



Welwyn Hatfield Borough

LOCAL CYCLING AND WALKING INFRASTRUCTURE PLAN

HCC / WHBC





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1

INTRODUCTION

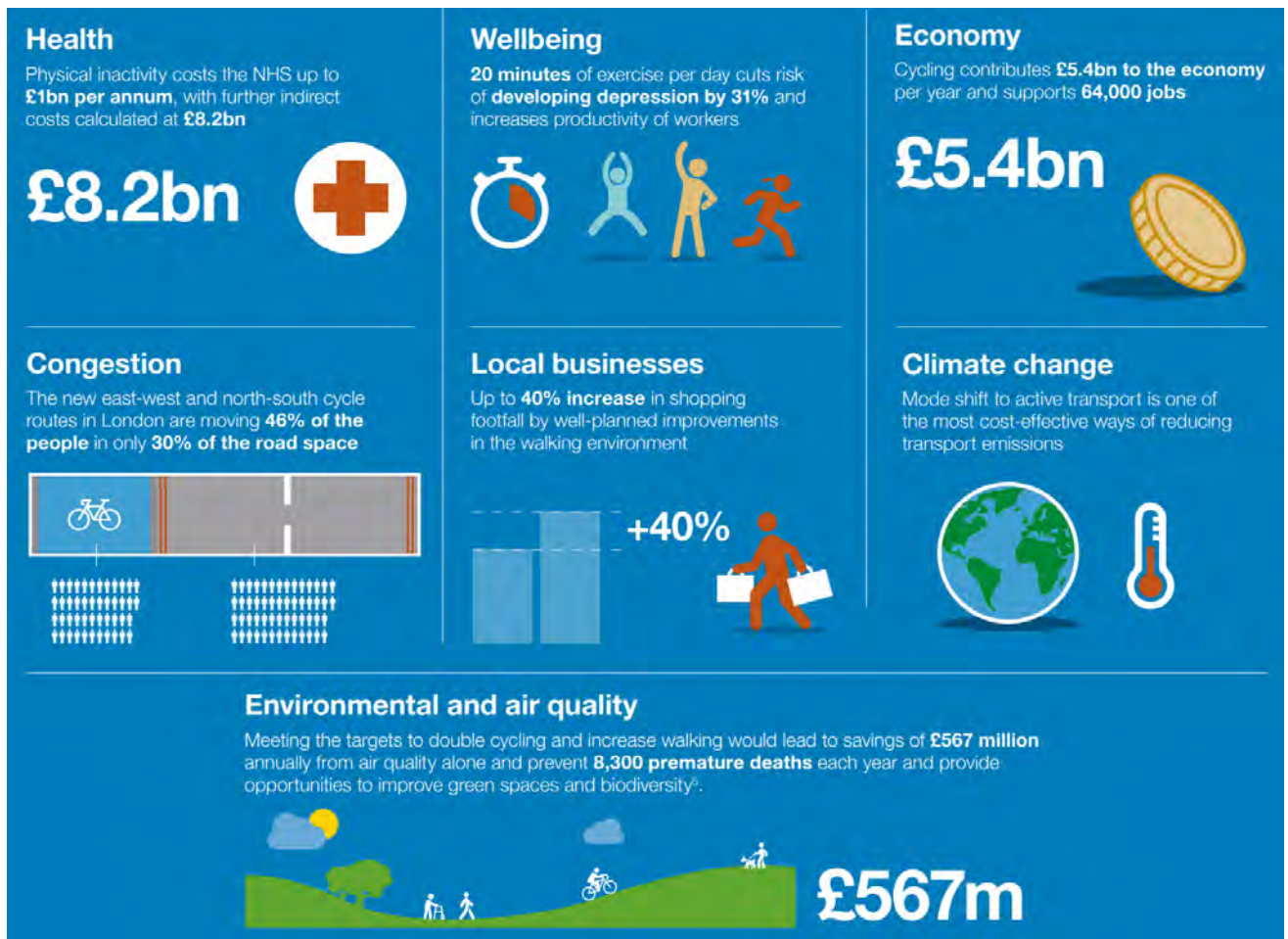


1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1. This Local Cycling and Walking Infrastructure Plan (LCWIP) covers Welwyn Hatfield Borough and showcases that Hertfordshire County Council (HCC) and Welwyn Hatfield Borough Council (WHBC) share central government’s ambition to make cycling and walking the natural choice for shorter journeys or parts of longer journey.
- 1.1.2. Evidence shows that enabling increased active travel trips brings benefits in areas such as road safety, congestion reduction, air quality, social mobility, the economy and public health and wellbeing. Gear Change (England’s Cycling and Walking Strategy, published in 2020 by the Department for Transport) gathers much of the existing research on the benefits of active travel. Figure 1-1 is an infographic taken from Gear Change, listing some of the key benefits.

