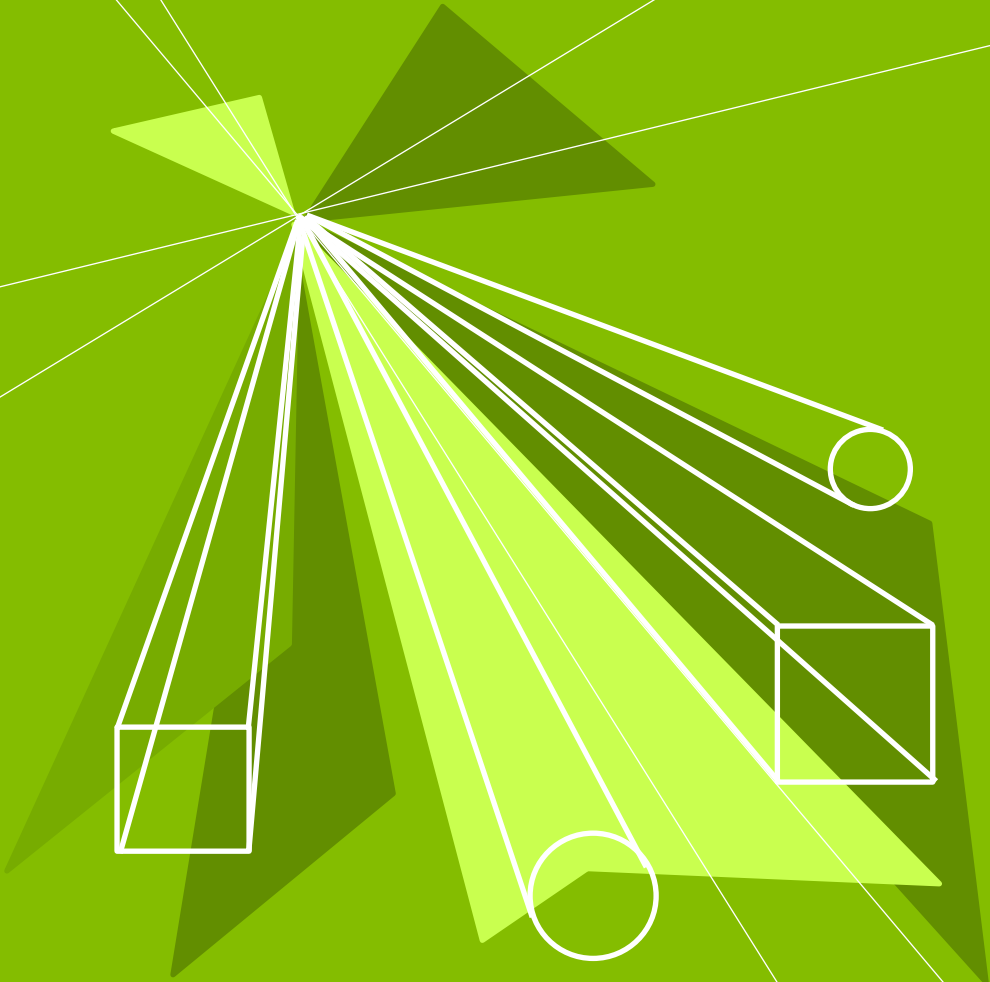


South Central Hertfordshire Growth and Transport Plan Stage 3 Interventions Paper

May 2022



AECOM



Prepared for:
Hertfordshire County Council

Prepared by:
AECOM

AECOM Limited
AECOM House
63-77 Victoria Street
St Albans
Hertfordshire
AL1 3ER
UK

T: +44(0)1727 535000
aecom.com

© 2021 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Limited (“AECOM”) for sole use of our client (the “Client”) in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

Table of Contents

1.	Introduction.....	6
2.	South Central Hertfordshire	9
3.	Vision and Objectives	12
4.	Method Overview.....	17
5.	Prioritising Interactions	21
6.	Proposed Packages.....	26
7.	Conclusion.....	141

Figures

Figure 1 - GTP Stages	7
Figure 2 – South Central GTP Areas.....	10
Figure 3 - Place and Movement Road Types.....	19
Figure 4- Radar Plot Example	21
Figure 5 - Current Toolbox of Interventions	26
Figure 6 - Intervention Hierarchy	29
Figure 7 - Example Scheme Approaches	31
Figure 8 - Strategic Interventions and Corridors	32
Figure 9 – MRT Connectivity	41
Figure 10 – Package 1 College Lane/Cavendish Way Corridor	47
Figure 11 - Package 2 Cavendish Way / Queensway Corridor	49
Figure 12 - Package 3 Bishop’s Rise Corridor.....	51
Figure 13 - Package 4 Woods Avenue/Travellers Lane Corridor	53
Figure 14 - Package 5 French Horn Lane Corridor.....	56
Figure 15 - Package 6 Comet Way/Wellfield Road Corridors	58
Figure 16 - Package 7 St Albans Road East/Hertford Road Corridor.....	60
Figure 17 - Package 8 North West Hatfield and Lemsford Connectivity.....	65
Figure 18 - Package 9 St Albans-Welwyn Garden City Connectivity	67
Figure 19 - Package 10 Hatfield-Welwyn Garden Connectivity.....	69
Figure 20 - Package 11	71
Figure 21 - Package 12 Welwyn Garden City Mundells Employment Area Site Accessibility.....	75
Figure 22 - Package 13 Welwyn Garden City Active Travel Improvements	78
Figure 23 - Package 14 Bridge Road Transformation.....	80
Figure 24 - Package 15 Welwyn Garden City – Stevenage Corridor	84
Figure 25 - Package 16 Luton-Wheathampstead-Hatfield and Welwyn Garden City Corridor	87
Figure 26 - Package 17 Hatfield-Potters Bar Cycle Corridor Enhancements	92
Figure 27 - Package 18 Potters Bar Active Travel Improvements	94
Figure 28 - Package 19 Potters Bar Public Transport Improvements	96
Figure 29 - Package 20 Borehamwood Active Travel Improvements	99
Figure 30 - Package 21 Borehamwood Elstree Village Connectivity	101
Figure 31 - Package 22 Borehamwood-London Connectivity	103
Figure 32 - Package 23 Radlett Station Accessibility.....	107
Figure 33 - Package 24 St Albans City Centre Improvements	110
Figure 34 - Package 25 St Albans Green Ring and Alban Way Improvements	113
Figure 35 - Package 26 St Albans Abbey Station Accessibility	115
Figure 36 - Package 27 St Albans City Station Accessibility	117

Figure 37 - Package 28 Hatfield Road Corridor-St Albans.....	119
Figure 38 - Package 29 London Road Corridor-St Albans.....	121
Figure 39- Package 30 A414 Highways Improvements (South of St Albans).....	125
Figure 40 - Package 31 London Colney Inter Urban Strategic Public Transport Connectivity	127
Figure 41 - Package 32 London Colney Inter-Urban Local Connectivity.....	129
Figure 42 - Package 33 London Colney Internal Connectivity	131
Figure 43 - Package 34 St Albans-Hatfield Local Connectivity	133
Figure 44 - Package 35 Chiswell Green Corridor Active Travel Improvements.....	135
Figure 45 - Package 36 Alban Way Improvements.....	137

Tables

Table 1 - Interurban Interaction Prioritisation	22
Table 2 – Local Interaction Prioritisation.....	23
Table 3 - South Central GTP Packages.....	42
Table 4 - PK1 - Hatfield - College Lane/Cavendish Way Corridor	45
Table 5 - PK2 - Hatfield - Cavendish Way/Queensway Corridor	48
Table 6 - PK3 - Hatfield - Bishop's Rise Corridor	50
Table 7 - PK4 - Hatfield - Woods Avenue/Travellers Lane Corridor.....	52
Table 8 - PK5 - Hatfield - French Horn Lane Corridor.....	54
Table 9 - PK6 - Hatfield – Comet Way/Wellfield Road Corridors.....	57
Table 10 - PK7 - Hatfield - St Albans Road East / Hertford Road Corridor	59
Table 11 - PK8 – North West Hatfield and Lemsford Connectivity	63
Table 12 - PK9 - St Albans-Welwyn Garden City Connectivity	66
Table 13 - PK10 - Hatfield-Welwyn Garden City Connectivity.....	68
Table 14 - PK11 - A1(M) - A414 Junction 4 Interchange	70
Table 15 - PK12 - Welwyn Garden City Mundells Employment Area Non-Car Accessibility and Travel Planning	74
Table 16 - PK13 - Welwyn Garden City Active Travel Improvements.....	76
Table 17 - PK14 - Bridge Road Transformation - Welwyn Garden City.....	79
Table 18 - PK15 - Welwyn Garden City-Stevenage Corridor	82
Table 19 - PK16 - Luton-Wheathampstead-Hatfield and Welwyn Garden City Corridor.....	85
Table 20 - PK17 - Hatfield-Potters Bar Corridor Enhancements	91
Table 21 - PK18 - Potters Bar Active Travel Improvements	93
Table 22 - PK19 - Potters Bar Public Transport Improvements.....	95
Table 23 - PK20 - Borehamwood Active Travel Improvements	98
Table 24 - PK21 - Borehamwood-Elstree Village Connectivity.....	100
Table 25 - PK22 - Borehamwood-London Connectivity	102
Table 26 - PK23 - Radlett Station Accessibility	106
Table 27 - PK24 - St Albans City Centre Improvements	109
Table 28 - PK25 - St Albans Green Ring and Alban Way Improvements	111
Table 29 - PK26 - St Albans Abbey Station Accessibility.....	114
Table 30 - PK27 - St Albans City Station Accessibility	116
Table 31 - PK28 - Hatfield Road Corridor - St Albans	118
Table 32 - PK29 - London Road Corridor - St Albans	120
Table 33 - PK30 - A414 Highway Improvements (South of St Albans).....	124
Table 34 -PK31 - London Colney Inter-Urban Connectivity	126
Table 35 - PK32 - London Colney Inter-Urban Local Connectivity	128
Table 36 - PK33 - London Colney Internal Connectivity.....	130
Table 37 - PK34 - St Albans-Hatfield Local Connectivity.....	132
Table 38 - PK35 - Chiswell Green Corridor Active Travel Improvements	134
Table 39 - PK36 - Alban Way Improvements	136



Introduction

01

1. Introduction

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 helps facilitate journeys from home to work, to school, for leisure purposes and for access to vital services such as healthcare.

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 to different places. As well as catering for existing requirements, transport can also help enable or constrain new opportunities for economic development and for individual wellbeing.

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

Hertfordshire is facing significant levels of housing and employment growth which are expected to have an impact not only on the county's local and strategic transport systems and networks, but also on the environment in the short, medium and long term. The County's Sustainable Hertfordshire Strategy recognises the critical consequences of climate change and commits to considering the environmental impact of the county's operations and services.

Delivering economic growth through sustainable infrastructure whilst mitigating climate change challenges is also one of the UK Government's main priorities. However, this is set against a backdrop of increasing competition for funding to help invest in new infrastructure, with less money available for local authorities to spend today than perhaps in the past.

The transport needs of large-scale residential and employment development coming forward within Hertfordshire and surrounding areas may be reliant upon seeking vital 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 positive collaborative planning.

With this in mind, a series of Growth and Transport Plans (GTP) are being developed as supporting documents to the fourth Local Transport Plan (LTP4). A GTP is a strategic spatial transport plan developed by Hertfordshire County Council in partnership with key stakeholders, including District/Borough councils and the Local Enterprise Partnership, for the purpose of applying LTP policies and objectives to a growth-focused sub-area within Hertfordshire. The GTP looks ahead at transport improvements required at least over the period of the Local Plans and will be subject to review periodically to reflect changes in growth and transport forecasts.

Each GTP focuses on a different sub-area within Hertfordshire. This document concerns the South Central Growth and Transport Plan. The area incorporates the city of St Albans, the larger towns including Borehamwood, Potters Bar, Hatfield and Welwyn Garden City, smaller settlements such as London Colney and Radlett, as well as connections to outside of the study area.

This area is undertaking a large amount of development which will increase demand on an already constrained highway network unless a significant shift towards walking, cycling and public transport is achieved. It is therefore appropriate and necessary to look beyond the provision of extra highway capacity alone and instead invest significantly in modes of transport which support efficient mobility while reducing environmental impacts.

As shown in the figure below, this is the third paper within the SC GTP and forms part of a portfolio of documents. This paper provides an in-depth description of the proposed packages developed based on analysis of the existing evidence base and assessment of transport networks and services against the SC GTP objectives undertaken at Stage 2.

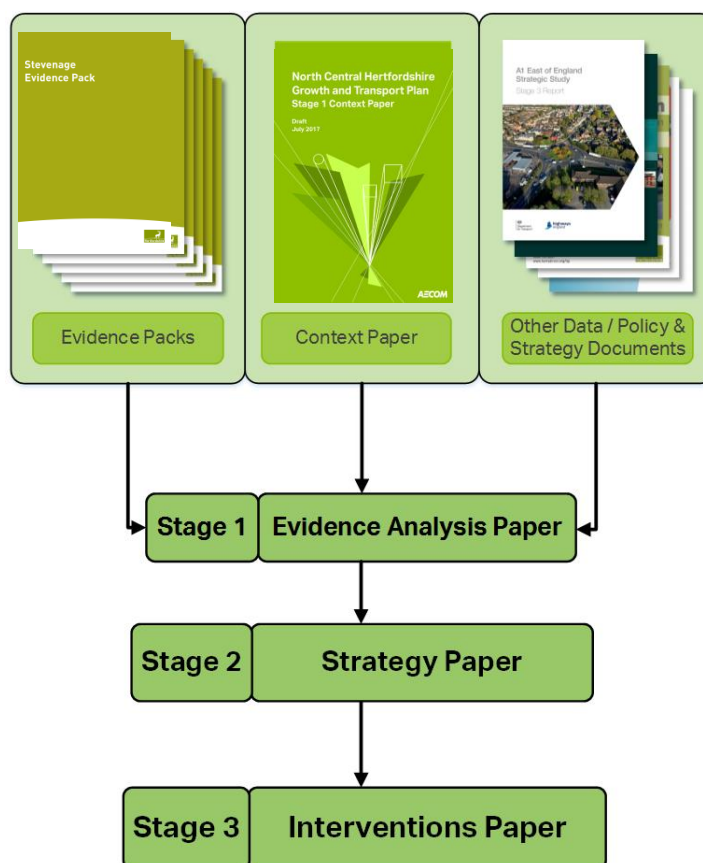


Figure 1 - GTP Stages

Report Structure

The report is composed of 7 sections that outline the following:

- Section 2 provides a spatial portrait of South Central Hertfordshire (discussed in more detail in the Stage 0 context paper).
- Section 3 summarises the objectives and vision developed specifically for the GTP which have guided the review of evidence, prioritisation and sifting of growth and transport challenges (discussed in more detail in the Stage 2 Strategy Paper).
- Section 4 describes the method used to identify growth and transport challenges and development of innovative packages of interventions.
- Section 5 summarises the approach to prioritising interactions to determine what might be most in need of mitigation through the GTP.
- Section 6 summarises the main growth and transport challenges addressed through the GTP as well as the formulation of transport interventions.
- Section 7 provides concluding remarks and highlights the steps that will be taken following the adoption of this GTP.



South Central Hertfordshire

02

2. South Central Hertfordshire

In the Hertfordshire context, the SC GTP area consists of the southern portion of the A1/A1(M) and East Coast Main Line corridor as well as covering key transport connections to Watford, Hemel Hempstead and Hertford and Harlow in the east. The area broadly encompasses Hertsmere Borough, Welwyn Hatfield Borough and parts of St Albans and City District.

Several major strategic transport corridors dissect the area, specifically the A1/A1(M) trunk road, the M25 London orbital trunk road, the Midland Main Line and the East Coast Main Line railways, in addition to several key A roads which connect Hertfordshire with surrounding areas and serve more interurban movements, most notably the A414 (Hemel Hempstead-St Albans-Hatfield-Hertford), the A411 (Watford-Borehamwood-Barnet), the A1081 (London Colney bypass), A5183 (running through St Albans, Radlett and Elstree Village) and the A1000 (Potters Bar-Hatfield-Welwyn Garden City).

St Albans and Welwyn Garden City are two of the largest towns in Hertfordshire by population and size and are both located within the SC GTP area. Other key towns include Borehamwood, Hatfield and Potters Bar along with a host of smaller settlements including Radlett and London Colney.

The character of the area varies considerably, with a mixture of urban and suburban neighbourhoods being separated by areas of agricultural land and open countryside. The SC GTP area is strongly influenced by London, with many of the existing transport connections servicing movements to/from the capital, however many of the towns also offer significant employment including Hatfield Business Park which serves as a major employment provider for a large catchment area spanning Hertfordshire and beyond.

As established in the SCGTP Stage 1 paper, the SC GTP area suffers from peak hour congestion on several of the key highway connections, with travel delays regularly occurring on the M25, A1(M), A414, and at key junctions including the A414/A1081 London Colney Roundabout, A414/A405 Park Street Roundabout and A1(M) Junction 4 (plus adjoining junctions) to name but a few.

While the plan area includes some closely spaced towns and is served by main line rail services radiating to/from London and a range of bus services, the majority of trips are made in a private vehicle and motor traffic has a dominant impact on how residents make use of public space.

The figure overleaf provides a broad indication of the SC GTP area.

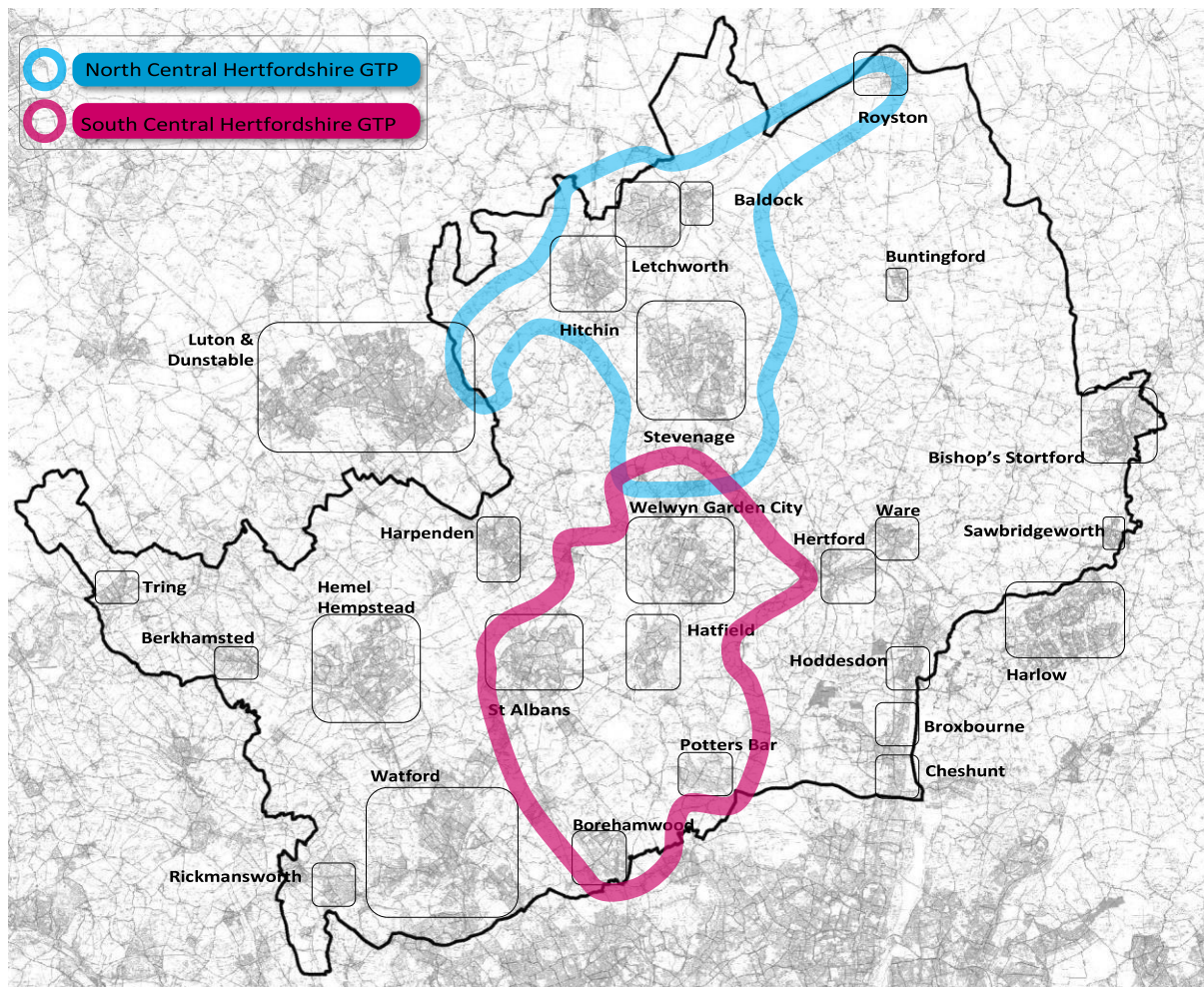


Figure 2 –GTP Areas

The SC GTP Context Paper is available for more in-depth analysis of towns and infrastructure in this area.



Vision and Objectives

03

3. Vision and Objectives

The Vision describes a positive future scenario for personal travel within the plan area following successful implementation of intervention packages arising from SC GTP.

The SC GTP Vision

Significant changes to the way Hertfordshire grows and develops have transformed the way we get around, within and beyond the county. This transformation has affected growth and transport throughout the county, irrespective of mode.

All new developments are designed with sustainability 'built-in'. High speed broadband in every new home allows more people to work from home, reducing their need to travel. Major new development is located in highly accessible locations. While this growth places new pressures on transport networks (as the population is set to grow by over 20%) many new homes and employment areas have been built close to train stations and existing bus routes, services and infrastructure have been improved, and bus priority measures have been introduced.

Thus, significant opportunities exist for a step change in the uptake of sustainable travel behaviours, enabling people to lead healthier, better connected, happier, and more environmentally friendly lives.

Greater priority on improving conditions for pedestrians and green corridors connect principal towns, forming the spine of a safe, direct, and convenient local and inter-urban network.

Better urban cycle infrastructure, as well as the provision of more cycle parking and ancillary facilities such as changing rooms and showers at workplaces, has led to cycling becoming a safer, more attractive, and widely adopted transport mode.

Travel plans are adopted by all types of development, including workplaces and schools, and improvements in technology including real-time and integrated transport information better inform people to make smarter travel choices. As a result, an increasing number of people now choose to walk or cycle for shorter trips or take public transport for longer journeys.

Advancements in technology and expansion of the sharing economy also provide greater travel choice, including car and cycle sharing, community transport options, demand responsive transit services, and emerging autonomous vehicles. Improved choices have particularly improved connections on the first and last mile of journeys, improving accessibility and enabling more sustainable travel habits.

Mass Rapid Transit links principal towns, providing quick and convenient east-west and north-south passenger routes and facilitating faster, more reliable journeys across the SC GTP area. These investments in passenger transport have helped to lead to an increase in patronage and a decrease in private car use, allowing for operators to increase frequencies, provide better journey time reliability, and enhance accessibility, which is especially beneficial for Hertfordshire's ageing population. As a result of substantial modal shift, there is the potential for air pollution and greenhouse gas emissions to decline considerably, helping to further improve the environment of local places. HCC, together with local authority partners and bus operators, is exploring opportunities to further improve passenger transport connectivity for bus, coach and express coach services from areas without direct rail access as part of LTP4. Provision of bus corridors will need to be

considered in development master planning, in line with the transport user hierarchy as set out in LTP4 (Policy 1).

The area's connectivity with London has been further strengthened with increased range of multi-operators and smart, flexible tickets, additional pedestrian and cycle links between town centres and railway stations, and increased rail capacity and service frequencies. As a result, train travel continues to be a popular choice for commuters to and from Central London, as well as becoming an increasingly popular mode for travel between outer London Boroughs and the SC GTP area. In addition to these, the possibility of TfL extending the Oyster zone further into Hertfordshire and providing cross-boundary services with improved interchanges on TfL routes, would establish an even better connectivity between Hertfordshire and London and is currently being investigated.

Parking measures and restrictions in town and neighbourhood centres are developed and enforced, supporting the use of sustainable transport modes and improving the quality of urban space within the towns. These improvements in transport options support a wider effort to increase positive social interaction in urban spaces.

Many people continue to travel by private modes of transport, although the lower priority placed on highway upgrades coupled with demand management measures such as parking charges mean this may no longer be the most attractive transport option. Improvements to highway capacity and safety have been implemented, including targeted junction improvements along the Strategic Road Network, primarily to serve and facilitate other modes.

Hertfordshire County Council has been awarded £6.4 million by the Department for Transport as part of the government's Active Travel Fund, some of which will be invested in fulfilling the SC GTP vision. Additional funding will, however, need to be obtained from either Central Government and/or other funding boards. HCC acknowledges the importance of investment to deliver new infrastructure as part of its SC GTP vision and is constantly monitoring potential funding opportunities. Thus, significant opportunities exist for a step change in the uptake of sustainable travel behaviours, enabling people to lead healthier, better connected, happier, and more environmentally friendly lives.

Successful delivery of the vision and objectives will be dependent on HCC maintaining and enhancing partnerships with a wide range of stakeholders including the local planning authorities, neighbouring authorities outside of the GTP area, the LEP, National Highways (formerly Highways England), Network Rail, train operating companies, bus and coach operators, local businesses, parish councils as well as community groups and user groups.

Objectives

The SC GTP Vision sets out how the transport network could appear and the opportunities it could provide in the future. From the SC GTP Vision, six key objectives are identified. In order for each of the identified interactions in the SC GTP area to meet the Vision, they will need to meet one or more of these objectives. Further discussion about the relevance of these objectives to each interaction is discussed in section 5 of the paper. The six objectives provide direction and guidance as to what the SC GTP should aim to achieve.

1. Connected

The Connected objective is focussed on:

- Improved transport connections between and within urban and rural locations and services to support economic activity;

- Education;
- Access to services and the development of new jobs and homes

This objective is focused on providing viable mode options for regular trips, which are convenient to use due to their affordability, reliability, safety and accessibility. This will also be dependent on and linked to many of the remaining objectives below.

2. Reliable

The Reliable objective is focussed on:

- Improved network resilience and journey time reliability for all users, so that transport networks and services provide consistent and dependable journeys throughout the day.

This objective is about ensuring reliable journey times across the network by minimising the risks of disruption. This encompasses all modes of transport, not just highways. Risks can be planned or unplanned and associated with anything from roadworks and signal failures to collisions and extreme weather events. Planning for and designing the system, and the services that use it, to be able to cope and respond efficiently to these events, will help to minimise their risk and improve the reliability in journey time.

3. Accessible

The accessible objective is focussed on:

- Improved transport networks by all modes, including public transport services; to increase the choice available to transport users; and reduce barriers to prosperity, development and growth.

This is about making urban areas and key services accessible to all residents and future development areas, particularly those in more remote areas. Improvements in geographical coverage, infrastructure and frequency of bus and coach services should be prioritised for those areas most lacking in transport options and areas designated for development, where there is stronger potential for modal shift and where services could be commercially viable. In more rural areas, where there is unlikely to be the demand to support conventional bus services, more innovative solutions will be required.

4. Attractive and Sustainable Places

The Attractive and Sustainable Places objective is focussed on:

- Enhancing the function and character of North Central Hertfordshire's neighbourhoods and public locations to support vibrant communities; and
- Preserving and enhancing the local environment and quality of life.

Whilst this is traditionally a role for urban design and place-making initiatives, it is now more widely understood that transport has a big role to play in creating attractive places as it forms much of the built environment within urban areas.

The Healthy Streets¹ approach developed by Transport for London is a useful framework for understanding the impact of transport on places, and the scoring of place in the Growth and Transport Plans reflects the Healthy Streets criteria. Specifically, the attractive places are defined as those where streets are easy to cross for pedestrians, where places to stop are provided with shade and shelter, which are not too noisy and where people feel safe.

¹ Healthy Streets <https://healthystreets.com/>

Hertfordshire County Council has declared a climate emergency and in doing so, reaffirmed the councils' commitments to tackling climate change. In addition, St Albans City & District Council², Welwyn Hatfield Borough Council³ and Hertsmere Borough Council⁴ have prepared Climate Change Strategies.

Improved infrastructure for walking and for cycling is important, in order to promote physical activity and reduce emissions which lead to poor air quality. These aspects are considered in Objective 5 and Objective 6.

5. Efficient

The Efficient objective is focussed on:

- Make the most efficient use of resources and technology by reducing the need to travel and enabling a shift to more sustainable modes of travel.

The focus of this objective is to use the existing network in the most efficient way, by both reducing demand and consolidating trips, through reducing the need to travel and encouraging car sharing and freight consolidation. It can also mean encouraging a modal shift away from private vehicles to more sustainable modes, through smarter travel initiatives.

Technology will also have an increasing role in facilitating improved network efficiency, through fast incident response and management, urban traffic management control systems (UTMC) in traffic signal networks, real time travel information for roads and public transport, both online, at stops and through variable message signage on the highway.

Emerging innovations in transport technology such as driverless vehicles, low emission vehicles and demand responsive transport are also being explored at a county and national level, which are expected to provide vast improvements in network efficiency, safety and air quality in the longer-term future.

6. Healthy and Safe

The Healthy and Safe objective is focussed on:

- Promoting measures to improve safety and reduce the negative impacts of motorised travel, in particular private car travel;
- Reducing the harm caused to public health and the environment; and
- Minimising safety risks.

This objective is linked to several of the previous objectives above in that many of them will lead to improved health and safety outcomes. However, community health and safety and transport's impact upon this is equally important in its own right. Current safety issues should be addressed through infrastructure improvements, ongoing highway maintenance and local targeted road safety campaigns. The design of new infrastructure and services should focus to support the Hertfordshire Public Health Service Strategy (2017-2021)⁵.

² St Albans City & District Council Sustainability and Climate Crisis Strategy <https://www.stalbans.gov.uk/sustainability-and-climate-crisis-strategy>

³ Welwyn Hatfield Borough Council Climate Change Strategy <https://www.welhat.gov.uk/strategies/climate-change/preface>

⁴ Hertsmere Borough Council Climate Change and Sustainability Strategy 2020 <https://www.hertsmere.gov.uk/Environment-Refuse-and-Recycling/Climate-change/Climate-Change-and-the-council.aspx>

⁵ Hertfordshire Public Health Strategy 2017-2021, <https://www.hertshealthevidence.org/documents/key-resources/hertfordshire-public-health-strategy-2017-21.pdf>



Method Overview

04

4. Method Overview

This section provides a brief overview of the method used to develop the intervention packages.

Interventions have been identified in line with LTP4 and take into account those which have already been identified in other local transport plans and strategies (for example the Local Planning Authorities' Infrastructure Delivery Plans (IDPs)) and/or those which are already in development. It is acknowledged that in some cases short-term interventions could be the means to immediate mitigation of transport challenges, however high-level interventions need to be prioritised in order to facilitate growth.

These already identified interventions have been supplemented with ideas on other types of interventions generated from workshops with council officers and members.

Local Cycling and Walking Infrastructure Plans (LCWIPs) are also either in development or have been adopted by districts within Hertfordshire. LCWIPs set out a recommended approach to planning networks of walking and cycling routes. Although the technical guidance was not considered when forming the interventions presented in this report (which pre-dated the publication of the guidance), compliance with LCWIPs will be a requirement for the approval of interventions as they are developed in more detail.

Interventions need to be in line with the transport user hierarchy as set out in LTP4 (Policy 1), which provides the highest priority to those policies which encourage people not to travel or make unnecessary journeys. Pedestrians, cyclists and vulnerable road users then have the next level of priority, followed by public transport and finally motorised vehicles. This hierarchy has been recognised and followed to ensure that sustainable interventions are chosen where these are feasible and appropriate to address particular issues.

The list is not exhaustive. Local Planning Authorities should maintain IDPs as a 'live' record of planned infrastructure measures to support planned development.

An approach was built which supports the sustainable agenda laid out in LTP4 and follows the HCC Place and Movement approach that recognises differences in the function and usage of roads across the county. The Place and Movement approach is used to identify areas where change is needed or desired, whilst aspirational values are engaged to support a balanced change of environment and speed.

The approach presented in the SC GTP includes but is not limited to: no increase in highway capacity unless required to reduce strategic traffic routeing through urban areas or on inappropriate country roads; improved walking routes between urban centres and transport hubs; a comprehensive cycle network suitable for all abilities, including inter-urban routes; and bus priority infrastructure and improved information. Interventions and packages of interventions have been formulated with this mind as well as the objectives and the shortfalls which are in their geographic area.

In addition to LTP4, Hertfordshire's Rail Strategy⁶ assists in ensuring the railway in Hertfordshire can support economic growth and development. It supports the LTP4, which sets out the policies and measures required to improve transport across all modes. The Rail Strategy details aspirations which are categorised into the following headings:

⁶ Hertfordshire's Rail Strategy: <https://www.hertfordshire.gov.uk/media-library/documents/highways/transport-planning/local-transport-plan-live/rail-strategy.pdf>

- Franchises
- Service Levels
- Fares and Ticketing
- Stations
- Accessibility
- Passenger information
- Freight
- Passenger Safety

Strategic projects which are currently under construction in Hertfordshire include High Speed 2, East West Rail and the Luton Airport DART.

Following this information gathering and optioneering process, interventions are categorised as either smaller projects (and linked project groups), or larger and more complex schemes by objective interaction shortfalls they met. The exercise has not been used to prioritise or sift existing infrastructure lists from other policy documents as it has been assumed that they have already undergone some form of sifting and prioritisation in order to feature in those documents.

The interactions were used as a basis for organising the interventions into general geographic groupings, and understanding which shortfalls needed to be met. These were then further narrowed down with the additional considerations of development and dependencies on each other to form packages.

The focus for this GTP has been to devise a range of intervention packages, each aimed at addressing a particular challenge or set of challenges in a distinct area of a town or corridor between towns.

This GTP consists of thirty-six packages. Some of the packages are within towns, some between towns, and they are not necessarily mode-specific although in some situations they are focused towards prioritising the needs of particular users on the transport network.

Place and Movement

Hertfordshire's highway network includes a wide variety of roads with different purposes, each carrying varying levels of traffic, with different levels and standards of provision for users of the highway network be it motorists, pedestrians and cyclists and diverse surrounding land uses which influence how roads are used, including shops, homes, schools and countryside.

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 as shown in the figure below. 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.

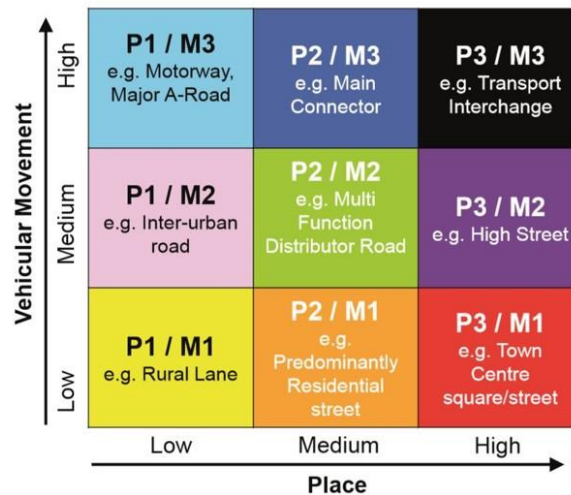


Figure 3 - Place and Movement Road Types

Place and Movement maps are included in Proposed Packages and how this method has been interpreted for roads within the SC GTP area.



Prioritising Interactions

05

5. Prioritising Interactions

Radar Plot Scoring

An interaction is a relationship between two locations which can vary based on travel demand. For the GTPs Interactions are used to assess the accessibility and future travel demand between locations along routes. The process of establishing these interactions can be seen in more detail in the Stage 1 Evidence Paper.

The current and future conditions of interactions have been considered qualitatively, informed by evidence compiled in Stage 1 of the GTP process as well as town-based Evidence Packs and local knowledge, using what are called radar plots. Shortfalls on interactions were identified using these plots which also visually plots the SC GTP vision and allows comparisons to be made between current conditions and the vision. The radar plots have been scored based on the six GTP objectives which are laid out earlier in this paper. An example radar plot showing the score of an existing interaction versus the vision is shown below. The process of scoring the radar plots can be seen in more detail in the Stage 2 Strategy paper.

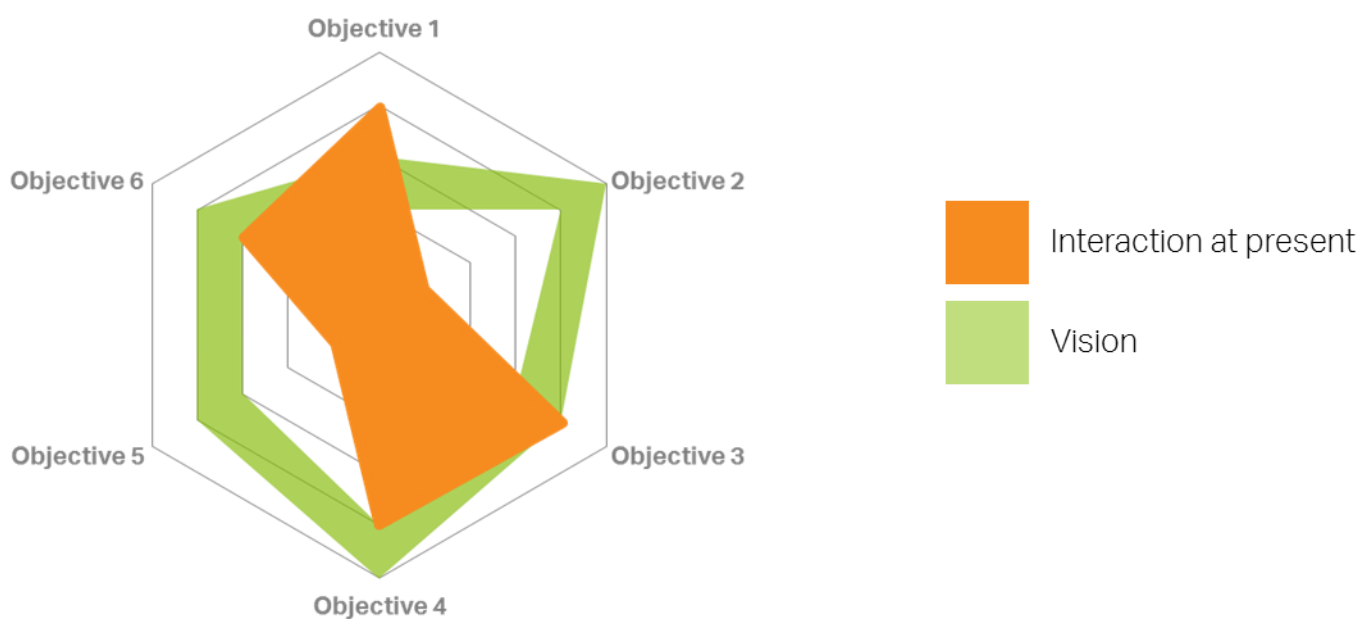


Figure 4 - Radar Plot Example

Priority Interactions

A process of prioritisation of interactions has been developed to understand where interventions could be more of a priority. This could be used by decision makers to identify which interventions or packages could come forward first if a choice needs to be made.

Shortfalls on the interactions have been identified using the radar plots. Each of the interurban and local radar plot scores are located Table 1 and Table 2 overleaf. Individual objective scores are summed to provide a total score for each interaction. The shortfall against the vision score for each interaction is also listed, including both the shortfall for each objective and for the total score against the total vision score. The worst performing interactions are located towards the top of the tables, while the best are towards the bottom.

The prioritisation of the interactions allows them to be compared and highlights potential opportunities where more than one interaction shortfall could be addressed by a single intervention or shared package of interventions if they suffer from the same shortfalls. With this order, interventions can address the highest shortfalls first and work down the list. Prioritising interactions ensure that the objectives which score poorly against the vision can be addressed with relevant interventions.

Interurban Interactions

Interurban interactions are between two urban areas. These are important in ensuring sustainable accessibility for the residents of new developments. The data used in reviewing these interactions is derived from the Census 2011 journey to work data because commuting makes up a large proportion of peak period travel (when the transport network is under most stress). It is also recognised that other journey purposes such as education are also relevant when considering network stress. More detail can be found in the Stage 1 Evidence paper.

Table 1 - Interurban Interaction Prioritisation

Interaction	Connected	Reliable	Accessible	Place	Efficient	Healthy and Safe	TOTAL
Borehamwood and Radlett to Harrow	-2	-4	-3	-1	-2	-3	-15
Borehamwood and Radlett to Watford	-2	-4	-2	-1	-2	-2	-13
Hemel Hempstead to St Albans	-2	-4	-1	-1	-2	-2	-12
St Albans to Barnet	-2	-3	-2	0	-2	-3	-12
Luton and Harpenden to Hatfield	-2	-1	-3	-1	-2	-2	-11
Potters Bar to Enfield	-2	-3	-1	-1	-1	-3	-11
Borehamwood and Radlett to Barnet	-1	-4	-1	-1	-2	-1	-10
Hatfield to Barnet	0	-4	-1	-1	-2	-2	-10
Potters Bar to Barnet	-1	-3	0	-1	-2	-3	-10
Welwyn Garden City and Hatfield to Stevenage	0	-3	0	-1	-2	-3	-9
St Albans to Harpenden and Luton	0	-4	0	-1	-2	-2	-9
Welwyn Garden City to St Albans	-1	-3	0	0	-2	-2	-8
Hatfield to St Albans	0	-3	0	0	-1	-2	-6
Hatfield to Welwyn Garden City	1	-3	0	-1	-1	-2	-6
Borehamwood and Radlett to Central London	0	-4	0	0	1	-2	-5

The table above indicates that the Borehamwood to outer London Borough corridors suffer the worst shortfalls when evaluated against the SC GTP vision scores. The scores are closely linked with the primary shortfalls being Reliable, Accessible and Healthy and Safe, being the most common areas of concern.

Local Interactions

Local interactions occur within one urban area and these were categorised into zones, residential, employment and town centres. This helps explore the various interactions at a local level. More detail on these can be found in the Stage 1 Evidence paper.

Table 2 – Local Interaction Prioritisation

Interaction	Connected	Reliable	Accessible	Place	Efficient	Healthy and Safe	TOTAL
Welwyn Village to WGC Employment Area	-1	-1	-3	-3	-3	-2	-13
Elstree Village to Borehamwood Employment	-1	-2	-1	-2	-3	-2	-11
Borehamwood to Elstree Village	-1	-2	-2	-3	-2	-1	-11
Radlett to Borehamwood Employment	-2	-2	-4	-1	-2	0	-11
East Potters Bar to Town Centre	-1	-3	-1	-2	-1	-3	-11
Chiswell Green to St Albans Town Centre	0	-2	-1	-2	-3	-3	-11
London Colney to St Albans Town Centre	-1	-2	-1	-2	-2	-3	-11
Welwyn Village to WGC town centre	-1	-1	-2	-2	-3	-2	-11
West Potters Bar to Town Centre	-1	-2	-2	-3	-1	-1	-10
Hatfield to Hatfield Employment Area	0	-2	-2	-3	-1	-2	-10
Jersey Farm to St Albans City Centre	0	-2	-1	-2	-2	-3	-10
Welham Green to Hatfield Employment Area	-1	0	-3	-2	-2	-1	-9
Hatfield to Hatfield Train station	0	-1	-2	-3	-1	-2	-9
Welwyn Village to WGC Employment Area	0	-1	-2	-2	-1	-3	-9
South East Welwyn to WGC Town Centre	-1	0	-2	-1	-2	-2	-8
Borehamwood North to Employment area	0	-1	0	-2	-2	-2	-7
St Albans East to City Centre	0	-1	-1	-1	-1	-3	-7
St Albans West to City Centre	0	-1	-1	-1	-1	-3	-7
Borehamwood South to Employment Area	0	-1	0	-2	-1	-2	-6
Borehamwood to Town Centre	0	-1	0	-2	-1	-2	-6
Hatfield to Hatfield Town Centre	0	-1	-1	-2	0	-2	-6
WGC Garden City West to WGC Town Centre	-1	0	-1	-1	-1	-2	-6
St Alban Central to City Centre	0	-1	0	-1	0	-3	-5

The level of shortfalls follows a general pattern, with those on the outskirts of towns having higher levels. The shortfalls are widespread across all objectives, except for the Connected objectives which generally fares well.

The area which suffers from the highest level of shortfalls is Welwyn Village to the Mundells employment area of Welwyn Garden City. Here the issues stem from a lack of safe active travel routes and too many people considered to be travelling by car. Other areas follow this pattern including the local interactions around Borehamwood.

The lowest shortfalls are in the areas surrounding the urban centres of St Albans, Welwyn Garden City and Hatfield on journeys. The reasons they fare so well compared to the vision is because of (comparatively speaking) their high percentage of active trips, connectedness and quality/level of infrastructure. Nevertheless, despite the scores, urban centres will remain a focal point for employment, retail and leisure uses, and where transport networks are likely to be most intensively used by different users, all of whom are competing for what might be quite constrained space. It is important therefore that these urban centres are not overlooked when considering potential interventions.

This is a suggested prioritisation, however in practice the implementation of interventions and packages could follow a different sequence based on other emerging local priorities.

More information on the scoring of interactions can be found in the Stage 2 Paper Strategy Paper.



Proposed Packages

06

6. Proposed Packages

The challenges identified during the process of developing the SC GTP can be addressed in many different ways. To an extent, over time the challenges will be influenced by wider trends and changes in travel behaviour which can affect people’s decisions to use particular modes of transport, the route they take, the time of day they travel, even where they live, work and participate in leisure activities.

However we cannot rely on wider influences and factors alone to either address a challenge, or assume it will reduce in scale of impact over time. A coordinated and smart approach is needed to tackle challenges through a wide range of physical interventions, some small and some large in scale, which are targeted at addressing a challenge symptom or more critically the underlying cause(s).

Hertfordshire County Council and partners have a toolkit of approaches to help influence transport and travel behaviour. This includes both infrastructure interventions and so-called ‘soft measures’, these being behaviour change initiatives such as promotion of bus services, travel planning for new developments, cycling training and exploring opportunities for integrated ticketing. The figure below illustrates the range of interventions available to influence travel choices and behaviour.

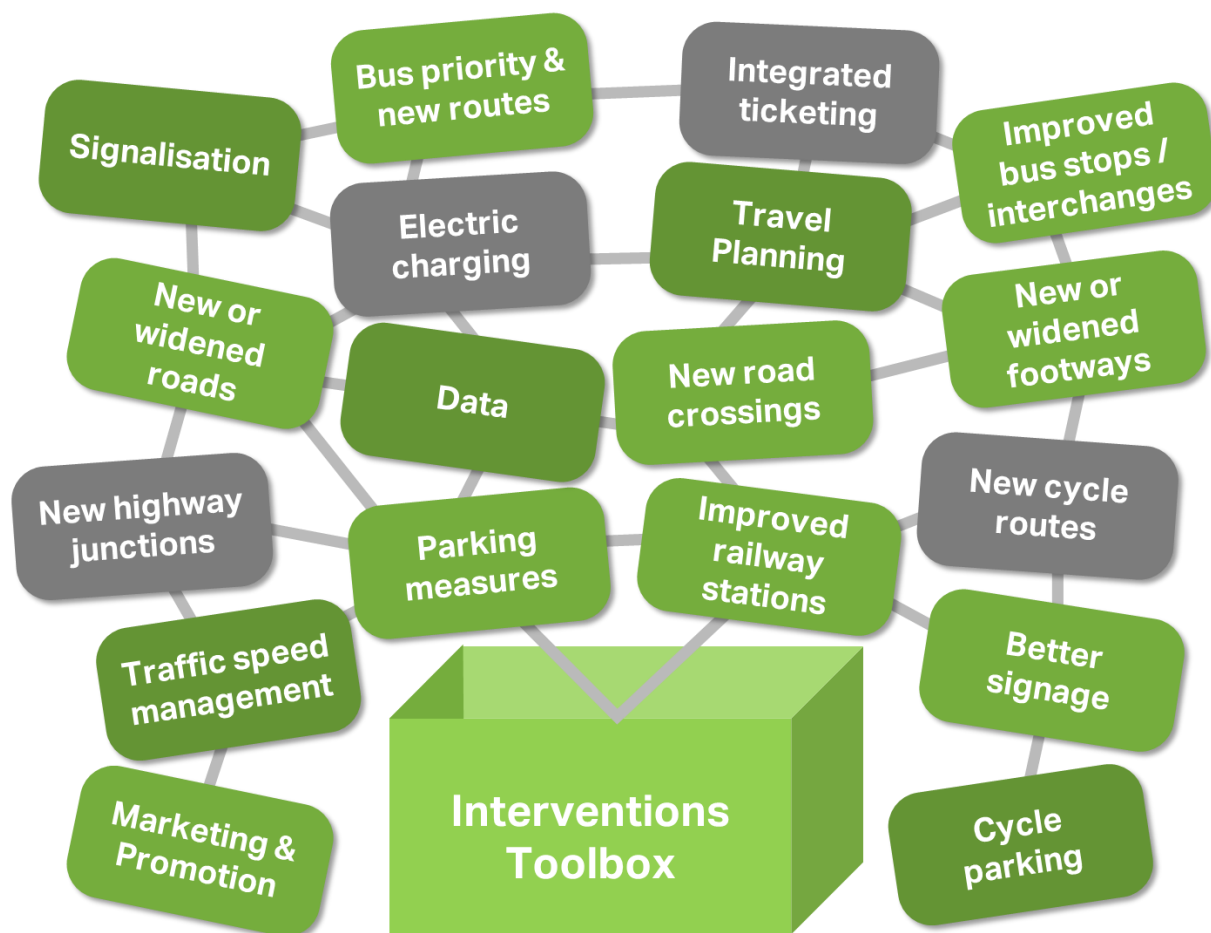


Figure 5 - Current Toolbox of Interventions

All of the packages of interventions identified in this Prospectus should be complemented by a range of supporting interventions and initiatives, which should be considered and rolled-out consistently across the GTP area. These area-wide interventions and measures are described later in this section of the report.

