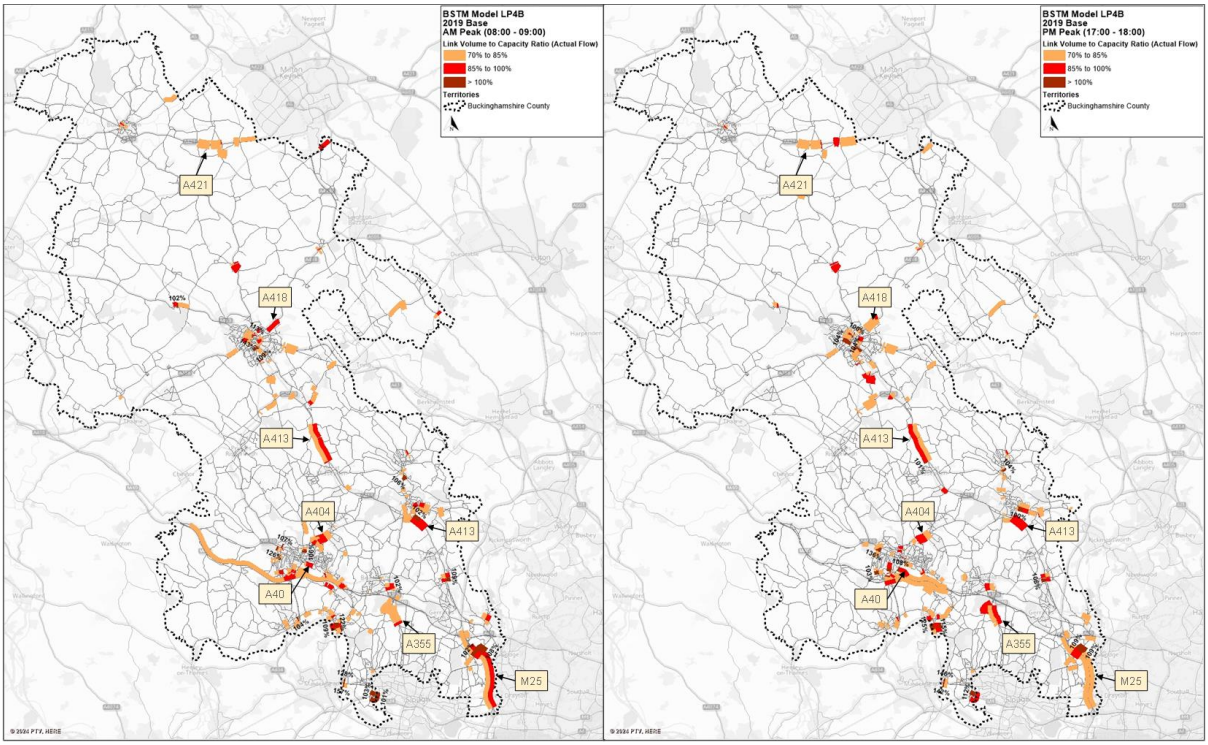

Figure 15. Link volume/capacity - Base year 2019 AM and PM peak hours

9.15. The volume/capacity (V/C) ratios of junctions are also shown in Figure 16 for the morning and evening peak hours.

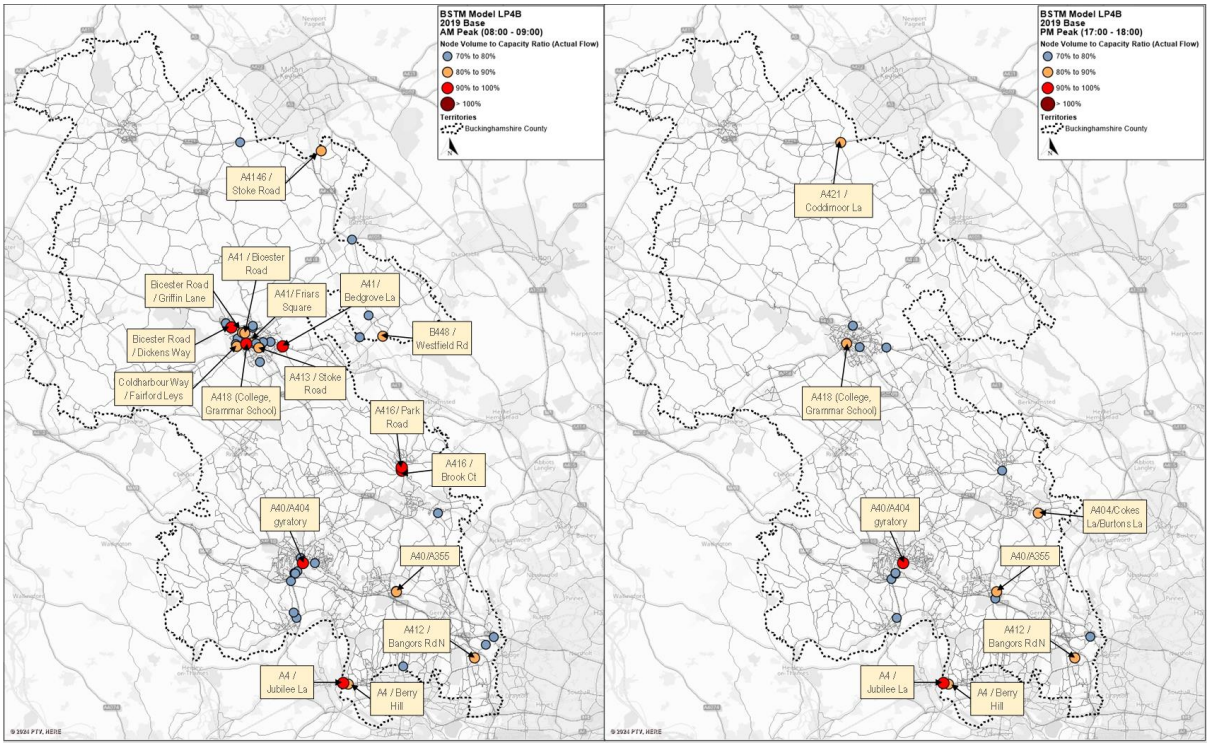

Figure 16. Junction volume/capacity - Base year 2019 AM and PM peak hours

9.16. The Initial Transport Impact Assessment report in Appendix A provides more detail on the capacity issues shown in the above figures.

Forecast changes in delay (congestion) between 2019 and 2045

9.17. Model outputs show a 26-30% increase in traffic levels between 2019 and 2045 during peak periods. This is broadly comparable to the Core National Road Traffic Projection for daily traffic growth in the South East in terms of vehicle miles[41].

9.18. Journeys to and from the existing development site allocations and committed development sites account for between 25% and 31% of the total growth in traffic between 2019 and 2045.

9.19. In Aylesbury, traffic is forecast to increase on the new sections of the orbital route: the South Western Link Road (SWLR), South East Aylesbury Link Road (SEALR), Southern Link Road (SLR) and Eastern Link Road (ELR), as well as many of the existing roads within the town and on all arterial routes towards the town. There are some forecast reductions in traffic on A4010 Station Road and A413 Wendover Road (Stoke Mandeville) and on A41 Aston Clinton Road. This is due to forecast re-routing of traffic from these roads to the new orbital routes.

9.20. In High Wycombe, the provision of the new Gomm Valley Spine Road is forecast to cause reductions in traffic volume on A40 London Road and on the A404 (south of M40 Junction 4) in the AM peak hour.

9.21. The findings from this assessment also show that the average distance travelled will be shorter, while travel time is predicted to remain broadly constant. As a consequence of shorter journeys and constant travel time, there is a forecast reduction in average speeds of 7% in the morning peak and 6% in the evening peak hour. Comparatively, the National Traffic Projection (Core) for the South East is for speeds on all roads to fall by a weighted average of 4.2% over the same period (5.6% excluding minor roads). Travel time increases due to delay are forecast to almost double in Buckinghamshire (increasing by between 87-89%).

9.22. The top ten journeys with the largest percentage increase in delay are shown in Figure 17 below. During the morning peak hour, the largest increases in traffic delay between 2019 and 2045 are forecast in the south of Buckinghamshire, while in the evening peak hour the most significant increases in delay are forecast for journeys towards Aylesbury and Wendover.

41 https://www.gov.uk/Government/publications/national-road-traffic-projections

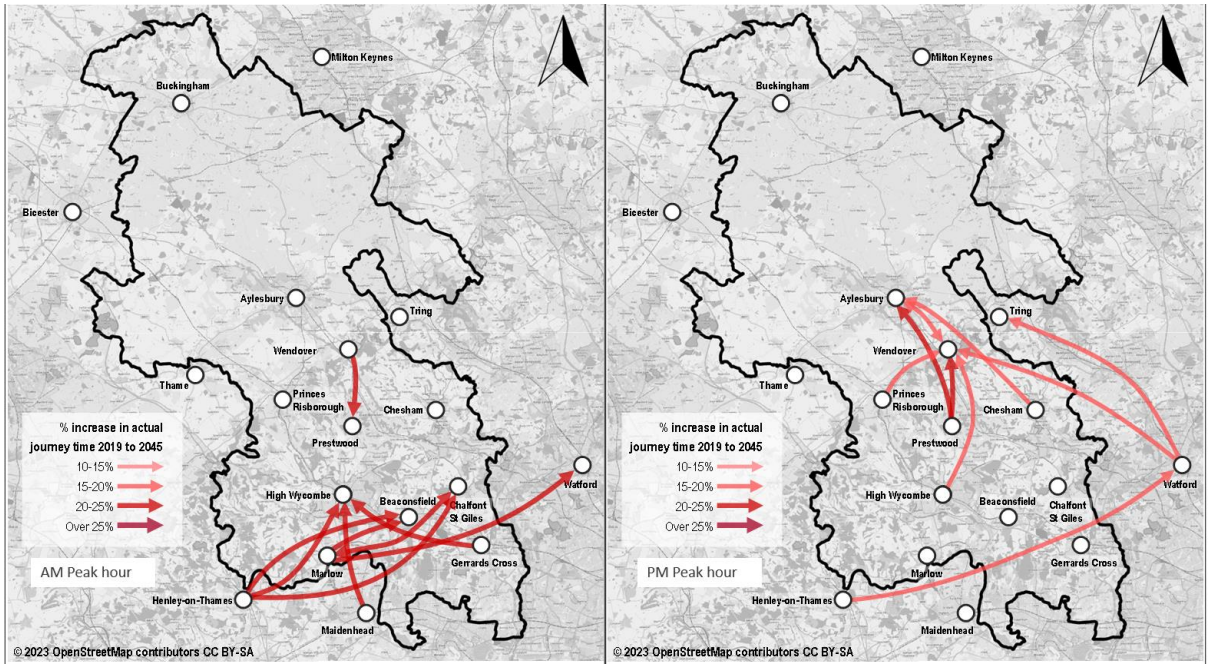

Figure 17. Top ten increases in delay between 2019 and 2045 AM and PM peak hours

9.23. In terms of capacity, the links with capacity issues in 2045 are similar to those in 2019, with the majority of junction capacity issues within the key urban areas of Aylesbury and High Wycombe. These capacity issues are generally more significant during the morning peak hour in 2045. Comparable maps are shown in Figure 18 below.

