ENGLAND'S ECONOMIC HEARTLAND

APPENDIX 1: Thames Valley – Northampton Connectivity Study

[Styled cover image to be provided by EEH]

Final Report – FINAL DRAFT for Approval

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Prepared in partnership with

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Overview

England's Economic Heartland (EEH) is the sub-national transport body responsible for bringing together local transport authorities in a strategic partnership for the region extending from Swindon to Cambridgeshire and North Northamptonshire to Hertfordshire.

Our 2021 Transport Strategy, ***Connecting People, Transforming Journeys***, set an ambitious policy framework with the vision for our transport system:

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

Our strategy highlights that ours is **one of the world's leading economic regions**, with its success founded on science and technology innovation, powered by a network of world-leading universities and research centres.

We work closely with infrastructure owners and operators to support a smooth transition to a decarbonised regional transport network in line with the science and legal requirements, as well as our ambition to reach net zero by 2040. This is done while maximising economic opportunities, increasing resilience and access, and reducing car dependence and congestion caused by development.

Since 2021 a **programme of six Connectivity Studies has examined** areas of the region in more detail, identifying packages of multimodal infrastructure, service, or policy interventions to help achieve the Transport Strategy's objectives and inform the EEH Investment Prioritisation Framework.

Based on a detailed methodology, the Framework is intended to record, track, and assist in prioritisation of strategic transportation interventions that have been proposed in or may significantly impact the EEH region.

This fourth study in the programme examined from the Thames Valley through Buckinghamshire and West Northamptonshire (see Figure 1). The study had a **focus on better connecting key employment clusters and settlements such as High Wycombe and onward transport opportunities in and near Thames Valley and London, with opportunities and communities further north such as Aylesbury, Northampton, and Milton Keynes**. The area also includes much of the Chilterns Area of Outstanding Natural Beauty (AONB) and more rural communities.

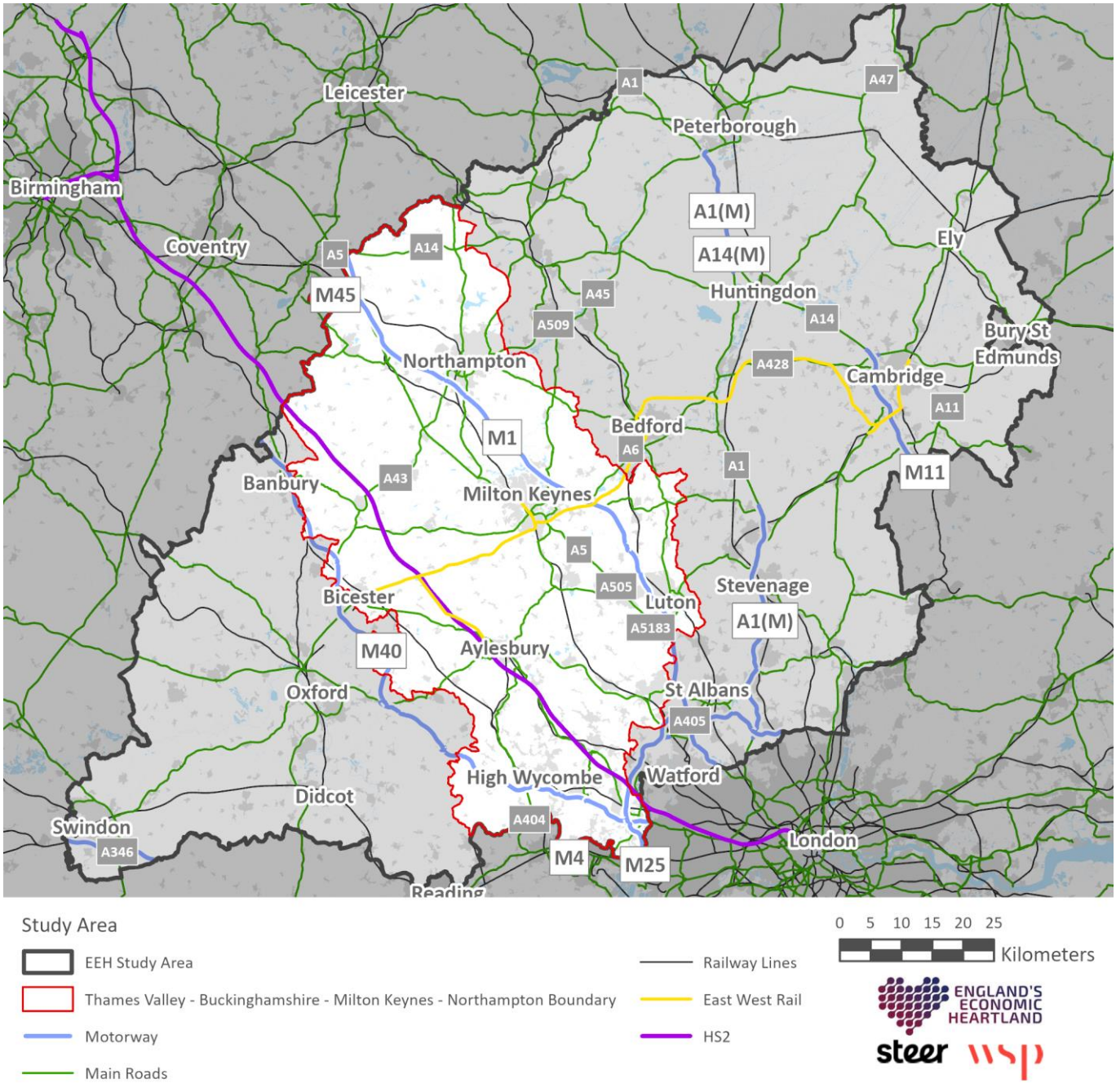
Home to the Universities of Bedfordshire, Northampton, Buckinghamshire New University, and the Open University, the area also includes Caswell Park Science and Technology Park, Mayland's Business Park in Hemel Hempstead and Silverstone Park and University Technical College. Several advanced manufacturing and logistics industries are located in the north such as Nissan Technical Centre, Volvo and Aston Martin. While the middle and south are characterised by the life sciences, aviation, and aerospace industries (for example, Johnson & Johnson and European Astrotech).

Several significant road links are within or pass through the area, including the A404, A41, A43, A413 A5, M1, M40, M45, and a portion of the M25. National Rail links include the West Coast Main Line (WCML) through Milton Keynes, and the Chiltern Main Line (CML) through Bicester and High Wycombe, and Midland Main Line (MML) through Luton. London Luton Airport is an international gateway is situated within the area's eastern edge.

Across the study area there are significant opportunities and potential for investment in transport that improve accessibility and connectivity across the area, help support better access to opportunities, especially in more deprived areas, while also contributing to improved air quality, safety, health and well-being, support biodiversity net gain, and achieving net zero requirements.

This Final Summary Report provides an overview of this study, with additional detail contained in the supporting Evidence Base and Full Technical Reports.

Figure 1: Study Area



Study Aims

This study was developed by EEH with the support of consultants at Steer, WSP, and 5th Studio (collectively the 'project team').

The policy framework set out in the transport strategy is guided by four key principles that form part of how interventions were assessed and packaged as part of this connectivity study:

1. Achieving net zero no later than 2050, with an ambition to reach this by 2040.
2. Improving quality of life and wellbeing through a safe and inclusive transport system accessible to all which emphasises sustainable and active travel.
3. Supporting the regional economy by connecting people and businesses to markets and opportunities.
4. Efficient movement of people and goods through the region & to international gateways.

This report sets out the rationale for packages of interventions which will address the objectives and critical success factors developed for the study area. Its two key sections combine to form a pre-strategic programme outline case (SPOC):

Options Appraisal Process: This aligns with the strategic and economic dimensions within the Treasury's 'five case model' and Department for Transport's (DfT's) transport analysis guidance (TAG). This considered the context, current and future situation, a long list of interventions, and the development of packages aligned with the strategy.

Recommended Connectivity Plan: This consists of the combined packages of interventions and initial consideration at a strategic level how they could be implemented in terms of rationale for delivery (via a theory of change framework) and finance.

The overall method is summarised in Figure 2 below.

Stakeholder Engagement

Development of the transport strategy involved comprehensive engagement, including a public call for evidence, stakeholder workshops and the development of the study was led by a Steering Group formed from a wide representation from across the study area.

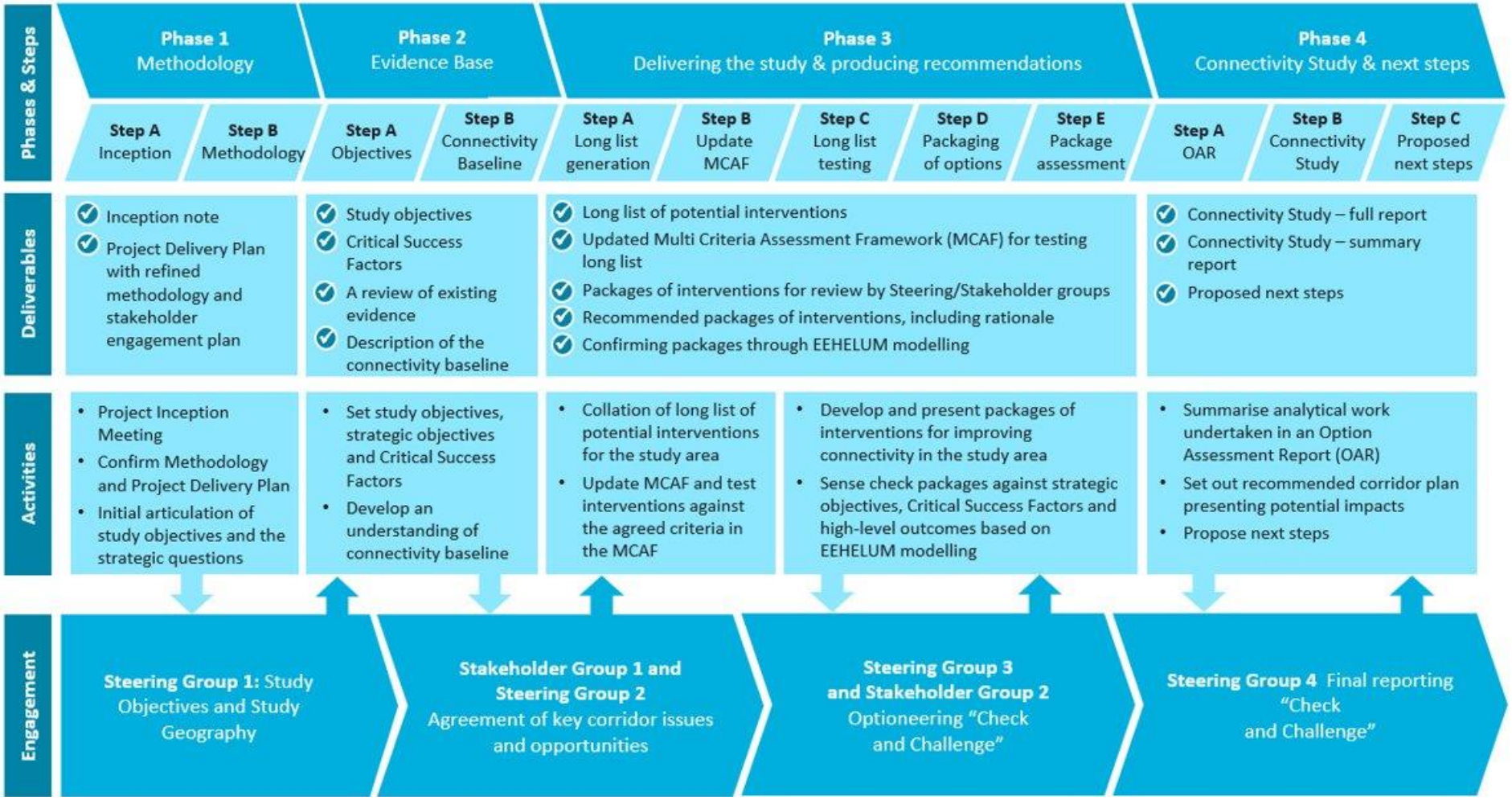
The project team worked collaboratively with stakeholders to develop the evidence base, identify possible interventions, assess their likely impact and combine them into packages.

Stakeholder engagement and connectivity evidence were gathered through the following forums:

- **Steering group:** Virtual workshops with local authority planning, local enterprise partnerships & transport officers, alongside National Highways & Network Rail, to gain local insights into connectivity issues & opportunities.
- **Stakeholder group**: Virtual workshops were undertaken with transport, place, and environmental stakeholder groups to gather insights on issues and opportunities and potential solutions. A number of topic specific 1:1 discussions were also held.
- **Call for evidence**: Gathering of further insights through an online survey, providing the opportunity for wider participation from members of the public, businesses and interest groups in identifying key connectivity issues in the study area and potential interventions.

This was complemented by various subject matter experts from across Steer and WSP who were also engaged to advise on identified interventions and assisting in capturing additional connectivity opportunities in the area.

Figure 2: Study Method



West Coast Main Line (Steer)

The Study Area

The study area (see Figure 1 on Page 4 above) is an attractive place to live, exhibiting diverse social characteristics, a strong economy and with relatively good transport connectivity compared to other others of the United Kingdom. However, the nature of the study area results in complex social, economic and connectivity challenges to be addressed and opportunities to be maximized.

Containing some of the Heartland's most important economic assets including the key settlements of Northampton, Milton Keynes, Luton, Aylesbury, and High Wycombe as well as numerous universities and innovation clusters – including some of the most significant facilities and businesses associated with the film and television industries.

Transport movements in the study area are dominated by significant north-south routes of the M1, M40, M45, A404, West Coast Main Line (WCML), London–Aylesbury Line (the Metropolitan Line) and Chiltern Main Line (CML) that provide extensive road and rail connectivity, including between London and the rest of the UK.

There are key differences in characteristics across the study area, such as dense urban populations compared to sparse rural populations, variation in income levels and employment and comparative access to key services and jobs by public transport. Improving connectivity and equality of access opportunity across the various socioeconomic groups while achieving net zero carbon emissions is a key challenge facing the region.

Existing connectivity varies across the area and in coming years will be transformed through the first phases of High Speed 2 (HS2) and East West Rail (EWR), with the latter including a new railway station at Winslow. There are opportunities presented by these schemes in terms of releasing capacity on existing local road and rail networks, which should be capitalized on through scheme development.

Where people live

A significant population of 1.9m people live in the study area, with the largest settlement being Northampton with 243,527 people. Luton and Milton Keynes are the second and third largest settlements, with populations of 233,524 and 197,328 respectively. More than a third of the residents of the area live within these three urban areas.

The area's overall resident population grew by nearly 12% between 2011 and 2021, with planned growth on the periphery of existing urban areas presenting particular challenges as these areas are often further from existing everyday services and amenities and are typically less well connected by active and public transport when first developed. This results in high reliance on private vehicles or a lack of access to opportunity for those without access to such a vehicle.

Rural areas can be found across the study area, particularly in the north-west around Daventry and Bicester, and parts of South Buckinghamshire, with such areas typically being far less populated. The area to the north of Northampton around the A14 and A508 is particularly rural and sparse in terms or its comparative population density. In addition, its recognised that much of Buckinghamshire is rural in nature, often dependent on poor overall transport options for travel to access jobs and facilities.

Key Where People Live Challenges:

- Larger and more dense settlements have a high number of services, amenities and employment opportunities which generate high travel demand from new planned developments within the settlements and further afield. The existing transport network is largely highway and rail based and is not designed or built to cater for these demands.
- Lower population densities tend to increase car dependency as they make it less efficient to run more regular bus or rail services without public operational investment. Historically limited investment in safe interurban cycle and walking routes further increases car dependency.

Where people work

There is a significant net influx of employees that travel into the area for employment as the total number of employees is approximately 50% higher than the total number of people in employment.

Milton Keynes is a key employment hub with the highest number of employees of all key settlements at 144,430. This is driven in part by employment areas including Magna Park, Kingston, Fox Milne and the City Centre. High levels of in-commuting can also be found in Hemel Hempstead, contributed to by Mayland's Business Park, as well as the various town centre amenities.