Future Trends

The world of transport is predicted to undergo a profound transformation in the coming years and decades. New technologies could change how we travel and also how frequently. Over time new technology and other initiatives could supplement or replace tools which are currently available to Hertfordshire County Council and partners to address transport issues.

Research has shown that the younger population is increasingly favouring access over ownership. Faced with increasing costs of ownership, they prefer pay-per-use or renting of everyday items such as smart phones but also cars. Those aged between 18 and 35 are 40% more likely than other age groups to move to leasing as opposed to ownership of cars, certainly if costs continue to rise⁷.

Mobility as a Service (MaaS) describes a shift away from personally owned modes of transportation and towards mobility solutions that are consumed as a service, paid for on demand through connected technologies. Research undertaken by Transport Systems Catapult (now Connected Places Catapult)⁸ envisages that MaaS could change our travel behaviour. It could result in more journeys and distances travelled by car (or potentially less); it could enable policy makers and transport planners to have a greater influence on managing travel demand and responding to changing travel behaviours; and it could affect the transport industry with car makers and transport operators moving away from a business to consumer model.

For MaaS to be successful and offer flexibility to customers, a wide range of integrated transport services will be needed. As part of a public transport package sitting alongside rail services and traditional bus services (those running on fixed, timetabled routes), there are examples of Demand Responsive Transit (DRT) services emerging across the country in both rural and urban areas.

DRT “provides transport ‘on demand’ from passengers using fleets of vehicles scheduled to pick up and drop off people in accordance with their needs”⁹. DRT services tend to use smaller buses or minibuses and provide variable routes which are tailored to the users’ needs. DRT services such as ArrivaClick enable passengers to order and track a DRT vehicle from an app, which will also tell them the name of the driver and allow them to choose a pick-up point and reserve a seat.

The system is powered by technology which uses complex algorithms to match passengers travelling in the same direction, dynamically routing vehicles in real-time to determine the optimal route for their trip. The system calculates the shortest and fastest routes, with a guaranteed fare and real-time information on time of departure and arrival is provided. Passengers are then picked up and dropped off by the bus in the order most convenient for them. A DRT service (Herts Lynx) has recently been introduced in East Herts. Opportunities for establishing further DRT services in Hertfordshire are currently being investigated.

How cars are powered is changing. Electric vehicles are increasing in popularity and it is predicted that even if fuel efficiency improves in more traditional petrol and diesel powered

⁷ ABN Amro (August 2016) ‘On The Road To The Circular Car’, <https://www.circle-economy.com/thecircularcar>

⁸ Transport Systems Catapult (July 2016) ‘Mobility as a Service – Exploring the Opportunity for Mobility as a Service in the UK’, https://ts.catapult.org.uk/wp-content/uploads/2016/07/Mobility-as-a-Service_Exploring-the-Opportunity-for-MaaS-in-the-UK-Web.pdf

⁹ Mageeanand Nelson (2003) as cited by Laws and Potter (2009) “Demand responsive transport: A review of Schemes in England and Wales”, *Journey of Public Transportation*, 12, 1, 2009. <https://oro.open.ac.uk/18426/1/JPT12-1Laws.pdf>

vehicles, electric vehicles will be cheaper to own than conventional vehicles by 2022¹⁰. Substantial investment will be needed in supporting infrastructure, most notably additional charging points at key destinations including employment areas, town centres, retail parks, supermarkets, within modified petrol filling stations or dedicated electric vehicle charging forecourts. In 2018, the UK Government launched its Road to Zero Strategy¹¹ which sets out the ambition for at least 50% of new car sales to be ultra low emission by 2030 alongside up to 40% of new vans.

The government expects the transition to ultra low emission vehicles to be industry and consumer led, supported by a range of government-led measures including increasing the supply and sustainability of low carbon fuels; taking steps to accelerate the adoption of fuel-efficient motoring by company car drivers, businesses operating fleets and private motorists; consulting on reforms to the Vehicle Excise Duty to incentivise van drivers to make the cleanest choices when purchasing a new van; working with industry to develop an ultra low emission standard for trucks; and investment in research and development including the next generation battery technology.

New cars entering the market today already incorporate ever more advanced technology – sensors, parking assist systems, automatic braking – and manufacturers are exploring increased connectivity so that a vehicle's navigation system can detect available parking spaces and can communicate with traffic signals to optimise traffic flow.

Autonomous, driverless vehicle technology is being investigated across the world. The UK Government is actively exploring the potential opportunities and risks posed by this new technology. There have been several rounds of government funding in its Connected Autonomous Vehicles (CAV)¹². Trials to test driverless cars on the streets are currently underway in places such as Milton Keynes and in Greenwich (London). Autonomous vehicles will help support the MaaS concept, and could greatly increase social mobility particularly for those who cannot afford to own a car. The potential effects on mass transport, in particular local bus services, is unknown, and concerns about the technology's resilience, safety and insurance is still to be fully understood.

This all presents significant uncertainties going forward and clearly poses risks in terms of decisions that are made today, such as the type of transport improvements which are implemented, later becoming obsolete if technology influences how people travel to such an extent that those transport improvements are no longer required or (conversely) are insufficient to meet future needs.

However, whilst it is important to ensure transport infrastructure is future-proof as far as possible, it is not feasible to hold off important decisions today and wait for new technologies to fully emerge and be adopted. Our current understanding of the impact and potential of new technologies is ever-changing. There is a need therefore to continue to plan based on the current toolkit of transport infrastructure intervention types.

Identifying Interventions

A hierarchical approach to defining interventions has been adopted for this GTP. This means that small interventions are distinguished from large interventions. This is important because each intervention is likely to involve a different amount of work to take it from concept (today) to implementation (in the future). They may also present varying level of risks and therefore need different approaches to planning. The scale of impact may also vary which needs to be highlighted at this early stage.

¹⁰ Egerton-Read, S. (March 2016) Circulate News <http://circulatenews.org/2016/03/electric-cars-will-be-cheaper-than-conventional-cars-by-2022-new-report-predicts/>

¹¹ The Road to Zero – Next steps towards cleaner road transport and delivering our Industrial Strategy (2018) www.gov.uk

¹² UK Centre for Connected and Autonomous Vehicles <https://www.gov.uk/government/organisations/centre-for-connected-and-autonomous-vehicles>

It is also necessary to recognise how different interventions may relate to one another, how they may complement each other and how it may be necessary to deliver them in a particular sequence for reasons such as engineering feasibility, impact on people and places or obtaining funding.

Each intervention must not therefore be considered in isolation. Such an approach is overly simplistic as it could overlook or mask an important decision that needs to be made. For example, if 'Intervention X' is delivered ahead of 'Intervention Y', it may not be possible to implement 'Intervention Y' without 'Intervention X' needing to be removed or rebuilt which would be wasteful in terms of public resources, and disruptive to people's lives. Moreover, linkages between interventions and existing travel networks will be made at the time of delivery to ensure that isolated provision is minimised.

It is important to bear in mind that this is a strategic spatial transport plan. Interventions are identified at a very broad, conceptual level of detail. In practice, the composition of interventions and packages which are set out in this GTP may eventually be influenced by other factors which cannot be identified at this time.

This GTP however provides a broad framework for how a set of interventions could or should in principle be brought forward, and how and why they complement each other in terms of their intention to address a challenge.

The Intervention Hierarchy

Interventions are defined as Projects, Linked Project Groups or Schemes, which are combined into Packages. Larger-scale Strategic Interventions which are not specifically proposed in this GTP, are considered as they may influence the Packages. The formation of packages is described simply in the figure overleaf.

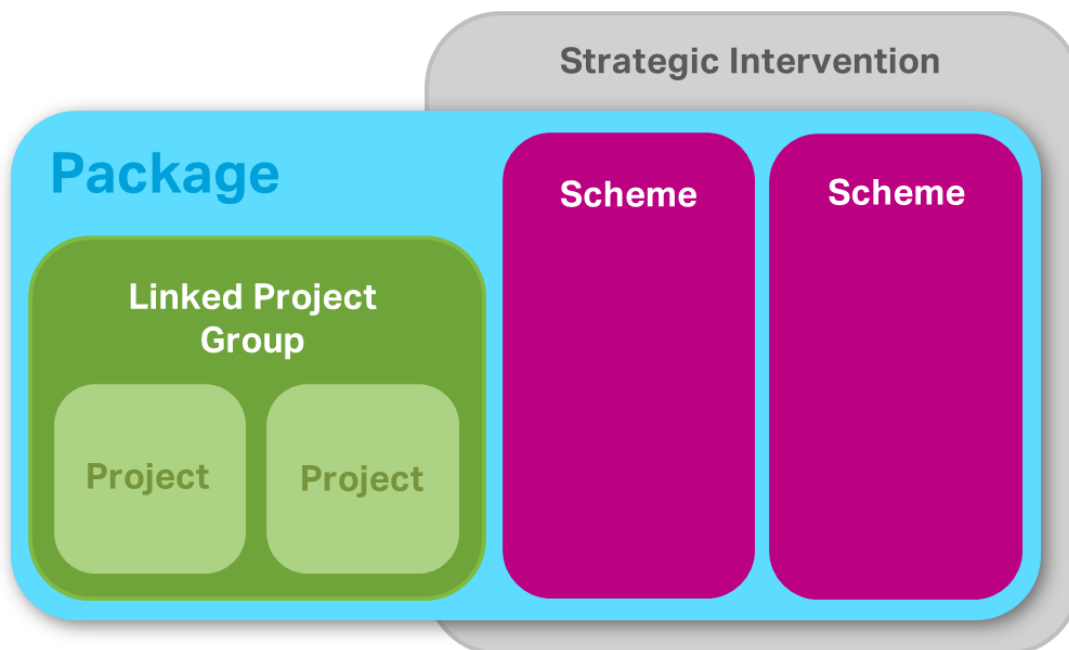


Figure 6 - Intervention Hierarchy



A Project represents an individual, smaller-scale intervention that would impact quite a localised, distinct geographical area or apply to multiple geographical areas in a relatively minor way. For example, a Project could include:

- *A discrete section of cycleway*
- *A new signalised crossing*
- *Minor road or junction redesign*
- *Additional bus stop/facility or cycling infrastructure points;*



Linked Project Group

A Linked Project Group represents a geographically related group of Projects that may impact a broader geographical area than an individual Project. The groups have flexibility in so much that Projects can be brought forward in isolation, in a programmed sequence, or at the same time. If individual projects are dropped, the overarching aim of the Linked Project Group would be weakened, however there should remain some benefit in bringing forward the remaining elements of the Linked Project Group, i.e. they are not so closely entwined that one Project cannot occur without another.

Linked Project Group examples could include:

- *A collection of cycleway projects forming a network*
- *A set of non-motorised and public-transport interventions at a particular junction or along a distinct stretch of road*
- *A series of minor motorway junction redesigns at successive junctions.*



Scheme

A Scheme is a medium-to-large scale intervention or study that would most likely impact a broader geographical area than a Project or apply to multiple geographical areas in a more significant way than a Linked Project Group. A Scheme could comprise of a single large intervention or a closely related set of measures which would not be deliverable as separate projects. Scheme examples could include:

- *Station redesigns or relocations with a less than major impact on the surrounding geographical area*
- *Town-wide bus service reconfigurations*
- *Long route or major road redesign*
- *Full motorway junction redesigns.*

Scheme Approaches

There are important choices to be made, not only about whether or not a particular intervention is required and the type of intervention, but also the potential different approaches that could be taken to address the challenge.

There may be more than one approach to dealing with a particular challenge (see Figure 7). An Approach represents an alternative option for the implementation of a Scheme (or Strategic Intervention) and this therefore influences the combination of interventions within Packages.

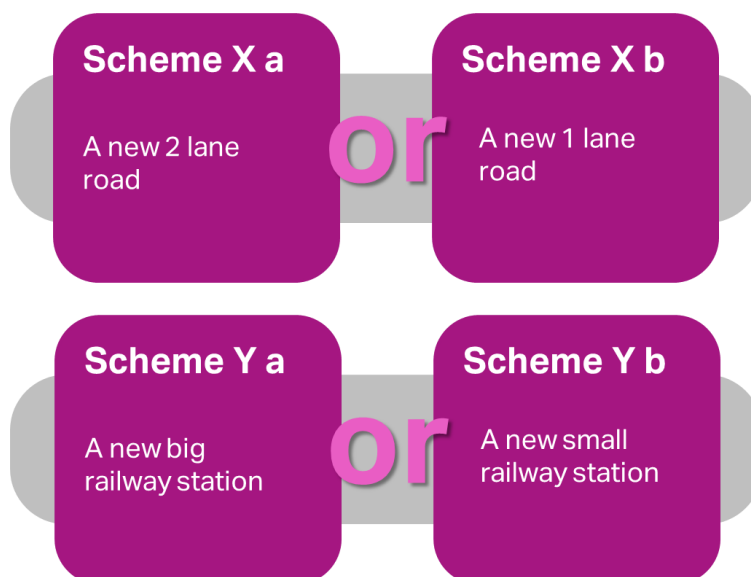


Figure 7 - Example Scheme Approaches

There may be a choice in which mode of transport takes priority in terms of the intervention, for example whether to invest in highway capacity by improving junctions and widening roads, or instead to invest in public transport and alternatives modes by improving bus services and cycleways. The choices however may be more subtle than this, such as the geographic extent or location of an intervention.

Package

A Package represents a collection of Schemes and Linked Project Groups, often within distinct geographical areas, that seek to solve or mitigate against a specific GTP challenge group. Schemes and Linked Project Groups may be assembled into packages for one or more overarching purpose related to the challenge groups, such as:

- *Improving connectivity between two towns*
- *Generating more transport links along a particular corridor*
- *Reducing congestion within a town centre, neighbourhood or sub-area of a town such as a business park.*

Strategic Interventions

Strategic Interventions are related to major decisions points. A number of prospective major, county-significant infrastructure interventions with the potential to affect the SC GTP area and beyond are defined exclusively at this level. These interventions are not specifically proposed or endorsed as part of the GTP, however they are highlighted at this level because it is recognised that if they were taken forward through other plans such as the LTP or by bodies including National Highways (formerly Highways England) and Network Rail, they could significantly influence decision making through the GTP.

Strategic Interventions and Corridors

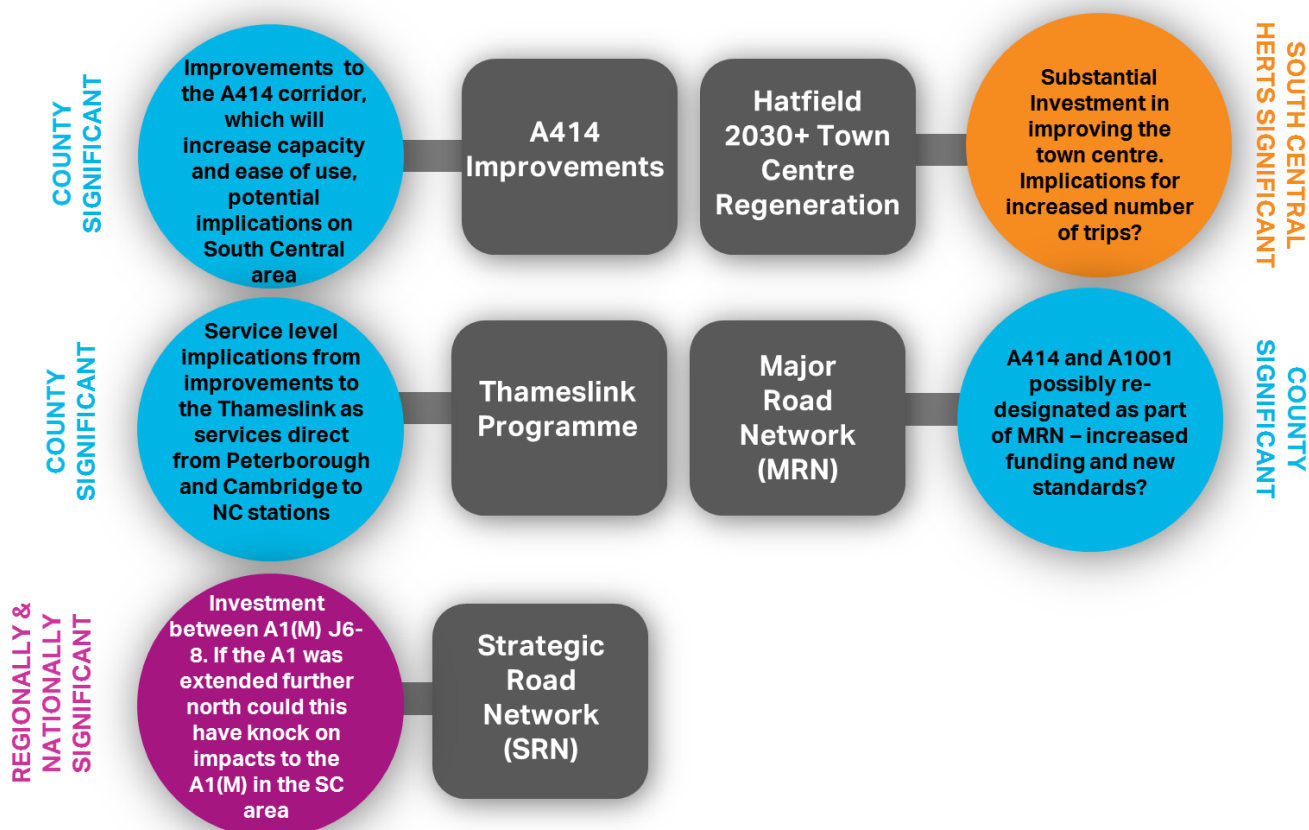


Figure 8 - Strategic Interventions and Corridors

National Highways Road Investment Strategy

National Highways is investing significantly in maintaining and improving the strategic road network (all motorways and major A-roads). The A1(M) Junction 6-Junction 8 All Lane Running scheme is one of many examples across the country of significant National Highways projects aimed at increasing capacity and improving network performance and resilience. The Junction 6-Junction 8 All Lane Running (Smart Motorway) scheme involves replacing existing hard-shoulders with running lanes. This should increase traffic throughput and it is anticipated that it will reduce congestion which is frequently experienced on this section of the A1(M) through Hertfordshire. If further investment comes forward on other parts of the A1(M)/A1 corridor further north in the future, which is not currently planned by National Highways, this could have further implications on the South Central area in terms of the attractiveness of the A1(M) for undertaking journeys.

It is acknowledged that increasing capacity on the A1(M) could create additional traffic flows on the adjoining local road network. Moreover, it should be noted that improvements to junctions along the A1(M) corridor are not proposed as part of the All Lane Running (Smart Motorway) scheme. It is at these junctions where the strategic road network interacts closely with the local road network, which is managed by Hertfordshire County Council.

Local road network impacts occurring as a result of the smart motorway scheme could be mitigated by interventions proposed in this GTP.

Thameslink

Between 2018 and 2020, local rail services operating along the East Coast Main Line were significantly overhauled and now form part of an extended Thameslink network. New services operate from Hertfordshire direct to places such as Brighton, Horsham and Gatwick Airport via central London. A new timetable is gradually being introduced, which will culminate in 24 trains per hour (tph) passing through the Thameslink Core section within central London. Around 8tph will route to/from the East Coast Main Line, while, for comparison, at the time of writing, 4tph are routed along the East Coast Main Line.

Major Road Network

In 2017/18, the DfT consulted on a potential new designation of road - MRN - which will sit between the local road network (managed here by HCC) and the strategic road network (managed by National Highways). This designation has now been adopted. Certain roads such as the A414 and A405 have now been designated as part of the MRN, as well as the A1001 between A1(M) Junctions 2 and 3 (Hatfield) and A1081 London Colney bypass. The MRN will be subject to separate prioritised funding and targets for maintenance and performance are likely to be specified to ensure these roads operate efficiently.

A414 Corridor Improvements

In parallel with this GTP, HCC has developed an A414 Corridor Strategy to identify the priorities for future transport investment along the key east-west corridor spanning the whole of Hertfordshire. The A414 crosses through the South Central area and is currently a very car dominated corridor. The strategy is seeking to identify opportunities to improve alternative modes of travel, including investigations into a new cross-county mass rapid transit system which features prominently in this GTP. Investment in road infrastructure may also be prioritised, where appropriate, on certain sections of the corridor.

Hatfield 2030+

Hatfield is a town with huge potential and a host to big business and academia. Yet the town faces a number of challenges, like many New Towns of its era, and needs an ambitious plan for change and renewal and to attract private and public investment. The Hatfield Renewal Partnership was established to deliver change across the town. The vision for Hatfield 2030+ is *“a well-connected, distinctive and multi centred town with a renewed ‘New Town’ pioneering and entrepreneurial spirit. A town that re-balances economic growth and world class education assets with new and rejuvenated housing, excellent community, culture, retail and leisure facilities and a series of connected urban centres”*. Transport will play a key role in delivering the vision, and in 2017 a Hatfield Transport Strategy was developed which set out the investment priorities for the town. The strategy’s proposals are fully absorbed into this GTP.

While no decision on any strategic intervention has been prescribed by the GTP, thinking around the future possibilities and opportunities of these interventions and initiatives has guided or influenced discussions on the optioneering and prioritisation of interventions and packages.

Proposals

Before introducing the proposed intervention packages, which make up a large part of the GTP, it is important not to overlook the broader set of principles or measures which will be required to help ensure the hard infrastructure type interventions put forward in this GTP are really successful.

A set of area wide interventions and principles are described below. These are considered to be essential accompaniments to the (mostly) hard infrastructure type interventions which make up the Packages described later in this paper. These behavioural change measures are aimed at supporting the delivery of positive change on Hertfordshire's transport network, helping to maximise the use of planned new infrastructure while addressing current and future growth and transport challenges.

Sustainable Travel Towns

The sustainable travel town programme is introduced in LTP4. This is a comprehensive package of schemes and behaviour change initiatives aimed at achieving a significant modal shift to non-car modes and reduction in single occupancy car use. Improvements could include improved cycling, walking and passenger transport infrastructure and service levels, in combination with initiatives such as travel planning and marketing. The application of Park and Ride and other parking demand management approaches, including resident-only parking permits where appropriate (and agreed in discussion with local residents), should also be considered as these would complement other improvements in passenger transport, and improved provision for sustainable modes in the towns. Within LTP4, there are key objectives with evidence detailed. Examples of objectives within different themes are detailed below:

- Enhance connectivity between urban areas in Hertfordshire
- Enhance journey reliability and network resilience across Hertfordshire
- Reduce carbon emissions
- Make journeys and their impact safer and healthier
- Improve access and enable participation in everyday life through transport

Many of the packages put forward in this GTP align with the Sustainable Travel Town concept and will need to be accompanied broader measures rolled out across the GTP area to encourage behaviour change.

Local Planning Authorities will liaise with HCC and bid for towns in their authority areas to become Sustainable Travel Towns. It is possible that one or more of the towns in the SC GTP area will become a Sustainable Travel Town in the future.

The following set of area-wide interventions is for guidance only, to be considered in conjunction with Local Plan and LTP policies.

Local Cycling and Walking Infrastructure Plans

The Department for Transport (DfT) sets out technical guidance for Local Authorities on Local Cycling and Walking Infrastructure Plans¹³. The key outputs of LCWIPs are:

¹³ Local Cycle and Walking Infrastructure Plans - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908535/cycling-walking-infrastructure-technical-guidance-document.pdf

- A network plan for walking and cycling which identifies preferred routes and core zones for further development
- A prioritised programme of infrastructure improvements for future investment
- A report which sets out the underlying analysis carried out and provides a narrative which supports the identified improvements and network.

Local Authorities are required to develop a LCWIP for their area in line with the LCWIP Technical Guidance for Local Authorities. At the time of writing St Albans District and Welwyn Hatfield Borough are producing LCWIPs in discussion with HCC. It is expected that these LCWIPs will draw from but also add to walking and cycling proposals set out in this GTP. LCWIPs are intended to identify infrastructure measures, which will need to be developed in line with LTN 1/20 Cycle Infrastructure Design.¹⁴

Enhanced Bus Partnership

The Intalink Enhanced Partnership involves bus companies and local authorities working more closely together to improve the bus networks within and between the Hertfordshire towns. Key plans for the partnership include giving buses priority on congested roads and measures such as:

- Prioritising bus and coach services in traffic
- Improving the image of bus travel
- Upgrading bus infrastructure
- More closely integrating the bus network
- Making smarter use of data and information

The Enhanced Partnership builds on the work done by the existing Intalink Partnership, a unique collaboration between Hertfordshire County Council, bus and rail operators and local districts and councils. It has been established in Hertfordshire for over 20 years. The partnership has been successful in improving the experience of bus passengers and in making public transport a more attractive option by delivering a range of publicity and information, digital communications including a website, mobile ticket app and multi-operator ticketing schemes.

Hertfordshire County Council has published its Intalink Bus Strategy¹⁵ and Bus Service Improvement Plan¹⁶ which sets out the county council's proposals to prioritise bus services in traffic, improve the image of bus travel, upgrade bus infrastructure, better integrate the network and apply a smarter approach to the use of data and information.

Given the importance of bus services in the local area, further investigations are likely to be required to identify wider scale improvements along corridors and across towns in the SC GTP area. An Enhanced Partnership bus priority feasibility study has already commenced for St Albans, and the towns of Welwyn Garden City and Hatfield are also considered key priorities for similar studies in the future. Specific interventions which may have an influence

¹⁴ LTN 1/20 Cycle Infrastructure Design 2020 - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/951074/cycle-infrastructure-design-ltn-1-20.pdf

¹⁵ Hertfordshire County Council – Intalink Bus Strategy <https://www.hertfordshire.gov.uk/media-library/documents/about-the-council/consultations/intalink-bus-strategy-september-2019.pdf>

¹⁶ <https://www.intalink.org.uk/bus-service-improvement-plan>

on bus services in these towns which are presented in this GTP will need to be considered in the context of any future feasibility study or studies to be undertaken in line with the Enhanced Partnership's aims and objectives.

Area Wide Interventions

Area wide interventions, especially in relation to behavioural change, are required for a more cohesive delivery of sustainable and accessible development. The following interventions are considered to support the GTP.

Ensure sustainable transport access to developments

New developments should be designed in line with Local Plan policies to support travel by walking, cycling and public transport. Direct walking and cycle routes should be included to connect to existing and planned walking and cycle routes on the fringes of the development site, knitting new development into existing active travel infrastructure. In larger developments, a suitable corridor for bus access should be provided, designed to harmonise with existing and planned bus services. Consultation with bus operators will be required in ensuring that the highway network within the development facilitates efficient bus service performance. Any changes or improvements to bus services need to be developed in line with the Intalink Bus Strategy and BSIP¹⁷ and will most likely require monetary contributions from developers. Walking and cycling routes should be as direct as possible to existing key services, schools, shops and local public transport services.

Develop a network of electric vehicle charging points

Towns and neighbourhood centres within the plan area should develop a network of public electric vehicle charging points in line with projected demand, in order to enable the uptake of electric vehicles. The location and number of sites required will require further study into likely demand patterns, which may be undertaken in cooperation with vehicle charging network operators. The local authorities and Hertfordshire County Council will need to work with the industry to monitor the uptake of electric vehicles across the county and identify where the provision of additional charging points can be optimised and an EV charging implementation strategy is being developed to enable this.

Car clubs

The provision of car clubs, including car clubs using electric vehicles and floating car clubs, is to be developed to encourage HCC to require them for developments in all locations where there is likely to be sufficient demand from residents and employees. Car clubs play an important role in enabling sustainable travel choices by reducing the need for vehicle ownership. Reduced vehicle ownership allows residents greater flexibility in travel mode choice by reducing sunk costs for travel. Existing car clubs such as the University of Hertfordshire's CarPlus-BikePlus scheme and Herts Liftshare could be used as templates for expansion or replication in other parts of the county. The provision of car clubs should be considered in conjunction with current parking standards and provision.

Area-wide wayfinding

Encourage and adopt coherent wayfinding strategies and programmes across town centres, neighbourhoods and key movement corridors with the aim of promoting walking and cycling trips and improved, more sustainable access to public transport services

¹⁷ Intalink Bus Strategy and Bus Service Improvement Plan – Hertfordshire County Council
<https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/planning-in-hertfordshire/transport-planning/transport-policy-and-supporting-strategies.aspx> and <https://www.intalink.org.uk/bus-service-improvement-plan>

Improved information and wayfinding at bus stops

Work with operators to provide improved information at bus stops; including real time information, route maps and local area maps (if appropriate) in order to make it easier for bus users to navigate. Any measures should align with the Actions set out in HCC's Intalink Bus Strategy, in particular Actions 7, 11 and 12.

Integrated Ticketing

Create integrated ticketing area with London to allow easier interchange between modes

Integrated Transport Planning

Support the establishment of a London Capital Region Transport Body, or other administrative structure which will allow greater integration of transport and land use planning between Local Authorities, support multi-modal planning and enable integrated ticketing across Hertfordshire and surrounding areas.

The County Council and the majority of Bus Operators in Hertfordshire have been members of a voluntary quality partnership, Intalink, for 20 years. This partnership has led to various achievements, including multi-operator ticketing and extensive roadside publicity covering almost all bus stops in the county, some of which also have real time passenger information displays utilising data from Bus Operators' systems. Following new powers introduced by the 2000 Act (as amended by the 2017 Act), the partnership has been extended into an Enhanced Partnership which now offers the benefits to the travelling public and wider community which could not be achieved with a voluntary arrangement. The principal objectives will be those contained in the Enhanced Partnership Plan and Scheme, in support of its LTP4 include prioritising bus and coach services in traffic; improving the image of bus travel; upgrading bus infrastructure; closer integration of the bus network; and smarter use of data and information¹⁸. HCC is also working in close collaboration with Intalink partners in identifying bus-priority interventions on key routes.

Town Bike Share Schemes

Implement bike share schemes in larger towns with bike locations at train stations and town centres. Borough/district councils will identify their own bike sharing schemes such as Beryl Bikes in Watford.

Temporary Road Closures

Implement temporary closures of roads to coincide with special events or to promote more sustainable travel behaviour. Liaise with the emergency services, local communities and bus/coach operators prior to implementing temporary closures.

Parking at railway stations

There should be a presumption against additional car parking at railway stations except where a need has been demonstrated with evidence and agreed between all relevant stakeholders. Any additional parking should incorporate dedicated spaces for electric vehicles and potentially high occupancy vehicle spaces if sufficient monitoring systems can be put in place. The current extent and effectiveness of Controlled Parking Zones around stations needs to be reviewed in the context of potential increases in travel demand. (See LTP4 Policy 4: Demand Management). The local authorities will need to work with Network Rail and the train operating companies to investigate any changes to parking at stations.

¹⁸ Intalink Enhanced Partnership Plan and Scheme, Hertfordshire County Council - <https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/planning-in-hertfordshire/transport-planning/transport-policy-and-supporting-strategies.aspx>

Parking in new developments

The number of parking spaces to be provided within new developments needs to be in line with the standards set out in local guidance. Where practical and appropriate to do so, a reduced number of spaces should be considered, particularly in developments close to town centre locations. Any proposals to change parking, notably at public car parks, would need to be discussed and agreed by Welwyn Hatfield Borough Council, St Albans City and District Council and Hertsmere Borough Council as they have responsibility for setting parking standards.

Parking in Town Centres

Many town centres depend on sufficient provision of car parking to cater for visitors and employees. Any proposals to increase overall provision of spaces should however take into account the future demand for car travel as well as the relationship to other GTP proposals which aim to encourage more sustainable travel. Car park tariffs are also a key consideration which can influence when and where people choose to park. Any proposals to change parking, notably at public car parks, would need to be discussed and agreed by Hertsmere Borough Council, St Albans City and District Council and Welwyn Hatfield Borough Council as they manage the majority of public car parks.

Parking on roads

There should be a presumption against providing additional parking on roads. Where there is opportunity to re-evaluate the place and movement function of a road or corridor, consideration could be given to reviewing the provision of on-road parking spaces in consultation with local residents and businesses. Where any reduction in on-road parking provision is proposed, consideration should be given to the opportunities this could afford to improving conditions for cyclists, pedestrians and the efficient movement of bus services. The details of such measures, however, are not included in this GTP and will be considered as part of other mechanisms, such as the Hertfordshire Local Cycling and Walking Infrastructure Plan (LCWIP) and Sustainable Travel Town Programme (STT).

Parking Surveys

Review the role/use of residents parking zones for Monday-Friday 9-5 working hours to support local businesses; on nearby streets where on street parking loss on main routes is proposed to achieve more reliable bus journeys/active travel, to see how proposed interventions will impact current and future parking conditions within the SC GTP area.

20mph speed limits

The introduction of 20mph areas has been shown to encourage the uptake of active travel within an area and Hertfordshire County Council's adopted Speed Management Strategy (SMS) sets out a framework to identify areas which may be suitable for 20mph limits and additional funding has been secured to implement these more widely across the county. The SMS also states that 20mph speed limit areas will be implemented, if the environment allows, where new schools are proposed and states that the physical design of new residential developments should encourage motorists to drive at 20mph or less.

Active Travel Infrastructure

Active travel encourages the movement of pedestrians through physical activity, such as walking and cycling, to travel between places as an alternative to motorised transport. The encouragement of active travel will improve health, quality of life, and the environment in the areas it is implemented. Active travel is encouraged by maintaining existing and providing additional pedestrian facilities such as widened footways, pedestrian crossings, safe and

secure cycle storage, and other measures to ensure pedestrians have safe and accessible travel routes.

Hertfordshire's Rights of Way network will continue to play a vital role in connecting places and enabling people to walk. Hertfordshire County Council is developing a new Active Travel Strategy and the Rights of Way Improvement Plan sets out the county's approach to retaining and improving the Public Rights of Way Network ¹⁹.

Travel Planning

Travel Plans are an important tool in Hertfordshire County Council's strategy to achieve the goals and objectives set out in Local Transport Plan 4. Travel Plans are required by planning authorities for a wide range of development proposals, including commercial, educational institutional and residential developments.

A Travel Plan is a long-term management strategy for an organisation or site which seeks to deliver sustainable transport objectives, and which is regularly reviewed. Travel Plans are unique to each development and identify a package of measures for a specific location to improve accessibility and encourage use of sustainable modes of travel.

Travel Plan implementation is an ongoing process requiring regular monitoring, review and adjustment to ensure agreed objectives are delivered.

Travel Plans should be produced to support all developments generating significant amounts of movement and/or where other local circumstances make one necessary. Travel Plans may also be advantageous for changes in occupier or land-use involving a new set of travel patterns, particularly where the previous occupants did not have a Travel Plan. They can also be prepared on a voluntary basis.

Travel Plans will be required for all development proposals exceeding the county council's thresholds²⁰, and in other circumstances where local factors make one necessary.

Travel Plan measures could include incentives for people to travel more sustainably including free bus tickets for a limited period and vouchers towards the purchase of cycle equipment, as well as provision of information including cycle maps.

Development Travel Planning

Travel plans will be required for new developments following HCC guidance.

School travel planning

School travel plans are a proven method to achieve reduced car use and increase active travel among young people. They can be voluntary or secured through the planning process. However, increase in journey length for education trips is making it harder to achieve modal shift away from cars.

Nevertheless, it should remain a priority to continue and enhance school travel planning across the plan area. Particular emphasis should be placed on travel planning for schools in the local vicinity of the interventions listed below which have a focus upon improving walking, cycling and public transport routes.

Particular attention should also be given to engaging with secondary schools, including those with large catchment areas, to determine how the proportion of pupils travelling to/from school on foot, by bike, by bus as part of a car share (as opposed to travelling individually by

¹⁹ Rights of Way Improvement Plan 2017 – Hertfordshire County Council - <https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/planning-in-hertfordshire/transport-planning/transport-policy-and-supporting-strategies.aspx>

²⁰ Hertfordshire County Council Travel Plan Guidance – March 2020

car) can be encouraged and linked to the educational programme. Travel plan guidance for schools is currently being updated.

Travel Plans could also be considered alongside measures such as increased parking restrictions (whilst ensuring sufficient spaces are retained for disabled people), reduction in speed limits, banned turns for vehicles during school opening and closing times etc. (See LTP4 Policy 3: Travel Plans and Behavioural Change). Additional school travel planning interventions and successful case studies are set out in Hertfordshire's Sustainable Modes of Travel Strategy (SMoTS) for schools and colleges.

Mass Rapid Transit

The concept of a Mass Rapid Transit (MRT) traversing Hertfordshire has been put forward in the A414 Corridor Strategy. A Mass Rapid Transit (MRT) 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 a Mass Rapid Transit?

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. The key criteria for a MRT are:

- Ability to interchange easily between different modes of travel
- Frequent services to minimise wait times for passengers
- Reliable services
- Distinctive branding and marketing
- Supporting sustainable growth
- Integrated ticketing
- Linked to key developments and major employment centres
- Better-than or equal-to journey times compared to the private car
- Linked to major transport hubs
- High quality rolling stock

What could an MRT look like?

An MRT could take different forms. What is crucial is the type of service that is provided.

An 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. Alternatively, it could take the form of a tram system. Hertfordshire County Council is investigating options for what form an MRT could take along the A414 corridor area with work ongoing to develop a business case for the Hertfordshire – Essex Rapid Transit (HERT).²¹

What is the overarching aim of a Mass Rapid Transit (HERT) 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

²¹ More detailed information on HERT can be found at www.hertfordshire.gov.uk/HERT

service provision to maintain and enhance Hertfordshire's local economy and competitiveness.

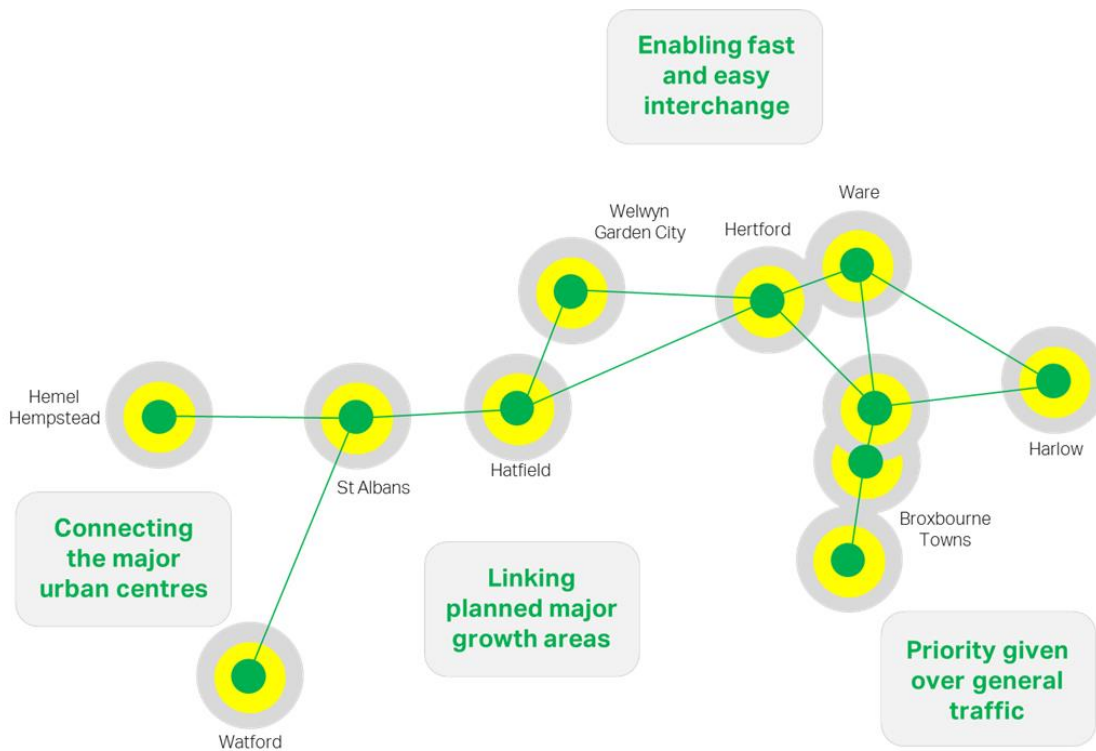


Figure 9 – MRT Connectivity

What effect could a Mass Rapid Transit (HERT) have on the South Central GTP area?

The effect of HERT on the South Central could depend on the form and route it takes. Further interventions or a change to the interventions put forward in this paper could be required. Additional interventions include new stops or interchanges, new footway connections and cycle routes which enable people to access the service. If HERT is a rubber tyre-based system (rather than rail / track based), alteration to the highway network may be required. A review may therefore be required of the SCGTP proposals at a later date once more detailed investigations into a MRT have been completed.

South Central GTP Packages

A total of thirty-six packages are proposed in this GTP, each containing two or more interventions. Some interventions feature in more than one package because they could serve more than one purpose.

For ease of reference, packages are introduced on a town-by-town basis with firstly the overarching aim of the package, followed by the key features which the package comprises, the schedule of interventions within that package, and lastly a map providing an indication of the broad location of package interventions. A more general discussion is provided at the end of each town section.

Packages are introduced by town geographically in a broadly clockwise fashion, commencing in Hatfield, then moving to Welwyn Garden City, Potters Bar, Borehamwood, and finally St Albans and London Colney.

It should be noted that Packages 1-7 broadly align with corridors 1-7 of the adopted Hatfield Transport Strategy (Welwyn Hatfield Borough Council, 2017).

Table 3 - South Central GTP Packages

Area	Package ID	Package Name
Hatfield	PK1	Hatfield – College Lane/Cavendish Way Corridor
Hatfield	PK2	Hatfield – Cavendish Way/Queensway Corridor
Hatfield	PK3	Bishop’s Rise Corridor
Hatfield	PK4	Woods Avenue/Travellers Lane Corridor
Hatfield	PK5	French Horn Lane Corridor
Hatfield	PK6	Comet Way/Wellfield Road Corridors
Hatfield	PK7	St Albans Road East/Hertford Road Corridor
Welwyn Garden City – key connections to other towns	PK8	North West Hatfield and Lemsford Connectivity
Welwyn Garden City – key connections to other towns	PK9	St Albans – Welwyn Garden City Connectivity
Welwyn Garden City – key connections to other towns	PK10	Hatfield – Welwyn Garden City Connectivity
Welwyn Garden City – key connections to other towns	PK11	A1(M) – A414 Junction 4 Interchange

Welwyn Garden City	PK12	Mundells Area Non-Car Accessibility and Travel Planning
Welwyn Garden City	PK13	Welwyn Garden City Active Travel Improvements
Welwyn Garden City	PK14	Bridge Road Transformation – Welwyn Garden City Town Centre
Welwyn Garden City – key connections to larger towns	PK15	Welwyn Garden City – Stevenage and Hitchin Corridor
Welwyn Garden City – key connections to larger towns	PK16	Luton – Wheathampstead – Hatfield and Welwyn Garden City Corridor
Potters Bar	PK17	Hatfield – Potters Bar Cycle Corridor Enhancements
Potters Bar	PK18	Potters Bar Active Travel Improvements
Potters Bar	PK19	Potters Bar Public Transport Improvements
Borehamwood	PK20	Borehamwood Active Travel Improvements
Borehamwood	PK21	Borehamwood – Elstree Village Connectivity
Borehamwood	PK22	Borehamwood – London Connectivity
Radlett	PK23	Radlett Station Accessibility
St Albans	PK24	St Albans City Centre Improvements
St Albans	PK25	St Albans Green Ring and Alban Way Improvements
St Albans	PK26	St Albans Abbey Station Accessibility
St Albans	PK27	St Albans City Station Accessibility
St Albans	PK28	Hatfield Road Corridor - St Albans
St Albans	PK29	London Road Corridor - St Albans
St Albans District	PK30	A414 Highways Improvements (South of St Albans)
St Albans District	PK31	London Colney Inter-Urban Strategic Public Transport Connectivity

St Albans District	PK32	London Colney Inter-Urban Local Connectivity
St Albans District	PK33	London Colney Internal Connectivity
St Albans District	PK34	St Albans – Hatfield Local Connectivity
St Albans District	PK35	Chiswell Green Corridor Active Travel Improvements
St Albans District	PK36	Alban Way Improvements

Hatfield

Packages 1-7 cover the town of Hatfield and are summarised in turn below.

Package 1 – Hatfield - College Lane/Cavendish Way Corridor

The overarching aim of Package 1 is:

To 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.

The Package consists of:

- Junction improvements along the corridor that increase priority for active travel modes.
- Cycleway improvements, including a new cycle lane along Cavendish Way and general improvements and maintenance.
- Cycle parking locations at key destinations along the corridor.
- Development of a new active travel bridge across the A1(M).
- Upgraded road crossings.

The full schedule of interventions is shown in the table below.

Table 4 - PK1 - Hatfield - College Lane/Cavendish Way Corridor

	ID	Name	Description
	SM1	Cycle route improvements	Remove the existing railing around the crossing points and in the central island to open the area up to other modes. Improve the cycling environment by connecting the various cycle routes. Improve the crossing points by expanding the width of the crossings and remarking the carriageway with alternative materials to highlight crossing locations.
	SM2	Junction signalisation	Replace the existing roundabouts with signalised junctions incorporating better pedestrian crossing facilities. Opportunities to incorporate bus priority features will also be explored.
LP1	PR3	Railing Removal	Remove existing railing along the edge of the carriageway.
LP1	PR4	Pavement Decluttering	Declutter the existing pavements and explore opportunities to provide a better streetscape for pedestrians and cyclists. Reduce the potential for conflict by formalising segregation between cyclists and pedestrians.
			PR3 and PR4 are very closely linked, and it is recommended that they are implemented in combination
SM5		Hotel access reconfiguration	Reduce the priority that the Hotel access has onto the roundabout; install a raised entry treatment across the access.

	ID	Name	Description
	PR6	Crossing signal reprogramming	Re-programme the signal phasing at these crossing locations to prioritise pedestrian movements and in the process carry out an assessment of the impact of traffic, notably buses.
	SM7	Upgrade crossings on St Albans Road	Remove the existing Zebra crossings and install dual purpose crossings and in the process carry out an assessment of the impact of traffic, notably buses.
	PR8	Comet Way cycle route maintenance	Better maintaining of the cycle route; cut back vegetation, implement lighting on the cycle path and ensure a regular maintenance programme is in place.
	SM9	Cavendish Way cycle lane	Increase the width of the pavement to allow for formal marking of a cycle lane, whilst making sure the carriageway remains sufficiently wide to accommodate buses and other large vehicles.
	SM10	A1(M) cycle overbridge	Construct a bridge across the A1 (M) providing a more direct as the crow flies route for pedestrians and cyclist only (with National Highways involvement)
	SM11	A1(M) Junction 3 reconfiguration	A major redesign of the existing A1 (M) junction 3 roundabout. (with National Highways involvement)
	SM12	A1(M) Junction 3 - A414-Comet Way improvement	An improved connection between the A414 eastbound link and A1001 Comet Way by way of a segregated left turn link or extended merge.
	SM13	A1(M) Junction 2 - Junction 3 link road	Remove the existing northbound exit slip at Junction 3 and provide a connector road from Junction 2 to connect to Junction 3 on the western side of the A1 (M). (with National Highways involvement)
	SM16	Cycle Parking at prominent locations	Provide cycle parking and storage facilities in prominent locations

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

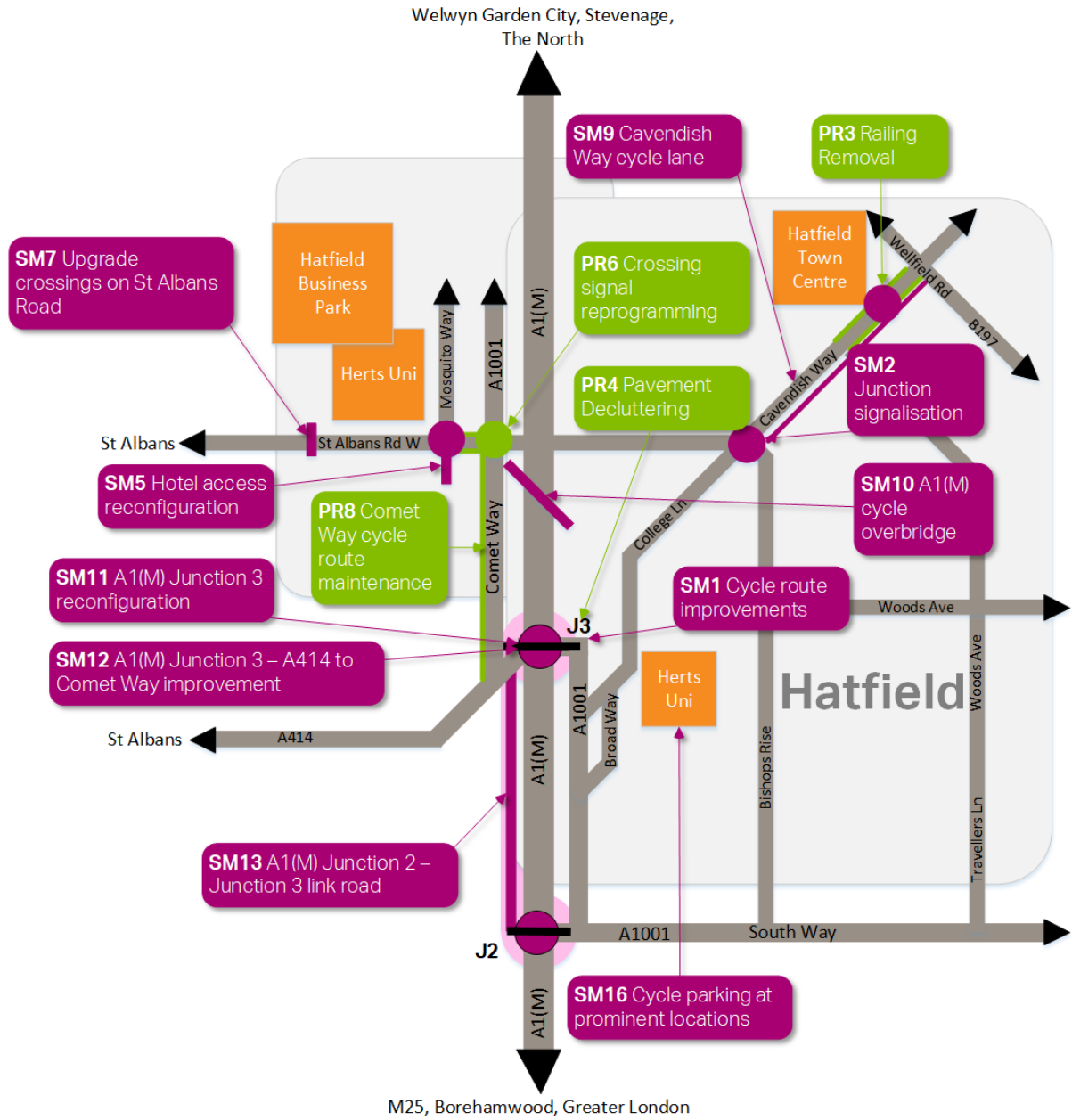


Figure 10 – Package 1 College Lane/Cavendish Way Corridor

Package 2 – Hatfield - Cavendish Way/Queensway Corridor

The overarching aim of Package 2 is:

To 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.

