A414 Corridor Strategy

Draft for Public Consultation

December 2018
Google Earth Pro™ imagery in the form of Google Map™ and Google Streetview™ have been used, unmodified, within this document. This imagery has been used within the extents of the AECOM license.
The corridor

Watford area including Abbots Langley, Leavesden, Garston, Bushey and South Oxhey

Bricket Wood, How Wood, Chiswell Green and Park Street

Hemel Hempstead

St Albans

Hatfield

Welwyn Garden City

Hertford

Ware

Broxbourne, Cheshunt and Hoddesdon

Harlow

London Colney

Hertford

Ware

Broxbourne, Cheshunt and Hoddesdon

Harlow

London Colney

Hertford

Ware

Broxbourne, Cheshunt and Hoddesdon

Harlow

London Colney
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Draft A414 Corridor Strategy 2018
Consultation on the draft A414 Corridor Strategy

This draft A414 Corridor Strategy was published on 3 December 2018. The public consultation is open until 23 February 2019.

The strategy and supporting documents are available at www.hertfordshire.gov.uk/about-the-council/consultations

There is also a summary version of the strategy and an easy read version of the strategy available.

We are interested in hearing your views on the A414 Corridor Strategy and would encourage feedback via our online survey. Alternatively views can be submitted via:

@ A414StrategyConsult@hertfordshire.gov.uk

A414 Corridor Strategy Consultation.
Postal Point CHN115, Hertfordshire County Council, County Hall, Pegs Lane, Hertford, SG13 8DN

Responses are welcomed from individuals or on behalf of organisations. If you have any queries on this consultation, or require any of the materials in an alternative format or language, please contact the A414 Corridor Strategy Team (Email: A414StrategyConsult@hertfordshire.gov.uk).

We will consider all the feedback received and will use it to prepare a report to inform the development of the final strategy in Spring 2019.

We expect to publish the final version of the Local Transport Plan in Summer 2019.
Foreword

The A414 corridor is the strategic east-west transport route in the County which runs from Harlow to Hemel Hempstead, with branches to Watford and Broxbourne. There are very few opportunities for continuous travel by public transport which increases reliance on the car to make even fairly short journeys along the corridor. There are also limited opportunities for walking and cycling, with poor and discontinuous routes in many areas.

There are over 100,000 new homes planned for Hertfordshire and fifty per cent of these will be along the A414 route, with further development expected beyond 2031. The impacts on the route are likely to be significant. Traffic congestion is predicted to increase further which will lead to longer journey times and more rat running onto less suitable roads for example if we do nothing.

The recently adopted Local Transport Plan sets the County Council’s long term transport strategy and provides a framework to guide all our future transport planning and investment. This framework has been used to develop the draft A414 Corridor Strategy. The focus is on routing traffic to the most appropriate roads, providing a real alternative to the car for inter-urban travel in the form of a new cross-county public transport system and providing choice for local residents by improving opportunities for walking and cycling.

A proposed southern bypass around Hertford will open up opportunities to improve walking, cycling and public transport routes and services within the town by removing traffic. Junctions improvements are planned to help relieve traffic congestion, for example at M1 Junction 8 (Hemel Hempstead) and the A414/A1081 London Colney Roundabout.

In the longer term a Mass Rapid Transit system will provide a high quality, attractive, fast and continuous public transport link from Hemel Hempstead and Watford in the west, to Broxbourne and Harlow in the east serving the key urban areas along the corridor.

As the interventions in the strategy are developed from concepts into real deliverable schemes, advantage will be taken of emerging new technologies.

This Strategy builds on the principles set out in the Local Transport Plan and offers a vision for residents and users of the transport system to have reliable east-west travel options across Hertfordshire serving the growing population.

Derrick Ashley

Hertfordshire County Councillor

Executive Member, Growth, Infrastructure, Planning and the Economy
Executive Summary

The A414 corridor is a strategic east-west, multi-modal transport corridor extending from Harlow in the east to Hemel Hempstead in the west. In addition, the A405 extending down from St Albans towards Watford, and the A10 from west of Hertford to M25 Junction 25 in Broxbourne also act as important cross-county routes. Other key urban areas include Hatfield and Welwyn Garden City.

The corridor is extremely important in facilitating movements of people by different modes of transport across Hertfordshire.

Today, the corridor experiences traffic congestion along sections of the A414 and at key junctions between and within towns. There are also notably very few opportunities for continuous travel by public transport which increases dependency on the car to make journeys along the corridor. There are also limited opportunities for walking and cycling, with poor and discontinuous routes in many areas.

Current levels of traffic congestion will only be exacerbated by the expected large growth in housing, population and employment in the coming years. At least 50,000 new homes and a similar number of new jobs are proposed within the corridor.

Hertfordshire County Council has developed this draft A414 Corridor Strategy to confirm the key current and future growth and transport challenges and identify the proposed set of intervention packages in what is one of the most vital transport corridors spanning the county.

This draft strategy has been developed around a set of eleven objectives:

- Support sustainable economic growth
- Improve inter-urban connectivity
- Define an appropriate route hierarchy
- Improve operation, resilience and reliability of the transport network
- Enhance sense of place and town centre viability
- Enable and facilitate modal shift to active travel
- Enable and facilitate modal shift to public transport
- Implement demand management to support efficient use of the network and enable behaviour change
- Incorporate the benefits of new technology to support efficient use of the network and enable behaviour change
- Ensure safe and secure travel
- Deliver better environmental outcomes

The corridor has been divided into fourteen segments which reflect how the corridor is currently used differently along its length, and how it is predicted to be used in the future. Some segments carry more longer distance trips mainly in terms of cars and lorries. Other segments carry more of a mixture of shorter and longer distance trips with cycling, bus and rail also being used.

The draft A414 Corridor Strategy has drawn from existing adopted plans and strategies to develop a list of interventions which seek to address the growth and transport challenges in the corridor which also align with the priorities described in Hertfordshire County Council’s Local Transport Plan 4 (2018).
Thirty packages are proposed, each containing two or more interventions. Interventions are wide ranging and can include improvements to footways, new cycle routes, new bus services, better access to rail stations and highway improvements including alterations to junctions.

A Mass Rapid Transit system will provide a high quality, attractive, fast and continuous public transport link from Hemel Hempstead and Watford in the west, to Broxbourne and Harlow in the east via the key urban areas along the corridor. A southern bypass around Hertford will open up opportunities to improve walking, cycling and public transport routes and services within the town by removing traffic. Junctions will be improved to help relieve traffic congestion, for example at M1 Junction 8 (Hemel Hempstead) and the A414/A1081 London Colney Roundabout.

The interventions will be accompanied by broader initiatives aimed at encouraging more sustainable travel behaviour. The aim is to make better use of existing infrastructure and services, aim to discourage traffic using less appropriate roads to avoid traffic congestion elsewhere; remove actual or perceived barriers to pedestrians and cyclists; and provide a real alternative to the car for inter-urban travel in the form of a new cross-county public transport system.

Many of the interventions put forward in this draft A414 Corridor Strategy are concepts. Following public consultation, if there is support for packages of interventions, there will need to be a process of assessing proposals in more detail.

If however circumstances change, for example key housing and employment developments do not come forward in the way that has been envisaged, or new priorities emerge, a review of the Corridor Strategy may lead to a potential revision or evolution of the proposals.

If supported and approved, interventions will be adopted by Hertfordshire County Council in partnership with the Local Planning Authorities as well as relevant infrastructure operators, service providers and private developers. Not until more detailed investigations are completed which will involve engagement with communities and stakeholders on a case-by-case basis will interventions be implemented.

In many cases, these will need detailed business cases to be developed that assess overall value for money and wider impacts.

Funding is also critical. Continual recognition and monitoring of potential funding opportunities is critical. Local Authorities are increasingly reliant on making bids to funding competitions often promoted by Central Government. It is important therefore that a robust case can be put forward for successfully obtaining funds. The availability of sufficient funding will play a crucial role in the implementation of proposals put forward.

This draft A414 Corridor Strategy is being consulted on with members of the public and stakeholders from December 2018 until February 2019. Following the consultation, there will be a period in which Hertfordshire County Council gives consideration to feedback and makes any necessary revisions to the Corridor Strategy between February 2019 and May 2019. It is the County Council’s aim to adopt a finalised A414 Corridor Strategy in Summer 2019.
**A414 Corridor Strategy in brief**

**Planned Growth**
50,000+ new homes and 50,000+ new jobs will create additional travel demand on the corridor’s transport network including highway routes and public transport services.

**The challenges**
Highway congestion is predicted to increase leading to longer journey times. Making journeys by public transport along the corridor is not easy and convenient. It is not easy to travel by bike within and between some urban areas. Communities can be split by heavily trafficked roads which can be made worse where crossing facilities for pedestrians and cyclists are limited.

**The proposed response**
30 packages of wide-ranging interventions aim to address the corridor challenges, improve inter-urban connectivity, improve operation, resilience and reliability of the transport network, enable and facilitate modal shift to active travel and public transport plus much more.

**Total estimated cost of all interventions**
Up to £1.8bn

Sufficient funding needs to be found to deliver interventions.
The corridor

**St Albans**
Historic city with one of the busiest railway station in Hertfordshire, with strong commuting flows by rail to London but surrounded by north-south and east-west highway links.

**Hemel Hempstead**
Including the large Maylands industrial area (part of the Enviro-Tech Enterprise Zone).

**Watford area**
Including the adjoining communities of Bushey, South Oxhey, Abbots Langley, Leavesden and Garston.

**Hatfield**
20th Century New Town where the A414 meets the A1(M), including the large Hatfield Business Park and University of Hertfordshire campus.

**Welwyn Garden City**
Adjacent to the A1(M) and A414, this planned town has expanded since its creation.

**Hertford**
County Town, divided by the busy A414 and two railway stations connected to London.

**Ware**
Market town with close links to Hertford and bypassed by the A10.

**Harlow**
Located in Essex at the eastern end of the corridor, a major location for employment with strong links to Hertfordshire as well as London and Stansted.

**Broxbourne Towns**
Comprise Broxbourne, Cheshunt, Hoddesdon, Waltham Cross and adjoining communities of Goffs Oak and Hammond Street, dissected by the A10 highway route which links the A414 and M25.

**London Colney**
Small town close to St Albans but separated by the A414.

**Bricke Wood, How Wood, Chiswell Green and Park Street**
Communities clustered along the A405 and Abbey Line routes.
The A414 Corridor is a strategic east-west multi-modal transport corridor extending from Harlow in the east to Hemel Hempstead in the west. In addition, the A405 extending down from St Albans towards Watford, and the A10 from east of Hertford to M25 Junction 25 also act as important cross-county routes.

The provision of transport infrastructure and facilities varies significantly along the length of the corridor. Today different parts of the corridor experience traffic congestion on roads, and there are very limited opportunities for continuous travel by public transport. The A414, A10 and A405 roads themselves carry a lot of traffic between towns along the corridor but at a local level the presence of wide roads and fast moving traffic can disconnect local communities and create issues for people wanting to travel on foot or by bike.

Current levels of traffic congestion will only be exacerbated by the expected large growth in housing, population and employment in the coming years. At least 50,000 new homes and a similar number of new jobs are proposed within the corridor to 2031.

A co-ordinated and consistent strategy for the A414 corridor is therefore necessary to ensure the corridor can adequately cater for a diverse range of journey lengths and purposes in the short, medium and long term, and facilitate sustainable growth.

The aims of the draft A414 Corridor Strategy are:

- Foster joined up decision making among authorities along the corridor to support better integration and alignment of strategic spatial planning and investment priorities
- Consider the corridor as a system of transport links and clarify the role and the hierarchy of key links within and between towns
- Clarify the infrastructure requirements along the corridor, including those generated by the cumulative impacts of growth
- Identify potential funding mechanisms and opportunities and set out a route to delivery for packages of interventions
- Support the development along the corridor and help manage and improve inter-urban movement

This consultation report sets out the rationale for the Corridor Strategy, supporting evidence and proposed packages of interventions to equip the corridor for the short to long term.
Report Structure

Section 2... An overview of the corridor in terms of the key towns, the transport network and services

Section 3 ... How the strategy has been developed, supporting documents and underlying policies

Section 4 ... Planned housing and employment growth along the corridor and the wider area

Section 5 ... The key growth and transport challenges the corridor faces now and in the future

Section 6 ... The objectives for the A414 corridor

Section 7 ... An overview of the transport interventions proposed in the draft Corridor Strategy

Section 8 ... A summary of a potential Mass Rapid Transit system which will span the A414 corridor

Section 9 ... Consideration of what can be achieved with the proposals put forward in the draft Corridor Strategy

Section 10 ... Estimated cost ranges, potential routes to delivery and possible funding sources

Section 11 ... Next steps following consultation of the draft Corridor Strategy

What then follows is a series of technical annexes which provide more detailed information.

Annex 1 - Annex 14 cover the fourteen corridor segments and provide more information on the challenges, priorities and proposed packages of interventions within each segment.

Annex 15 provides more detailed information on a proposed Mass Rapid Transit.

Annex 16 describes the sifting and evaluation process used to develop the packages of interventions.

Annex 17 summarises the approach to assessing place and movement functions of the highways network across the A414 Corridor.
Corridor Overview

The A414 Corridor is a strategic east-west transport corridor which runs from Harlow (to the east of Hertfordshire’s boundary with Essex) to the south of St Albans, where it separates with one leg running to Hemel Hempstead as the A414 and the other running through to Watford as the A405.

It directly connects the primary centres of Harlow, Hatfield, St Albans, Hemel Hempstead and Watford, and provides connectivity across large parts of Hertfordshire including many smaller towns, as well as connecting Harlow with Chelmsford in Essex.

From west to east, the corridor intersects with the A41 (London to Aylesbury), West Coast Main Line (London to Scotland), M25 (London Orbital), M1 and Midland Main Line (London to The North via the East Midlands, Sheffield and Leeds), A1/A1(M) (London to Scotland), East Coast Main Line (London to Scotland), Hertford Loop branch line (London to Stevenage), West Anglia Main Line and A10 (London to King’s Lynn via Cambridge) and the M11 (London to Cambridge). The corridor covers a distance of approximately 48km.

Currently the corridor provides overwhelmingly for private car and commercial goods vehicles, with more fragmented provision for public transport, cycle and foot.

The main road running through the corridor is the A414 which is mainly dual carriageway but with notable pinch-points comprising single carriageways within Hertford (beneath the Hertford Loop branch line of the East Coast Main Line), Hatfield (between A1001 Great North Road and Mount Pleasant Road), Hemel Hempstead (Two Waters Road) and Harlow.

Some sections of the A414 run through towns including Hertford and Hemel Hempstead; other sections are more rural in character including the section between Hertford and Hatfield.

Junctions are mainly at-grade, and different speed limits are imposed on different sections depending on the urban/rural setting.

The A414 is not however a continuous route. There are notable ‘dog legs’ where east-west traffic has to use sections of intersecting north-south routes including the M1 at Hemel Hempstead between junctions 7 and 8, the A1(M) at Hatfield between junctions 3 and 4 and the A10 between Hoddesdon and Hertford.