Figure 1-1 - The Benefits of Cycling and Walking Investment (Source: Gear Change)



- 1.1.3. This LCWIP represents a first stage in the councils' aspirations for active travel network development across the borough, with the LCWIP approach being applied across the rest of the county in due course.
- 1.1.4. To achieve this the councils recognise the need for a step change in the process of planning active travel networks, identifying and prioritising infrastructure improvements, and incorporating emerging best practice in design.
- 1.1.5. LCWIPs represent an ongoing process where the development of active travel networks can evolve over time, and in a way closely aligned to our strategic corporate objectives and transport, public health, environmental and planning policy.
- 1.1.6. As such, the Welwyn Hatfield LCWIP will be revisited periodically and updated as infrastructure is built throughout the Borough. While all of Welwyn Hatfield has been considered in this first iteration of the LCWIP, it is acknowledged that the audits and subsequent infrastructure ideas identified are limited to the larger settlements (of Welwyn Garden City and Hatfield) and shorter inter-urban routes. This means that initially the areas and routes in the Borough being considered are those where the greatest potential for cycling and walking exists and therefore where targeted infrastructure improvements could help generate the most new active trips.
- 1.1.7. However, in the next iteration of the LCWIP, a major focus will be on areas in the Borough which were not audited in this iteration. These will include (but are not limited to) for example: outer neighbourhoods in Welwyn Garden City and Hatfield, and villages such as Woolmer Green, Oaklands, Welwyn, Digswell, Welham Green, Brookmans Park and Cuffley. This is discussed in more detail in sections 5.6, 6.7, 7.4, 7.5 and 9 of this report.
- 1.1.8. WSP has worked in close collaboration with HCC and Welwyn Hatfield Borough Council (WHBC) to develop this LCWIP in line with the DfT guidance. WSP are responsible for producing the key deliverables of the LCWIP, including:
- network plans for walking and cycling in Welwyn Hatfield borough;
 - a prioritised programme of infrastructure improvements for future investment; and
 - this report which sets out the process and underlying analysis carried out and draws together our LCWIP outputs.

1.1.9. An LCWIP offers the council a chance to strengthen partnerships with local stakeholders and interest groups who can be influential in identifying and providing infrastructure to enable more walking and cycling journeys to be made. An LCWIP also provides an opportunity for the council to demonstrate its commitment to related policy issues, such as net zero, air quality, reducing congestion and health and wellbeing.

1.2 THE LCWIP PROCESS

1.2.1. In 2017 the Department for Transport (DfT) produced a technical guidance document to help local authorities develop LCWIPs. Table 1-1 summarises the six-stage LCWIP process as detailed in this guidance document.

Table 1-1 – LCWIP Process

Stage	Name	Description
1	Determining Scope	Establish the geographical extent of the LCWIP, and arrangements for governing and preparing the plan.
2	Gathering Information	Identify existing patterns of walking and cycling and potential new journeys. Review existing conditions and identify barriers to cycling and walking. Review related transport and land use policies and programmes.
3	Network Planning for Cycling	Identify origin and destination points and cycle flows. Convert flows into a network of routes and determine the type of improvements required.
4	Network Planning for Walking	Identify key trip generators, core walking zones and routes, audit existing provision and determine the type of improvements required.
5	Prioritising Improvements	Prioritise improvements to develop a phased programme for future investment.
6	Integration and Application	Integrate outputs into local planning and transport policies, strategies, and delivery plans.

Source: *LCWIP Technical Guidance for Local Authorities, DfT, April 2017*

1.3 REPORT STRUCTURE

- 1.3.1. This report details the technical support provided by WSP at each of the six LCWIP stages.
- 1.3.2. LCWIP Stage 1 (Determining Scope) was largely completed by HCC and WHBC as defined in their Scoping Report). The majority of support provided by WSP was during LCWIP Stages 2 to 5. For the technical support provided for LCWIP Stages 2-5, details of the approach, methodology, assumptions and outputs are provided in this report.
- 1.3.3. LCWIP Stage 6 (Integration and Application) concerns the integration of the LCWIP into local policy, strategies and plans. In this report, section 9 (Next Steps) sets out some initial ideas and actions for how this can be done, but the actual process of integrating the LCWIP into local policy, strategy and plans will be progressed by HCC and WHBC in the coming months.
- 1.3.4. The report structure is detailed in Table 1-2 below, showing the sections of the report and how they fit within the six-stage LCWIP process.