Rural settlements are also home to unique employment offerings, for example Westcott Innovation Centre and Silverstone Racecourse. There is also a notable film industry within the study area as several major studios are located within the area, including Pinewood studios and Bovingdon Airfield, with additional new studios also planned to be developed.

Key Employment Challenges:

- The study area is a large and complex mix of urban and rural environments, with major settlements being significant trip generators and destinations. There is significant commuting into the area from surrounding settlements.
- Employment activity and growth in the area is largely dependents on strategic road and rail infrastructure, with several committed schemes of regional and national importance seeking to increase capacity, connectivity, and transition towards a low carbon future.

Community diversity

In comparison to England on average, the study area is economically and socially diverse. The average household income across the study area is £50,000 (salary before tax). This is slightly higher than the average of the EEH region (£49,484) and notably higher than the average for England (£43,888).

There is a clear urban / rural divide in respect to relative deprivation, with rural areas comparatively less deprived than urban centres. Any causal or correlation relationship between this and the transport network is unclear and would require further investigation. The most deprived neighbourhoods in the study area are within the key settlements of Milton Keynes, Northampton, Luton, and Aylesbury, where some parts rank in the 10% most deprived in England.

There is also a clear north-south divide in the study area in respect to housing affordability. Property prices in the south of the study area, and therefore closer to London, are far higher relative to earnings compared to properties in the north. As such, for many people working in more southern areas housing will be less affordable, prompting them to live under housing stress (where housing costs are high relative to household income, presenting a significant cost of living pressure) or reside further away from their preferred locality in more affordable

settlements. This has the potential to result in additional and longer inter-urban commuting journeys, with most of these made by single occupant private vehicles.

However, improvements to long distance public transport can make it more attractive for people to live further away from London and in turn potentially contribute to easing housing pressures in the south of the study area which providing some relief to affordability pressures, noting that housing markets are complex and demand currently outstrips supply.

Key Community Challenges:

- High levels of relative deprivation are observed in some parts of the study area, which improved public transport and active travel infrastructure can help reduce by providing better access to employment opportunities and key services. It can also promote more positive health outcomes.
- The north-south and urban-rural disparity in average income level and housing affordability across the study area may present challenges in respect to successfully decarbonising the transport network and improving accessibility, as low carbon options will need to be affordable and provide an integrated accessible network across the geography.

Economic activity

The region is the heart of UK's academic and commercial research sector, with EEH having clear strategy to enhance the area as an 'innovation powerhouse', building on the region's combination of scientific and cultural assets. This has the potential to grow the highly skilled workforce and regional economy.

Business administration and support services are the largest employer by type, being higher than the average for England. The "Transport and Storage" industry also has higher than the England average representation in the study area, including clusters in the industry hubs noted below.

Prominent industry hubs within the study area include Magna Park, Maylands, Motorsports, Digital Creative, Life Sciences, and Aviation and Aerospace. Northampton University has also grown with a registered 12,060 students in 2019/20 and which appeared in the 2012 Guardian University League Table as ranked first for 'value added' in the UK.

The study area is a major contributor to the success of the region, contributing towards 39% of the EEH region's Gross Value Added (GVA).

Wholesale and retail trade / repair of motor vehicles contributed a large proportion (16.2%) of GVA comparative to both the wider EEH (13.2%) and England as a whole (10.6%). This can be attributed in part the presence of large businesses such as Nissan Technical Centre and Volvo as well as the motorsport industries in Northamptonshire.

Key Economic Activity Challenges:

- To maximise the economic potential of key industries within the study area and support decarbonisation, interventions should focus on better connecting existing and emerging industry hubs with a skilled workforce via more sustainable modes of transport, particularly those situated outside large urban areas (e.g. Silverstone and Daventry SRFI).

Public transport services

New and under construction rail lines in the area mostly radiate north-south away from London, reinforcing the need for integrated multi-modal journeys (for example, bus, train, and walking). The are two major railways being built or developed which will fundamentally change the existing network and how it is used. HS2 to Birmingham will unlock capacity on the WCML and road network while East West Rail (EWR), being developed in stages, will provide improved connectivity across and through the region to support potential for modal shift from private vehicles.

Railway stations situated in towns and cities and with more regular bus connections for inward and onward journeys are more frequently used than those situated in smaller settlements or with fewer non-car connections. Many stations have the potential for greater use as mobility hub or "parkway" stations where rail can be used for all or part of an increased number of journeys. Strategically located new stations and improved connectivity to rural stations could encourage even more journeys by rail.

High frequency local bus routes serve the major settlements of Northampton, Luton, and Milton Keynes. However, direct inter-urban bus connections between these settlements are relatively limited. There is limited service provision in the north west, in areas such as Silverstone, Brackley and Banbury.

Key Public Transport Challenges:

- Station usage varies across the area, with users in more car dependent areas such as the north and west needing to drive further to access rail services.
- Improvements to deliver higher frequency bus services (both transitional and on-demand) with more reliable journey times and longer operating hours are needed to provide an attractive alternative to the private car.
- Public transport journey times are not competitive with journeys made by private car, particularly to smaller settlements.

Highway network and travel by car

Highway connectivity in the area includes routes that form part of the national Strategic Road Network (SRN) managed by National Highways, the Major Road Network (MRN) managed by local authorities, and a large number of local roads. Transport movements in the study area are dominated by significant north-south SRN routes of the M1, M40, A404 and the A5.

Major local routes include A413, A41, A418, A4146, A508 and A505. Other routes of significance include the A4010 between Aylesbury and High Wycombe, which as well as connecting with the growing town of Princes Risborough, is recognised as an emergency vehicle access route, providing links to both High Wycombe and Aylesbury hospitals.

Car dependency and mode choice is heavily influenced by accessibility of everyday services and amenities by different transport modes. Across the region private vehicles provide greater accessibility than public transport in almost all situations, with most of the study area accessible from at least one key settlement within 60 minutes of driving.

In contrast, only 42% of the study area can be reached within a 60-minute journey by public transport from at least one key settlement. Outside of this range are mainly rural areas in the centre and northwest of the study area. There are also some small and medium size settlements that cannot be reached included Silverstone and Towcester.

The region's highway network provides important strategic routes for freight journeys, with the largest flows of Heavy Goods Vehicle (HGV) movements found along the main motorways such as the M1 and M40. Motorways make up more than 60% of the HGV movements in the study area with several smaller single carriageway roads like the A508 which have high proportions of HGV traffic. A lack of SRN connections for freight traffic can mean that HGVs are using roads that are not always appropriate for these vehicles resulting in local impact. HGV freight movements can be a barrier to achieving EEH's future sustainability goals due to high carbon emissions of the existing vehicle fleet and road safety concerns. There are opportunities to decarbonise freight movements throughout whilst acknowledging the economic importance of freight industries such as along the M1. The current distribution of Electric Vehicle Charging Points (EVCP) shows a clear divide between urban and more rural areas. There is a significant concentration of existing EVCPs in Milton Keynes urban area, with this city alone having 293 charging points or 40% of the total volume in the study area.

Reported collision data also reveals that the number of Personal Injury Accidents (PIA) generally increases around large urban areas, with the highest concentration of PIAs occurring around settlements of Milton Keynes, Northampton, and Aylesbury. Many fatal PIAs have been recorded along the M1 – one of the most heavily trafficked motorways in the country – and also along A5 from Dunstable to Rugby – a single carriageway A Road which provides an alternative parallel route to the M1.

Key Highway Challenges:

- High car dependency and the presence of strategic national and regional routes through the study area has seen settlements and amenities largely developed around these. Many residents have limited choice in terms of attractive comparative sustainable travel alternatives to car travel times.
- There is limited access to alternative travel modes, as well as limited provision of electric vehicle charging infrastructure in smaller settlements and rural communities.
- Whilst road haulage is essential to the growth and success of businesses in the study area, it continues to have adverse but likely avoidable negative impacts on the environment and local communities.
- Safety challenges presented by relatively high-volume, high-speed highway infrastructure.

Active travel

At present, cycling to work is most common in the urban areas of Milton Keynes, Luton, Northampton, and Aylesbury, with the distribution of strategic active travel infrastructure varied throughout the study area.

Several urban settlements are connected by national cycle network routes, including a direct connection between Luton, Milton Keynes, and Northampton, as well as a connection from Bicester to Buckingham and Daventry.

Several medium size settlements are more poorly connected by active travel routes, including Aylesbury, High Wycombe and Hemel Hempstead. This can limit opportunities for potential cyclists to undertake medium and long distance trips by traditional bicycles or e-bikes instead of driving.

There are opportunities for new and improved inter-urban active travel routes to be developed between settlements. The routes of former railway lines could provide established alignments for new or improved connections between Brackley and Waddesdon Via Buckingham as well as between Northampton and Silverstone.

Micro-mobility modes are small lightweight personal vehicles such as e-bikes and e-scooters that are becoming increasing popular in the area. Improved active travel infrastructure will further enhance the attractiveness and benefits of such modes to the transport network, such as reduced local road congestion.

Key Active Travel Challenges:

- To help facilitate longer-distance journeys using more sustainable modes, an enhanced active travel networks are needed to provide high quality connections between rail stations and residential and employment areas.
- Luton and Hemel Hempstead are large settlements that do not benefit from shared micro-mobility schemes.

Strategic Mobility Hubs

The study area already benefits from several strategic mobility hubs that provide a central point for users to transfer between different modes of travel. Notable among these are locations such as High Wycombe Park & Ride and bus interchange facilities in centres such as Daventry, which provide private car users in particular the ability to avoid driving into central areas by connecting with reliable bus connections.

Aylesbury Parkway is a local example of a strategic mobility hub, providing direct rail connections with London by Chiltern Railways via Amersham or High Wycombe. It also provides large numbers of cycle parking spaces, connects with the local 16, 17 and 617 bus services, and provides amenities and a small retail offer.

Mobility hubs are important strategic transport nodes that reflect the needs of the local community, respond to local geography, and maximise opportunities for users to choose more sustainable modes for all or part of a given journey.

Key Mobility Hub Challenges:

- Many potential mobility hubs and similar facilities have focused on discouraging private cars travelling into busier urban areas, rather than maximizing their ability to facilitate and attract more sustainable strategic and local journeys as a destination in their own right.
- Naming sites as “Park & Ride” and focusing their design on large car parks, while useful for private vehicle drivers, could limit their potential to be valuable strategic hubs for all types of travel and user.
- Many areas that could benefit from a hub to enhance and support transfer between modes (for example at interchanges between quality walking and cycling routes and local and intercity bus services) do not currently have basic facilities like toilets, cycle parking or e-cycle charging.

Digital connectivity

Since the COVID-19 pandemic there has been a significant increase in the number of people working from home leading to changes in the way many teams and businesses are structured, as well as an increased importance in good digital connectivity. The "EEH Working from Home Propensity and capacity release report" outlines (through use of Capacity Release Model estimates) that remote and hybrid working could result in a 12% reduction in traffic congestion for the study area.

Digital connectivity varies across the study area, with the larger urban settlements such as Northampton, Luton and Milton Keynes having better availability (>80% of premises have gigabit internet availability) and more rural areas such as Brackley having much lower availability (21% to 41% availability).

For mobile connectivity, the UK's four mobile network operators are currently rolling out 5G services, which offer higher speeds and lower latency.

Improved digital connectivity, particularly in rural areas like Nash / Great Horwood, where there is the lowest availability gigabit internet, will help facilitate the adoption of agile and hybrid working practices. This in turn will help reduce the need to travel, particularly at peak times.

Key Digital Connectivity Challenges:

- Digital connectivity is highly variable across the study area as is the ability and willingness to work from home.
- Those whose roles do not allow them to work from home (such as those working in the logistics sector) are more reliant on the transportation network and susceptible to being impacted by issues such as congestion and increases in transportation costs.

Landscape and Protected Areas

A large portion of the southern part of the study area is included in the Chilterns area of outstanding natural beauty (AONB), with other parts also including notable areas in need of protection. These natural and community assets can present challenges to the operation and development of the transport network.

Areas subject to flooding or identified as being flood risk typically surround the key rivers or the River Nene near Northampton, River Great Ouse near Milton Keynes, and Newport Pagnell. The River Thames and Thames Valley are also found at the southern border of the study area.

There are also numerous protected areas within the study area such as the 'greenbelt' zones around High Wycombe, Luton, Princes Risborough, and Leighton Buzzard that limit the type and nature of development in favour of protecting the natural environment and community amenity. The greenbelt found in the study area is mostly that surrounding the north of London which is in place to assist in safeguarding the countryside from encroachment protect the local environment and prevent urban sprawl.

Key Natural Landscape Challenges:

- The delivery of large-scale infrastructure improvements, close to the River Thames, River Great Ouse and River Nene, may be challenging due to the potential flood risks impacting viability and project costs.
- The greenbelt areas have a substantial influence on the location of planned growth and the resultant connectivity requirements.
- Protected areas within the study area add an additional consideration to the delivery of new large-scale transport infrastructure and may increase some costs affecting perceptions of costs versus benefit.

Emissions and air quality

In 2020 the total amount of road-based Carbon Dioxide equivalent emissions within local authorities in the study area was 1,367Kt, representing 41% of road-based emissions in the EEH region. The highest levels of road-based emissions are in the immediate vicinity of the busy M1 motorway, a key long-distance strategic route used by large number of internal combustion engine vehicles. This impact will reduce as the vehicle fleet is decarbonised/electrified, but this transition will not address all air quality issues (such as particulates from tires).

There is a key challenge in balancing the impact of Luton Airport with its wider economic importance. Over the last five years emissions have fallen at a slower rate in the study area than the comparative average for the UK at 11% compared to 13% between 2012-2017, due in part to the airport operations. However, this EEH connectivity study can only influence surface travel to/from airports as opposed to airport operations themselves.

Areas of poor air quality are identified from the location of the 27 Air Quality Management Area (AQMAs) within the study area. Most of the AQMAs are clustered within either Luton or Northampton, with others located on major road links including the M40 adjacent to High WycombeSouth Buckinghamshire through Iver also has an AQMA bordering the M25.

Key Emissions and Air Quality Challenges:

- A decarbonized vehicle fleet will not remove all air quality issues from the area, with carbon emissions from electric vehicles determined largely by the emissions intensity of the national electricity grid, as well as particulates from tyre and brake wear.
- AQMAs highlight areas with the most severe air quality issues, with most associated with the Strategic Road Network and longer distance trips passing through the area that local decision makers can least influence.

Key Opportunities and Need for Intervention

The current challenges facing the study area are primarily due to dominant radial routes passing through the area, bringing with them non-local through traffic, and the uncertainty of what capacity may be unlocked by new infrastructure such as HS2. In addition, there are a range of rural and inter-urban connectivity challenges within the study area.

In seeking to **reinforce the region's role as an economic and innovation powerhouse**, while also meeting the requirement to reach net zero emissions by 2050 (at the latest), identifies a range of opportunities including:

Figure 3: Key Opportunities for the Study Area

Mass Rapid Transit

High frequency public transport services with priority access on key roads and junctions can help to create attractive and overall more efficient ways of facilitating journeys within and between urban centres and rural areas.

Shared mobility services

Roll out or expansion of shared mobility schemes could help offer more affordable and attractive access to opportunities, further complementing and making the most of active travel improvements and benefits.

Rail improvements

Existing connectivity will be transformed through major infrastructure currently under construction, notably High Speed 2 and East West Rail Stage 1 between Milton Keynes and Oxford (including its new railway station at Winslow). These schemes are forecast to release capacity on existing local road and rail networks.

Sustainable first/last mile and rail freight

The use of more sustainable first and last mile freight modes combined with enhanced rail freight interchanges can help move freight transport away from traditional HGV road-based movements.

Pinch point improvements

Highway improvement schemes that address issues along existing routes, particularly on strategic road network routes that are more appropriate for higher volumes of traffic.

Strategic mobility hubs

Combining parking, public transport, active travel improvements and demand responsive services in hubs can help to reduce difficulties of linking travel between different transport modes and encourage more sustainable travel choices.

Urban active travel improvements

Infrastructure improvements to include better priority and safer segregation for active travel modes will help drive more sustainable travel patterns (particularly for shorter journeys), reducing car dominance, congestion, and emissions.