The Package consists of:

- Implementation of bus priority measures, including a bus lane along Cavendish Way.
- Improvement of the cycle lanes along the corridor.
- Junction improvements, including signalisation, to improve conditions for active travel modes.
- New and upgraded road crossings.

The full schedule of interventions is shown in the table below.

Table 5 - PK2 - Hatfield - Cavendish Way/Queensway Corridor

ID	Name	Description
PR17	Link Drive traffic management	Introduce traffic management measures along Link Drive to reduce speed and make it easier for pedestrians to cross the road and for cyclists to route along it.
PR18	Cavendish Way-Queensway Active Travel Corridor	Review the design of the cycle route along Cavendish Way and Queensway and improve facilities for pedestrians and cyclists by removing the existing railing, whilst maintaining segregation from vehicles to increase safety.
PR19	Cavendish Way crossing upgrade, adjacent to Comet Way	Install a dual-purpose crossing for use by pedestrians and cyclists
SM20	Cavendish Way bus improvements	Introduce a bus lane in the north eastern direction of the road and investigate reconfiguration of the Cavendish Way/Queensway junction into a signal-controlled junction.
PR21	Cavendish Way cycle lane markings	Improve the marking of the cycle lanes and ensure consistency along the route
PR22	Cavendish Way new crossing, adjacent to Meadow Dell	Install a new pedestrian crossing
SM23	Cavendish Way-Bishops Rise junction reconfiguration	Remove the existing roundabout and the installation of an at grade signalised junction and investigate opportunities for bus priority.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

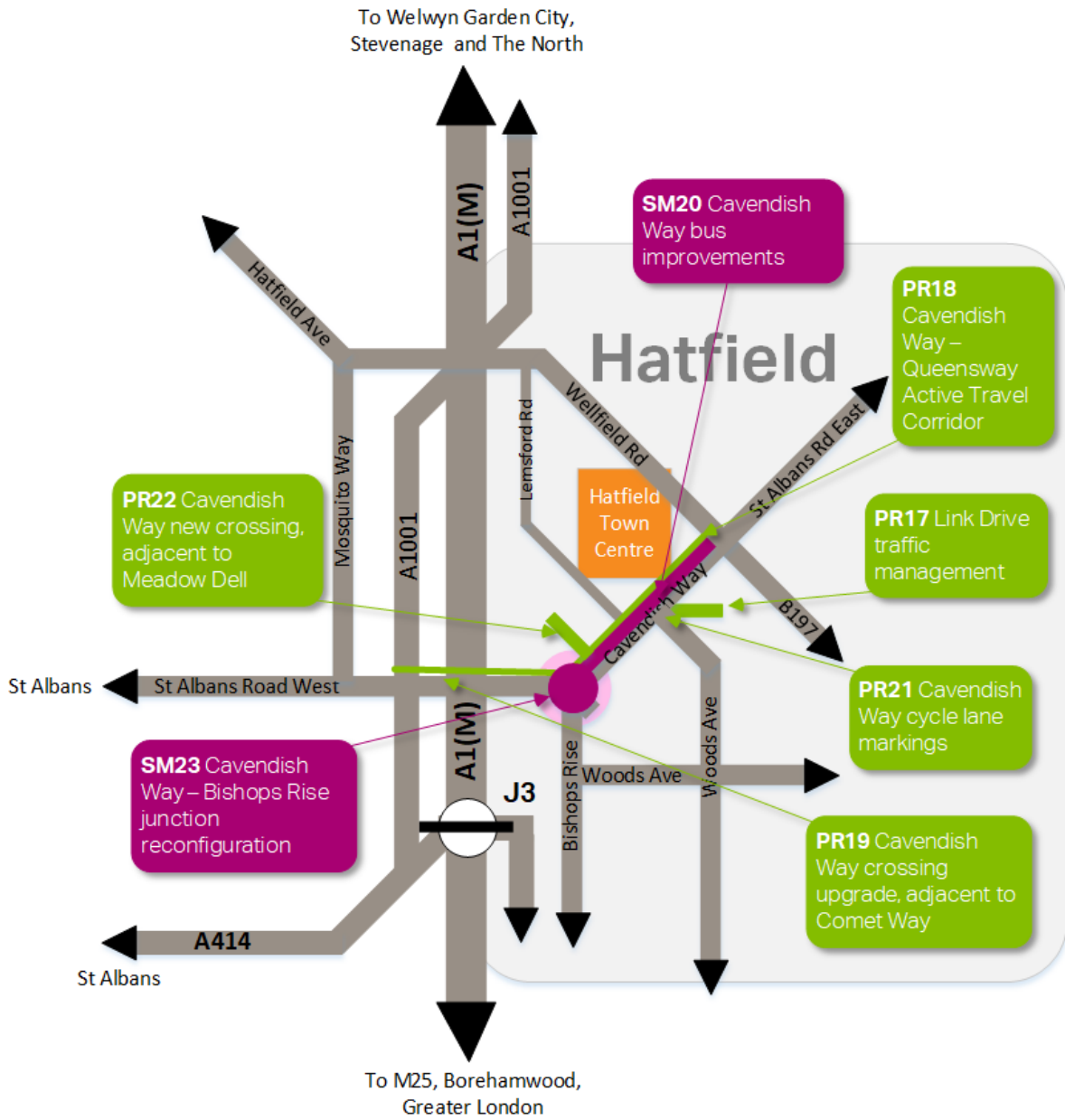


Figure 11 - Package 2 Cavendish Way / Queensway Corridor

Package 3 – Hatfield - Bishops Rise Corridor

The overarching aim of Package 3 is:

To improve active travel connections and urban realm between the Hatfield Business Park, university, and the residential areas along Bishops Rise.

The Package consists of:

- Development of cycling infrastructure along Bishops Rise, including a cycle lane, raised entry treatments to side streets, junction upgrades, and new crossings.
- Urban realm improvements at the South Hatfield Shopping Centre at High View.
- Parking rationalisation along Bishops Rise.

The full schedule of interventions is shown in the table below.

Table 6 - PK3 - Hatfield - Bishop's Rise Corridor

ID	Name	Description
SM24	Side arm raised entry treatments	Introduce raised entry treatments on side roads to the east side of Bishops Rise. Entry treatment works would need to account for the safe and efficient movement of buses.
SM25	New crossings on Bishops Rise	Install new pedestrian and cyclist crossing points along Bishops Rise - adjacent to Minster Close, Lark Rise and High View
SM26	Parking rationalisation	The rationalising of the parking arrangements along the northern section of Bishops Rise to help ensure sufficient visibility for more frequent crossings. This is not considered to be a large-scale reduction in parking spaces.
PR27	Cycle Lane on Bishops Rise between High View and Cavendish Way	Widen the footpath on the eastern side of Bishops Rise and mark dedicated cycle lane, whilst making sure the carriageway remains sufficiently wide to accommodate buses and other large vehicles.
PR29	Cycle Lane on Bishops Rise between High View and South Way	Widened the existing footway to allow for pedestrian and cyclist shared space on the footway
SM30	Garden Avenue junction reconfiguration	Substitute existing roundabout with T junction and raised tabletop treatment

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

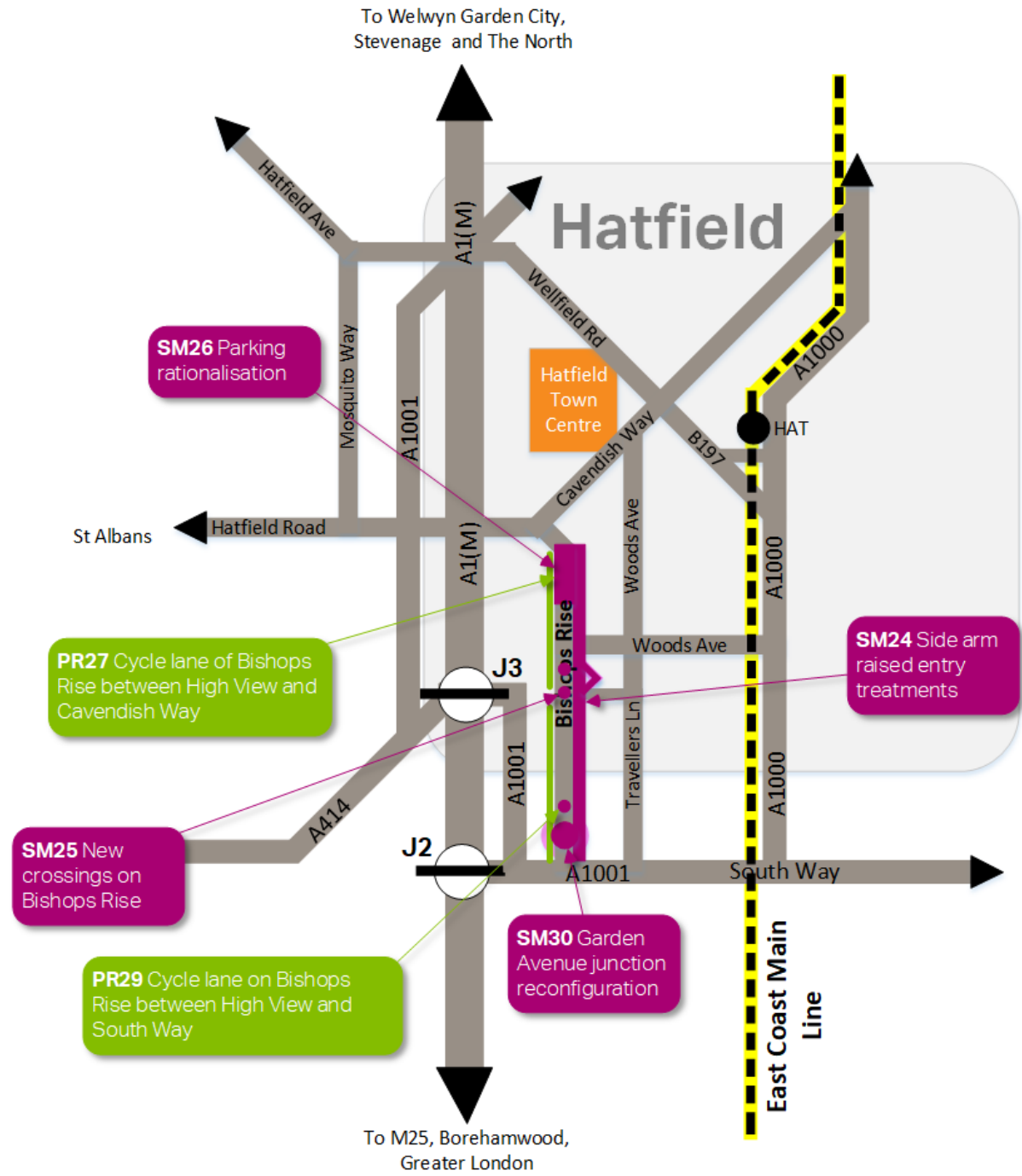


Figure 12 - Package 3 Bishop's Rise Corridor

Package 4 – Hatfield - Woods Avenue/Travellers Lane Corridor

The overarching aim of Package 4 is:

To enhance connectivity between south Hatfield and the town centre along Travellers Lane/Woods Avenue by improving facilities for pedestrians and cyclists and reducing traffic speeds.

The Package consists of:

- Development of cycling infrastructure along Travellers Lane and Woods Avenue, including raised entry treatments to side streets, junction upgrades, and new crossings.
- Implementation of traffic calming measures along the corridor.
- Formalised parking along Traveller Lane.

The full schedule of interventions is shown in the table below.

Table 7 - PK4 - Hatfield - Woods Avenue/Travellers Lane Corridor

ID	Name	Description
SM31	Raised entry treatments	Implementation of raised entry treatments along the eastern side of Woods Avenue and Travellers Lane. Entry treatment works would need to account for the safe and efficient movement of buses.
PR32	New crossing	Install a new pedestrian crossing between Oaklands Wood and Queensway-Link Drive junction
PR33	Waiting and loading restrictions review	Review waiting and loading restrictions along the northern section of Woods Avenue
SM34	Roundabout entry treatments	Install raised entry treatments with cycle priority measures around the Woods Avenue/Travellers Lane/Oxlease Drive roundabout. Entry treatment works would need to account for the safe and efficient movement of buses.
PR35	Parking Bays	Install and provide markings for formalised parking bays on Travellers Lane
SM36	New at-grade crossing adjacent to De Havilland Primary School	Remove the existing subway and bring pavements to grade level adjacent to De Havilland Primary School. However, the existing subway is potentially well used by an adjacent school. Investigate the option for surface level crossing facilities instead of existing subway arrangement.
SM37	A1000 South Way/Travellers Lane roundabout cycle improvements	Improve the cycle connections to various routes around the roundabout
SM38	Travellers Lane traffic calming	Traffic calming measures along the length of the corridor

Indicative cost range estimates and timescales for these interventions are contained in Appendix B

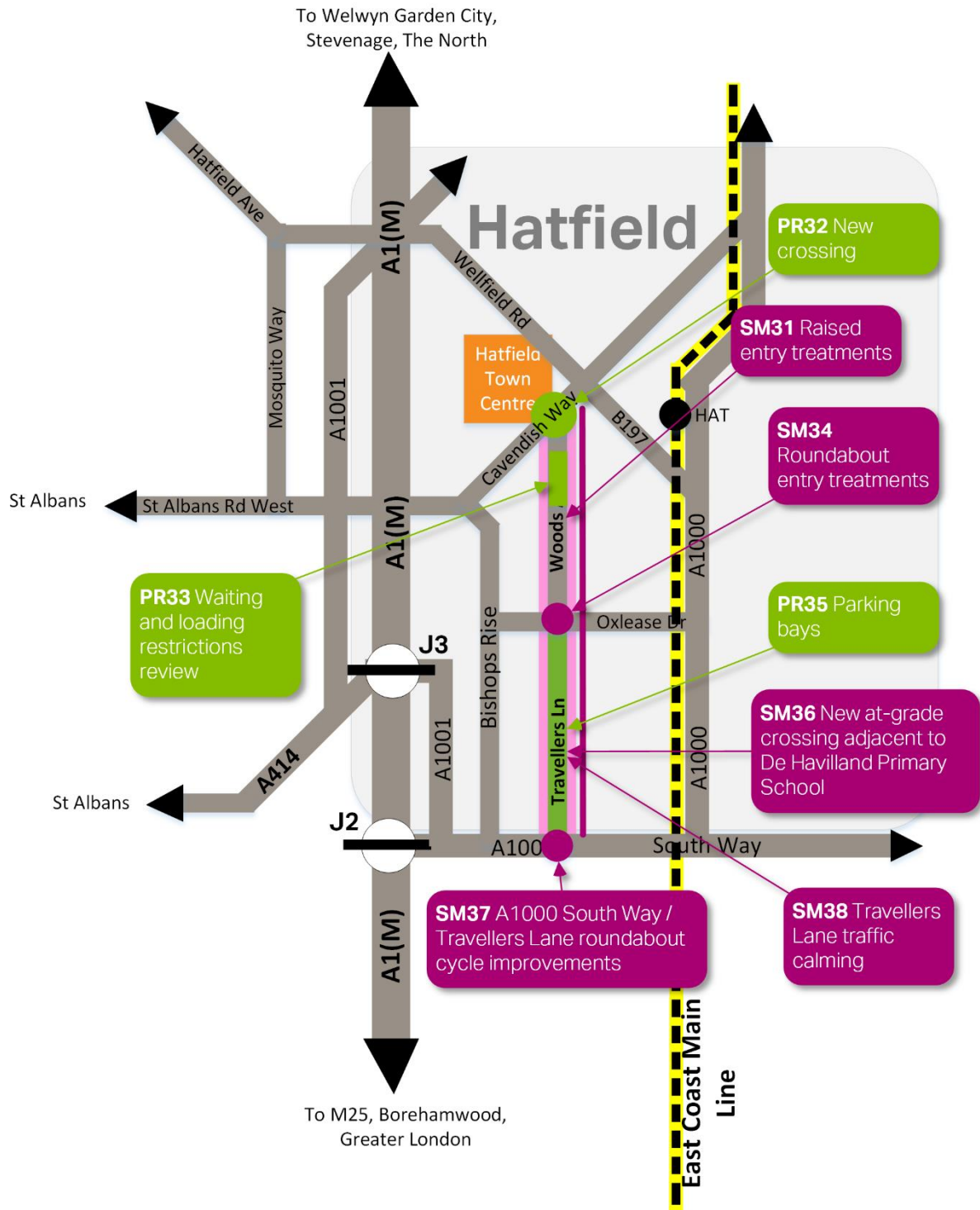


Figure 13 - Package 4 Woods Avenue/Travellers Lane Corridor

Package 5 – Hatfield - French Horn Lane Corridor

The overarching aim of Package 5 is:

To increase active travel provision between Hatfield town centre and the train station by improving facilities for pedestrians and cyclists.

The Package consists of:

- Development of cycling infrastructure along French Horn Lane, including cycle lanes along French Horn Lane with a link to Queensway, junction upgrades, and new crossings.
- Implementation of public realm and safety improvements along the corridor, including wayfinding, street lighting and CCTV along streets and underpasses/bridges.
- Improvement of the pedestrian railway bridge.

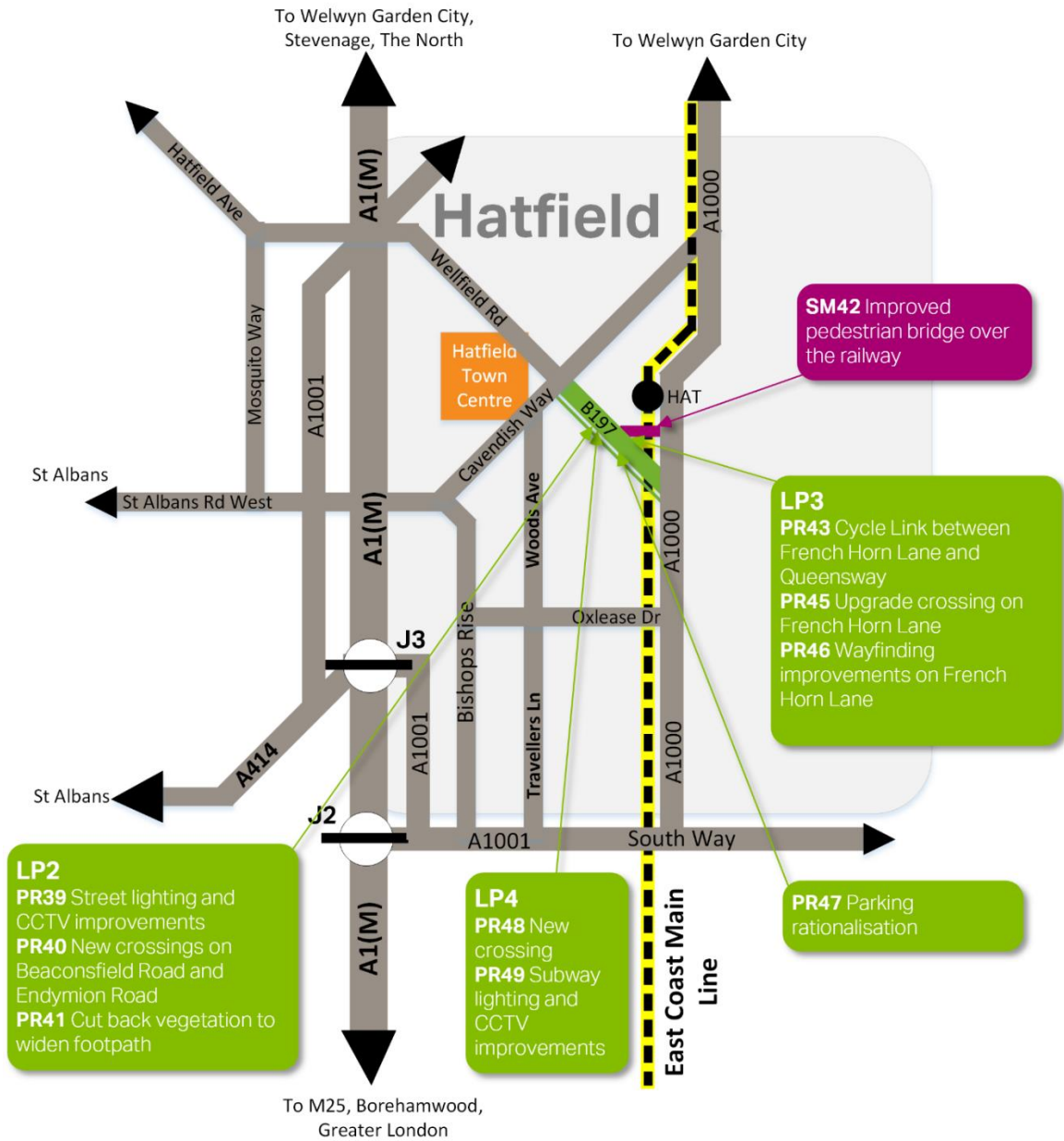
The full schedule of interventions is shown in the table below.

Table 8 - PK5 - Hatfield - French Horn Lane Corridor

	ID	Name	Description
LP2	PR39	Street lighting and CCTV improvements	Improve the street lighting and provide CCTV cameras along key walking routes between the railway station and town centre
LP2	PR40	New crossings on Beaconsfield Road and Endymion Road	Install new pedestrian crossings on Beaconsfield Road and Endymion Road to coincide with route to the station
LP2	PR41	Cut back vegetation to widen footpath	Widen the footpaths by cutting back vegetation where possible on route to the station
LP2			PR39, PR40 and PR41 are very closely linked, and it is recommended that they are implemented in combination
	SM42	Improved pedestrian bridge over the railway	New wider pedestrian bridge across the railway (south of the station) and install ramps on either side (with Network Rail involvement)
LP3	PR43	Cycle Link between French Horn Lane and Queensway	Introduce cycle lane along the side arm of French Horn Lane to Queensway adjacent to the Memorial Hall
LP3	PR45	Upgrade crossing on French Horn Lane	Upgrade and widen existing pedestrian crossing adjacent to Old French Horn Lane junction

	ID	Name	Description
LP3	PR46	Wayfinding improvements on French Horn Lane	Continue the improvements to wayfinding and signage and guidance about routes
LP3			PR43, PR45 and PR46 are very closely linked, and it is recommended that they are implemented in combination
	PR47	Parking rationalisation	Rationalise the existing parking along French Horn Lane, however this would be subject to more study to ensure that there isn't significant displacement of vehicles onto other roads where parking could be more disruptive.
LP4	PR48	New crossing	Install new signalised pedestrian crossing adjacent to Beaconsfield Road junction
LP4	PR49	Subway lighting and CCTV improvements	Improve the lighting and install CCTV in the subway
LP4			PR48 and PR49 are very closely linked, and it is recommended that they are implemented in combination

Indicative cost range estimates and timescales for these interventions are contained in Appendix B



Package 6 – Hatfield – Comet Way/Wellfield Road Corridors

The overarching aim of Package 6 is:

To implement sustainable transport improvements along the Wellfield Road corridor, providing greater mode choice for trips between the Hatfield Business Park and the town centre.

The Package consists of:

- Implementation of improvements at Comet Way, including downgrading Comet Way to one lane, improved crossings, roundabout signalisation, and provision of an off-road cycle lane around the roundabout.
- Implementation of bus priority measures, incl. a bus lane along Wellfield Road.
- Safety improvements at the A1(M) pedestrian bridge.

The full schedule of interventions is shown in the table below.

Table 9 - PK6 - Hatfield – Comet Way/Wellfield Road Corridors

ID	Name	Description
PR50	A1M pedestrian bridge improvement	Improve the lighting and signing of the pedestrian bridge over the A1(M) within the roundabout
SM51	Comet Way/Wellfield Road junction signalisation	Upgrade the Comet Way roundabout to incorporate signals to congested approaches and changes to approach lane layouts
SM52	Comet Way corridor reconfiguration	Downgrade Comet Way to one lane in either direction, (with National Highways involvement)
SM53	Off road cycle lane around the Comet Way roundabout	Implementation of a cycle lane to connect existing provisions on either side of the roundabout
PR55	Alban Way-Wellfield Road connectivity	Redesign the existing connections from Wellfield Road to the Alban Way cycle route
PR56	A1001 Crossing improvement	Improve pedestrian and cycling crossing on Comet Way south of the roundabout
SM202	Hatfield West Bus Circuit and Interchange Hubs	Examine the feasibility of developing a circular network for local buses services comprising of bus priority (where feasible) on A1057, Albatross Way, Mosquito Way, Tamblin Way, Jetliner Way and Comet Way which includes retaining and improving upon existing facilities. Interchanges will be provided at the existing Parkhouse bus station (with improved waiting facilities), Galleria (opp. Comet Hotel) and Albatros Way.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B

It should be noted that **SM202** is an addition to the proposals put forward in the Hatfield Transport Strategy.

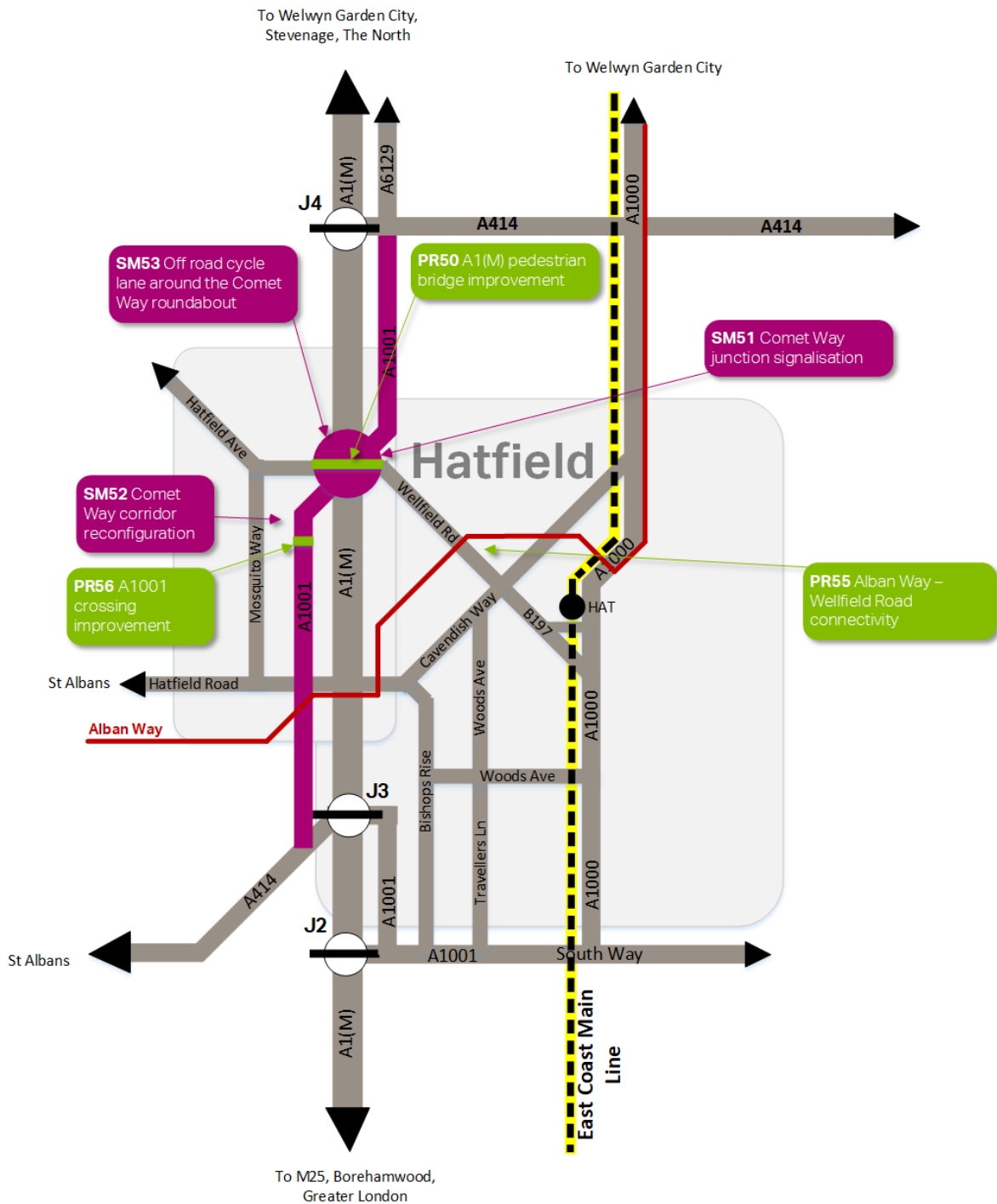


Figure 15 - Package 6 Comet Way/Wellfield Road Corridors

Package 7 – Hatfield - St Albans Road East/Hertford Road Corridor

The overarching aim of Package 7 is:

To reduce severance in north east Hatfield and enhance connectivity between this residential area, the town centre and railway station.

The Package consists of:

- Development of cycling infrastructure along the corridor, including cycle lanes along Mount Pleasant Lane, an off road cycleway along St Albans Road East, junction upgrades, signage improvements, lighting, and new crossings.
- Widened St Albans Road East rail bridge.

The full schedule of interventions is shown in the table below.

Table 10 - PK7 - Hatfield - St Albans Road East / Hertford Road Corridor

ID	Name	Description
PR57	Improved crossings at A1000-A414 Mount Pleasant Lane junction	Install priority crossing for cyclists
SM58	Cycle route lighting	Improve lighting along the A1000 cycling route between Great North Road and A414 junction
PR59	A1000/Great North Road/St Albans Road East junction signal timing review	The junction has been improved in recent years including enhancements to pedestrian crossing facilities. The future operation of the junction needs to be closely monitored in relation to the operation of the A414. The junction will form a key node for helping to regulate traffic movements through Hatfield, in particular discouraging rat-running through Hatfield to avoid congestion on major roads such as the A414 and A1(M) (e.g. around J4 Jack Oldings). Where any future enhancements are identified at the junction, these should not disadvantage the safe and efficient movement of pedestrians, cyclists and buses.
SM60	St Albans Road East off road cycleway	Introduce an off-road cycleway along St Albans Road East with raised entry treatments on side arms
PR61	Signage improvements	Improve the existing signage to provide cycle route guidance
SM62	St Albans Road East railway bridge widening	Widen the road bridge over the railway on St Albans Road East (with Network Rail involvement) to better accommodate facilities for pedestrians and cyclists (this could comprise replacing the existing pedestrian footbridge with an improved bridge wide enough for pedestrians and cyclists).
PR63	Mount Pleasant Lane footway/cycleway	Install footpath and cycle infrastructure on Mount Pleasant Lane between the A1000 junction and Pleasant Rise

ID	Name	Description
PR64	Raised entry treatments on the A1000	Install raised entry treatments (design will account for bus movement) along the route of the Great North cycle lane at junctions with The Ryde and Lodge Drive. Priority will be for pedestrian and cycling connectivity.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B

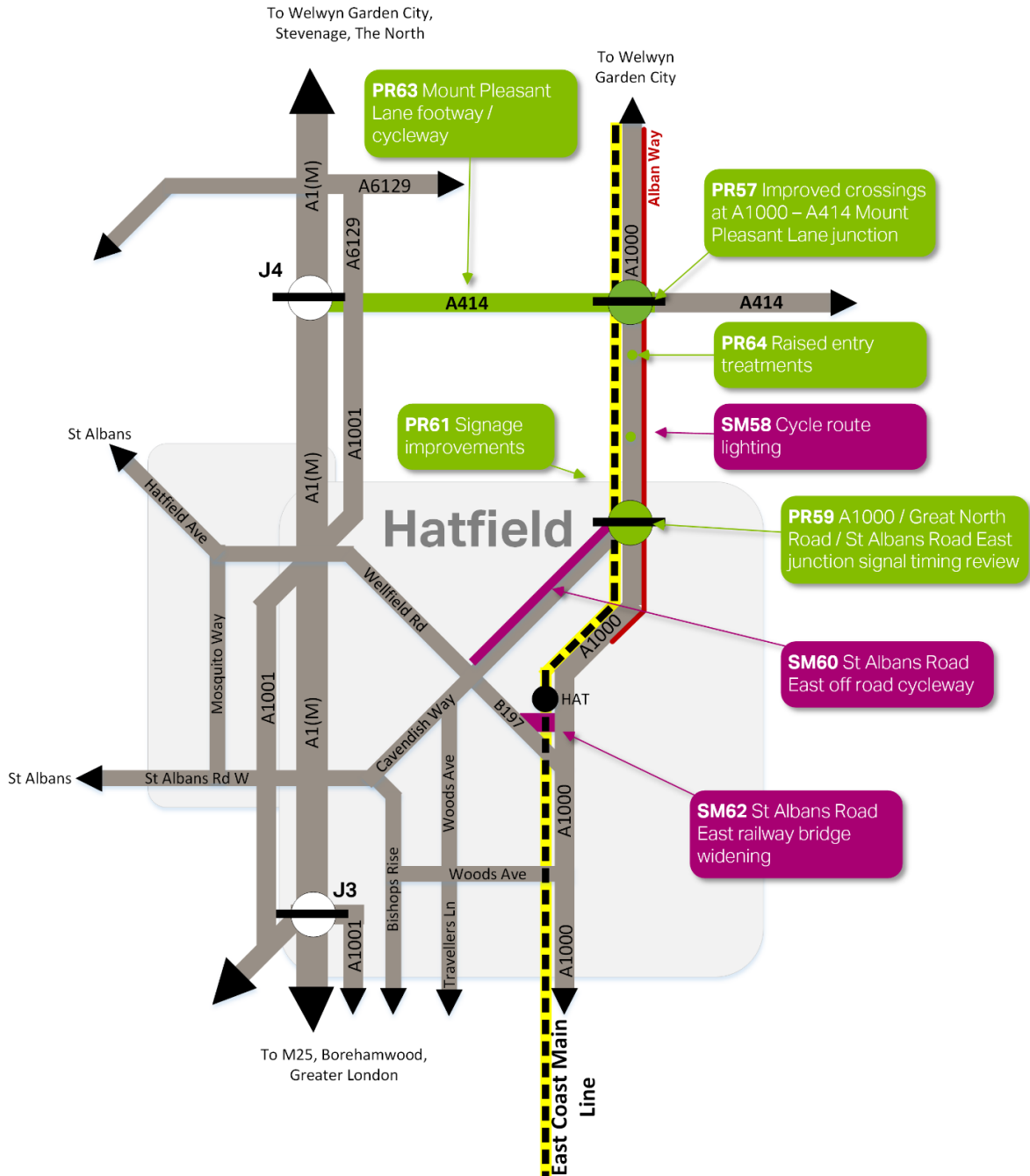


Figure 16 - Package 7 St Albans Road East/Hertford Road Corridor

Package 1-7 summary (Hatfield)

Packages 1-7 are broadly aligned with corridors 1-7 of the Hatfield Transport Strategy.

Hatfield generally is well served by public transport and within the town itself it does not currently experience the same levels of traffic congestion as those experienced in other towns across Hertfordshire. The town is however surrounded by major roads and key junctions which experience very significant levels of congestion. There are also new residential developments planned in areas adjoining and surrounding the town which could change the operation of the transport network in and around Hatfield in the future.

The majority of Hatfield's growth and transport issues in Hatfield come from poor accessibility and connectivity for active travel users. The area also features several roundabouts with extensive pedestrian underpasses. These do separate pedestrians from vehicles however they require quite convoluted route detours, and the spaces can be perceived as unpleasant and unsafe. This affects the perception of place, as it is defined by the TfL Healthy Streets initiative. Safety has been affected by the major routes which pass through Hatfield, pedestrian desire lines have previously not been considered and therefore, crossings are awkwardly placed and discourage travel on foot or by bike. A patchy, disconnected cycling network does not allow for complete trips by bike to be made, although the Alban Way does run through the town providing opportunities for travel by bike as far west as St Albans.

While a majority of trips are made by motorised vehicle, the university, local schools and residents along Woods Avenue and Travellers Lane provides the potential population for the increase of journeys made by active modes. To help facilitate a shift from car to more sustainable travel modes, pedestrian and cycle schemes are the first which should be considered. These include reducing the severance across the major routes which go through Hatfield including the town centre area **(PR18)** **(PR27)** **(PR29)** **(PR46)**. To compliment these projects are improvements to the streetscape **(PR4)** **(PR39)** **(PR49)** and installation of new pedestrian/cycle crossings **(PR19)** **(SM25)**.

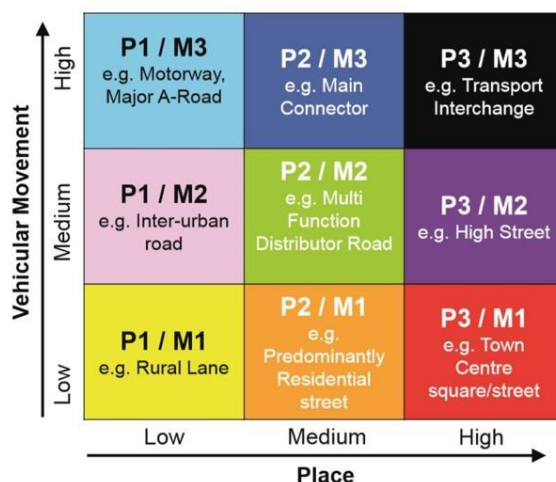
Both corridors provide key links throughout the town; notably between Hatfield Business Park, the town centre, the railway station and residential areas. Wellfield Road and the A1001 Comet Way roundabout is currently the primary access to the north end of the business park. It suffers from high levels of congestion during peak times and is heavily used by large HGVs accessing the site. The roundabout also presents a barrier to non-motorised modes of travel trying to cross the junction. It currently has limited provision for cyclists and pedestrians to cross and the existing points are not well kept or signed.

The St Albans Road East/Hertford Road Corridor is an important connection between Hatfield and Welwyn Garden City and has about ten buses an hour running along it. St Albans Road East crosses the railway line and the current bridge is quite narrow acting as a pinch point to vehicles and creating navigation issues for cyclist. Creation of an off-road cycle route along St Albans Road East **(SM60)** will provide better connectivity for cyclists between Hatfield Town Centre and the north-eastern part of the town including The Ryde.

Car users are likely to benefit from junction and signal improvements **(SM51)** **(PR59)** and active travel users from a range of footways and cycleways **(PR63)**. Additionally, a long-term aspiration to widen the railway bridge **(SM62)** is likely to benefit all users including cyclists and will be crucial in the reduction of severance caused by the railway.

Place and Movement in Hatfield

Maps showing the place and movement functions of roads in Hatfield are included in Appendix A.



A1001 Comet Way is currently formed of a dual carriageway on the section between St Albans Road West and Wellfield Road. It is defined as a **P1/M3 Major Interurban Road** however with measures introduced to reduce the dominance of motorised traffic and better facilities for buses, pedestrians and cyclists, the function should change to a **P2/M2 Multi-Function Distributor Road**. This new function will still recognise Comet Way as an important route for accessing to key locations such as the business park, Galleria, University and local businesses, whilst also recognising that people need to route across the road, particularly on foot or by bike, and that a greater proportion of shorter distance trips within Hatfield ideally should be undertaken by more sustainable modes of travel.

Proposed housing development at North West Hatfield needs to be well connected with Hatfield. Whilst to the north A1001 Comet Way is a single carriageway road and not a dual carriageway road, the high volume of traffic including heavy goods vehicles travelling to/from the business park, could make it difficult for people to cross. Comet Way should not however be a barrier for people wanting or needing to access Hatfield without using the car, therefore interventions proposed should help towards changing the function of this road to a **P2/M2 Multi-Function Distributor Road**.

Within Hatfield town centre, the Cavendish Way/Queensway is an important route. There is concern however it is being used by motorists to travel all the way through Hatfield instead of using the A1(M) and A414 because these roads can experience traffic congestion. Regeneration of Hatfield town centre is reliant on good quality transport links, including better facilities for pedestrians and cyclists. There will be less road space for cars and reduced speeds. Buses will continue to route along Queensway, however proposed measures could change the layout and prioritisation of this road which should discourage motorists from using it as a through route. The function may not change from a **P2/M2 Multi-Function Distributor Road**, unless surrounding town centre land uses were to significantly change so that they were more open to the road (currently the town centre to some extent faces away from the road), in which case the function could in the future change to a **P3/M2 High Street** or **P3/M1 Town Centre Street**.

Welwyn Garden City – key connections to other towns

Packages 8-11 cover major transport corridors leading into/out of Welwyn Garden City. Inter-urban connections to towns such as Hertford will be addressed by the South East GTP.

Package 8 – North West Hatfield and Lemsford Connectivity

The overarching aim of Package 8 is:

To ensure sustainable development at North West Hatfield (Stanboroughbury) through improved transport connections and junctions that facilitate active travel

The Package consists of:

- Development of an active travel corridor along Coopers Green Lane, including a reduction in the speed limit and new crossings, linking North West Hatfield (Stanboroughbury) developments to Hatfield Business Park, Welwyn Garden City, and St Albans.
- Highway network upgrades to support increased demand due to development, including junction improvements at Lemsford Village.

The full schedule of interventions is shown in the table below.

Table 11 - PK8 – North West Hatfield and Lemsford Connectivity

ID	Project / Approach	Name	Description
SM65	a	Coopers Green Lane Crossing	New at-grade crossings on Coopers Green Lane for pedestrians and cyclists travelling between Hatfield and adjacent countryside
SM65	b	Coopers Green Lane Crossing	New at-grade signal-controlled crossings on Coopers Green Lane for pedestrians and cyclists travelling between Hatfield and adjacent countryside
SM65	c	Coopers Green Lane Crossing	New grade-separated crossings over or under Coopers Green Lane suitable for pedestrians and cyclists travelling between Hatfield and adjacent countryside
SM66	-	Coopers Green Lane Active Travel Infrastructure NE of Hatfield Avenue (towards Welwyn Garden City)	Coopers Green Lane reimaged as a multi-modal corridor with reduced traffic speeds (if justified in accordance with HCC's Speed Management Strategy) and provision made for pedestrians and cyclists. Off-road cycling and footway infrastructure along Coopers Green Lane to be provided, linking in with existing provision at the B653-B197 roundabout junction which should also be improved across the northern side.

ID	Project / Approach	Name	Description
SM67	-	St Albans – Hatfield active travel corridor	Coopers Green Lane reimagined as a multi-modal corridor with reduced traffic speeds (if justified in accordance with HCC's Speed Management Strategy) and provision made for pedestrians and cyclists. Off-road cycling and footway infrastructure along Coopers Green Lane to be provided as far as Sandpit Lane, and a new route along Sandpit Lane as far as Woodstock Road. Including wider links into key St Albans destinations
PR68	-	Coopers Green Lane Speed Limit Reduction	Reduced speed limit along Coopers Green Lane (if justified in accordance with HCC's Speed Management Strategy) to support active travel infrastructure.
SM70	-	B653/Lemsford Village/Green Lanes junctions improvement	Junction improvements to reduce congestion and improve capacity and reliability
SM209	-	Coopers Green Lane-Stanborough Junction Improvements (part of the NW Hatfield development masterplan transport strategy)	Coopers Green Lane-B197-B653-A6129 (Stanborough/Lemsford) junction improvements to facilitate planned development growth and address congestion issues in the area.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B

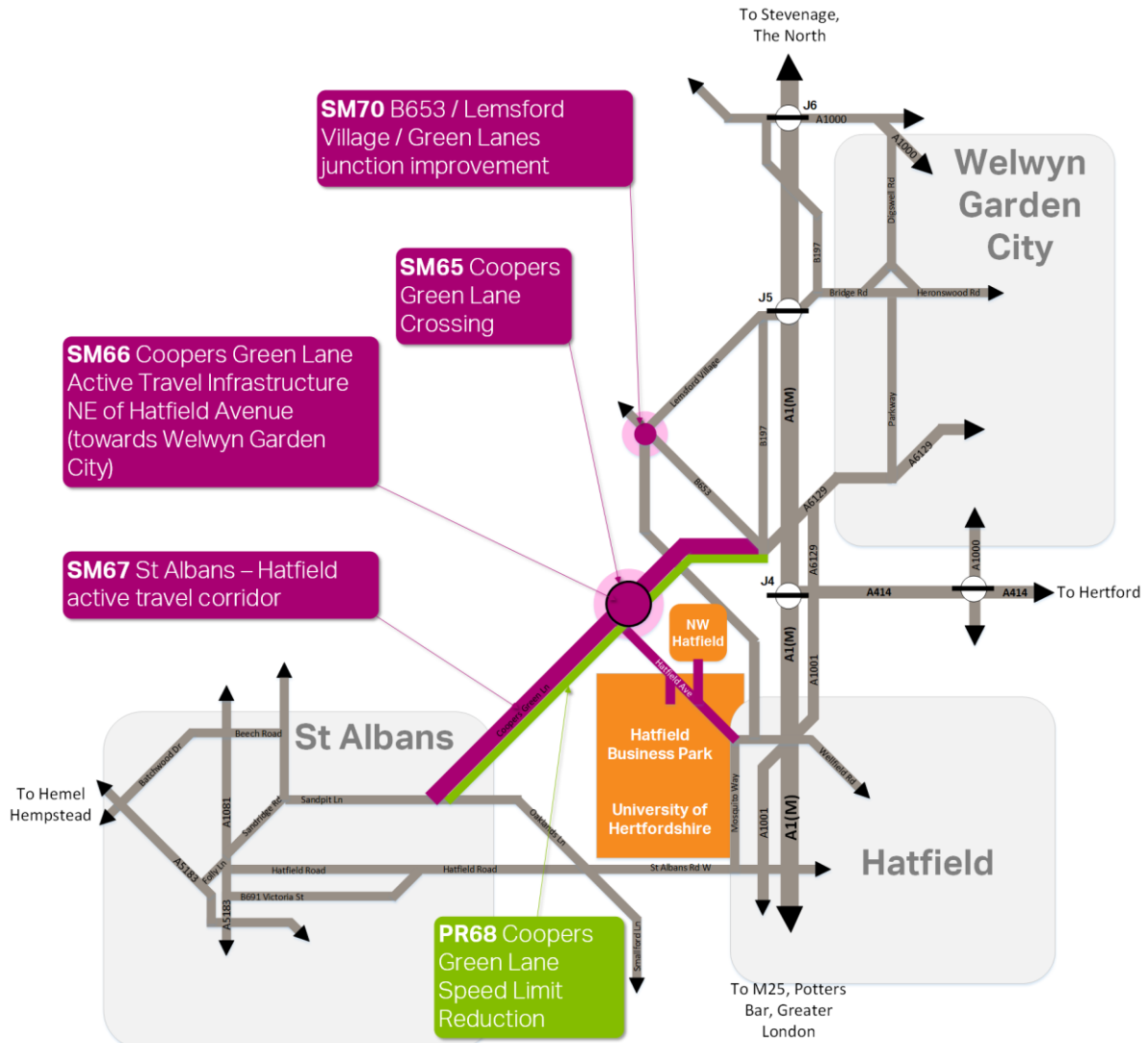


Figure 17 - Package 8 North West Hatfield and Lemsford Connectivity

Package 9 – St Albans-Welwyn Garden City Connectivity

The overarching aim of Package 9 is:

To 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 North West Hatfield development, as well as Hatfield Business Park.