Table 1-2 – Report Structure

Section	Title	Associated LCWIP Stage(s)
2	LCWIP Geographic Scope	1 – Determining Scope
3	Policy Context	2 – Gathering Information
4	Gathering Information	2 – Gathering Information
5	Network Planning for Cycling	3 – Network Planning for Cycling
6	Network Planning for Walking	4 – Network Planning for Walking
7	Walking and Cycling Infrastructure Improvements	3 – Network Planning for Cycling 4 – Network Planning for Walking
8	Scheme Costing and Prioritisation	5 – Prioritising Improvements
9	Next Steps	6 – Integration and Application

- 1.3.5. The appendices after the main body of the report contain additional information and LCWIP deliverables. The content of each appendix is listed in the report contents before this introduction. Of particular help to the reader may be Appendix J, which contains a list of acronyms used in this report.

2

LCWIP GEOGRAPHICAL SCOPE

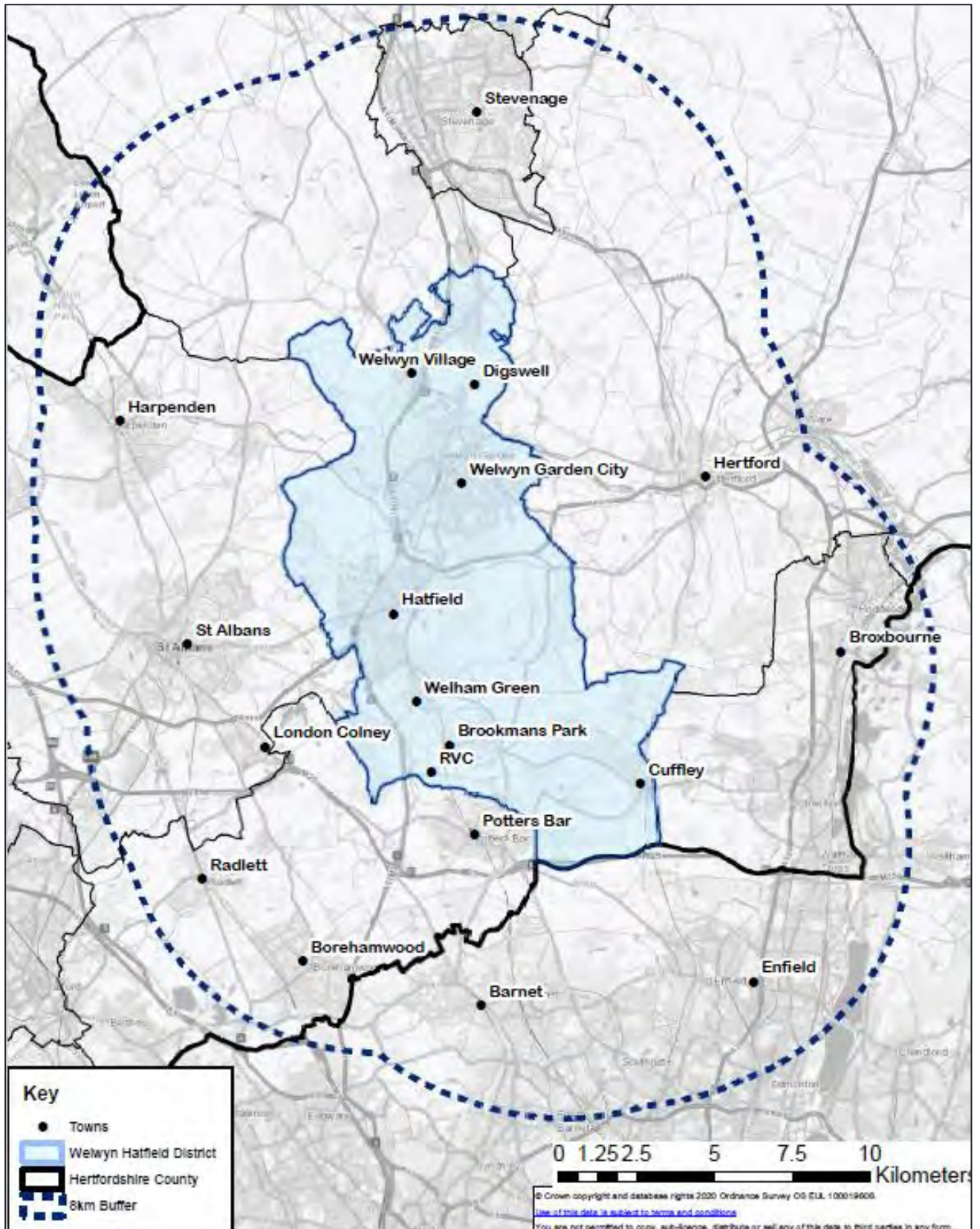


2 LCWIP GEOGRAPHICAL SCOPE

2.1 LCWIP GEOGRAPHICAL SCOPE

- 2.1.1. The routes and infrastructure plans contained within this LCWIP do not extend beyond the Welwyn Hatfield Borough boundary. However, these routes and infrastructure plans are influenced by the potential for journeys coming in and out of the Borough from nearby settlements, such as St Albans and Hertford. As such, when developing this LCWIP, a wider area (8km from the Borough boundary) has been studied. This 8km (5 mile) distance was selected based on the DfT's Gear Change document, which refers to 5 miles as being a distance that is 'suited to cycling' for 'many people'.
- 2.1.2. Figure 2-1 shows the geographical scope of this LCWIP, illustrating the Welwyn Hatfield Borough boundary as well as the 8km buffer zone.

Figure 2-1 - Geographical Scope of the Welwyn Hatfield LCWIP



3

POLICY CONTEXT



3 POLICY CONTEXT

3.1 OVERVIEW

3.1.1. The tables in this section set out the existing policy documents that are relevant to this LCWIP on the national, county and borough levels. Table 3-1 sets out the national strategic context while Tables 3-2 and 3-3 set out the county and borough strategies, policies and plans respectively. More detail on the policy context and how it all relates to the LCWIP can be seen in Appendix A.

Table 3-1 - National Strategic Context

Document	Publisher and Date Published	Description
Gear Change	Department for Transport (DfT) 2020	Government's vision for a step-change in levels of walking and cycling in England, the strategy details how the Government intends to increase the numbers of people walking and cycling. The document sets out the actions in required, under four key themes, to increase uptake and achieve the target of half of all journeys in towns and cities being cycled or walked by 2030.