Study Objectives

Figure 4 details the 8**objectives established with stakeholders for the study area** based on the evidence base and issues and opportunities identified. These are centred around the four key strategic principles set out in England's Economic Heartland's Transport Strategy.

Figure 4: Study Objectives

Key Principles from EEH's Transport Strategy			
Achieving net zero no later than 2050, with ambition to reach this by 2040.	*Improving quality of life and wellbeing through a safe and inclusive transport system which emphasises sustainable and active travel.*	*Supporting the regional economy by connecting people and business to markets and opportunities.*	*Efficient movement of people and goods through the region and to international gateways.*
Objectives for the study area			
1a – Harness innovation to reduce all emissions including carbon and manage transport demand to make more efficient use of existing network capacity **1b** – Promote and enable the use of more sustainable travel modes and transport technologies	**2a** – Create a transport network that reduces car dependency and provides comprehensive, equitable, and sustainable access to services and opportunities for all **2b** – Improve public health and individual wellbeing outcomes by minimising road traffic danger, and transport-related air and noise pollution	**3a** – Better connect people and businesses through sustainable modes to help create more employment, innovation, and collaboration opportunities **3b** – Ensure planned development is part of a well-connected, sustainable, and accessible transport network	**4a** – Enable efficient, safe and sustainable movement of people and goods through the study area and to key international gateways, ensuring impacts on local communities from freight traffic are minimised **4b** – Facilitate sustainable first mile/last mile connectivity for people and goods in both urban and rural areas

Critical Success Factors

To help shape the development of this Connectivity Study and the development of a long list of transport interventions for the study area, **nine critical success factors were identified** to provide an articulation of the need for intervention. They also helped to bring specificity around the outcomes that need to be achieved through the study without defining what specific interventions are required for achieving those outcomes. These Critical Success Factors were:

1. The carbon emissions from transport are reduced to net zero with an ambition to reach this by 2040.
2. Improved digital infrastructure reduces the need to travel.
3. A high-quality, sustainable, integrated and accessible transport network connects all places of strategic importance.
4. Improved transport connectivity enables sustainable and high-quality planned development that improve accessibility and links to improved quality of life.
5. Rural communities are well connected to services and opportunities by a safe and reliable public transport network.
6. Everyone can access the benefits of new and improved technologies (e.g. shared electric vehicle services).
7. The benefits of new strategic/ major infrastructure are maximised for the whole study geography (e.g. HS2 creates additional capacity for freight and passengers on WCML).
8. The transport network enables safe and sustainable distribution of goods within and through the area via appropriate routes.
9. There is a substantial increase in active travel mode share for all local and first mile last mile journeys, contributing to better connectivity, increased health benefits through increasing physical activity and improved air quality.

Scenario Planning

The Department for Transport's Uncertainty Toolkit identifies the need to consider future uncertainty in the transport network during the appraisal process and scenario planning is increasingly viewed as good practice in long-range planning given uncertainty about the future.

To ensure that each Connectivity Study has been developed in such a way that allows for a good level of resilience to potential future changes in travel patterns, a set of "**Alternative Futures**" were developed at an EEH region level, led by technical specialists, and informed by stakeholder input:

- **Radical Change**: high government spend, radical change in policy to support improved health and decarbonisation and a resilient economy.
- **High Tech**: positive public and government attitudes towards technological change, high levels of home working, lower overall and peak travel demand, reduced demand for traditional public transport and private car ownership.
- **Slow Recovery**: slow return to the pre-Covid business-as-usual and an economy vulnerable to economic shocks, fewer journeys for all trip types, across all modes especially peak time.

Completing these are "**Infrastructure Scenarios**" developed with stakeholders to represent different approaches to intervention planning that could contribute to realising our vision and addressing the objectives and critical success factors of this study.

Potential interventions were then assessed within the study's MCAF (see explanation below) in the context of the Alternative Futures and Infrastructure Scenarios with the purpose of considering if any interventions which were assessed as being borderline under a Business-as-Usual state would be more appropriate recommend under an alternative future(s).

They were also assessed to help ensure the packages were resilient to different potential future states.

Intervention Identification and Assessment

An initial long list of potential interventions and options was developed **from a wide range of sources**, including input from the project team, Steering Group, Stakeholder Group, Call for Evidence and subject matter experts, with additional desk research also undertaken. This included a review of local transport planning policy documents as well as a review of the challenges and opportunities identified in the evidence base.

In total, **232 'potential' interventions** were included in the long list with suggestions only excluded from the Long List if they:

- Did not primarily address movement within the study area.
- Were not considered to be at sufficient scale to have regional significance (i.e., a specific, small-scale cycle intervention) – note that many small-scale interventions are covered by wider regional interventions.
- Are a committed intervention (schemes where construction had already started or those with identified funding and a clear delivery timescale).
- Did not pass a basic 'common sense' feasibility test (i.e., if they were based on an unproven technology) (e.g., Hyperloop).

An initial assessment of the potential interventions excluded 102 potential interventions. Reasons for exclusion ranged from the scheme already being committed or delivered, being a duplicate, not supporting strategic movements in the study area, being addressed as part of another connectivity study, not having enough detail of scope to proceed to the MCAF assessment process, through to not being in the study area.

The remaining 130 potential interventions then progressed to a detailed assessment.

Multi-Criteria Assessment

A multi-criteria assessment framework (MCAF) was developed based on DfT's Early Assessment and Sifting Tool (EAST) Guidance and used as an early assessment and sifting tool for this study.

The MCAF was used to sift out options that perform poorly, and to organise and compare options to help develop coherent packages of interventions. For each option, they were assessed against three different types of criteria:

- **The Strategic Dimension**: How well each option contributes to achieving the study's principles and objectives and how well it is aligned with national, EEH and local policy.
- **The Economic Dimension**: The nature and scale of the economic, environmental, and social impacts of each option.
- **The Deliverability Dimension**: The deliverability of each option, including an options financial case (likely cost and affordability), an options deliverability / management case (timescale, technical complexity and acceptability) and the quality of supporting evidence.

The MCAF does not provide an overall score or rank for each option assessed. Instead, professional judgement has been used to establish a criteria scores for each potential intervention.

A **technical review** of the assessment process was undertaken by the project team at several stages of the assessment. This ensured that the assessors were adhering to the principles outlined within EAST guidance in particular.

Stakeholder moderation was also facilitated with overview MCAF assessment results reviewed by EEH and shared with the steering and stakeholder

groups. Consideration was given to suggested changes and where appropriate results updated.

Packaging of Interventions

Following assessment of potential interventions against the MCAF, the project team worked with key stakeholders and technical advisors to develop a set of coherent packages that together will help realise our vision based on the objectives defined for the study while also reinforcing the region's position as an economic and innovation powerhouse.

These packages have been developed through workshops, discussions, and careful analysis of results of the assessment of the long list of possible interventions described in the preceding section. The inputs informing package development are summarised in Figure 5 below:

Figure 5: Inputs Informing Package Development

The packages combine consideration of the EEH's Transport Strategy, study specific sub-objectives, critical success factors and Infrastructure Scenarios, expert advice, stakeholder, and officer feedback.

This 'vision led' approach was then combined with the individual assessment of the long list, with interventions not taken forward at this time deemed as 'parked'.

A proposed intervention may be parked for a range of reasons, and this should only be seen as EEH not taking it forward in part this study. An intervention could be supported at a later stage (such as part of a future EEH study or council project) should circumstances or priorities in the area change.

Based on insights from previous Connectivity Studies in the programme, it was decided to that priority should be given to the following four ways of grouping interventions in order to more accurately reflect the multi-modal nature of transport infrastructure:

1. Around a single location (for example, a coherent urban area);
2. An existing or potential transportation corridor (for example, along a rail service or motorway route)
3. Based around common types of locations (for example, science parks or market towns); and
4. By mode type or other characteristic (for example, freight or electrification).

In total, there are 80 recommended within the 6 different packages set out in more detail in the following section.

Phasing and Indicative Timeframes

Based on stakeholder input from the Infrastructure Scenario development, intervention phasing was considered in three key time periods:

- **Short term** schemes were judged to have a construction start date between 2025 and 2032 with benefits beginning to be accrued within this timescale.
- **Medium term** schemes were judged to have a construction start date between 2033 and 2040.
- **Long term** schemes were judged to have a construction start date from 2041 onwards.

The indicative timeframe for each intervention is included as part of the full list in Appendix A.

[Image caption] ([SOURCE])

Recommended Connectivity Plan

This study recommends **80 interventions** to achieve a step change in connectivity for the area (full list of included in Appendix A). These have been **grouped into six packages** that together will help to realise our Transport Strategy vision:

1. **West Coast Main Line, A5 and M1 Corridor**: *Provide and make best use of released rail capacity from the construction of new lines, alongside delivery of sustainable transport connections along the corridor.*
2. **Northampton - Brackley - Aylesbury**: *Improved bus services and intermodal connectivity enhancements between Northampton and Aylesbury, including centres such as Winslow, Buckingham, Brackley, and Bicester.*
3. **Thames Valley and London Connections**: *Improved connectivity between the Chilterns and key areas in the Thames Valley, leveraging new and improved rail connections between Aylesbury and Milton Keynes, better road connections between the M4 and M40, as well as Chiltern Main Line improvements and rail connections to Old Oak Common.*
4. **Sustainable Rural Connectivity**: *Better connectivity to market towns such as Brackley, Buckingham, and Towcester, rural areas, innovation hubs and the creative sector through improved transport choice.*
5. **Future Freight and Rail Electrification**: *Rail electrification combined with partnering with private sector and organisations managing national road and rail transport networks to better manage freight movements, including impacts such as congestion, and securing the future of freight terminals.*
6. **Creating an Integrated Transport Network**: *Better integration between different modes to encourage multi-modal journeys that more sustainably meet individual travel needs, and reduce the overall cost and impact of the transport and travel on the environment.*

In addition to **reducing car dependency and providing significantly improved access to employment and education opportunities** across and beyond the study area, the logic and benefits of each package was also confirmed through modelling using EEH's Economy Land Use Model (EEHULUM), a high level model that simulates transport, people, employers, and land use interaction over time.

Compared to a business-as-usual baseline, the EEHULUM results show that if implemented in full the recommended connectivity plan could achieve the following step change each weekday by 2049 compared to the business as usual baseline:

- **155,000 fewer journeys by car and other private vehicles;**
- **25,000 more journeys by bus;**
- **200,000 more trips made by walking, wheeling, or cycling; and**
- **20,000 more journeys by train.**

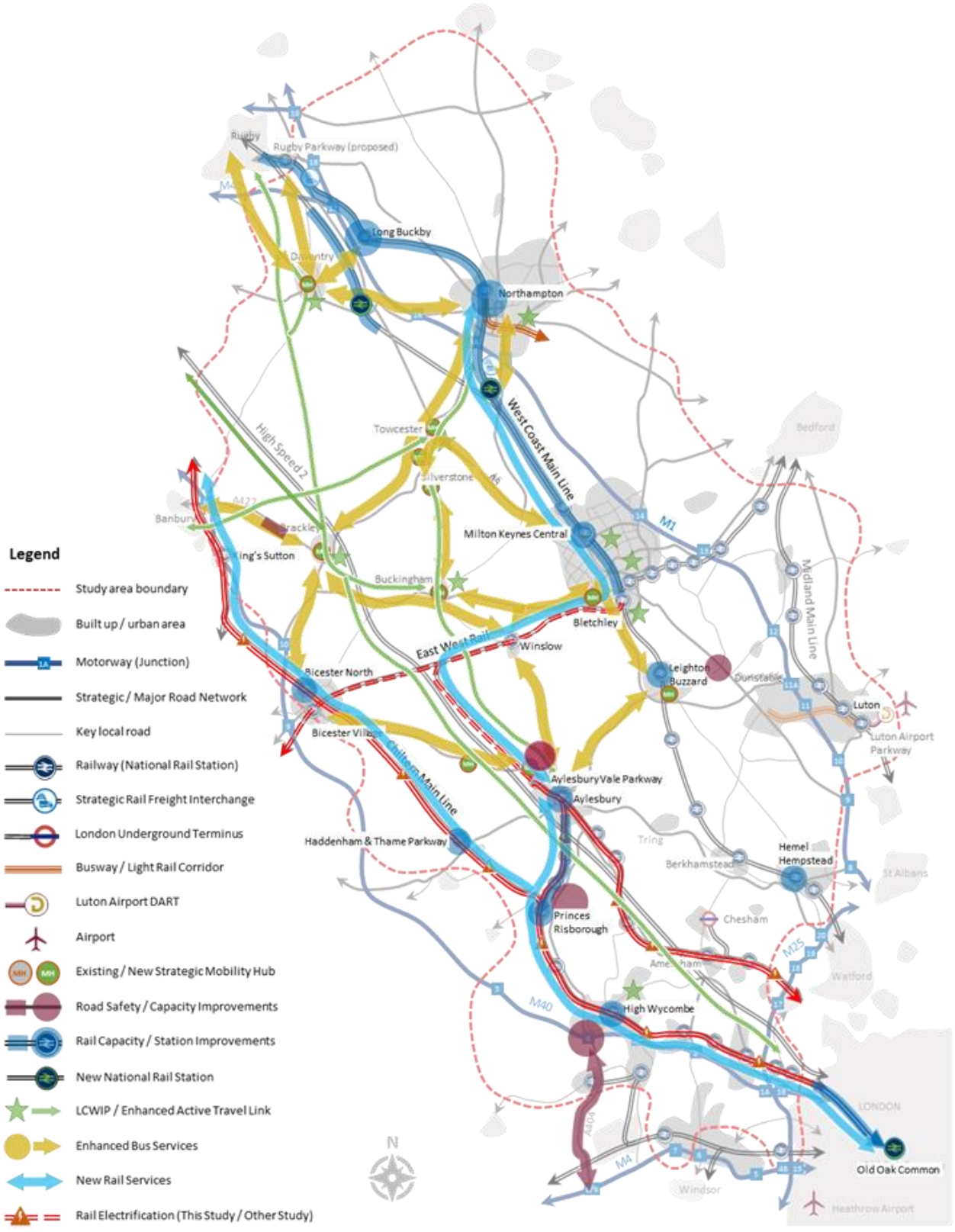
While further detailed work on costs and benefits will be undertaken as schemes are progressed by relevant authorities, the indicative capital investment required to deliver this plan is £4.98 billion, with estimated annual maintenance and renewal requirements of £190 million, over 30 years.

By 2049 this investment could deliver the following compared to the business-as-usual baseline:

- **153 KT less CO2e emitted per year;**
- **5,900 additional new jobs created;**
- **£1,400 million in Gross Value Added (GVA) per annum; and**
- **5,900 additional new residents**

This ambitious plan will help us deliver our Transport Strategy vision and will inform EEH's continued delivery of our Investment Prioritisation Framework.

Recommended Connectivity Plan Summary Map



Package 1: West Coast Main Line, A5 and M1 Corridor

The focus of this package is to ***provide and make best use of released rail capacity from the construction of new lines, alongside delivery of sustainable transport connections along the corridor.***

Interventions included in this package support the region making the most of capacity released by new developments, notably HS2 Phase 1 between London and Birmingham that is expected to release capacity on the WCML and M1. This will be achieved by moving higher speed trains onto HS1 to create more paths for local and freight services, and those then being used to reduce HGV traffic.

Larger core interventions focused on these strategic routes are supported with complementary measures such as active travel infrastructure improvements that further facilitate more sustainable transport choices for all or part of passenger and freight journeys in and through the area.

Benefits of this package are expected to include:

- **New and improved railway stations to reduce pressure on road network** by absorbing increased demand from planned developments and providing more attractive and convenient options to those who may otherwise only drive to or from areas such as London, or who currently drive to centres such as Milton Keynes and Rugby to access long distance rail services;
- **Increased transport choice and reduced congestion into larger centres** through provision of improved active travel infrastructure, bus services and interchange facilities, providing more attractive and reliable connections to key services, amenities, as well as existing and new railway stations; and
- **Improved network resilience during periods of high demand** such as major events like those held at Silverstone and future commercial activity centres aimed at bringing the region closer to opportunities near-by, including London and other major centres of activity..