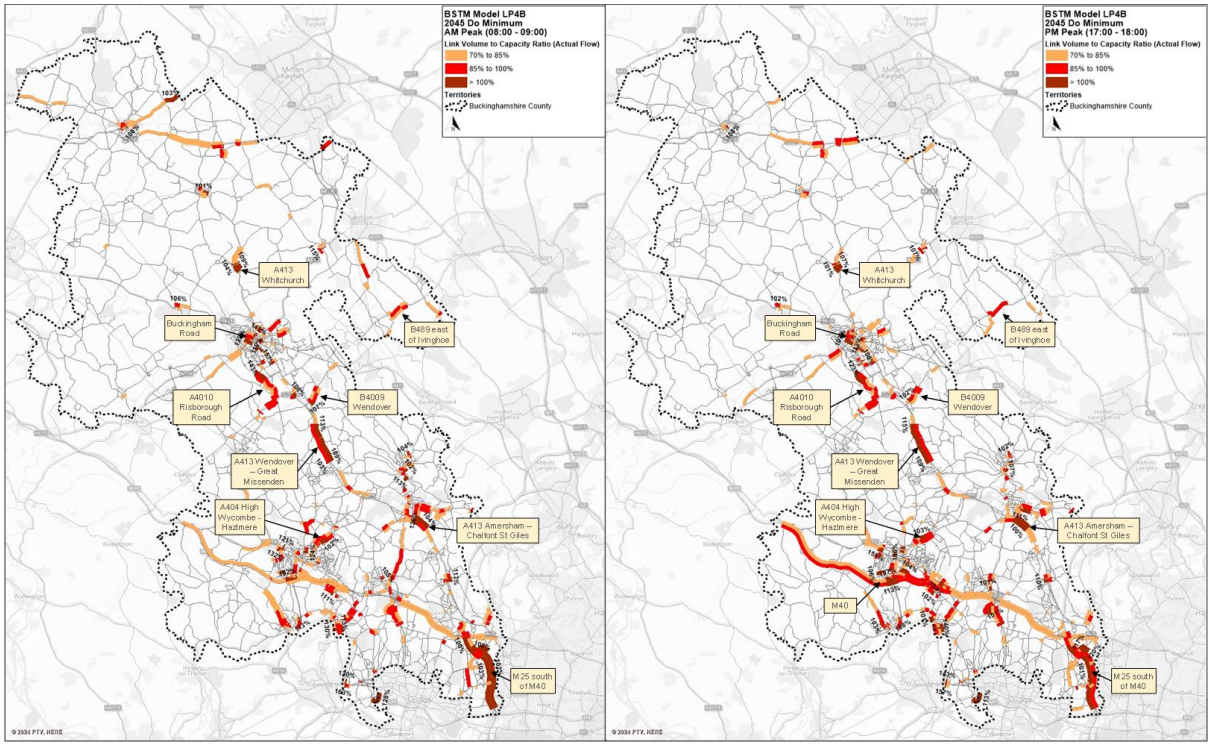

Figure 18. Link volume/capacity ratio - Forecast year 2045 AM and PM peak hour

9.24. The growth in traffic to 2045 results in a number of links reaching 100% capacity. The following links are predicted to be operating at or very close to capacity in 2045 in the AM and PM peak hours:

- A413 through Whitchurch (V/C >100%);
- A4010 Risborough Road, Stoke Mandeville (V/C of 70-100%);
- A413/A4156 Buckingham Road, Aylesbury (V/C >100%);
- B489 east of Ivinghoe (V/C of 70-100%0);
- B4009 Wendover (V/C of 70-100%);
- A413 London Road, between Wendover and Great Missenden (V/C >100%);
- A413, between Amersham and Chalfont St Giles (V/C >100%);
- M40, south of High Wycombe at Junction 4 (V/C>100%);
- A404 between High Wycombe and Hazlemere (V/C>100%); and
- M25 south of the M40 (V/C >100%).

9.25. In Aylesbury, the junctions with a V/C ratio at 90% or more occur in the morning peak hour and are as follows:

- A4157/A41 Bicester Road roundabout;
- Coldharbour Way / Great Meadow Way;
- A418 Oxford Road/Coldharbour Way;
- A418 Oxford Road/Fowler Road/Hartwell end; and
- A41/Aston Clinton Road 'Woodlands roundabout' – PM peak hour only.

9.26. In High Wycombe, the junctions forecast to have the highest volume/capacity ratios in 2045 tend to be concentrated along the A404 Marlow Hill corridor between the M40 (Junction 4) and the Abbey Way gyratory in the town centre, and the A40 London Road corridor.

Opportunities and challenges

9.27. Vehicle miles travelled in Great Britain have shown year-on-year growth in each year between 2011 and 2019 and despite a sharp decline in 2020, during the coronavirus pandemic, traffic levels have returned to pre-COVID levels, potentially higher in some areas[42].

9.28. Findings from the Initial Transport Impacts Assessment (see Appendix A) reinforce the view that the road network in Buckinghamshire is stretched. Aylesbury for example, has

[42] National statistics on road use (and other transport modes) comparing levels before/after the pandemic are available on the Government website: https://www.gov.uk/Government/statistics/transport-use-during-the-coronavirus-COVID-19-pandemic

previously been identified as having some of the worst congestion in the country (measured in average vehicle speeds), ranking 6th out of 111 cities and large urban areas in the UK according to the 2018 INRIX Global Traffic Scorecard[43].

9.29. However, the issue of high traffic volumes is not just due to the limited capacity of the road network. There are also challenges relating to the increased maintenance pressures of an aging road network and associated subsurface utilities.

9.30. Climate change projections indicate that the UK is likely to experience increasing and more intense rainfall leading to more frequent flooding, increasing summer temperatures and wind speeds. This will cause highway assets to deteriorate faster, increase maintenance costs and increase disruptions. Furthermore, the increasing levels of road freight and delivery vans will lead to greater maintenance and repair requirements.

9.31. Buckinghamshire Council received approximately 64,000 permit requests to carry out work on our highway network in 2022/23, compared to approximate 35,000 permit applications received the year before. A significant percentage of these works are carried out by a variety of utility companies who are Statutory Undertakers and have a legal right to carry out works on their existing apparatus and to install new apparatus.

9.32. Although some of the increase in permit requests was expected due to the launch of the 'Modified Buckinghamshire Streetworks Permit Scheme' in 2020, the volume of street works is still strikingly high[44], which has a significant impact on traffic congestion, particularly in Aylesbury. Buckinghamshire has just undertaken a review of its Traffic Sensitive Streets which play a vital role in streetworks coordination and is developing proposals to operate a Lane Rental Scheme. Once approved, lane rental allows an authority to charge up to £2,500 per day for works that can cause congestion on critical parts of the highway network. This incentivises organisations to either move their works to less busy times, or complete their works quicker to avoid accumulating charges, thus reducing congestion and helping to create smoother journeys for all.[45]

9.33. The construction of High Speed 2 and East West Rail also undoubtedly contributes to congestion across Buckinghamshire, including around Aylesbury (particularly on the A4010 between Aylesbury and Princes Risborough). Whilst all plans for road closures, diversion routes and traffic management are scrutinised in advance by the Council's Streetworks team to try and minimise impact to road users, HS2 construction was

[43] https://assets.dmagstatic.com/wp-content/uploads/2018/02/INRIX_2017_Traffic_Scorecard_Final_2.pdf
[44] By comparison 28,710 permit applications were received from Utility Promoters and Highway Authority Promoters by Oxfordshire County Council in 2021/22
[45] https://www.gov.uk/government/publications/street-works-lane-rental/lane-rental-schemes-guidance-for-english-highway-authorities

approved under the HS2 Act, which affords Buckinghamshire Council limited influence on construction activities and associated roadworks.

9.34. How highways maintenance is funded presents a significant challenge. The responsibility of funding local road maintenance lies with central government while Local Transport Authorities are responsible for implementing the work. Government funding is provided through several different streams and the level of funding received by a local highway authority depends on factors such as road length, bridges, street lighting, footways and cycleways.

9.35. For example, funding for the Major Road Network (MRN) which consists of the busiest and most economically important local authority 'A' roads comes from the National Roads Fund. Where works are delivered by local highway authorities, MRN interventions require a local or third-party contribution towards the final cost of the scheme. Local highway authorities are responsible for identifying suitable schemes in collaboration with sub-national transport bodies such as EEH and key stakeholders to put forward regionally significant schemes for investment.

9.36. The DfT does not consider traffic volume or capacity levels in calculating funding allocations and the funding is often short-term or subject to cancellation with changing national policy, making it difficult for local authorities to address maintenance backlog and plan future maintenance and new schemes effectively.

Strategic schemes linked to major development

9.37. New development creates opportunities to deliver highway infrastructure which are linked to it. There are several schemes already under way which support development in adopted local plans including:

Aylesbury Link Roads

9.38. The transport network in Aylesbury is constrained and in need of additional transport capacity. Modelling undertaken as part of the Aylesbury Transport Strategy (ATS, adopted 2016) showed that the cumulative impact of the scale of growth in Aylesbury had a significant impact on the Aylesbury road network.