The Package consists of:

- Development of cycling and walking infrastructure along Coopers Green Lane and Sandpit Lane, integrated with development along the corridor, including the NW Hatfield (Stanboroughbury) development.
- A reduced speed limit along Coopers Green Lane to support active travel infrastructure and reflect the more urbanised environment along the route, particularly alongside the NW Hatfield development.

The full schedule of interventions is shown in the table below.

Table 12 - PK9 - St Albans-Welwyn Garden City Connectivity

ID	Name	Description
SM66	Coopers Green Lane Active Travel Infrastructure NE of Hatfield Avenue (towards Welwyn Garden City)	Coopers Green Lane reimagined as a multi-modal corridor with reduced traffic speeds and provision made for pedestrians and cyclists. Segregated cycling and footway infrastructure along Coopers Green Lane to be provided, linking in with existing provision at the B653-B197 roundabout junction which should also be improved across the northern side.
SM67	St Albans – Hatfield active travel corridor	Coopers Green Lane reimagined as a multi-modal corridor with reduced traffic speeds and provision made for pedestrians and cyclists. Segregated cycling and footway infrastructure along Coopers Green Lane to be provided as far as Sandpit Lane, and a new route along Sandpit Lane as far as Woodstock Road. Including wider links into key St Albans destinations
PR68	Coopers Green Lane Speed Limit Reduction	Reduced speed limit along Coopers Green Lane (if justified in accordance with HCC's Speed Management Strategy) to support active travel infrastructure and reflect more urbanised environment along route adjacent to the NW Hatfield development
SM207	Sandpit Lane cycle improvements	New and improved cycle route provision along Sandpit Lane, off-road where feasible utilising footways which are widened and converted to shared use. Provide a link between Coopers Green Lane, the new Oaklands development, Verulam School and onwards towards St Albans city centre and the St Albans Green Ring

Indicative cost range estimates and timescales for these interventions are contained in Appendix B

Package 10 – Hatfield-Welwyn Garden City Connectivity

The overarching aim of Package 10 is:

To strengthen connections between Hatfield and Welwyn Garden City by modes of active travel, encouraging modal shift and improving recreational facilities within the green spine running between the towns.

The Package consists of:

- Improvement and promotion of the A1000 corridor cycleway between Hatfield and Welwyn Garden City.
- Development of a southern Welwyn Garden City cycle bypass linking Hatfield directly to the Cole Green Way cycleway.
- Implementation of a recreational Welwyn Hatfield Green Corridor between the towns.

The full schedule of interventions is shown in the table below.

Table 13 - PK10 - Hatfield-Welwyn Garden City Connectivity

ID	Name	Description
SM71	A1000 Cycleway Improvements	Physical improvements to cycleway including surface, crossings, general maintenance, etc. Crossings on side roads including Ascots Lane will be enhanced to improve inter-visibility between motorists and cyclists, and an enlarged refuge island (subject to detailed design). The purpose of these improvements is to provide better connectivity between Hatfield and Welwyn Garden City by bike, and also to improve links to the proposed Green Corridor which will provide better links between Welwyn Garden City and Hatfield. These improvements need to take into consideration the safe and efficient movement of buses along the corridor.
PR72	Cycle Signage	Cycle signage along A1000 cycleway
PR73	Hatfield-Cole Green Way Cycle Link (Green Corridor)	Southern WGC cycle 'bypass' connection from Hatfield to Cole Green Way alongside the A414 within the Green Corridor. Connecting into the A1000 near to Mill Green.
PR74	Cole Green Way Signage at B195	Wayfinding improvement to Cole Green Way at B195, currently unclear-directing cyclists to main road
SM76	Welwyn Hatfield Green Corridor	Implement Green Corridor between Hatfield and WGC as per the WelHat local plan policy SP 12
SM79	A414 Mill Green Junction Improvements	Modified eastbound onslip approach onto A414 to improve safety, including reducing the A414 between the eastbound off slip and on slip to a single lane to create a lane-gain configuration.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B

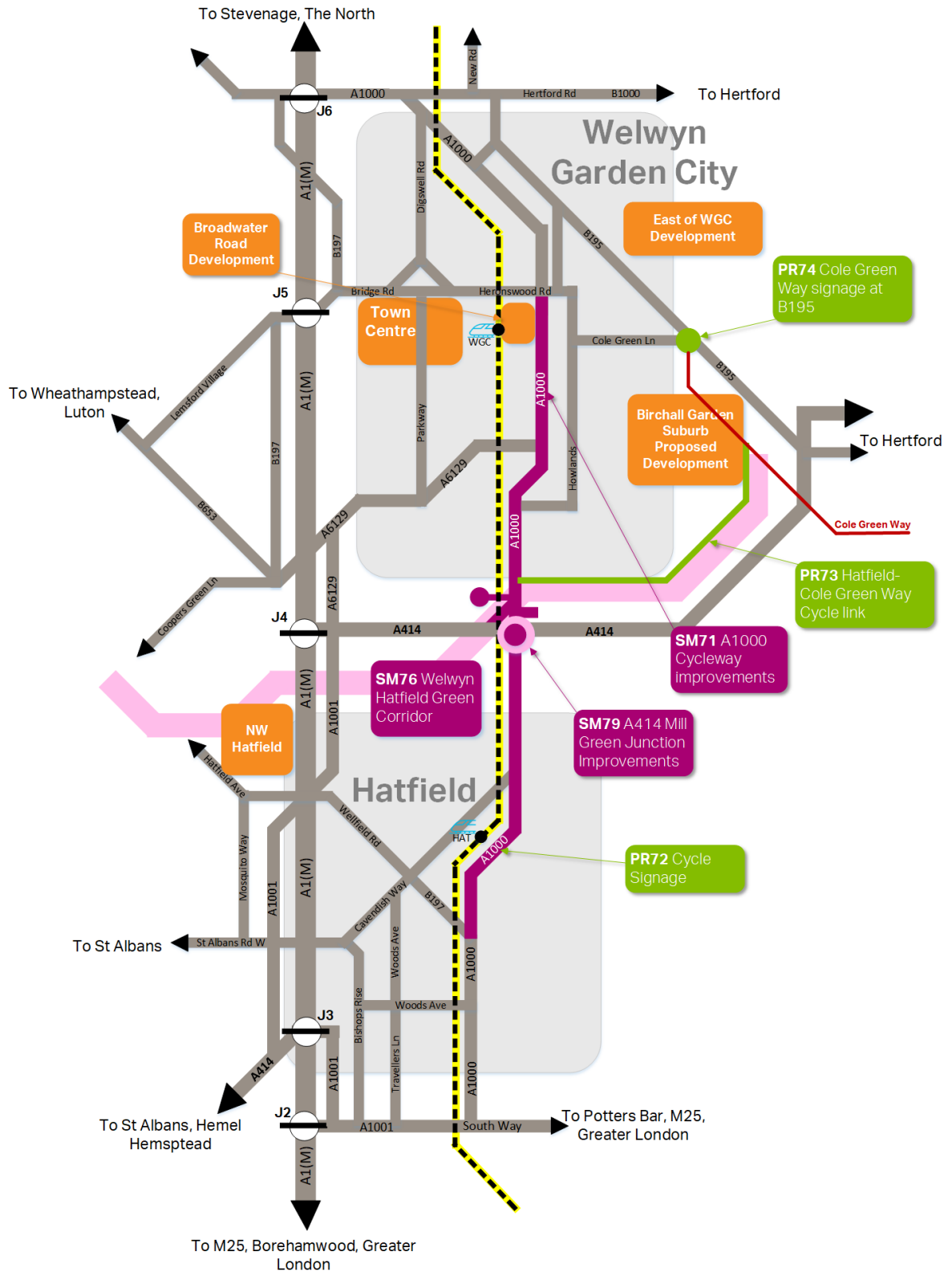


Figure 19 - Package 10 Hatfield-Welwyn Garden Connectivity

Package 11 – A1(M) - A414 Junction 4 Interchange

The overarching aim of Package 11 is:

To reduce congestion and increase reliability for inter-urban trips at A1(M) Junction 4 and adjoining links and junctions on the A414.

The Package consists of:

- A1(M) Junction 4 upgrades.
- A414 junction upgrades at A1001/Oldings Corner and A1000/Mill Green.

The full schedule of interventions is shown in the table below.

Table 14 - PK11 - A1(M) - A414 Junction 4 Interchange

ID	Project / Approach	Name	Description
SM77	a	Oldings East' A414/Great North Road Junction Improvements	Westbound Arm Sign and Line Marking Improvements.
SM77	b	Oldings East' A414/Great North Road Junction Improvements	Conversion to a signal-controlled crossroads.
SM77	c	Oldings East' A414/Great North Road Junction Improvements	Enlargement of the roundabout to enable two lanes of traffic to route from the A414 East towards A1(M) J4
SM78	a	Oldings North' A1(M) NB at Junction 4 to A414 Improvements (Any improvements need to at least maintain if not improve facilities for pedestrians and cyclists, e.g. the route for school children travelling from northern Hatfield to Stanborough School)	Review permitted lane movements to optimise the use of roadspace at the junction including eastbound lanes on the overbridge and southbound offslip. No physical alteration to the roundabout layout
SM78	b	Oldings North' A1(M) NB at Junction 4 to A414 Improvements (Any improvements need to at least maintain if not improve facilities for pedestrians and cyclists, e.g. the route for school children travelling from northern Hatfield to Stanborough School)	Provide a 'through-link' across the roundabout connecting the A1629 and A1(M) Southbound onslip.
SM78	c	Oldings North' A1(M) NB at Junction 4 to A414 Improvements (Any improvements need to at	Enlarged signal-controlled roundabout to provide increased stacking space on the circulatory carriageway

ID	Project / Approach	Name	Description
		least maintain if not improve facilities for pedestrians and cyclists, e.g. the route for school children travelling from northern Hatfield to Stanborough School)	
SM80	a	Oldings East' to 'Oldings West' link road	Provide a through link between the Oldings East roundabout (A414-Great North Road) and the A1001 Comet Way to the south of the retail park and supermarket. The western junction could comprise of a rounsabout or signal-controlled junction
SM80	b	Oldings East' to 'Oldings West' link road	As above plus closure of the A1001 Comet Way between the new 'Oldings West' junction and A1(M) Junction 4, except for entry/exit to the retail park.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B

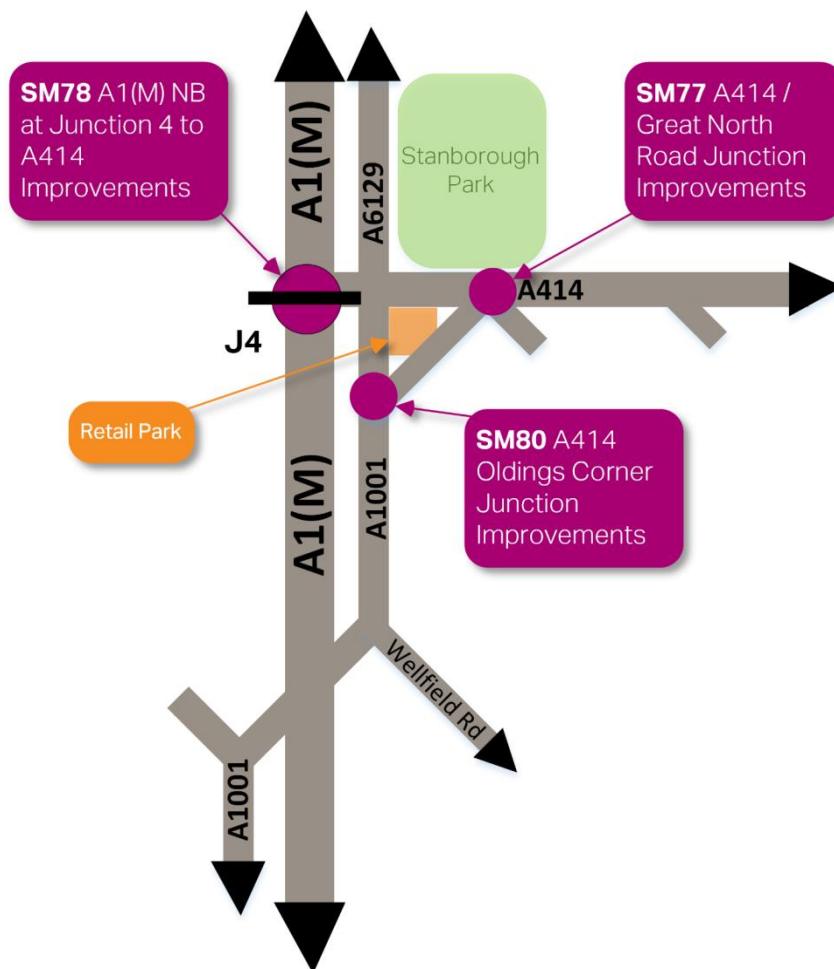


Figure 20 - Package 11 A1(M) – A414 Junction 4 Interchange

Package 8-11 summary (Welwyn Garden City key connections to other towns)

This set of packages has a focus on the inter-urban connections between Welwyn Garden City, St Albans and Hatfield. With Welwyn Garden City as the focal point, a common issue between the inter-urban areas relate to reliability. Between Welwyn Garden City and Hatfield, there is a particular issue of congestion as the main routes pass through the A1(M) and A1001. Similarly, there are localised delays in north Hatfield at the B197 and A6129 roundabouts.

In the draft Welwyn Hatfield Local Plan, there is a proposed urban extension at North West Hatfield (Stanboroughbury). The site is located north west of Hatfield and south west of Welwyn Garden City. The proposed development will place some additional pressure on the already congested junctions and is likely to have an impact on reliability unless measures are in place to encourage as far as possible the use of sustainable travel modes.

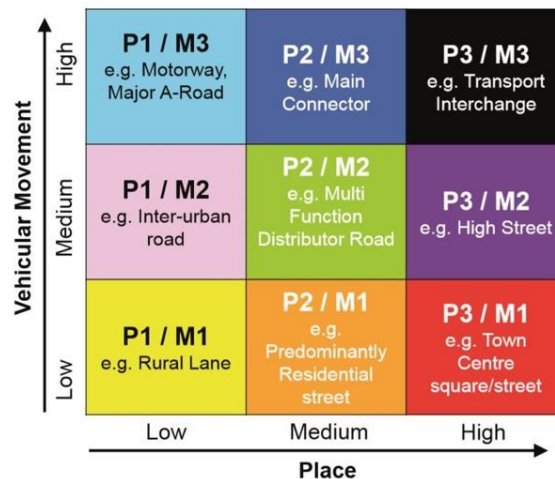
Package 8 proposes initial changes to the current traffic dominated infrastructure to a more sustainable active led modal split. This includes the development of cycling and footway infrastructure along Coopers Green Lane in both directions (**SM66**) (**SM67**).

To integrate transport infrastructure to the new developments, improvement to the surrounding highway network should be considered (**SM65**). This will complement the range of packages that include junction improvements to alleviate congestion along the A1(M) junction 4 and the A414 (**SM77**) (**SM78**) (**SM79**) (**SM80**).

Between Hatfield and Welwyn Garden City, there is a need for cohesive cycle infrastructure particularly along the A414 corridor to facilitate connectivity. Package 10 proposes a combination of measures to sustain and make cycling more attractive. These include improvements to the A1000 (**SM71**), a cycle bypass connection from Hatfield to Cole Green Way (**PR73**) and the development of Welwyn Hatfield Green Corridor (**SM76**).

Place and Movement between Welwyn Garden City, St Albans and Hatfield

Maps showing the place and movement functions of roads between Hatfield, St Albans and Welwyn Garden City are included in Appendix A.



Coopers Green Lane is a **P1/M2 Interurban Road** linking St Albans and Welwyn Garden City. It also facilitates eastern access to Hatfield business park. It is formed of a single carriageway road with no footway provision and is largely surrounded by countryside.

Key housing development proposed at North West Hatfield will create new travel movements on the surrounding transport network. Coopers Green Lane will act as a boundary to the North West Hatfield development. With the new travel movements, there will be a need to reconsider how this road may function in the future. It will feel less rural, with housing alongside or within view of the road, and there will be people who should have opportunity to travel to/from the new developments on foot or by bike.

With proposed new footways and off-road cycling facilities along Coopers Green Lane, the road could change function. This will however depend to the extent to which new surrounding urban land uses interact with the road. The road could therefore at least change to a **P2/M3 High Road** or potentially a **P2/M2 Multi-Function Distributor Road**.

Welwyn Garden City

Package 12-14 cover the town of Welwyn Garden City

Package 12 – Mundells Area Non-Car Accessibility and Travel Planning

The overarching aim of Package 12 is:

To alleviate peak congestion issues at the Business Park in the Mundells Area.

The Package consists of:

- Implementation of travel planning for the employment site.
- Improvements to cycle routes feeding into the western side of the Mundells area.

The full schedule of interventions is shown in the table below.

Table 15 - PK12 - Welwyn Garden City Mundells Employment Area Non-Car Accessibility and Travel Planning

ID	Name	Description
PR201	Knightsfield Lane Cycle Route	Conversion of one or both footways along Knightsfield to shared use for pedestrians and cyclists, linking Digswell Road with Lyles Lane.
PR202	Lyles Lane Cycle Route	Improved link from Falcon Way onto Lyles Lane Cycle Route including widening and better signage (in discussion with site owners).

Indicative cost range estimates and timescales for these interventions are contained in Appendix B

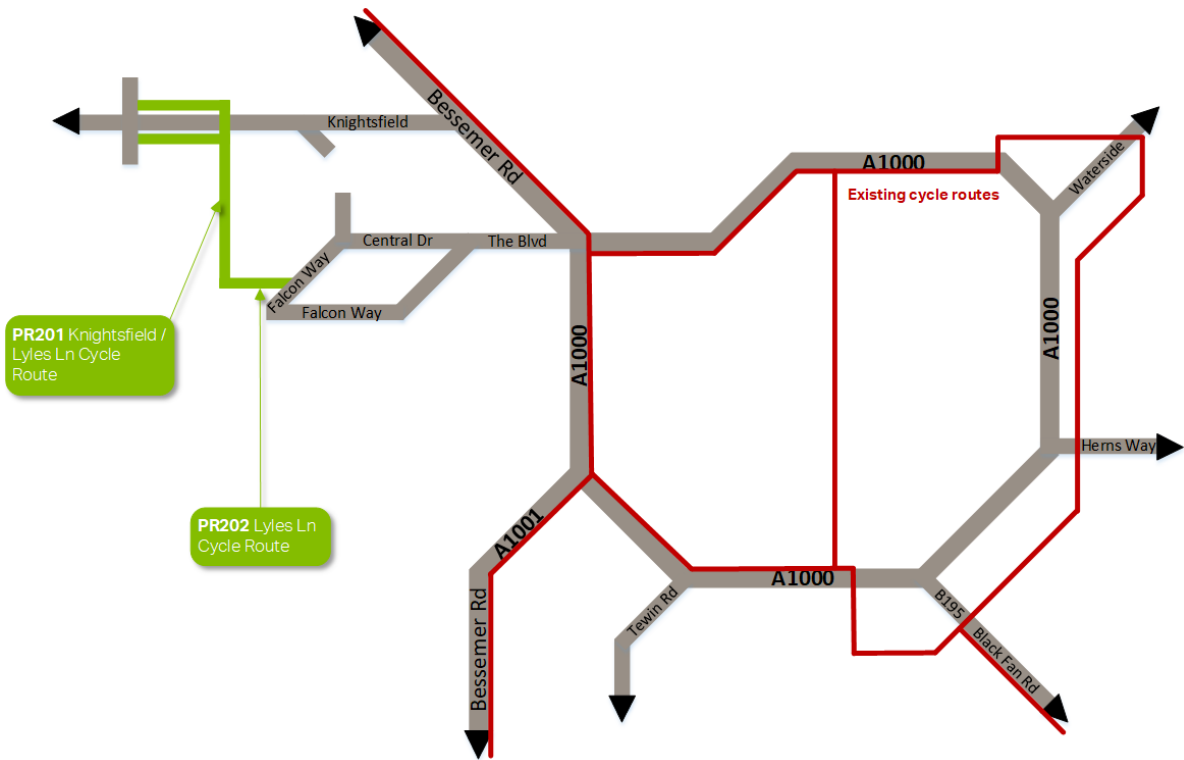


Figure 21 - Package 12 Welwyn Garden City Mundells Employment Area Site Accessibility

Package 13 – Welwyn Garden City Active Travel Improvements

The overarching aim of Package 13 is:

To transform Welwyn Garden City into a town that facilitates safe, attractive, and convenient journeys by active and sustainable transport modes.

The Package consists of:

- Redevelopment of Welwyn Garden City town centre, improving conditions for pedestrians and cyclists.
- Improvement of the town cycleway network, including completing missing links, improved infrastructure, cycle parking at key locations, signage, wayfinding, and promotion.
- Development of a town bus network.

The full schedule of interventions is shown in the table below.

Table 16 - PK13 - Welwyn Garden City Active Travel Improvements

ID	Name	Description
SM84	Welwyn Garden City Town Centre Development	Redevelopment of the town centre to improve pedestrian and cycling areas and new road layouts in places, including improved footways, crossings, parking restrictions, relocation of taxi bays, and closure of part of Stonehills to traffic
PR86	Complete Gaps in Cycleway Network	Complete missing links in cycleway network, including the northern section of Mundells/A1000
PR87	Cycleway Network Improvements	Improve cycling infrastructure along Howlands/Heronswood Road - currently painted symbols on road only
PR88	Cycle Parking	Increase cycle parking provision at Welwyn Garden City station. Parking needs to be covered and secure. Cycle parking should also be provided on both the eastern and western sides of the station footbridge as part of the proposed Bridge Road (Shredded Wheat factory) development.
PR89	Cycle Signage	Cycle signage along cycleways in Welwyn Garden City
PR90	Wayfinding	Improved wayfinding within Welwyn Garden City, including in particular on the main route from the Panshanger area and the town centre via Mundells. This could comprise additional blue

		signs indicating times and distances to key destinations at key decision points, additional blue roundals to indicate continuation of cycle route and surface markings indicating routes.
PR91	B195 Black Fan Road/Herns Lane/Ridgeway Junction Improvements	The junction currently comprises double mini roundabouts. Pedestrians and cyclists are catered for separately through subways beneath the highway however these do not cater for all movements. Localised congestion occurs at the roundabouts which could be partly attributed to the layout. Conversion to a staggered signal-controlled crossroads could help to ease congestion. There may also be opportunity to provide some form of bus priority, e.g. transponders/GPS being able to recognise buses on approach and re-optimising signals to ensure buses get through the signals as quickly as possible. At-grade crossing provision should also be considered to cater for movements not currently served by the subway.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

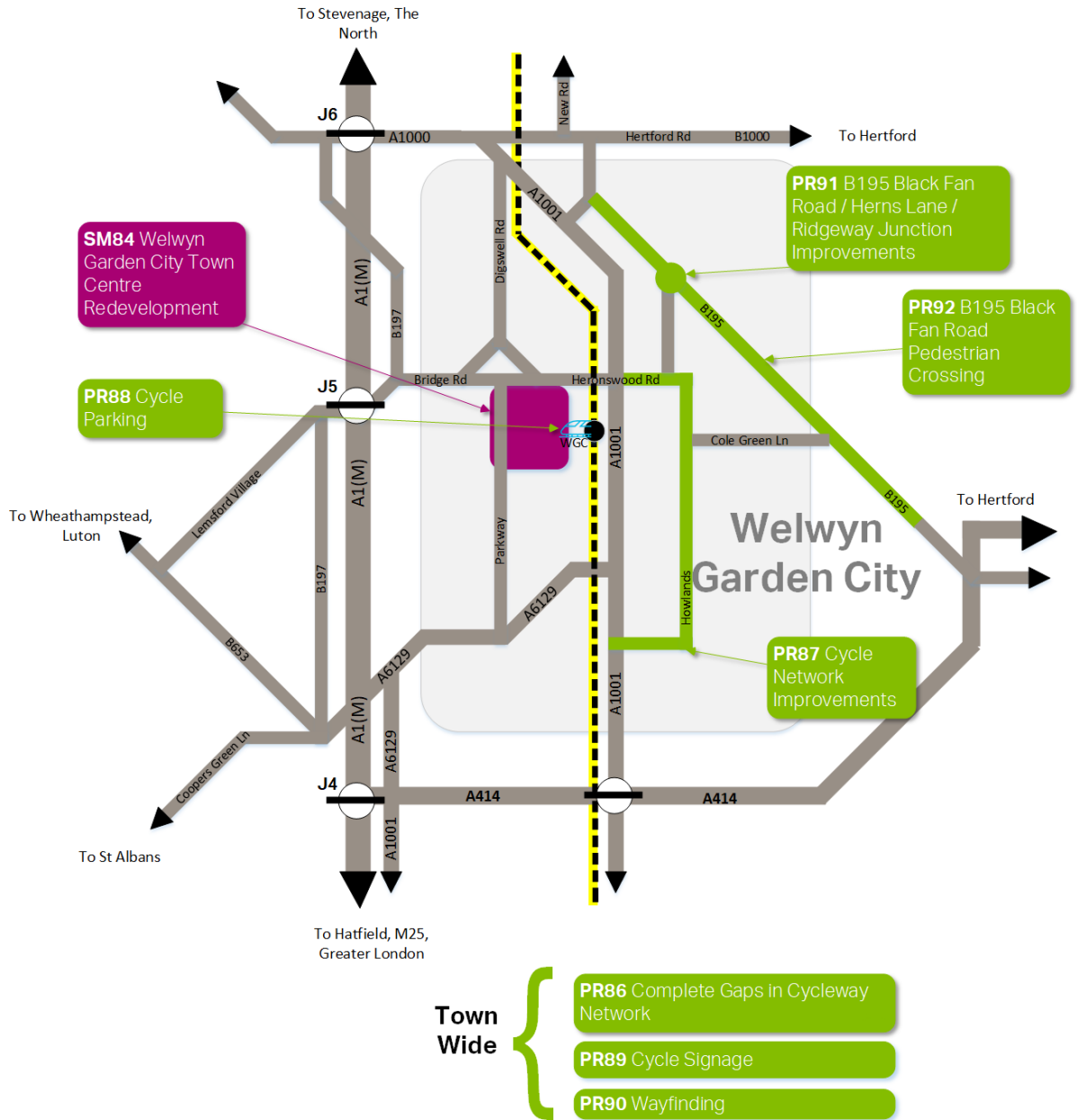


Figure 22 - Package 13 Welwyn Garden City Active Travel Improvements

Package 14 – Bridge Road Transformation - Welwyn Garden City Town Centre

The overarching aim of Package 14 is:

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.

The Package consists of:

- Reduction of vehicular traffic to one lane in each direction, facilitating the development of cycleways, widened footways, and improved bus stops along Bridge Road, with reference to the Town Centre North SPD.
- Improvements to the Bridge Road/Broadwater Road junction.

The full schedule of interventions is shown in the table below.

Table 17 - PK14 - Bridge Road Transformation - Welwyn Garden City

ID	Name	Description
SM93	Bridge Road Boulevard (Broadwater Road West proposal)	Redistribute road space to provide dedicated cycleways, improved bus stops and additional greenery and landscaping- in line with the Broadwater Road West proposals.
PR97	Broadwater Road/Bridge Road Junction Improvement	Improvement/reconfiguration of the Broadwater Road/Bridge Road junction as part of the Broadwater Road West development proposals)

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

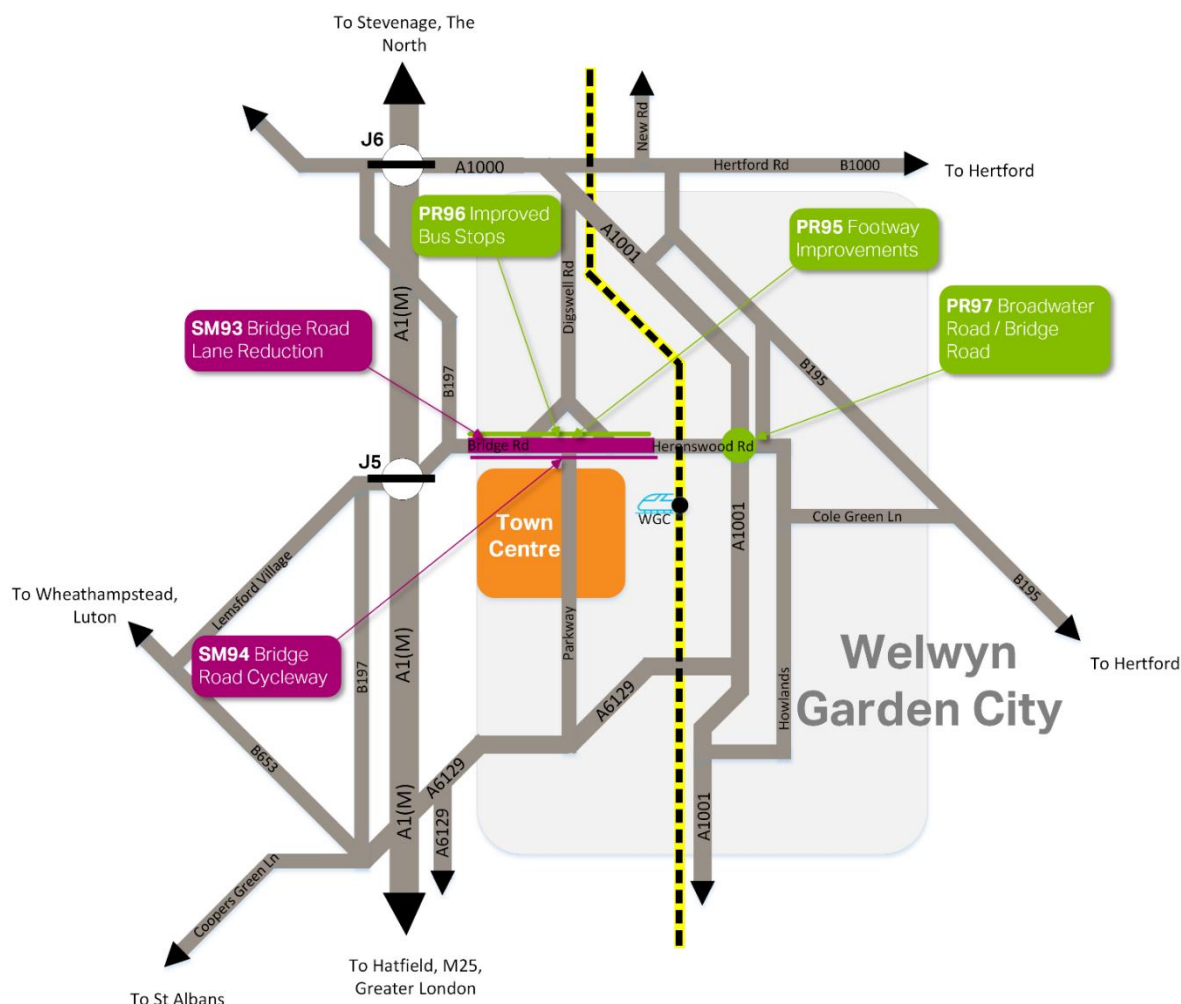


Figure 23 - Package 14 Bridge Road Transformation

Package 12-14 summary (Welwyn Garden City)

Welwyn Garden City is a town that suffers from localised delays especially at the junctions between the B195 Bridge Road and the A1000 Bessemer Road. The main employment zone is located between these points in the Mundells area.

Whilst peak congestion is apparent due to private vehicle use, particularly on routes leading into/out of the town, sustainable transport routes and services require improvement so that they provide an attractive alternative to the car. Many of these routes are not suitable or attractive to use without a car. This is largely the case for residents in the northeast of the town due to poor bus provision. The rail line also imposes severance between the East and West of Welwyn Garden City, reducing walking accessibility to the Town Centre from the Mundells employment area and other eastern parts of town. There are already good cycle links on the eastern side of the town (e.g. National Cycle Routes 12 and 57) which need to be better connected to the town centre.

Packages 12-14 offer a robust approach to ensuring that Welwyn Garden City has viable options for active and sustainable transport.

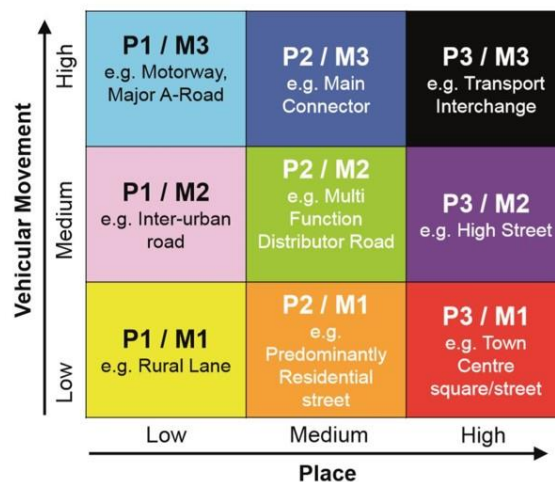
In Welwyn Garden City there is a need for a cohesive and joined up cycleway (**PR86**) (**SM93**). The reinvented cycle network will be complemented by cycle network signage (**PR89**) and station cycle parking (**PR88**); this will encourage trips between all areas on the new infrastructure. The new cycling infrastructure will be provided across the corridor with

Bridge Road as the sustainable spine to link Welwyn Garden City town centre and the employment zone east of the rail line, ensuring the possibility of a multi-modal or active commute for more people.

Overall, the foundation of this set of packages is the redevelopment of the town centre to provide pedestrian and cyclist priority (**SM84**) (**SM93**).

Place and Movement in Welwyn Garden City

Maps showing the place and movement functions of roads in Welwyn Garden City are included in Appendix A.



As it is currently defined, Welwyn Garden City is currently made up of a network of **P2/M2 Multi-Function Distributor Roads** in recognition that they have broadly equal place and movement functions. Proposals to change the layout of some roads within the town centre seek to improve facilities for pedestrians and cyclists and enhance the surrounding town centre environment. It is possible, depending on the extent of change, that the function of roads could change to **P3/M2 High Streets** and **P3/M1 Town Centre Streets**.

To the east of the town centre and railway, the Broadwater area is already undergoing change with new development taking place. Further development is proposed, and this will change the land use characteristics of Broadwater Road and adjoining roads such as Bridge Road.

Broadwater Road and Bridge Road are categorised as **P2/M2 Multi-Function Distributor Roads**. Whilst the surrounding land uses change with more housing and less industrial uses, and better facilities are introduced for pedestrians and cyclists, the place and movement function of these roads is not likely to change as they will still act as important links between different parts of Welwyn Garden City and to facilitate access to the railway station and town centre.

Welwyn Garden City – key connections to larger towns

Package 15 and 16 covers key corridors leading between Welwyn Garden City and nearby larger towns.

Package 15 – Welwyn Garden City-Stevenage and Hitchin Corridor

The overarching aim of Package 15 is:

To improve connections between towns and facilitate development on the Welwyn Garden City to Stevenage and Hitchin corridor through formation of a sustainable transport corridor along the B197 (via Oaklands), B656 (via Codicote) and Digswell Road which aims to discourage longer distance trips from using the corridor in preference over the A1(M).

The Package consists of:

- Development of a sustainable transport corridor along the B197 and B656, including bus priority, speed reduction, and urban realm improvement interventions in towns including Oaklands, Woolmer Green, Codicote and Knebworth.
- Improved cycling and walking infrastructure between Welwyn Village and Welwyn Garden City.
- Improved pedestrian accessibility to Welwyn North train station at Digswell, including footways, cycleways, crossings, etc.

The full schedule of interventions is shown in the table below.

Table 18 - PK15 - Welwyn Garden City-Stevenage Corridor

ID	Name	Description
SM98	B197 Sustainable Travel Corridor	Development of a sustainable transport corridor along the B197 which will include cycleway/footway improvements, traffic calming (requires further study as to exact location of traffic calming), additional or improved crossings (at key locations close to schools, shops and new housing) and bus priority measures where possible along the corridor. The aim should be to provide a high quality sustainable travel offer along the B197 between Welwyn Garden City and Stevenage; discourage the use of the B197 for longer distance inter-urban travel through the use of signage, reduction in permitted traffic speed and other physical changes to road layout which enhance facilities for pedestrians and cyclists; provide better access from the villages

ID	Name	Description
		<p>(including Welwyn and Knebworth) and to railway stations by more sustainable forms of transport, such as cycling and pedestrian infrastructure; and provide safer and more sustainable travel access options to local schools.</p> <p>Speed limit reduction and traffic calming measures will be put in place where possible, and in alignment with the Speed Management Strategy standards, on roads around Knebworth, including Park Lane and the B197 to Stevenage. A 20mph zone within Knebworth centre will be combined with parking removal and streetscape improvements to increase road safety and enable sustainable travel.</p>
SM99	Welwyn Village Connectivity	<p>Improved pedestrian/cyclist connections between Welwyn Garden City and Welwyn Village, including Welwyn North rail station. Provide pedestrian/ cycling infrastructure on the A1000 Hertford Road and beneath the A1(M) and connect it to the existing footway/cycleway on Bessemer Road, to improve the attractiveness and safety of this route for cycling and walking.</p>
SM100	Welwyn North Station Connectivity	<p>Digswell improvements around Welwyn North station to improve conditions for pedestrians and cyclists, including footways, cycleways, crossings, etc.</p> <p>Traffic calming measures on Station Road and Harmer Green Lane around the station, will help create a safer and more accessible environment for pedestrians and cyclists. Such measures will be either in the form of speed limit reduction, which, however, will need to comply with the Speed Management Strategy standards, or one-way roads which will generate more space for cyclists and pedestrians to safely navigate to the station.</p>
SM205	Clock Roundabout and Welwyn Bypass	<p>Improved cycling and walking facilities including at-grade crossings enabled by the reduction of the dualled section (east of the A1(M)) to single lanes. This will also discourage rat running along the B197 at peak times.</p> <p>The existing footway on the western side of the Welwyn Bypass, between the Clock Roundabout and the Parkside roundabout, should also be upgraded to support cycling and walking. This work should be considered alongside SM98 (B197 Sustainable Travel Corridor).</p> <p>As congestion on the roundabout is heavily influenced by the A1(M), more radical or substantial interventions are not under consideration until the full impact of the Junction 6 – Junction 8 Smart Motorway proposals are understood.</p>
SM210	B656 Sustainable Travel Corridor	<p>Development of a sustainable transport corridor along the B656, including cycleway/footway improvements and traffic calming (where appropriate along the B656) measures with a focus on the village of Codicote. The aim should be to provide a high-quality sustainable travel offer along the B656 between Welwyn Garden</p>

ID	Name	Description
		<p>City and Hitchin; discourage the use of the B656 for longer distance inter-urban travel through the use of signage, reduction in permitted traffic speed and other physical changes to road layout which enhance facilities for pedestrians and cyclists; and provide safer and more sustainable travel access options to local schools. It is acknowledged that this corridor will remain an important interurban bus route between Welwyn Garden City and Hitchin and therefore any measures such as traffic calming should not hinder the safe and efficient movement of buses along the route. In addition, any improvements need to consider not only the needs of pedestrians and cyclists but also those of equestrians who will be using parts of the route.</p>

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

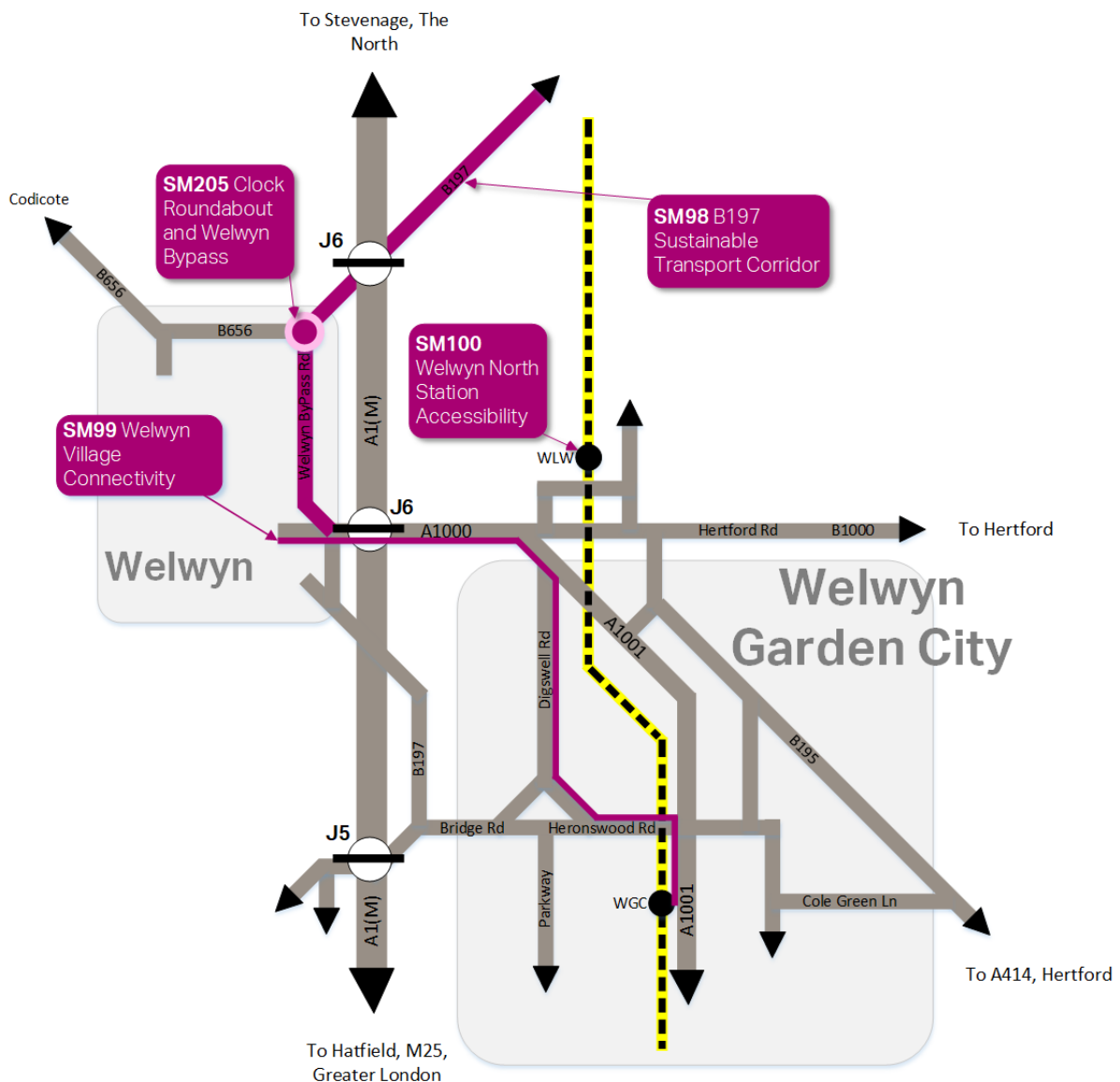


Figure 24 - Package 15 Welwyn Garden City – Stevenage Corridor

Package 16 – Luton-Wheathampstead-Hatfield and Welwyn Garden City Corridor

The overarching aim of Package 16 is:

To facilitate new and existing public transport connections between Luton, Hatfield and Welwyn Garden City, alongside improvements to inter-urban cycling infrastructure and selective highway upgrades in order to improve reliability on the corridor.

The Package consists of:

- Support for new and existing bus services between Luton and Welwyn Garden City and between Luton and Hatfield.
- Development and promotion of a cycleway between Luton and Welwyn Garden City/Hatfield, completing the gap in the existing National Cycleway 57 between Harpenden and Wheathampstead, and forming a new/improved cycle corridor between Wheathampstead, Welwyn Garden City (where it links to National Cycleway 12), Hatfield (linked to the Stanboroughbury developments) and Hatfield Business Park.
- Junction upgrades at Lemsford Village and A6129/B197 to improve reliability of the highway network.

The full schedule of interventions is shown in the table below.

Table 19 - PK16 - Luton-Wheathampstead-Hatfield and Welwyn Garden City Corridor

	ID	Name	Description
	PR101	Harpenden-Wheathampstead Cycleway	Complete missing link in National Cycleway 57 between Harpenden and Wheathampstead and improve onward cycle connectivity with Welwyn Garden City.
	PR102	Wheathampstead-Hatfield Cycleway	Investigate options for cycling route between Wheathampstead and Hatfield, potentially along Tower Hill Lane/Hammonds Lane
	PR103	Welwyn Garden City and Hatfield -Luton Bus Services	Investigate options for improved WGC and Hatfield - Luton bus services. Existing services between these towns are infrequent and end too early in the evening to be used for commuting purposes). Liaise with Luton Borough Council to ensure passengers boarding/alighting local bus services along the B653 can gain access to the proposed Luton Direct Air Rail Transit (Luton DART) between Luton Airport Parkway and London Luton Airport. This package is partly dependent on the expansion of Luton Airport otherwise unlikely to be any significant trigger for improvements.

	ID	Name	Description
LP11	PR105	A6129/B197 (Boat) Roundabout - Signalisation	Junction improvement to improve flow for right turning traffic from Luton towards Hatfield, which is currently blocked by traffic from Hatfield towards Welwyn Garden City
LP11	PR203	B653//B197/Coopers Green Lane roundabout improvement	Junction improvement (as defined by the NW Hatfield, Stanboroughbury, developer) to improve traffic conditions.
LP11			PR105 and PR203 are very closely linked, and it is recommended that they are implemented in combination
	SM70	B653/Lemsford Village/Green Lanes junctions improvement	Junction improvements to reduce congestion and improve capacity and reliability

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

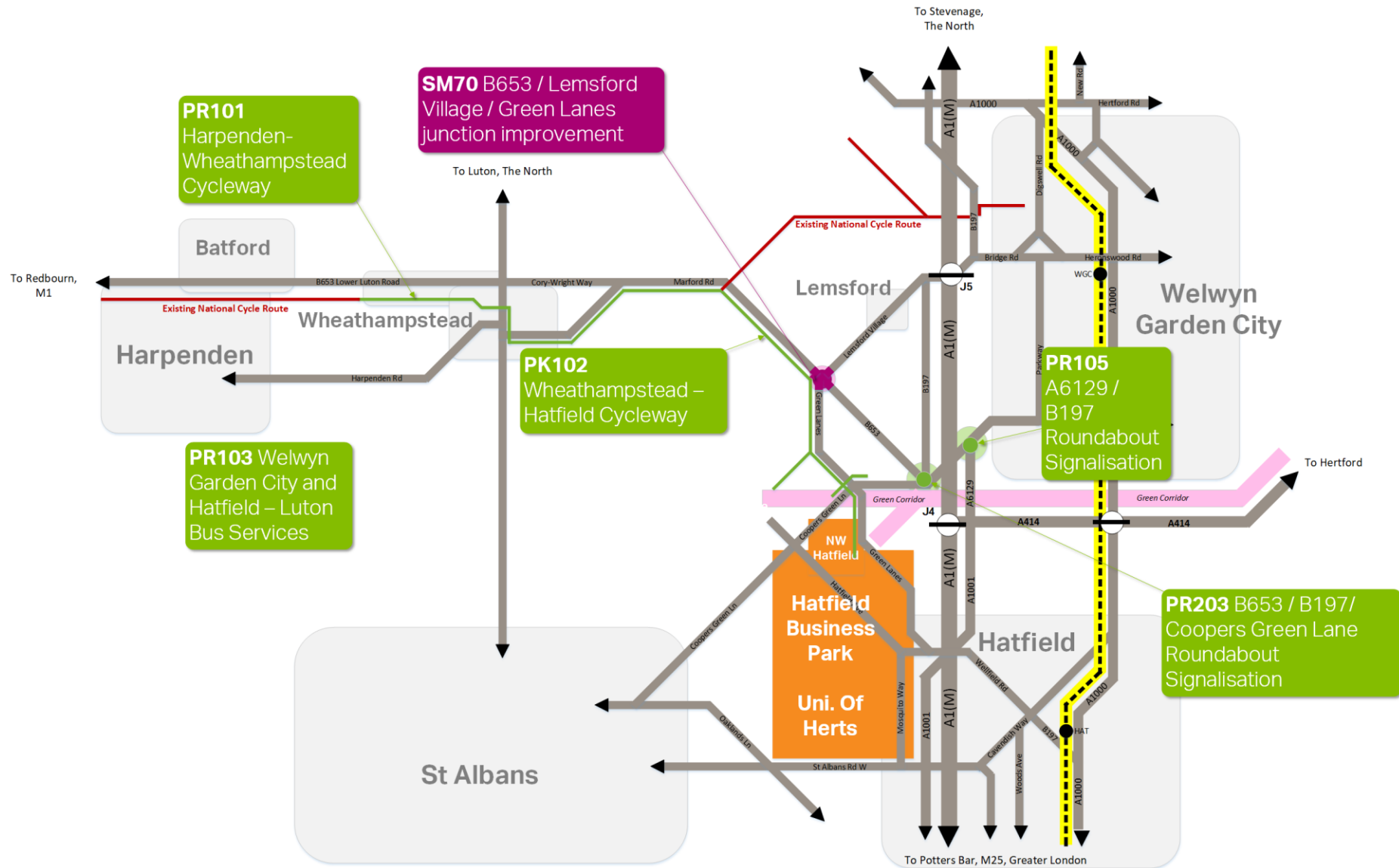


Figure 25 - Package 16 Luton-Wheathampstead-Hatfield and Welwyn Garden City Corridor

Package 15-16 summary (Welwyn Garden City links to other large towns)

Packages 15 and 16 each cover a major inter-urban interaction – **Package 15** between Welwyn Garden City and Stevenage/Hitchin, and **Package 16** between Welwyn Garden City and Luton via Wheathampstead.