Local Transport Note 1/20: Cycle Infrastructure Design	Department for Transport (DfT) 2020	Explains the five overarching design principals (cycle routes and networks must be coherent, direct, safe, comfortable and attractive) and gives context to the need to improve the quality of cycle infrastructure as part of wider strategies, such as increasing physical activity, reducing carbon emissions and stimulating economic growth.
Cycling and Walking Investment Strategy	Department for Transport (DfT) 2017	Outlines ambitious targets up to 2025 including a doubling of cycling trip stages each year whilst also reversing the year-on-year decline in walking trip stages. The benefits of doing this are stated as potentially leading to cheaper travel and better health, increased productivity for business and increased footfall in shops. Along with lowering congestion, better air quality, and vibrant, attractive places and communities.

Future of Mobility: Urban Strategy	Department for Transport (DfT) 2019	The document sets out principles to guide Government decision making, industry and local authorities, it recognises active travel as a key area to help shape the future of urban mobility. It states many journeys could be undertaken by sustainable, active modes of transport leading to better air quality, health outcomes and lower congestion which could in turn be supported by new technologies making public transport more convenient and responsive.
Clean Air Strategy	Department for Environment, Food and Rural Affairs 2019)	Sets out a comprehensive action plan required to tackle all sources of air pollution. It suggests encouraging an increase in cycling and walking for short journeys delivers a reduction in congestion and emissions in addition to the associated health benefits from a more active lifestyle.
Bus Back Better, National Bus Strategy	Department for Transport (DfT) 2021	A long-term national bus strategy setting out the vision and opportunity to deliver better bus services for passengers across England, through ambitious and far-reaching reform of how services are planned and delivered.
The Inclusive Transport Strategy (Department for Transport, 2018)	Department for Transport (DfT) 2018	Plans to create a more inclusive transport system for everyone. The report focusses on transport inclusivity, explaining how vehicles, stations and streetscapes can be designed to be inclusive to people with different forms of disability.
Active Travel Fund	Department for Transport (DfT) 2020 – present	To support a desired shift to walking and cycling following Covid-19 restrictions and to make social distancing easier the government announced a £250m Emergency Active Travel Fund (11/05/20). HCC used funding it was awarded from the first tranche to improve active travel infrastructure across Hertfordshire. The fund was renamed the Active Travel Fund and the second tranche of funding was awarded based on plans submitted to the DfT.