9.39. Three Major Road Network routes (A41, A413 and A418) meet and run through Aylesbury town centre, making congestion a significant issue, which is evidenced by analysis by INRIX[46] which lists Aylesbury as being within the top 250 most congested places in the world.

[46] IINRIX 2023 Traffic Scorecard report ranks Aylesbury congestion as 89th Worldwide: https://inrix.com/scorecard-city-2023/?city=Aylesbury&index=88

9.40. To combat this the ATS set out a vision for a series of link roads, forming an orbital bypass around the town. These Aylesbury Link Roads form a key part of the growth plans for Aylesbury as set out in Vale of Aylesbury Local Plan (VALP). There are also plans for a 20km orbital walking and wheeling route set out in the Aylesbury Local Cycling and Walking Infrastructure Plan (LCWIP).

9.41. Once completed, the orbital routes will alleviate traffic on the existing inner and radial roads and support greater travel choice by creating space for shared use active travel paths and bus lanes.

9.42. The link roads are predominantly being delivered through VALP development site allocations. These new routes will also enable connections between new developments and existing areas, connecting people to transport hubs and the Buckinghamshire Greenway.

9.43. Some of the link roads set out in the ATS have already been delivered and funding has been secured for some of the remaining sections, including the South East Aylesbury Link Road (SEALR). Others such as the Western Link Road and North East Link Road are yet to have funding, or a delivery mechanism identified. Further detail on layout and progress of the link roads is outlined in Figure 19.

9.44. Delivery of the remaining Aylesbury link roads is crucial in supporting development growth around Aylesbury, reducing congestion and allowing other transport improvement measures (e.g. reducing through traffic) for Aylesbury town centre to progress.

9.45. The ATS concluded that if the Aylesbury Link Roads are not delivered, the town would 'stagnate' which would prevent future economic growth. It is therefore important that the Local Plan for Buckinghamshire considers the status of these link roads and how planned development will have an impact on Aylesbury as a whole.

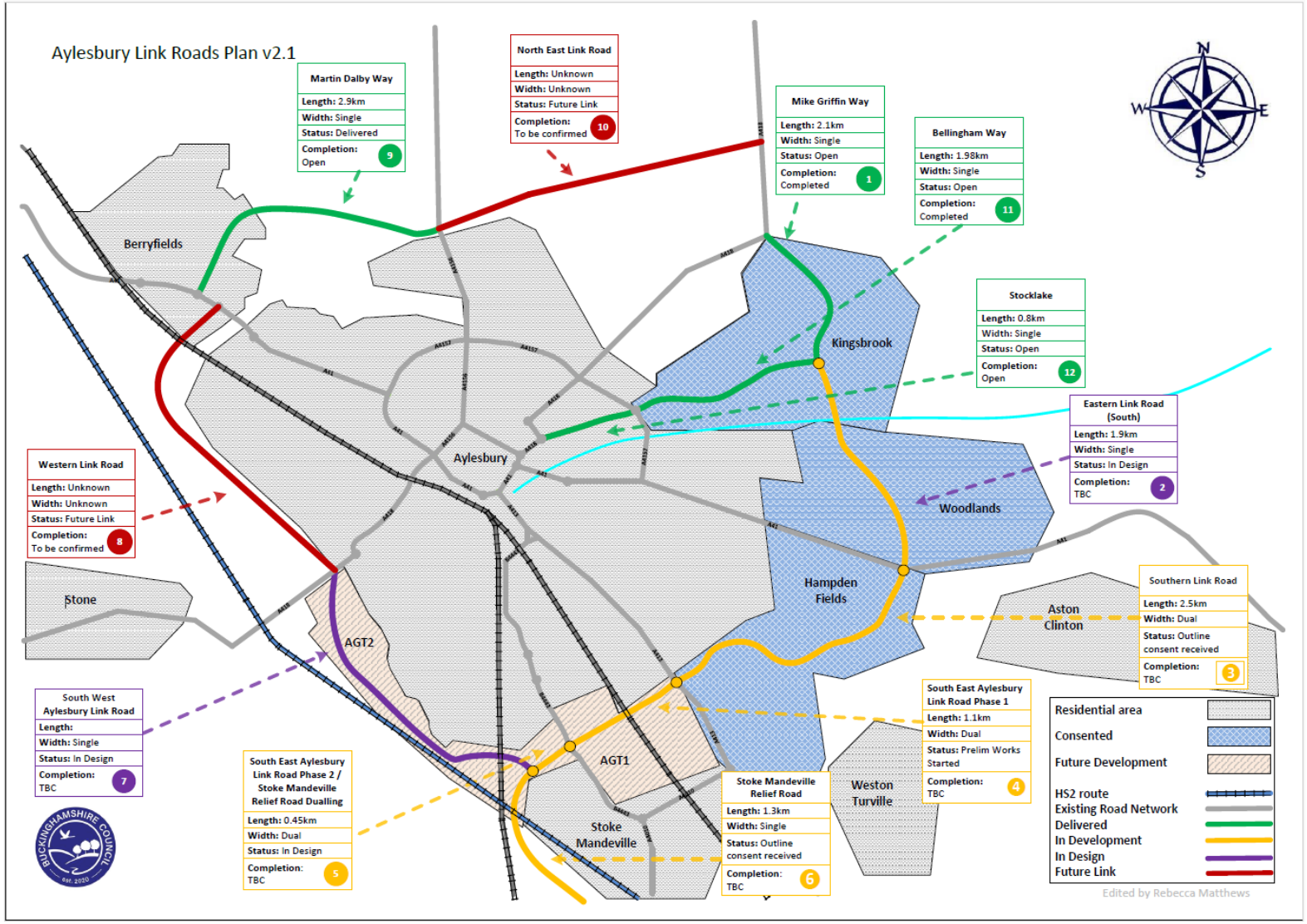

Figure 19 Aylesbury Link Roads Delivery Plan

Princes Risborough Relief Road (A4010)

9.46. Approximately 2,500 new homes and associated infrastructure are proposed to the northwest of Princes Risborough as part of a major expansion strategy as set out in the Wycombe District Local Plan (WDLP, 2019[47]).

9.47. The long-term vision of the Princes Risborough relief road is the creation of an alternative to the existing A4010 around the town, facilitating smoother journeys between High Wycombe and Aylesbury and removing the negative impact of through traffic on the existing A4010 alignment through the town centre. The scheme design includes new active travel infrastructure to support greater walking and cycling accessibility for the town, especially to Princes Risborough and Monks Risborough stations, and address severance issues across the railway line.

9.48. The road is being planned and delivered in phases. Plans for the Princes Risborough Southern Road Link, the first phase of the Princes Risborough Relief Road, have been submitted under planning application: 22/06910/R9FULE. This proposal involves the creation of 750m two lane, single carriageway link road that will connect to the future Princes Risborough Expansion Area (PREA) as shown in Figure 20.

9.49. Later stages of the relief road are the route to the north that which is intended to be delivered through planned development and Grove Lane area upgrades, and the route to the south called the Culverton Link Road.

9.50. The Council is working with developers to secure the delivery of the relief road and other strategic transport infrastructure.

Other road links

9.51. More information on other road capacity improvements currently under development in Buckinghamshire are here: https://www.buckinghamshire.gov.uk/parking-roads-and-transport/road-and-infrastructure-projects/view-road-projects-in-development/

[47] https://buckinghamshire-gov-uk.s3.amazonaws.com/documents/Wycombe-District-Local-Plan-Adopted-August-2019-accessible.pdf

Figure 20. Princes Risborough Southern Road Link (PRSRL)

Corridor studies

9.52. To inform future investment priorities and improve our evidence base for Local Transport Plan 5, the Council is undertaking a series of corridor studies. Any schemes identified within these studies do not have a specific funding source or delivery mechanism at this stage, but this information is helpful in identifying opportunities to review how our main roads can support surrounding land uses. Some of the studies being undertaken include:

A421 corridor study

9.53. The A421 forms part of the Major Road Network and runs from the A43 south of Brackley in Oxfordshire to the A1 south of St Neots in Cambridgeshire. In Buckinghamshire, the A421 covers a 12 mile (19km) stretch between Finmere and Milton Keynes, providing east- west strategic connectivity between the A43 and the M1 on the Strategic Road Network. A map of the corridor is shown in Figure 19.

9.54. The rural nature of this corridor means that it also serves as an important connection between the small villages and hamlets located to the north and south of the A421, including Newton Longville, Great Horwood, Padbury, Thornborough, Gawcott, Thornton, Whaddon and Nash.

9.55. The East West Rail Line forms part of the corridor with a station in Winslow, providing future rail connectivity between Oxford, Milton Keynes and beyond. The area is also served by the X5 coach service connecting Oxford via Bicester, Buckingham, Milton Keynes and Bedford.

9.56. Furthermore, there is sustainable active travel connectivity between Milton Keynes, Winslow, Buckingham, and Oxford, including the Varsity Way (National Cycle Network Route 51) and the planned Buckinghamshire Greenway.

9.57. The A421 corridor will need to support significant local growth as set out in the Vale of Aylesbury Local Plan (VALP), especially on the edge of Milton Keynes and Buckingham. In support of the VALP, the Council published the Buckingham Transport Strategy[48] (BTS) in 2017 which identified future transport requirements in/around Buckingham up to 2033.

9.58. More recently, an A421 corridor study has been commissioned to assess and appraise the efficiency of the corridor and its wider area of influence in terms of journey time reliability and safety for different users (car/bus/freight/active travel). The study will identify measures to ensure that the route can continue to support future growth as set out in the VALP and beyond (i.e. to 2045) and in neighbouring authorities' Local Plans.

9.59. External studies have also been conducted to look at options to both maximise efficiency for traffic using this corridor as well as enable increased connectivity to its rural surroundings and the future East West Rail station at Winslow, by all modes. These studies include:

- England Economic Heartland's (EEH) Oxford-Milton Keynes Connectivity Study[49] – undertaken in 2022/3, this study examined the strategic corridors that run between Oxford and Milton Keynes (including the A421) to explore opportunities and potential for investment in transport. The study concluded that journey time reliability and safety measures are required to improve the A421 corridor.
- National Highways Oxford-Cambridge Roads Study – this study was initiated following the cancellation of the Oxford -Cambridge Expressway in 2020. Although the results of the study are not yet published, findings revealed that the A421 corridor requires

[48] https://buckinghamshire-gov-uk.s3.amazonaws.com/documents/buckingham-transport-strategy-final-jan-17-1_LA9bjiO.pdf
[49]Oxford-Milton Keynes Connectivity Study: https://eeh-prod-media.s3.amazonaws.com/documents/Oxford-Milton_Keynes_connectivity_study.pdf

improvement to provide a reliable alternative for east-west movements in the region[50].