Key links to other packages include:

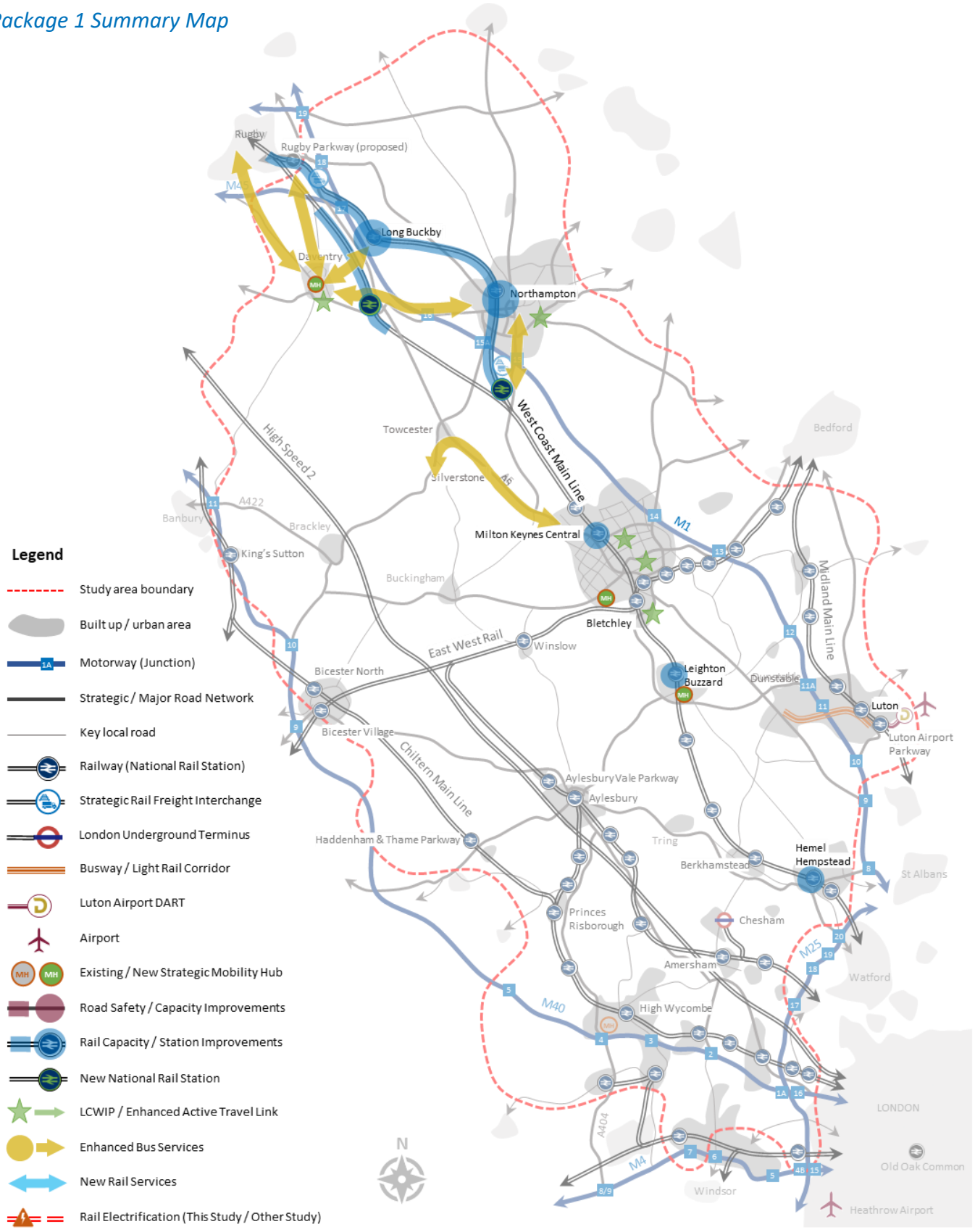
- **New passenger services to Old Oak Common via Aylesbury** that make use of the New Rail Link between Chiltern Main Line and Old Oak Common and East West Rail Services Extended between Milton Keynes and Northampton (Package 3), building off proposals identified within the Oxford to Milton Keynes Connectivity Study, while shaping the best ways to make use of released rail capacity following higher speed WCML services moving to HS2 Phase 1;
- **Strategic mobility hubs and improved bus services** (Package 2 and 3) will inform and boost the case for increased passenger services on the WCML and station improvements on the route, particularly where services are well coordinated and have integrated ticketing (Package 6);
- **Rail electrification will reduce passenger and freight impacts** by transitioning large numbers from diesel to electric (decarbonised) traction (Package 5).

To ensure delivery of interventions aligns with our Transport Strategy vision of net zero carbon by 2050 at the latest, consideration needs to be given to:

1. The initial and longer-term balance of timetabled passenger and freight services able to make use of released WCML capacity following higher speed services moving to HS2;
2. Confirming the location and connections of new railway stations to provide greater certainty for policy makers, businesses, and users (for example, so their role as strategic mobility hubs can be referenced and reinforced in the West Northamptonshire Local Plan and Local Transport Plan); and

3. Identification and avoiding of weak links in active travel and public transport networks, such as intersections that present a high actual or perceived risk to cyclist safety, and or which regularly impact bus journey time reliability.

Package 1 Summary Map



Package 2: Northampton – Brackley – Aylesbury

The focus of this second package is on ***improved bus services and intermodal connectivity enhancements between Northampton and Aylesbury, including centres such as Winslow, Buckingham, Brackley, and Bicester.***

Interventions in this package will help to deliver a step change in connectivity for those areas with the highest levels of car dependency and limited or no access to timetabled public transport options.

Enhanced bus services will serve and be supported by a series of strategic mobility hubs based on existing bus stops, employment areas and the location of key services. These will provide a far superior experience of most bus stops across the region that typically have little or no amenities such as shelters, seating, charging facilities for e-bikes or other mobility devices, or real time travel and bus arrival information.

Benefits of this package are expected to include:

- **Making new and enhanced bus services a more appealing alternative** to private vehicle travel, reducing demands on the road network by moving travellers more efficiently with higher capacity vehicles;
- **Improved value for money for bus travel and services** through an improved customer experience and clear visual indicators of public investment in the network such as new and improved facilities to drive positive sentiment and support for public investment in operations (subsidy), and increase patronage and network benefits;
- **Foster more sustainable land use planning and development** through providing greater long term certainty of where public transport services will operate, and that future residents, employees and visitors will be provided with a higher frequency, better quality, and more reliable service.

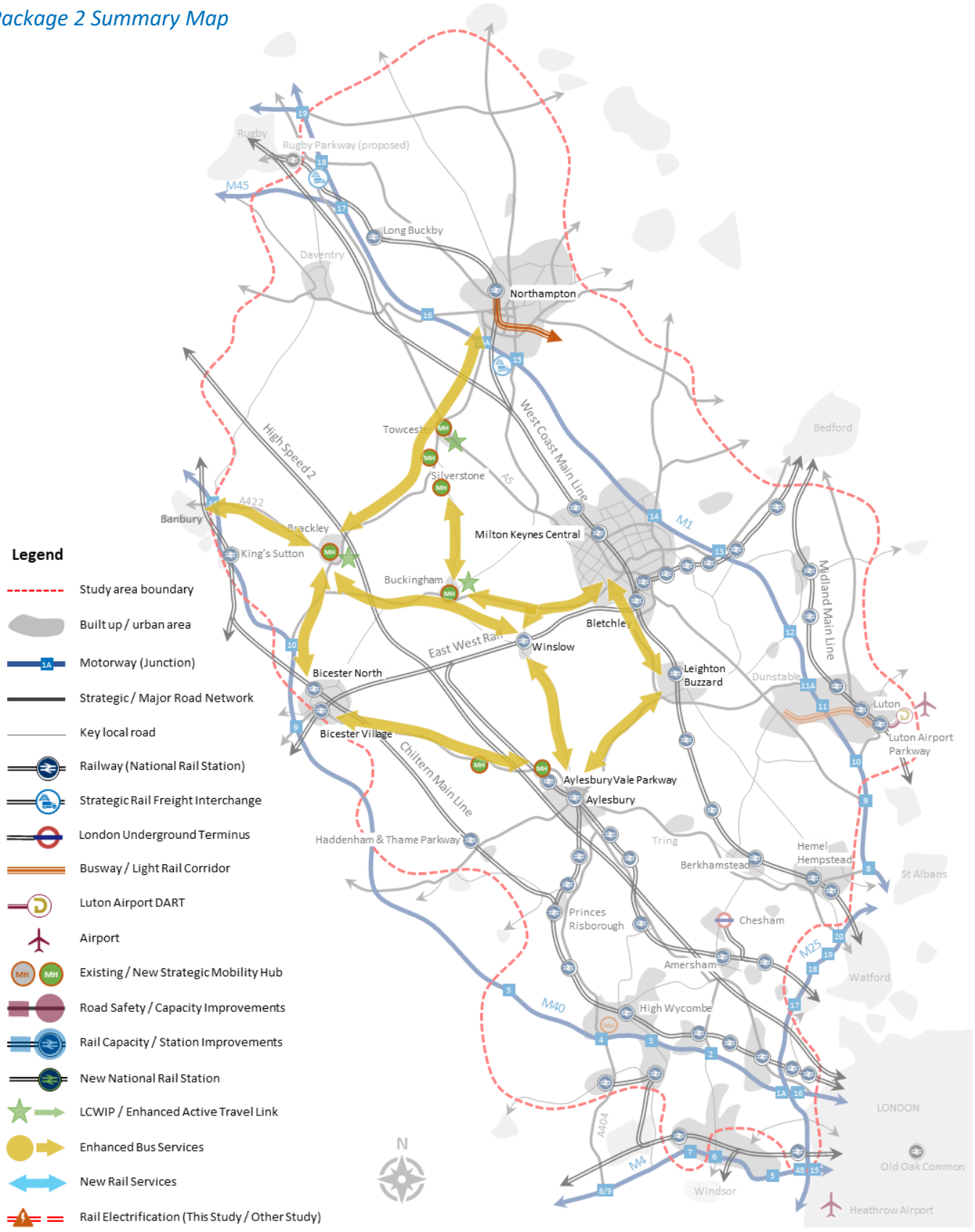
Key links to other packages include:

- **Connections to new passenger services to Old Oak Common via Aylesbury** (Package 3) will provide a significantly enhanced network of connectivity for new and enhanced train and supporting bus services between areas of key economic importance, particularly following higher speed WCML services moving to HS2 Phase 1;
- **Strategic mobility hubs and improved connections** (Package 3 and 6) will inform and boost the case for increased passenger services on the WCML and railway stations making taking the bus a more attractive options, particularly where services are well coordinated and with integrated ticketing (Package 6); and
- **Improved bus services across the region,** including those recommended to connect with the WCML (Package 1) will make choosing public transport more acceptable and reliable to a larger number of potential users.

To ensure delivery of interventions aligns with our Transport Strategy vision of net zero carbon by 2050 at the latest, consideration needs to be given to:

1. Long term bus route planning to determine the location and needs of strategic mobility hubs, and ensure they meet the needs of prospective users and operators;
2. Alignment of mobility hub and development planning throughout the region, providing guidance and consistency wherever possible to reduce duplication and maximise benefits; and
3. Clear communication of existing and new bus routes, including options and costs for ticketing and multi-modal integration (for example, where else tickets can be used.)

Package 2 Summary Map



Package 3: Thames Valley and London Connections

The focus of this package is ***improved connectivity between the Chilterns and key areas in the Thames Valley, leveraging new and improved rail connections between Aylesbury and Milton Keynes, better road connections between the M4 and M40, as well as Chiltern Main Line improvements and rail connections to Old Oak Common.***

Interventions will deliver significantly improved rail connectivity, including for Buckinghamshire to be directly connected to Milton Keynes and Elizabeth Line services. The corridor will provide new and improved strategic rail connectivity and a better alternative to driving between growing settlements such as Aylesbury and High Wycombe. This also supports improved economic opportunities for communities with new links to a wider range of jobs.

This will be **made possible through upgrading existing routes, as well as delivering two missing links**; the Aylesbury Link (recommended in a previous study to connect Aylesbury and Milton Keynes) and making use of passive provision for Chiltern Main Line services between South Ruislip and new dedicated platforms at Old Oak Common.

Benefits of this package are expected to include:

- **Enhanced strategic rail connectivity between and to growing settlements and places of economic importance** such as Aylesbury, High Wycombe and Milton Keynes;
- **A second London terminus for Chiltern Main Line at Old Oak Common** for onward travel to and from the capital and Heathrow via the Elizabeth Line and Great Western Main Line;
- **Improved rail system resilience** with alternative routes for periods of disruption and changing passenger and freight journeys needs; and
- **Enhanced mode shift to rail and other sustainable moves** by expanding the range of available routes and connections, and enabling greater use of more sustainable and space efficient modes for all or part of journeys.
- **Improving the safety and efficiency of strategic traffic movements**, including for freight, through targeted highway improvements on the strategic road network such as the A404, as well as required improvements linked to planned growth on more local routes, particularly the A4010 at Princes Risborough**.**

Key links to other packages include:

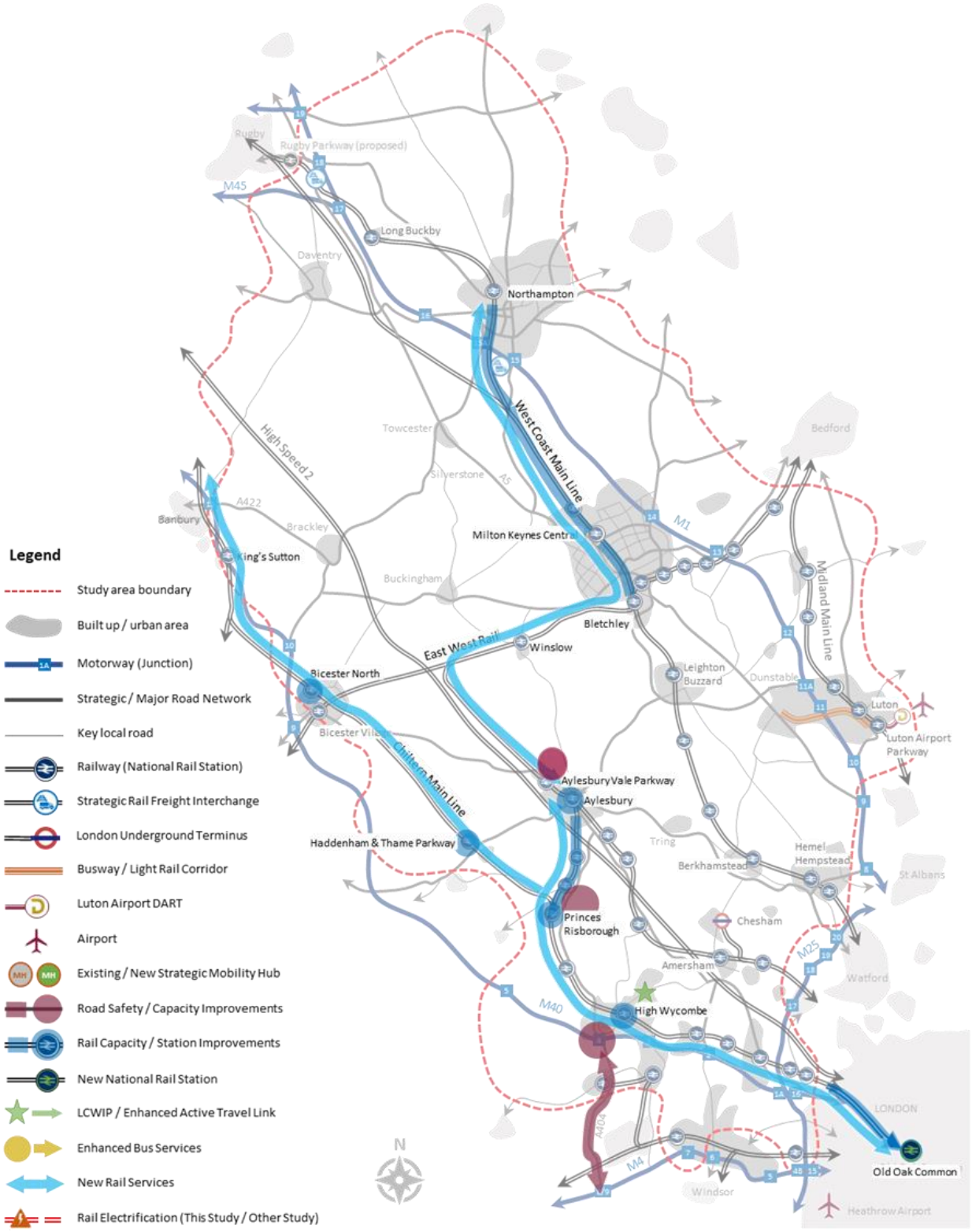
- **New rail routes supported by enhanced bus services** with services linking to the growing network of mobility hubs and railway stations across the region (Packages 1 and 2), increasing the number of people able to access new connections to the second London terminus at Old Oak Common;
- **Enhanced rural connectivity will connect more people** living outside of urban areas through enhanced on-demand services and improved active travel links (Package 4) reducing the need for them to drive or have access to existing activity centres or mobility hubs to access onward travel; and
- **Rail electrification will reduce passenger and freight impacts** by transitioning large numbers from diesel to electric traction (Package 5), and making the most of improvements to railway stations (Packages 1 and 2).