Table 3-2 - County Strategies, Policies and Plans

Document	Publisher and Date Published	Description
Local Transport Plan 4 (2018-2031)	Hertfordshire County Council (HCC)	The plan sets out a new transport vision for Hertfordshire and accelerates the transition towards a less car-centric, more balanced approach which caters for all forms of transport and seeks to encourage a switch from the private car to sustainable transport wherever possible. The key policy is the transport user hierarchy which puts the needs of vulnerable road users above those of private car users. The document also highlights several regionally strategic corridors in which sustainable transport is a priority
South Central Growth and Transport Plan (SCGTP)	Hertfordshire County Council (HCC)	The suite of GTPs are area-based transport strategies which support LTP4. The area covered by SCGTP includes Welwyn Hatfield Borough. The SCGTP recognises the large amount of development proposed which will increase demand on an already constrained highway network unless a significant shift towards walking, cycling and public transport is achieved.
Intalink Hertfordshire Bus Strategy	Hertfordshire County Council (HCC)	Sets out in greater detail the plans to grow the local bus network to support the shift towards more sustainable transport within Hertfordshire. The strategy's plans include giving greater priority to bus services in traffic, making sure bus information is easy to access and raising standards of operation across the county.
Bus Service Improvement Plan	Hertfordshire County Council (HCC) 2021	Acts as the vision for how bus services will be developed and enhanced across Hertfordshire in the coming years. Key corridors with gaps in the bus network across Hertfordshire have been identified; these corridors would benefit from increased frequencies and enhanced connectivity particularly during the weekday peak and interpeak periods.
Emerging Place and Movement Design Guide – Draft	Hertfordshire County Council (HCC) Draft 2021	A technical approach to highway design which recognises the needs of different road users in Hertfordshire and the interfaces between them. It intends to provide a way of looking at the appropriate function of any section of highway and a basis for deciding which activities should be prioritised. In doing so, it aims to provide a means to translate LTP4 policies into practice.

Sustainable Hertfordshire Strategy	Hertfordshire County Council (HCC) 2020	Sets out initial policies and strategies needed to embed sustainability across all its council operations and services throughout the county. Identifies the need for an increased mode shift away from the car towards walking and cycling will help achieve the county's plans for fighting climate change.
Speed Management Strategy	Hertfordshire County Council (HCC) 2020	An update of the previous strategy adopted in 2014 and reflects changes in regulation, guidance and policy (including the adoption of LTP4). The key aim of the strategy is to ensure that the speed limit for any road is in keeping with its environment and one of the core principles is that there will be the encouragement of speed limit changes that support active travel (walking and cycling).
Hertfordshire Active Travel Strategy	Hertfordshire County Council (HCC) 2013	Identifies key challenges that people living and working in Hertfordshire face when making decisions to replace car journeys, or generate new trips, through more walking and cycling. It also set out how the County Council and its partners would identify, deliver and promote interventions to increase the numbers of people walking and cycling in Hertfordshire.
Roads in Herts Design Guide	Hertfordshire County Council (HCC) 2011	Encourages a holistic approach to street design and a reduced dominance of motorised traffic through design objectives that promote alternative modes of transport. The document is due to be replaced by the Place and Movement Design Guide.
Sustainable Travel Towns	Hertfordshire County Council (HCC)	A programme of town based measures (including behaviour change initiatives as well as infrastructure improvements). Each Sustainable Travel Town will implement a package of measures aimed at achieving a significant switch to walking, cycling and public transport.
Rights of Way Improvement Plan	Hertfordshire County Council 2017	The Rights of Way Improvement Plan (RoWIP) provides the framework for the changes, enhancements, and improvements to Hertfordshire's extensive Right of Way network, aiming to provide better provision for walkers, cyclists, and equestrians regardless of ability level or familiarity with the network.



Table 3-3 - Borough Strategies, Policies and Plans

Document	Publisher and Date Published	Description
Local Plan (Welwyn Hatfield Borough Council, 2016-2036)	Welwyn Hatfield Borough Council Submitted 2017	The Local Plan sets out the planning framework for the borough for the plan period. It identifies a number of challenges facing Welwyn Hatfield over the plan period and sets out a vision and policies to address them and to help create the type of place the community would like the borough to be. The document contains policies to bring about sustainable development, and promote the use sustainable modes of transport including making appropriate provision for pedestrians and cyclists.
Draft Infrastructure Delivery Plan (IDP)	Welwyn Hatfield Borough Council 2016	The purpose of the IDP is to identify the infrastructure requirements arising out of an authority's Local Plan over the entire plan period; considering the cost, timing, potential funding mechanisms and responsibilities for delivery. Improvements to the borough's existing green infrastructure network and the provision of new green infrastructure, will be crucial in supporting the levels of development identified in the Local Plan
Hatfield 2030+ Transport Strategy	Hatfield Renewal Partnership 2017	Document forms part of the Hatfield 2030+ regeneration framework that aims to provide guidance and direction for the development and growth of Hatfield over the next twenty years. The Strategy explains how the identified objectives will help to provide a transport network capable of supporting the future vision for Hatfield.
Welwyn Hatfield District Plan	Welwyn Hatfield District Council 2005	Until the Local Plan is adopted this plan remains the adopted development plan for the borough. The District Plan is supportive of sustainable development and modal shift and supports delivery of Hertfordshire County Council's transport strategies.
Welwyn Garden City Town Centre North Supplementary Planning Document	Welwyn Hatfield Borough Council 2015	The Supplementary Planning Document supplements Policy TCR4 of the District Plan which allocates this site for development and requires detailed guidance on the type of design, layout of development and mix of uses for the site.