9.60. All available evidence has shown that there are notable issues and areas of concern regarding transportation for all modes on the A421 corridor. Notably, congestion and junction performance have an impact on journey times, and the availability and quality of both active travel and public transportation infrastructure is lacking.

9.61. These issues are expected to be exacerbated by any future development growth and therefore service level improvements or policy measures that will mitigate and/or address these challenges will need to be a consideration in the location of future areas of growth and potential site allocations.

A404 Corridor – Handy Cross to Bisham

9.62. The A404 corridor is crucial for north-south movements and also supports one of Buckinghamshire's most economically productive areas. This corridor hosts high performing businesses located in Cressex Business Park, Globe Business Park (Marlow) and new thriving business areas at Handy Cross Hub and Cressex Island. The route is a strategic connection between the Strategic Road Network (SRN) M40 and the M4, providing a vital alternative north-south alternative link to the M25.

9.63. However, traffic congestion is impacting future inward investment and growth on both business parks causing businesses to consider relocating their operation and headquarters. National Highways, EEH and Buckinghamshire Council have all identified this is an area in need of improvements in three particular locations:

- Handy Cross Junction (M40 Junction 4) on the approach to the junction from the A404 south (SRN), on the approach from the M40 in both directions and from the approach from the other minor roads such as the A4010, A404 Marlow Hill and Marlow Road;
- The Westhorpe Interchange on the approach from the A4155 from in both directions; and
- The Bisham Roundabout on the approach from the A404 in both directions.

9.64. Traffic congestion also impacts on air quality, which is evident as the Wycombe AQMA is focused on the M40 near the Handy Cross junction and the A404 approach from the town.

9.65. The Government's Road Investment Strategy outlines the long-term vision for strategic roads, what it expects National Highways to deliver and the funding available to

[50] Oxford-Cambridge Roads Study Stage 3 Report: https://assets.publishing.service.gov.uk/media/5a7f5d30ed915d74e33f5f9b/oxford-to-cambridge-expressway-strategic-study-stage-3-report.pdf

deliver the programme of investments. National Highways are responsible for maintaining and operating the Strategic Road Network and the development of potential future projects through a pipeline of schemes.

9.66. Improvements to the 'A404 Bisham Junction' and 'A404/M40 Junction 4 High Wycombe' were included as Road Investment Strategy (RIS3) Pipeline Schemes within the Road Investment Strategy (RIS2): 2020-2025[51] published by DfT. However, due to financial uncertainty the Council understands that improvements to this key corridor may be delayed until 2030 or beyond.

9.67. Buckinghamshire Council will continue to make the case for these improvements to be part of the next scheme pipeline, RIS4. To support this work, a high-level economic business case for investment into improvements for the corridor to enable it to continue to support economic growth into the future is being developed.

9.68. The findings will deliver an evidence base which will enable the Council and EEH to lobby Government and National Highways to continue to progress their feasibility work so that the schemes are delivered in the early part of the RIS4 period (2030-2035), ensuring that both local and strategic needs are recognised and considered.

Transport Scheme pipeline

9.69. The Council's Transport Scheme Pipeline, which includes all schemes identified in our policy/strategy documents, is tool for prioritising the development of potential transport infrastructure schemes. Considered against the Local Transport Plan 5 objectives this tool enables us to direct resources into developing and delivering the highest priority schemes.

9.70. Individual town-level and a Buckinghamshire-wide Local Cycling and Walking Infrastructure Plans also identify and prioritise key walking/cycling improvements required to help encourage modal shift in locations with highest potential.

The nature of rural transport: car dependency

9.71. For many in rural areas, travel to work, school or access to services like healthcare and shopping has to be completed using a private car, often covering longer distances for these every day journeys.

9.72. Transport connectivity is a key enabler for improving the quality of life and boosting opportunity and growth for people and businesses in rural areas. For those unable to drive; walking, cycling or public transport can provide much needed access for more local

[51] https://assets.publishing.service.gov.uk/media/5ffb39808fa8f56405c5f5bf/road-investment-strategy-2-2020-2025.pdf

journeys. However, with varied terrain, dispersed populations and lack of whole route provision, people can be isolated and excluded from accessing wider social and economic benefits opportunities.

9.73. In Buckinghamshire, there is a strategic gap in the Council's highways provision in rural areas. Some of the key challenges that would need to be addressed include:

- Traffic congestion in the urban areas of Aylesbury and High Wycombe where many key services are located. This leads to increased journey times for all traffic but also leads to poor bus reliability, which contributes to making buses an unattractive travel option.

- Limited public transport provision leaves residents in the outskirts of towns and in villages unable to access education, employment and leisure facilities by bus or train.

- Fragmented rail and bus services mean that residents who need to interchange have to pay for multiple tickets to complete their journey.

- The Future of Transport: Rural Mobility paper[52] provides local authorities with 9 principles for the future of rural mobility which will ensure that services are designed with all users in mind. Some of the insights that should be considered include:

    - Investment in local highways in order to provide good quality, well maintained and resilient roads for all local transport users.

    - Journeys should be considered in terms of end-to-end journeys and seek to integrate local rail and bus services.

    - Supporting the transition to low emission vehicles through the deployment of charging infrastructure.

    - Exploring how technology and innovation can unlock new transport options such as demand responsive services, automation, and shared mobility.

    - Integration of services through data and digitalisation can improve access to existing services e.g. integrated ticketing apps.

[52] The Future of Transport: Rural Mobility paper: https://assets.publishing.service.gov.uk/media/652e37b46b6fbf0014b757a9/dft-future-transport-supporting-rural-transport-innovation.pdf

Decarbonisation (provision of alternative fuels)

9.74. The 2008 Climate Change Act has committed the UK to reducing its greenhouse gas emissions to net zero by 2050. All greenhouse gases contribute to climate change and to meet the emission reduction target, the Government has published the Net Zero Strategy: Build Back Greener[53] which outlines a range of policies aimed at reducing these emissions from all sectors of the economy.

9.75. In terms of transport, the Transport Decarbonisation Plan[54] sets out the Government's commitments and the actions needed to decarbonise the entire transport system.

9.76. Transport produced 26% of the UK's total emissions in 2021 and remains the largest emitting sector in the UK. The biggest contributors to this were cars and taxi's making up 52% of the transport emissions[55]. By comparison in Buckinghamshire transportation currently contributes 51% of emissions, with 65% of these generated by car use. This shows that tackling the climate change requires curbing all motorised transport, particularly private cars, as much as possible.

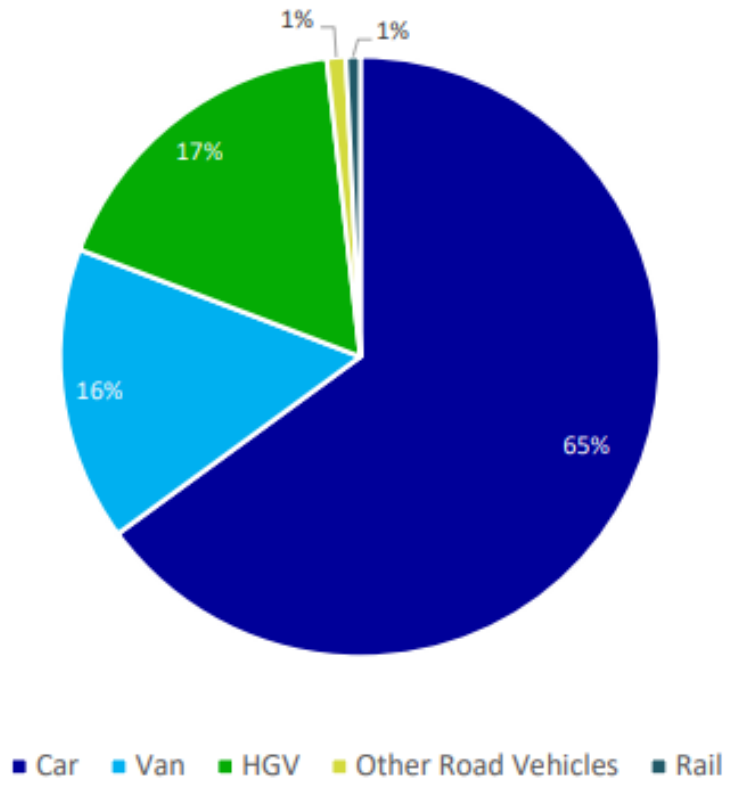

Figure 21: Carbon sources from transportation in Buckinghamshire, 2019 (Buckinghamshire EVAP)

[53] Net Zero Strategy: Build Back Greener - GOV.UK (www.gov.uk)
[54] Transport Decarbonisation Plan: https://www.gov.uk/Government/publications/transport-decarbonisation-plan
[55] Transport and environment statistics: 2023 - GOV.UK (www.gov.uk)

9.77. Much of the focus on decarbonising the transport system has been on electric vehicles (EV) to address emissions produced by the transport industry. The previous Government set a deadline to phase out the sale of new petrol and diesel cars and vans by 2035 (although the new administration has pledged to restore this to 2030). To facilitate this, attention has been focused on increasing public EV infrastructure across the UK.

9.78. With increasing consumer demand and the greater availability of electric vehicles and charging points, the number of electric cars in the UK is growing at a rapid rate. As of the end of March 2024, there are over 1,000,000 fully electric cars on UK roads and a further 645,000 plug-in hybrids[56].

9.79. Buckinghamshire reflects the national average in its level of plug-in EV ownership. We can therefore expect demand (at least in the short term) to follow national trends which will lead to a rapid increase in demand for publicly accessible electric vehicle (EV) charging infrastructure across the county.