Both of these interactions suffer from similar reliability issues. There is a lot of congestion which stems from the A1 (M) and has resulted in through traffic along the B197 and B656 as alternative routes. Although these routes are highly accessible, efficiency is not optimal due to a heavily car dominated modal split between these areas.

The packages recommend a focus on encouraging sustainable transport. While some of these routes are rural and quite car focused, **Package 15** proposes a re-focus towards improving the sustainable travel offer.

To improve public transport services, a sustainable corridor along the B197 and B656 will serve villages en-route and discourage through traffic (**SM98** and **SM210**).

To complement enhancements to the Stevenage corridor, improvements to Welwyn village and Welwyn North station will aid the facilitation of multi-modal transport (**SM99**) (**SM100**). The current bus service running between Hatfield, Welwyn Garden City and Luton could benefit from improvements to service frequencies (**PR103**) especially where there may be opportunities for better links to Luton Airport.

Without improvements to bus, cycle and walking facilities, there will be no modal shift. Both routes have connectivity issues, so the facilitation of sustainable modes will make them competitive options. This will contribute to meeting the vision for south central to be well connected with a majority of trips using cycling or walking to connect inter-urban areas.

Package 16 recommends completion of the missing link on National Cycle Route 57 between Harpenden and Wheathampstead to increase convenience for cyclist (**PR101**). To further connect local areas, research on a Wheathampstead and Hatfield cycleway via Tower Hill Lane/Hammonds Lane should be considered (**PR102**).

The B653 connects Luton and Welwyn Garden City via Batford and Wheathampstead. It is an intensively used corridor for interurban journeys made predominantly by private car. There are bus services, including the 366 (Luton-Hatfield via Welwyn Garden City) and 610 (Luton-Hatfield plus Brookmans Park, Potters Bar and Enfield) along the corridor including those to/from Hatfield Business Park and University of Hertfordshire campus. There is potential for the corridor to increase in use in the future with the planned expansion of London Luton Airport which attracts passengers as well as employees in from Hertfordshire.

The B653 will therefore be a convenient route for airport users and for more general use. Sections of the road are inter-urban and invite higher traffic speeds, whereas some sections especially those running through the urban areas of Batford (east Harpenden) and Wheathampstead are narrower and more congested. This GTP is not advocating any improvements to the B653 corridor which are designed to facilitate increases in traffic. Conversely, it is not proposed that the route is downgraded. For example, traffic calming would not be feasible on many sections as the route is used by buses.

It is envisaged that the current capacity of the B653 will manage traffic volumes in the future. As traffic volumes increase over time, congestion could increase, and this may encourage motorists onto other routes. In conjunction, improvements to bus services and cycle routes as proposed in this GTP should encourage journeys by alternative modes to the car. Improvements at the A6129/B197 (boat) roundabout at Stanborough (**PR105**) and the nearby B197/B653/Coopers Green Lane roundabout (**PR203**) will manage congestion at the south-east end of the corridor.

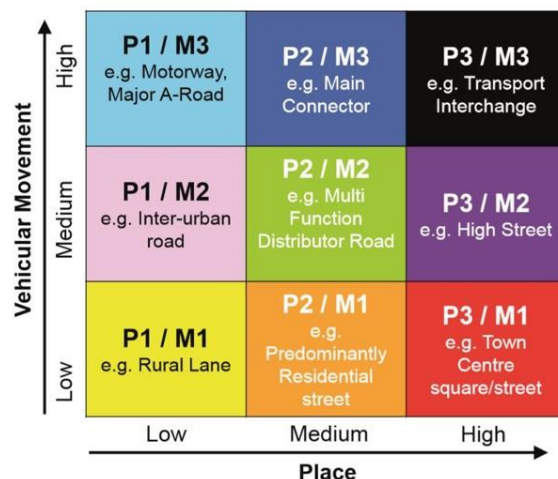
Recognising that London Luton Airport is a major attractor for journeys along the B653, it will be important for HCC and local planning authorities to liaise with Luton Borough Council to ensure passengers boarding/alighting local bus services along the B653 can gain access to the proposed Luton Direct Air Rail Transit (Luton DART) between Luton Airport Parkway and London Luton Airport without accessing the main train station.

Emerging plans for growth to the north-east of Harpenden could place additional pressure on the B653 Lower Luton Road corridor. Given Harpenden is a town with a main line railway link to Central London as well as Luton and St Albans, the focus for any growth which may come forward here will be to facilitate and encourage journeys on foot and by bike to Harpenden town centre and railway station, as well as have easy access to bus services which run along the B653 including the Uno 657 service.

Reference should be made to the South West Hertfordshire Growth and Transport with regard to proposals in Harpenden and Batford.

Place and Movement - routes linking Welwyn Garden City to other urban areas

Maps showing the place and movement functions of roads leading to/from Welwyn Garden City are included in Appendix A.



Welwyn Garden City is linked to the A1(M) north at Junction 6 via a series of roads which are categorised as **P2/M3 Main Connectors** (Digswell Lane), **P1/M2 Interurban Roads** (A1000) or **P2/M2 Multi-Function Distributor Roads** (Welwyn Bypass). The A1(M) is categorised as a **P1/M3 Major A Road**. Further north, the B197 corridor towards Knebworth via Oaklands is a mixture of place and movement functions, with the section at the southern end connecting Oaklands and the A1(M) categorised as a High Road and **P2/M2 Multi-Function Distributor Road**.

The GTP is putting forward measures to establish this corridor as a Sustainable Travel Corridor, with improved footways and an off-road cycle route. Measures regarding speed limit reduction, especially around Knebworth, may require changes to the local road environment based on the Speed Management Strategy guidelines. However, place and movement functions will be maintained where possible, as these roads will continue to facilitate vehicle traffic between towns, but it will be important to ensure that where pedestrians and cyclists interact at junctions, that safe and attractive crossing facilities are provided.

Similarly, the B653 corridor linking Welwyn Garden City, Hatfield, Wheathampstead, Harpenden and Luton will not change function even though proposals are put forward to improve walking and cycling facilities. The functions along this road are currently defined as a **P1/M2 Interurban Road**, **P2/M3 Main Connector**, **P2/M2 Multi-Function Distributor Road** and **P2/M1 Predominantly Residential Street** along its length depending on the surrounding land uses. The opening of the new Katherine Warrington school between Wheathampstead and Batford (Harpenden) could change the function of this section of the road from High Road to **P2/M2 Multi-Function Distributor Road** in recognition of the change in land use and increase in pupils travelling to the school on foot, by bike and bus.

Potters Bar

Packages 17-19 cover the town of Potters Bar.

Package 17 – Hatfield-Potters Bar Cycle Corridor Enhancements

The overarching aim of Package 17 is:

To develop an active travel corridor between Hatfield, Welham Green, Brookmans Park and Potters Bar.

The Package consists of:

- Development and promotion of a cycleway between Hatfield and Potters Bar, improving the National Highway 12 section between Hatfield and Welham Green, creating a new active travel link between Welham Green and Brookmans Park, and upgrading the rail line path between Brookmans Park and Potters Bar with a link to the Royal Veterinary College.
- Improved pedestrian accessibility to Welham Green train station, including footways, cycleways, crossings, etc.

The full schedule of interventions is shown in the table below.

Table 20 - PK17 - Hatfield-Potters Bar Corridor Enhancements

ID	Name	Description
SM107	Welham Green Station Accessibility Improvements	Improvements around Welham Green station to improve conditions for bus users, pedestrians and cyclists, including footways, step-free access, cycleways, crossings, cycle parking and bus stop improvements. Improve connectivity to existing terminus of cycleway on Pooleys Lane, with marked/signed on-road route including improved 'cut-through' shared use cycleway and footway connecting Pooleys Lane and Travellers Close, off-road provision along Travellers Lane.
SM108	Welham Green-Hatfield Cycleway improvements	Physical improvements to cycleway including surface, crossings, general maintenance, etc.
SM109	Welham Green-Brookmans Park Pedestrian/Cycle Link	Cycling/walking infrastructure between Welham Green and Brookmans Park, connecting to train stations and onward cycle/footways to Hatfield and Potters Bar. To be considered in relation to potential development on the western side of the railway at Brookmans Park, and discussions of improving the pedestrian footbridge over the railway line.
SM110	Potters Bar-Brookmans Park Cycleway Improvements	Improve (make suitable for cycling) and promote footway alongside the rail line connecting Potters Bar to Royal Veterinary College and Brookmans Park. Also, implementation of these improvements is subject to investigations to assess options at the

ID	Name	Description
		existing underpass at the north-eastern corner of the Cranbourne Employment Area.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

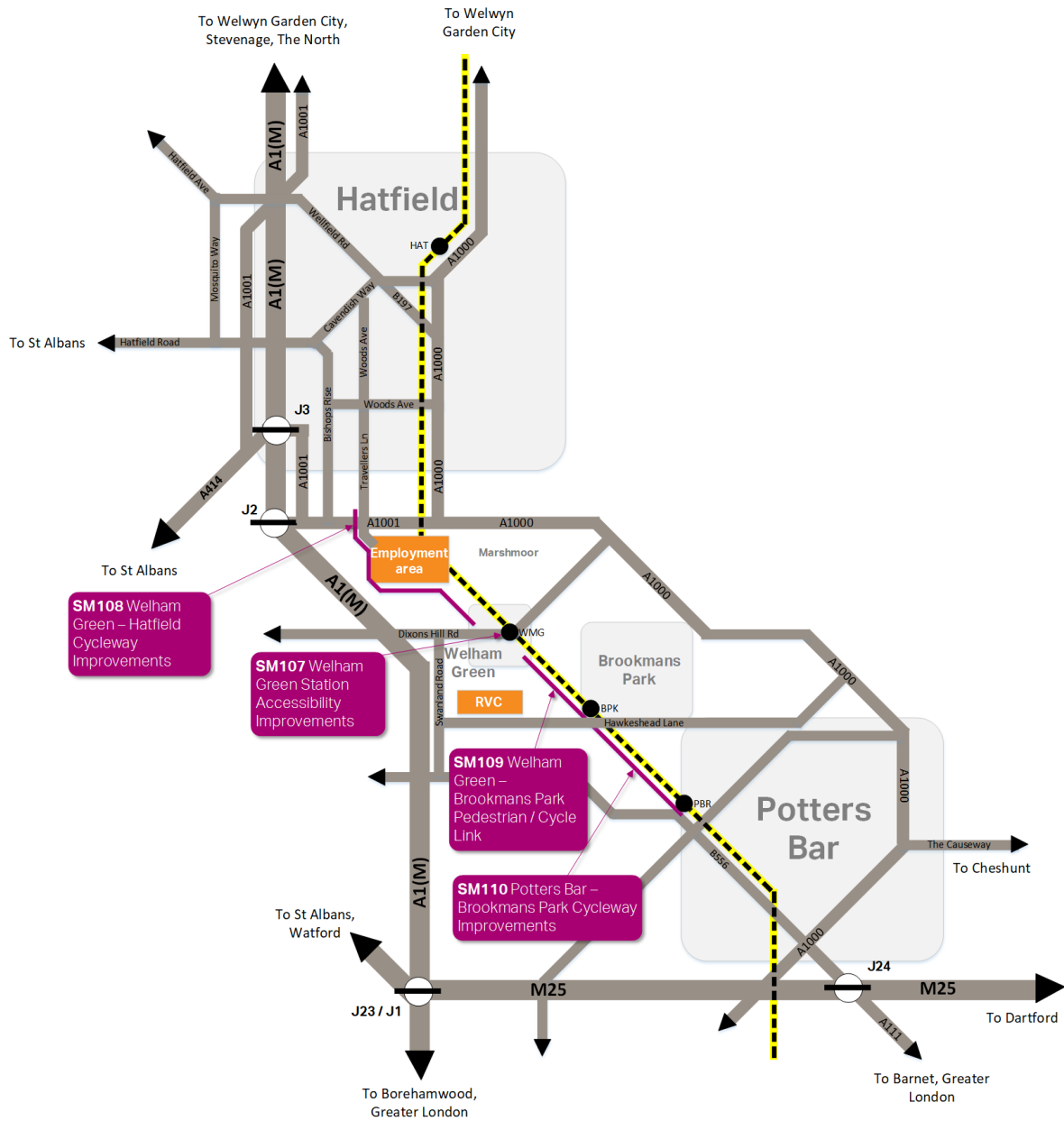


Figure 26 - Package 17 Hatfield-Potters Bar Cycle Corridor Enhancements

Package 18 – Potters Bar Active Travel Improvements

The overarching aim of Package 18 is:

To make Potters Bar a safe, attractive, and convenient place to walk and cycle, and enhance cycle connections to north London.

The Package consists of:

- Increased pedestrian priority and safety improvements, including at the Potters Bar train station junction, and along The Causeway.
- Implementation of wayfinding measures and active travel promotion throughout Potters Bar.
- Development of new pedestrian and cycleway crossings of the M25, including at Bentley Heath Lane/Sawyers Lane.

The full schedule of interventions is shown in the table below.

Table 21 - PK18 - Potters Bar Active Travel Improvements

ID	Name	Description
PR111	Potters Bar Wayfinding	Improved wayfinding in Potters Bar, particularly between High Street and the town centre, and to and through Parkfield Open Space. Opportunities should then be explored to expand wayfinding improvements across the town.
SM113	Station Junction Improvement	Junction improvements at Darkes Lane/The Walk to improve conditions for pedestrians and cyclists as well as broader urban realm enhancements along the high street. Improvements should be designed in such a way that it does not impact upon the safe and efficient movements of buses into/out of the station forecourt/bus interchange.
PR114	The Causeway Pedestrian Crossings	Improved pedestrian crossings along The Causeway to reduce severance for pedestrians.
PR115	Baker Street Cycle Route and M25 'Crossing'	Provision of new off-road walking and cycling facilities along Baker Street between the junction with B656 Mutton Lane south of the M25 underpass, including an at-grade priority crossing broadly adjacent to the farm track access which links to Bentley Heath Lane.
PR116	M25 Cycle Crossings	Support National Highways' Cycling, Safety and Integration Designated Fund Programme ²² on planned and future cycleway crossings over the M25, to provide better connections into north London.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

²² National Highways (formerly Highways England) Delivery Plan update 2019 to 2020, <https://www.gov.uk/government/publications/highways-england-delivery-plan-update-2019-to-2020>

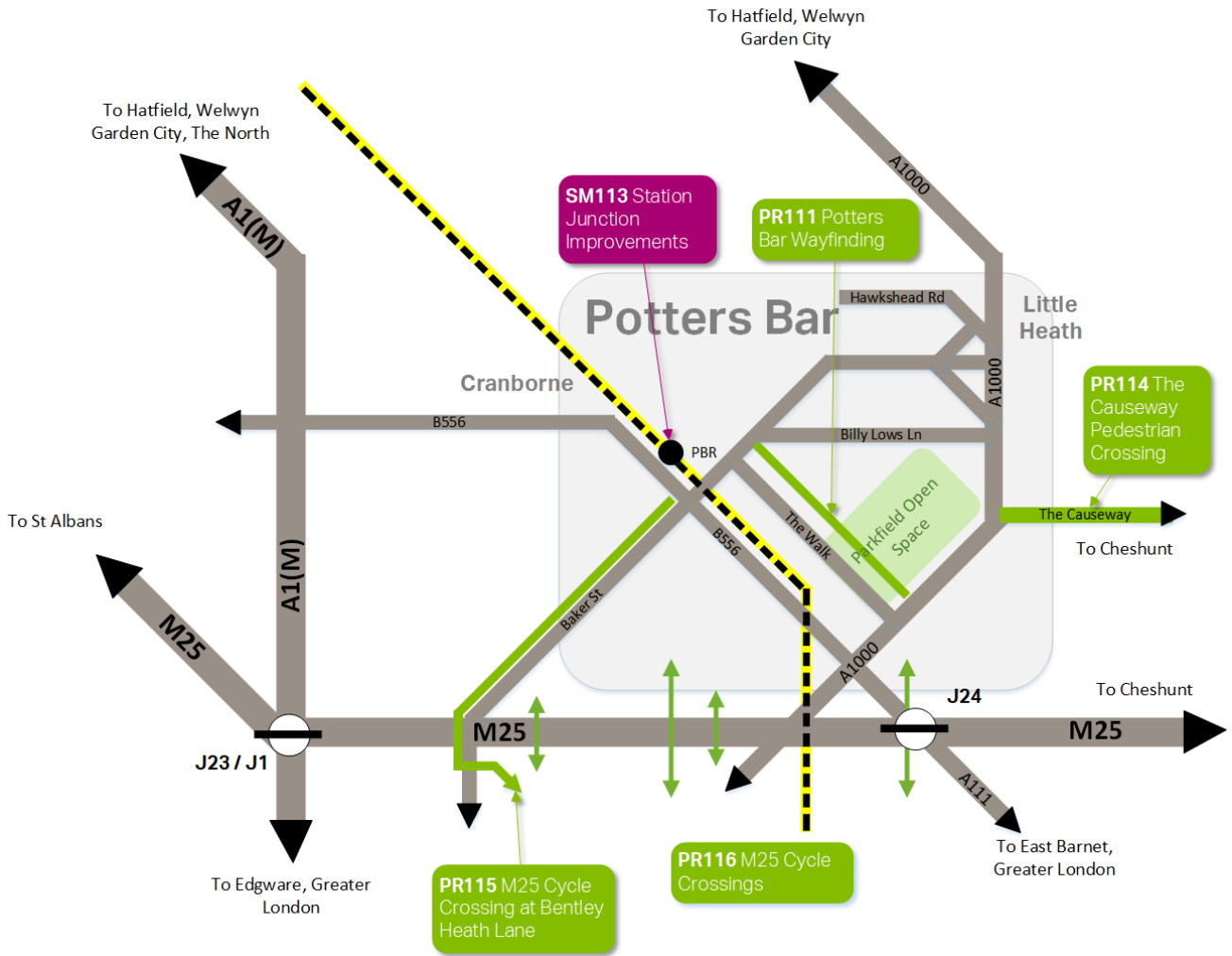


Figure 27 - Package 18 Potters Bar Active Travel Improvements

Package 19 – Potters Bar Public Transport Improvements

The overarching aim of Package 19 is:

To increase the attractiveness of public transport as the preferred mode of choice for journeys within and beyond Potters Bar and facilitate seamless interchange between modes within the town centre.

The Package consists of:

- Implementation of integrated ticketing to facilitate train-bus transfers at Potters Bar station.
- Increase cycle parking facilities at Potters Bar station to facilitate cycle-bus and cycle-train transfers.
- Upgrades to increase capacity at Potters Bar bus station.
- Improvement of bus services in Potters Bar (related to the Enhanced Partnership which is intended to focus on areas which need improvement for buses), particularly services connecting to north London, as well as reinstating Cranborne Road services.

The full schedule of interventions is shown in the table below.

Table 22 - PK19 - Potters Bar Public Transport Improvements

ID		Name	Description
PR117	-	Cranborne Road Employment Area - Town Centre Sustainable Travel Link	Reinstate bus services to Cranborne Road employment area (previously discontinued due to low patronage) and investigate whether patronage would increase due to the planned South Mimms development. This would be done in conjunction to funding measures which could return the service to commercial viability. TfL had previously operated the service and there will need to be liaison with them about any reinstatement of a service. Improve pedestrian routes and investigate feasibility of off-road cycling routes to the town centre either via the station car park (in cooperation with the train operator, Network Rail and the car park operator) and/or via B556 Mutton Lane (the journey from the town centre and railway station is approximately 20-25 minutes).
SM118	-	Potters Bar Bus Station Upgrade	Improvements to increase capacity and the general environment for passengers using Potters Bar Station. This will include improved surfacing, new/improved shelters, signage, additional seating and planting.
PR121	-	Cycle Parking	Increase cycle parking provision at Potters Bar station

Indicative cost range estimates and timescales for these interventions are contained in

Appendix B

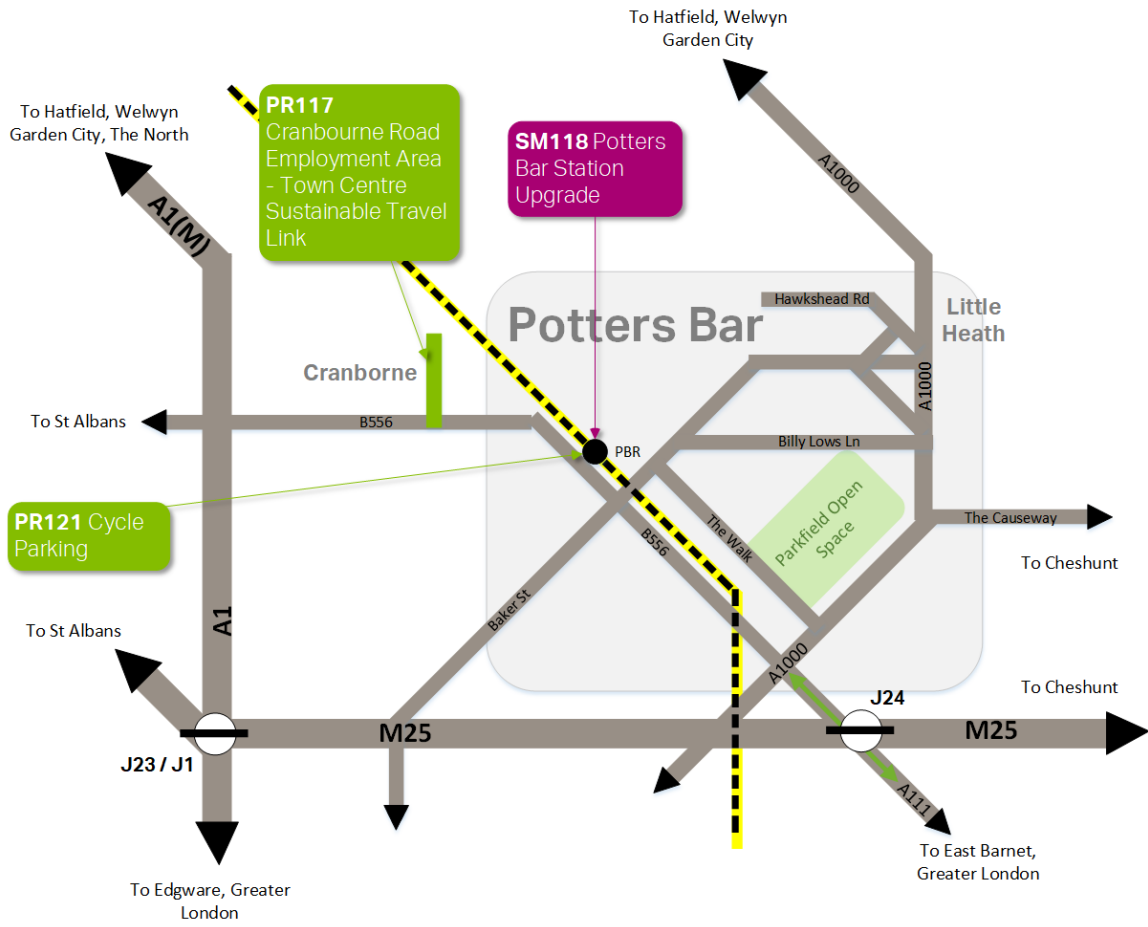


Figure 28 - Package 19 Potters Bar Public Transport Improvements

Package 17-19 summary (Potters Bar)

Potters Bar and Hatfield are linked by National Cycle Route 12. The route runs from Enfield Lock in North London to Spalding. Although disconnected, there is currently some cycle infrastructure in Hatfield unlike Potters Bar where infrastructure is mostly absent.

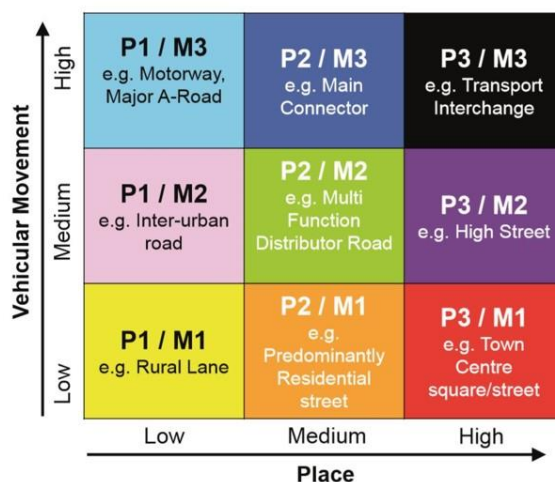
Potential improvements will include a range of cycleway and crossing developments in Welham Green, Brookmans Park and Potters Bar town centre (**SM108**) (**SM109**) (**SM110**) (**PR115**) (**PR116**) (**PR121**). To complement these and attract an uptake of cycling, wayfinding (**PR111**) and marketing material (**PR122**) should be considered. Cycle route connections between the South Mimms area and Potters Bar to also be investigated.

Potters Bar significantly underperforms in the prioritisation score for place, reliability, and to a lesser extent accessibility objectives. This is due to a combination of issues which include poor conditions of footpaths, intermittent lighting towards the outskirts of town, congestion at B556/A1000 and B556/Darkes Lane junctions and the rail line running through Potters Bar resulting in severance between the east and west.

To improve these issues, the packages put forward improvement to public transport including providing bus services to employment areas and north London (**PR117**). The large scheme will consist of an upgrade to Potters Bar bus station at the railway station (**SM118**) and the station junction improvement (**SM113**). The perceived benefit of the packages combined is a seamless interchange for multi-model users.

Place and Movement – Potters Bar

Maps showing the place and movement functions of roads in Potters Bar are included in Appendix A.



Potters Bar is characterised by a series of interlinked **P2/M2 Multi-Function Distributor Roads** which filter movements into/out of the town. These roads all generally converge in the town centre (Darkes Lane) and the A1000 High Street, both of which are categorised as **P3/M2 High Streets** in the place and movement assessment. These are heavily trafficked routes and facilitate movements to, from and through Potters Bar. It is unlikely the functions will change although the GTP puts forward measures which aim to increase walking and cycling especially for shorter distance trips within the town.

The prospect of development around Potters Bar, which at the time of writing is not confirmed, could change the place and movement function categories of existing roads on the edge of Potters Bar, e.g. Baker Street to the south of the town which is currently categorised as a **P2/M3 Main Connector**.

Borehamwood

Packages 20-22 focus on the town of Borehamwood.

Package 20 – Borehamwood Active Travel Improvements

The overarching aim of Package 20 is:

To make Borehamwood a safe, attractive, and convenient place to walk and cycle by connecting key locations with active travel infrastructure and urban realm improvements that prioritise the needs of pedestrians, cyclists and public transport users.

The Package consists of:

- Development of the Elstree Way Corridor scheme, enhancing active travel infrastructure provision along the sustainable spine of the town.

The full schedule of interventions is shown in the table below.

Table 23 - PK20 - Borehamwood Active Travel Improvements

ID	Name	Description
SM123	Elstree Way Corridor	<p>Elstree Way Corridor scheme comprises substantial streetscape improvements and junction reconfigurations which are aimed at improving conditions for pedestrians and cyclists and make it a more inviting corridor for people to spend time in and travel through.</p> <p>The Elstree Way Corridor scheme's focus is to be on connectivity of sustainable and active modes.</p> <p>Furthermore, improvements should ensure buses have priority (where feasible) and connectivity to the station and Tesco bus interchanges is improved. The scheme will extend from Station Road/Theobald Street to Shenley Road broadly adjacent to Hertswood Academy. Consideration will also be given to the opportunities with new technologies to improve the management of parking and motorists navigating towards nearby car parks.</p>

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

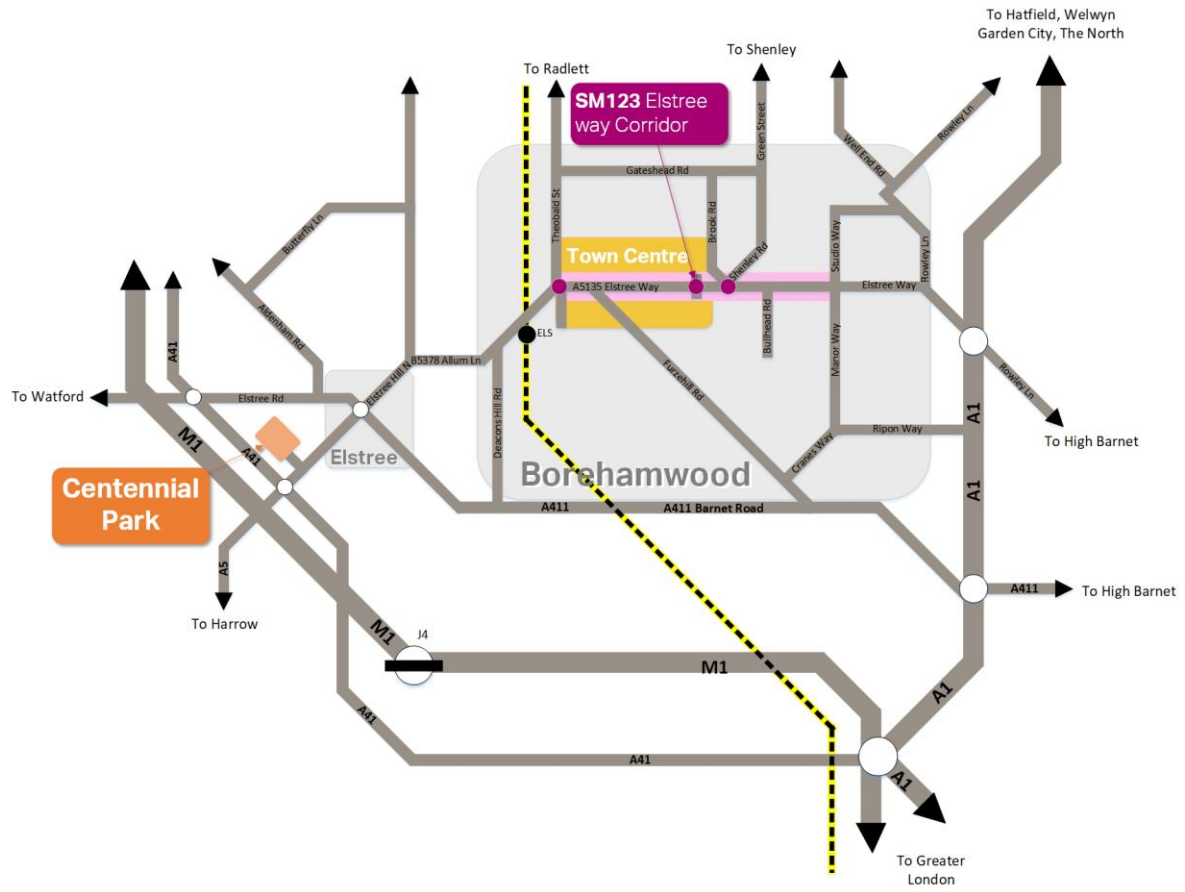


Figure 29 - Package 20 Borehamwood Active Travel Improvements

Package 21 – Borehamwood-Elstree Village Connectivity

The overarching aim of Package 21 is:

To improve connectivity by active travel modes between Borehamwood, Elstree Village, and the Centennial Park employment area.

The Package consists of:

- Development of a cycleway and footway between Borehamwood and Elstree Village, and between Elstree Village and the Centennial Park employment area.
- Increased cycling parking provision at key locations along the corridor.
- Rationalised parking provision in Borehamwood town centre.
- Improved access by all modes to the Centennial Park employment area.

The full schedule of interventions is shown in the table below.

Table 24 - PK21 - Borehamwood-Elstree Village Connectivity

	ID	Name	Description
	PR122	Cycle Wayfinding - Promoting the Connections	Promoting cycle connections between Elstree-Composers Way-Centennial Way, Elstree Village-Borehamwood, and within Borehamwood (based on actions identified in the Borehamwood and Elstree Urban Transport Plan)
LP6	PR124	Borehamwood-Elstree Village Pedestrian/Cycle Link	Cycling/walking infrastructure between Borehamwood station and Elstree Village
LP6	PR125	Elstree-Centennial Park Pedestrian/Cycle Link	Cycling/walking infrastructure between Elstree Village and the Centennial Park employment area
LP6	PR126	Centennial Park Accessibility Improvements	Improved junctions and bus stops around Centennial Park (UTP). Bus stops are required to include a shelter, bench, raised kessel kerb (for easier access to buses) and real time screens.
LP6			PR124, PR125 and PR126 are very closely linked, and it is recommended that they are implemented in combination
	PR127	Borehamwood Cycle Parking	Cycle parking at Key Local Destinations, including town centre and train station which could be facilitated by a revised road layouts and simplified car parking arrangements
	PR128	Elstree Way/Shenley Road Parking Study	Undertake parking study to understand parking requirements along the B5378. Also, undertake streetscape study along the B5378. The study could potentially indicate the need to remove parking service lanes and simplifying the general road layout, however suitably located disabled spaces will be provided. Prior to any changes being implemented, any study should also involve consultation with local residents and businesses

			and an impacts assessment undertaken to determine if there would be any detrimental effect on local businesses.
	SM129	Station Road Junction Improvements	Junction improvements to improve conditions for pedestrians, cyclists and bus services

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

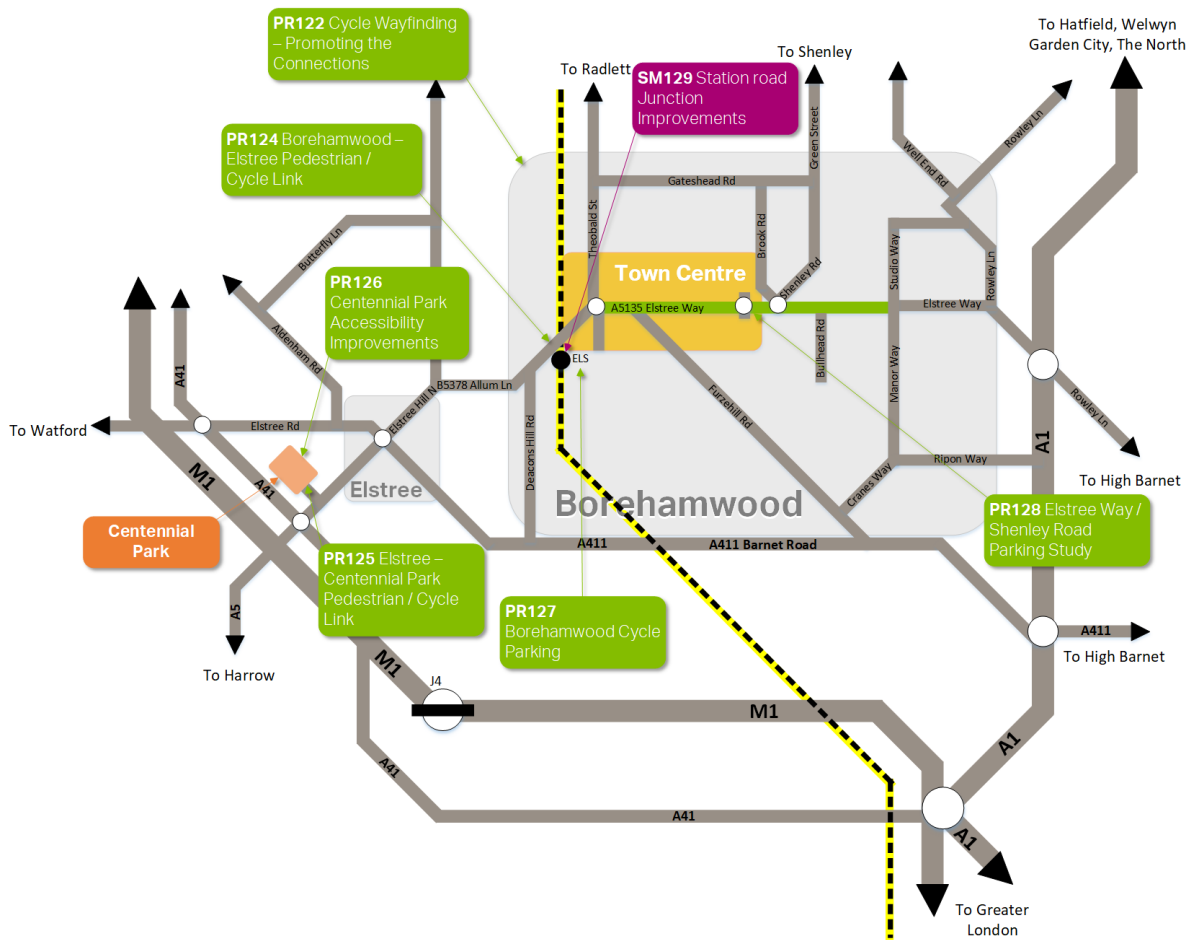


Figure 30 - Package 21 Borehamwood Elstree Village Connectivity

Package 22 – Borehamwood-London Connectivity

The overarching aim of Package 22 is:

To maintain and improve connections between Borehamwood and north London by strengthening sustainable transport links and addressing pinch points, which reduce congestion and improve non-car connectivity.

The Package consists of:

- Development of cycleways along the A5 towards Edgware, and along Rowley Lane towards Barnet.
- Upgrades at the Stirling Corner roundabout and A1/Rowley Lane junction to improve conditions for pedestrian and cyclists, as well as improve traffic reliability.
- Support for increased bus services to surrounding areas including Barnet, Edgware, Watford, and Stanmore.

The full schedule of interventions is shown in the table below.

Table 25 - PK22 - Borehamwood-London Connectivity

	ID	Project / Approach	Name	Description
	SM130	a	Stirling Corner Junction Improvements for pedestrians and cyclists	Minor improvements focused on pedestrians and cyclists - including a signal-controlled crossing on the A1 either north or south of the roundabout (to be discussed with TfL)
	SM130	b	Stirling Corner Junction Improvements for pedestrians and cyclists	Pedestrian and Cyclist bridge over the A1 either north or south of the roundabout (to be discussed with TfL)
	SM131	a	Stirling Corner Junction Improvements for vehicles	Alterations to the junction aimed at reducing traffic congestion on the A1 southbound. Could include reducing the northbound exit from 3 to 2 lanes and implementing traffic signals on the northern side of the junction.
	SM131	b	Stirling Corner Junction Improvements for vehicles	M1 Junction 4 improvements (see SW Herts GTP). There will be a need to consider wider implications for example impact on traffic routeing across Borehamwood, on the A411 corridor between the A41 and A1, and at the Stirling Corner junction
	SM132		A5 Cycleway	Work with Harrow Council to identify whether it would be feasible to construct an off-road cycleway along Brockley Hill between the A41 and Stanmore via the Royal National Orthopaedic Hospital (RNOH). There is also a need for crossing improvements near to the RNOH,

ID	Project / Approach	Name	Description
			which will be designed and planned in collaboration with Harrow Council.
LP7 PR133	-	Rowley Lane Cycleway	Work with Barnet Council to identify whether it would be feasible to introduce cycling/walking infrastructure along Rowley Lane between the A1 junction and Barnet Hospital
LP7 PR134	-	A1/Rowley Lane Junction Improvements	Improved conditions for pedestrians and cyclists at the A1/Rowley Lane junction, with connections between Borehamwood and the Rowley Lane Cycleway, the A1 Cycleway and new employment development planned between Rowley Lane and the A1 north of the junction
LP7			PR133 and PR134 are very closely linked, and it is recommended that they are implemented in combination

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

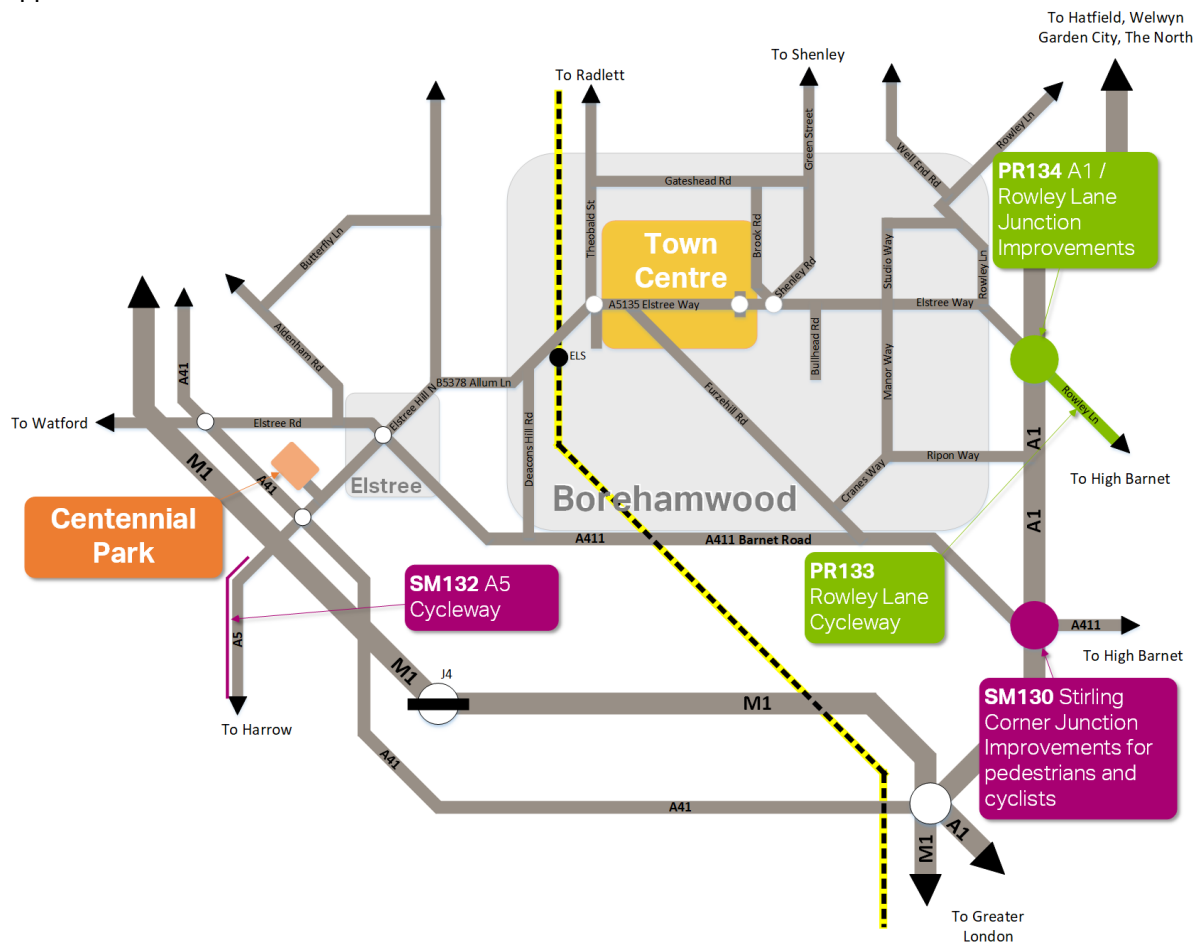


Figure 31 - Package 22 Borehamwood-London Connectivity

Package 20-22 summary (Borehamwood)

Borehamwood suffers from low prioritisation scores as a result of its local interactions issues. Consistently the Place theme is a concern due to infrequent lighting outside the town centre and the overall lack of pedestrian and cyclist priority. Borehamwood generally underperforms in efficiency as people choose to drive rather than cycle or walk.

Local infrastructure is primarily targeted at motorised vehicles which are displayed by the width ratio of the pavement compared to the road and pavements only on one side of the street in specific places. Reliability tends to be an issue throughout Borehamwood where there are congestion issues along the A411 Barnet Road, A5183 Watling Street and B5378 Shenley Road during the AM peak only and along the A5183 during the PM peak. There are no major key shortfalls for accessibility however this is likely to improve with better connectivity.

Cycling provisions in Borehamwood consists of a cycle route alongside the A1 Barnet By-Pass, significant parts of Elstree Way and other sporadic sections of the town. The disjointed cycle network combined with a lack of provision towards Elstree Village and the Centennial Park business park results in a disconnection between areas which are relatively close together. As a consequence, people are less inclined to travel by bike or on foot and therefore travel what might be quite short distances by car.

The packages, therefore, in conjunction with existing projects in the Borehamwood area, offer links to create an ingratiated sustainable spine through local corridor improvements and range of pedestrian and cycle links (**SM123**) (**LP6**). This is crucial to ensuring joined up infrastructure.

To facilitate the use of sustainable transport, **Package 22** aims at exploiting the close proximity of Borehamwood and north London through strengthening of the bus services (and potential introduction of cycling infrastructure alongside junction improvements (**SM132**) (**LP7**).

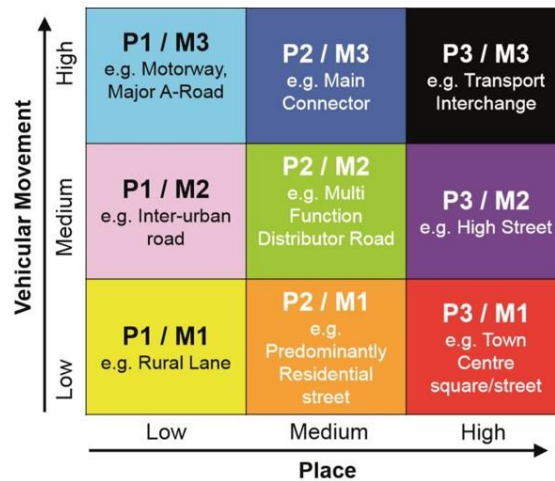
The schemes are complemented with cycle parking and wayfinding improvements to help promote connectivity and attract more people to cycle in Borehamwood (**PR122**) (**PR127**). There is also the potential to further attract cyclists by deterring car parking along Shenley Road. This can only occur after a study to rationalise the need for parking (**PR128**). Additionally, a business impact assessment and full consultation should be considered prior to any parking changes.

It should be noted that preliminary meetings with London boroughs have been held to improve links between Borehamwood and London.

With this set of packages there is potential to unlock Borehamwood as a walking and cycling town by giving the space and priority to those most vulnerable; active travel users.

Place and Movement – Borehamwood

Maps showing the place and movement functions of roads in Borehamwood are included in Appendix A.



The main high street, Shenley Road, in Borehamwood is categorised as a **P3/M2 High Street** but it also serves as an east-west route, linking to Elstree Village in the south west, Shenley village in the north and the A1 corridor to the east.

Elstree Way, which is the main gateway route leading into Borehamwood from the A1, has undergone change as a result of new homes, hotel and leisure centre development. This has made this section of road more vibrant however the current place and movement function (**P2/M2 Multi-Function Distributor Road**) is unlikely to change. Measures put forward in the GTP to enhance bus, pedestrian and cyclist facilities will help reinforce the current place and movement functions.

If development sites to the north east of the town come forward, this could change the function of existing adjacent sections of roads, especially if new land uses front onto existing roads and where new development is expected to create new travel movements by different modes, such as extra people walking and cycling, which will trigger the need for better footways, cycle routes and crossing facilities.

Radlett

Packages 23 cover the town of Radlett.

Package 23 – Radlett Station Accessibility

The overarching aim of Package 23 is:

To improve accessibility by active modes to Radlett station as a key node for inter-urban journeys.

The Package consists of:

- Improvement of footways, cycleways, and crossings in the vicinity of Radlett town centre and station.
- Increased provision of cycle parking at the train station.

The full schedule of interventions is shown in the table below.

Table 26 - PK23 - Radlett Station Accessibility

ID	Name	Description
SM136	Radlett Station Pedestrian and Cycle Accessibility	Improvements around Radlett station to improve conditions for pedestrians and cyclists, including footways, cycleways, crossings, etc. Investigate widening along Shenley Road/Radlett Lane for cycles or new cycle connections through development on Harper Lane (Bloor Homes).
PR137	Cycle Parking	Increase cycle parking provision at Radlett station

Indicative cost range estimates and timescales for these interventions are contained in Appendix B

Radlett station is centrally located within the village with the furthest residential areas located around 1.5km from the station. The private car is the current mode of choice over cycling or walking, although the station should be no more than 20-25 minutes from all parts of Radlett.

Accessibility is a reoccurring issue in Radlett particularly as there are no secondary schools in the village. The closest independent schools are within a 12-30-minute walk from the west half of Radlett (west of Watling Street) and central Radlett.

The A5183 Watling Street runs through the centre of Radlett and forms the main high street flanked by shops, restaurants/cafes and local businesses. Most of road space along the high street is car-focused with parking provided in wider sections of the street. There is currently limited opportunity for safe off-road cycling.

To improve these issues, this package recommends a robust set of active travel improvements. This includes walking and cycling around the centre of Radlett specifically at the station as the major node for inter-urbans journeys (**SM136**) (**PR137**).