The section of the A414 between Park Street and M1 Junction 8 (formerly the M10) is managed by Highways England as part of their Strategic Road Network.
remaining sections are managed by Hertfordshire County Council (HCC). Essex County Council manages the section through Harlow. The A405 (North Orbital Road) is entirely dual carriageway along its length and can be considered more urban and semi-urban in character. It connects with the A41 in northern Watford. It intersects with the A412 which connects into the centre of Watford.

The section of the A405 between M25 Junction 21a and M1 Junction 6 (North Orbital Road, Bricket Wood) also forms part of Highways England’s network and facilitates movement between the M25 and the M1 (London).

There are a number of sections of cycle routes linking towns within the corridor, however they are of varying quality and there are gaps in provision. Immediately parallel to the A414 south of St Albans there is a shared footway/cycle route, and there are several segregated cycle routes within the corridor (but set away from main roads) including the Alban Way and Cole Green Way (both forming part of National Cycle Route 61).

Passenger transport is limited to bus services which serve sections of the route. For example, bus service 300/301 between Hemel Hempstead and Stevenage via Welwyn Garden City, St Albans and Hatfield. Bus service 724 runs between Rickmansworth, Watford, St. Albans, Hatfield, Welwyn Garden City, Hertford, Ware and Harlow and is the only continuous end-to-end passenger transport service operating across the corridor. A timetabled journey time from Watford to Harlow is around 2 hours 15 minutes using the 724 service.

Other more local bus services run within and between towns along the corridor.

The single track Abbey Line provides heavy rail services which connect St Albans Abbey and Watford Junction railway stations via Park Street, How Wood, Bricket Wood and Garston on a service frequency of 45 minutes and a journey time of around 20 minutes. There is however no continuous railway east-west across Hertfordshire. Many former railway branch lines were closed in the 1950s and 1960s, including routes between St Albans and Hatfield, and Welwyn Garden City and Hertford. Some of these former railway alignments have since been converted to leisure routes for cyclists and pedestrians.

There are a number of notable parallel and adjoining highway routes within the corridor including, but not limited to the A4147 (linking Hemel Hempstead and St Albans), A1001 Comet Way (running broadly parallel to the A1(M) in Hatfield), A1057 Hatfield Road (linking St Albans and Hatfield), B1000 (linking Welwyn Garden City and Hertford), A119 (linking Hertford and Ware), A1070 (linking Ware and Broxbourne), and B1502 Stanstead Road (linking Rush Green and Hoddesdon). These routes in some cases provide alternatives to the A414 but can also experience congestion.

Towards the eastern end, the A10 runs north-south through Hertfordshire. A section of the A10 between Hertford/Ware and Hoddesdon carries both north-south A10 traffic as well as east-west
A414 traffic. The section of the A10 to the south through Broxbourne is more urban in character with more frontage access.

The A10 could become increasingly relevant in the context of the A414 corridor in the future in terms of route choice to/from the M25 for more strategic journeys.

There are two designated Enterprise Zones (EZ) which are located within the corridor. The Enviro-Tech EZ is located across several sites in the south-west of Hertfordshire including the large Maylands industrial area in eastern Hemel Hempstead, the BRE site in Bricket Wood and Rothamsted Research in Harpenden. The EZ is strongly tied to the A414, A405 and M1 which are important arterial routes to connect employees, transport goods and attract new business.

The Harlow EZ is located at the eastern end of the corridor and relies on the A414, M11 and West Anglia Main Line to provide inter-urban connectivity. Harlow Science Park provides a significant development opportunity with a focus on creating a Med Tech Campus, bringing together research, innovation and manufacturing. Kao Park will comprise a 32,000m² data centre complex and 20,000m² business park. These new employment areas will join the established Templefields industrial estate which accommodates around 80,000m² of business properties including manufacturers and distributors.

There are other notable employment centres.

Watford is currently home to around 3,500 businesses with a good mix of company size and sector, with many international headquarters and a higher than average start-up success rate, and a range of businesses in between. There is representation from financial and professional services sectors, pharmaceutical, health sciences, creative media, manufacturing and retail and leisure industries, amongst many others.

Located broadly in the centre of the corridor is Hatfield Business Park which hosts 325,000m² (32.5 hectares) of business space creating 13,500 jobs and the adjacent University of Hertfordshire campus. This is where the A414 intersects the A1(M) and is therefore an important intersection between east-west and north-south travel.

The Mundells industrial area in Welwyn Garden City is host to office and light industrial businesses creating employment in the town and beyond.

Hoddesdon Business Park is located on the eastern edge of Hoddesdon, and is the largest employment area in Broxbourne and covers 110 hectares. It accommodates around 200 businesses including warehouses and specialist manufacturers, and has approximately 5,500 employees. The business park relies on the A10 to provide onward connectivity with more strategic routes such as the A414 and more notably the M25.

The Park Plaza area at the southern end of the A10 in Broxbourne is a major location for new employment development. A total of approximately 140 hectares of land is allocated to employment-related land uses.

Brookfield Retail Park is located to the west of the A10 corridor in Cheshunt, and is home to a number of well known high street retailers. The scale of the retail park means that it is a major draw for shoppers not just from the immediate area of Broxbourne, but further afield.
The following roads within the A414 corridor are among the 25 most heavily trafficked roads in Hertfordshire.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Road</th>
<th>Averaged flow across full road length (average weekday traffic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>M1</td>
<td>142,275</td>
</tr>
<tr>
<td>3rd</td>
<td>A1(M)</td>
<td>69119</td>
</tr>
<tr>
<td>5th</td>
<td>A414</td>
<td>34,177</td>
</tr>
<tr>
<td>8th</td>
<td>A405</td>
<td>31,657</td>
</tr>
<tr>
<td>9th</td>
<td>A10</td>
<td>29,023</td>
</tr>
<tr>
<td>12th</td>
<td>A6129 (Welwyn-Hatfield)</td>
<td>27,507</td>
</tr>
<tr>
<td>13th</td>
<td>A414 (old M10)</td>
<td>26,720</td>
</tr>
<tr>
<td>18th</td>
<td>B4630 (Chiswell Green)</td>
<td>21,188</td>
</tr>
<tr>
<td>19th</td>
<td>A4147 (Hemel Hempstead-St Albans)</td>
<td>21,165</td>
</tr>
<tr>
<td>23rd</td>
<td>A1081 (Luton-Barnet)</td>
<td>18,306</td>
</tr>
</tbody>
</table>

Based on an AM peak journey between Watford and Harlow. Journey by train is assumed to route via London.

Travel mode share for commuting trips to towns in the A414 corridor is dominated by private vehicle trips.
The Plough Roundabout, referred to locally as the Magic Roundabout.

Maylands industrial area is a major employment centre and part of the Enviro-Tech Enterprise Zone.

M1-M25 interchange - not all movements are catered for, with some traffic using the A405.

The single track, electrified, low frequency Abbey Line runs between St Albans and Watford.

Hatfield Business Park and University campus - a major attractor for commuting journeys.

Key junctions including the longabout at Smallford facilitate access to/from the A414.
The 724 bus is the only continuous public transport service along the corridor.

Hertford Town Centre lies north of the A414 dual carriageway which dissects the town.

A414 River Stort crossing (Fifth Avenue) – a major link between Harlow and the rest of Hertfordshire to the west. Experiences traffic congestion during peak periods.

Harlow is a major retail and employment centre, drawing people in from the surrounding area by a variety of travel modes, including by car on the A414 dual carriageway.

Brookfield retail park, Cheshunt, a major attractor for people across a wide area – accessed from west of the A10, whilst main residential areas lie east of the A10.

Former railways have been converted into traffic-free inter-urban cycle routes, e.g. the Alban Way and Cole Green Way.
A staged approach has been taken to develop the draft A414 Corridor Strategy. The approach commenced with a process of clarifying the broad aims and objectives of the strategy, through to reviewing evidence to confirm the key issues that need to be addressed on the corridor. Objectives were then confirmed for what needs to be achieved along the corridor, and optioneering packages of interventions to help address the key challenges in the short, medium and long term.

Reference should be made to the A414 Corridor Strategy Evidence Report which sits alongside this report. The Evidence Report brings together a wide range of data sets to help build a picture of the A414 corridor both today and in the future. Datasets include journey times, modes of travel used and socio-demographic data (e.g. population statistics) as well as information on the environment and land uses.

In addition this draft Corridor Strategy is supported by the appropriate statutory requirements for Habitats Regulations, Equality Impact Assessment and Strategic Environmental Assessment.

These are available as part of the consultation for the draft A414 Corridor Strategy.
Supporting plans and policies

The draft A414 Corridor Strategy aligns with objectives and proposals both from a **Growth** perspective (the provision of land for housing and employment development, and the planning and management of places) and a **Transport** perspective (the provision of a sustainable travel and transport network accessible by all).

Planned housing and employment growth is identified by Local Planning Authorities (in Hertfordshire, the districts and boroughs) in their Local Plans. These plans will set out planning policies, identify how land should be used, and determine the type and quantity of development that should be built where and by when. They should also be consistent with the National Planning Policy Framework.

Typically Local Plans are prepared at different times. Some authorities may have a recent, adopted plan in place whereas others may still be in the process of preparing a new plan.

It is important for the draft Corridor Strategy to align with key policies in Local Plans because the corridor is expected to be a focus for major housing and employment growth.
Hertfordshire County Council’s Local Transport Plan (LTP4) sets out the vision of where transport in Hertfordshire should be heading and gives high level policy guidance. It adopts a road user hierarchy to deliver a shift in the approach taken to transport infrastructure away from prioritising private vehicles towards sustainable transport modes.

LTP4 is accompanied by a series of supporting documents including the Rail Strategy.

Also sitting beneath the LTP4 are a suite of Growth and Transport Plans (GTPs). Three GTPs span the A414 corridor area. The South West Hertfordshire GTP covers the Watford and Hemel Hempstead area plus their interaction with St Albans. This GTP was consulted during 2018 and is expected to be adopted in 2019.

The emerging draft South Central Hertfordshire GTP covers St Albans, Hatfield, Welwyn Garden City, London Colney, Potters Bar and Borehamwood. This GTP integrates proposals initially put forward in the Hatfield Transport Strategy, and will be consulted on during 2019.

The emerging draft South East Hertfordshire GTP covers Hertford, Ware, the Broxbourne Towns and Harlow. This GTP integrates the proposals initially put forward in the Broxbourne Transport Strategy and the emerging draft Harlow Gilston Garden Town Transport Strategy.

The draft A414 Corridor Strategy also seeks to influence other future plans and strategies, including those being developed by Highways England who manage the strategic road network. Consultation, proposals and initiatives led by Central Government could also influence the Corridor Strategy.
The corridor faces unprecedented levels of housing and employment growth, which is likely to have a significant impact on how the corridor’s transport system functions in the future.

Emerging local development plans from Hertfordshire’s local planning authorities indicate that an additional 50,000 homes will be needed within a 5 mile radius of the A414/A405 in the next 15 years.

This will result in an estimated 110,000 - 120,000 increase in population based on average household occupancy. Beyond 2031 it is likely that further growth will be allocated along the corridor, adding pressure and new travel demands upon the transport system.

Employment is also expected to rise, with a number of major employment sites proposed. Employment densities tend to be highest in town centres, but there are multiple out-of-town areas which have high employment densities as a result of business parks including Maylands Industrial Park (Hemel Hempstead), Hatfield Business Park, and Harlow Industrial Estates. In addition, the Enviro-Tech Enterprise Zone falls towards the western end of the corridor, incorporating Maylands Industrial Area. These areas will be focal points for significant employment growth, as well as the proposed Strategic Rail Freight Interchange between Radlett and St Albans. Watford is expected to continue as a regional centre for employment and retail, due to its close proximity and links to London. Hatfield Business Park and the University of Hertfordshire campus will continue to be a focus for education, employment, innovation and research.

Therefore, it is anticipated that current transport pressures and movements will be further exacerbated by the significant levels of housing and employment growth already in the planning system and additional growth in the future. A range of interventions will be required to help address and mitigate these impacts and enable growth.
Estimated 50,000+ additional homes could come forward by 2031 along the corridor in Hertfordshire

Plus estimated 80,000+ additional homes in immediately adjacent authority areas

A similar number of additional jobs is also estimated to come forward within the same time frame.
Key development sites

Below is a selection of key housing and employment development locations within the corridor either in adopted or emerging Local Plans

**East Hemel Hempstead broad locations** (North and South sites)
Between Maylands industrial area and the M1, two broad locations have a minimum capacity of **4,050** dwellings across both the North and South sites.

**Enviro-Tech Enterprise Zone** (East Hemel Hempstead)
A major new Enviro-Tech focused employment location, including enhanced transport infrastructure for new and existing employment and residential areas, within an approximately 55 Ha area. Has the potential to offer in the order of **10,000** jobs.

**East St Albans broad location**
An urban extension of St Albans, improved and new education and training facilities, and to further integrate Oaklands College with the wider community, with a minimum capacity of **1,250** dwellings.

**Park Street Garden Village broad location**
A new Garden Village including a secondary school and country park with a minimum capacity of **2,300** dwellings (600 dwellings beyond 2036).

**West of London Colney broad location**
An urban extension of London Colney including a new secondary school and a minimum capacity of **440** dwellings.

**North West Hatfield and Symondshyde**
NW Hatfield urban extension comprises approximately **1,650** dwellings and the by 2032, whilst the standalone Symondshyde village development comprises around **1,130** dwellings by 2032

**Broadwater Road West (Welwyn Garden City)**
Located in the town centre adjacent to the East Coast Main Line, this former industrial site is allocated for approximately **1,020** dwellings by 2032.

**Birchall Garden Suburb (Welwyn Garden City)**
Birchall Garden Suburb lies to the east of Welwyn Garden City just to the north of the A414. Approximately **2,550** dwellings are proposed by 2032.

**West of Hertford**
Straddling the B1000 Welwyn Road on the western edge of Hertford, this development will accommodate **550** dwellings with new vehicle access arrangements onto the surrounding highway network. Mead Lane (**200** dwellings) will also affect the surrounding highway network.

**Land North and East of Ware**
Land to the north and east of Ware is allocated as a mixed-use development site, to accommodate between **1,000** and **1,500** dwellings (subject to satisfactory transport mitigation) and **3 hectares** employment land by 2033.

**Harlow Gilston Garden Town**
Harlow Gilston was designated as a Garden Town in 2017. At least **23,000** dwellings are planned, with 16,000 of them built by 2033 in new communities to the north (Gilston Area), south (Latton Priory), east (East of Harlow) and west (Water Lane) of Harlow.

**Brookfield Riverside and Brookfield Garden Village (Broxbourne)**
Planned redevelopment of the Brookfield area as a comprehensively planned garden suburb encompassing retail, civic and leisure centre for the borough of Broxbourne, a business campus and Brookfield Garden Village. **43,500** square metres of additional retail and leisure space plus **30,000-50,000** square metres of additional business space will deliver a significant number of new jobs. Both sites will deliver around **1,500** dwellings.
A range of data and evidence sources as well as consultation with stakeholders have been used to identify key growth and transport challenges within the A414 corridor.