9.80. Buckinghamshire Council published the Electric Vehicle Action Plan[57] (EVAP) in January 2022, outlining our strategy to improve access to EV charge point infrastructure. This included recommendations and actions for the Council to progress in the short, medium and long term to deliver at least 1000 publicly accessible charging points across Buckinghamshire by the 2027 (the end of the 5-year plan) and 2,500 by 2030.

9.81. These charging points will be installed in more densely populated areas where there is existing demand, such as Aylesbury, High Wycombe, Amersham, Chesham, Gerards Cross, Wendover, and the outskirts of Slough and Maidenhead which fall within the Council's remit. However, the Council also intends to enhance charging point coverage in rural areas by working with parish and town councils.

9.82. As of April 2024, there are currently 320 public chargers in Buckinghamshire, 52 of which are classed as 'rapid' chargers.

9.83. The Council is aiming to support those who cannot install their own charge points at home by using £1,991,000 in funding recently granted from the UK Government's Local Electric Vehicle Infrastructure (LEVI) capital fund towards hundreds of new on-street EV charging points across the county. Although the LEVI fund will enable more people to make the switch to EVs in the short term and contribute towards decarbonising our

[56] https://www.zap-map.com/ev-stats/ev-market/

[57] https://buckinghamshire.moderngov.co.uk/documents/s43677/Appendix%204%20Electric%20Vehicle%20EV%20Action%20Plan.pdf

transport network, we cannot rely on any funding support for public EV infrastructure beyond 2030.

9.84. Furthermore, the government's requirements for the provision at least one charging point and cable routes in residential and non-residential buildings with more than 10 parking spaces means that more land will be required to accommodate charging infrastructure in new developments.

9.85. There is also uncertainty around the rate at which the transition to Zero Emission Vehicles (ZEVs) will occur. For example, EEH's Carbon Assessment PlayBook - Decarbonisation Baseline Report for Buckinghamshire (Appendix D) suggests that a localised scenario of accelerated ZEV[58] uptake will reduce total emissions to 0.097 MtCO2 per annum by 2050 compared to a 'business as usual' [59] scenario where the total user emissions in 2050 are 0.666 MtCO2 per annum. Figure 22 shows the variation in future emissions in Buckinghamshire that result from different scenarios of ZEV uptake.

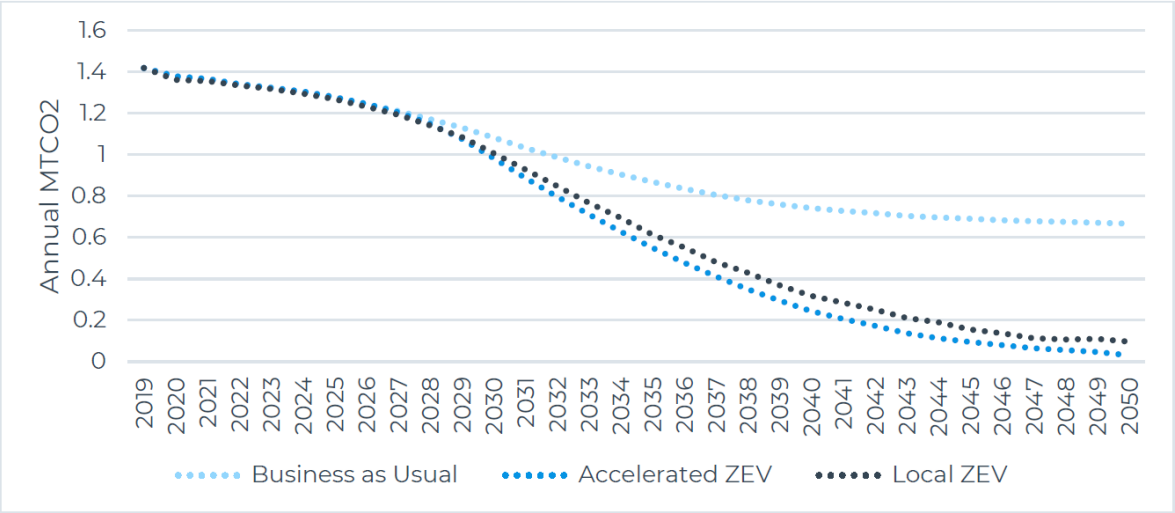

Figure 22. Total emissions in Buckinghamshire over time assuming different scenarios of ZEV uptake

9.86. This demonstrates that although the transition to EVs is a crucial step towards achieving the UK's net zero target, this alone may not be sufficient to meet net zero.

9.87. The difference may be due to local place-based factors that local transport authorities may have no control over e.g. motorway emissions and the opportunities that exist within the local geography to deliver infrastructure and realise a change in travel behaviour. It also suggests there is a need for a combination of different interventions

[58] Localised scenario of accelerated ZEVs* considers local ZEV sales to date, propensity for ZEV uptake in Buckinghamshire, and current levels of local charging provision.
[59] BAU* assuming growth in line with the national road traffic projections core scenario (2022) and fleet composition in line with TAG assumptions

that could Avoid (or reduce the need to) travel, Shift modes, and/or Improve efficiency similar to the SAM Framework approach in Figure 7.

9.88. Other concerns include that the emphasis on electric vehicles could result in increased car use and car ownership[60], leading to increased traffic congestion, inactivity-related ill-health, and increased emissions from the production of the vehicles and tyre wear and tear.

9.89. The Initial Transport Impact Assessment report (see Appendix A) concluded that:

- Between 2019 and future year 2045 Do Minimum, most roads in Buckinghamshire are expected to see an increase in traffic levels but there will be a significant decrease in carbon dioxide (CO_2) and Nitrogen Oxide (NO_x) emissions due to a reduction in vehicle exhaust emissions. Direct tailpipe CO_2 emissions are estimated to be 1.122 mtCO2e in 2045, a fall of nearly 30% from 2019.
- There are notable exceptions seen on roads on the outskirts of some urban centres (Aylesbury, Princes Risborough and Buckingham). Here, improvements in vehicle technology and greater electric vehicle fleet do not outweigh the traffic growth introduced by new and proposed developments in these areas. In the case of Aylesbury for example, the new link roads will carry traffic to areas where there was no traffic in 2019.
- Despite the reduction in emissions, the estimated 1.122 mtCO2e in 2045 is significantly above the 'Business as usual' carbon pathway in the Emissions Estimates and Pathways data provided by EEH. This reconfirms the need for a comprehensive approach that includes various strategies beyond just transition to electric vehicles in order to meet zero emission targets.
- Particulate matter (PM_{10} and $PM_{2.5}$)[61] is expected to **increase** overall from the base year (2019) by 13% and 5% respectively. This is because particulate emissions from brake and tyre wear are not expected to reduce in future years because of greater use of heavier electric vehicles and Sports Utility Vehicles ('SUVs'). The reduction in tail pipe particulate emissions is not sufficient to counteract the expected increase in traffic volume and associated brake and tyre wear.

[60] Are consumers ready for electric vehicles? (erm.com)

[61] PM_{10} and $PM_{2.5}$ are fine particles found in vehicle exhaust gases associated with a range of symptoms of ill health including effects on the respiratory and cardiovascular systems, on asthma and on mortality. These air pollutants are categorised by size e.g. PM_{10} have a diameter of less than 10 micrometres. Approximately 12% of PM_{10} emissions in the UK are derived from transport.

10. Parking in new developments

10.1. Parking is a key consideration for place-making, so it is essential that an appropriate level and type of parking is provided in new developments.

10.2. Buckinghamshire Council's Parking Guidance for New Developments (adopted in 2016)[62] supports a balanced approach which provides standards that reflects real-world demand for parking, promotes sustainable modes of transport and allows flexibility based on local circumstances.

Opportunities and challenges

10.3. The current guidance was developed by bringing together parking standards in former district areas and does not reflect recent national policy changes (e.g. on EVs or provision for active travel).

10.4. Operationally the issues relating to parking in new developments are:

- Inappropriate and inadequate parking provision leading to poor parking behaviours
- Lack of accessible, safe and well-designed cycle parking
- Lack of whole route solutions to support multi modal journeys
- Poor quality bus services and unattractive active travel routes leading to car dependency and high parking demand

10.5. The parking guidance for new developments is currently being reviewed and will form part of the Local Plan for Buckinghamshire evidence. The new parking standards will need to adhere to national policy in support of EVs to help achieve net zero emissions from transport by 2050.

10.6. It will also bring together local policies and strategies to facilitate optimum parking provision and good parking design throughout the Council area. This will include alignment with new policies in relation to mobility hubs and car clubs which will feature in the Local Transport Plan 5.

62 https://www.buckinghamshire.gov.uk/planning-and-building-control/planning-policy/local-development-plans-and-guidance/local-planning-guidance/parking-guidance-for-new-developments/

11. Freight

11.1. The freight and logistics sector has a critical role in supporting UK supply chains. It underpins the UK's prosperity, health, wellbeing and security by maintaining the flow of goods into, out of and across the country. The sector is a facilitator for UK imports, exports, and access to global markets, making it central to strengthening the UK's global impact. Road and rail freight levels have significantly increased since the COVID pandemic[63].

11.2. Supporting the sector to achieve net zero carbon emissions, through fleet and technological changes, provision of energy infrastructure and facilitating changes to distribution models will also be central to achieving the Government's net zero ambitions.

11.3. In Autumn 2023 the Government consulted on a call for evidence around Freight, logistics and the planning system. The Future of Freight[64] made it clear that the planning needs of freight and logistics are wide-ranging and complex, reflecting the variation of the sector and that it is unlikely that any single intervention will address all its needs.

11.4. Some of the issues raised about the planning system and where the planning system has facilitated freight-related development include:

- Local plans tend to identify broad types of future employment, such as office, industrial or warehousing. This is usually set out as new land allocations which need to be flexible to adapt to evolving market needs. The precise mix of uses on sites is often determined at the planning application stage. The allocations do not usually identify infrastructure needed to support B8 uses (storage and distribution), such as driver welfare facilities, fuelling, or parking to cater for HGV needs, etc.
- Logistics operators do not engage well in Local Plans as they are operating at a larger than local scale.
- National policy needs to elaborate on the importance of freight, with a specific requirement to evidence this as part of Local Plan employment and transport studies alongside LTPs and Local Freight strategies, e.g., providing guidance on sub-regional issues, distances / spacing between facilities, types of infrastructure needed, etc.