<p>Northaw and Cuffley Parish Plan</p>	<p>Northaw and Cuffley Parish Council. 2022</p>	<p>Neighbourhood plans provides an opportunity for local people to plan for the types of development which meet their community’s needs and align with the strategic needs and priorities of the wider local area. The Northaw and Cuffley plan has aspirations to improve the connectivity of a number of walking routes, supports creating new cycle links and suggests changes to public realm to improve pedestrian accessibility and improved crossing points.</p>
<p>Welwyn Hatfield Climate Change Strategy</p>	<p>Welwyn Hatfield Borough Council 2019</p>	<p>WHBC declared a climate change emergency in June 2019 and set itself the ambitious target to be zero net carbon by 2030. The action plan for the strategy sets out existing actions that the Council is already undertaking and new actions that the Council and its partners will take to tackle climate change.</p>

3.2 RELEVANT PLANS IN NEIGHBOURING AUTHORITIES

3.2.1. At the time of writing, St Albans City and District Council and North Herts District Council are also developing LCWIPs in partnership with HCC, with WSP supporting. The walking and cycling networks in these three LCWIPS have therefore been aligned. The key inter-urban routes that connect to the Welwyn Hatfield Borough LCWIPs are:

- **St Albans City and District LCWIP:** The Alban Way and A1057 link St Albans to Hatfield across the district/borough boundary to the southwest of the Galleria shopping centre. The Alban Way is an off-carriageway active travel route between the two, while the A1057 is a slightly more direct route but has a worse level of service for pedestrians (there is only one footway) and cyclists (who must mix with high volumes of traffic).
- **North Herts District LCWIP:** The B197 corridor links Welwyn to Stevenage, routing via Woolmer Green (in Welwyn Hatfield Borough) and Knebworth (North Herts District).

3.2.2. HCC has further aspirations to produce LCWIPs for each of the authorities across Hertfordshire county, including Hertsmere and East Herts which also border Welwyn Hatfield borough.

3.2.3. These connections are discussed in more detail in sections 5, 6, 7 and 8.

4

GATHERING INFORMATION



4 GATHERING INFORMATION

4.1 INTRODUCTION

4.1.1. The following information sources were mapped in GIS and referred to as the first drafts of the walking and cycling network plans were developed:

- Outputs of the Propensity to Cycle Tool
- Outputs of the WSP/HCC LCWIP GIS Model
- Existing Rights of Way
- Existing Cycle Routes and Facilities
- Strategic Routes / Connections (from the strategies, plans and policies in section 3).

4.1.2. This section of the report introduces each of these information sources, explaining why they are relevant to the LCWIP. Sections 5 and 6 of the report explain how they were used together to develop the draft network plans.

4.2 PROPENSITY TO CYCLE TOOL

OVERVIEW

4.2.1. The Propensity to Cycle Tool (PCT) was developed on behalf of the DfT between 2016-2019. It is a web-based tool designed to help authorities plan cycle networks, with LCWIPs in mind.

4.2.2. The PCT helps identify desire lines for cycle traffic for trips to work and to schools. It can also help inform network development, as its outputs can be configured to be applied to the existing network, giving 'heat maps' of indicative demand.

4.2.3. It is based on data from the 2011 Census, which is then manipulated and uplifted to represent a number of future scenarios, showing potential cycle demand patterns. Two scenarios were modelled in the study area for this LCWIP: "Government Target (Near Market)" and "Go Dutch". The latter scenario looks at the distances between homes and workplaces and applies Dutch willingness to cycle to these, imagining how many additional trips could be cycled if there was Dutch-style cycle infrastructure in the UK and Dutch levels of willingness to cycle.

4.2.4. More information on the PCT and its scenarios is on the <https://www.pct.bike> website.

PCT OUTPUTS

- 4.2.5. The PCT outputs for both journeys to work in both the “Government Target (Near Market)” and “Go Dutch” scenarios are shown at a Borough-wide level, applied to the network, in Figure 4-1 and Figure 4-2. This can be found in greater resolution in Appendix B
- 4.2.6. The coloured lines on these plans represent a heat map of the potential for commuting cycle trips on a given part of the network under the two different scenarios. The numbers in the scale refer to potential cycle commute trips on a weekday.
- 4.2.7. The parts of the network highlighted in orange and red in these figures show the routes with the greatest potential for commuter cycle trips. There is greater potential shown in the “Go Dutch” output, as this scenario is more optimistic. These outputs show that the routes with the most potential are mostly within and between Welwyn Garden City and Hatfield. Additional high-potential routes include links between Hatfield and St Albans, the B197 corridor and connections to Welham Green.