More detailed information on the process of gathering and analysing evidence is contained in the Evidence Report.

One of the primary transport evidence tools is Hertfordshire County Council’s COMET model which can assess the current and future year performance of the transport network and test different scenarios such as higher or lower housing growth and transport improvements.

The key observations resulting from the evidence review and issue identification exercises are summarised below and presented in this section.

- **Modal Share and Travel Patterns**: Analysis of Census Journey to Work data shows that sustainable modes (i.e. public transport, cycling, and walking) represent less than a quarter of commuting trips to towns in the A414 Corridor.

- **Highway Congestion**: Current and likely future highway congestion hotspots have been identified based on traffic data and local knowledge of the Corridor’s transport network and COMET model outputs.

- **Air Quality**: Several Air Quality Management Areas have been designated within the study area, many of which are in urban areas and are likely to experience increases in vehicle volumes over the next 15 years.

- **Cycling Connectivity**: The cycling network in the corridor is patchy, discontinuous, and there are known issues with the variability in the standard of the facilities.

- **Public Transport Usage/Accessibility**: Town centres/rail stations and their respective residential areas in the A414 Corridor towns are in general relatively well connected by bus services, although this varies by place and time of day. Inter-urban accessibility, however, is significantly lower e.g. considering a typical journey from a residential part of one town to the centre/employment centre of another.
The graphic to the left shows the percentage travel mode share for commuting trips to the towns along the A414 corridor. This shows that around three quarters of all commuting trips are made by car. Walking is also a popular method of travel for shorter distance trips within towns. Trips by bicycle and public transport make up only a small proportion of all commuting trips.

The graphics below show very few trips were made by bicycle or bus between key settlements. Car is the most popular mode of travel between these settlements. The commuting mode share for bicycle is much lower between Hemel Hempstead and St Albans than between Hertford and Ware whereas bus mode share is quite similar. There is a lack of suitable, safe and attractive routes for cyclists between Hemel Hempstead and St Albans.

How people travel through the corridor
Travel patterns by car on sections of the A414

Most of the traffic approaching the M1 at Junction 8 originates in Hemel Hempstead, although some trips originate from the A41 and therefore route through the town. Trips route towards a wide range of destinations including Hatfield and Welwyn Garden City via the A414.

A large proportion of trips approaching A1(M) Junction 3 originate in St Albans including the surrounding district. Many of the trips originate from locations outside of Hertfordshire. Trips route towards a wide range of locations including Hatfield and Welwyn Garden City, but fewer towards Hertford and Harlow.
Trips travelling through A1(M) Junction 4 and onto the A414 north of Hatfield come from far and wide including areas along the A1(M) but not a significant number from western and south-western parts of the county. Welwyn Garden City and Hatfield are big destinations as are Hertford and Ware but not many are destined east of the A10 e.g. Harlow.

A large proportion of trips on the A414 at Rush Green originate in Hertford, and some also from Welwyn Garden City and Hatfield (fewer from places further west). Trips are destined for a variety of locations including Harlow although a large proportion of trips use the A10 corridor.
The analysis of vehicle travel patterns along sections of the A414 dual carriageway highlight that the route is predominantly used for short to medium distance trips as opposed to longer distance trips from end to end.

However, some sections of the A414 dual carriageway are used more by longer distance trips, for example the section to the south of St Albans between Park Street and Hatfield.

The section of the A414 through Hertford predominantly carries traffic between the A1(M) and A10 but less so to places further west of the A1 (M) (e.g. St Albans) and further east of the A10 (e.g. Harlow). The analysis indicates that large volumes of trips using the A414 are destined for Welwyn Garden City and Hatfield with the A1(M) and A10 north-south corridors acting as filters for onward travel.

Other roads in the corridor have a less strategic function. For example, the A1057 Hatfield Road / St Albans Road West between Hatfield and St Albans performs a less strategic function than the A414, although it does facilitate onward movements to the A1(M) corridor. Similarly, the B1000 linking Welwyn Garden City and Hertford predominately facilitate traffic movements between the two towns.

The A405 between Watford and St Albans is also more strategic in nature. The section between M1 Junction 6 and M25 Junction 21a (Bricket Wood) forms part of Highways England’s Strategic Road Network and carries longer distance traffic movements as well as shorter distance trips between Watford and St Albans.

In summary, whilst the Corridor is a major east-west corridor across Hertfordshire, it functions differently along its length which indicates that a ‘one size fits all’ solution to current challenges, such as traffic congestion and a lack of attractive alternatives to the car, will not be appropriate.
Highways Congestion

The graphic to the left shows where traffic congestion hotspots typically occur based on 2014 data (presented with yellow and red circles). Locations which experience traffic delays include junctions along the A414 in Hemel Hempstead, at the A414/A405 Park Street Roundabout, A414/A1081 London Colney Roundabout, at A1(M) Junctions 3 and 4 in Hatfield, on A414 junctions in Hertford, and at the A414 Eastwick junction north of Harlow. Therefore, journeys made on any length of the A414 corridor are likely to encounter some delays. Delays also occur on adjoining and local parallel routes, especially within urban areas.

The graphic to the right shows traffic volumes in 2014 (based on the HCC COMET model) along major roads including the A414. Traffic volumes are influenced by a variety of factors including the capacity of roads, therefore higher volumes of traffic occur on motorways such as the M1, M25 and A1(M) where there are more lanes provided. There are sections of the A414 dual carriageway which experience higher volumes of traffic in particular to the south of St Albans. The A414 also acts as an alternative to the M25 during busy times, providing some network resilience but also increasing local congestion.
Transport, Place and People

Transport can significantly impact on people and quality of life. Effective transport links enable more accessible travel to healthcare, leisure, education and employment – all vital to ensuring people can live successful, healthy and happy lives, and play an active part in society. There are a number of groups in the county at risk of social exclusion if access needs are not being met, or are not well understood. Whilst in a minority there is a sizeable population in the county who have difficulty accessing services. Resident surveys indicate there is scope for improvements in local bus service provision, however services to meet access needs are under significant funding pressure. Transport infrastructure such as roads and rail lines can also limit accessibility by severing communities, and by acting as a physical barrier to walking and cycling.

Within the A414 corridor, major roads which are heavily trafficked can dissect communities. In Hemel Hempstead and Hertford for example the A414 dual carriageway runs through the middle of the towns, putting the needs of motorists ahead of the needs of local people who need access to local shops and key services. In some instances, there is limited or less attractive provision for pedestrians and cyclists to cross these busy roads. Noise, traffic congestion and pollution can have a serious detrimental effect on the lives of people who live alongside or close to these busy roads.

Key issues which can affect the quality and vitality of urban centres include high levels of car use and congestion resulting in excessive noise, poorer air quality, aesthetics, and negative impacts on the historic and natural environment. High levels of car use can limit the potential to improve provision for other modes of travel, such as walking and cycling, which may enhance the sense of place.

The quality of local transport links and environment can also be a factor in levels of physical activity, with implications for people’s health and wellbeing. As with other parts of England, there are high levels of obesity among the population of Hertfordshire, with a lack of physical activity being a significant factor. Increasing levels of active travel can contribute to healthier weight, but also reduce the risk of a number of major diseases. There is scope to increase rates of physical activity in all parts of the corridor and increasing rates of walking and cycling can be a way to help achieve this. It could also play a role in addressing health inequalities given some of the districts with the lowest rates of walking and cycling activity also contain some of the county’s more deprived areas.
Socio-economic inequalities, housing affordability and health

In Hertfordshire approximately 80% of working age residents are in employment, which is above the national average, and unemployment is at its lowest rate for ten years. However, there are parts of Hertfordshire that have high levels of socio-economic deprivation, particularly in the more densely populated areas such as parts of Watford, Hemel Hempstead, Hatfield and Broxbourne. Transport can play a role in supporting access to employment, education and training, but also in tackling other issues present in some deprived communities such as poorer health outcomes and lower quality environments. Poor access to services can be a factor in social exclusion.

Hertfordshire’s appeal and its growth constraints are factors in it being one of the most expensive places to buy a property outside London, including in places such as St Albans. This means many people cannot afford to live in Hertfordshire and are forced to commute into the county from surrounding areas. This in turn places pressure on primary, inter-urban routes such as the A414 and mainline railways. As with many parts of the country there is significant scope for improvement in the health of Hertfordshire’s population. Raising levels of active travel can make a significant contribution to raising levels of physical activity and overall health and wellbeing.

One of the most direct impacts on health by transport is through lives lost and life limiting conditions caused by road collisions and poor air quality. There is evidence to suggest that the premature deaths (40-50,000 per year in the UK) caused by poor air quality in the UK dwarfs the number of deaths caused by road casualties (1,732 in 2015 in Great Britain) and public awareness of poor air quality, its impacts and the contribution of transport to this has grown in recent years.

Several Air Quality Management Areas are designated along the A414, including two in Hemel Hempstead, three in St Albans and one in Hertford as well as on the A10 in Cheshunt and A405 in northern Watford.

Cycle Connectivity

There are notable gaps in the provision of safe, attractive and continuous cycle routes between key towns along the corridor (see the figure to the right). Cross-referencing commuting patterns indicates that a significant number of commuters travel between these towns, currently predominantly by private car). It is likely, therefore, that the available cycling facilities are insufficient to encourage modal shift between and within these towns despite in some cases the distances being quite short.
Public Transport Accessibility and Reliability

The level of public transport accessibility based on journey time varies across the corridor. Towns are typically well connected by bus to the adjacent town. The graphic to the right shows the level of accessibility by public transport to Hatfield town centre. Areas shaded orange-to-red have poorer levels of accessibility where journeys by public transport are longer, and areas shaded green have better levels of accessibility. Hatfield is relatively well connected to the adjacent settlements of St Albans and Welwyn Garden City, but less well to locations further along the corridor such as Watford, Hemel Hempstead and the Broxbourne towns. Hatfield is a major employment centre with the business park being of county-significance and is home to the university. This indicates that the private car may be the only means of accessing Hatfield from some parts of the corridor within an attractive journey time over the distance travelled.

Bus services within the A414 corridor experience delays. Whilst bus operators endeavour to take account of congestion and reflect this in timetables, the lack of resilience in the highway network can lead to service delays. For example, the 724 Greenline service spans the entire corridor between Harlow and Watford (and beyond) and it passes through many settlements along heavily trafficked sections of highway. Delays to services can therefore occur especially during busy peak periods, and these delays can accumulate across the entire route. Such delays can reduce the attractiveness of bus travel, and must be taken into account alongside other factors such as access to the Public Transport network, fares, frequency and hours of operation in planning future bus service provision.
What will growth mean for transport in the corridor?

Increased travel demand generated by population and economic growth is forecast to increase peak period car trips by 17-18% by 2031 across Hertfordshire. This will lead to peak spreading (people travelling at different times of the day to avoid the worst congestion). Travel times during the AM peak are predicted to increase by 50% with a 15% reduction in average traffic speed.

The statistics at the bottom of this page are taken from the county council’s transport model (COMET) which assumes current travel behaviour continues into the future. It estimates significant increases in journey times between key towns within the A414 corridor. The model indicates a significant amount of suppressed travel demand, particularly in the AM peak, where demand cannot be accommodated on the transport network resulting in trips being made at different times of the day (increasing congestion in other time periods) or not at all.

The forecast suggests a transport strategy solely focused on catering for increased traffic demand would be at best very expensive, difficult to deliver, environmentally damaging and result in traffic congestion simply being displaced to other parts of the network. At worst such an approach could be largely ineffective as any new capacity created would be filled by supressed demand.
Analysis of modelled intra-urban vehicle trips (i.e. trips starting and ending in the same town) in HCC’s COMET model shows that there is a predicted increase in journey times as a result of rising congestion. The towns with the largest predicted increases in journey time between 2014 and 2031 are Hatfield and Watford. What might appear to be relatively modest increases in journeys in places such as St Albans may be attributable to existing levels of traffic congestion that can act as a constraint on any additional delay that can occur in the future.

The figure to the right shows the predicted highway congestion hotspots in 2031 according to forecasts provided by HCC’s COMET model. Congestion is occurring either at key junctions (as shown by the yellow and red circles) or along carriageway links (as shown by the shaded red lines). In comparison to a modelled base year of 2014, the following hotspots show notable increases in junction or carriageway link-based delay by 2031:

- Junctions on the A414 through Hemel Hempstead
- A414/A1081 London Colney Roundabout
- A1(M) Junctions 3 and 4 (Hatfield)
- Junctions on the A414 through Hertford
A summary of key challenges

The analysis briefly summarised in this report and discussed in more detail in the accompanying Evidence Report highlights the key challenges which the A414 Corridor Strategy seeks to address. These challenges need to be considered in the context of planned future housing and employment growth as summarised in the previous chapter. Where the challenges today may be considered an irritant to users of the transport network, or already at a severe level having a more significant effect on people’s day-to-day activities, the additional housing and employment growth will place even greater pressure on the transport network.

Traffic congestion is already severe on key carriageway links and at junctions including the A414 Breakspear Way (Hemel Hempstead), M1 Junction 8, A414/A405 Park Street Roundabout, M25 Junction 21a (Bricket Wood), A414/A1081 London Colney Roundabout, A1M Junctions 3 and 4, A414 junctions in Hertford and A10 junctions in Broxbourne. At many of these locations, congestion is predicted to increase further in the future which will lead to longer journey times and more trips diverting onto less suitable roads for example through residential areas.

There is poor connectivity for cyclists between and within key urban settlements, thus cycling is not a viable, safe and attractive alternative to the car for short and some medium distance trips within the corridor. Key gaps or where existing facilities are poor include Hemel Hempstead-St Albans, Park Street-London-Colney-Hatfield and within Hertford and Hemel Hempstead.

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There is poor public transport connectivity along the corridor which could offer an alternative to the private car for medium to longer distance trips within the A414 corridor. Travelling by bus is most likely to require interchanging between services. Some services experience delays and reliability issues due to traffic congestion. Some services are less frequent and journey times are much longer than those by car. Most trips by train within the corridor require a trip via London.

Heavily trafficked roads disconnect communities and make access to urban centres and key services more difficult, especially where facilities for pedestrians and cyclists are more limited or perceived to be poor in quality. The dominance of traffic in urban settlements can have a detrimental effect on sense of place and can impact the viability and vitality of town centres. Hertford and Hemel Hempstead are two examples where the A414 dual carriageway dissects the towns. There can also be a detrimental effect on people’s health and wellbeing.
Corridor Segments

The evidence review undertaken for this strategy demonstrates that the A414 Corridor is not consistent in terms of its characteristics and usage. For example, the section south of St Albans displays high levels of interaction with the strategic road network. By contrast, east of the A1(M), the A414 is used more heavily for shorter distance trips. Some more local roads which run parallel to the A414 main road have an important inter-urban function, including the A4147 between Hemel Hempstead and St Albans, A1057 between St Albans and Hatfield and the A119 between Hertford and Ware.

The corridor has been divided into fourteen segments which reflect the variety of travel patterns and usage of the corridor.