Opportunities and challenges

11.5 Buckinghamshire is landlocked and without any major freight logistics hubs but is impacted by long distance road haulage between these sites.

[63] https://www.theitc.org.uk/wp-content/uploads/2024/03/ITC-Impacts-of-the-Pandemic-Report-March-2024.pdf
[64] https://assets.publishing.service.gov.uk/media/62b9a2ec8fa8f53572e3db68/future-of-freight-plan.pdf

11.6 Buckinghamshire Council is actively engaged in the Wider South-East Freight and Logistics Forum, with representatives from three Sub- Regional Transport Bodies including EEH. The goal of this group is to increase engagement with the freight and logistics industry with the following aims:

- Promote a better understanding and partnership working between freight and logistics operators and public sector.
- Provide oversight and support the implementation of each STB's work on freight.
- Provide a mechanism to share good practice across the wider geographical area.
- Identify areas for joint working.
- Bring together stakeholder expertise, intelligence, innovation, and advice to support all forum members.
- Advise, facilitate, and support collaborative working to resolve common issues and drive action towards shared goals.

11.7 Buckinghamshire Councils' Freight Strategy (2018) covers the period 2018 to 2036[65]. The aim of this strategy states that: 'Freight transport should continue to help Buckinghamshire grow, thrive and develop. Freight should move around the county as efficiently as possible, without imposing inappropriate costs on business, consumers, residents, or our unique environment.'

11.8 A number of policies were developed to demonstrate the Council's commitments and intentions for managing freight. These policies cover appropriate use of the road network, protecting our environment, partnership working and considering freight in decision making.

11.9 The strategy also identifies five locations to be targeted for physical interventions to manage disproportionate freight impacts. These are wider Aylesbury, Ivinghoe, Buckingham, Waddesdon, and Iver. The first intervention is about to be delivered in Ivinghoe in the form of a new freight zone.

11.10 There is therefore a need for the new local plan to consider the provision of supporting infrastructure to facilitate freight by:

- Addressing the growing need for Heavy Goods Vehicle (HGV) parking, rest and convenience sites on the MRN and SRN.
- Considering the development of consolidation centres, low emission fuelling centres, logistics and appropriate freight access routes, as well as last mile delivery options in new B8 (storage and distribution) developments.

[65] https://buckinghamshire-gov-uk.s3.eu-west-1.amazonaws.com/documents/freight-strategy-publication-version-enhanced-maps-2-1.pdf

- Where last mile solutions are to include air space e.g. drone deliveries, reflect national guidance on how this is to be managed.
- Provide for deliveries within the design of new development sites.

12. Airports

12.1. There are no commercial airports in Buckinghamshire, but the South East of England and the Western Midlands host several major airports which are within easy reach of Aylesbury, Buckinghamshire:

- Heathrow (45 mins drive; around 2 hours by train)
- Luton (45 mins; around 2 hours by train)
- Gatwick (85 mins; over 2 hours by train)
- Stansted (85 mins; around 2-3 hours by train) and
- Birmingham (95 mins; around 2-3 hours by train)

12.2. Heathrow is by far the busiest airport in the UK and the closest to Buckinghamshire. Before the COVID pandemic Heathrow was serving 80 million passengers per year. Luton, Gatwick and Stansted are all branded as London airports and are often chosen by passengers as they are major hubs of low-cost carriers. Gatwick is the second busiest airport in the country.

Connections to Airports

12.3. Heathrow is connected to south Buckinghamshire by the bus service 'Chiltern Hundreds 102' operated by Carousel. The 102 runs between Heathrow Central Bus Station and High Wycombe via Uxbridge, Gerrards Cross and Beaconsfield at an hourly frequency Monday to Sunday.

12.4. 'The Airline' coach service by the Oxford Bus Company provides direct connections to Heathrow and Gatwick from High Wycombe and Lewknor (M40 Junction 6, within Oxfordshire but close to the Buckinghamshire border).

12.5. Central and North Buckinghamshire do not have any direct public transport connections to Heathrow. For instance, to reach Heathrow by public transport from Aylesbury, passengers would either have to travel by train via Central London, or local bus to High Wycombe to take The Airline. In Buckingham, passengers would need to take the National Express coach service and change at Milton Keynes Coachway.

12.6. There are currently no direct public transport services between Buckinghamshire and Luton Airport, despite it being only 26 miles (42 km) from Aylesbury and 20 miles (32 km) from Chesham. The scarcity of east-west public transport linkages in the area means that in order to reach London Luton Airport at least one change is required via larger transport hubs such as Central London and Milton Keynes.

12.7. Future expansion plans have been proposed for both Luton and Heathrow airports in order to increase passenger capacity. The status of these are summarised below:

Heathrow airport expansion

12.8. Heathrow's expansion plans include a new runway to the north-west of the airport, a new terminal and new public transport interchange points. This allows for an additional 260,000 flights per year to be created as well as "tens of thousands of jobs and economic benefits to the UK"[66].

12.9. The expansion plan was originally given approval in 2015 but this was subsequently challenged. In December 2020 the Supreme Court made clear that climate obligations must be considered as part of any proposals for Heathrow expansion. Since then, plans for expansion have been put on hold in order to prioritise COVID recovery.

12.10. Buckinghamshire Council is involved in the Heathrow Strategic Planning Group (HSPG), a joint partnership of many of the local authorities. The group will shape the proposed expansion by identifying options to accelerate the pace of decarbonisation.

12.11. The Council is also a member of the Heathrow Area Transport Forum (HATF), which provides input on on-going surface access initiatives and challenges Heathrow in relation to its performance against set surface access targets and advocating for passengers, colleagues and local communities.

Luton airport expansion

12.12. Luton airport has applied for a Development Consent Order (DCO) to increase passenger numbers from 18 million to 32 million per year by 2043. 'Luton Rising' includes expanding the current terminal and building a new terminal and associated facilities.

12.13. To support this expansion, Luton DART (a direct air to rail transport shuttle) was opened in 2023. This driverless light rail service transfers passengers from Luton Airport Parkway station to the airport terminal in under four minutes.

12.14. Buckinghamshire Council is a member of the London Luton Airport Consultative Committee (LLACC) and Luton Airport Transport Forum and is actively lobbying for bus connections to Aylesbury and High Wycombe, via Leighton Buzzard, as part of the DCO process.

Airfields within Buckinghamshire

12.15. The vast majority of airfield sites, including historical bases used during the Second World War, have since been utilised for industrial and commercial purposes. Many of these former airfields are situated in rural locations away from the MRN and SRN. This can generate conflict over HGV road movements servicing the site.

[66] https://www.heathrow.com/company/about-heathrow/expansion/plan-overview

- Booker Airfield, High Wycombe: While still operational there are significant numbers of commercial businesses located on this site that are unrelated to airspace use.
- Westcott Venture Park, Aylesbury: This site now focusses on high-tech aerospace development including drone evolution.
- Former RAF Oakley: This is being utilised for autonomous vehicle testing.
- The Marsworth airfield: This site is used by light industrial and waste operators.

Opportunities and challenges

12.16. The area around Iver in South Buckinghamshire is nationally unique in being impacted upon by a number of simultaneous national infrastructure schemes including the expansion of Heathrow Airport, HS2, Western Rail Link to Heathrow (WRLtH), Crossrail (Elizabeth Line now completed) and the M4 Smart Motorway Project.

12.17. Airport expansions can bring benefits to the area as they increase the national and international connectivity for Buckinghamshire; deliver new employment opportunities, including for people living in areas of deprivation; contribute towards the regional economy; and are able to support improved reliability and increased frequency of public transport connections.

12.18. There have been concerns regarding increased traffic due to the proposed airport expansion plans and their subsequent impacts on air quality, the local road network, public transport network and the implications this would have for residents and businesses and the tranquillity of villages, parks and public spaces.

12.19. Increased aircraft using the increased runway capacity at both Heathrow and Luton will also result in overfly of areas that have not been previously overflown (Luton will result in increases in night time noise levels in areas such as Dagnall and Pitstone of between 2 to 3 decibels), causing a significant change in residents, service users and employees' overall quality of life.

12.20. Although some of these concerns do not appear to be as great for Buckinghamshire as they are for other authorities (given the nature of the transport system and the proximity and position of these airports) the Local Plan will need to consider the impacts on the communities of Buckinghamshire:

- The new Luton DART is unlikely to provide significant savings in overall journey times for passengers travelling to/from Buckinghamshire. Therefore, effective ways to connect Buckinghamshire to the Luton DART are required in order to establish public transport as a realistic alternative to the private car. Proposals for

a bus route/improved 61 bus service from Aylesbury - Dunstable - Luton have been submitted for consideration as part of the Luton DCO and agreement has been reached to ensure that tendering of any new bus contracts consider connections to Aylesbury.

- In terms of Heathrow Airport, work is ongoing through the HSPG and HATF to ensure that Buckinghamshire's policy aims for better/ direct bus connections and extensions to existing links between neighbouring authorities, such as the Western Rail Link to Heathrow (WRLtH), can be progressed. WRLtH would be a new 4 miles (6.5 km) rail link between the Great Western Main Line and London Heathrow Airport which would leave the Main Line between Langley and Iver in south Buckinghamshire.

- Buckinghamshire's response to Luton's expansion plans will ensure that Luton Rising considers the impacts of expansion in communities in northern Buckinghamshire, particularly, Edlesborough, Dagnall, Pitstone, and Halton.

Chapter 3. Transport implications of the Growth Scenarios

13. Seven Growth Scenarios

13.1. The Council has been working on developing a series of 'growth scenarios' setting out different potential approaches for accommodating future development needs. Seven scenarios have been identified through engagement with stakeholders and will be published on the Council's website. The scenarios are not mutually exclusive, and the final plan will likely be a blend of different approaches.

- **Scenario 1: Brownfield sites within existing towns and villages**
- **Scenario 2: Growth on the edges of existing towns**
- **Scenario 3: New towns and villages**
- **Scenario 4: Growth close to public transport hubs**
- **Scenario 5: Housing development close to business locations**
- **Scenario 6: Limited expansion of villages**
- **Scenario 7: Expanding urban areas on the edge of Buckinghamshire**

13.2. This chapter considers the travel and transport implications of each of the approaches. These considerations were developed through internal discussions and sharing of transport evidence in 2023, including an officer workshop on 19th September 2023.