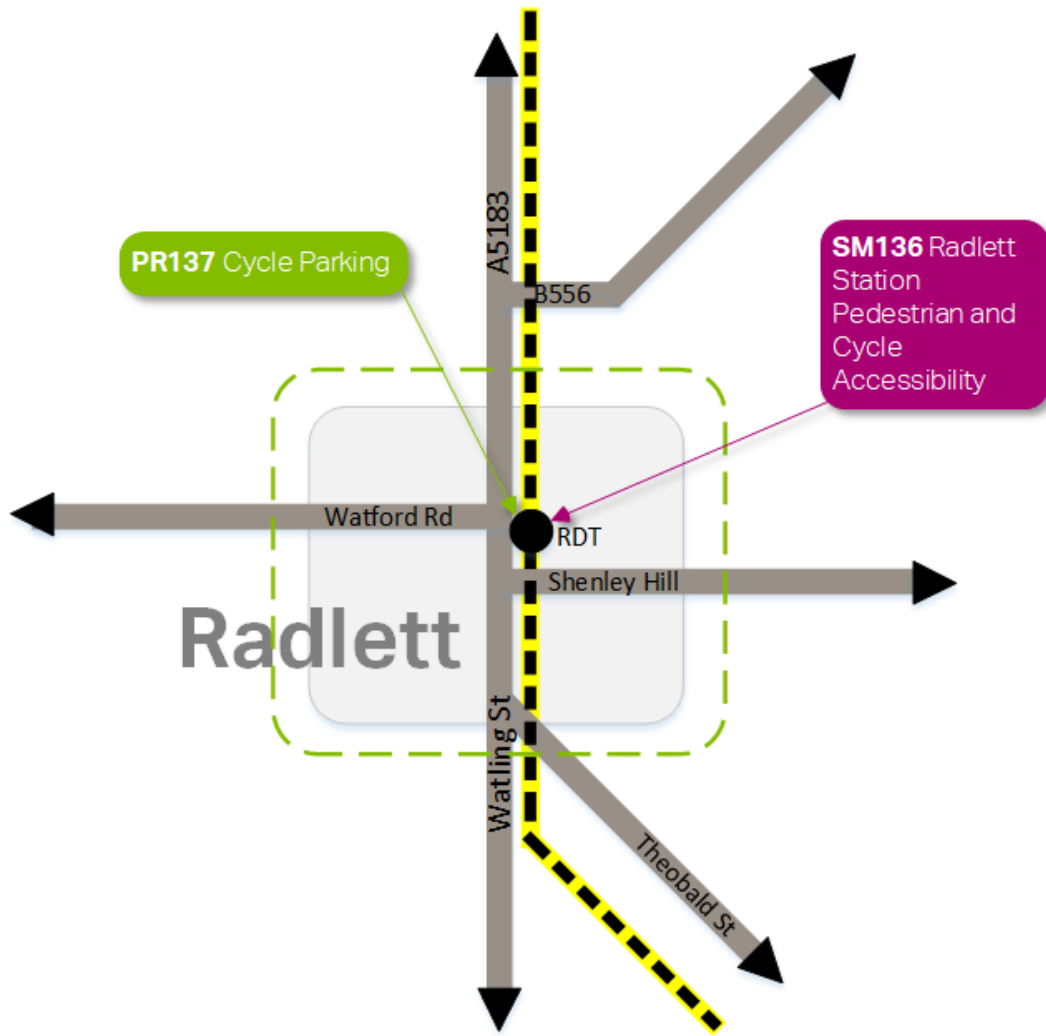
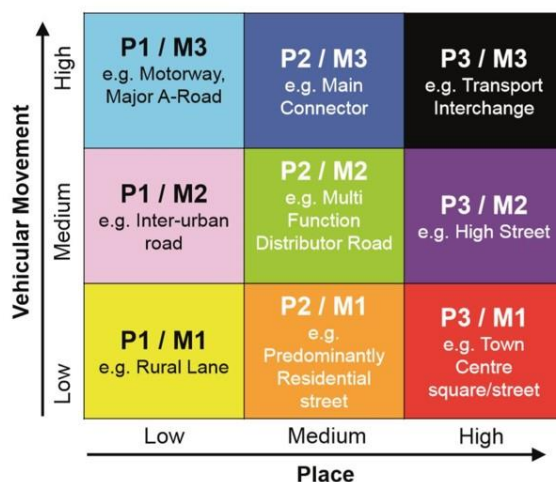


Figure 32 - Package 23 Radlett Station Accessibility

Place and Movement – Radlett

Maps showing the place and movement functions of roads in Radlett are included in Appendix A.



The main high street, A5183 Watling Street, in Radlett is categorised as a **P3/M2 High Street** the sections leading into the town are categorised as **P2/M2 Multi-Function Distributor Roads** and **P2/M3 Main Connectors** here are not expected to be any changes to the current place and movement functions that would occur as a consequence of proposed interventions. As a fairly compact town, the existing **P2/M2 Multi-Function Distributor Roads** which also include Watford Road and Theobald Street (which links to Borehamwood) will need to continue to act as feeder routes and will therefore need to make provision for people travelling by different modes, be it by private car, on foot, bike, bus, HGV (for access only).

The A5183 Watling Street will continue to create some level of severance for people walking and cycling however there are considered to be sufficient measures in place to create suitable conditions for all to travel about safely.

If new housing development comes forward (R1 and/or R2), which is not certain at the time of writing, then these could trigger the need for the County Council to consider how people from these developments will travel around and this could result in changes being made to key roads such as Watford Road and Watling Street for example providing better footways, new bus stops, new pedestrian crossings, cycle routes and potentially reduced speed limits.

St Albans

Package 24-29 focus on the area of St Albans City.

Package 24 – St Albans City Centre Improvements

The overarching aim of Package 24 is:

To make St Albans city centre a safe, attractive, and convenient place to walk and cycle, through improvements to active travel infrastructure and the urban realm.

The Package consists of:

- Urban realm, footway, and junction improvements, including a new crossing along St Peter's Street, revisions to the St Peter's Street/Victoria Street junction, enhancements along Victoria Street linking the city centre and railway station, and along a new pedestrian link between Victoria and St Peter's Street through the civic centre redevelopment site.
- Expansion of the 20mph zone in St Albans.

The interventions being put forward would need to be developed in line with the findings of the EP bus feasibility study.

The full schedule of interventions is shown in the table below.

Table 27 - PK24 - St Albans City Centre Improvements

ID	Approach	Name	Description
PR139	-	St Albans Footway Improvements Study	Investigate potential for widening or otherwise improving narrow footways in the town centre to improve conditions for pedestrians with the objective to encourage modal shift by encouraging motorists out of their cars.
PR140	-	St Albans City Centre 20mph zone expansion	Expanded 20mph zone in St Albans including Victoria Street, Bricket Road and Catherine Street. Any implementation of 20mph zone needs to be in accordance with HCC's Speed Management Strategy
PR141	-	A1081 St Peter's Street Pedestrian Crossing	Reduced severance for pedestrians along A1081 St Peter's Street with a new signal-controlled crossing adjacent to the small shopping parade and St Peter's churchyard between St Peter's Close and Grange Street.
SM143	-	Victoria Street Urban Realm Improvements	Urban Realm Improvements along Victoria Street to improve conditions for pedestrians, cyclists and buses and improve amenity of the street by introducing walk time signage between main areas and coherent footway surface treatments, to encourage pedestrian use.
SM144	-	Enhanced Victoria Street-Civic Centre-St Peter's Street Link	A new/enhanced link for pedestrians, associated with planned development on the former Police station and adjacent office block, between Victoria Street/Bricket Road, the Civic Centre and St Peter's Street (Nationwide Building Society).

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

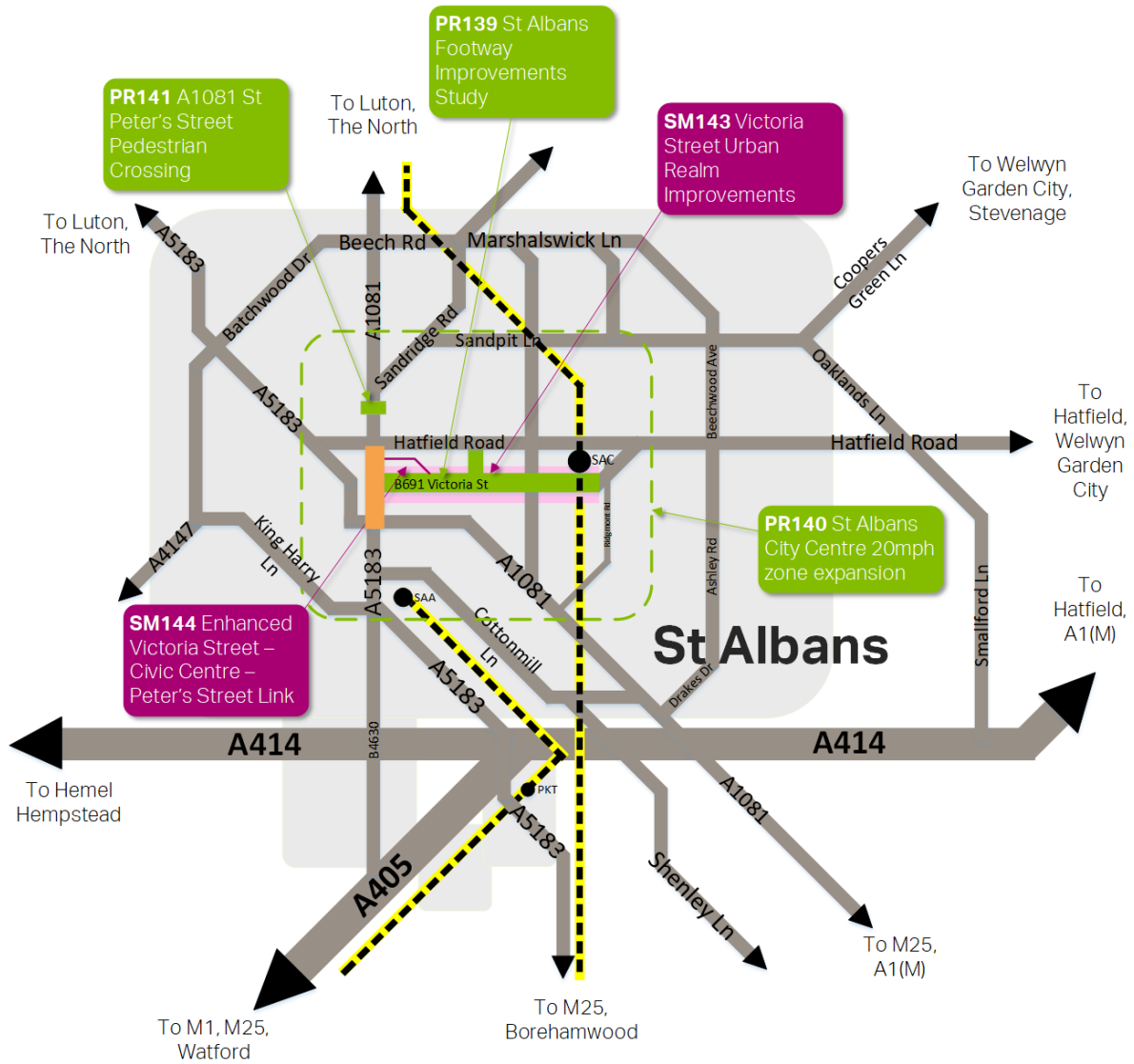


Figure 33 - Package 24 St Albans City Centre Improvements

Package 25 – St Albans Green Ring and Alban Way Improvements

The overarching aim of Package 25 is:

To unlock the potential of the St Albans Green Ring and Alban Way infrastructure and maximise its benefits.

The Package consists of:

- Upgrades including crossings, signage and markings to the Green Ring at various locations.
- Development of spoke routes facilitating active travel modes between the Green Ring and St Albans town centre.
- Upgrades to the Alban Way, including wayfinding and signage, lighting, maintenance, and marketing and promotion of the corridor.
- Rights of Way (ROW) improvement plan for St Albans

The full schedule of interventions is shown in the table below.

Table 28 - PK25 - St Albans Green Ring and Alban Way Improvements

	ID	Approach	Name	Description
LP8	PR147	-	Folly Lane - Verulam Road pedestrian crossing	Consider a new signalised pedestrian crossing near to the existing petrol station at the level of the school bus stop on Folly Lane, which will increase pedestrian safety.
LP8	PR148	-	St Albans Green Ring Enhancement - Beech Bottom/ Batchwood Drive	Beech Bottom-Batchwood Drive raised speed table crossing and improved markings.
LP8	PR149	-	St Albans Green Ring Enhancement - Townsend Drive	Introduce a raised speed table crossing where the cycle route crosses Townsend Drive.
LP8	PR150	-	St Albans Green Ring Enhancement - Branch Road and St Michael's Street	Additional markings and signage on Branch Road and St Michael's Street to indicate the continuation of the Green Ring on road.
LP8	PR151	-	St Albans Green Ring Enhancement – Verulamium car park	Improvements to cycling accessibility to and through Verulamium car park, including additional facilities or changes to the car park surface.
				PR147, PR148, PR149, PR150 and PR151 are very closely linked, and it is recommended that they are implemented in combination
	SM152	-	Level Crossing	Maintain crossing point and continue to promote safe access in discussion with Network Rail.
	SM153	-	St Albans Green Ring 'Spoke' Routes	Investigate feasibility of new cycle 'spoke' routes in conjunction with the area's

	ID	Approach	Name	Description
				LCWIP - better signposting between the City Station, Hatfield Road and the Alban Way in the vicinity of Flora Grove, Breakspear Avenue, Vanda Close and Camp Road
	PR154	-	Alban Way Lighting	<p>Implement lighting along Alban Way, either 'always on' or sensor activated. This will depend on the environmental impact from the type of lighting. The route would be divided into sections and lighting improvements will be developed, funded and implemented in multiple phases, for example:</p> <p>Phase 1: between Cottonmill Lane and Colney Heath Lane (3.5 km) Phase 2: between Colney Heath Lane and Cavendish Way (3.8 km) Phase 3: between Cavendish Way and Hertford Road (3 km)</p> <p>The exact sections and number of sections will be determined after careful consideration of the available funding and duration for implementation in order for the closure to cause as little disruption as possible.</p>
	PR155	-	Alban Way Wayfinding	Wayfinding to Alban Way in St Albans And Hatfield. Extension of Alban Way branding/signage/wayfinding beyond the extents of the actual cycleway to provide easier wayfinding to it, with clear links to important destinations whilst making sure the need for any lighting does not have any adverse impacts on its rural surroundings.
	PR156	-	Alban Way Cycle Signage	Improved cycle signage along Alban Way. Include 'reference point' signage to provide an indication to cyclists of where they are in relation to nearby prominent land use features, and distances/estimated journey times to key locations
	SM157	-	Alban Way Physical Improvements	Physical improvements including surface, crossings, general maintenance, etc. Maintain the crossing over the Abbey Line as a priority, and incorporate into any improvement scheme. Investigate sensor lighting. Manage vegetation along the route, and clear leaf mould regularly from the relatively new surface to avoid mud building up. Investigate widening and lighting the path as it passes through Hatfield, especially to the east of the Galleria, or consider alternative busier routes as part of the Hatfield regeneration plans. If rail service frequency increases this may trigger the need for a bridge.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B

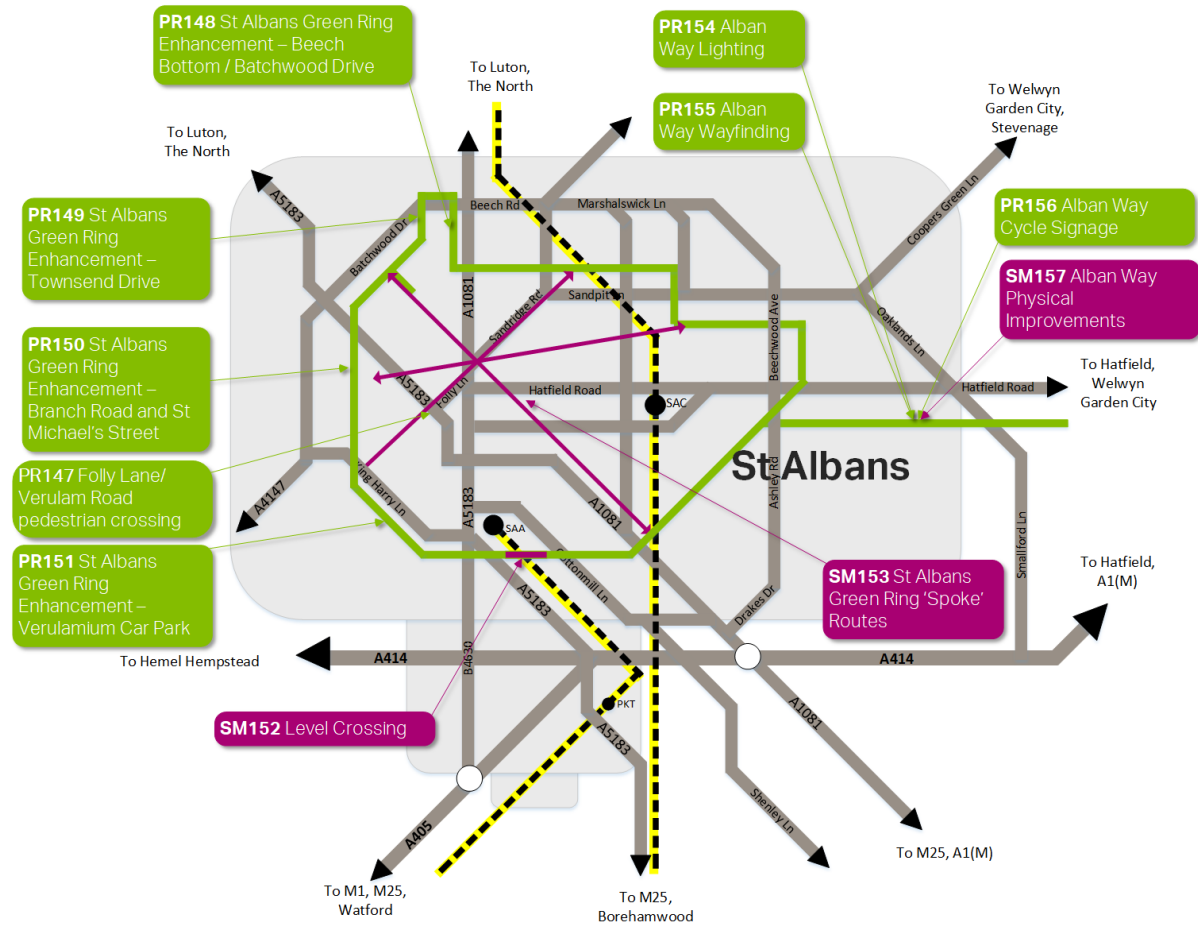


Figure 34 - Package 25 St Albans Green Ring and Alban Way Improvements

Package 26 – St Albans Abbey Station Accessibility

The overarching aim of Package 26 is:

To improve accessibility by active modes to St Albans Abbey station

The Package consists of:

- Increased provision for cycle parking at the station.
- Investigating longer term options for and Abbey Line park and ride hub, or relocation of the existing Abbey Line station. How these are taken forward will be dependent on the routing and form of the HERT MRT system.

The full schedule of interventions is shown in the table below.

Table 29 - PK26 - St Albans Abbey Station Accessibility

ID		Name	Description
PR159	-	Cycle Parking	Increase cycle parking provision at St Albans City station in association with improvements to the station on Ridgmont Road.
PR160	-	Station to Station Connectivity	Investigate options for improved pedestrian and cycling connections between St Albans Abbey Station, the city centre and St Albans City station, as well as feasibility to expand bus routes 601 and 724.
SM152	-	Level Crossing	Maintain crossing point and continue to promote safe access in discussion with Network Rail.
SM161	-	St Albans Abbey Station Relocation	Investigate long term potential for a local relocation of St Albans Abbey station to a position more adjacent to the Sainsbury's supermarket car park. This could enable a shorter distance at-grade route to be provided for pedestrians and cyclists and could unlock development in the area.
SM162	a	Abbey Line Park and Rail Hub (related to SW GTP proposal)	Extension of Park Street station platform northwards to facilitate the introduction of a Park and Rail hub south of the A414. Vehicle access provided off the A414 at a new at-grade junction.
SM162	b	Abbey Line Park and Rail Hub (related to SW GTP proposal)	Abbey Line Park and Rail hub at an extra new station (Cottonmill area) north of the A414. Vehicle access provided off the A414 at a new at-grade junction. Local pedestrian/cycle links into southern St Albans.
SM162	c	Abbey Line Park and Rail Hub (related to SW GTP proposal)	Abbey Line Park and Rail hub at an extra new station (Cottonmill area) north of the A414. Vehicle access provided off A414 at a new at-grade junction. Local pedestrian/cycle links into southern St Albans and a new bus link into southern St Albans (to City Station) via Holyrood Crescent or Butterfield Lane.
SM162	d	Abbey Line Park and Rail Hub (related to SW GTP proposal)	Abbey Line Park and Rail hub at a relocated Park Street station south of the A414 - car park linked to the A414. Local pedestrian/cycle links plus new bus link into southern St Albans (to City Station). Bridge over A414 for buses, cyclists and pedestrians.

ID	Name	Description
		NOTE: SM162 is linked to SW-SM13 in the South West Hertfordshire Growth and Transport Plan.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

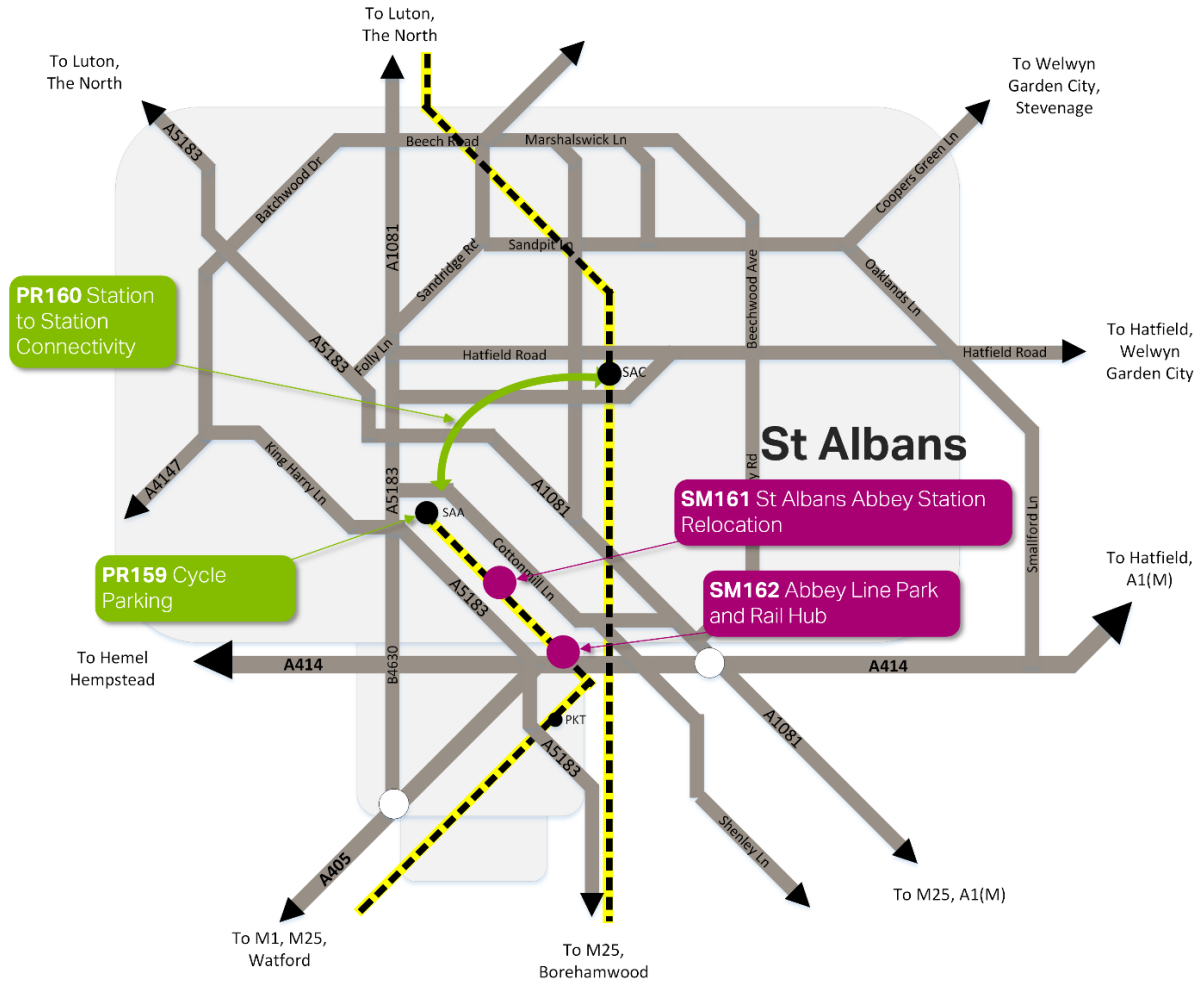


Figure 35 - Package 26 St Albans Abbey Station Accessibility

Package 27 – St Albans City Station Accessibility

The overarching aim of Package 27 is:

To improve accessibility by active modes to St Albans City station, particularly through enhanced connectivity between the station and the city centre.

The Package consists of:

- Improvement to footways, crossings and urban realm, and implementation of wayfinding along Victoria Street between the station and the city centre.
- Development of cycleway infrastructure leading to the station along Grosvenor Road/Ridgmont Road.
- Increased provision for cycle parking at the station and a safeguarded location for future increases.

The full schedule of interventions is shown in the table below.

Table 30 - PK27 - St Albans City Station Accessibility

ID	Name	Description
SM163	Victoria Street Footway Improvements	Upgrade to a sustainable corridor. Improved and widened footways at the junctions with Ridgmont Road and Alma Road/Beaconsfield Road and the link in between to increase capacity for high pedestrian volumes to/from the City station especially during peak periods. This will be carefully investigated prior to implementation of any changes and will need to include assessment of impacts upon bus service reliability. The potential impact of a loss of road space could be increased queues and delays. Any magnitude of impact will need to be carefully investigated prior to implementation of any changes. The objective however of this intervention is to improve the walking environment and encourage modal shift by encouraging motorists out of their cars, especially those making shorter distance journeys within St Albans e.g. taking pupils to/from school, driving to the station etc.
PR164	Victoria Street Wayfinding	Improved wayfinding between the city centre and City station by introducing walk time signage between main areas and coherent footway surface treatments, to encourage pedestrian use.
SM165	Pedestrian Crossing Improvements	Improve crossings at intersections with consistent type and placement of signals and signal call buttons, and pedestrian priority interventions such as zebra crossings at intersections and maintaining footway level/surfacing across minor roads.
PR167	Cycle Parking	Maintain or increase current and safeguard locations for future provision of cycle parking at St Albans City station such as the need for sufficient security and in the city centre, especially as part of the proposed station ticket hall improvements on Ridgmont Road which could also form part of a cycle hub facility.
PR168	Cycle connectivity improvements and widening to include	Improved walking/cycling infrastructure along Grosvenor Road and Ridgmont Road for access to the City station.

ID	Name	Description
	improvements to access from the north	Also, as part of SW-SM13, there is the potential for a bus St Albans City-Southern PT Hub bus link which could route via Ridgmont Road. Further investigations would be required

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

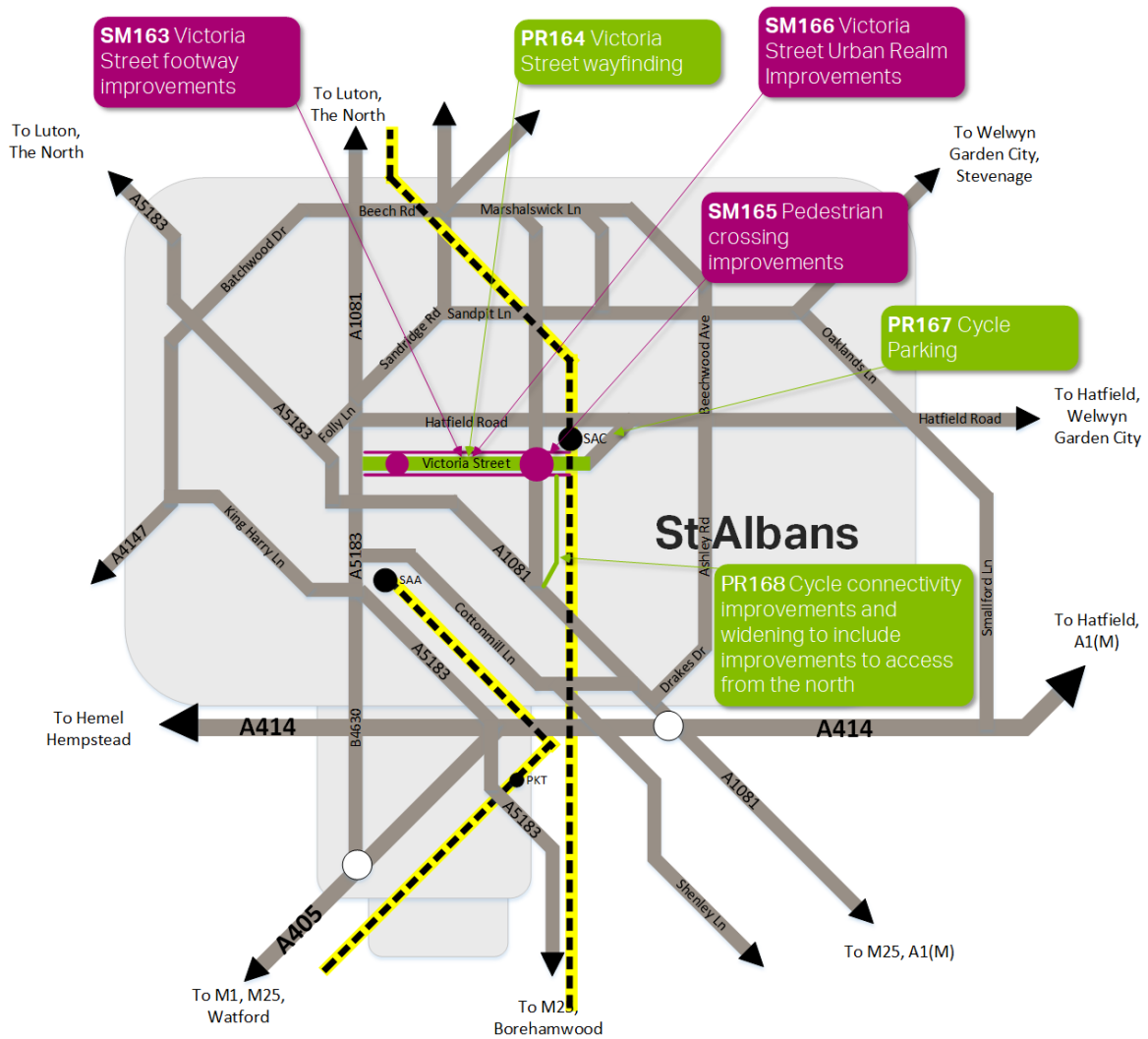


Figure 36 - Package 27 St Albans City Station Accessibility

Package 28 – Hatfield Road Corridor - St Albans

The overarching aim of Package 28 is:

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

The Package consists of:

- Implementation of bus priority measures along Hatfield Road, potentially facilitated by removal of on-street parking as investigated through a parking study.
- Urban realm improvements along Hatfield Road, including footway and crossing upgrades and bus stop improvements.

The full schedule of interventions is shown in the table below.

Table 31 - PK28 - Hatfield Road Corridor - St Albans

ID	Name	Description
PR169	Hatfield Road Parking Study	Undertake a parking study to understand parking requirements and investigate potential for removal of parking along Hatfield Road. Prior to any changes being implemented, any study should also involve consultation with local residents and businesses and an impacts assessment undertaken to determine if there would be any detrimental effect on local businesses. Moreover, suitably located disabled spaces will be provided. Investigations of these interventions would need to consider any knock-on impacts on adjoining and parallel routes such as Sandpit Lane.
PR170	Hatfield Road Bus Priority and Improvements	Investigate options for bus improvements, such as improved bus stops with real-time service information, and priority measures along Hatfield Road, including the section in Smallford, in order to improve reliability and reduce travel times on routes to Hatfield/WGC. Investigations of these interventions would need to consider any knock-on impacts on adjoining and parallel routes such as Sandpit Lane and Oaklands Lane.
SM171	Hatfield Road Urban Realm Improvements	Urban Realm Improvements along Hatfield Road to improve conditions for pedestrians, such as provision of pavements, and improve amenity of the high street, potentially as a result of parking removal along all or part of the street as recommended by the parking study (PR169). Investigations of these interventions would need to consider any knock-on impacts on adjoining and parallel routes such as Sandpit Lane.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

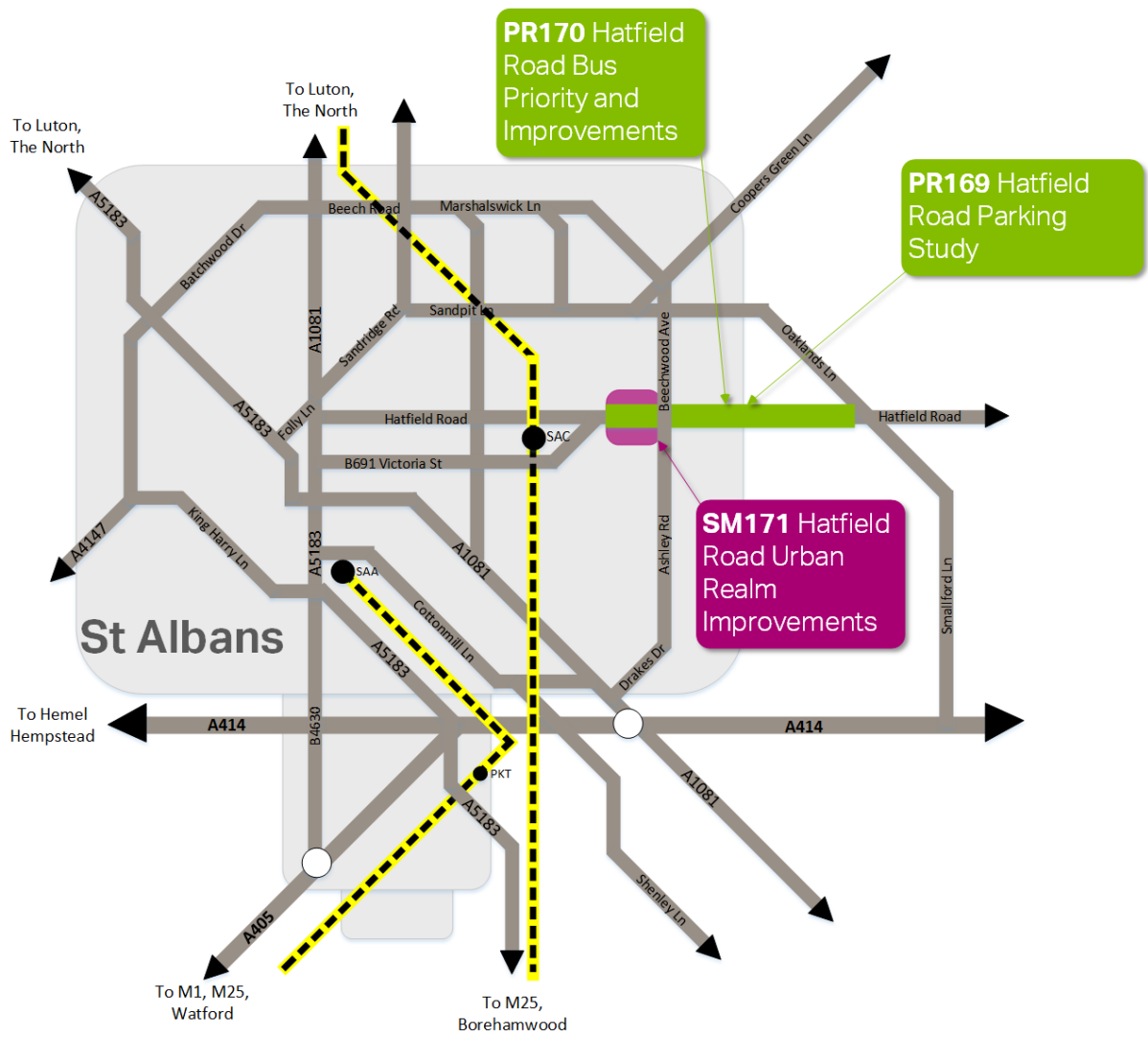


Figure 37 - Package 28 Hatfield Road Corridor-St Albans

Package 29 – London Road Corridor - St Albans

The overarching aim of Package 29 is:

To make London Road a more attractive place for pedestrians and cyclists and improve reliability of journeys along the corridor.

The Package consists of:

- Development of new pedestrian crossing points, including at the Odyssey Cinema and other locations, potentially facilitated through reduction of on-street parking.
- Junction upgrades and signal timing reconfiguration to improve conditions for pedestrians at the Peahen junction and Watsons Walk/Lattimore Road junctions.

The full schedule of interventions is shown in the table below.

Table 32 - PK29 - London Road Corridor - St Albans

ID	Name	Description
SM173	Parking revisions	A review of on-road parking provision along the corridor to consider whether it can be rationalised in order to improve conditions for cyclists and provide additional crossing facilities.
SM174	London Road/Watsons Walk/Lattimore Road junction alterations	Investigate the potential to reconfigure the junction to rationalise surplus road space, for example the right turn filter lanes on London Road. Remove guardrails where this is safe to do so. Widen footways where feasible, especially to reduce crossing distances.
PR175	Peahen junction signal timing reconfiguration	<p>A temporary junction reconfiguration, with closure of the High Street arm, was tested in 2020 as part of the social distancing restrictions due to the pandemic. Following a public consultation this is currently under review with local partners to assess and decide on the future of the scheme.</p> <p>This project will investigate the potential to further reconfigure the junction as to incorporate bus priority measures and to amend the signal timings so that the Holywell Hill and Chequer Street arms run separately. The aim would be to reduce the occurrence of right turning vehicles blocking the northbound movements.</p>

Indicative cost range estimates and timescales for these interventions are contained in Appendix B



Figure 38 - Package 29 London Road Corridor-St Albans

Package 24-29 summary (St Albans City)

The prioritisation scores for travel within St Albans ranges across the spectrum. Connectivity scores are consistently in line with the local vision as the main roads serve North-South and East-West movements though the city centre.

Shortfalls were identified with the other remaining objectives. St Albans generally underperforms in efficiency as pedestrian and cyclist facilities are perceived as secondary to roadspace which is focused more on the needs of motorised vehicles.

Place tends to have a severance issue near the railway lines due to uninviting or circuitous crossings. Reliability is another reoccurring issue as there are delays particularly along the A1081 London Road, B691 Victoria Street, and A1057 Hatfield Road. Additionally, there are two Air Quality Management Areas (AQMAs) which are directly related to the congestion issues. The healthy and safe scores are therefore affected as it is considered to be more hazardous for pedestrians and cyclists.

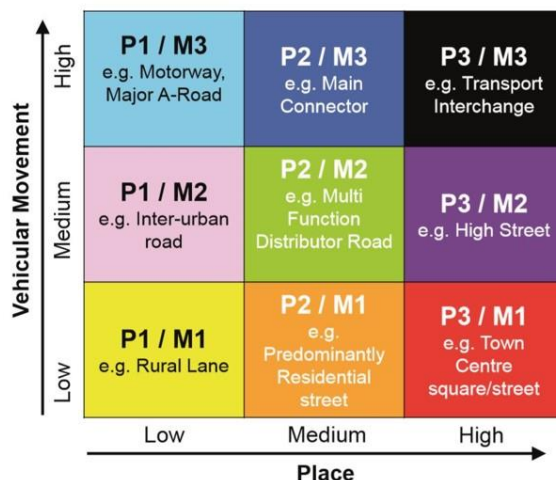
St Albans is considered to have the propensity to facilitate a much higher proportion of internal trips on foot and by bike especially using the already established Green Ring and along key routes such as Victoria Street. The packages presented here therefore propose improvements to active travel in the city centre. Firstly, the packages recommend a study to sustainably connect St Albans City and St Albans Abbey stations (**PR160**). Additionally, more integration of pedestrian facilities along footways is suggested. Additional vehicle turning restrictions could be considered to reduce traffic but maintain access. A left turn ban out of the Maltings Shopping Centre car park for example. (**PR139**) (**PR141**) (**SM163**) (**SM165**). This will likely encourage more walking to the city centre via the rail stations. To facilitate greater cycle use, a combination of regular cycleway maintenance and implementation of good lighting, wayfinding and signage is suggested (**PR154**) (**PR155**) (**PR156**). This will also help to improve the priority interaction scores for place as well as healthy and safe.

The packages also suggest improvements outside the city centre, particularly along Hatfield and London Roads. The foundation of the packages is a study to assess the need for on-street parking along both corridors (**PR169**) (**SM173**). There is also the potential to implement some limited bus priority measures specifically on Hatfield Road (**PR170**). This package is complemented with a complete Hatfield Road Urban Realm improvement that will focus on convenience and integration of pedestrians on the high street (**SM171**). It is key though that any measures taken along Hatfield Road and London Road will not cause knock on effect on Sandpit Lane. This road is already severely congested at peaks, especially at junctions with Beechwood Avenue/Marhsallwick lane with House House Lane and Coopers Green Lane.

While the proposed interventions would enable sustainable trips to happen, **Package 26** suggests longer term schemes to improve both local and inter-urban interactions for the St Albans Abbey station area. This includes a study to investigate the potential local relocation of the station to closer to the Sainsbury's supermarket (**SM161**) and the development of an Abbey Line Park and Rail Hub. (**SM162*** SW GTP **SM13**) on the southern edge of the city, adjacent to the A414. With this in mind, an improvement to accessibility could unlock a significant amount of new and sustainable trips.

Place and Movement – St Albans

Maps showing the place and movement functions of roads in St Albans are included in Appendix A.



The centre of St Albans is characterised by narrower, historic streets which in some cases restricts opportunities for providing sufficient facilities for all modes of travel. It is the case on some key routes leading into the city centre that pedestrian and cycling facilities are quite limited however a significant change would be required to improve them which could mean a reduction in road space for motorised traffic. Whilst this is considered a potential long-term goal, in the interim the GTP puts forward measures which seeks to improve pedestrian and cyclist facilities where space allows, and this may result in some reduction in road space.

These measures should seek to reinforce or reimagine existing place and movement functions as opposed to change them. The main north-south route through the city centre is categorised as a **P3/M2 High Street**. It is flanked by shops and local businesses and has a vibrant street market which operates twice a week. It is well served by buses and footway provision on either side of the road is good. Whilst all the ingredients of a good well-functioning and successful high street are there, the road is heavily trafficked, and this causes some degree of severance for pedestrians and cyclists.

The same issues occur on adjoining routes such as Hatfield Road, London Road and Victoria Street which are categorised as a combination of **P3/M2 High Streets** and **P2/M2 Multi-Function Distributor Roads**, and the measures proposed seek to reduce severance whilst recognising that access for traffic needs to be maintained. Crucially, it is through traffic and short distance trips by car which need to be discouraged from routeing through the City Centre.

St Albans District

Packages 30-36 cover key corridors connecting St Albans to the wider St Albans District.

Package 30 – A414 Highway Improvements (South of St Albans)

The overarching aim of Package 30 is:

To enhance the function of the A414 as a strategic east-west route in south central Hertfordshire through capacity and reliability upgrades

The Package consists of:

- A414 junction upgrades at London Colney and Park Street.
- Implementation of smart traffic management.
- Improving signage within St Albans to route long distance strategic trips to the A414.
- Improving the A414 cycleway between London Colney and Hatfield to facilitate cycle journeys.

The full schedule of interventions is shown in the table below.

Table 33 - PK30 - A414 Highway Improvements (South of St Albans)

ID	Name	Description
SM176	A414/A1081 London Colney Roundabout Upgrade	Junction improvement to reduce vehicle delays and reduce severance for active users. Consideration should be given to the movement of local bus services through the junction and how this could be optimised.
SM177	A414 Park Street Roundabout Improvements	An improvement to the existing roundabout layout with signal-control introduced to most if not all arms and some minor physical alterations to the junction's layout. Furthermore, as part of cycle route improvements alongside the A405 and A414, improved pedestrian/cycle crossing facilities will be required across the A5183 Watling Street. Consideration should be given to the movement of local bus services through the junction and how this could be optimised.
SM179	A414 Smart Traffic Management	A review of traffic speed limits and measures required to improve compliance along the A414 Between the Park Street Roundabout and the A1(M) Junction 3). This could include adoption of 'expressway' type technology enhancements which can manage traffic speeds during busy periods and in response to incidents occurring downstream.
SM180	Traffic Routeing Signage	Review and renew signage within St Albans and the surrounding area to ensure motorists are directed towards the A414 for making onward journeys on the A1(M). This includes measures to discourage HGVs from routeing on unclassified roads.
SM181	A414 Cycle Route upgrade London Colney-Hatfield	Improve the existing footway alongside the A414 to accommodate pedestrians and cyclists between the

ID	Name	Description
		London Colney Roundabout and the A1001 Comet Way in Hatfield. Consideration will also need to be given to a grade-separated link over the A1081 north of the A414 junction (potentially to be linked with the existing or improved bridge over the A414).
SM206	A414 Corridor Park Street-Napsbury-London Colney Cycle Route	Provide better provision for cyclists between Park Street and London Colney, including the proposed station hub (SW-SM13), with consideration to space and expected user numbers. Wayfinding, signage and accessibility from local routes including the existing A414 shared use footway should also be considered.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

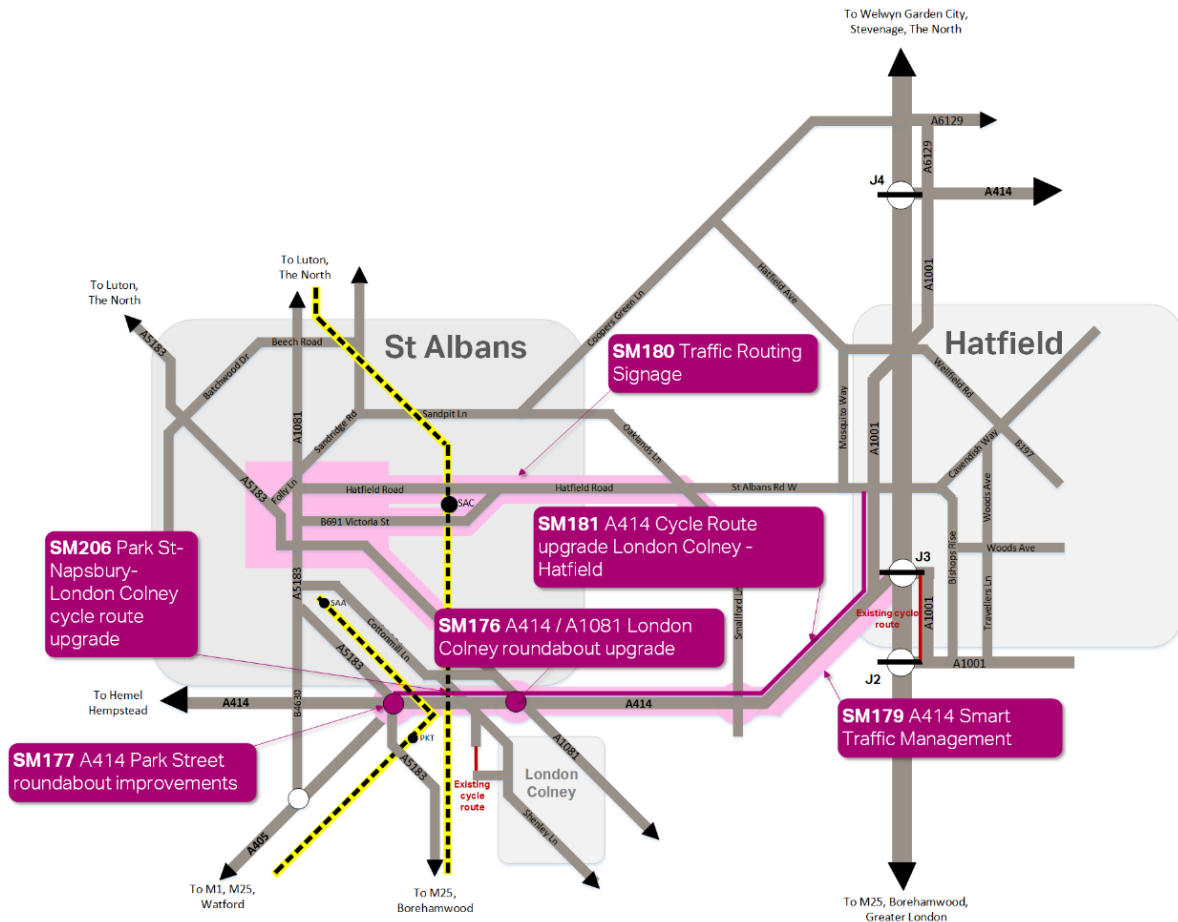


Figure 39- Package 30 A414 Highways Improvements (South of St Albans)

Package 31 – London Colney Inter-Urban Connectivity

The overarching aim of Package 31 is:

To integrate London Colney into broader east-west connections within south central Hertfordshire.

The Package consists of:

- Development of an envisioned small-scale interchange adjacent to the A414 to serve London Colney.

The full schedule of interventions is shown in the table below.