- **S1** Hemel Hempstead
- **S2** Hemel Hempstead-St Albans-Park Street
- **S3** Watford-Garston
- **S4** Bricket Wood Triangle
- **S5** Park Street-How Wood-Chiswell Green
- **S6** Park Street-St Albans-London Colney
- **S7** St Albans-London Colney-Hatfield
- **S8** Hatfield
- **S9** Welwyn Garden City-Hatfield
- **S10** Hatfield-Welwyn Garden City-Hertford
- **S11** Hertford
- **S12** Hertford-Rush Green
- **S13** Broxbourne Towns
- **S14** A10-Harlow
How the corridor is used

The various segments of the corridor display different characteristics in terms of the type of journeys made on them. Some segments are used more for longer distance trips using strategic transport links such as motorways and major roads such as the A414 or A10. Other segments also serve short distance journeys within towns. HCC’s COMET model has been used to determine how the various segments of the corridor function in terms of dominant or significant flows that may contribute to congestion and delay.

<table>
<thead>
<tr>
<th>Corridor Segment</th>
<th>Local: movements within towns</th>
<th>Local Strategic: movements between towns within the corridor</th>
<th>Corridor Strategic: movements on the strategic transport network originating/ending in corridor area</th>
<th>External Strategic: through-trips on the strategic transport network</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Hemel Hempstead</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>S2</td>
<td>Hemel Hempstead-Park St</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>S3</td>
<td>Watford-Garston</td>
<td>✓</td>
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<tr>
<td>S4</td>
<td>Bricket Wood Triangle</td>
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<tr>
<td>S5</td>
<td>Park Street-How Wood-Chiswell Green</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>S6</td>
<td>Park Street-St Albans-London Colney</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>S7</td>
<td>St Albans-London Colney-Hatfield</td>
<td>✓</td>
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<tr>
<td>S8</td>
<td>Hatfield (A1M)</td>
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<td>S9</td>
<td>Welwyn Garden City-Hatfield</td>
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<tr>
<td>S10</td>
<td>Hatfield-Welwyn Garden City-Hertford</td>
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<td>S11</td>
<td>Hertford</td>
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<tr>
<td>S12</td>
<td>Hertford-Rush Green</td>
<td>✓</td>
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<tr>
<td>S13</td>
<td>Broxbourne Towns</td>
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<td>✓</td>
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<tr>
<td>S14</td>
<td>A10 - Harlow</td>
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<td>✓</td>
</tr>
</tbody>
</table>
A set of eleven broad objectives have been defined to help guide the development of the draft Corridor Strategy, informed by the assessment of key challenges. These objectives are aligned with the objectives of the county council’s Local Transport Plan 4 and broadly align with principles and objectives set out in local planning authorities’ Local Plans.

**Support sustainable economic growth** - A significant number of new jobs are proposed within the corridor, including clusters at key locations including the Enviro-Tech Enterprise Zone at Maylands. These additional jobs will generate movements by different methods of travel within the corridor. The aim of this objective is to ensure that this economic growth can come forward in a sustainable way from a transport perspective including provision being made for journeys by more sustainable modes including public transport and cycle.

**Improve inter-urban connectivity** - The A414 corridor is used for a variety of purposes, be it travelling to/from work, to see family or friends, or to transport goods, and by different methods of travel for example by bus, by car, on foot or by bike. However, the level of connectivity is not consistent along the corridor and there is a limited choice of transport modes which will disadvantage certain user groups. The aim of this objective is to identify improvements to connectivity between places along the corridor by different modes, including a much improved offer for non-car users.

**Define an appropriate route hierarchy** - The A414 corridor comprises a network of highway, including cycling and walking routes, and public transport links. The aim of this objective is to consider if the network is being used efficiently, for example discouraging traffic from rat-running along residential streets and country lanes, and identifying where certain users of the transport network should be given greater priority to better serve their needs.
Improve operation, resilience and reliability of the transport network - The A414 corridor already experiences significant levels of traffic congestion today. With planned housing and employment growth, levels of congestion could increase further and motorists may seek alternative and less appropriate routes to minimise the impact on journey times. The aim of this objective is to improve the operation of the corridor which can entail improving highway junctions or making more efficient use of existing infrastructure and alternative modes to car.

Enhance sense of place and town centre viability - There are many settlements along the corridor, including the principal towns of Watford, Hemel Hempstead, St Albans, Hatfield, Welwyn Garden City, Hertford, the Broxbourne Towns and Harlow, as well as smaller communities including Bricket Wood, Park Street, London Colney and Ware. Transport can have a significant effect on place, both negative and positive: busy roads can disconnect communities; traffic congestion and infrequent bus services can discourage people from travelling to their local town centre; but well designed roads with attractive landscaping and high quality materials can enhance a sense of place. The aim of this objective is to ensure there are opportunities to enhance place and contribute towards the viability and vitality of town centres through transport proposals.

Enable and facilitate modal shift to active travel - Much of the A414 corridor is focused towards the needs of motorists. People can make quite short journeys within and between urban settlements by car because it is viewed as being more convenient or the alternatives are deemed to be less attractive. The aim of this objective is to enhance infrastructure and routes for pedestrians and cyclists in order to make travelling on foot or by bike a much more attractive alternative to the car, especially for shorter distance trips.

Enable and facilitate modal shift to public transport - There are limited public transport alternatives to the private car within the A414 corridor, especially for journeys between towns and along the entire length of the corridor. For instance, there is only one continuous bus service operating hourly between Watford and Harlow. There are numerous local bus services linking towns, however these services vary in frequency and not all connect to key locations such as business parks and railway stations. The aim of this objective is to improve the public transport offer within the corridor, in particular facilitating faster, more reliable and comfortable journeys by local bus or by more innovative passenger transport alternatives.
Implement demand management to support efficient use of the network and enable behaviour change - There is currently great potential for mode shift in the county and existing travel behaviour represents an inefficient use of road space. Around half of the commuters in local towns including Watford, Hemel Hempstead, Welwyn Garden City, St Albans and Cheshunt, who live in the same town in which they work, travel by car. Additionally there is a lot of short distance inter-urban commuter travel in Hertfordshire, that could readily transfer to rail, bus or car share. This is not an efficient use of the transport network. The aim of this objective is to encourage behaviour change, reallocate road space from general traffic to more sustainable modes, discourage unnecessary car trips and encourage working from home.

Incorporate the benefits of new technology to support efficient use of the network and enable behaviour change - Users of the transport network are increasingly reliant upon different forms of technology to undertake journeys, including satellite navigation in vehicles to make informed routing decisions and buying public transport tickets on their mobile phones. Technology can play a significant role in managing the transport network, including the operation of traffic signals and is set to play an even greater role in the future. The aim of this objective is to recognise the role of technology and use it as an opportunity to support a more efficient use of the existing network and enable people to make more informed decisions about their journeys.

Ensure safe and secure travel - The safety and security of different user groups on the transport network is of the upmost importance and this includes minimising the risk of collisions and injuries occurring on roads and increasing the feeling of safety and security at bus stops for example. The aim of this objective is to ensure journeys within the A414 corridor can be made safely and securely.

Deliver better environmental outcomes - Transport and associated infrastructure can have a significant effect on the environment, including impacts on noise volumes, air quality and surface run-off which can lead to flooding. Conversely, transport can provide the opportunity to improve the environment if infrastructure is designed well and sympathetically to suit its surroundings. The aim of this objective is to ensure that the environment within the A414 corridor is not adversely impacted by proposed interventions, and that there could be opportunities to enhance the environment as a consequence of proposals.
It is essential for the A414 Corridor Strategy to align with other strategies and plans in the area. To identify appropriate interventions which address the growth and transport challenges along the corridor, a logical starting point is to make reference to the local planning authorities’ Infrastructure Delivery Plans which set out the key infrastructure required to deliver the levels of housing and employment growth proposed in their Local Plans.

Reference has been made to town-based transport strategies, specifically the Broxbourne; Hatfield; and Harlow Gilston Transport Strategies.

At a larger geographical level, reference has been made to the Local Transport Plan 4 which identifies strategic transport interventions; and the emerging Growth and Transport Plans.

Finally, there has been a process of idea generation in discussion with key stakeholders, seeking their views on appropriate solutions to the corridor’s growth and transport challenges. This has resulted in an exhaustive list of interventions, not all aligned with the corridor objectives. A process has therefore been undertaken to sift the long list down to those interventions considered most essential to deliver the Corridor objectives, with the sifting process broadly based on industry and Department for Transport guidance (‘WebTAG’) and best practice. The analysis considered how the network serves ‘place’ (residential, retail, leisure etc.) and ‘movement’ (e.g. local or strategic traffic) functions.
Considering the **place** and **movement** functions of the highway

Hertfordshire network includes a wide variety of different types of roads with different purposes, each carrying different levels of traffic, with different standards of provision for different users of the highway network and different surrounding land uses which influence how roads are used.

With significant planned levels of housing and employment growth coming forward, the network faces a complex set of challenges in accommodating additional movements between places and along links. Many roads already experience significant levels of traffic congestion, and this can have negative implications on surrounding communities. If congestion levels continue to increase, this may force people to find alternative and less suitable routes which can have negative impacts on communities.

Defining the intended function of highway links can help to inform the process of appraising the appropriateness of proposed infrastructure interventions and identify alternative interventions which can reinforce intended functions or seek to reprioritise routes for the betterment of communities.

The purpose of defining the network hierarchy is to identify links or junctions where there is considered to be a ‘clash’ between different functions which could potentially impact on particular users in a positive or negative way.

A set of nine road types have been defined. These road types sit within a matrix which qualitatively assesses Place and Movement from low significance to high significance.

**Place** relates to those functions that are specific to and happen in particular places, including residential and retail. Roads have an impact economically as well as on quality of life, with place-making an increasingly important element in local policy making. Roads are also the foreground to the built environment, and the most successful streets are those that respect and refer to it.

**Movement** relates to the moving functions across different modes. Roads perform a wide range of movement functions from roads carrying very high volumes and mixes of vehicular traffic and people, to urban streets which only have a local movement function and could give greater priority to the needs of pedestrians and cyclists.
The example Place and Movement assessment shown here is for Hertford. It clearly shows the A414 as a major interurban road dissecting the town.

The Place and Movement assessment is a visual tool to identify the potentially competing and conflicting functions of different roads and inform what the priorities should be.
Proposed interventions have been assembled into **30 packages** which slot into the 14 corridor segments. The packages are very briefly summarised in this section, with details set out by segment in Annex 1 to Annex 14.

It is important for the Corridor Strategy to be integrated with other plans and strategies. Therefore for consistency many of the packages are broadly identical to those in the emerging Growth and Transport Plans as well as the Hatfield Transport Strategy’s town-based corridor packages.

The interventions are wide-ranging. It has been the intention to focus only on the more strategic interventions. Very small-scale interventions are not necessarily identified but this does not mean they will be excluded from consideration in the future. Interventions broadly fit into a number of categories as set out below.
The A414 corridor is made up of many different types of roads. Some are major links which enable more traffic to travel faster between places. Some roads are primarily for access to homes and schools. There are many instances where roads are not performing their intended function. This could be to the detriment to local communities or to particular users of the network. The A414 is a higher-speed dual carriageway over much of its length. This is more appropriate between settlements, however it also runs through some settlements.

In combination with very selective highway upgrades and new roads, the needs of different users of the transport network can be enhanced where these are currently under-served. What this could mean is that in some instances, where it is feasible and appropriate, the movement of pedestrians and cyclists could be prioritised over the movement of private cars. In the longer term this is considered to be a more sustainable and appropriate way of making better use of existing infrastructure, and making more targeted and effective investment in transport improvements.

**Example interventions include...**

Re-allocation of some road space in Hemel Hempstead, Hatfield and Hertford.

A range of interventions have been identified to make travelling by bike between key urban areas along the corridor easier and more attractive, and to help reduce some major barriers for pedestrians and cyclist which are created by busy roads.

Improved facilities including better surfacing, signage and crossings can increase the attractiveness and convenience of cycling as a healthy alternative to the car for different types of journeys.

**Example interventions include...**

- More signal-controlled at-grade crossings on the A414 Breakspear Way in Hemel Hempstead
- A new continuous off-road cycle route linking Hemel Hempstead and St Albans
- An improved cycle route alongside the A414 between Park Street, London Colney and Hatfield
- An improved cycle route with new links alongside the A405 between northern Watford and southern St Albans
- Improved footways and crossing facilities in the Broxbourne towns
- Brand new, high quality pedestrian and cycle routes in Harlow
The highway network has an important role in connecting people and places. It facilitates the movement of different users although in the majority of circumstances they prioritise the movement of motorised vehicles over active modes including pedestrians and cyclists. In line with Hertfordshire County Council’s LTP4, the needs of pedestrians and cyclists in particular will be enhanced across the corridor however in some situations it will only possible to fully achieve this by making improvements to some roads and junctions, or constructing new roads, which can remove points at which different users could interact and disrupt one another, and to reduce the use of some roads by motorists as ‘rat-runs’ to try and avoid delays on the more major routes.

**Example interventions include…**
- An improved M1 Junction 8 at Hemel Hempstead (and the longer term potential for a new Junction 8a to the north-east of Hemel Hempstead)
- Junction improvements at Park Street and London Colney
- Potential new slip road links at M25 J21
- A new bypass around Hertford
- A new River Stort crossing to the north of Harlow

Enhanced urban realm comprising better connections, attractive landscaping, greenery and high quality materials can enhance a sense of place.

**Example interventions include…**
- Hatfield Town Centre enhancements
- Welwyn Garden City Bridge Road improvements

The A414 corridor facilitates journeys to other places. Better connections and access at railway stations can improve journey experience including Hemel Hempstead and St Albans City stations. Local bus services will continue to play an important role in connecting people and places including between London Colney and St Albans and between St Albans and Hatfield.
**Sustainable Travel Towns (LTP4)**

Comprehensive packages of schemes and behaviour change initiatives aimed at achieving a significant modal shift to non-car modes and reduction in single occupancy car use, will be prioritised in key towns along the corridor and across Hertfordshire as a whole.

Packages could feature improved cycling, walking and passenger transport infrastructure and service levels, in combination with initiatives such as travel planning and marketing. Park & ride and other parking demand management approaches should also be considered to complement improvements in passenger transport, and improved provision for sustainable modes in the towns.

Sustainable Travel Towns provide the potential for greater housing density and car free development, and therefore could support the future delivery and development of local land use plans. The detailed criteria for any settlement being included in the Sustainable Travel Towns programme will be subject to further local discussion to ensure that they have the support of key stakeholders and the wider community.

**Cycle Infrastructure Improvement Towns (LTP4)**

In line with Policy 8 of the county council’s Local Transport Plan 4, a number of towns are identified where the DfT’s Propensity to Cycle Tool identifies the most heavily used cycle routes in the future. Some towns have a small number of popular routes, others have many.

Within the A414 corridor, Hemel Hempstead, Watford, St Albans, Hatfield, Welwyn Garden City, Hertford, Ware, Broxbourne and Hoddesdon have been identified as Cycle Infrastructure Improvement Towns.