To ensure delivery of interventions aligns with our Transport Strategy vision of net zero carbon by 2050 at the latest, consideration needs to be given to:

1. The business case and strategic narrative for the Aylesbury Link should include its full value as part of a longer distance strategic connection;

2. Targeted and strategic highway improvements should look to avoid inducing demand to achieve goals such as reducing congestion, improving safety, air quality and noise pollution; and
3. Use of electric and other low/zero emissions vehicles to further improve expected benefits and limit environmental and health externalities.

Package 3 Summary Map



Package 4: Sustainable Rural Connectivity

The focus of this package is ***on better connectivity to market towns such as Brackley, Buckingham, and Towcester, rural areas, innovation hubs and the creative sector through improved transport choice***.

Interventions focus on supporting those who live and or work outside urban centres and experience high levels of car dependency. This is achieved through area wide initiatives such as the expansion of demand responsive transport services combined with location and journey specific schemes such as new routes for longer walking and cycling journeys.

To achieve outcomes faster many options build upon existing services and options to consider using or upgrading former rail alignments and or construction service roads where possible. This package builds on the 'place-making' proposals for addressing the impact of roads and traffic on quality of life already identified in the Oxford to Milton Keynes study, for example at settlements such as Wing and Stone on the A418 and Waddesdon on the A41, as well as road routes around Aylesbury.

The package links to cycle route upgrades identified in the Southern East-West Movements study, such as Aylesbury to Tring, and to longer-term aspirations to manage traffic and improve accessibility by all modes on major corridors such as the A5, A413, A422, and A4010, including with any improvements associated with new developments on these routes.

Benefits of this package are expected to include:

- **Making rural areas more accessible and inclusive** by complementing a growing network of mobility hubs and reducing the need to own or have access to a car to access key services, job opportunities, services or activities;
- **Reducing road congestion and travel times** through better managing traffic, and encouraging more people to make journeys by walking, wheeling, or cycling, including electric mobility options, instead of driving to release road space for those with more essential needs to drive; and
- **Reduce rural isolation and maximise public health benefits** by making people be and feel more connected through greater access to low or no cost travel options such as walking and cycling (including e-bikes), as well as providing a step change in connectivity and flexibility.

Key links to other packages include:

- **Enhanced bus connectivity between urban and rural settlements** through new or enhanced services (Packages 1 and 2) and the growing network of hubs will provide significant improvements in the frequency and operating hours of public transport services between settlements and across rural areas;
- **Connections through network of strategic mobility hubs** are to build on those already available (for example, Park & Ride locations) to allow those in rural areas to use the expanded bus network (Package 1 and 2) to access key services instead of having to drive, walk or cycle the full distance; and
- **Improved digital connectivity will reduce the need for travel** (Package 6) as well as assist those wishing to access timetabled or on-demand services to access real time travel information and updates (Package 6).

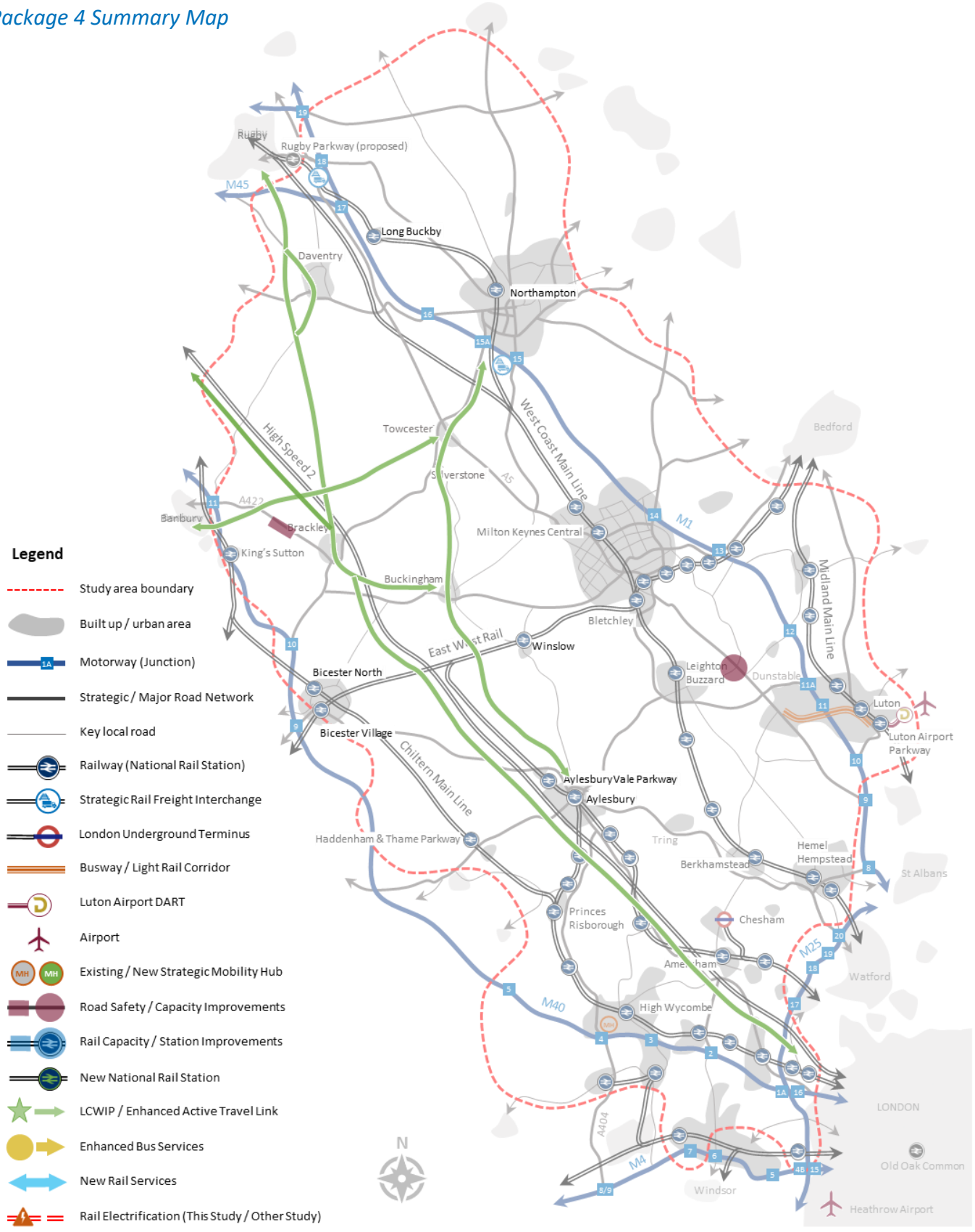
To ensure delivery of interventions aligns with our Transport Strategy vision of net zero carbon by 2050 at the latest, consideration needs to be given to:

1. Building connections centred on the region's strategic mobility hubs to maximise business case and operational benefits of clustering services and amenities in rural communities;
2. Understand and cater for electric mobility options in more rural areas and proactively

invest in elements like reliable charging infrastructure and wayfinding signage; and

3. Different types of users that could live in rural areas and their specific needs, such as e-bikes being well suited to longer journeys and or those with mobility support needs.

Package 4 Summary Map



Package 5: Future Freight and Rail Electrification

The focus of this package is to decarbonise rail operations through ***rail electrification combined with partnering with private sector and organisations managing national road and rail transport networks to better manage freight movements, including impacts such as congestion, and securing the future of freight terminals***.

Interventions included in this package will realise some of the largest possible reductions in greenhouse gas emissions possible across the EEH region through powering trains through electric power, rather than diesel traction the only non-electrified rail main line radiating from London; the Chiltern Main Line and associated elements of the Metropolitan Line beyond Amersham to Aylesbury.

While being technology agnostic (for example, trackside infrastructure and/or through use of battery technologies within individual rail vehicles or a combination of these technologies), electrification addresses what will become one of the region's largest sources of emissions following the expected transition of road vehicles to electric or other zero emissions technologies in the coming decades.

Benefits of this package are expected to include:

- **Significant reduction in carbon emissions and air pollution** near and associated with rail through an overhaul the technologies used to provide traction movement for passenger and freight services;
- **Options for staged and innovative ways of delivering electrification investment**, such as onboard batteries and or discontinuous trackside electrification and to limit extended periods of disruption to services; and
- **Ability to accommodate new freight and passenger services** such as those made possible by new and expanded strategic rail freight interchanges and better partnership working between the public and private sectors to manage and accommodate flows of both road and rail freight.

Key links to other packages include:

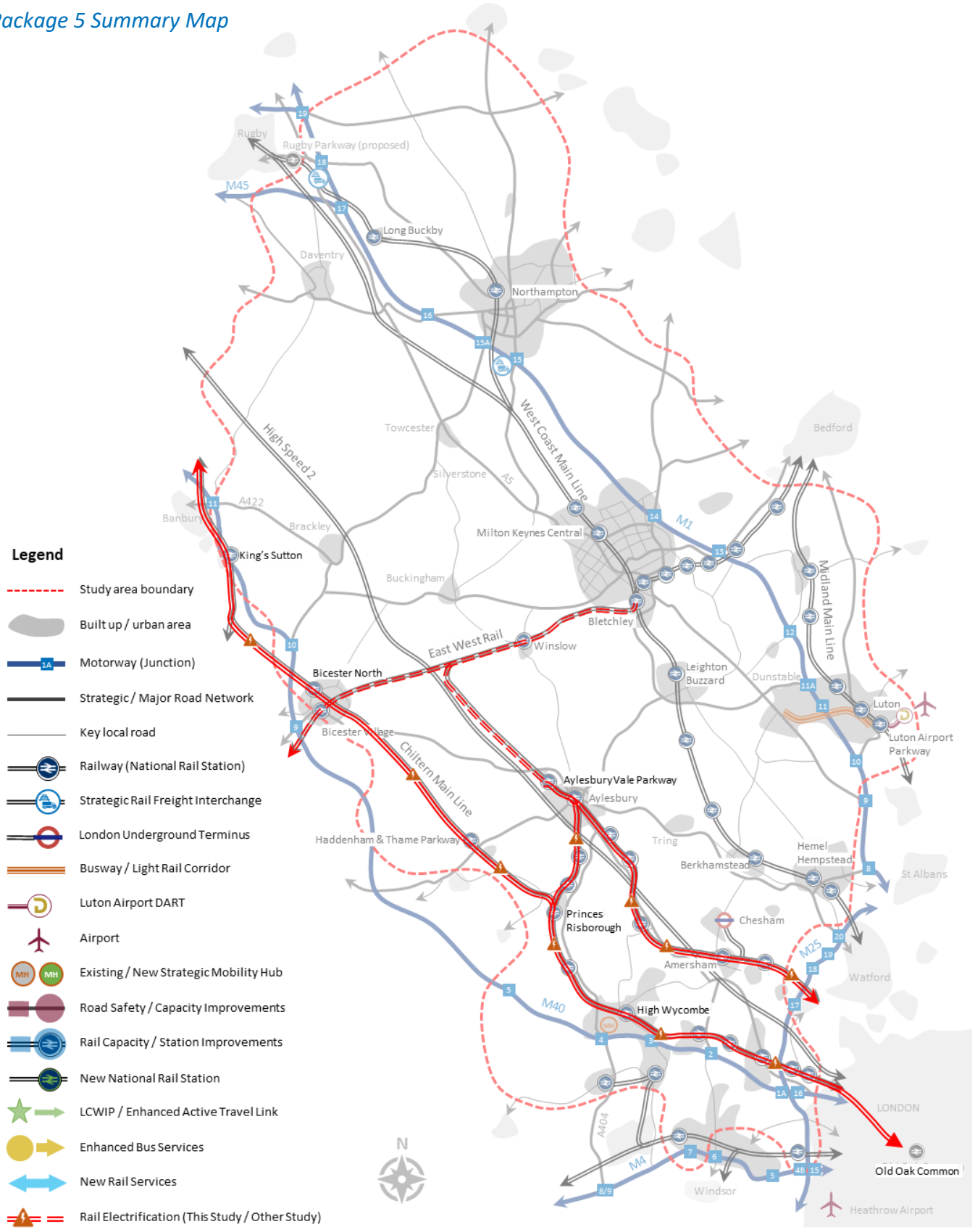
- **New and enhanced zero emissions rail connections and services** that make use of the New Rail Link between Chiltern Main Line and Old Oak Common and East West Rail Services Extended between Milton Keynes and Northampton (Package 3) whilst utilising the planned decarbonized national electricity grid;
- **Enhanced active travel infrastructure** as detailed through LCWIP proposals (Packages 1, 2 and 3) and new or enhanced active travel routes (Package 4) facilitate a step change in more sustainable first and last mile freight and logistics across the region, particularly those using e-mobility; and
- **Expanded electric and hydrogen vehicle charging/ re-fuelling networks** across the region (Package 6) will allow the freight and logistics industry that plays a large role in the local economy to shift faster to zero emissions vehicles.

To ensure delivery of interventions aligns with our Transport Strategy vision of net zero carbon by 2050 at the latest, consideration needs to be given to:

1. The mix of electrification technologies (including consideration of interim and longer-term solutions) that may be needed to achieve a cost effective transition away from diesel traction on the Chiltern Main Line and Metropolitan Line north of Amersham;
2. Ways to maximise use of more sustainable first and last mile connections, particularly for freight services such as new or upgraded cycle routes in key urban and commercial centres; and

3. Providing long term certainty for those involved in the supply chain for electrification to ensure competitive pricing and reduced project risks.

Package 5 Summary Map



Package 6: Creating a Sustainable Integrated Transport Network

The focus of this sixth package is on ***better integration between different modes to encourage multi-modal journeys that more sustainably meet individual travel needs, and reduce the overall cost and impact of the transport and travel on the environment.***

Interventions included in this package support all of the previous packages 'global' interventions that apply across the study area and benefit all potential users through improvements such as expansion of electric and hydrogen vehicle charging/ re-fuelling networks and improvements in the way services connected and information about them communicated in advance and at places like bus stops.

The shift to zero emissions vehicles (in the overall energy cycle and not just local tailpipe emissions) will fundamentally change the emissions profile of the transport network. This will then make it even more important to 'get the basics right' to make the case for and improve the attractiveness and perceived reliability of alternatives to less efficient private car journeys.

Benefits of this package are expected to include:

- **Supporting a shift away from emissions intensive vehicles** through a wide ranging and reliable network of charging stations for electric vehicles and potentially alternative zero emissions fuels such as hydrogen;
- **Reduced car dependency and congestion** by making public transport be and feel more reliable and predictable through provision of real time journey planning information, integrated ticketing and better alignment between different services and modes (e.g., at mobility hubs); and
- **Assistance with cost of living pressures** through providing improved access to more affordable travel options for more people and then further reducing the cost of accessing such services through increased public operational investments to reduce operator reliance on fare revenue.