Table 34 -PK31 - London Colney Inter-Urban Connectivity

ID	Name	Description
SM185	Upgrade of the A414 Napsbury Junction	Improvements to the A414 Napsbury Junction, including upgrade of slip road merges and diverges to ensure they comply with current design standards
SM186	B5378 Active Travel Corridor - north	Upgrade of existing footway to provide shared use footway/cycleway along the entire length between the junction with Coombes Road (London Colney) and the A414 / B5378 Napsbury Lane Junction. To provide improved access to the segregated cycle routes alongside the A414.
SM187	B5378 Active Travel Corridor - south	Provide cycle facilities along the length of the B5378 between the St Annes Road and Coombes Road junctions. In addition to this, investigate the provision of an active travel corridor that would connect London Colney to new developments in South Mimms along the B556, with the potential to expand the corridor further to the south and connect London Colney and South Mimms with Barnet in North London. Expand sustainable travel routes as new developments come forward in the area.
SM206	A414 Corridor Park Street-Napsbury-London Colney Cycle Route	Provide a cycle route between Park Street (including the proposed station hub (SW-SM13)) and London Colney

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

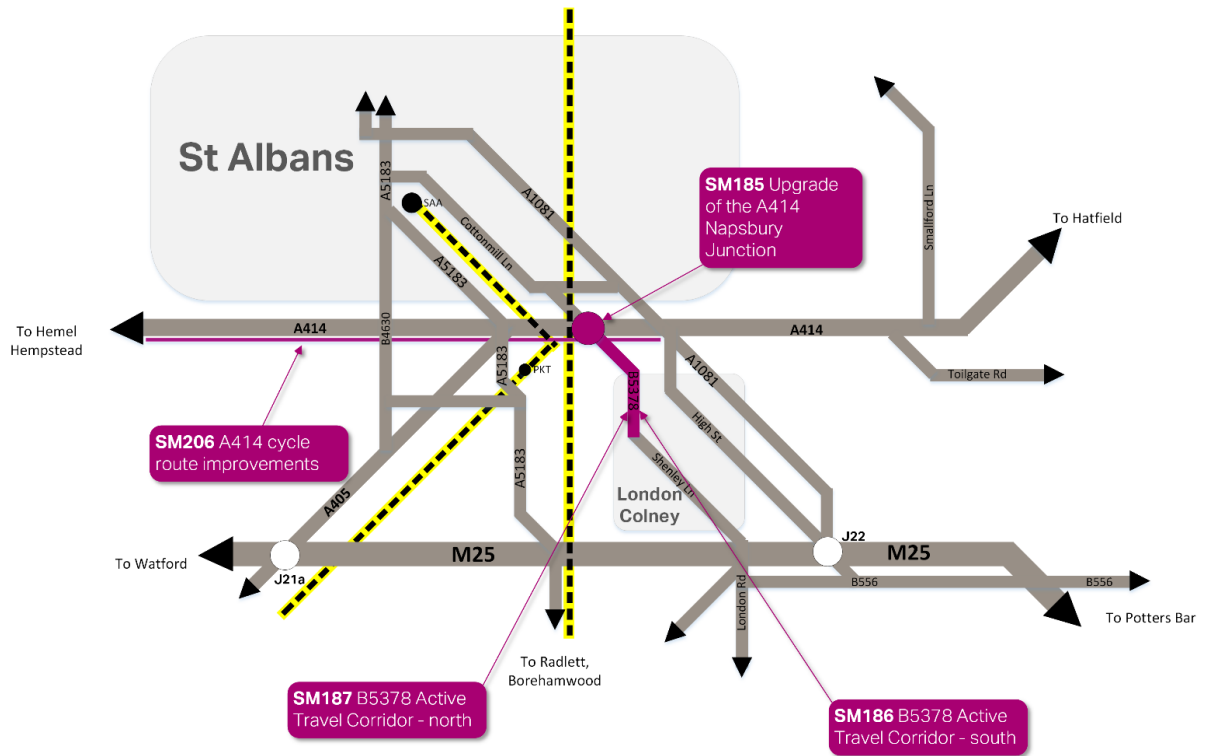


Figure 40 - Package 31 London Colney Inter Urban Connectivity

Package 32 – London Colney Inter-Urban Local Connectivity

The overarching aim of Package 32 is:

To improve connectivity by all modes of transport between London Colney and St Albans.

The Package consists of:

- Improvements to cycling infrastructure within London Colney, as well as between London Colney and St Albans, including upgrades to the A414 pedestrian/cycle bridge.
- Development of a new sustainable transport bridge across the A414.
- Maintaining and improving bus services between London Colney and St Albans

The full schedule of interventions is shown in the table below.

Table 35 - PK32 - London Colney Inter-Urban Local Connectivity

ID	Name	Description
PR188	London Colney A414 Cycle/Pedestrian Bridge Improvements	Improvements to the existing overpass approaches including thinning vegetation to increase security, removal of kissing gates, wayfinding and signage, etc. This intervention must be considered in conjunction with SM176 .
SM190	Improved Pedestrian and Cycle Links within London Colney on the High Street	Improved active travel infrastructure between London Colney and St Albans, including footways, cycleways, crossings, lighting, signage, etc., to encourage more trips to be made by active modes.
SM176	A414/A1081 London Colney Roundabout Upgrade	Junction improvement to reduce vehicle delays and reduce severance for active users. Consideration should be given to the movement of local bus services through the junction and how this could be optimised.
SM206	A414 Corridor Park Street-Napsbury-London Colney Cycle Route	Provide a cycle route between Park Street (including the proposed station hub (SW-SM13)) and London Colney.
SM208	London Colney A414 Sustainable Travel Bridge	Investigate longer term options for a new, more attractive sustainable travel bridge over the A414 which will be capable at least of accommodating pedestrians and cyclists but also potentially future public transport and autonomous mass transit vehicles. This would replace the existing pedestrian footbridge to the west of the junction. This needs to be considered in conjunction with SM176 and PR188 .

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

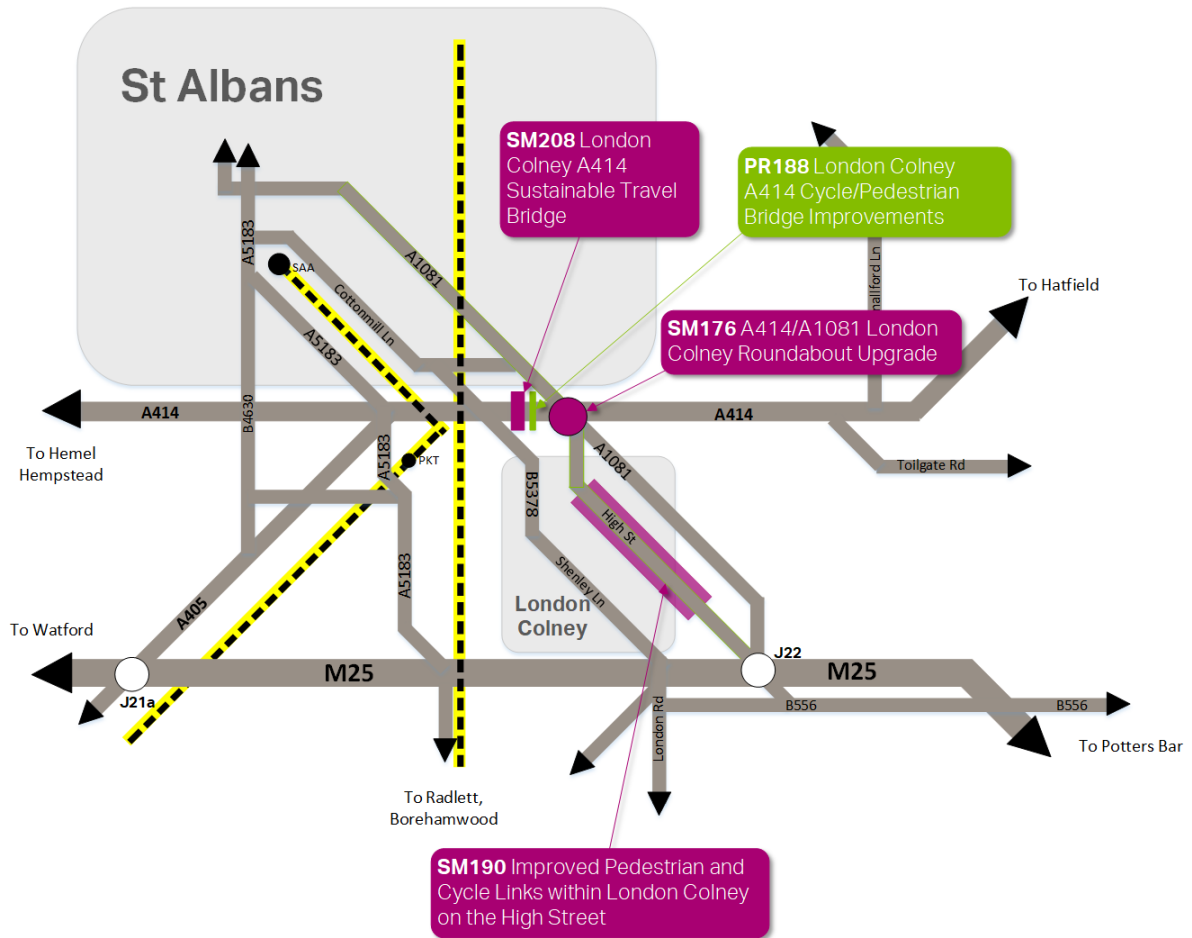


Figure 41 - Package 32 London Colney Inter-Urban Local Connectivity

Package 33 – London Colney Internal Connectivity

The overarching aim of Package 33 is:

To make London Colney a safe, attractive, and convenient place to walk and cycle through improvements to active travel infrastructure and urban realm in the town centre.

The Package consists of:

- Improvements to pedestrian and cycling infrastructure and urban realm within London Colney.
- Development of new pedestrian and cycling infrastructure linked to new development west of London Colney.
- 20mph speed limits in the town centre and throughout the town.

The full schedule of interventions is shown in the table below.

Table 36 - PK33 - London Colney Internal Connectivity

ID	Name	Description
SM192	High Street streetscape improvements	Streetscape improvements adjacent to the High Street shopping parade incorporating a new crossing facility, traffic calming, potential limited reduced car parking (with some space given over to cycle parking) and widened footway with new surfacing. Any improvements need to take into account the safe and efficient movement of buses along the high street.
PR193	High Street 20mph speed limit	A 20mph speed limit introduced on the section of the High Street adjacent to the shopping parade.
PR194	Town wide 20mph speed limit	Widespread introduction of 20mph speed limit on residential roads within London Colney (subject to Speed Management Strategy).
PR195	Cross-town core pedestrian and cycle route linked to potential new housing development	Cross-village core pedestrian and cycle route or routes linked to potential a new housing development and secondary school on land to the west of London Colney. This should comprise new signal-controlled crossing provision on B5378 Shenley Road and improvements along St Annes Road (to the High Street and onward connection to the retail park)

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

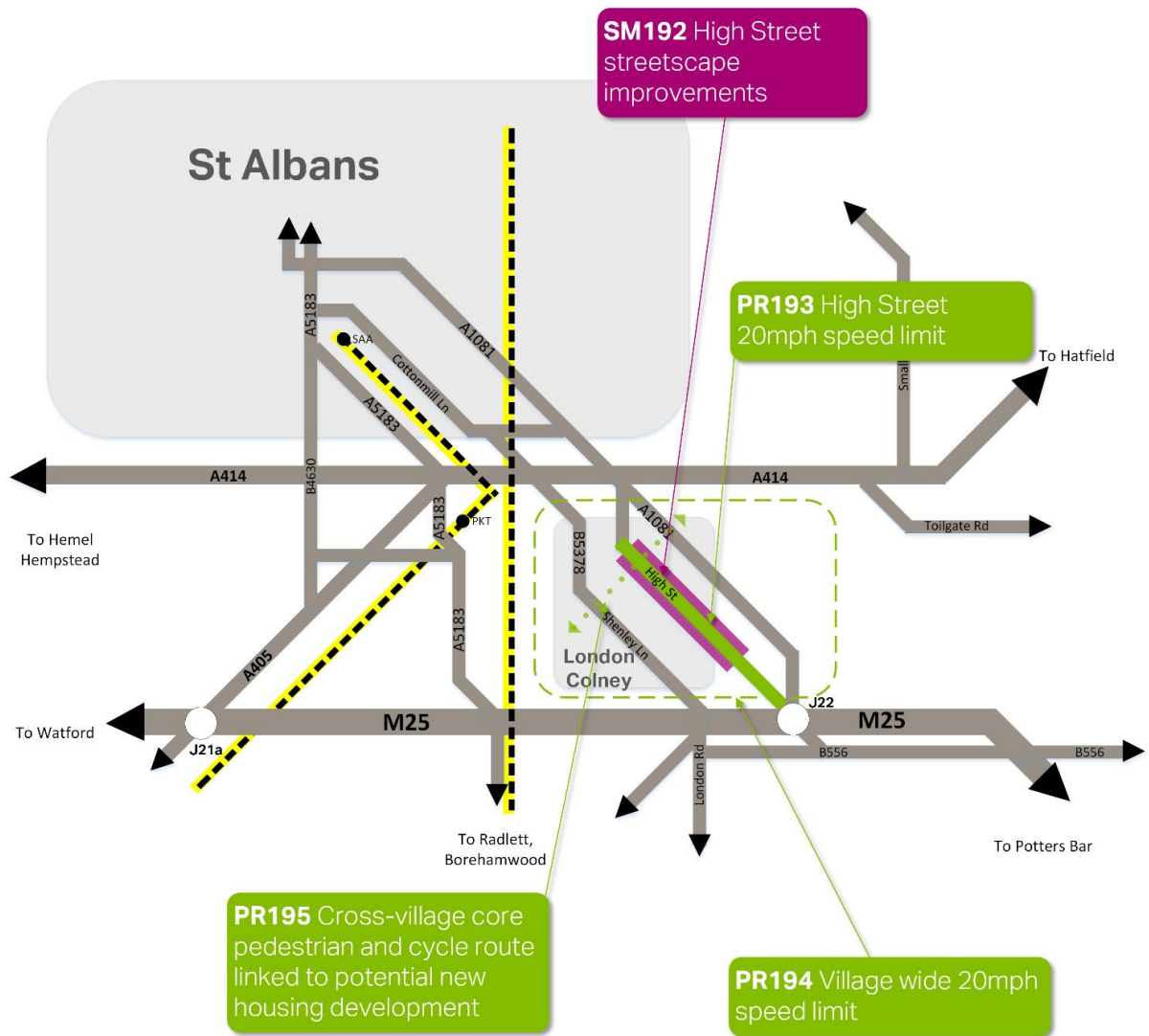


Figure 42 - Package 33 London Colney Internal Connectivity

Package 34 – St Albans-Hatfield Local Connectivity

The overarching aim of Package 34 is:

To enhance local transport between St Albans and Hatfield and facilitate growth along the Sandpit Lane-Coopers Green Lane corridor.

The Package consists of:

- Development of an active travel corridor along Coopers Green Lane with a link to Hatfield Business Park, including cycling and footway infrastructure supported by a reduction in the speed limit.
- Improvements to traffic routeing signage to ensure longer distance strategic trips are routed to strategic roads including the A414.
- Improvements to local bus services including extended hours of operation and overall utility of routes along the key Hatfield – St Albans link

The full schedule of interventions is shown in the table below.

Table 37 - PK34 - St Albans-Hatfield Local Connectivity

ID	Name	Description
SM67	St Albans – Hatfield active travel corridor	New off-road cycling and footway infrastructure along Sandpit Lane and Coopers Green Lane, including links to Hatfield Business Park. Investigate the possibility of linking the active travel corridor to the existing cycling route along Jennings Road via Clarence Rd, which will encourage sustainable travel to St Alban rail station.
SM180	Traffic Routeing Signage	Review and renew signage within St Albans and the surrounding area to ensure motorists are directed towards the A414 for making onward journeys on the A1(M).
PR68	Coopers Green Lane Speed Limit Reduction	Reduced speed limit along Coopers Green Lane to support active travel infrastructure and in reflection of a more urbanised environment along the route due to the nearby adjacent North West Hatfield (Stanboroughbury) development.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

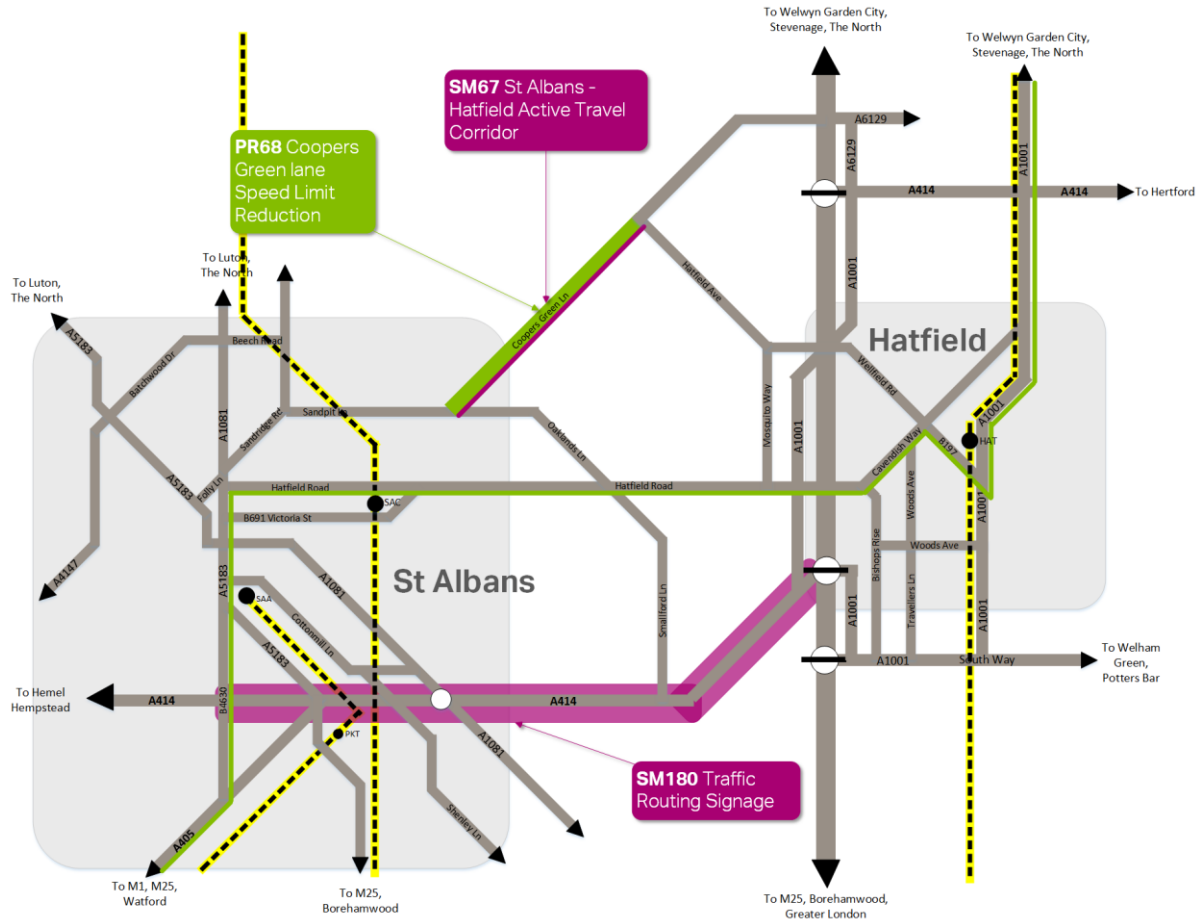


Figure 43 - Package 34 St Albans-Hatfield Local Connectivity

Package 35 – Chiswell Green Corridor Active Travel Improvements

The overarching aim of Package 35 is:

To improve connectivity between Chiswell Green, Park Street and St Albans and reduce through traffic on the Watford Road corridor.

The Package consists of:

- Improvements along the B4630 Watford Road with the aim of discouraging through traffic (i.e. trips which neither begin nor end in Chiswell Green), ensuring capacity is given to other modes of transport.
- Improvements along the A405, including roundabout upgrades at the A414/A405/A5183 Park Street Roundabout and at the B4630 Watford Road/A405 Noke Roundabout.

The full schedule of interventions is shown in the table below.

Table 38 - PK35 - Chiswell Green Corridor Active Travel Improvements

ID	Name	Description
SM200	B4630 Watford Road Improvements	An intervention to discourage through traffic in Chiswell Green. Watford Road is currently the most heavily trafficked B-road in Hertfordshire. It is used by traffic to/from Chiswell Green as well as through trips to/from further afield. An on-road cycle lane in each direction (removing central hatched areas) could be provided alongside improved/widened footways and additional crossing facilities around the shopping parades on both sides of the road. A narrowed carriageway along the section on the A414 overbridge could also discourage higher traffic speeds. Tippendell Lane will be acknowledged as a key route to Park St / How Wood stations, reducing traffic through Chiswell Green and encouraging active travel.
SM177	A414 Park Street Roundabout Improvements	An improvement to the existing roundabout layout with signal-control introduced to most if not all arms and some minor physical alterations to the junction's layout. Furthermore, as part of cycle route improvements alongside the A405 and A414, improved pedestrian/cycle crossing facilities will be required across the A5183 Watling Street. Consideration should be given to the movement of local bus services.
SM201	A405/B4630 Watford Road junction reconfiguration	Conversion of the existing roundabout to a signal-controlled crossroads with more priority given to the A405 arms. Improvements would need to ensure signal priority is given to bus services (e.g. 321) in terms of GPS / transponder technology. Any junction improvement needs to ensure that provision is made for the planned A405 cycle route (SW-SM20).
PR70	A5183 Cycle Route	Provision of a cycle route along the A5183 between St Albans and Redbourn to encourage more sustainable travel. This intervention could be considered in conjunction with the proposed A4147 cycleway (SW-PR21) as the two routes would link together at Batchwood Roundabout.

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

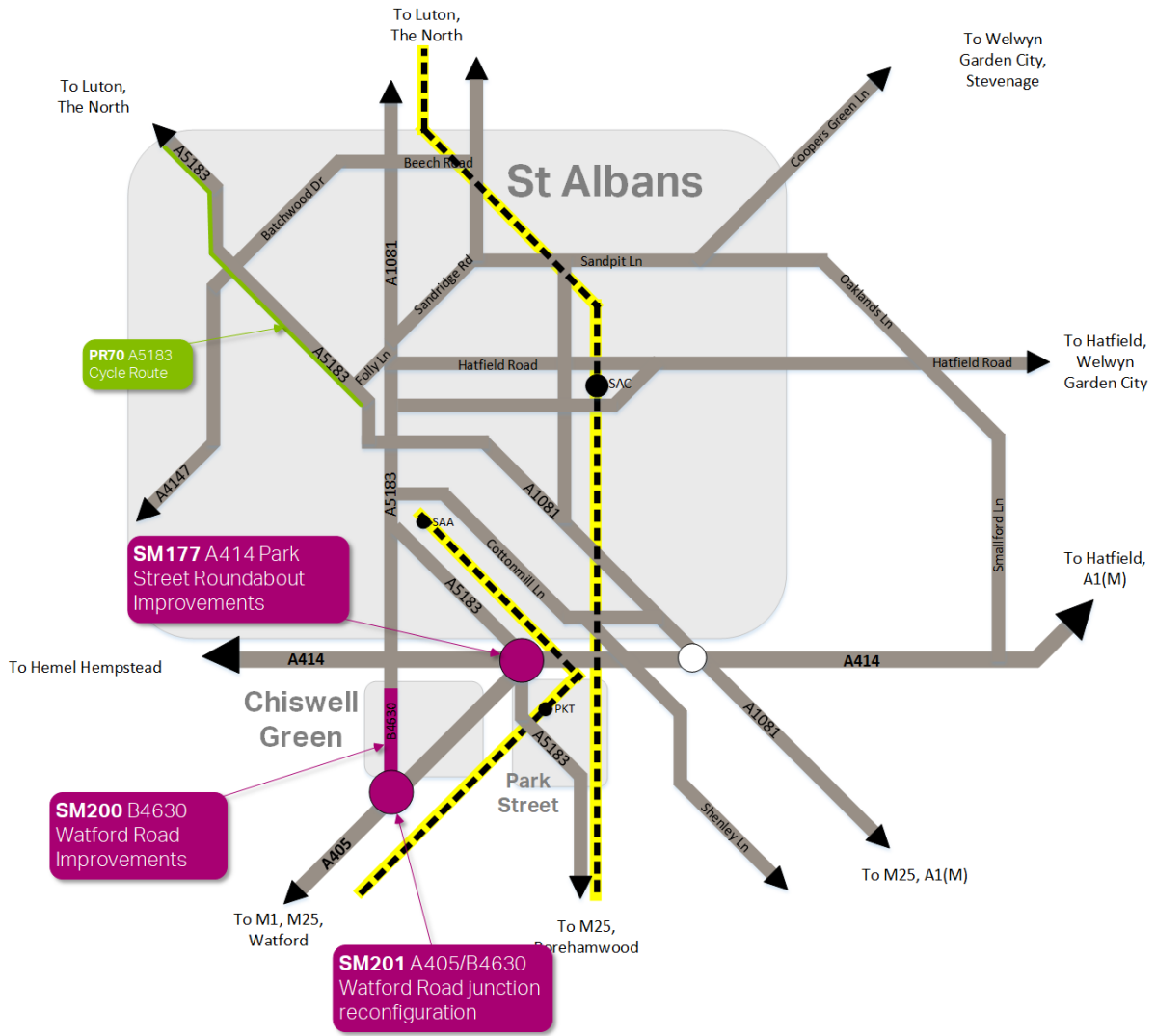


Figure 44 - Package 35 Chiswell Green Corridor Active Travel Improvements

Package 36 – Alban Way Improvements

The overarching aim of Package 36 is:

To enhance the Alban Way and promote it as a safe, convenient and attractive option for trips between St Albans and Hatfield.

The Package consists of:

- Implementation of physical improvements to the Alban Way, including wayfinding and signage, lighting, crossings and maintenance.

The full schedule of interventions is shown in the table below.

Table 39 - PK36 - Alban Way Improvements

ID	Name	Description
PR154	Alban Way Lighting	<p>Implement lighting along the Alban Way, either 'always on' or sensor activated. This will depend on the environmental impact from the type of lighting. The route would be divided into sections and lighting improvements will be developed, funded and implemented in multiple phases, for example:</p> <p>Phase 1: between Cottonmill Lane and Colney Heath Lane (3.5 km) Phase 2: between Colney Heath Lane and Cavendish Way (3.8 km) Phase 3: between Cavendish Way and Hertford Road (3 km)</p> <p>The exact sections and number of sections will be determined after careful consideration of the available funding and duration for implementation in order for the closure to cause as little disruption as possible.</p>
PR155	Alban Way Wayfinding	<p>Introduce improved wayfinding along the Alban Way in St Albans and Hatfield. Extension of Alban Way branding and wayfinding signage beyond the extents of the actual cycleway to provide easier wayfinding to it, with clear links to important destinations. New signs along the route will point out nearby local features to help guide users as to where they are.</p>
PR156	Alban Way Cycle Signage	<p>Improved cycle signage along the Alban Way. Include 'reference point' signage to provide an indication to cyclists of where they are in relation to nearby prominent land use features, and distances/estimated journey times to key locations along the route.</p>
SM157	Alban Way Physical Improvements	<p>Physical improvements including surface, crossings, general maintenance, etc.</p> <p>Retain a crossing point over the Abbey Line as a priority and incorporate into any improvement scheme. Investigate sensor lighting. Manage vegetation along the route, and clear leaf mould regularly from the relatively new surface to avoid mud building up. Investigate widening and lighting the path as it passes through Hatfield, especially to the east of the Galleria, or consider alternative routes as part of the Hatfield 2030+ regeneration plans.</p>

Indicative cost range estimates and timescales for these interventions are contained in Appendix B.

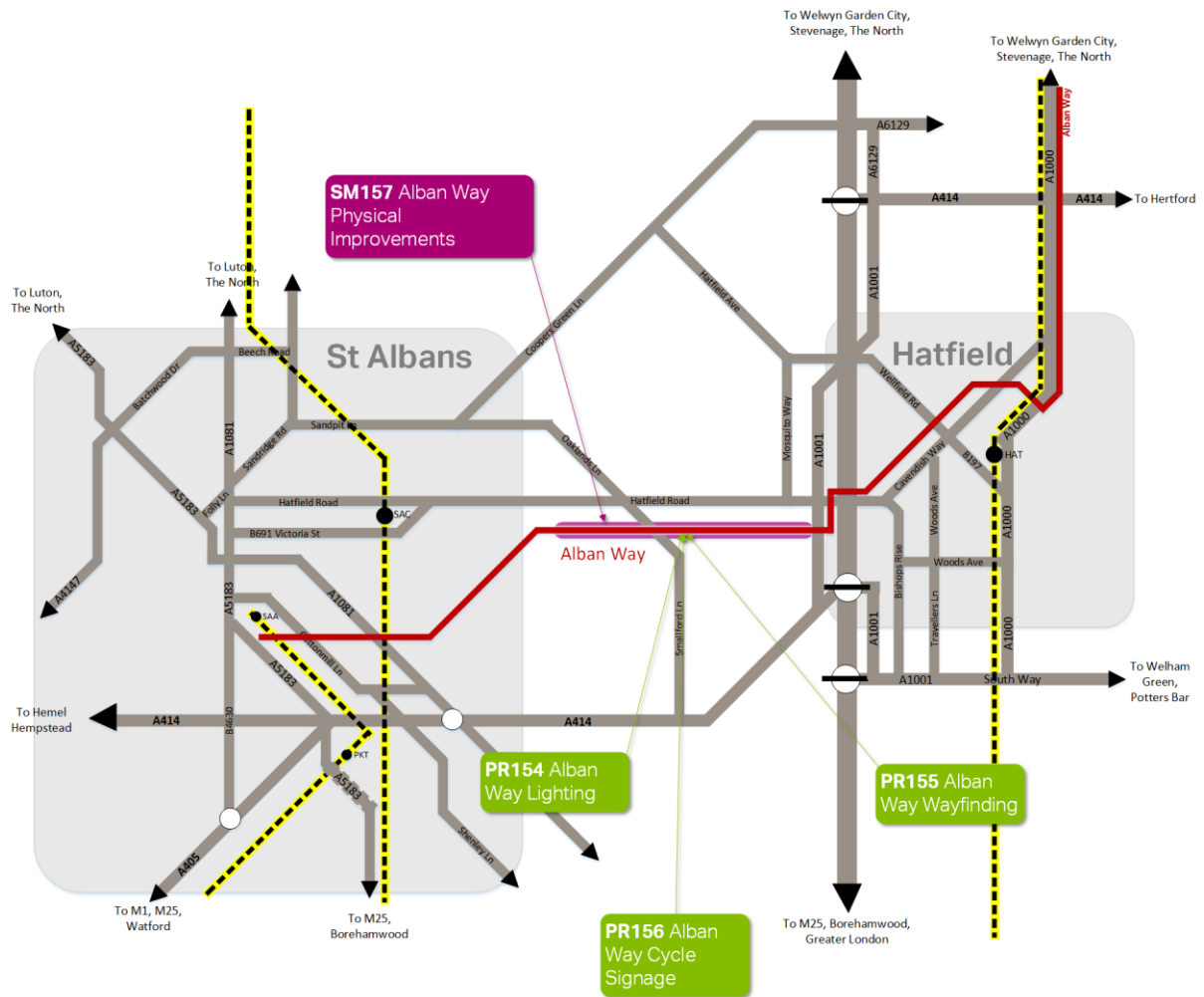


Figure 45 - Package 36 Alban Way Improvements

Packages 30-36 (south of St Albans including London Colney)

The village of London Colney has the propensity to benefit from its close links to St Albans City as well as other towns along the A414 corridor. In order for this to happen, there is a need to strengthen local transport infrastructure and links.

For this reason, the set packages seek to improve the east-west connectivity for all modes of transport. **Package 32** and **33** in particular seek to improve active travel. This includes upgrades to existing footways and cycleways and further improvement north of the A414 would also be required (where feasible and subject to more detailed investigation) (**SM186**) (**SM187**) (**SM190**). Active travel improvements are encouraged to be implemented alongside streetscape improvements particularly on the high street in London Colney (**SM192**). Additionally, passenger transport links between St Albans and London Colney will be maintained and improved where opportunities arise.

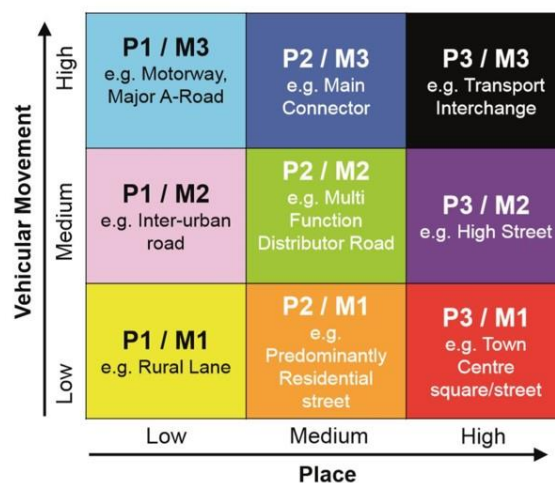
To encourage pedestrians to use the proposed infrastructure this would need to be in conjunction with pedestrian wayfinding and regular maintenance, to encourage pedestrians to use the network (**PR188**). Improvements to active travel will encourage multi-modal journeys and facilitate the ease of traffic congestion and potential air quality issues with the reduction of trips being taken by private car. Improving north-south connectivity through sustainable modes is also of high importance. Thus, the provision of a cycle route along the A5183 (**PR70**) between St Albans and Redbourn, whilst considering connectivity with the proposed A4147 cycleway (SW-PR21), will be investigated.

To support these enhancements, a number of highway improvements are suggested. This includes junction and roundabout improvements along the A414 corridor (**SM176**) (**SM177**) (**SM185**). Such improvements will not only benefit public transport users, but also private car users. While many people continue to travel by private modes of transport, targeted improvements are primarily to serve and facilitate sustainable modes.

Wider improvements to passenger transport will include maintaining existing service provision where possible and promoting improvements to infrastructure, frequency, or reliability as opportunities arise.

Place and Movement – St Albans District

Maps showing the place and movement functions of roads in St Albans district, including London Colney, Park Street and Chiswell Green are included in Appendix A.



What is immediately clear from the place and movement assessment is the presence of the A414 dual carriageway which separates Park Street and London Colney from St Albans. The A414 is categorised as a **P1/M3 Major A-Road** which is biased towards facilitating movement over place. What this means is that travelling between these small urban areas and the large centre would require crossing the A414, more typically via either the A414-A405-A5183 Park

Street Roundabout or the A414-A1081 London Colney Roundabout. Both of these junctions are very large and experience heavy volumes of fast-moving traffic.

They also experience congestion and delays especially during busy weekday peak periods. Subways and footbridges are available at these junctions although they do not cater for all movements. Whilst the place and movement function of the A414 will not change to the south of St Albans - it will continue to be an important route linking key towns and motorways – this should not be at the expense of local north-south movements, particularly those undertaken on foot, by bike or by bus. Interventions put forward seek to address this issue although the place and movement functions are not expected to change.



Conclusion

07

7. Conclusion

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 helps facilitate journeys from home to work, to school, for leisure purposes and for access to vital services such as healthcare.

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 to different places. As well as catering for existing requirements, transport (or a lack thereof) can also 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 development growth proposals. If the process of planning is not equipped to deal with these requirements, the delivery of sustainable development could be delayed or even prevented, and this could therefore have 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 help invest in new infrastructure, with less money available for local authorities to spend today than perhaps in the past.

The transport needs of large-scale residential and employment development coming forward within Hertfordshire and surrounding areas may be reliant upon seeking vital 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 positive collaborative planning.

A variety of other mechanisms are also in place for further developing schemes. Some of the mechanisms that are linked to planned housing and employment developments (and included in the Local Plan Infrastructure Delivery Plans) highlight that developers would be expected to develop the proposals and provide funding. More general cycling and walking measures within the urban areas will be developed further as part of the ongoing Local Cycling and Walking Infrastructure Plans (LCWIPs). The Sustainable Travel Towns programme also provides an opportunity to progress schemes, including some of the Area Wide Interventions.

With this in mind, Hertfordshire County Council has developed a fresh approach to planning for the short, medium- and long-term transport needs.

The Growth and Transport Plan ('GTP') is a new approach to sub-county transport planning. A GTP is a strategic spatial transport plan developed by Hertfordshire County Council in partnership with key stakeholders, including District/Borough councils and the Local Enterprise Partnership, for the purpose of applying LTP policies and objectives to a growth-focused sub-area within Hertfordshire.

The South Central Growth and Transport is one of five plans which will be supporting documents to the county's LTP4. The South Central area broadly comprises the towns of Hatfield, Welwyn Garden City, St Albans, Potters Bar and Borehamwood, as well as surrounding towns and villages and rural areas in between.

Underpinned by the LTP4 user hierarchy and a toolbox of appropriate interventions to address particular types of shortfalls, the SC GTP puts forward a set of thirty-six focused

Packages. Each Package comprise of two or more separate but complementary interventions with a shared aim of addressing shortfalls along key interactions within and between towns.

Interventions are wide ranging in cost, scale and type. They include new or enhanced road crossings to improve accessibility on foot and by bike; potential speed limit reductions (to be considered in line with HCC guidance); rationalisation of on-street parking; road reconfigurations and streetscape improvements; improved bus stops, re-routed bus services and priority lanes and traffic signals to make bus a more attractive mode; highway junction improvements to reduce congestion and improve safety and efficiency; brand new and enhanced walking and cycle routes to provide a more attractive alternative to the car for shorter journeys to school, urban centres and railway stations; and safe and secure cycle parking facilities.

The focus of the SC GTP should not be solely on implementing hard physical infrastructure therefore a range of complimentary and integral initiatives will be required to fulfil the potential for many of the packages, particularly in encouraging more sustainable and healthy journeys on foot, by bike or by bus, and create the appropriate conditions where these modes are an appealing and natural mode of travel on at least a par with the private car especially for shorter distance journeys within towns.

This area faces significant levels of housing and employment growth in the coming years. This growth is coming forward internally, within and around the urban settlements, but also from surrounding areas including Greater London and other parts of Hertfordshire.

The GTP provides an opportunity to plan for the cumulative transport needs of this planned development growth and recognise this in conjunction with much broader needs to maintain and improve the quality of life of residents, employees and visitors to the area.

The South Central Hertfordshire GTP puts forward a bold schedule of transport interventions which have been formulated in response to a range of challenges and in line with a set of robust and forward-looking objectives. Interventions are defined as Projects – which are arranged into complementary Linked Project Groups - and Schemes, and in turn these have been assembled into Packages. The Packages are geographically aligned to reflect key movements, current and future pressures on the transport system, and/or opportunities arising from planned future development.

It is not intended for the GTP to prescribe a rigid forward programme of works but instead should act as a decision-making guide to steer future direction of investment and prioritisation in transport.

It is envisaged that only by implementing all of the interventions within a Package will the overall benefits that the GTP aspires to be unlocked. However, it is recognised that interventions are only defined at a broad, conceptual level of detail and therefore more detailed work may reveal important changes to interventions, or alternative interventions that could also achieve the same aim and goals of each Package.

There are many unknowns which will influence the implementation of the GTP's proposals and vision: the availability of funding; scale, location and build-out of planned development; travel behaviour; development and take-up of innovative new transport technologies; local and macro-social, economic and environmental factors. The implementation of the HERT Mass Rapid Transit system will also have a key influence on travel patterns in the area. These could all exert an influence on future decision making. As far as possible, the GTP provides a flexible decision-making framework built upon currently available evidence and forecasts which could and should evolve in response to changing factors.

Next Steps

The GTP is a high-level transport strategy, based on evidence and local knowledge, which identifies what types of potential interventions and packages required to:

- help support new housing and employment developments;
- address existing or future issues on the transport network (including poor facilities for pedestrians and cyclists); and
- ensure that the transport network is better aligned with the key policies of HCC's LTP, the districts' Local Plans and wider Government policies and aims.

The high-level nature of the GTP, where interventions are not in the majority of cases defined in detail, means that further work will inevitably be required to develop interventions in more detail. This further work, which will follow the adoption of the GTP, is likely to include surveys and design/engineering feasibility studies. This more detailed work will determine whether the interventions are feasible; how they might look; when they could be implemented; who they may impact (and therefore what scale of local consultation with residents and businesses will be needed); and how much they are likely to cost. This will also inform what funding is required and where this funding is most likely to come from, which could include contributions from nearby proposed housing and employment developments.

The current assumption is that where, through more detailed work, it can be demonstrated with evidence that there is a definitive link between a proposed development and an intervention, then development contributions could be sought towards implementing the intervention either by way of a S106 monetary contribution which will be passed to the local authorities to help fund the improvement, or through a S278 agreement whereby the developer/promotor of a site is required to fund and implement an intervention in its entirety. Other sources of funding may need to be sought to help support the delivery of intervention, certainly where contributions from developers may fall short.

The GTP has not indicated a prioritisation of interventions or packages. Prioritisation over such a large area covering multiple towns and districts is quite challenging. The need for interventions is likely to evolve; the form in which interventions take could change; and the ability to fund interventions will also change and at this present time it is difficult to fully account for these variables. The build-out and delivery of developments will however be a major driver for bringing forward interventions, and HCC working in partnership with the local planning authorities will assess development planning applications to identify opportunities to bring forward appropriate mitigation which could include interventions set out in the GTP.

Furthermore, HCC as highway authority will need to consider prioritises at a county level including interventions from the GTPs as well as other strategy and planning processes including Local Plans Infrastructure Delivery Plans.

The interventions presented in this GTP have been subject to optioneering, and alternative interventions have been considered but then dismissed prior to finalising the packages because either the interventions have been considered to be unfeasible or would work against local policies and priorities.

This GTP should not be set in stone indefinitely therefore it is recognised that a periodic update will be required, especially where there is a significant change in local circumstances which may warrant a re-evaluation of growth and transport challenges and opportunities. For example, Local Plans will undergo reviews which may identify new growth priorities which in turn trigger the need to consider how the transport network needs to cater for the increased

growth. In this way, the GTP will respond to an ever-changing development context and provide a robust framework for strategic spatial transport planning today and into the future.