**Notable Improvements and Major Schemes (LTP4)**

Included within the LTP4 recommendations for major schemes are proposals for an east west bus rapid transit system and a programme of A414 highway improvements including a Hertford bypass, if it contributes to more objectives than just the facilitation of traffic flow.
PK1 Hemel Hempstead East-West Corridor
Form an east-west, cross-town corridor which facilitates attractive and convenient journeys on foot, by bike, by bus and also by car between Hemel Hempstead railway station, the Town Centre, Jarman Park and Maylands industrial area.

PK2 Maylands and East Hemel Hempstead
Provide improved access to the Maylands Enviro-Tech Enterprise Zone and the wider East Hemel Hempstead Garden Community from within Hemel Hempstead and outside of the town by all modes of travel.

PK3 Hemel Hempstead-Park Street -St Albans Connectivity
Maintain the A414’s role as an inter-urban corridor facilitating medium and longer distance trips, and providing greater mode choice across both the A4147 and A414 to help mitigate the effects of increased traffic, including that arising from planned housing and employment growth in the surrounding area.

PK4 St Albans-Watford Corridor
Transform the A405 into a multi-modal road by diverting strategic traffic onto the motorway network, freeing up space for more local journeys by bus, bike or by car.

PK5 Chiswell Green Active Travel Improvements
Improve connectivity between Chiswell Green, Park Street and St Albans, and reduce through traffic on the B4630 corridor.

PK6 South of St Albans and London Colney Cycle & Public Transport Improvements
Provide enhanced east-west connectivity to the south of St Albans including improved public transport and active travel connections via London Colney.

PK7 St Albans - Hatfield Alban Way Enhancements
Enhance the Alban Way and promote it as a safe, convenient and attractive option for trips between St Albans and Hatfield.

PK8 St Albans City Station Accessibility
Improve accessibility by active modes to St Albans City station, particularly through strengthened connectivity between the station and the city centre.
PK9 A1057 Hatfield Road Corridor (St Albans)

Transform Hatfield Road in St Albans into an attractive and inviting high street and enhance its function as an efficient public transport corridor.

PK10 A1081 London Road Corridor (St Albans)

Make London Road a more attractive place for pedestrians and cyclists, and improve reliability of journeys along the corridor.
<table>
<thead>
<tr>
<th>Package</th>
<th>Description</th>
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| PK11 | A414 Highway Improvements (South of St Albans)  
Enhance the function of the A414 as a strategic east-west route in south central Hertfordshire through capacity and reliability upgrades. |
| PK12 | London Colney Strategic Public Transport Connectivity  
Integrate London Colney into broader east-west public transport connections within south central Hertfordshire. |
| PK13 | St Albans-Hatfield Local Connectivity  
Enhance local transport between St Albans and Hatfield and facilitate growth along the Sandpit Lane-Coopers Green Lane corridor. |
| PK14 | Hatfield College Lane/ Cavendish Way Corridor  
Reduce severance and improve conditions for pedestrians and cyclists along the College Lane/ Cavendish Way corridor, enhancing connectivity between the university campuses and Hatfield town centre. |
| PK15 | Hatfield Cavendish Way/ Queensway Corridor  
Reprioritise the main transport corridor through Hatfield town centre to reduce the dominance of motorised vehicles, improve connectivity to the surrounding area and make a more attractive entrance to the town centre. |
| PK16 | Hatfield French Horn Lane Corridor  
Increase active transport provision between Hatfield town centre and the train station by improving facilities for pedestrians and cyclists. |
| PK17 | Hatfield - Wellfield Road Corridor  
Implement sustainable transport improvements along the Wellfield Road corridor, providing greater mode choice for trips between the Hatfield Business Park and the town centre. |
| PK18 | Hatfield - St Albans Road East/Hertford Road Corridor  
Reduce severance in north east Hatfield and enhance connectivity between The Ryde residential area, the town centre and railway station. |
| PK19 | St Albans-Welwyn Garden City Connectivity  
Form a sustainable transport corridor between St Albans and Welwyn Garden City, facilitating attractive and convenient journeys on foot and by bike between the towns with links to the Symondshyde and North West Hatfield developments, as well as Hatfield Business Park. |
**PK20 A1(M) Junction 4**
Reduce congestion and increase reliability for inter-urban trips at A1(M) Junction 4 and adjoining links and junctions on the A414.

**PK21 Hatfield-Welwyn Garden City Connectivity**
Strengthen local connections between Hatfield and Welwyn Garden City by active travel modes, encouraging modal shift from private car and improving recreational facilities within the Green Corridor running between the towns.

**PK22 Welwyn Garden City Bridge Road Transformation**
To transform Bridge Road into a sustainable spine that enhances connections on foot, by bike and by bus between the Welwyn Garden City town centre and the employment zone east of the rail line, and reduce the dominance of motorised traffic.
**PK23 Hertford Sustainable Travel Improvements**
Provide a step-change in sustainable travel connectivity across Hertford through the transfer of A414 traffic out of the town centre and the provision of high quality pedestrian and cycle routes, crossings and public transport.

**PK24 Hertford Bypass**
A bypass to the south of Hertford to attract through traffic out of Hertford town centre and improve journey time reliability.

**PK25 Brookfield Connectivity**
Provide transport improvements to facilitate better connectivity and access between major growth planned at Brookfield and the wider Broxbourne area.

**PK26 Broxbourne Area - PT Improvements**
Provide a range of enhancements to public transport services and infrastructure which encourage a modal shift from private car for journeys within, into and out of the Broxbourne area.

**PK27 Park Plaza Improvements (Cheshunt)**
Provide a combination of highway and public transport improvements to facilitate planned employment-led development at Park Plaza.

**PK28 Local road improvements across Broxbourne**
Improve the local highway network across Broxbourne to help manage traffic congestion and support sustainable economic growth.

**PK29 Enhancements for pedestrians and cyclists across Broxbourne**
Provide enhanced connectivity for pedestrians and cyclists making local journeys within the Broxbourne towns through the provision of new/improved attractive walking and cycling routes.

**PK30 Harlow and Gilston Garden Town Transport Improvements**
Provide a package of multi-modal transport improvements and brand new facilities to help facilitate large-scale sustainable development in and around Harlow.

**Proposed Packages of Interventions (3)**

**Key**
- **PK#** Package
- **S#** Segment
The challenges set out earlier in this draft Corridor Strategy highlight the high levels of traffic congestion and poor east-west public transport connectivity. A Bus Rapid Transit system is identified as a priority in LTP4 and seeks to remedy some of the current east-west connectivity deficiencies in Hertfordshire and enhance interurban connectivity.

What is Mass Rapid Transit?

This strategy identifies the potential for a new Mass Rapid Transit (MRT) system spanning the A414 Corridor. A MRT system would need to link the major urban settlements and be a fast, efficient, affordable and frequent service which is an attractive alternative to the car.

A MRT can take different forms. There are many examples from across the world with some shared and unique features tailored to their particular needs.

In the Hertfordshire context, a MRT would need to tick the following boxes:
What does a MRT look like?

A MRT could take different forms. What is crucial is the type of service that is provided. It should be distinctive from a traditional bus service.

A MRT service could take the form of a high quality bus or articulated bus running along a conventional road, bus lanes and / or its own dedicated carriageway.

A dedicated highway could be guided whereby the bus runs along a concrete track which can enable vehicles to reach higher speeds on tighter alignments, such as the Cambridge-St Ives Guided Busway and the Luton-Dunstable Busway.

Vehicles could be diesel powered, hybrid electric buses which combine a conventional internal combustion engine with an electric battery; or fully electric. A MRT could even take the form of an electric tram which runs on rails, often but not always separated from other highway traffic. Furthermore, a MRT network could comprise more than one mode-type if two modes can be closely integrated.
What is the overarching aim of a Mass Rapid Transit in Hertfordshire?

A fast and reliable express inter-urban passenger transport network linking major urban settlements within the A414 corridor to facilitate sustainable travel; address the pressure of delivering significant growth in housing and jobs; and provide a step change in capacity and service provision to maintain and enhance Hertfordshire's local economy and competitiveness.
Some MRT interchanges could be located at stations on major railway corridors including the West Coast Main Line and East Coast Main Line; at edge of town locations; adjacent to major employment areas (including Maylands and Hatfield Business Park), and in town centres.

MRT interchanges will be high quality, providing a range of facilities including seating, shelters, real time information, wi-fi access and cycle parking. Some interchanges could have enhanced facilities including car parking/drop-off, lockers etc.

Walking and cycling networks will be improved to provide better local links to MRT interchanges.

Some local bus routes will be reconfigured and improved to act as feeder services to the MRT.

It will not be feasible for a MRT to connect to all places. An integrated travel network will be required for a MRT to be successful, encompassing all modes of travel - car, bicycle, walking and local bus.
Potential Service Pattern and Frequency

A Mass Rapid Transit will not necessarily comprise one single service end-to-end but instead could consist of several interlocking and overlapping services between key urban centres, reflecting current and future journey patterns.

There may not be high demand for a direct MRT service between Watford and Harlow for example, and it may be inefficient to run a single MRT vehicle between these two towns.

The graphic below provides an indication of the potential formation of different MRT services across the corridor. This shows that most MRT services will link more than two major urban areas.

To make a MRT system attractive, services should be frequent, for example every 10-15 minutes during weekday peak periods, and high quality interchange facilities will help to provide more seamless journeys even where an interchange between MRT services is required.

If there is sufficient passenger demand, there is no reason why additional MRT routes could not be provided.
How a Mass Rapid Transit could be implemented on Hertfordshire’s roads

From this...

Sections of dual carriageway run through urban centres such as Hertford and Hemel Hempstead, cutting off communities and providing limited opportunities for pedestrians and cyclists to cross.

It may not be necessary for a MRT to run along its own dedicated carriageway across the whole network. This would be costly and not necessarily provide journey times benefits. On some sections, MRT can mix with general traffic especially where there are fewer delays caused by congestion. This can enable such services to reach places where there is not enough space to accommodate dedicated carriageway.

More rural or strategic sections of the A414 dual carriageway would not be converted to single carriageway in this scenario.

To this...

Some sections of dual carriageway can be re-purposed as single carriageway roads plus dedicated carriageway for a MRT to facilitate faster and more efficient services.

The streetscape can be enhanced with additional space provided for pedestrians and cyclists.

An aerial view of how an urban dual carriageway could be converted to a single carriageway road and a dedicated MRT carriageway. Where sufficient space is available, dedicated cycle tracks can run alongside the MRT carriageway, with cycle parking facilities provided adjacent to interchanges.
Potential extensions to the Mass Rapid Transit

The draft Corridor Strategy identifies the potential need for a Mass Rapid Transit system between Hemel Hempstead, Watford and Harlow. There is further potential scope to extend a MRT in the future to serve the needs of existing or planned communities and proposed developments. At the eastern end of the envisaged MRT network, the town of Harlow is expected to expand significantly as part of a Garden Town initiative. Large developments including Gilston are planned around the town. The MRT will certainly need to serve the Gilston development which will lie to the north of the A414 corridor. A mobility hub within the Gilston development will act as a focal point for MRT services, local buses and active travel. The Gilston development will be built out over a number of years and is likely to generate travel demand not just towards Harlow (including the railway stations) but also to areas to the east, west and north. A network of sustainable transport corridors are proposed across the Garden Town to connect all of the planned new communities.

Destinations to the west would be served by a MRT through Hertfordshire, however locations to the north and east such as Bishop’s Stortford, Stansted Airport and other parts of Essex could also generate trips from Gilston and the wider Garden Town. Similarly, trips could be generated from areas of Essex including along the A414 and A120 corridors. In the absence of high-quality, frequent public transport connections east-west across Essex, an extended MRT system could provide a much improved cross-boundary public transport service.

Towards the western end of the envisaged MRT route, MRT extensions or enhanced connectivity with other passenger transport services could be considered towards Luton and Heathrow Airports.

Any MRT extensions will be subject to study and consultation with stakeholders.
Introduction

Hertfordshire County Council’s strategic transport model, COMET, is a key evidence tool for the draft A414 Corridor Strategy. The model was developed to help HCC understand how the transport network could operate in the future under different conditions.

COMET represents the county as well as surrounding areas, and includes roads as well as bus and rail services. It does not include every road or public transport service, but provides at a strategic level forecasts of how travel behaviour and volumes of trips could change in the future. The model represents weekday morning and evening peak hours and an hour representative of the weekday inter-peak between 10am and 4pm.

The model can be used to test the transport effects of a change in the number or distribution of homes, population and jobs. It can be used to test different scenarios in terms of where increases in population could occur, including particular development sites, in line with the districts’ and boroughs’ Local Plans. It can also be used to test different types of transport improvements.

COMET has been used to carry out an indicative test of the interventions put forward in this draft Corridor Strategy. Many of the interventions identified are concepts, with limited detail on how the interventions could actually be implemented. Instead, broad assumptions have been made such as the roads new bus routes could take, the number of extra lanes at an improved junction, and changes to traffic signal timings to reflect bus priority or additional pedestrian and cyclist crossings.

Methodology

Testing the impact of interventions using COMET has focused upon two scenarios, both tested for a forecast year of 2031.

The first scenario is referred to as the ‘Do Minimum’, i.e. compared to the present day, only already committed or funded transport schemes are implemented, or the minimum required for new development sites to connect to/ access the existing transport network.

The second scenario, referred to as the ‘Do Something’, assumes key interventions put forward in the draft Corridor Strategy are implemented in addition to those in the Do Minimum.

It is not possible to test all interventions because COMET is not detailed enough to test smaller scale interventions, in particular improvements to cycle routes and footways. It is however possible to make an adjustment in the model which reflects how people may be attracted to shift from private car to walking and
cycling in urban areas to represent the substantial improvements in pedestrian and cyclist facilities across the A414 Corridor, as well as broader initiatives to encourage more sustainable travel behaviour including the Sustainable Travel Towns.

Both scenarios assume planned housing and employment developments identified in current or emerging Local Plans will be implemented, including access routes and committed transport improvements.

In practice, not all of the interventions put forward in this draft Corridor Strategy will be implemented by 2031. Some may only be partially complete, such as a Mass Rapid Transit. The model assumes therefore that interventions are approved, developed, fully funded and implemented by 2031. However in reality some interventions could take longer to come forward because they are more complex to develop.

A comparison between Do Minimum and Do Something scenarios can help indicate how the transport network could be influenced by interventions. Using the COMET model it is possible to identify changes in journey times between places and on specific roads or bus services, delays which could be incurred at particular junctions, mode share between car, public transport and walk/cycle.

Predicted Outcomes

The potential outcomes of proposed interventions put forward in the draft Corridor Strategy are considered below in relation to Public Transport, Walking and Cycling and Highways.

Public Transport

An estimated 9% increase in public transport trips

Significantly reduced journey times by public transport between key urban areas along the corridor

Improved journey time reliability as buses can use priority lanes and traffic signals

Key employment areas better connected by public transport including Maylands Enterprise Zone and Brookfield Retail Centre

Increased public transport mode share by up to 5% in areas including Maylands (Hemel Hempstead), south west Hatfield, Panshanger (Welwyn Garden City) and Cheshunt

An increase in public transport trips will most likely arise with substantial improvements to services including the cross-county Mass Rapid Transit system between Hemel Hempstead, Watford, Hatfield.
services, including between Luton and Hemel Hempstead, and between Potters Bar, London Colney and St Albans. As well as brand new MRT services, there are also changes to existing service routes, the introduction of bus priority and increases in service frequencies which all increase the attractiveness of public transport.