Key links to other packages include:

- **Increasing choice and flexibility will increase network resilience** for all users by providing a larger number of alternative ways to move across the region including new rail connections (Packages 2 and 3) and enhanced bus services connecting strategic mobility hubs (Packages 2 and 3);
- **Electrification of rail routes will reduce impacts and increase appeal** (Package 5), boosting the benefits and potential user base for improved real time information and integrated ticketing; and
- Increased rural active travel will increase demand for digital connections (Package 4) to support journey planning and associated activities.

To ensure delivery of interventions aligns with our Transport Strategy vision of net zero carbon by 2050 at the latest, consideration needs to be given to:

1. Balancing direct investment by the public sector with the ability to unlock and leverage private sector capital to deliver initiatives such as consistent and reliable electric vehicle charging;
2. Reframing of 'subsidy' when referring to public transport services in order to better align it with how operational investment in road infrastructure is currently discussed, improving public and political understanding of the relative benefits of different modes of travel in a more even way; and
3. Passing on operational efficiencies to transport network users through lower fares and operating charges wherever possible.

Note: No summary map is provided for this package as the interventions do not have specific geographies within the study area.

Impact Assessment

EEH commissioned Steer to develop a model to test the impact of the packages developed within the connectivity studies on transport and socioeconomic outcomes up to the year 2049. This model, known as the England's Economic Heartland Economy and Land Use Model (EEHELUM) and updated in 2023, is a transport and land use model that simulates the interaction of transport, people, employers and land use over periods of time.

To model each package in EEHELUM, adjustments were primarily made to the generalised journey times (GJTs) within and between each zone (by mode) to reflect the anticipated impact users will get from the proposed interventions identified. The packages were modelled in EEHELUM and presented in comparison to a business-as-usual scenario (BAU) based on the national trip end model (NTEM) which also projects employment and population growth to 2049.

Investment and Expenditure

The construction and maintenance cost estimates have also been prepared to a level of detail commensurate with the maturity of the design of the interventions and the current level of detail available on the proposals. Items have been priced using either published costs, estimated based on similar known schemes or built up based upon industry standard rates. All estimates have a base year of 2022.

To reflect the lack of maturity of the design, risk allowances have been applied to the higher range costs at levels commensurate with SOC estimates, informed by DfT's transport analysis guidance (TAG) as detailed in the table below. Operations cost estimates have been presented as low, medium and high range of costs. This reflects a level of uncertainty in cost estimating accuracy, due to the lack of maturity of the design and available detail for many schemes. The low costs are based on estimated delivery costs in 2022, medium applies a +10/+15% increase and high accounts for additional risk and optimism bias.

Connectivity Plan Benefits

Table 1 below summarises the key modelled impacts of each package and overall for all 80 interventions included in the recommended connectivity plan compared to a BAU scenario for 2049. It also includes the medium estimate of investment in construction and maintained, as well as an indication of relative operational investment requirements.

Though a Benefit Cost Ratio (BCR) and Value for Money assessment is not appropriate at this stage in the business case development process, **overall economic benefits are expected** (in terms of GVA per annum and emissions reduction) against the required investment to deliver and operate each intervention.

Demand Management

Demand management measures, such as behaviour change initiatives and price signals to make the more efficient use of limited road space and increase the relative appeal of more sustainable modes, were not included in the recommended connectivity plan beyond schemes already being considered by local authorities in the EEH region.

Through the development of this study, the impact of further demand management interventions was considered. This highlighted the benefits that demand management could bring to encouraging additional mode shift to public transport, walking, wheeling, and cycling, provided it was at the right scale. It can also assist in further reducing carbon emissions and improving quality of life, the public realm, and air quality. While not considered in this assessment, funding generated by interventions such as the Workplace Parking Levies can also be utilised to fund other transport improvements, particularly where funding sources are constrained.

Demand management solutions should be considered either nationally, within the geography of individual local authority areas, or both. A region-wide demand management solution is not currently as aspiration of the EEH Board.

Table 1: Modelled Impacts and Estimated Investment

		Change in Daily Return Trips (Journeys to/from and within study area in comparison to BAU 2049)				Change in Socioeconomic Indicators (In comparison to BAU 2049)				Investment and Expenditure (Mid Cost - £ million 2022 prices)		
		Private vehicles*	Rail	Bus	Active	Population	Jobs	GVA (£ million per annum)	Carbon ($KTCO_2e$ per annum)	Construction	Maintenance & Renewal	Operations
Business as Usual (BAU) 2049		*3,000,000*	*70,000*	*170,000*	*690,000*	*1,540,000*	*650,000*	*70,000*	*665*			
1	West Coast Main Line, A5 and M1 Corridor	-30,000	5,000	10,000	40,000	1,200	1,000	200	-6	780	30	High
2	Northampton – Brackley – Aylesbury	-10,000	-	5,000	35,000	1,400	700	100	-2	290	20	Medium
3	Thames Valley and London Connections	-	10,000	-	35,000	1,600	8,800	800	-1	2,750	80	High
4	Sustainable Rural Connectivity	-40,000	-	5,000	75,000	1,500	1,100	200	-9	230	20	Low
5	Future Freight and Rail Electrification					-	-	-	-90	710	20	Medium
6	Creating an Integrated Transport Network	-75,000	5,000	5,000	15,000	200	100	100	-44	220	20	Low
Combined Impact		**-155,000**	**20,000**	**25,000**	**200,000**	**5,900**	**11,700**	**1,400**	**-153**	**4,980**	**190**	
% Change vs BAU 2049		-5%	29%	15%	29%	0%	2%	2%	-23%			

[Image caption] ([SOURCE])

Next Steps

All of the interventions recommended in this study will be included as new entries into EEH's dynamic Investment Prioritisation Framework or used to update existing entries identified from previous studies. Appendix A includes some of the key 'intervention information' that will be transferred across to the Investment Prioritisation Framework tool for ongoing consideration by EEH and its partners. Further details will also be drawn from the Evidence Base and Full Technical Reports that form part of this study.

EEH will work with partners to update and utilise the investment prioritisation framework. These partner groups include:

- The **Transport Officer Group (TOG)** which is composed of Head of Service or Senior Officer level representation from partner authorities and provides technical oversight of EEH general governance;
- The **Strategic Transport Leadership Board** composed of local authority leaders (or their nominated cabinet member substitute) and senior supporting officers which provides decision making on key EEH actions and/or final outputs including the approval and publishing of reports, strategies and studies; and
- Members of the **Steering and Stakeholder Groups** established as part of this and other connectivity studies where they are not part of the above.

Local Authorities will be able to draw from this study and the Investment Prioritisation Framework to build their own investment pipelines and strategies to highlight those interventions that are supported and provide strategic benefits, not only to the Local Authority, but across the Heartland region.

Funding and financing

It is recognised that funding is challenging nationally. This includes for large capital schemes, early-stage scheme and business case development, and also revenue funding for interventions and programmes for behaviour change and service operating subsidies.

A range of funding models will need to be analysed and considered going forward. There are several funding sources able to support infrastructure investment in the EEH region which will vary in the amount of funding they can generate, and the challenges associated with their implementation. Additionally, new funding sources may emerge in response to environmental, economic, and social changes over the life of EEH's Transport Strategy.

Potential funding sources are not limited to but may include:

- **Central Government funding:**, e.g. Transforming Cities, Towns, Levelling Up or Shared Prosperity Funds, Bus Service Improvement Plan funding, Housing Infrastructure Fund, Rail Network Enhancements Pipeline;
- **National Roads Fund:** e.g. Roads Investment Strategy, Major Road Network;
- **Third party contributions:** e.g. from major private sector investors, land/asset owners, and developer contributions (including S106 agreements and Community Infrastructure Levy); and
- **Local rates/levies:** e.g. Business Rate Supplement, Council Tax, parking charges, and Integrated Transport Block funding.

While possible funding sources are identified in the Framework, relative to an intervention, it is assumed that further exploration and securing of funding will be progressed in the business case development and approvals processes of each specific intervention.

Delivery Plan

In order to identify indicative durations for the different types of interventions, which make up the different packages, a range of assumptions have been assumed.

Planning timescales have been considered as well as the scale and complexity of the scheme, its current stage (e.g., pre SOC, SOC, OBC etc) and what powers and consents are required, along with major considerations such as securing funding and land assemblage.

The total implementation time assumptions range from 0 - 2 years for an active travel service improvement to 15 - 20 years for a new offline rail infrastructure scheme.

The assumed scheme promoters (interlinked with corresponding funding sources) have also been assumed as follows, but noting that there is also an important role for the private sector partnerships (bring with them innovative funding and financing tools):

- Rail network – Network Rail (Great British Railways)
- Mass rapid transit – local transport authorities
- Active travel – local transport authorities
- Strategic Road Network – National Highways
- Major Road Network – local transport authorities

The full list of interventions in Appendix A provides an overview of what could be delivered based on the indicative timeframes for each intervention:

- **Short term** schemes were judged to have a construction start date between 2025 and 2032 with benefits beginning to be accrued within this timescale.
- **Medium term** schemes were judged to have a construction start date between 2033 and 2040.
- **Long term** schemes were judged to have a construction start date 2041 onwards.

Consideration of risks

EEH will seek to assist in the apportion and sharing of the different responsibilities and risks between parties, with allocated being judged on the party best placed to manage them based on the needs of each project. The delivery of any intervention(s) in the Investment Prioritisation Framework should be set out in a way that:

- Allocates risk appropriately across contracts;
- Incentivises the intended outcomes in terms of performance, efficiency, and innovation;
- Facilitates the delivery of the project to time and budget; and
- Secures the targeted economic, social, and environmental benefits of the project as discussed with stakeholders and agreed with decision makers.

Role for EEH based on each intervention

As EEH does not have statutory powers to deliver schemes directly, it's role in helping to prioritise, advocate for and/or help to coordinate stakeholders will vary for each of the interventions recommended.

This will also be shaped by a range of other factors, such as availability of resources within local authorities and infrastructure owners, requirements set by Government in providing funding and the need or not for cross-boundary coordination.

Local strategy alignment

Both EEH's Connectivity Studies and Investment Prioritisation Framework provide a strategic narrative and evidence for Local Authorities in the development of their work. The outputs of this study can therefore help inform the strategic narrative and development of any new or updated Local Transport Plans (LTPs), by highlight interventions that, as well as shaping the future of local transport, and can be shown to also be regionally supported and provide

strategic benefits, not only the Local Authority, but across the Heartland region.

[Image caption] ([SOURCE])

Appendix A: Full List of Interventions

The following is a full list of interventions that form part of the recommended connectivity plan for the Thames Valley – Northampton study area with the primary package allocations **(in bold)** and those they are closely related to, as well as an indicative timeframe for delivery.

Based on stakeholder input from the Infrastructure Scenario development, intervention phasing was considered based on three key time periods:

- **Short term** schemes were judged to have a construction start date between 2025 and 2032 with benefits beginning to be accrued within this timescale.
- **Medium term** schemes were judged to have a construction start date between 2033 and 2040.
- **Long term** schemes were judged to have a construction start date from 2041 onwards.