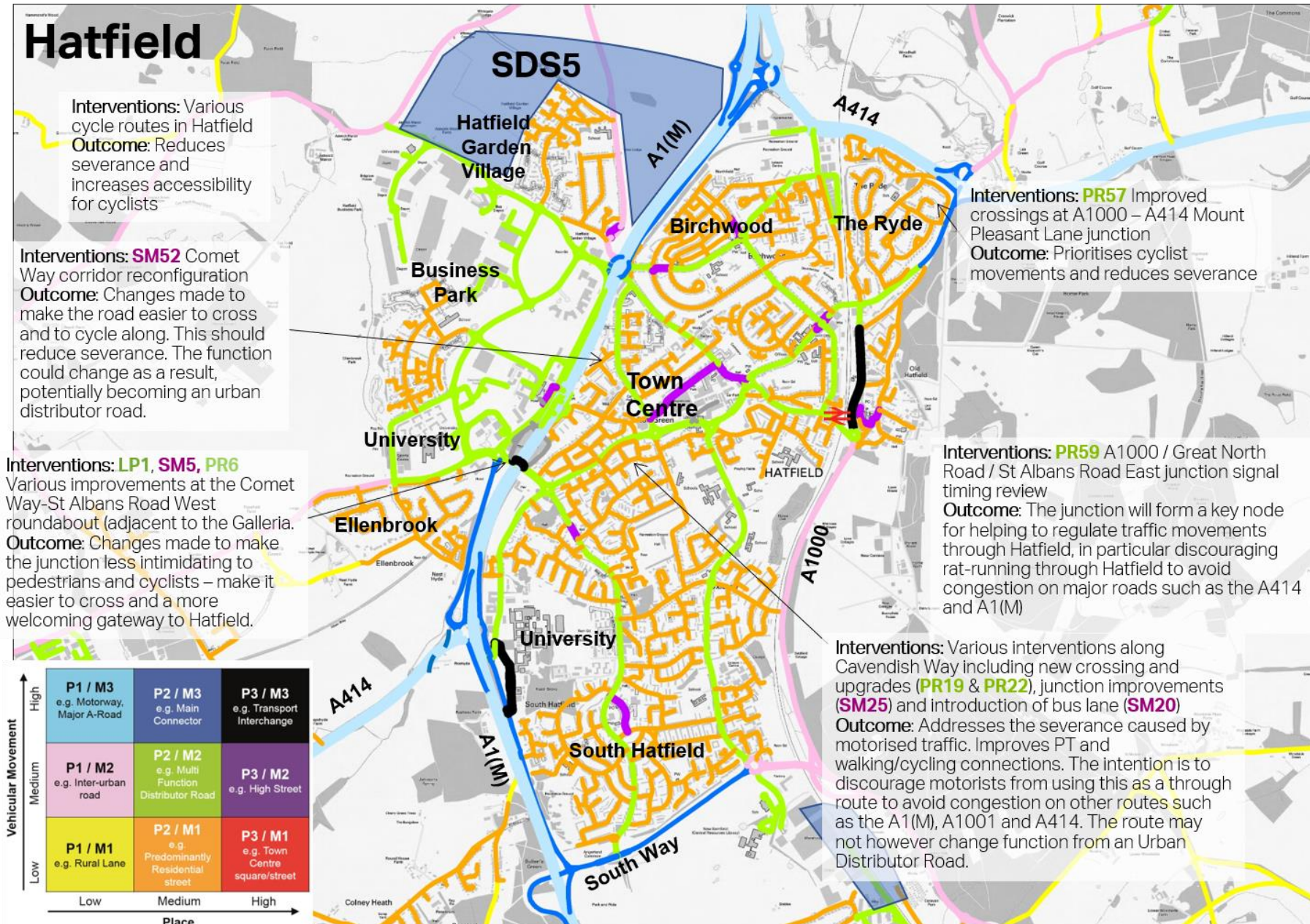
Appendix A

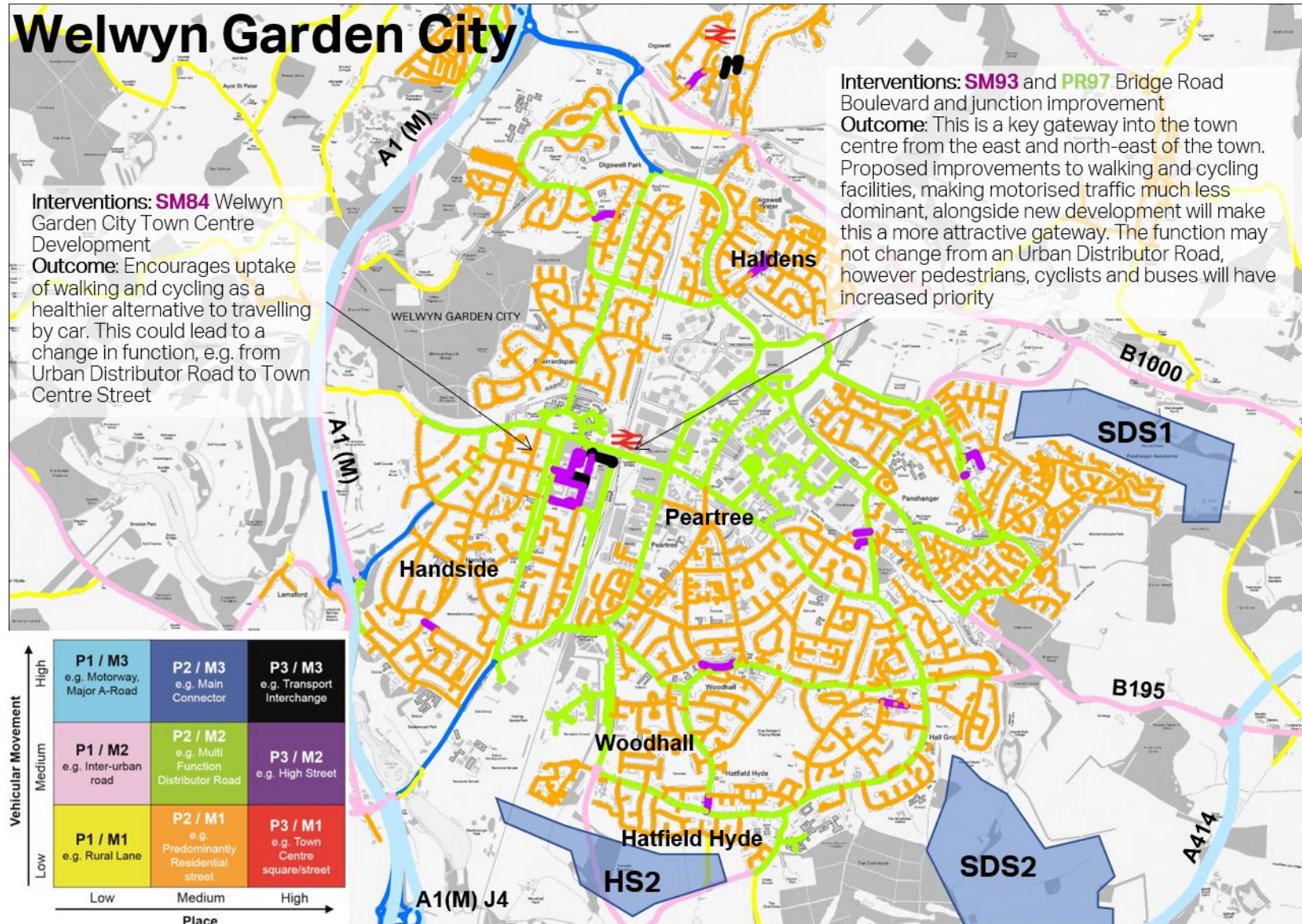
Place and Movement Maps

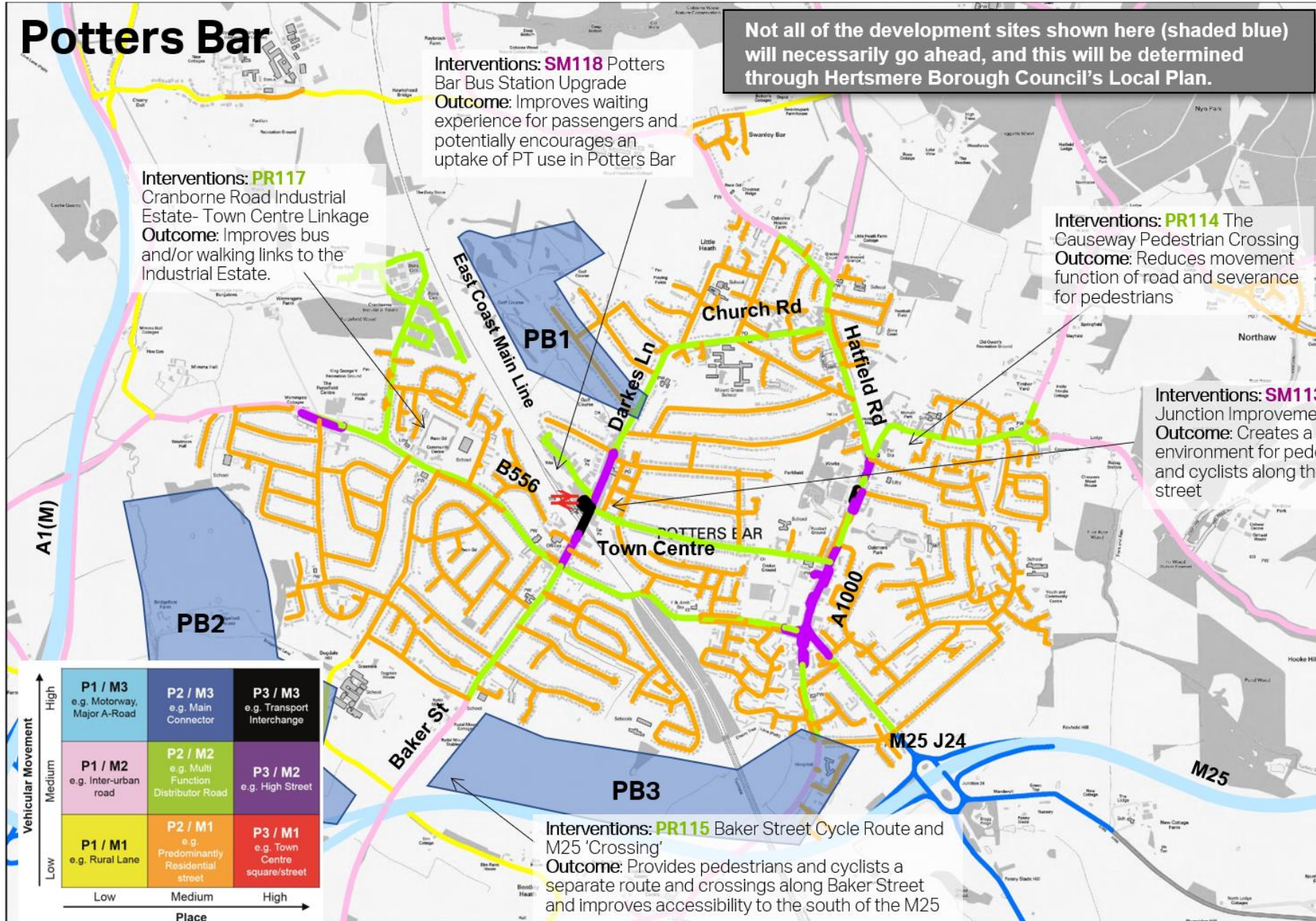
The following place and movement maps outline the road functions in the towns of Hatfield, Welwyn Garden City, Potters Bar, Borehamwood, Radlett and St Albans, highlighting key proposed interventions. The maps also identify proposed development sites, which have been sourced from the below documents:

- Hertsmere Borough Council's Local Plan (2018)
- St Albans City and District Council Local Plan (2018)
- Welwyn Hatfield Borough Council Draft Local Plan (2016)

It is recognised that each of these Local Plan documents are at different stages of consultation and approval at the time of writing. The following maps therefore make reference to potential development sites, some of which may not come forward. They are included for context but some of them may not come forward. It is recommended that reference is made to the Local Planning Authorities websites for up to date information on proposed development









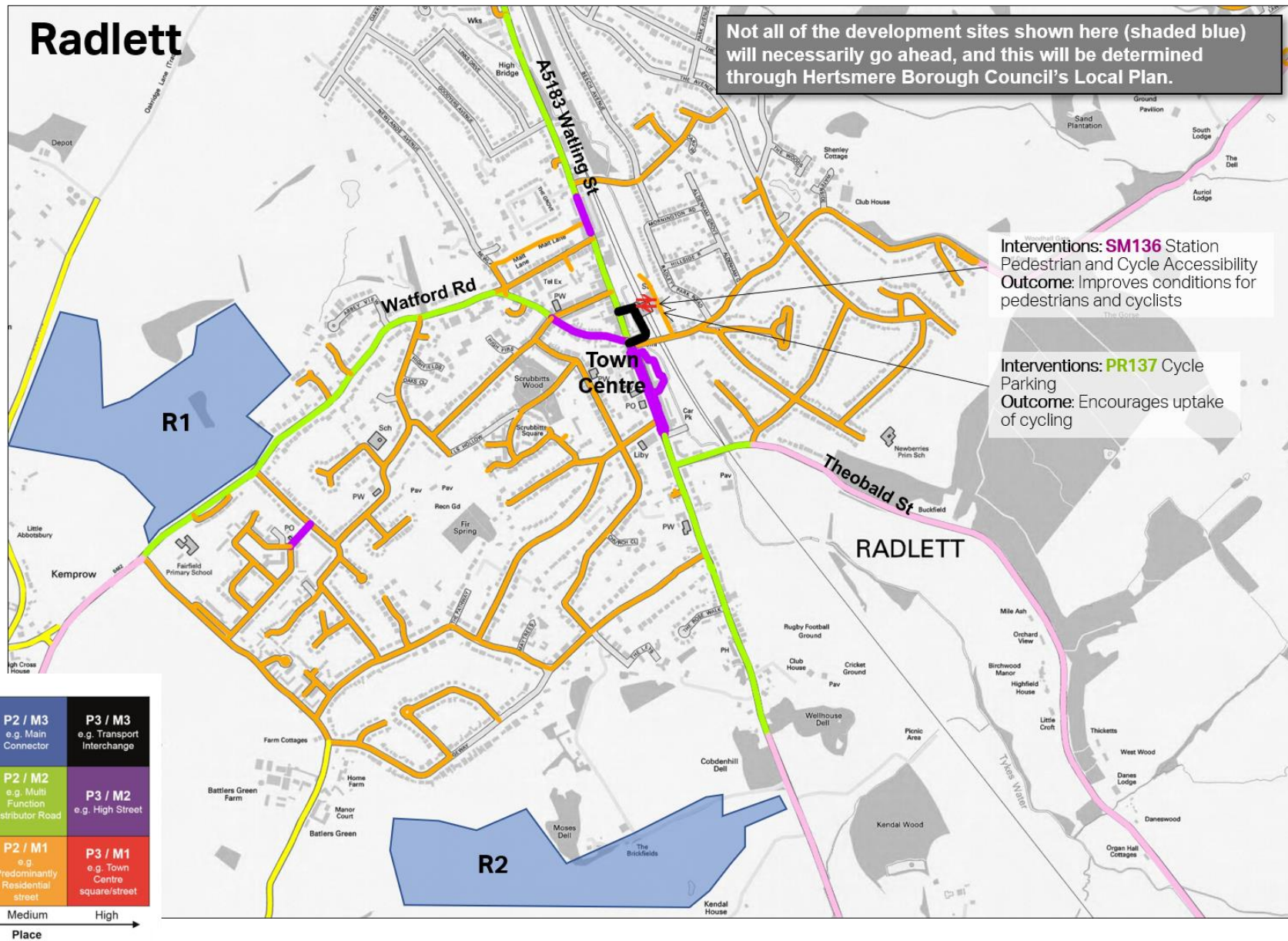
Not all of the development sites shown here (shaded blue) will necessarily go ahead, and this will be determined through Hertsmere Borough Council's Local Plan.

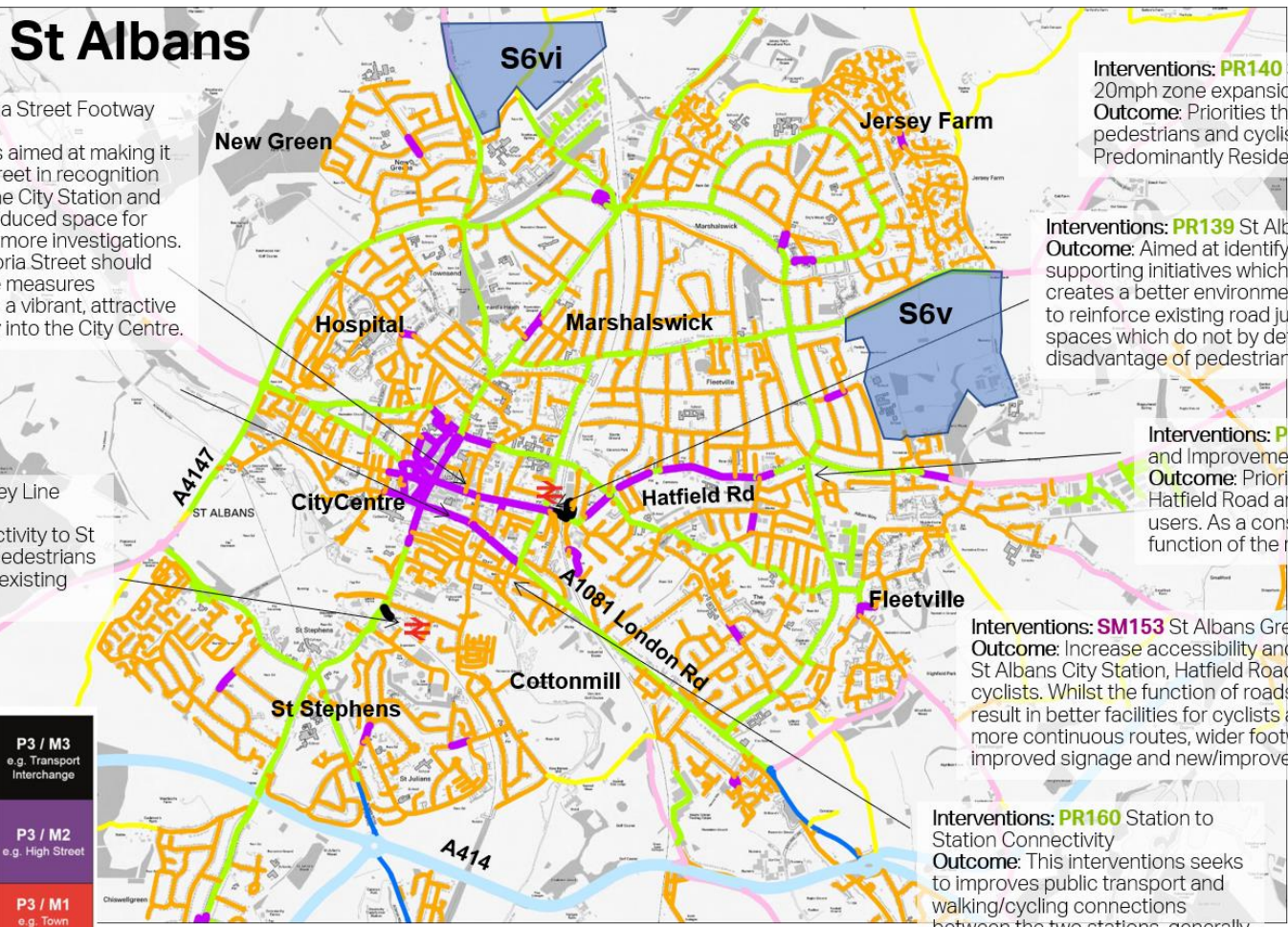
Interventions: SM129 Station Road Junction Improvements
Outcome: Improve conditions for pedestrians, cyclists and bus services. The function of the roads are unlikely to change, although pedestrians and cyclists will have greater priority when travelling through the junction.

Interventions: SM123 Elstree Way Corridor
Outcome: Increases connectivity to the station and accessibility along Elstree Way, creating a better environment for pedestrians and cyclists, and reduced delays for buses. These changes will reinforce the existing High Street function at the western end, and whilst the highway environment may change towards the eastern end the function may not change from an Urban Distributor Road

Interventions: SM130 Stirling Corner Junction Improvements for pedestrians and cyclists
Outcome: Increases accessibility of pedestrians and cyclists travelling in/out of the town. The functions of the roads leading into this junction will not change as the roads will continue to function as interurban routes, however the proposed interventions are intended to improve conditions for users who have very poor facilities for crossing the road on foot or by bike as the roads are prioritising motorists.

Vehicular Movement	High	P1 / M3 e.g. Motorway, Major A-Road	P2 / M3 e.g. Main Connector	P3 / M3 e.g. Transport Interchange
	Medium	P1 / M2 e.g. Inter-urban road	P2 / M2 e.g. Multi Function Distributor Road	P3 / M2 e.g. High Street
	Low	P1 / M1 e.g. Rural Lane	P2 / M1 e.g. Predominantly Residential street	P3 / M1 e.g. Town Centre square/street
		Low	Medium	High
		Place		





Interventions: SM163 Victoria Street Footway Improvements
Outcome: The intervention is aimed at making it easier walk along Victoria Street in recognition that it is a key route linking the City Station and City Centre. There may be reduced space for traffic although this requires more investigations. The general function of Victoria Street should not change however, but the measures introduced will reinforce it as a vibrant, attractive High Street and key gateway into the City Centre.

Interventions: PR140 St Albans City Centre 20mph zone expansion
Outcome: Priorities the safety needs of pedestrians and cyclists on quieter, Predominantly Residential Streets

Interventions: PR139 St Albans Footway Improvements Study
Outcome: Aimed at identifying wider scale interventions and supporting initiatives which encourage uptake of walking and creates a better environment for pedestrians. This would seek to reinforce existing road junctions such as High Streets as spaces which do not by default, prioritise private cars to the disadvantage of pedestrians, cyclists and buses.

Interventions: SM152 Abbey Line Pedestrian / Cycle Bridge
Outcome: Increase connectivity to St Albans Abbey Station for pedestrians and cyclists, replacing the existing level crossing

Interventions: PR170 Hatfield Road Bus Priority and Improvements
Outcome: Prioritise bus movement along Hatfield Road and increases reliability for bus users. As a consequence, the High Street function of the road will not change.

Interventions: SM153 St Albans Green Ring 'Spoke' Routes
Outcome: Increase accessibility and connectivity between the St Albans City Station, Hatfield Road and the Alban Way for cyclists. Whilst the function of roads may not change, this may result in better facilities for cyclists and pedestrians, including more continuous routes, wider footways/cycle routes, improved signage and new/improved crossings.

Interventions: PR160 Station to Station Connectivity
Outcome: This interventions seeks to improves public transport and walking/cycling connections between the two stations, generally on quieter residential streets

Vehicular Movement	High	P1 / M3 e.g. Motorway, Major A-Road	P2 / M3 e.g. Main Connector	P3 / M3 e.g. Transport Interchange
	Medium	P1 / M2 e.g. Inter-urban road	P2 / M2 e.g. Multi Function Distributor Road	P3 / M2 e.g. High Street
	Low	P1 / M1 e.g. Rural Lane	P2 / M1 e.g. Predominantly Residential street	P3 / M1 e.g. Town Centre square/street
		Low	Medium	High
		Place		



Appendix B

A full list of the interventions identified through the SC GTP process is provided below.

Fifteen packages of schemes and projects, concerning areas in North Central Hertfordshire, were identified.

Cost ranges for each intervention are included in the table. However, it should be noted that these are indicative and were based on typical costs of similar implemented interventions (linked with documents referenced).

Similarly, reported timescales relate to past experience based on timescales of typical and implemented interventions, if these were to be delivered in isolation with no third-party involvement, land acquisition difficulties and other constraints.

Interactions with other planned interventions are also considered.

This list provides the basis of an ongoing implementation plan, where costs and timescales will be refined, and delivery mechanisms identified as part of further work.

Intervention ID	Package	Approach (if applicable)	Linked Project Group ID	Intervention Name	District(s)	Cost Range	Timescale if delivered in isolation	Interaction(s)
SM1	PK1	-	-	Cycle route improvements	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
SM2	PK1	-	-	Junction signalisation	Welwyn Hatfield Borough	£2.5million-£5million	5-10 years	9HATe1, 11HATtc, 12HATts
SM5	PK1	-	-	Hotel access reconfiguration	Welwyn Hatfield Borough	£500k-£1million	2-5 years	9HATe1, 11HATtc, 12HATts
SM7	PK1	-	-	Upgrade crossings on St Albans Road	Welwyn Hatfield Borough	£500k-£1million	0-2 years	9HATe1, 11HATtc, 12HATts
SM9	PK1	-	-	Cavendish Way cycle lane	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
SM10	PK1	-	-	A1(M) cycle overbridge	Welwyn Hatfield Borough	£5million-£10million	5-10 years	9HATe1, 11HATtc, 12HATts
SM11	PK1	-	-	A1M Junction 3 reconfiguration	Welwyn Hatfield Borough	£2.5million-£5million	5-10 years	9HATe1, 11HATtc, 12HATts
SM12	PK1	-	-	A1(M) Junction 3 - A414-Comet Way improvement	Welwyn Hatfield Borough	£2.5million-£5million	2-5 years	9HATe1, 11HATtc, 12HATts
SM13	PK1	-	-	A1M Junction 2 - Junction 3 link road	Welwyn Hatfield Borough	£2.5million-£5million	5-10 years	9HATe1, 11HATtc, 12HATts
SM16	PK1	-	-	Cycle Parking at prominent locations	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
PR3	PK1	-	LP1	Railing Removal	Welwyn Hatfield Borough	£500k-£1million	2-5 years	9HATe1, 11HATtc, 12HATts
PR4	PK1	-	LP1	Pavement Decluttering	Welwyn Hatfield Borough	£0-£500k	2-5 years	9HATe1, 11HATtc, 12HATts

PR6	PK1	-	-	Crossing signal reprogramming	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
PR8	PK1	-	-	Comet Way cycle route maintenance	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
SM20	PK2	-	-	Cavendish Way bus improvements	Welwyn Hatfield Borough	£2.5million-£5million	2-5 years	9HATe1, 11HATtc, 12HATts
SM23	PK2	-	-	Cavendish Way-Bishops Rise junction reconfiguration	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
PR17	PK2	-	-	Link Drive traffic management	Welwyn Hatfield Borough	£500k-£1million	0-2 years	9HATe1, 11HATtc, 12HATts
PR18	PK2	-	-	Cavendish Way-Queensway Active Travel Corridor	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
PR19	PK2	-	-	Cavendish Way crossing upgrade, adjacent to Comet Road	Welwyn Hatfield Borough	£500k-£1million	2-5 years	9HATe1, 11HATtc, 12HATts
PR21	PK2	-	-	Cavendish Way cycle lane markings	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
PR22	PK2	-	-	Cavendish Way new crossing, adjacent to Meadow Dell	Welwyn Hatfield Borough	£500k-£1million	2-5 years	9HATe1, 11HATtc, 12HATts
SM24	PK3	-	-	Side arm raised entry treatments	Welwyn Hatfield Borough	£2.5million-£5million	0-2 years	9HATe1, 11HATtc, 12HATts
SM25	PK3	-	-	New crossings on Bishops Rise	Welwyn Hatfield Borough	£1million-£2.5million	0-2 years	9HATe1, 11HATtc, 12HATts
SM26	PK3	-	-	Parking rationalisation	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
SM30	PK3	-	-	Garden Avenue junction reconfiguration	Welwyn Hatfield Borough	£2.5million-£5million	2-5 years	9HATe1, 11HATtc, 12HATts
PR27	PK3	-	-	Cycle Lane on Bishops Rise between High View and Cavendish Way	Welwyn Hatfield Borough	£500k-£1million	2-5 years	9HATe1, 11HATtc, 12HATts

PR29	PK3	-	-	Cycle Lane on Bishops Rise between High View and South Way	Welwyn Hatfield Borough	£500k-£1million	2-5 years	9HATe1, 11HATtc, 12HATts
SM31	PK4	-	-	Raised entry treatments	Welwyn Hatfield Borough	£1million-£2.5million	0-2 years	9HATe1, 11HATtc, 12HATts
SM34	PK4	-	-	Roundabout entry treatments	Welwyn Hatfield Borough	£1million-£2.5million	0-2 years	9HATe1, 11HATtc, 12HATts
SM36	PK4	-	-	New at-grade crossing adjacent to De Havilland Primary School	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
SM37	PK4	-	-	A1000 South Way/Travellers Lane roundabout cycle improvements	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
SM38	PK4	-	-	Travellers Lane traffic calming	Welwyn Hatfield Borough	£500k-£1million	2-5 years	9HATe1, 11HATtc, 12HATts
PR32	PK4	-	-	New crossing	Welwyn Hatfield Borough	£500k-£1million	0-2 years	9HATe1, 11HATtc, 12HATts
PR33	PK4	-	-	Waiting and loading restrictions review	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
PR35	PK4	-	-	Parking Bays	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
SM42	PK5	-	-	Improved pedestrian bridge over the railway	Welwyn Hatfield Borough	£2.5million-£5million	2-5 years	9HATe1, 11HATtc, 12HATts
PR39	PK5	-	LP2	Street lighting and CCTV improvements	Welwyn Hatfield Borough	£500k-£1million	0-2 years	9HATe1, 11HATtc, 12HATts
PR40	PK5	-	LP2	New crossings on Beaconsfield Road and Endymion Road	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
PR41	PK5	-	LP2	Cut back vegetation to widen footpath	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
PR43	PK5	-	LP3	Cycle Link between French Horn Lane and Queensway	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts

PR45	PK5	-	LP3	Upgrade crossing on French Horn Lane	Welwyn Hatfield Borough	£500k-£1million	2-5 years	9HATe1, 11HATtc, 12HATts
PR46	PK5	-	LP3	Wayfinding improvements on French Horn Lane	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
PR47	PK5	-	-	Parking rationalisation	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
PR48	PK5	-	LP4	New crossing	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
PR49	PK5	-	LP4	Subway lighting and CCTV improvements	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
SM51	PK6	-	-	Comet Way/Wellfield Road junction signalisation	Welwyn Hatfield Borough	£500k-£1million	2-5 years	9HATe1, 11HATtc, 12HATts
SM52	PK6	-	-	Comet Way corridor reconfiguration	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
SM53	PK6	-	-	Off road cycle lane around the Comet Way roundabout	Welwyn Hatfield Borough	£500k-£1million	0-2 years	9HATe1, 11HATtc, 12HATts
SM202	PK6	-	-	Hatfield West Bus Circuit and Interchange Hubs	Welwyn Hatfield Borough	£0-£500k	2-5 years	
PR50	PK6	-	-	A1M pedestrian bridge improvement	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
PR55	PK6	-	-	Alban Way-Wellfield Road connectivity	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
PR56	PK6	-	-	A1001 Crossing improvement	Welwyn Hatfield Borough	£1million-£2.5million	0-2 years	9HATe1, 11HATtc, 12HATts
SM58	PK7	-	-	Cycle route lighting	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
SM60	PK7	-	-	St Albans Road East off road cycleway	Welwyn Hatfield Borough	£1million-£2.5million	0-2 years	9HATe1, 11HATtc, 12HATts

SM62	PK7	-	-	St Albans Road East railway bridge widening	Welwyn Hatfield Borough	£2.5million-£5million	2-5 years	9HATe1, 11HATtc, 12HATts
PR57	PK7	-	-	Improved crossings at A1000-A414 Mount Pleasant Lane junction	Welwyn Hatfield Borough	£500k-£1million	0-2 years	9HATe1, 11HATtc, 12HATts
PR59	PK7	-	-	A1000/Great North Road/St Albans Road East junction signal timing review	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	9HATe1, 11HATtc, 12HATts
PR61	PK7	-	-	Signage improvements	Welwyn Hatfield Borough	£0-£500k	0-2 years	9HATe1, 11HATtc, 12HATts
PR63	PK7	-	-	Mount Pleasant Lane footway/cycleway	Welwyn Hatfield Borough	£1million-£2.5million	0-2 years	9HATe1, 11HATtc, 12HATts
PR64	PK7	-	-	Raised entry treatments on the A1000	Welwyn Hatfield Borough	£500k-£1million	0-2 years	9HATe1, 11HATtc, 12HATts
SM65	PK8	a	-	Coopers Green Lane Crossing	Welwyn Hatfield Borough	£500k-£1million	0-2 years	106aHAT_STA, 106bWGC_STA, 105LUT_HAT
SM65	PK8	b	-	Coopers Green Lane Crossing	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	106aHAT_STA, 106bWGC_STA, 105LUT_HAT
SM65	PK8	c	-	Coopers Green Lane Crossing	Welwyn Hatfield Borough	£2.5million-£5million	2-5 years	106aHAT_STA, 106bWGC_STA, 105LUT_HAT
SM66	PK8	-	-	Coopers Green Lane Active Travel Infrastructure NE of Hatfield Avenue (towards Welwyn Garden City)	Welwyn Hatfield Borough	£2.5million-£5million	5-10 years	106bWGC_STA
SM67	PK8	-	-	St Albans – Hatfield active travel corridor	Multiple	£2.5million-£5million	5-10 years	106aHAT_STA, 106bWGC_STA
SM70	PK8	-	-	B653/Lemsford Village/Green Lanes junctions improvement	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	105LUT_HAT, 106bWGC_STA
SM209	PK8	-	-	Coopers Green Lane-Stanborough Junction Improvements (part of the NW Hatfield development masterplan transport strategy)	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	
PR68	PK8	-	-	Coopers Green Lane Speed Limit Reduction	Multiple	£0-£500k	2-5 years	106aHAT_STA, 106bWGC_STA, 105LUT_HAT

SM66	PK9	-	-	Coopers Green Lane Active Travel Infrastructure NE of Hatfield Avenue (towards Welwyn Garden City)	Welwyn Hatfield Borough	£2.5million-£5million	5-10 years	106bWGC_STA
SM67	PK9	-	-	St Albans – Hatfield active travel corridor	Multiple	£2.5million-£5million	5-10 years	106aHAT_STA, 106bWGC_STA
SM207	PK9	-	-	Sandpit Lane cycle improvements	St Albans City & District	£0-£500k	0-2 years	
PR68	PK9	-	-	Coopers Green Lane Speed Limit Reduction	Multiple	£0-£500k	2-5 years	106aHAT_STA, 106bWGC_STA, 105LUT_HAT
SM71	PK10	-	-	A1000 Cycleway Improvements	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	107HAT_WGC, 106bWGC_STA
SM76	PK10	-	-	Welwyn Hatfield Green Corridor	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	107HAT_WGC, 106bWGC_STA, 108WH_SVG
SM79	PK10	-	-	A414 Mill Green Junction Improvements	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	107HAT_WGC, 106bWGC_STA
PR72	PK10	-	-	Cycle Signage	Welwyn Hatfield Borough	£0-£500k	0-2 years	107HAT_WGC, 106bWGC_STA
PR73	PK10	-	-	Hatfield-Cole Green Way Cycle Link (Green Corridor)	Welwyn Hatfield Borough	£10million-£50million	5-10 years	107HAT_WGC, Hatfield-Hertford
PR74	PK10	-	-	Cole Green Way Signage at B195	Welwyn Hatfield Borough	£0-£500k	2-5 years	107HAT_WGC, Hatfield-Hertford, WGC-Hertford
SM77	PK11	a	-	Oldings East' A414/Great North Road Junction Improvements	Welwyn Hatfield Borough	£500k-£1million	0-2 years	108WH_SVG, 107HAT_WGC, 106bWGC_STA
SM77	PK11	b	-	Oldings East' A414/Great North Road Junction Improvements	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	108WH_SVG, 107HAT_WGC, 106bWGC_STA
SM77	PK11	c	-	Oldings East' A414/Great North Road Junction Improvements	Welwyn Hatfield Borough	£2.5million-£5million	2-5 years	108WH_SVG, 107HAT_WGC, 106bWGC_STA
SM78	PK11	a	-	Oldings North' A1(M) NB at Junction 4 to A414 Improvements (Any improvements need to at least maintain if not improve facilities for pedestrians and cyclists, e.g.	Welwyn Hatfield Borough	£0-£500k	0-2 years	108WH_SVG, 107HAT_WGC, 106bWGC_STA

				the route for school children travelling from northern Hatfield to Stanborough School)				
SM78	PK11	b	-	Oldings North' A1(M) NB at Junction 4 to A414 Improvements (Any improvements need to at least maintain if not improve facilities for pedestrians and cyclists, e.g. the route for school children travelling from northern Hatfield to Stanborough School)	Welwyn Hatfield Borough	£2.5million-£5million	2-5 years	108WH_SVG, 107HAT_WGC, 106bWGC_STA
SM78	PK11	c	-	Oldings North' A1(M) NB at Junction 4 to A414 Improvements (Any improvements need to at least maintain if not improve facilities for pedestrians and cyclists, e.g. the route for school children travelling from northern Hatfield to Stanborough School)	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	108WH_SVG, 107HAT_WGC, 106bWGC_STA
SM80	PK11	a	-	Oldings East' to 'Oldings West' link road	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	107HAT_WGC, 106bWGC_STA
SM80	PK11	b	-	Oldings East' to 'Oldings West' link road	Welwyn Hatfield Borough	£2.5million-£5million	2-5 years	107HAT_WGC, 106bWGC_STA
PR201	PK12	-	-	Knightsfield Lane cycle route	Welwyn Hatfield Borough	£0-£500k	0-2 years	
PR202	PK12	-	-	Lyles Lane cycle route	Welwyn Hatfield Borough	£0-£500k	0-2 years	
SM84	PK13	-	-	Welwyn Garden City Town Centre Development	Welwyn Hatfield Borough	£2.5million-£5million	2-5 years	17WGCtc, 18WGCtc, 19WGCtc
PR86	PK13	-	-	Complete Gaps in Cycleway Network	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	17WGCtc, 18WGCtc, 19WGCtc, 20WGCe1, 21WGCe1, 106bWGC_STA, 107HAT_WGC
PR87	PK13	-	-	Cycleway Network Improvements	Welwyn Hatfield Borough	£1million-£2.5million	0-2 years	17WGCtc, 18WGCtc, 20WGCe1

PR88	PK13	-	-	Cycle Parking	Welwyn Hatfield Borough	£0-£500k	0-2 years	17WGCtc, 18WGCtc, 19WGCtc, 20WGCe1, 21WGCe1, 107HAT_WGC, 108WH_SVG
PR89	PK13	-	-	Cycle Signage	Welwyn Hatfield Borough	£0-£500k	0-2 years	17WGCtc, 18WGCtc, 19WGCtc, 20WGCe1, 21WGCe1
PR90	PK13	-	-	Wayfinding	Welwyn Hatfield Borough	£0-£500k	0-2 years	17WGCtc, 18WGCtc, 19WGCtc, 20WGCe1, 21WGCe1
PR91	PK13	-	-	B195 Black Fan Road/Herns Lane/Ridgeway Junction Improvements	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	18WGCtc, 20WGCe1
SM93	PK14	-	-	Bridge Road Boulevard (Broadwater Road West proposal)	Welwyn Hatfield Borough	£1million-£2.5million	0-2 years	17WGCtc, 18WGCtc, 20WGCe1
PR97	PK14	-	-	Broadwater Road/Bridge Road Junction Improvement	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	17WGCtc, 18WGCtc, 20WGCe1
SM98	PK15	-	-	B197 Sustainable Travel Corridor	Welwyn Hatfield Borough	£2.5million-£5million	2-5 years	108WH_SVG
SM99	PK15	-	-	Welwyn Village Connectivity	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	19WGCtc, 21WGCe1
SM100	PK15	-	-	Welwyn North Station Connectivity	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	19WGCtc, 21WGCe1
SM205	PK15	-	-	Clock Roundabout and Welwyn Bypass	Welwyn Hatfield Borough	£500k-£1million	2-5 years	
SM210	PK15	-	-	B656 Sustainable Travel Corridor	Multiple authorities	£2.5million-£5million	2-5 years	
SM70	PK16	-	-	B653/Lemsford Village/Green Lanes junctions improvement	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	105LUT_HAT, 106bWGC_STA
PR101	PK16	-	LP5	Harpenden-Wheathampstead Cycleway	St Albans City & District	£1million-£2.5million	0-2 years	105LUT_HAT
PR102	PK16	-	LP5	Wheathampstead-Hatfield Cycleway	Multiple	£500k-£1million	0-2 years	105LUT_HAT

PR103	PK16	-	-	Welwyn Garden City and Hatfield -Luton Bus Services	Multiple	£1million-£2.5million	2-5 years	105LUT_HAT
PR105	PK16	-	LP11	A6129/B197 (Boat) Roundabout Signalisation	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	105LUT_HAT, 106bWGC_STA, 107HAT_WGC
PR203	PK16	-	LP11	B653/B197/Coopers Green Lane Roundabout Improvement	Welwyn Hatfield Borough	£0-£500k	2-5 years	105LUT_HAT, 106bWGC_STA, 107HAT_WGC
SM107	PK17	-	-	Welham Green Station Accessibility Improvements	Welwyn Hatfield Borough	£500k-£1million	0-2 years	10HATe1
SM108	PK17	-	-	Welham Green-Hatfield Cycleway improvements	Welwyn Hatfield Borough	£1million-£2.5million	0-2 years	10HATe1
SM109	PK17	-	-	Welham Green-Brookmans Park Pedestrian/Cycle Link	Welwyn Hatfield Borough	£1million-£2.5million	2-5 years	104HAT_BNT
SM110	PK17	-	-	Potters Bar-Brookmans Park Cycleway Improvements	Multiple	£1million-£2.5million	2-5 years	104HAT_BNT, 7PBRtc
SM113	PK18	-	-	Station Junction Improvement	Hertsmere Borough	£1million-£2.5million	2-5 years	7PBRtc, 8PBRtc
PR111	PK18	-	-	Potters Bar Wayfinding	Hertsmere Borough	£0-£500k	0-2 years	7PBRtc, 8PBRtc
PR114	PK18	-	-	The Causeway Pedestrian Crossings	Hertsmere Borough	£1million-£2.5million	2-5 years	8PBRtc
PR115	PK18	-	-	Baker Street Cycle Route and M25 'Crossing'	Hertsmere Borough	£2.5million-£5million	2-5 years	110PBR_BNT, 111PBR_ENF
PR116	PK18	-	-	M25 Cycle Crossings	Hertsmere Borough	£500k-£1million	5-10 years	110PBR_BNT, 111PBR_ENF
SM118	PK19	-	-	Potters Bar Bus Station Upgrade	Hertsmere Borough	£1million-£2.5million	2-5 years	110PBR_BNT, 111PBR_ENF, 7PBRtc, 8PBRtc
PR117	PK19	-	-	Cranborne Road Employment Area-Town Centre Link	Hertsmere Borough	£0-£500k	0-2 years	110PBR_BNT, 111PBR_ENF, 7PBRtc
PR121	PK19	-	-	Cycle Parking	Hertsmere Borough	£0-£500k	0-2 years	110PBR_BNT, 111PBR_ENF, 7PBRtc, 8PBRtc
SM123	PK20	-	-	Elstree Way Corridor	Hertsmere Borough	£10million-£25million	2-5 years	1BHWe1, 2BHWe1, 3BHWe1, 4BHWtc, 5BHWe2

PR122	PKPK21	-	-	Cycle Wayfinding - Promoting the Connections	Hertsmere Borough	£1million-£2.5million	0-2 years	1BHWe1, 2BHWe1, 3BHWe1, 4BHWtc, 5BHWe2
SM129	PK21	-	-	Station Road Junction Improvements	Hertsmere Borough	£0-£500k	0-2 years	4BHWtc, 5BHWe2
PR124	PK21	-	LP6	Borehamwood-Elstree Village Pedestrian/Cycle Link	Hertsmere Borough	£1million-£2.5million	0-2 years	5BHWe2
PR125	PK21	-	LP6	Elstree Village-Centennial Park Pedestrian/Cycle Link	Hertsmere Borough	£500k-£1million	0-2 years	5BHWe2
PR126	PK21	-	LP6	Centennial Park Accessibility Improvements	Hertsmere Borough	£500k-£1million	0-2 years	5BHWe2, 6BHWe2
PR127	PK21	-	-	Borehamwood Cycle Parking	Hertsmere Borough	£0-£500k	0-2 years	1BHWe1, 2BHWe1, 3BHWe1, 4BHWtc, 5BHWe2
PR128	PK21	-	-	Elstree Way/Shenley Road Parking Study	Hertsmere Borough	£0-£500k	0-2 years	1BHWe1, 2BHWe1, 3BHWe1, 4BHWtc, 5BHWe2
SM130	PK22	a	-	Stirling Corner Junction Improvements for pedestrians and cyclists	Hertsmere Borough	£500k-£1million	0-2 years	100BHW_LON, 101BHW_BNT, 103BHW_HRR
SM130	PK22	b	-	Stirling Corner Junction Improvements for pedestrians and cyclists	Hertsmere Borough	£1million-£2.5million	5-10 years	100BHW_LON, 101BHW_BNT, 103BHW_HRR
SM131	PK22	a	-	Stirling Corner Junction Improvements for vehicles	Hertsmere Borough	£1million-£2.5million	2-5 years	100BHW_LON, 101BHW_BNT, 103BHW_HRR
SM131	PK22	b	-	Stirling Corner Junction Improvements for vehicles	Hertsmere Borough	£2.5million-£5million	2-5 years	100BHW_LON, 101BHW_BNT, 103BHW_HRR
SM132	PK22	-	-	A5 Cycleway	Hertsmere Borough	£2.5million-£5million	2-5 years	100BHW_LON, 103BHW_HRR
PR133	PK22	-	LP7	Rowley Lane Cycleway	Hertsmere Borough	£1million-£2.5million	2-5 years	100BHW_LON, 101BHW_BNT
PR134	PK22	-	LP7	A1/Rowley Lane Junction Improvements	Hertsmere Borough	£1million-£2.5million	2-5 years	100BHW_LON, 101BHW_BNT
SM136	PK23	-	-	Radlett Station Pedestrian and Cycle Accessibility	Hertsmere Borough	£500k-£1million	0-2 years	6BHWe2
PR137	PK23	-	-	Cycle Parking	Hertsmere Borough	£0-£500k	0-2 years	6BHWe2
SM143	PK24	-	-	Victoria Street Urban Realm Improvements	St Albans City & District	£0-£500k	0-2 years	13STAtc, 14STAtc, 15STAtc, 16STAtc, 17STAtc, 18STAtc

SM144	PK24	-	-	Enhanced Victoria Street-Civic Centre-St Peter's Street Link	St Albans City & District	£0-£500k	0-2 years	13STAtc, 14STAtc, 15STAtc, 16STAtc, 17STAtc, 18STAtc
PR139	PK24	-	-	St Albans Footway Improvements Study	St Albans City & District	£500k-£1million	0-2 years	13STAtc, 14STAtc, 15STAtc, 16STAtc, 17STAtc, 18STAtc
PR140	PK24	-	-	St Albans City Centre 20mph zone expansion	St Albans City & District	£0-£500k	0-2 years	13STAtc, 14STAtc, 15STAtc, 16STAtc, 17STAtc, 18STAtc
PR141	PK24	-	-	A1081 St Peter's Street Pedestrian Crossing	St Albans City & District	£1million-£2.5million	0-2 years	13STAtc, 14STAtc, 15STAtc, 16STAtc
SM152	PK25	-	-	Level Crossing	St Albans City & District	£5million-£10million	2-5 years	13STAtc, 15STAtc
SM153	PK25	-	-	St Albans Green Ring 'Spoke' Routes -	St Albans City & District	£1million-£2.5million	0-2 years	13STAtc, 14STAtc
SM157	PK25	-	-	Alban Way Physical Improvements	Multiple	£500k-£1million	0-2 years	106aHAT_STA, 106bWGC_STA
PR147	PK25	-	LP8	Folly Lane - Verulam Road pedestrian crossing	St Albans City & District	£500k-£1million	0-2 years	
PR148	PK25	-	LP8	St Albans Green Ring Enhancement - Beech Bottom/Batchwood Drive	St Albans City & District	£500k-£1million	0-2 years	13STAtc, 15STAtc, 14STAtc
PR149	PK25	-	LP8	St Albans Green Ring Enhancement - Townsend Drive	St Albans City & District	£500k-£1million	0-2 years	13STAtc, 15STAtc, 14STAtc
PR150	PK25	-	LP8	St Albans Green Ring Enhancement - Branch Road and St Michael's Street	St Albans City & District	£0-£500k	0-2 years	13STAtc, 15STAtc
PR151	PK25	-	LP8	St Albans Green Ring Enhancement – Verulamium car park	St Albans City & District	£0-£500k	0-2 years	
PR154	PK25	-	-	Alban Way Lighting	Multiple	£1million-£2.5million	0-2 years	106aHAT_STA, 106bWGC_STA
PR155	PK25	-	-	Alban Way Wayfinding	Multiple	£0-£500k	0-2 years	106aHAT_STA, 106bWGC_STA
PR156	PK25	-	-	Alban Way Cycle Signage	Multiple	£0-£500k	0-2 years	106aHAT_STA, 106bWGC_STA

SM152	PK26	-	-	Level Crossing	St Albans City & District	£5million-£10million	2-5 years	13STAtc, 15STAtc
SM161	PK26	-	-	St Albans Abbey Station Relocation	St Albans City & District	£2.5million-£5million	10-20 years	13STAtc, 15STAtc
SM162	PK26	-	-	Abbey Line Park and Rail Hub	St Albans City & District	£500k-£1million	2-5 years	15STAtc, 17STAtc
PR159	PK26	-	LP9	Cycle Parking	St Albans City & District	£0-£500k	0-2 years	13STAtc, 15STAtc
PR160	PK26	-	LP9	Station to Station Connectivity	St Albans City & District	£500k-£1million	0-2 years	13STAtc
SM163	PK27	-	-	Victoria Street Footway Improvements	St Albans City & District	£500k-£1million	0-2 years	13STAtc
SM165	PK27	-	-	Pedestrian Crossing Improvements	St Albans City & District	£1million-£2.5million	0-2 years	13STAtc
PR164	PK27	-	-	Victoria Street Wayfinding	St Albans City & District	£0-£500k	0-2 years	13STAtc
PR167	PK27	-	-	Cycle Parking	St Albans City & District	£0-£500k	0-2 years	13STAtc
PR168	PK27	-	-	Cycle connectivity improvements and widening to include improvements to access from the north	St Albans City & District	£0-£500k	0-2 years	13STAtc
SM171	PK28	-	-	Hatfield Road Urban Realm Improvements	St Albans City & District	£500k-£1million	0-2 years	13STAtc, 14STAtc, 16STAtc
PR169	PK28	-	-	Hatfield Road Parking Study	St Albans City & District	£0-£500k	0-2 years	13STAtc, 14STAtc, 16STAtc
PR170	PK28	-	-	Hatfield Road Bus Priority and Improvements	St Albans City & District	£500k-£1million	0-2 years	13STAtc, 14STAtc, 16STAtc, 106aHAT_STA
SM173	PK29	-	-	Parking revisions	St Albans City & District	£500k-£1million	0-2 years	13STAtc, 14STAtc, 18STAtc

SM174	PK29	-	-	London Road/Watsons Walk/Lattimore Road junction alterations	St Albans City & District	£1million-£2.5million	2-5 years	13STAtc, 14STAtc, 18STAtc
PR175	PK29	-	-	Peahen junction signal timing reconfiguration	St Albans City & District	£1million-£2.5million	2-5 years	13STAtc, 14STAtc, 15STAtc, 17STAtc, 18STAtc
SM176	PK30	-	-	A414/A1081 London Colney Roundabout Upgrade	St Albans City & District	£2.5million-£5million	2-5 years	18STAtc
SM177	PK30	-	-	A414 Park Street Roundabout Improvements	St Albans City & District	£1million-£2.5million	2-5 years	17STAtc
SM179	PK30	-	-	A414 Smart Traffic Management	St Albans City & District	£1million-£2.5million	2-5 years	106aHAT_STA, 106bWGC_STA, 107HAT_WGC, 109HML_STA
SM180	PK30	-	-	Traffic Routeing Signage	St Albans City & District	£0-£500k	0-2 years	113STA_LUT
SM181	PK30	-	-	A414 Cycle Route upgrade London Colney-Hatfield	St Albans City & District	£500k-£1million	0-2 years	106aHAT_STA
SM206	PK30	-	-	A414 Corridor Park Street-Napsbury-London Colney Cycle Route	Multiple authorities	£500k-£1million	0-2 years	
SM185	PK31	-	-	B5378 Active Travel Corridor - north	St Albans City & District	£1million-£2.5million	2-5 years	18STAtc, 106aHAT_STA
SM186	PK31	-	-	B5378 Active Travel Corridor - south	St Albans City & District	£1million-£2.5million	2-5 years	18STAtc
SM187	PK31	-	-	B5378 Active Travel Corridor (if a PT interchange is provided west of London Colney)	St Albans City & District	£1million-£2.5million	0-2 years	18STAtc
SM206	PK31	-	-	A414 Corridor Park Street-Napsbury-London Colney Cycle Route	Multiple authorities	£500k-£1million	0-2 years	
SM176	PK32	-	-	A414/A1081 London Colney Roundabout Upgrade	St Albans City & District	£2.5million-£5million	2-5 years	18STAtc
SM190	PK32	-	-	Improved Pedestrian and Cycle Links within London Colney on the High Street	St Albans City & District	£1million-£2.5million	0-2 years	18STAtc

SM206	PK32	-	-	A414 Corridor Park Street-Napsbury-London Colney Cycle Route	Multiple authorities	£500k-£1million	0-2 years	
SM208	PK32	-	-	London Colney A414 Sustainable Travel Bridge	St Albans City & District	£2.5million-£5million	5-10 years	18STAtc
PR188	PK32	-	-	London Colney A414 Cycle/Pedestrian Bridge Improvements	St Albans City & District	£0-£500k	0-2 years	18STAtc
SM192	PK33	-	-	High Street streetscape improvements	St Albans City & District	£500k-£1million	0-2 years	18STAtc
PR193	PK33	-	LP10	High Street 20mph speed limit	St Albans City & District	£0-£500k	0-2 years	18STAtc
PR194	PK33	-	LP10	Town wide 20mph speed limit	St Albans City & District	£0-£500k	0-2 years	18STAtc
PR195	PK33	-	-	Cross-village core pedestrian and cycle route linked to potential new housing development	St Albans City & District	£1million-£2.5million	2-5 years	18STAtc
SM180	PK34	-	-	Traffic Routeing Signage	St Albans City & District	£0-£500k	0-2 years	106aHAT_STA
SM67	PK34	-	-	St Albans – Hatfield active travel corridor	Multiple	£1million-£2.5million	2-5 years	106aHAT_STA, 106bWGC_STA
PR68	PK34	-	-	Coopers Green Lane Speed Limit Reduction	Multiple	£0-£500k	0-2 years	106aHAT_STA, 106bWGC_STA, 105LUT_HAT
SM177	PK35	-	-	A414 Park Street Roundabout Improvements	St Albans City & District	£1million-£2.5million	2-5 years	17STAtc
SM200	PK35	-	-	B4630 Watford Road Improvements	St Albans City & District	£2.5million-£5million	2-5 years	17STAtc, St Albans-Watford (ex 114STA_WAT)
SM201	PK35	-	-	A405/B4630 Watford Road junction reconfiguration	St Albans City & District	£1million-£2.5million	2-5 years	17STAtc, St Albans-Watford (ex 114STA_WAT)
PR70	PK35	-	-	A5183 Cycle Route	St Albans City & District	£1million-£2.5million	0-2 years	
SM157	PK36	-	-	Alban Way Physical Improvements	Multiple	£500k-£1million	0-2 years	106aHAT_STA, 106bWGC_STA

PR154	PK36	-	-	Alban Way Lighting	Multiple	£1million- £2.5million	0-2 years	106aHAT_STA, 106bWGC_STA
PR155	PK36	-	-	Alban Way Wayfinding	Multiple	£0-£500k	0-2 years	106aHAT_STA, 106bWGC_STA
PR156	PK36	-	-	Alban Way Cycle Signage	Multiple	£0-£500k	0-2 years	106aHAT_STA, 106bWGC_STA