The table above presents indicative journey time savings that could be achieved with a Mass Rapid Transit system between key urban areas along the corridor. Such reductions in journey times will make travelling by public transport between urban areas a far more attractive alternative to the car.

### Walking and Cycling

<table>
<thead>
<tr>
<th>Journey Time Comparison</th>
<th>Do Minimum Local Bus</th>
<th>Do Something MRT</th>
<th>Journey Time Saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemel Hempstead to Welwyn Garden City</td>
<td>113 mins</td>
<td>56 mins</td>
<td>-56 mins (-50%)</td>
</tr>
<tr>
<td>Watford to St Albans</td>
<td>74 mins</td>
<td>48 mins</td>
<td>-25 mins (-34%)</td>
</tr>
<tr>
<td>Welwyn Garden City to Hertford</td>
<td>61 mins</td>
<td>46 mins</td>
<td>-14 mins (-24%)</td>
</tr>
</tbody>
</table>

**Notes:** The above journey times are based on the AM peak including waiting times and the time passengers spend on board.

An estimated 5% increase in walking and cycling trips

Improved routes for cyclists encourages trips within and between towns by bike

The estimated increase in walking and cycling trips reflects the proposed improvements to walking and cycling facilities.

As noted earlier, it is not always feasible to include smaller-scale interventions in COMET including improvements to footways and cycle routes and therefore a broad assumption has been made about the predicted shift to walking and cycling that could occur as a consequence of not only physical improvements but broader initiatives which encourage sustainable travel behaviour.
Highways

Potential reduction in highway trips compared to the Do Minimum

Managed traffic delays at key junctions and on sections of the A414

Reduced rat-running on less appropriate roads such as country lanes and residential streets to avoid congestion elsewhere

A combination of improved pedestrian and cycle routes and public transport, as well as reduced highways capacity particularly in urban locations targeted for public realm improvements, will see a reduction in the number of highway trips relative to the Do Minimum.

Traffic congestion will still occur at different locations across the network and be worse in the future, but the comparison between the Do Something and Do Minimum scenarios shows that there could be reductions in traffic delays along key highway links and at junctions, for example M1 Junction 8 (Hemel Hempstead), around M1 J6, M1 J6a/ M25 J21 and M25 J21 (Bricket Wood Triangle) and in Hertford, as a result of a combination of highway interventions and improvements to alternative modes.

The comparison test using COMET has demonstrated that it could be possible, with substantial investment in a range of interventions, to help manage levels of traffic congestion by providing selective increases in highway capacity alongside a step change in the quality of alternative modes of travel which can attract people out of their cars and enable them to make healthier and less stressful journeys.

The modelling has also demonstrated that forecast increases in population and employment, assuming current travel behaviours remain similar to today, will result in increases in travel demand and congestion in the future. It is therefore essential to implement a package of measures to manage as well as cater for this demand and effect mode shift to more sustainable modes.

Whilst not explicitly modelled in COMET, behaviour change supported by targeted marketing and promotion is assumed to be part of the mix to encourage use of sustainable modes.

In addition, COMET does not explicitly model land use changes that might be brought about by changes in transport provision and accessibility, but step changes in public transport provision and reliability, as well as improved walking and cycling infrastructure, may change the nature of transport - land use interactions and travel behaviour in the future.
This section sets out initial high level cost range estimates for each intervention package, the issues surrounding the delivery of the interventions proposed in this draft Corridor Strategy, and possible funding mechanisms.

**How much will it cost?**

Many of the interventions identified in this draft Corridor Strategy are concepts and will require more detailed investigation and design. It is therefore only possible at this stage to provide indicative cost ranges. To provide an indicative guide to potential implementation costs per intervention, intervention package and cumulatively across the whole corridor, the following capital cost range estimates have been defined.

- Less than £0.5 million
- £0.5 million - £1 million
- £1 million - £2.5 million
- £2.5 million - £5 million
- £5 million - £10 million
- £10 million - £50 million
- £50 million - £100 million
- £100 million +

It is acknowledged these cost ranges are quite large, which is typical at this stage of assessment given the uncertainty on design, risks, and interactions with existing transport and non-transport infrastructure and land use.

This draft Corridor Strategy concentrates on delivery and capital costs estimates. It is acknowledged that interventions will require maintenance over a period of time following delivery and some may require additional revenue support to operate; for example the Mass Rapid Transit is likely to require dedicated staff to support operations, but is also likely to raise revenue, predominantly through fares, partly or wholly off-setting some of these costs. Such cost estimates will be estimated for interventions that are developed in more detail and taken forward in business cases that assess overall lifetime value for money.

The following delivery and capital cost range has been estimated for each of the packages. The minimum cost has been set at £50,000.
When will the interventions be delivered?

Prioritisation

Determining the priority and order to deliver interventions will be a key step for decision makers in implementing this draft Corridor Strategy alongside other plans and strategies. Given many of the interventions defined in this strategy are concepts and will be subject to further internal and external engagement and discussion, there is insufficient information at this stage to confirm priorities and the order in which to deliver interventions. Nevertheless, this section provides an overview of the key considerations that will need to be taken into account in informing these decisions.

For each package some of the interventions are categorised as either quick wins or longer term delivery goals. This is to provide decision makers with some understanding of which interventions could come forward first and those which will mark the completion of the package.

Interventions put forward in this draft strategy vary in complexity. Some are relatively straightforward and could therefore be implemented in a short timeframe. Others will be complex and require more detailed investigation and preparatory work prior to implementation. This preparatory work could take several years. Some of the particularly complex interventions may require planning permission or a Development Consent Order which will heavily influence the timetable for bringing forward interventions. Others may be closely associated with planned housing or employment developments which will influence when the interventions are required to be complete and operational.

Package cost range estimates

These are indicative cost range estimates for each package. If interventions are taken forward, they will be developed in more detail and therefore the cost estimates will be refined and the range between upper and lower estimates mostly likely narrowed.

In such cases, it is usual for an order of magnitude cost estimate to be produced for an intervention in the first instance, and for this to be refined as the scheme is designed and developed further, together with a costed quantified risk assessment.

These cost range estimates will be revised in the annexes if/when work progresses on the proposed packages.
Each of the interventions set out in this draft Corridor Strategy has a predicted timescale for delivery. These indicative timescales are based on a judgement of how long it might take for an intervention to be developed and implemented, and these assumptions will undoubtedly evolve over time. Schemes that are both worthwhile and straightforward to deliver may be prioritised. However, it does not follow that an intervention with a 0-2 year indicative timescale for delivery is necessarily a higher priority than an intervention with a 2-5 year timescale. Where a complex scheme is identified, and in particular where such a scheme has important impacts and synergies with other interventions, more detailed feasibility work could get underway as a priority.

Several factors should be considered when prioritising interventions. These are, in approximate order of importance:

**Support for an intervention**
- Having support from key stakeholders and members of the public for interventions will be crucial for their delivery.
- Once the Corridor Strategy is adopted, each intervention or package of interventions will need to be developed in more detail. This process will require engagement with individuals and organisations to seek views and any necessary approvals.
- Endorsement of the Corridor Strategy does not guarantee endorsement of interventions once they are developed in more detail. Continued engagement and collaborative working will therefore be required as interventions are developed in more detail which could influence prioritisation.

**When an intervention is needed**
- The timing for implementing an intervention could be influenced by the timing of other interventions as well as when planned development growth is expected to arise, for example additional travel demand triggering the need for a new bus service or highway improvement. In some situations there will be a desirable sequence of delivery, for example where a particular intervention may need to be implemented before another to resolve engineering feasibility issues.
- Regardless of how long an intervention takes to develop, the need for the intervention will have influence on prioritisation. For example, a relatively simple intervention with a short development timescale may not be required until a more complex intervention taking several years to develop is implemented.

**Availability of funding**
- The availability of funding will be a significant influence on prioritisation.
- Government-led funding initiatives often have a set of criteria which determines the eligibility of
certain interventions for funding.

- Funding bids can require significant time and resource from personnel without guarantee of success. If a funding bid fails, the focus may switch to other interventions which stand a better chance of being funded.
- Whilst some central government led funding initiatives come round in cycles, it is not possible at this stage to fully determine what level of funding will be available.
- Some funding will come from private developers and again this may influence when an intervention can come forward. Sometimes funding is provided up-front by developers, and on other occasions it comes forward in phases or much later in a development’s build out. Also, there may be a timescale for when funds from developers need to be spent by, and what type of interventions it can be spent on.

**External factors**

There are other factors which are not yet known or potentially beyond the control of those who will lead the development of interventions which could also influence prioritisation. Many of the interventions have not yet been developed in detail. When further investigations are underway, on-site surveys may identify a constraint which could affect the delivery of an intervention, therefore warranting a change in design and extra work which could create delays. Land ownership and protecting the environment in particular could have a significant influence.

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**Sequence of delivery**

The sequence of delivery must take into account all Corridor objectives, all modes, and wider impacts. This section uses Hertford as an example to demonstrate the need for a wider package of sustainable transport measures alongside highways investment, in this case a bypass, beyond Hertford.

**Removing and diverting through traffic**

The **Hertford Bypass** is a proposed strategic intervention which is likely to have an effect not just on Hertford but the wider A414 corridor. It would be packaged alongside a set of improvements to pedestrian and cycling infrastructure, urban realm and passenger transport services within Hertford. These improvements will only be made feasible if strategic traffic is transferred onto the new bypass, which will free up road space within the town and help address air quality issues and improve town centre viability.

**Wider impacts and mitigation**

Testing of the proposed bypass using HCC’s COMET strategic transport model has indicated that there could be some knock-on impacts on other parts of the A414 corridor’s highway network. This is to be expected, as traffic will no longer encounter the delays currently experienced when travelling through Hertford and the route will become more attractive.

One of the impacts further west could be additional traffic heading in the westbound direction approaching **Hatfield** on the A414. The series
of junctions and highway links around A1(M) Junction 4 (adjacent to the large Tesco supermarket north of Hatfield) currently experiences significant congestion especially during weekday peak periods. Traffic can typically queue on the A414 westbound approach to the junction with Mount Pleasant Lane where the 2-lane dual carriageway reduces to a single lane.

Modelling has shown that some westbound traffic could divert off the A414 at the Mill Green grade-separated junction and instead route through the centre of Hatfield, for example via St Albans Road East, to continue a journey onwards towards more western parts of the A414 corridor including St Albans, Watford, Hemel Hempstead and beyond. This is not a desirable outcome as additional traffic rat-running through Hatfield will have a negative impact on residents and businesses with increased congestion and noise, in addition to traffic which may already be rat-running through Hatfield to avoid congestion on the A414 north of the town around A1(M) Junction 4. To counter this effect, and to help facilitate the aims of rejuvenating Hatfield town centre as part of the Hatfield 2030+ initiative, a series of intervention packages are proposed (originally developed as part of the Hatfield Transport Strategy and subsequently absorbed into the emerging South Central Hertfordshire Growth and Transport Plan and now the A414 Corridor Strategy) which are aimed at giving greater priority to pedestrians and cyclists and reducing capacity for road vehicles.

**Timing**

It will be crucial therefore for these improvements in Hatfield to be in place in time for the opening of the Hertford Bypass. Indeed, as they have wider benefits, they could come forward much earlier. These improvements will make streets through Hatfield less attractive for cross-town journeys which neither begin nor end in Hatfield. These journeys use streets that are predominantly residential in character and have an important local function facilitating access to schools, local shops, and businesses. Therefore it is more appropriate for cross-town journeys to use more strategic roads such as the A414 and A1(M).
As a consequence of both the Hatfield 2030+ initiative and the Hertford Bypass, traffic congestion is expected to increase in the vicinity of A1(M) Junction 4 north of Hatfield. It is important that the level of congestion does not increase in the future to such a point that it has a significant detrimental effect on Hertfordshire’s economy, for example people unable to get to work or goods unable to be delivered on time. Therefore, a package of improvements are envisaged around A1(M) Junction 4 that will help to ensure levels of delays in the future are at least no worse than they are at present. This could be challenging, especially given the forecast increases in traffic, which will necessitate consideration of public transport options.

Public Transport
The ambition of the A414 Corridor Strategy is ultimately to provide an attractive public transport alternative to the car for journeys being made between the major urban centres along the corridor, including through-trips affecting Hatfield’s residential streets. The corridor transport network should continue to enable an acceptable level of personal and economic opportunity while reducing negative health and environmental impacts. A shift from private car to public transport will therefore require a dramatic improvement in public transport service quality.

A Mass Rapid Transit (MRT) could help to provide this improvement. However, it could require reallocation of road space on the A414 for dedicated MRT running lanes. The section of the A414 running through Hertford will be transformed into a multi-modal corridor with the current dual carriageway converted into a single carriageway road for general traffic and a dedicated carriageway for MRT services as well as space for cyclists and pedestrians. Without this, it will not be feasible for MRT services to provide reliable journey times as services will be delayed in the same queues as general traffic. Similarly, in Hatfield, improvements to the town’s road infrastructure should facilitate infrastructure which prioritises the movement of MRT services through the town.

The MRT package requires the provision of the Hertford bypass in order to free up road space on the existing A414 for dedicated running lanes, and the Hertford bypass requires sustainable travel packages and road space reallocation in adjacent urban centres in order to mitigate its potential to increase demand for travel by car. The cross-county MRT could be delivered in phases. This draft strategy has set out a
possible five service routes as part of an overarching MRT package. Not all of the route services will be implemented concurrently.

**How could the intervention packages be funded?**

Funding will be required to deliver the intervention packages set out in this strategy. Most if not all of the interventions will require some funding which is outside of local government budgets. External funding sources will therefore need to be tapped into.

At this early conceptual stage, it is not possible to pin point exactly how and when interventions will be funded. There is uncertainty surrounding what level of funding is or will be available and what types of interventions funding is targeted towards.

The following is intended to act as a high level guide to the potential funding areas that could be tapped into.

External funding can be grouped into the following:

- Developer contributions
- Government funding streams
- Private sector partnerships
- Charities and private sector grants

**Developer contributions**

Developer contributions (often in the form of Section 106 contributions) are paid by private sector developers to local authorities in order to mitigate the impact of new homes and other types of developments where it has been demonstrated that extra demand will be placed on local facilities and infrastructure. The procedures for obtaining contributions has changed in recent years and Section 106 contributions can no longer be pooled from multiple developers to the same extent. Instead, under new regulations new Section 106 contributions have to be agreed for specific purposes at the time that planning permission is granted, with no more than five specific contributions being collected for any single specific project. If a specific project cannot be taken forward, the specific contribution cannot be used for another purpose.

Since April 2010, local planning authorities have been permitted to introduce a Community Infrastructure Levy (CIL) in their area. The purpose of CIL is to raise funds from developers who are undertaking new building projects, to help pay for infrastructure that is needed to support new development. It can be used to fund a wide variety of infrastructure including transport schemes, flood defences, schools, hospitals and other health and social care facilities, parks, green spaces and leisure centres.