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000580A	**A5 Hockcliffe Junction and Crossing Improvements**	*The A5 Hockcliffe Junction Improvement Study suggests that in the short term A5-A4012-B5704 junction improvements and signalised crossings, possibly combined with B5704 traffic restriction, would help to alleviate traffic impacts in Hockcliffe, but that a relief road from the A5 to B5704 would in the long term be more effective.*	**4,** 1, 5	Medium / Long term
EEH000581A	**A5 Hockcliffe Relief Road and Village Traffic Calming**	*New A5 relief road with connections to the B5704 to significantly reduce the impact of traffic and substantially enhance non-car access within the village with the existing route being detrunked (including a ban on HGV movements), particularly improving access to Hockcliffe Lower School. Strategic traffic relief measures would also help to enable local planned development by ensuring appropriate network capacity is available public transport services and movement of private vehicles. Aligns with the need identified in policies 4b, 4c and 4d of the Local Plan Infrastructure Delivery Plan.*	**4,** 1, 5	Long term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000560A	**A404 / A404(M) Junction Improvements**	*Junction improvements along the A404/A404(M) corridor between High Wycombe and Maidenhead.. Further scheme development to also pay attention to ways to support bus movements in area. This scheme should be developed as part of a corridor approach.*	**3,** 5	Medium term
EEH000561A	**A404 Bisham Roundabout Capacity Improvements**	*Capacity improvements at Bisham Roundabout to ease congestion and improve reliability for strategic movements along the A404. Further scheme development to also pay attention to ways to support bus movements in area. Bisham and most of the A404/ A404 (M) are outside the EEH area but have impacts/ benefits in terms of connectivity to Thames Valley and relief of traffic to the M25.This is a National Highways RIS 3 pipeline scheme. This scheme should be developed as part of a corridor approach.*	**3,** 5	Medium term
EEH000585A	**A422 Farthinghoe traffic calming**	*The A422 through the village of Farthinghoe currently suffers from sub-standard geometry, a narrow carriageway and footways. The main objectives are to enhance local environment and improve air quality of traffic travelling within the village, reduce volume of traffic through the village - particularly HGVs, and improve road safety, Further development of this scheme should consider ways to reduce required investment and maximise community and environmental benefits. A relief road has previously been reviewed, but that it may not be able to come forward due to funding constraints, and therefore an alternative package of measures to manage and mitigate traffic impacts are likely to be needed.*	**4,** 5	Long term
EEH000533A	**Additional services from Post-HS2 Timetable**	*Additional West Coast Main Line paths made available for passenger and freight services following delivery of HS2 between London and Birmingham will allow for review of frequency and scope of services on the West Coast Mainline, for example additional services calling at Milton Keynes, Northampton, Leighton Buzzard and Watford. Exact service opportunities to be reviewed in more detail with the rail industry, including taking account of any complementary infrastructure measures such as at Milton Keynes and/or relevant station proposals.*	**1,** 2, 3, 4, 5	Medium term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000562A	**Bus Priority improvements within High Wycombe**	*Bus priority measures to improve bus services operating within High Wycombe, including on the A404 between High Wycombe town centre and Handy Cross Coachway and on the A40 London Road and West Wycombe Road.*	**3,**	Short term
EEH000563A	**Chiltern Main Line Services to Old Oak Common**	*Additional services facilitated by rolling stock that will enable services on the Chiltern Main Line to have a second southern terminus in addition to London Marylebone, taking advantage of the New Rail Link between Chiltern Main Line and Old Oak Common to provide significantly enhanced range of onward connectivity using the Elizabeth Line, including to Heathrow Airport. Services could be of particular benefit to High Wycombe, Aylesbury, Bicester, and Banbury.*	**3,** 1, 2, 4	Medium term
EEH000564A	**Chiltern Main Line Train Lengthening**	*Increase train lengths on Chiltern Mainline to reduce existing overcrowding problems. This will include lengthened platforms where possible as well as selective door opening and may be integrated into future fleet upgrades.*	**3,** 1, 2, 4	Medium term
EEH000597A	**Community Transport Optimisation**	*Focus on ways to maximise the efficiency of these community transport operators as 'family' of services, avoiding duplication of journeys and maximising connectivity to bus/mobility hubs and rail stations. It also explores the role of CT operations and fleet in serving new development ahead of conventional services to capture customers at the outset. The workstream examines the role of CT in enabling access to key services by younger people, and also provides accessibility for new developments catering for elderly users and others with access needs.*	**6**, 1, 2, 3, 4	Medium term
EEH000598A	**Creation and Updating of Enhanced Partnerships or Franchising Arrangements**	*Local Transport Authorities (LTP's) to establish Enhanced Partnerships or Franchising Arrangements. An enhanced partnership is a statutory partnership between one or more LTAs and their local bus operators that sets out how they will work together to deliver Bus Service Improvement Plan outcomes in the defined geographical area. Local Authorities with Bus Service Improvement plans include Hertfordshire County Council, Buckinghamshire Council, Milton Keynes Borough Council, Oxfordshire County Council (Bicester), North Northamptonshire, West Northamptonshire, Luton, and Central Bedfordshire.*	**6,** 1, 2, 3, 4	Short term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000592A	**Developing Local Logistic Partnerships to help better manage road and rail freight**	*Setting up partnership arrangements working with SME and large logistics operators to work together in the areas of freight travel planning, carbon reduction, 'last mile' delivery and collaborating on ways to reduce freight carbon miles strategically and locally, for example development of freight consolidation facilities within new mobility hubs. Work in partnership with National Highways and Network Rail. EEH is setting up a Freight Officer Group, which will help bring together partners and industry to better co-ordinate freight movements.*	**5,** 1, 2, 3, 4	Medium term
EEH000593A	**Electrification of railway between Amersham and Aylesbury Parkway**	*Electrification of the Metropolitan Railway between London and Aylesbury Vale Parkway with the option to use battery or other technologies, alongside overhead equipment. Relationship to London Underground electrification between Amersham and London to be considered in later project stages.*	**5,** 2, 3	Medium term
EEH000594A	**Electrification of the Chiltern Main Line**	*Electrification of the Chiltern Main Line between London, Aylesbury, Banbury and Oxford with the option to use battery or other technologies, alongside overhead equipment. Could complement Electrification of East West Rail Phase 1.*	**5,** 2, 3	Medium term
EEH000524A	**Enhanced Bus Service between Daventry and West Coast Main Line**	*Increased frequency and operating hours of bus services connecting Daventry to West Coast Main Line Railway Stations at Rugby, Long Buckby, as well as the future planned stations such as Rugby Parkway. This may include enhancing existing routes and or addition of additional specific services providing more dedicated rail connectivity.*	**1,** 4	Short term
EEH000525A	**Enhanced Bus Service between Silverstone, Towcester and Milton Keynes**	*New high frequency, direct, bus service between Silverstone, Towcester and Milton Keynes. This will provide improved connectivity to employment opportunities and rail services by bus and is also expected to assist with providing alternatives to private vehicles travel and associated easing of road congestion. Plans for further enhancements to the 88 and X91 services in particular. These new services are being funded by new housing in Brackley, Silverstone and Towcester (S106) and are therefore designed to be fast and frequent, directly serving these sites and running on direct routes to their destinations. New service X91 to Milton Keynes will serve new housing areas,*	**1,** 3, 4	Short term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
		reducing journey times between Towcester and MK to under 30 minutes. Based on match funding by the DfT, BSIP and Bus Back Better. Service 88 would divert to serve Burcote Park.		
EEH000546A	**Enhanced Bus Services connecting rural West Northamptonshire and Buckinghamshire**	*Expanded routes, frequency and operating hours for bus services connecting rural communities and strategic mobility hubs in Towcester, Silverstone, Silverstone Park, Brackley, Westcott, and Buckingham with key services and further transport options in the hubs of Aylesbury, Bicester, Banbury, Leighton Buzzard, including linking to Milton Keynes, Northampton, and Winslow.*	**2,** 1, 3, 4	Short term
EEH000595A	**Enhanced First Mile / Last Mile Sustainable Freight Delivery**	*Creation of freight consolidation centres on the outskirts of towns / cities with first mile / last mile sustainable freight delivery. Watford is a notable location where this intervention is potentially being considered. Historic England has noted that for some specific interventions to achieve this a high-level assessment may be needed as part of later project stages to understand potential heritage impacts.*	**5,** 1, 2, 3, 4	Medium term
EEH000582A	**Expansion of Demand Responsive Transport Schemes**	*Expand service area for DRT schemes in rural areas, including expansion of the Herts Lynx Service to throughout Hertfordshire, the Milton Keynes DRT Service to surrounding rural areas, further developing the Buckinghamshire services around Aylesbury and High Wycombe, and services in the Northamptonshire service area.*	**4,** 1, 2, 3	Medium term
EEH000583A	**Rural Car Clubs**	*Creation of car clubs in rural areas. This will reduce the need for ownership of a private car / multiple private cars.*	**4,** 1, 2, 3	Short term
EEH000584A	**Expansion of Rural Ride Sharing**	*Creation or supporting the expansion of a digital platform(s) to make it easier for people living in rural areas to share journeys by private car.*	**4,** 1, 2, 3	Medium term
EEH000599A	**Expansion of the Electric Vehicle Charge Point Network**	*Electricity and other infrastructure upgrades to deliver significant increase in the electric charging capacity available to all vehicle types using the strategic and major road networks through the region, with a particular focus on development of rapid charging facilities, for example to support*	**6,** 1, 2, 3, 4, 5	Medium term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
		increased uptake of electric Vans and HGVs to reduce emissions and air pollution from freight. Also, the potential for supporting home EV charge point sharing schemes/apps. Historic England has noted that for some specific interventions to achieve this a high-level assessment may be needed as part of later project stages to understand potential heritage impacts.		
EEH000600A	**Expansion of the Hydrogen Vehicle Re-fuelling Point Network**	*Fuel supply, storage and other infrastructure upgrades to deliver significant increase in the hydrogen charging capacity available to all vehicle types using the strategic and major road networks through the region, with a particular focus on supporting increased uptake of alternative fuelled HGVs to reduce emissions and air pollution from freight. Historic England has noted that for some specific interventions to achieve this a high-level assessment may be needed as part of later project stages to understand potential heritage impacts.*	**6,** 1, 2, 3, 4, 5	Medium term
EEH000566A	**Extend East West Rail Services between Milton Keynes and Northampton**	*Extension of East West Rail services north from Milton Keynes to Northampton, taking advantage of additional capacity released following opening of HS2, particularly in association with additional infrastructure. Expected to provide improved connectivity across the region, with a particular focus on improved connections between Northampton and Aylesbury via the East West Rail Aylesbury Link- and as a result reduce local road congestion.*	**3,** 1, 2, 4	Medium term
EEH000601A	**Improved Connectivity Between Rail and Bus Services**	*Increased attractiveness and use of public transport journeys using multiple modes through improved integration of bus and rail timetables, improved connections between bus routes and stations, and integrated ticketing between modes, for example through development of mobility as a service platforms.*	**6,** 1, 2, 3, 4	Medium term
EEH000602A	**Improved Digital Connectivity in Urban and Rural Areas**	*Reduce demand for travel from those making journeys due to poor or unreliable digital connectivity and improve connection reliability for public transport users, with schemes including continued rollout of 5G technology.*	**6,** 1, 2**,** 3, 4, 5	Medium term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000596A	**Improved HGV Parking and Welfare Facilities**	*Enhanced HGV parking and welfare facilities serving the M40, A41, A45, A43, A5 and M1. Scope of possible locations for HGV parking facilities to include consideration of electric vehicle charging. Commercial case unlikely without central government support. The intervention is a regional consideration and HGV parking opportunities may be private sector led.*	**5,** 1, 2, 4	Medium term
EEH000603A	**Improved Wayfinding Information for all modes**	*Improved wayfinding information in urban areas and along inter-urban active travel routes. Historic England have noted need to look for opportunities to enhance access to heritage assets, especially those which are designated, without harming their significance (including their setting).*	**6,** 1, 2, 3, 4, 5	Medium term
EEH000567A	**Increase capacity on the rail line between Princes Risborough and Aylesbury**	*A major rail project involving adding another track to the line ('twin-tracking') which would allow direct services between High Wycombe and Milton Keynes (and beyond), thereby enhancing High Wycombe's regional connectivity. To be delivered in partnership with the rail operator and Network Rail.*	**3,** 1, 4, 5	Medium term
EEH000526A	**LCWIP improvements for Daventry**	*The delivery of a LCWIP and active travel infrastructure and connectivity improvement schemes in Daventry, with particular focus on improving walking and cycling connections with the West Coast Main Line and bus services. The purpose of this plan is to identify and prioritise key active travel routes for improvement, including relevant supporting traffic management measures.*	**1,** 3, 4	Short term
EEH000568A	**LCWIP improvements for High Wycombe**	*LCWIP improvements for all of High Wycombe with particular focus where they support improved connection and interchange with enhanced bus services. The purpose of this plan is to identify and prioritise key active travel routes for improvement, including relevant supporting traffic management measures. Proposed links within the LCWIP include improvements along the A404 and A40/London Road, as well as new links from High Wycombe to Marlow Bottom and Bourne End.*	**3,**	Short term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000527A	**LCWIP improvements for Northampton**	*The delivery of a LCWIP and active travel infrastructure and connectivity improvement schemes in Northampton, with particular focus on improving walking and cycling connections with the West Coast Main Line and bus services. The purpose of this plan is to identify and prioritise key active travel routes for improvement, including relevant supporting traffic management measures.*	**1,** 2, 3	Short term
EEH000528A	**LCWIP interventions in Bletchley**	*The delivery of a LCWIP and active travel infrastructure and connectivity improvement schemes in Bletchley. The purpose of this plan is to identify and prioritise key active travel routes for improvement. The LCWIP has been adopted. Top Schemes prioritised for Active Travel improvements in Bletchley are V7 Bletchley North; Manor Road; Sherwood Drive; Queensway; Blue Lagoon; Water Eaton; North Street; Watling Street; Bletchley Street and Buckingham Road.*	**1,** 2, 3	Short term
EEH000547A	**LCWIP Interventions in Brackley**	*The delivery of a LCWIP and active travel infrastructure and connectivity improvement schemes in Brackley. The purpose of this plan is to identify and prioritise key active travel routes for improvement, including relevant supporting traffic management measures.*	**2,** 4	Short term
EEH000548A	**LCWIP interventions in Buckingham**	*The delivery of a LCWIP and active travel infrastructure and connectivity improvement schemes in Buckingham. The purpose of this plan is to identify and prioritise key active travel routes for improvement, including relevant supporting traffic management measures.*	**2,** 4	Short term
EEH000529A	**LCWIP interventions in Milton Keynes Borough**	*The delivery of a LCWIP and active travel infrastructure and connectivity improvement schemes in Milton Keynes Borough. The purpose of this plan is to identify and prioritise key active travel routes for improvement. The LCWIP has been adopted. Top Schemes Prioritised for Active Travel in Milton Keynes Borough are: Wolverton High Street; Stony Stratford; Wolverton Station Link; Church Street; Windsor Street Wolverton Garage Link; Castlethorpe to Wolverton; Newport Road; Wolverton Minor Routes and Canal Wolverton to Newport Road.*	**1,** 3	Short term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000530A	**LCWIP interventions in Milton Keynes Central**	*The delivery of a LCWIP and active travel infrastructure and connectivity improvement schemes in Milton Keynes Central. The purpose of this plan is to identify and prioritise key active travel routes for improvement. The LCWIP has been adopted. Top schemes prioritised for active travel improvements in Central Milton Keynes are Avebury Boulevard, H9 Groveway, V7 Saxon Street, Fishermead to CMK, V4 Watling Street, Milton Keynes Station to CMK, Pentewan Gate Crossing and H3 Monks Way.*	**1,** 3	Short term
EEH000549A	**LCWIP Interventions in Towcester**	*The delivery of a LCWIP and active travel infrastructure and connectivity improvement schemes in Towcester The purpose of this plan is to identify and prioritise key active travel routes for improvement, including relevant supporting traffic management measures.*	**2,** 1, 4	Short term
EEH000531A	**Long Buckby Platform Lengthening and Railway Station Improvements**	*Increase the length of Long Buckby Station so that it can be served by 8+ car trains. Would align with opportunities to improve service / line speed along the loop line in Northampton. Improved access to existing and additional rail services at this Station, with schemes including step-free access to all platforms, and transport hubs elements including improved cycle parking quality and quantity, improved integration with local bus services, and EV charging provision for any parking. Would need to be considered alongside proposals for any other station improvements in the area.*	**1,** 4	Medium term
EEH000569A	**M40 / A404 Junction 4 Handy Cross Capacity Improvements**	*Capacity Improvement to M40 Junction 4 at High Wycombe as outlined in RIS 3 pipeline. To be considered in alignment with improving access to the M40 at High Wycombe.. Further scheme development to pay particular attention to ways to support bus and coach movements noting that the junction also serves as a local connection, and the need to balance local and strategic traffic movements and priority. This is a National Highways RIS 3 pipeline scheme.*	**3,** 5	Medium term
EEH000532A	**Milton Keynes Redway Network Upgrade and Extension**	*Expansion of the Redway network into Central Milton Keynes, regeneration areas, new developments and where possible the old towns, cultural venues and sports centres. Historic England have noted need to look for opportunities to enhance access to heritage assets, especially those which are designated, without harming their significance (including their setting).*	**1,** 2, 3, 5	Short term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000586A	**New Active Travel Route between Aylesbury to Northampton via Buckingham**	*Active travel improvements between Aylesbury and Northampton with options to connect with other strategic schemes such as New Active Travel Route between Towcester and Northampton and New National Cycle Route Alongside HS2 and make use of former railway alignments. Key localities likely to be connected include Verney Junction, Buckingham, Silverstone, and Towcester. Historic England have noted need to look for opportunities to enhance access to heritage assets, especially those which are designated, without harming their significance (including their setting).*	**4,** 1, 2	Medium term
EEH000587A	**New Active Travel Route between Buckingham and Rugby via Brackley**	*Active travel improvements between Buckingham and Rugby with options to connect with other strategic schemes such as New Active Travel Route between Aylesbury to Northampton via Buckingham, and New National Cycle Route Alongside HS2, and make use of former railway alignments. Key localities likely to be connected include Westbury, Brackley, Helmdon, Woodford Halse, Charwelton, and Willoughby. Historic England have noted need to look for opportunities to enhance access to heritage assets, especially those which are designated, without harming their significance (including their setting).*	**4,** 1, 2	Short term
EEH000588A	**New Active Travel Route between Towcester and Banbury via Helmdon**	*Active travel improvements between Towcester and Banbury with options to connect with other strategic schemes such as New Active Travel Route between Aylesbury to Northampton via Buckingham, New Active Travel Route between Buckingham and Rugby via Brackley, and New National Cycle Route Alongside HS2, and make use of former railway alignments. Key localities to be connected include Silverstone and Syresham.*	**4,** 2	Short term
EEH000589A	**New Active Travel Route between Towcester and Northampton**	*Potential for converting the existing disused Stratford-Upon-Avon and Midland Junction Railway into an active travel corridor, connecting Towcester to Northampton as well as to a potential active travel route along the disused Great Central Mainline. Historic England have noted need to look for opportunities to enhance access to heritage assets, especially those which are designated, without harming their significance (including their setting).*	**4,** 1, 2	Short term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000590A	**New National North/South strategic cycle route**	*Active travel improvements along the route of HS2, including linking with delivery of the Buckinghamshire Greenway. This includes linking in with a network of site access roads, maintenance access roads etc. which could be used to provide cycling facilities alongside HS2 to link rural communities to facilities. Historic England have noted need to look for opportunities to enhance access to heritage assets, especially those which are designated, without harming their significance (including their setting).*	**4,**	Medium term
EEH000570A	**New Rail Link between Chiltern Main Line and Old Oak Common**	*Track and signalling upgrades between Old Oak Common and South Ruislip (approx. 11km) to enable services on the Chiltern Main Line to have a second southern terminus in addition to London Marylebone. This would take advantage of existing passive provision for a two-platform station for Chiltern services as part of the new Old Oak Common interchange, providing significantly enhanced range of onward connectivity using the Elizabeth Line, including to Heathrow Airport. The link could also allow for the future extension of East West Rail services from Milton Keynes (and possibly Bedford and Cambridge) through the Aylesbury Link. Historic England has noted that a high-level assessment is needed as part of later project stages to understand potential heritage impacts.*	**3,** 1, 2, 4, 5	Medium term
EEH000565A	**New rail service connecting communities between Northampton, Aylesbury, Princes Risborough, High Wycombe, and Old Oak Common**	*Extend EWR services south to Aylesbury and then on-wards to South Buckinghamshire/ Old Oak Common, requiring infrastructure upgrades on the Aylesbury Link as identified in Connectivity Study 1, alongside upgrading the rail link to Old Oak Common. This will support future growth and improve connectivity in a way that reduces demand on the road network. In addition to linking the economic cluster centred on Milton Keynes with the planned growth centred on Aylesbury, the link forms part of the strategic opportunity to improve connectivity on the Northampton – Milton Keynes/Bletchley – Aylesbury – High Wycombe – Old Oak Common corridor, linking up centres of economic importance along the corridor. Realisation of this strategic opportunity is identified in the regional Transport Strategy as a regional priority.*	**3,** 1, 2, 4	Medium term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000534A	**New Railway Station serving South Northampton**	*A station between Northampton and Wolverton to encourage mode shift and relieve road congestion from those driving to Wolverton or Milton Keynes to connect with London services. A Strategic outline case would be developed to consider possible locations and potential impacts. This assessment should include consideration of available capacity on the West Coast Main Line and Northampton Loop, potential of a mobility hub, use of the slow lines between Hanslope Junction and Northampton, options for four track layouts, as well as consideration of other relevant station proposals in the area..*	**1,** 2, 3, 4, 5	Medium term
EEH000535A	**New Railway Station serving Weedon Bec and Daventry**	*Improved transport choice for new and planned commercial and residential near Weedon Bec, Daventry and surrounding settlements, through development of new two platform parkway station as an additional stop on the West Coast Main Line for services not using the Northampton Loop, taking advantage of additional local train paths facilitated by high-speed services moving to HS2. Scheme elements would include new mobility hub facility with direct connection to the A45, electric vehicle charging, active travel links, and possible increase from two to up to four tracks to avoid conflict with long distance services. A strategic outline business case would need to be developed for this station which should include consideration of available capacity on the West Coast Mainline, and plans for any other relevant station proposals in the area.*	**1,** 2, 3, 4, 5	Medium term
EEH000550A	**New Strategic Mobility Hub and Station Upgrades at Aylesbury Vale Parkway**	*Reduce car dependency and alleviate congestion nearby roads through development of a mobility hub serving Aylesbury Vale Parkway Station integrated with existing and enhanced bus and rail services to encourage use of more sustainable modes such as public transport, cycling, and or micromobility for all or part of journeys. Sites likely to include electric vehicle charging with the scale and mix of modes determined by the needs of each of the locations as scheme detail is developed. Historic England has noted that a high-level assessment is needed as part of later project stages to understand potential heritage impacts.*	**2,** 3, 4	Medium term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000551A	**New Strategic Mobility Hub serving Brackley**	*EEH has developed guidance and can support local authorities in determining the appropriate location and nature of strategic mobility hubs to complement existing transportation interchanges and services for maximum community benefit. Historic England has noted that a high-level assessment is needed as part of later project stages to understand potential heritage impacts.*	**2,** 4	Medium term
EEH000552A	**New Strategic Mobility Hub serving Buckingham**	*EEH has developed guidance and can support local authorities in determining the appropriate location and nature of strategic mobility hubs to complement existing transportation interchanges and services for maximum community benefit. Historic England has noted that a high-level assessment is needed as part of later project stages to understand potential heritage impacts.*	**2,** 4	Medium term
EEH000536A	**New Strategic Mobility Hub serving Daventry**	*Reduce car dependency and alleviate congestion nearby roads through development of a mobility hub serving Daventry integrated with existing and enhanced bus services to encourage use of more sustainable modes such as public transport, cycling, and or micromobility for all or part of journeys. Sites likely to include electric vehicle charging with the scale and mix of modes determined by the needs of each of the locations as scheme detail is developed. EEH has developed guidance and can support local authorities in determining the appropriate location and nature of strategic mobility hubs to complement existing transportation interchanges and services for maximum community benefit. Historic England has noted that a high-level assessment is needed as part of later project stages to understand potential heritage impacts.*	**1,** 4	Medium term
EEH000537A	**New Strategic Mobility Hub serving Leighton Buzzard**	*Reduce car dependency and alleviate congestion nearby roads through development of a mobility hub serving Leighton Buzzard integrated with existing and enhanced bus and rail services to encourage use of more sustainable modes such as public transport, cycling, and or micromobility for all or part of journeys. Sites likely to include electric vehicle charging with the scale and mix of modes determined by the needs of each of the locations as scheme detail is developed. EEH has developed guidance and can support local authorities in determining the appropriate location and nature of strategic mobility hubs to complement existing transportation interchanges and services*	**1**	Medium term