13.3. There are few formal trigger thresholds with regards to the need for transport interventions in Buckinghamshire. The requirements for new transport schemes is currently highly contextual (e.g. existing connectivity, rural/urban location etc) and determined on a case-by-case basis. Urban developments are generally easier and less costly to serve than smaller rural settlements.

Scenario 1 – Brownfield sites within existing towns and villages

This scenario would focus on further urban and brownfield development such as regeneration, or densification through further infill sites. This will provide more homes and jobs on underused land in town centres and in existing settlements. This could be by building taller buildings and / or redeveloping underused sites at higher densities.

Pros

- Reducing the need to use greenfield land to accommodate growth.

- Providing homes where people want to live – living in central, well-connected and vibrant areas is important for many people.
- With services and community facilities already available locally, this scenario reduces the need to travel by car and so makes a positive contribution to addressing climate change while planning for growth.
- Supporting existing centres' vitality and long-term viability.
- This scenario would also support local shops and the high street.

Cons

- This scenario will not meet our growth needs in full.
- Land assembly, viability and delivery of schemes can be more complex, costly, and challenging on brownfield sites.
- Need to respond to the character of existing settlements, respect their character and leave appropriate green (and other) spaces.

Transport impacts, challenges and opportunities

13.4. From a transport perspective, this scenario would allow us to maximise the existing transport links in areas where there is already demand, as well as large populations to justify the cost of supporting transport infrastructure.

13.5. The goal would be to promote regeneration and/or densification in areas (including suburban areas) that allow easy access to jobs and services by foot or public transport; reducing need to travel, the overall distances travelled, and lowering carbon emissions. Initial work on travel distances by sustainable options from key settlements has been undertaken using a software called TRACC. The mapping outputs for walking, cycling and bus distances are included at Appendix C.

13.6. This scenario is also perceived as key for designing in and creating sustainable accessibility, presenting an opportunity to bring forward new ways of travelling including on car clubs, mobility hubs, micromobility etc. to support brownfield development and address some of the parking concerns presented in urban areas.

13.7. This approach can also support regeneration, with the creation of healthy neighbourhoods, where public spaces and community assets are enhanced to create a sense of place and make sustainable travel options easier to access and more enjoyable.

13.8. There are concerns about this scenario including:

- Good connectivity is not always necessarily beneficial in terms of place making. For example, a well-connected housing site in the middle of an industrial estate makes for poor place-making. The Council would need to be more interventionist to avoid the above concern.

- A careful balance of housing, employment and other services is needed; otherwise out commuting and long travel distances will remain an issue.
- Retrofitting transport links to accommodate new development would require significant investment which may not be readily available. Works may be technically challenging and disruptive to existing communities for lengthy durations.
- Old market towns may not have the space to allow access and connectivity improvements (active travel, bus priority etc.).
- The success of this scenario would depend on the opportunities presented by the existing settlement, which would need to be assessed on an individual basis.

Ultimately this scenario alone will not be enough to meet transport objectives.

Scenario 2 – Growth on the edges of existing towns

This scenario would focus on the expansion of larger settlements within Buckinghamshire through large scale urban extensions. This will provide more homes and jobs on the countryside surrounding existing settlements. They would be integrated into existing settlements and provide new schools, roads and shops.

Pros

- Benefitting from the services and infrastructure at the existing settlement, maximising the potential for sustainable transport links to these from the outset.
- Making good use of and creating the critical mass sufficient for the provision of, new infrastructure, such as schools, local centres and green spaces that can bring benefits to existing and new communities.
- This scenario would also support local shops and the high street provided that the right balance and sustainable connectivity are obtained between the immediate new neighbourhood services and the existing town centre / high street so that the expansion does not detract from the existing facilities.

Cons

- Requires the use of greenfield land on the edge of existing settlements.
- Development will have to plan to accommodate existing 'issues' at the settlement, such as congestion and lack of public transport services to the site(s).
- Avoiding coalescence with nearby settlements.

Transport impacts, Challenges and Opportunities

13.9. From a transport perspective, a large expansion would provide the opportunity for larger scale infrastructure projects as well as creating new healthy neighbourhoods and well-connected transport hubs. A key consideration is the scale of the existing settlement and its transport challenges and opportunities compared to the scale and requirements of any proposed expansion. Any expansion would need to be of a scale sufficiently large to support investment in new transport infrastructure

13.10. It will be important to consider the distances between development and town centre facilities to optimise design and use of sustainable transport options. Also, clear corridors will need to be available to make interventions deliverable. This approach could provide the opportunity to prioritise active travel and alternative high frequency public transport system like tram or light rail.

13.11. There is a risk that expansion may dilute the potential infrastructure opportunities if the scale of the expansion outweighs the capacity of the existing settlements infrastructure. Therefore, only the largest settlements should be considered, to take advantage of agglomeration benefits.

13.12. The choice of settlement may be influenced by commuting patterns and the economic catchment of the settlement. Within the expanded settlement, there would need to be measures to reduce the need to travel long distances. This could take the form of remote working hubs to avoid longer commuting patterns.

13.13. The proposed Buckinghamshire Greenway, a key piece of active travel infrastructure, could be a step change for commuting between settlements. However, as it currently stands, the Greenway would not be a deciding factor in the choice of settlement, but it has the potential to enable active travel to become more viable.

13.14. Aylesbury could have the further potential for expansion, and this also offers the opportunity to deliver the 'missing' links roads, which are currently aspirational (Figure 19).

13.15. A combination of scenarios 1 and 2 would be preferred from the perspective of maximising sustainable, low carbon transport opportunities.

Scenario 3 – New towns and villages

This scenario would focus on the provision of one or more new settlements in Buckinghamshire. This will provide more homes and jobs on the countryside away from most existing settlements. They would provide their own new schools, roads and shops.

Pros

- Providing an opportunity for significant new infrastructure to be delivered, with a vision-led scenario to place-making and sustainable connectivity requirements of the new settlement (Decide and Provide).
- Providing an opportunity for substantial growth in a new location, connected to the existing transport network.
- May lessen impacts on existing communities as focuses the growth to fewer areas within Buckinghamshire.

Cons

- Potential major impact on the landscape and loss of greenfield land.
- A new settlement will require significant investment in new transport infrastructure. This is likely to require central government support.
- Likely to take longer to deliver than other scenarios, due to starting from scratch.
- Where a site relies on proposed new infrastructure, even where it is included in the plans of the relevant authorities, the level of certainty over delivery and timing of that infrastructure is crucial to avoid a poorly connected, car dependent and isolated population.

Transport impacts, challenges and opportunities

13.16. The potential for a new settlement needs to take into consideration current commuting patterns, and the connections to existing infrastructure including the Strategic Road Network and rail network. There may be a need to consider existing local travel demand and ensure the demand generated by the new development can be accommodated.

13.17. A new settlement would need to be of a large enough scale to support itself and justify the infrastructure spend needed to connect to existing infrastructure. Lack of surrounding road infrastructure would result in an isolated settlement and lack of public transport options would also perpetuate a car dependent society.

Scenario 4 – Growth close to public transport hubs

Providing new homes and jobs along key public transport corridors, where they can access high quality public transport. This could be by expanding or intensifying existing settlements, or within new settlements.

Pros

- Concentrating development on transport corridors where there are opportunities to connect into high quality public transport.

- Supporting the expansion of economic benefits outwards from existing settlements.

Cons

- Requires the use of land along transport corridors, which may already be built out or be safeguarded for future transport expansion.
- Weight to be given to proposed new strategic transport infrastructure, even where it is included in the plans of the transport authorities, will depend on the level of certainty over delivery and timing of that infrastructure.

Transport Impacts, Challenges and Opportunities

13.18. Transport hubs can offer a focal point for development as they offer accessibility and connectivity opportunities for different land uses. Rail services for example, would be particularly attractive for access to and from new developments where they offer an advantage over car travel in terms of journey time, cost or convenience. However, in Buckinghamshire there are considerable gaps in rail connectivity even where stations are available, and the high cost of rail travel compared to a private car often counteracts the potential benefits.

13.19. Other considerations include:

- Sites become far more valuable if they are to benefit from new transport infrastructure (e.g. Winslow sites with East West Rail opportunity). The Council will need to consider how this increased land value can be captured in the viability work for the local plan.
- Attractiveness of the journey is key – people will rather drive if the journey is more convenient.
- A level of certainty of housing growth is needed to justify and facilitate investment in future transport links.

13.20. The level of provision and capacity in transport corridors and at transport hubs is critical to the potential future growth of an area. A focus on areas with the greatest opportunity for sustainable travel patterns, such as the new EWR station at Winslow, would be beneficial.

Scenario 5 – Housing development close to business locations

Providing new homes and jobs at existing centres of employment.

Pros

- Better linking homes and jobs, enabling residents to commute by active travel.
- Supporting the expansion of existing business locations in Buckinghamshire.

Cons

- Existing business locations may not be the best sites for new homes due to unneighbourly (noisy) and unsightly uses.
- Existing business locations may already experience significant congestion in peak periods.

Transport impact, challenges and opportunities

13.21. From a transport perspective, we want to minimise the need to travel, and the distances travelled. Siting new housing near employment sites means that people are able to live and work locally.

13.22. The local plan should identify the corridors that link employment areas and then facilitate housing near those corridors. This would foster economic development by attracting skilled workers, businesses and services to the area and offer opportunities to enhance existing transport links.

13.23. Consideration needs to be given to the disparity of employment sites in the north and south of the county. Housing allocations could help contribute to evening out the flow of people in/out of the county. Currently the county's long and thin shape allows for a large flow of people out to neighbouring authorities to work.

13.24. In relation to specific employment sites, some will be more sustainable than others – e.g. at Westcott there is insufficient demand to provide economical bus services. This could be an example of where Buckinghamshire Council could allocate growth that would facilitate investment on the A41 as a key public transport corridor.

13.25. A holistic and integrated approach that considers the whole employment site for mixed use development, different transport modes as well as placemaking is required.