CIL replaces Section 106 contributions for many forms of infrastructure, although Section 106 agreements can still be used for more limited purposes. CIL can be used more flexibly to fund projects from multiple developments. Potential revisions to CIL are under consideration by the Government at the time of writing.

Many of the Local Planning Authorities in Hertfordshire will be preparing a CIL Charging Schedule, or already have one in place, which should describe an approach to applying CIL. Many of the interventions identified in this strategy lie close to where planned housing and employment development will occur (as this was a key determinant in
identifying the need for such infrastructure) and therefore there is potential opportunity to obtain some developer contributions. However, it is quite likely that the level of CIL collected will not be sufficient to cover all infrastructure needs. Local Planning Authorities in conjunction with the County Council and other key stakeholders will therefore need to prioritise much needed infrastructure investment through their Infrastructure Delivery Plans (IDPs) which form part of a Local Plan, taking into account funding constraints and other factors. It is an expectation that interventions identified in this strategy will need to be incorporated into IDPs.

**Government funding streams**

There are several different central government bodies that can offer funding that could be used to help deliver elements of the proposed intervention packages.

Funding is more typically obtained through competition led by local authorities and/or the Local Enterprise Partnership. There is no guarantee that funding will be awarded, and often bids need to be supported by robust evidence to demonstrate to assessors that the investment aligns with the funding criteria, yields benefits and is value for money, and meets local and central government objectives.

This Corridor Strategy will act as a basis for making such bids by setting interventions in the context of wider policy and growth priorities. As and when interventions are taken forward, more detailed investigations should be undertaken, including additional data gathering and modelling (if proportionate) which will add weight to bids and may indeed be a requirement for a bid to be considered seriously, including development of Business Cases line with government guidance.

Funding competitions set requirements in terms of the period over which funding will be provided and by when it needs to be spent; this may require interventions to be ‘shovel ready’: in other words, all preparatory works have been completed, including a well-developed Business Case and scheme design, and the intervention is ready to be implemented.

This means that local authorities and partnering bodies need to progress the development of interventions to a sufficient level of detail even when there remains some uncertainty about how exactly they will be funded.

The vast majority of interventions put forward in this strategy are described in a conceptual level of detail therefore it is quite likely that further more detailed investigations and design work will be required to get them to a ‘shovel ready’ position, or closer to it, prior to making funding bids.

Some examples of past and present Central Government-led funding competitions are shown overleaf.
Private Sector partnerships

Where interventions have the potential to offer employment or have the potential to be profitable, there might be interest from private sector organisations to be involved.

It is important to recognise however that although private/public sector partnerships have many upsides including covering initial start-up costs and maintenance costs, they can also result in a loss of control by the public sector. As public sector budgets come under increased pressure, interventions which are revenue earning could, if carefully managed and operated in accordance with legislative guidelines, be a useful source of income.

Charities and private sector grants

There are charities, educational organisations and private trusts/firms that may offer various grants for different types of interventions. These can be wide ranging from those that produce usable data, to those that target particular sectors of the population such as children or those with disabilities.

Due to the nature of these grants it is difficult to give precise information as to what the future grants will be for and who will be offering them. These funding sources are likely to be limited mostly to those softer measures proposed such as active travel seminars and school cycling education where data collection can occur and impact be measured. It may be possible that large employers and educational institutions have some funding opportunities that would align with some of the proposed interventions, such as those around behaviour change and sustainable travel plans.

Hertfordshire Local Enterprise Partnership (LEP)

Hertfordshire Local Enterprise Partnership (LEP) works in partnership with private and public sector partners to secure investment and accelerate economic growth for residents, businesses and the wider community. LEPs bid for central Government funding from the Local Growth Fund – known as Growth Deals – to secure key projects for economic growth in their area.
through a competitive process.

Hertfordshire LEP’s priorities for economic growth are delivering modern digital and transport connections across the county to develop prosperous town centres to live and work; creating lasting links between schools and businesses to create skilled workforces that meet the needs of local employers; stimulate innovation and business growth by investing in research and development and creating the right conditions to attract further inward investment; and providing support to small businesses to achieve their potential.

Hertfordshire LEP has so far secured £265.45m from the Local Growth Fund. This has the capacity to deliver 11,000 new jobs, 16,500 new homes and unlock £460m public and private investment by 2024/25. In other parts of Hertfordshire, Local Growth Fund money secured by the LEP is being invested in a wide variety of transport related projects including improved cycle routes, footways and junctions, especially where these are linked to housing and economic growth.

The LEP has flexibility on determining which projects meet the principles of Hertfordshire’s Strategic Economic Plan. Funding decisions on projects are made at a local level through the LEP Board which sets the overall strategic vision and priorities for economic development. The Board is made up of local business, academic and not-for-profit representatives.

The LEP is the channel for funding from the DfT for large infrastructure projects. For example, the proposed A120 Little Hadham Bypass west of Bishop’s Stortford, has received £27.4m of funding through the LEP. The LEP could be a source of funding for some of the intervention packages put forward in this draft Corridor Strategy.

**Major Road Network**

The A414 route currently forms part of the county’s Primary Route Network (PRN). The PRN designates roads between places of traffic importance across the UK, with the aim of providing easily identifiable routes to access the whole of the country. Primary routes are marked green on most road maps and road signs are green with white and yellow text. The A41 and A10 also form part of Hertfordshire’s PRN. Not all A-roads however form part of the PRN.

Local Highway Authorities including Hertfordshire County Council are funded to maintain their local road networks with sustained grant funding and other incentive-driven competitive schemes. This is chiefly made up of the Highways Maintenance Fund and the Pothole Action Fund. Funding has also been allocated over the same period for small local roads schemes from the Integrated Transport Block.

The Government is proposing to create a **Major Road Network** (MRN), of approximately the same mileage as the network for which Highways England is responsible. The proposal is to create a specific new funding stream dedicated to investing in this network and raising performance.

Although not confirmed at this stage, the current assumption is that major routes including the A414 will form part of the MRN. This could present significant opportunities to secure investment in the corridor and deliver some of the packages of interventions set out in this draft Corridor Strategy.
The provision of high quality transport infrastructure and services is an essential component in the functioning of urban and rural areas, and in the delivery of sustainable and accessible development. Transport facilitates access to work, school, leisure and vital services such as healthcare. Sustainable travel involving an element of walking and cycling may have health benefits.

Businesses are reliant upon an efficient, safe and reliable transport system in order to attract employees and customers, as well as for the transport of goods and services. As well as catering for existing requirements, transport can help unlock or be a constraint on new opportunities, both for economic development and for individual wellbeing.

Good planning practices can help identify the conditions needed to operate an efficient transport system and facilitate growth proposals. If the planning process is not equipped to deal with these requirements, the delivery of sustainable development could be delayed or prevented, with long lasting negative consequences on towns and communities.

Hertfordshire is facing significant levels of housing and employment growth which are expected to have an impact on the county’s local and strategic transport systems and networks in the short, medium and long term. In a post-recession economy, delivering economic growth has become one of the UK Government’s main priorities. However, this is set against a backdrop of increasing competition for funding to invest in new infrastructure, and the need to demonstrate a strong case for the role of transport in enabling sustainable growth.

The transport needs of large-scale residential and employment developments coming forward within Hertfordshire and surrounding areas may be reliant upon funding from Central Government and elsewhere, and this funding may only be obtained if a good case is made for investment which is based on robust evidence and collaborative planning.

Set against this backdrop, Hertfordshire County Council has developed this draft A414 Corridor Strategy to confirm the key current and future growth and transport challenges and proposed set of intervention packages in what is one of the most vital transport corridors spanning the county.

The A414 Corridor is a strategic east-west multi-modal transport corridor extending from Harlow in the east to Hemel Hempstead in the west. In addition, the A405 extending down from St Albans towards Watford, and the A10 from the west of Hertford to M25 Junction 25, also act as important cross-county routes.
The provision of transport infrastructure and facilities varies significantly along the length of the corridor.

Today different parts of the corridor experience traffic congestion on roads including to the south of St Albans at the A414/A1081 London Colney Roundabout, the A414/A405 Park Street Roundabout and at M25 J21a (Bricket Wood), to the north of Hatfield at A1(M) Junction 4, and in Hertford.

The A414, A10 and A405 roads themselves carry a lot of traffic between towns along the corridor but at a local level the presence of wide roads and fast moving traffic can disconnect local communities and create issues for people travelling on foot or by bike.

Current levels of traffic congestion will only be exacerbated by the expected large growth in housing, population and employment in the coming years. At least 50,000 new homes and a similar number of new jobs are proposed within the corridor.

There very limited opportunities for continuous travel by public transport, and in many cases a journey by public transport may require interchanging between relatively infrequent bus services or taking trains into and out of London.

The planned housing and employment growth will generate new demand for travel and place greater pressure on the corridor’s transport infrastructure and services which already experience severe pressure today.

A co-ordinated and consistent strategy for the A414 corridor is therefore necessary to ensure the it can adequately cater for a diverse range of journey lengths and purposes in the short, medium and long term, and facilitate sustainable growth.

This consultation report sets out the rationale for the Corridor Strategy, supporting evidence and proposed packages of interventions to equip the corridor for the short to long term.

Eleven objectives were defined to structure the Corridor Strategy:

- **Support sustainable economic growth**
- **Improve inter-urban connectivity**
- **Define an appropriate route hierarchy**
• **Improve operation, resilience and reliability of the transport network**
• **Enhance sense of place and town centre viability**
• **Enable and facilitate modal shift to active travel**
• **Enable and facilitate modal shift to public transport**
• **Implement demand management to support efficient use of the network and enable behaviour change**
• **Incorporate the benefits of new technology to support efficient use of the network and enable behaviour change**
• **Ensure safe and secure travel**
• **Deliver better environmental outcomes**

For the purposes of analysis and developing more tailored interventions to help address key growth and transport challenges, the corridor was divided into fourteen segments. These segments are intended to reflect how the corridor currently functions differently along its length, and how it is predicted to function in the future, in particular the types of trips made on different parts of the corridor.

Some segments are more strategic in character, carrying a greater proportion of longer distance trips which use the A414 corridor to travel elsewhere in Hertfordshire and beyond, recognising that the A414 itself links together some nationally significant north-south motorways such as the M1 and A1(M).

Other segments carry more of a mixture of shorter and longer distance trips which reflects the polycentric pattern of urban settlements which are quite closely spaced and generate a complex pattern of trips by different modes.

This draft Corridor Strategy has drawn from existing adopted plans and strategies to develop a list of interventions which seek to address the growth and transport challenges in the corridor. Other plans and strategies include the Hatfield 2030+ Transport Strategy, Broxbourne Transport Strategy and Hertfordshire County Council’s draft South West Hertfordshire Growth and Transport Plan.

Thirty packages have been developed, each containing two or more specific interventions. Interventions are wide ranging in scale and the type of users they aim to benefit.

In line with the priorities of Hertfordshire County Council’s Local Transport Plan 4, this draft Corridor Strategy recognises the opportunities for encouraging modal shift particularly for shorter distance trips within towns and in some situations between towns, from car to walking and cycling.
If safe, attractive and more direct routes can be provided for pedestrians and cyclists, this could have a beneficial effect on the health and wellbeing of the corridor’s population. New and much improved inter-urban cycle routes alongside key roads for instance will help facilitate faster and more convenient journeys by bike between settlements, for example from London Colney to Hatfield and from Hemel Hempstead to St Albans.

Clearly walking and cycling will not be viable means of travel for everyone. The corridor’s traffic congestion issues partly stem from the fact there is no fast, frequent public transport link between key towns. The private car is still deemed to be the most convenient door-to-door mode of travel, despite increasing levels of congestion. In recognition of future increases in traffic delays attributed to population growth across the corridor and beyond, there is an opportunity to achieve a significant modal shift or to encourage more sustainable travel behaviours for new residents and employees within the corridor. The implementation of a cross-county Mass Rapid Transit system could be a critical scheme for achieving significant modal shift. This transit system would link key settlements, employment locations and transport hubs, and provide a fast, frequent alternative to the car with some dedicated infrastructure to enable Mass Rapid Transit services to avoid areas of traffic congestion and get people to their destinations in a comfortable and more efficient way.

A Mass Rapid Transit system will need to be planned very carefully and cannot be delivered in its entirety in the short term. In recognition therefore of increasing levels of traffic congestion, the draft Corridor Strategy identifies the need for more targeted highway capacity improvements to alleviate the more immediate traffic congestion issues, such as at the A414/A1081 London Colney Roundabout. In some situations, highway capacity improvements will be necessary to reduce the occurrence of rat-running along less appropriate routes through residential areas or on country lanes. A bypass around Hertford will help unlock opportunities for a much improved sustainable transport network comprising high quality cycle and pedestrian routes and a Mass Rapid Transit system which will not be possible given the levels of traffic currently using the A414 through the town.
It is important to note that many of the interventions put forward in this draft Corridor Strategy are concepts. Following consultation on this draft Corridor Strategy and the consideration of feedback, if there is support for packages of interventions and they are agreed as being an appropriate way forward, there will need to be a process of assessing proposals in more detail using existing or new evidence tools including transport models. This will help to refine and validate proposals in the local and strategic context.

Furthermore, if circumstances change, for example key housing and employment developments do not come forward in the way that has been envisaged in this strategy, or other priorities emerge, a review of the Corridor Strategy or specific Segments may lead to a potential revision or evolution of the proposed Packages.

If supported and approved, interventions will be adopted by Hertfordshire County Council, alongside partner authorities, and entered into their established ranking processes and forward programme of works, as well as Local Planning Authorities’ IDPs. This will prioritise interventions and confirm if/when more detailed work needs to be carried out in order to eventually implement interventions.

Not until more detailed investigations are completed which will involve engagement with communities and stakeholders on a project-by-project basis will interventions be implemented on the ground.

In many cases, these will need detailed business cases to be developed that assess overall value for money and wider impacts.

Continual recognition and monitoring of potential funding opportunities is critical. Local Authorities are increasingly reliant on making bids to funding competitions often promoted by Central Government. It is important therefore that a robust case can be put forward for successfully obtaining funds. The availability of sufficient funding will play a crucial role in the implementation of proposals put forward.

**Next Steps**

This draft A414 Corridor Strategy is being consulted on with members of the public and stakeholders from December 2018 until February 2019.

Following the consultation, there will be a period in which Hertfordshire County Council gives consideration to feedback and makes any necessary revisions to the Corridor Strategy between February 2019 and May 2019.