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		for maximum community benefit. Historic England has noted that a high-level assessment is needed as part of later project stages to understand potential heritage impacts.		
EEH000553A	**New Strategic Mobility Hub serving Silverstone**	*Reduce car dependency and alleviate congestion nearby roads through development of a mobility hub serving Silverstone integrated with existing and enhanced bus and rail services to encourage use of more sustainable modes such as public transport, cycling, and or micromobility for all or part of journeys. Sites likely to include electric vehicle charging with the scale and mix of modes determined by the needs of each of the locations as scheme detail is developed. EEH has developed guidance and can support local authorities in determining the appropriate location and nature of strategic mobility hubs to complement existing transportation interchanges and services for maximum community benefit. Historic England has noted that a high level assessment is needed as part of later project stages to understand potential heritage impacts.*	**2,** 1, 4	Medium term
EEH000554A	**New Strategic Mobility Hub serving Silverstone Park**	*EEH has developed guidance and can support local authorities in determining the appropriate location and nature of strategic mobility hubs to complement existing transportation interchanges and services for maximum community benefit. Historic England has noted that a high-level assessment is needed as part of later project stages to understand potential heritage impacts.*	**2,** 1, 4	Medium term
EEH000538A	**New Strategic Mobility Hub serving South West Milton Keynes**	*Reduce car dependency and alleviate congestion nearby roads through development of a mobility hub as part of or adjacent to new Salden Chase development near intersection of Standing Way (H8) and Buckingham Road (B4034) integrated with existing and enhanced bus services to encourage use of more sustainable modes such as public transport, cycling, and or micromobility for all or part of journeys. Site should include electric vehicle charging with the scale and mix of modes determined by further scheme development.*	**1,** 3	Medium term
EEH000555A	**New Strategic Mobility Hub serving Towcester**	*Reduce car dependency and alleviate congestion nearby roads through development of a mobility hub serving Towcester integrated with existing and enhanced bus services to encourage use of more sustainable modes such as public transport, cycling, and or micromobility for all or part of*	**2,** 1, 4	Medium term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
		journeys. Sites likely to include electric vehicle charging with the scale and mix of modes determined by the needs of each of the locations as scheme detail is developed. EEH has developed guidance and can support local authorities in determining the appropriate location and nature of strategic mobility hubs to complement existing transportation interchanges and services for maximum community benefit. Historic England has noted that a high-level assessment is needed as part of later project stages to understand potential heritage impacts.		
EEH000556A	**New Strategic Mobility Hub serving Westcott**	*EEH has developed guidance and can support local authorities in determining the appropriate location and nature of strategic mobility hubs to complement existing transportation interchanges and services for maximum community benefit. Historic England has noted that a high-level assessment is needed as part of later project stages to understand potential heritage impacts.*	**2,** 4	Medium term
EEH000540A	**Northampton Loop Speed and Capacity Improvements**	*Improvements to the frequency of rail services between London and Birmingham via the Northampton Loop (currently 3 services to London/hr in AM Peak 2/hr rest of time) and infrastructure improvements that facilitate increased line speeds (currently 75 mph vs 125 mph on the "fast line"). Would align with lengthening of railway platforms at Long Buckby Railway Station. Journey times from Northampton by rail are not competitive with those from nearby stations located on the WCML fast lines. Speed improvements on the WCML Northampton Loop, such as raising low speeds to medium south of Northampton would improve Northampton to London times and all services using the Northampton loop. These improvements would need to be considered alongside other proposals for service, station and infrastructure improvements following delivery of HS2 between London and Birmingham.*	**1,** 2, 3, 4, 5	
EEH000539A	**Northampton Strategic Bus, Coach, and Rail Integration**	*Reduce car dependency and alleviate road congestion through improved access to and between rail, bus, and coach services in central Northampton to support existing and enhances services. Project include route updates and improved pedestrian wayfinding between Northampton town centre, bus station, and railway station. Following delivery of new multi-storey car park as part of Improved access to and between rail, bus, and coach services in central Northampton to support*	**1,** 2, 3, 4	Short term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
		existing and enhances services. Route updates and improved pedestrian wayfinding between Northampton town centre, bus station, and railway station. Additional work may include greater colocation, additional bus bays, or additional railway station platforms with step-free access on western side of station to provide sufficient capacity for extension of East West Rail services beyond Milton Keynes. Sites also likely to include electric vehicle charging with the scale and mix of modes (such as e-bike and electric car charging).		
EEH000696A	**Princes Risborough Relief Road**	*Completion of a new road and active travel link located around Princes Risborough linked to delivery of c. 2,500 new homes within local plan allocations and help relieve the existing A4010 for all road users and residents of the town by providing an alternative route for through traffic. The road improvements are being planned and delivered in phases, with later stages to the north expected to be delivered through planned development, and the route to the south called the Culverton Link Road.*	**3**, 4, 5, 6	Medium term
EEH000572A	**Rail Capacity Enhancement between Bletchley and Milton Keynes**	*West Coast Main Line capacity and signal improvements. Network Rail has considered the need to segregate West Coast and East West Rail traffic through additional track from Bletchley to Milton Keynes, new through platforms on the eastern side of Milton Keynes Central, a Milton Keynes Northern Connection, and the Bletchley Northeast Chord. A northeast chord at Bletchley would provide direct connections for east-bound services.*	**3,** 1, 2, 4, 5	Medium term
EEH000573A	**Rail Capacity Enhancement between Milton Keynes and Northampton**	*Network Rail has considered the future need to expand slow line capacity on the West Coast Main Line between Milton Keynes and Northampton due to the long-term requirement to uplift passenger and freight services via Northampton. Would support but not seen as required for extension of East West Rail services to Northampton.*	**3,** 1, 2, 4, 5	Medium term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000574A	**Railway Station Access and Accessibility Improvements at Aylesbury**	*Improved access to existing and additional rail services at Aylesbury Railway Station with schemes including improvements for access to all platforms, and transport hubs elements including improved cycle parking quality and quantity, improved integration with local bus services, and EV charging provision for any parking. Expected to assist with alternatives to road travel, supporting the easing of congestion on the M40 in particular.*	**3,** 2	Medium term
EEH000575A	**Railway Station Access and Accessibility Improvements at Bicester North (including mobility hub improvements)**	*Improved access to existing and additional rail services at Bicester North Railway Station with schemes including improvements for access to all platforms, and transport hubs elements including improved cycle parking quality and quantity, improved integration with local bus services, and EV charging provision for any parking.*	**3,** 2, 4	Medium term
EEH000576A	**Railway Station Improvements (including Mobility Hub improvements) at Haddenham & Thame Parkway**	*Further improvements to create a mobility hub at Haddenham and Thame Parkway Railway Station, including access to existing and additional rail services, improved walking, wheeling and cycling connectivity to and from Thame, Haddenham new estates and the surrounding villages and supporting elements including additional cycle parking, improved integration with local bus services, and EV charging provision (including for e-bikes).*	**3,** 2, 4	Medium term
EEH000541A	**Railway Station Access and Accessibility Improvements at Hemel Hempstead (including mobility hub improvements**	*Improved access to existing and additional rail services at Hemel Hempstead Railway Station (including future services made possible by HS2 through the release of capacity on existing rail routes), with schemes including improvements that provide improved access to all platforms, and mobility hub elements including improved cycle parking quality and quantity, improved integration with local bus services, and EV charging provision for any parking. This will also include improvements to sustainable transport connections between the station and town centre and Maylands employment areas including future proofing for the HERT rapid transit system. Expected to assist with alternatives to road travel, supporting the easing of congestion on the M1 in particular.*	**1,**	Medium term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
EEH000577A	**Railway Station Access and Accessibility Improvements at High Wycombe (including mobility hub improvements)**	*Improved access to existing and additional rail services at High Wycombe Railway Station with schemes including improvements for access to all platforms, and mobility hub elements including improved cycle parking quality and quantity, improved integration with local bus services, and EV charging provision for any parking. Expected to assist with alternatives to road travel, supporting the easing of congestion on the M40 in particular. Later stages to also further consider that the railway station is listed and lies within the High Wycombe Conservation Area.*	**3**	Medium term
EEH000542A	**Railway Station Access and Accessibility Improvements at Leighton Buzzard (including mobility hub improvements)**	*Improved access to rail services at Leighton Buzzard Railway Station (including future services made possible by HS2 through the release of capacity on existing rail routes), with mobility hub improvement schemes including improved cycle parking quality and quantity, improved integration with local bus services, and EV charging provision for any parking. Expected to assist with alternatives to road travel, supporting the easing of congestion on the A5 in particular.*	**1**	Medium term
EEH000543A	**Railway Station Access and Accessibility Improvements at Milton Keynes Central (including mobility hub elements)**	*Improved access to rail services at Milton Keynes Railway Station (including future services made possible by HS2 through the release of capacity on existing rail routes), with schemes including improvements that provide for access to all platforms, and mobility hub elements including improved cycle parking quality and quantity, improved integration with local bus services, and EV charging provision for any parking. Expected to assist with alternatives to road travel, supporting the easing of congestion on the M1 and A5 in particular.*	**1,** 3	Medium term
EEH000578A	**Railway Station Access and Accessibility Improvements at Princes Risborough (including mobility hub elements)**	*Improved access to existing and additional rail services at Princes Risborough Railway Station with schemes including improvements for access to all platforms, and mobility hub elements including improved cycle parking quality and quantity, improved integration with local bus services, and EV charging provision for any parking. Option to explore additional car parking to take advantage of proximity to Princes Risborough Southern Road Links (PRSRL) scheme being delivered.*	**3,** 4	Medium term
EEH000579A	**Railway Station Improvements at Local Stations between Aylesbury**	*Improved access to existing and additional rail services at Stoke Mandeville, Wendover, Great Missenden, Little Kimble, Monks Risborough, Saunderton, Beaconsfield, Seer Green & Jordans,*	**3,** 1, 4	Medium term

Framework ID	Intervention Name	Intervention Description	Package(s) (Primary Package noted in **bold**)	Indicative timeframe
	and London (including mobility hub elements)	*Gerrards Cross, Denham Golf Club, Denham Railway Stations with schemes including improvements that provide step-free access to all platforms, and mobility hub elements including improved cycle parking quality and quantity, improved integration with local bus services, and EV charging provision for any parking.*		
EEH000544A	**Railway Station Improvements at Local Stations between Northampton and London (including mobility hub elements)**	*Improved access to existing and additional rail services at Wolverton, Cheddington, Tring, Berkhamsted, and Apsley Railway Stations with schemes including improvements that provide step-free access to all platforms, and mobility hub elements including improved cycle parking quality and quantity, improved integration with local bus services, and EV charging provision for any parking.*	**1,** 3	Medium term
EEH000604A	**Real Time Passenger Information Online and at Stations and Bus Stops**	*Working with operators and authorities, EEH will ensure that examples of best practice are identified, and lessons learned applied across the area, including improved online accessible information provision.*	**6,** 1, 2, 3, 4	Short erm
EEH000605A	**Reduced Public Transport Fares**	*Reduction in the cost to use public transport across the region and or for specific users on targeted routes. Could include continuation of £2 fare caps, subsidising / pump priming bus services near expanding employment centres, and other measures to encourage travel by public transport.*	**6,** 1, 2, 3, 4	Short term
EEH000559A	**Sustainable Travel Corridor between Northampton and Brackmills**	*New bus rapid transit system or light rail system between Northampton and Brackmills from Waterside Campus along the disused Bedford - Northampton Line, with potential extension to Great Houghton. A sustainable travel route would run parallel to the new public transport corridor. Historic England have noted that the existing Bus Station lies within the All Saints Conservation Area which will need to be further considered in later project stages.*	**2,** 1, 3, 4	Long term
EEH000545A	**Weedon Fast Line Freight Loops on West Coast Main Line**	*Network Rail has considered the strategic opportunity to expand West Coast Main Line capacity through additional passing loops near Weedon. Requires local stations needs assessment before*	**1,** 2, 3, 5	Medium term

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		any development. Opportunity to be undertaken as part of or with consideration for planned railway station at Weedon Bec for Daventry.		
EEH000606A	**Zero Emissions Buses**	*Reduce local air pollution, noise and emissions through introduction of zero emissions vehicles across relevant routes in the study area.*	**6,** 1, 2, 3, 4	Short erm

Get in touch

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