Scenario 6 – Limited expansion of villages

Providing new homes and jobs in the villages, through allocating sites on the edges of villages or increasing the number of homes that can be developed on sites within the villages.

Pros

- Helping to sustain existing facilities and infrastructure in the villages.
- Helping to provide for hyper-local growth needs.
- Helps spread the impact of growth throughout the county.

Cons

- Can result in increased commuting by car, and travel to access services and facilities, particularly if the village is away from main transport corridors.
- Small sites are unlikely to significantly contribute to improvements to infrastructure so service capacity within or accessible to a particular village is important.
- Potential impact on village character needs to be considered.
- Some villages are within or surrounded by Green Belt or the Chilterns Area of Outstanding Natural Beauty.

Transport impacts, challenges and opportunities

13.26. This scenario can be viewed as pepper potting, or on the contrary as 'spreading the load' which avoids overloading one settlement or one part of the transport network.

13.27. However, from a transport perspective this scenario is the least favoured as it will perpetuate car-based developments and will not promote the behavioural change necessary to reduce our carbon emissions issues, thus contributing to climate change. This is contrary to the LTP5 ambition of decarbonising the transport system.

13.28. Development in rural areas would need to take a place-based approach that considers the landscape, promotes active and healthy lifestyles and improves connectivity and mobility.

13.29. The LTP5 will need to address existing mobility issues in rural areas – and the need for fair transport solutions for all.

Scenario 7 – Expanding urban areas on the edge of Buckinghamshire

Providing new homes and jobs to expand the larger settlements just outside Buckinghamshire

Pros

- Benefitting from the services and infrastructure at the existing settlement, maximising the potential for sustainable transport opportunities.
- Making good use of new infrastructure, such as schools, local centres and green spaces that can bring benefits to existing and new communities.
- Many settlements on the edge of Buckinghamshire are larger and have more jobs and better services and facilities than those within Buckinghamshire – development could be well connected to these jobs, services and facilities.

Cons

- Requires the use of greenfield land on the edge of existing settlements.
- Development will have to plan to accommodate existing 'issues' at the settlement, such as congestion.
- Avoiding coalescence with nearby settlements.
- Will require joint working with neighbouring authorities, introducing new political and administrative issues.

Transport impacts, challenges and opportunities

13.30. This scenario may be difficult to implement. It may lead to problems with compelling neighbouring authorities to deliver new transport infrastructure, for example.

13.31. We may need to focus the transport interventions on improving a set of key corridors (e.g. A41, A418, A421) feeding into nearby settlements, rather than spreading interventions too thinly.

13.32. This scenario will require further work with partners at subregional level, including with neighbouring authorities as part of the Duty to Cooperate.

Chapter 4. Conclusions and recommendations

14. Outcomes of the initial transport evidence

14.1. This report and its appendices provide:

- An initial understanding of the baseline transport situation in Buckinghamshire across all modes of transport – see chapter 2.
- An initial understanding of the performance of the highway and public transport network both now and by the end of the plan period – covered in chapter 2 and the Initial Transport Impacts Assessment report in Appendix A.
- An initial understanding of the scale of the transport interventions that may be required in relation to managing traffic and to encourage modal shift towards more sustainable transport options - covered in chapter 2 of this report and the Initial Transport Impacts Assessment report in Appendix A.
- Using this analysis to inform the opportunities and challenges presented by different approaches to accommodating growth, from a transport perspective, including consideration of carbon impacts - covered in chapter 3 of this report.
- Informing future transport and climate change policies for the LP4B - see chapter 1 and 2 regarding LTP5 and LP4B synergies, Decide and Provide and the Sustainability Hierarchy, as well as see chapter 3, TRACC maps at Appendix C and the emissions section in Initial Transport Impacts Assessment report in Appendix A.

Recommendations for the development of LP4B and LTP5

Local Plan for Buckinghamshire

14.2. The Local Plan will need to ensure that the spatial strategy meets the transport challenges of today and in the future. To do this, the Local Plan should be closely aligned with the vision and objectives of the LTP5 to enable transport issues to be considered from the earliest stages of plan-making and development proposals.

14.3. The NPPF requires development to be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. The Local Plan should therefore set out key transport policies to embed sustainable travel into sound place-making. It will need to outline the necessary infrastructure requirements for new developments where these provide opportunities to deliver / support the delivery of transport schemes identified in other strategies.

14.4. Opportunities to maximise sustainable transport solutions will vary between urban and rural areas. Many people in Buckinghamshire still rely on cars for everyday journeys and with increasing population growth, cars are expected to remain a key mode of transport in 2045.

14.5. Effective land use planning can minimise the impacts of car use by minimising the need to travel and/or the mileage distance covered by cars. Additional measures such well-designed parking provision, people centric road layout and accelerated adoption of electric vehicles can facilitate a sustainable transport system that is accessible, attractive and affordable for all.

14.6. The Local Plan should therefore consider locating new developments in more urban locations, near to existing economic and service centres. Mixed use developments that incorporate housing, schools, shops, healthcare and other services can reduce the distances people need to travel and therefore encourage more opportunities for walking and cycling.

14.7. The Local Plan should also consider a new developments proximity to reliable and frequent public transport services and active travel networks. This will increase the use of sustainable travel options and connect the new community with other neighbourhoods and towns in the region. Where additional transport infrastructure is needed, the Local Plan should set the expectation for this to be delivered by developer or through contributions such as Section 106 agreements and a Community Infrastructure Levy (CIL) as part of a fully sustainable Infrastructure Development Plan.

14.8. Further considerations should include provisions of appropriate sites for the delivery of the infrastructure required to support the transition to electric/alternative fuel vehicles (e.g. charging stations).

Conclusions drawn on maximising sustainable travel from the growth scenarios

14.9. Applying the Sustainable Travel Hierarchy and a Decide and Provide approach to place-making, the most sustainable growth scenarios considered within this report are:

- Scenario 1 (brownfield sites within existing towns and villages);
- Scenario 2 (growth on the edges of existing towns);
- Scenario 4 (growth close to public transport hubs); and
- Scenario 5 (housing development close to business locations).

14.10. Scenario 3 (new towns and villages) could be supported depending on the scale of development proposed, and whether it would enable the level of investment needed to deliver the transport infrastructure required to support sustainable modes of travel.

14.11. Scenario 6 (limited expansion of villages) and Scenario 7 (Expanding urban areas on the edge of Buckinghamshire) are the least favoured.

14.12. When preparing the LP4B the Council will need to balance the recommendations from a transport perspective with other evidence and planning requirements, including following national policy and guidance on sustainability.

Wider considerations

14.13. While the LP4B will facilitate the implementation of some of the transport infrastructure required to support growth, some will be outside the control of the Council. We will continue to work with partners, with support from England's Economic Heartlands, to ensure enhancements and infrastructure is delivered as needed. These include but are not limited to: the A404 (M) (National Highways), Chiltern upgrade (Chiltern Railway, Network Rail, Department for Transport) and the East West Rail Aylesbury link (East West Rail, Department for Transport).

14.14. Of particular importance to enable continued economic growth and delivery of housing in the north of the county, is the delivery of the East West Rail Aylesbury Link and improvements to connections between the Major Road Network at Aylesbury. Current growth in Aylesbury as set out in the Vale of Aylesbury Local Plan was agreed on the understanding that the EWR link would be forthcoming. Evidence has shown that without this link and the proposed Aylesbury link roads, the Council will not be able to tackle existing road capacity issues in Aylesbury and therefore may not be able to accommodate future growth.

Further evidence

14.15. A robust transport evidence base enables an assessment of the transport impacts of both existing development as well as that proposed and can inform a sustainable strategy to transport at a plan-making level. This will include consideration of viability and deliverability.

14.16. Key areas of further analysis and transport evidence will include:

- Evidence related to the development of LTP5, including the forecast transition to electric/alternative fuel vehicles and required infrastructure to support this.
- Further assessment of site accessibility/connectivity, using new tools such as DfT Connectivity Tool or similar.
- BSTM upgrade and assessment of proposed site allocations, where appropriate.
- Parking Standards for New Development review.

14.17. The BSTM outputs have provided a broad understanding of the effectiveness of the highway network across Buckinghamshire, now and in a future (2045) scenario. They also

highlight the key challenges and 'pinchpoints' on the network which may need to be addressed through the Local Plan.

14.18. In the next stages of the Local Plan, the BSTM model will be used to inform the transport impacts of the proposed site allocations and inform on the most sustainable approach to growth. However, this version of the model has some limitations: it does not include a variable demand model, public transport or active travel modes. As a highway only model it cannot fully assess the changes to travel demand and trip patterns due to proposed development schemes.

14.19. Work is ongoing to address some of these issues as outlined below:

- Include variable demand modelling to enable a more realistic assessment of travel demand in response to the schemes being tested.
- Urban area improvements will review and improve base model calibration and validation in the Aylesbury area and High Wycombe, Marlow, and Bourne End areas.
- Improved Transport Analysis Guidance (TAG) compliance and upgrading growth to the latest National Trip End Model (NTEM 8.0).

14.20. The updated model, BSTMv2, is intended to provide robust forecasts on travel demand and network performance to assess a range of development proposals for the Local Plan. From the BSTM we can understand the cumulative impact of existing, committed and new developments on the transport network, including local and strategic highway networks.

14.21. Once the Council has come to a preferred strategy for growth in 2025, we will need to test this in more detail. We will analyse individual site allocations so that we have a clear and robust justification for the transport interventions required to deliver those allocations.

At this stage of plan-making it is too early to consider land allocations. We will need to revisit the evidence at future stages of the Plan, using the best available information and tools at the time.

Background documents

- England's Economic Heartland Transport Strategy
- Buckinghamshire Local Transport Plan 4
- Local Cycling and Walking Infrastructure Plans
- Freight Strategy

- Bus Service Improvement Plan

Appendix A – Atkins Initial Transport Impact Assessment

Appendix B – Atkins BSTM Model Validation Report (March 2023) note

Appendix C – TRACC Maps

Appendix D – EEH Carbon Assessment PlayBook: Decarbonisation baseline report for Buckinghamshire

Appendix E – Proposed strategic infrastructure schemes in Buckinghamshire from the EEH Transport Strategy and Corridor Studies