It is the County Council’s aim to adopt a finalised A414 Corridor Strategy in Summer 2019.
## Acronyms

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<tr>
<th>Acronym</th>
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<tbody>
<tr>
<td>AQMA</td>
<td>Air Quality Management Area</td>
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<tr>
<td>BRE</td>
<td>Building Research Establishment</td>
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<td>CC</td>
<td>County Council</td>
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<td>CIL</td>
<td>Community Infrastructure Levy</td>
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<td>COMET</td>
<td>County Council Transport Model</td>
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<td>Department for Transport</td>
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<td>EV</td>
<td>Electric Vehicle</td>
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<td>EZ</td>
<td>Enterprise Zone</td>
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<td>GTP</td>
<td>Growth and Transport Plan</td>
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<td>Highways England</td>
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<td>HGV</td>
<td>Heavy Goods Vehicle</td>
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<td>Infrastructure Delivery Plan</td>
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<td>Local Sustainable Transport Fund</td>
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<td>MHCLG</td>
<td>Ministry of Housing, Communities and Local Government</td>
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<td>Major Road Network</td>
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<td>MRT</td>
<td>Mass Rapid Transit</td>
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<td>NCN</td>
<td>National Cycle Network</td>
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<td>PRN</td>
<td>Primary Route Network</td>
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<td>Public Transport</td>
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<td>SEP</td>
<td>Strategic Economic Plan</td>
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<td>SRN</td>
<td>Strategic Road Network</td>
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<td>S106</td>
<td>Section 106 agreement (Town and Country Planning Act 1990)</td>
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<td>TfL</td>
<td>Transport for London</td>
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Glossary

A

Accessibility
Enabling people to access key services at a reasonable cost, in reasonable time and with reasonable ease.

Active Travel
Journeys undertaken by physically active means such as walking or cycling.

Air Pollution
A substance which has harmful or poisonous effects which has been released into the air.

Air Quality Management Area (AQMA)
Through the Local Air Quality Management system, local authorities are required to assess air quality and carry out reviews. Local authorities must measure air pollution with the aim of making sure that the national air quality objectives are achieved to protect people’s health and the environment. If a local authority finds any places where the objectives are not likely to be achieved, it must declare an Air Quality Management Area.

Asset Management
The approach used to prioritise road maintenance work.

Autonomous Vehicles
A vehicle (including cars, vans, lorries or similar vehicles also known as a driverless cars, self-driving car and robotic cars) that is capable of sensing its environment and navigating without human input.

B

Behaviour Change
A transformation or modification of human behaviour.

Biodiversity
The variety of plant and animal life in a particular habitat which is usually considered to be important and desirable.

Brownfield
Urban sites with the potential for development which has previously been built on or used for development.

Bus Priority
Various techniques and measures aimed to reduce journey times and improve the reliability of bus services including; lane segregation, traffic management, traffic signal control and bus stop improvements.

Bus Rapid Transit
A good quality, high capacity passenger transport system.

Bypass
A road passing round a town or its centre to provide an alternative route for through traffic.

C

Carbon Emissions
The release of carbon into the atmosphere which can cause damage to the environment.

Community Infrastructure Levy (CIL)
A planning charge, introduced by the Planning Act 2008 as a tool for local authorities in England and Wales to help deliver infrastructure to support the development of their area.

**Community Rail Partnerships**
The support of railway lines and stations by local organisations comprising railway operators, local councils, and other community organisations, and rail user groups.

**Congestion**
Road congestion occurs when an additional vehicle on the network impacts on the journey time of all other vehicles using the network at that time.

**Connected Autonomous Vehicles**
Autonomous or driverless vehicles are connected through mobile data networks and other dedicated communications protocols that facilitate interactions with other vehicles, other devices or machines or with infrastructure.

**Crossrail 2**
A newly proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

**Cycle Infrastructure Improvement Towns**
Towns where the Propensity to Cycle Tool has identified the most heavily used cycle routes in the future.

**Demand Management**
The application of strategies, interventions and policies aimed to reduce travel demand or to redistribute this demand.

**Demand Responsive Transport**
An advanced form of shared passenger transport which has flexible routing and scheduling of small to medium sized vehicles operating in according to passengers’ needs and demand.

**Department for Transport**
The government department works with agencies and partners to support the transport network that helps UK businesses and gets people and goods travelling around the country. The department plans and invest in transport infrastructure to keep the UK on the move.

**Deprivation**
The damaging lack of material benefits considered to be basic necessities in a society.

**Economic Growth**
The increase in the amount of goods and services produced per head of the population.

**Enterprise Zone**
Enterprise Zones are part of the Government’s wider Industrial Strategy to support businesses and enable local economic growth by offering businesses incentives such as tax incentives to encourage investment and growth.

**Greenbelt**
Green Belts were made possible by the Town and Country Planning Act 1947 referring to an area that is kept in reserve for an open space, most often around larger cities to prevent the urban sprawl and help protect agricultural activities and the unique character of rural communities. The Metropolitan Greenbelt refers to the statutory...
Greenbelt around London which compromises parts of greater London and six surrounding counties including Hertfordshire.

**Greenfield**
Greenfield land is undeveloped land in a city or rural area either used for agriculture or landscape design, or left to evolve naturally. These areas of land are usually agricultural or amenity properties being considered for urban development.

**Growth and Transport Plans**
Growth and Transport Plans (GTPs) cover different sub areas of Hertfordshire and consider current and future challenges and identify interventions aligned to LTP objectives.

**Habitats Regulation Assessment**
The Planning Act 2008 local authorities have a legal obligation to consider impacts which might have an adverse effect to protected habitats. The assessment identifies any aspects of the A414 Corridor Strategy that would have the potential to cause a likely significant effect on Natura 2000, European sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites).

**Heavy Goods Vehicles (HGVs)**
A commercial vehicle also known as large goods vehicle (LGV) with a gross vehicle weight of over 3.5 tonnes.

**High Speed 2 (HS2)**
A planned high-speed railway in the United Kingdom, directly linking London, Birmingham, the East Midlands, Leeds and Manchester.

**Highway**
Under the Highways Act 1980, a local highways authority has a duty of care to maintain the safety and usability of public roads. A highway is a way over which all members of the public have the right to pass and repass. Their use of the way must be as of right, not on sufferance or by licence. Hertfordshire County Council is the Highway Authority for all highways within the County other than trunk roads and motorways, which are the responsibility of the Department for Transport and Highways England.

**Highways England**
Highways England operates, maintains and improves England’s motorways and major A roads.

**Implementation Plan**
A plan which describes how the strategy and policies will be delivered.

**Intelligent Transport Systems**
The use of technology to improve safety, efficiency, environmental performance and the journey experience for transport users.

**Inter-urban**
Connecting cities or towns.

**Intra-urban**
Within an urban area.

**Land Use Planning**
The future planning of housing and development of land.

**Light Goods Vehicles (LGVs)**
A commercial carrier vehicle with a gross vehicle weight of not more than 3.5 tonnes.
Local Enterprise Partnership (LEP)
A voluntary partnership between local authorities and businesses which help determine local economic priorities and lead economic growth and job creation. The Hertfordshire LEP maintains a pipeline of projects which support the delivery of their Strategic Economic Plan (SEP) https://www.hertfordshirelep.com/.

Local Governance
The system of Local Authorities electing representatives to be responsible for a range of vital public services for people and businesses in defined areas.

Local Highway Authority
A local highway authority is an organisation that is responsible for the maintenance of public roads. The current role of a highway authority is defined in the Highways Act 1980 and the role is held by a large number of different groups. Hertfordshire County Council is the local highway authority in Hertfordshire.

Local Sustainable Transport Fund
Funding made available through the Department of Transport which helped local authorities to deliver sustainable transport projects that support economic growth.

Local Plan
A local plan sets out local planning policies and identifies how land is used, determining what will be built where. Adopted Local Plans provide the framework for development across England. Local Plans are typically prepared by the Local Planning Authorities, including district/borough authorities and unitary authorities.

Local Planning Authority
A local planning authority (LPA) is the local government body that is empowered by law to exercise urban planning functions for a particular area. In Hertfordshire the districts and boroughs are the Local Planning Authorities.

Local Transport Plan

The Transport Act 2000 introduced a statutory requirement for local transport authorities to produce a Local Transport Plan (LTP) every five years and to keep it under review. The plan sets out the statutory framework and policies on how transport can help deliver a positive future vision by considering safe and efficient travel while supporting economic growth, meeting housing needs, improving public health and reducing environmental damage. The plan also considers how future planning decisions and emerging technology might affect the way transport needs to be provided in the longer term.

Mass Rapid Transit
A public transport service including bus, tram or similar which carries multiple passengers on a prioritised route. A bus rapid transit is a form of Mass Rapid Transit

Modal Shift
The transfer of people from one means of transport to another for regular journeys, e.g. a car driver deciding to take a bus to travel to work.

Multi Modal
The occurrence of several different forms of travel activity, including car, bus, cycle and pedestrians.

Multi Modal Transport interchange
An interchange in the form of a station or stop between one mode of any type of transport and another, for example between bus and train. It also considers interchange between public transport and the feeder modes used to get to and from the interchange for example walk, cycle or car.
N

National Planning Policy Framework
The National Planning Policy Framework sets out government’s planning policies for England and how these are expected to be applied. The NPPF draft policy paper can be found by visiting https://www.gov.uk/government/publications/national-planning-policy-framework--2.

Network Management
Enabling the highway to perform its primary function of moving people and goods.

Network Rail
Owns and operates the railway infrastructure in England, Wales and Scotland on behalf of the nation.

O

Open Data
The sharing of data by making data freely available, easy to access and, be re-used, built on and redistributed by anyone.

P

Passenger Transport
Passenger transport refers to transport available for use by the general public including bus, coach, rail and taxi.

Performance Indicator
A type of performance measurement which will be used to monitor the progress and effectiveness of the Local Transport Plan.

Primary Route Network (PRN)
The primary route network designates roads between places of traffic importance across the UK, with the aim of providing easily identifiable routes to access the whole of the country.

Public Realm
Space around, between and within buildings that are publicly accessible, including streets, squares, parks and open spaces.

Public Rights of Way
Public Rights of Way are all minor highways and give people the legal right to pass and re-pass along a specific route through grounds or property (often belonging to another), including:

- Footpaths – a right to pass on foot only, usually encompassing wheelchair users, mobility buggies, and with dogs, pushchairs, etc.;
- Bridleways – a right to pass on foot, horseback or leading a horse and, since 1968, a right for bicycles provided they give way to other users;
- Restricted Byways – a public right of way on foot, on horseback or leading a horse, and for vehicles other than mechanically propelled vehicles (such as horse-drawn carriages and pedal cycles);
- Byways Open to All Traffic – a highway over which the public have a right of way for vehicular and all other kinds of traffic, but which is used by the public mainly for the purpose for which footpaths and bridleways are so used.

R

Rat Running
Motorists using alternative and potentially inappropriate roads to avoid traffic congestion elsewhere.

Real Time Information
An information system which tracks buses and trains to provide live arrival and departure times and display these on digital information boards or smart devices.
Section 106
A legal agreement between an applicant seeking planning permission and the local planning authority used to mitigate the impact of new developments on the local community and infrastructure.

Shared Mobility
A transport strategy which encourages the shared use of a vehicle, bicycle, or other transportation mode.

Shared Space
An urban design and planning approach that seeks to minimise the segregation between different users of the highway. This can be done by removing features such as kerbs, road surface markings, traffic signs and traffic lights.

Sharing Economy
A trend which is shifting the conventional ownership model of purchasing vehicles and private transport to sharing transport services for example car clubs, bike sharing, lift sharing and on demand transport.

Sites of Special Scientific Interest (SSSI's)
Sites protected by law to conserve their wildlife or geology.

Smarter Choices
A collective title for a range of measures that can encourage reduced car use which can include all forms of travel planning, information provision, marketing, car sharing, tele conferencing and home working.

Socio-economic
The interaction of social and economic factors.

Social Exclusion
Social exclusion is a complex and multi-dimensional process. It involves the lack of resources, rights, goods and services, and the inability to participate in the normal relationships and activities, available to the majority of people in a society, whether in economic, social, cultural or political arenas. It affects both the quality of life of individuals and the equity and cohesion of society as a whole.

Strategic Environmental Assessment (SEA)
A report required by the European Union and implemented through the Environmental Assessment of Plans and Programmes Regulations 2004 which explaining the possible environmental impacts of the A414 Corridor Strategy.

Strategic Road Network
The highway network made up of motorways and trunk roads, the most significant ‘A’ roads, managed by Highways England.

Supporting Documents
Documents covering a particular topic area and supports the Local Transport Plan’s policies and objectives and include packages of smaller schemes and activities. This includes Growth and Transport Plans.

Sustainable Transport
Sustainable transport refers to transport that is socially, environmentally and economically sustainable and supports the source of an indefinite supply of energy (e.g. walking and cycling).

Sustainable Travel Town
Sustainable Travel Towns are about making a significant change to travel within an urban area, encouraging intra-urban journeys over inter-urban ones, and increasing the levels of walking and cycling.
services within or between urban areas.

**Transport User Hierarchy**
Policy which presents a shift in emphasis to increase rates of travel by more sustainable modes by increasing the attractiveness of alternative forms of travel so that those trips that can only feasibly be made by the car can be undertaken without suffering the effects of a significant worsening of congestion.

**Travel Plans**
Travel Plans are a way of assessing and mitigating the negative transport impacts of development in order to promote sustainable development.

**Ultra-Low Emission Vehicles (ULEVs)**
Vehicle that use low carbon technologies, emits less than 75g of CO2/km from the tailpipe and/or is capable of operating in zero tailpipe emission mode for a range of at least ten miles.
Annexes

Segment Priorities Outline

Segment 1 Hemel Hempstead
Segment 2 Hemel Hempstead-St Albans-Park Street
Segment 3 Watford-Garston
Segment 4 Bricket Wood Triangle
Segment 5 Park Street-How Wood-Chiswell Green
Segment 6 Park Street-St Albans-London Colney
Segment 7 St Albans-London Colney-Hatfield
Segment 8 Hatfield
Segment 9 Welwyn Garden City-Hatfield
Segment 10 Hatfield-Welwyn Garden City-Hertford
Segment 11 Hertford
Segment 12 Hertford-Rush Green
Segment 13 Broxbourne Towns
Segment 14 A10-Harlow

(15) Mass Rapid Transit Vision and Options
(16) Sifting and Packaging
(17) Place and Movement Assessment
Key Priorities — by theme

**Local Urban Connectivity**
Prioritised connections within towns for short distance trips

**Strategic Inter-Urban Connectivity**
Prioritised connections for longer distance trips with a focus on journey time reliability

**Rail Feeder Access**
Prioritising access to train stations to facilitate better access to other parts of Hertfordshire, Greater London and beyond

**Logistics Accessibility**
Provide safe and efficient access for logistics to travel to key hubs on the most appropriate roads.

**Inter-urban Non-Car Connectivity**
New and improved mass transit and cycling routes for town-to-town trips to make these a viable and attractive alternative to the car

**Enhanced Place Function**
Protection and enhancement of key urban areas, including preserving heritage and the unique character of places

**Mode Equality**
Recognising the complexities of the transport network, managing the needs of a mixture of modes and ensure routes are used in the most appropriate and efficient way for the benefit of all

**Active Travel Priority**
Priority given to pedestrians and cyclists at key junctions, along routes and across neighbourhoods, to encourage healthy and safe journeys

**Technology Focus**
Using advanced, innovative technology to deliver benefits to the transport network, to improve efficiency and enable more joined up journeys.
Segments

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