Figure 4-1 – PCT Output - Borough-wide “Government Target (Near Market)” Scenario

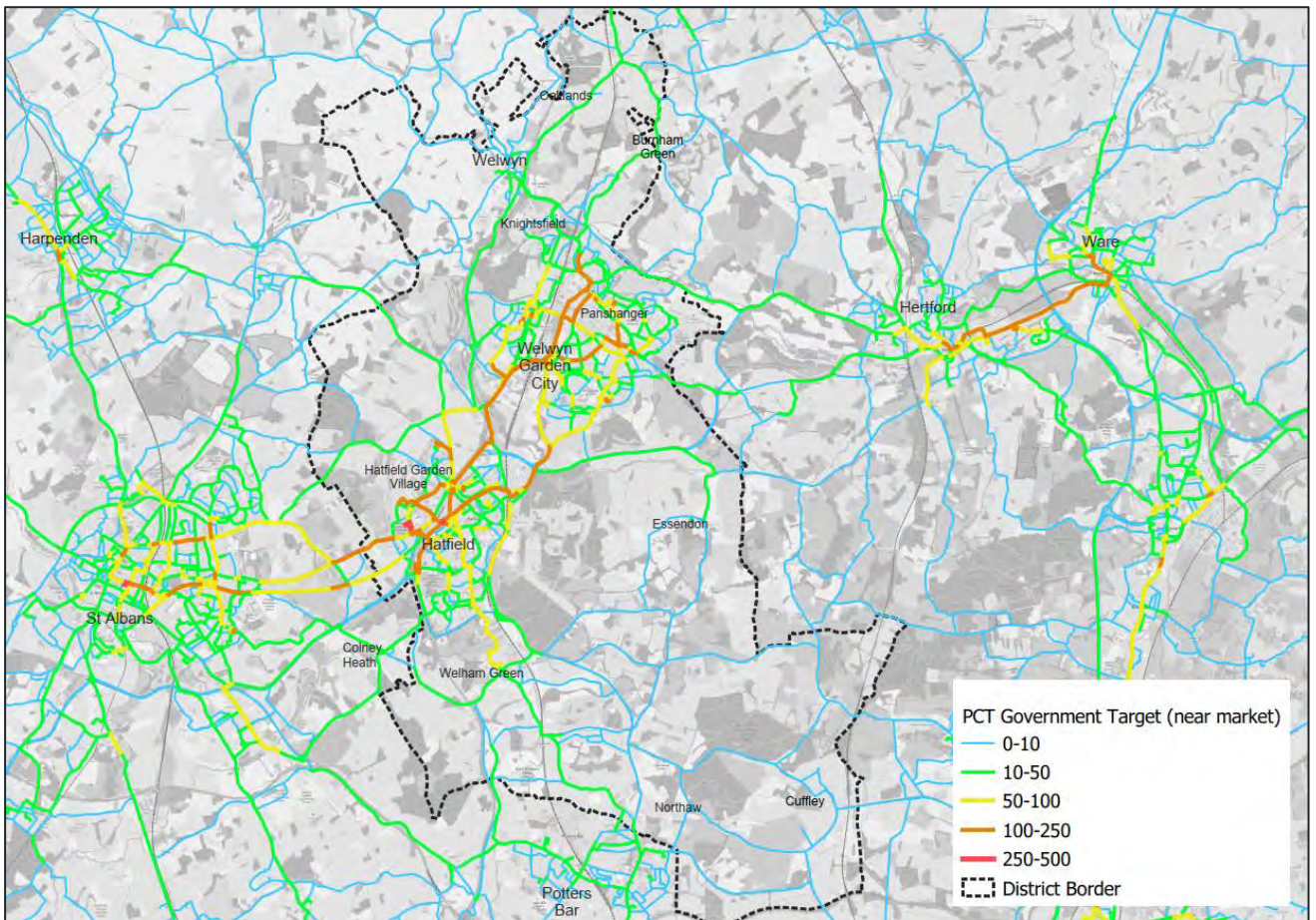
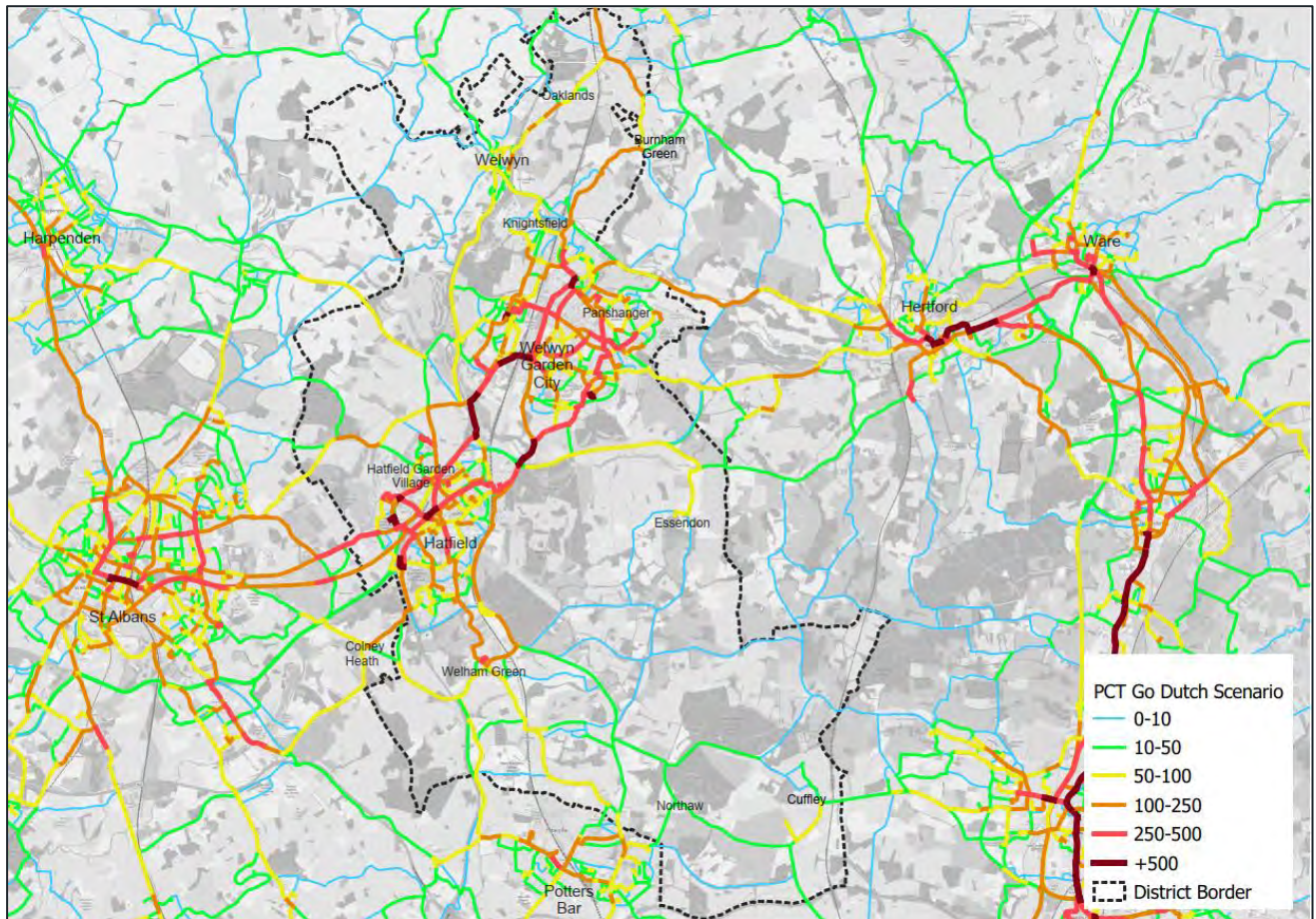


Figure 4-2 – PCT Output - Borough-wide “Go Dutch” Scenario



LIMITATIONS

- 4.2.8. While the PCT is a very useful tool, it has some key limitations when considering potential demand for cycling. These are also acknowledged in the DfT LCWIP guidance.
- 4.2.9. The first key limitation is that it only looks at journeys to work and school. This misses out a large number of shorter trips that are well-suited to cycling, such as trips to the shops, town centres and multi-modal trips to and from rail stations.
- 4.2.10. A second key limitation is that it is based on old data and does not consider any residential developments or key employment areas built since 2011, nor any planned developments.
- 4.2.11. Finally, it also is limited in that it only considers cycling trips.
- 4.2.12. For these reasons, WSP has built a GIS-based LCWIP model for Hertfordshire which has a similar functionality to the PCT but is customisable in terms of the origins, destinations and network that is input. The next section of the report explains this in more detail and displays and discusses the outputs of the model.

4.3 LCWIP GIS MODEL

OVERVIEW

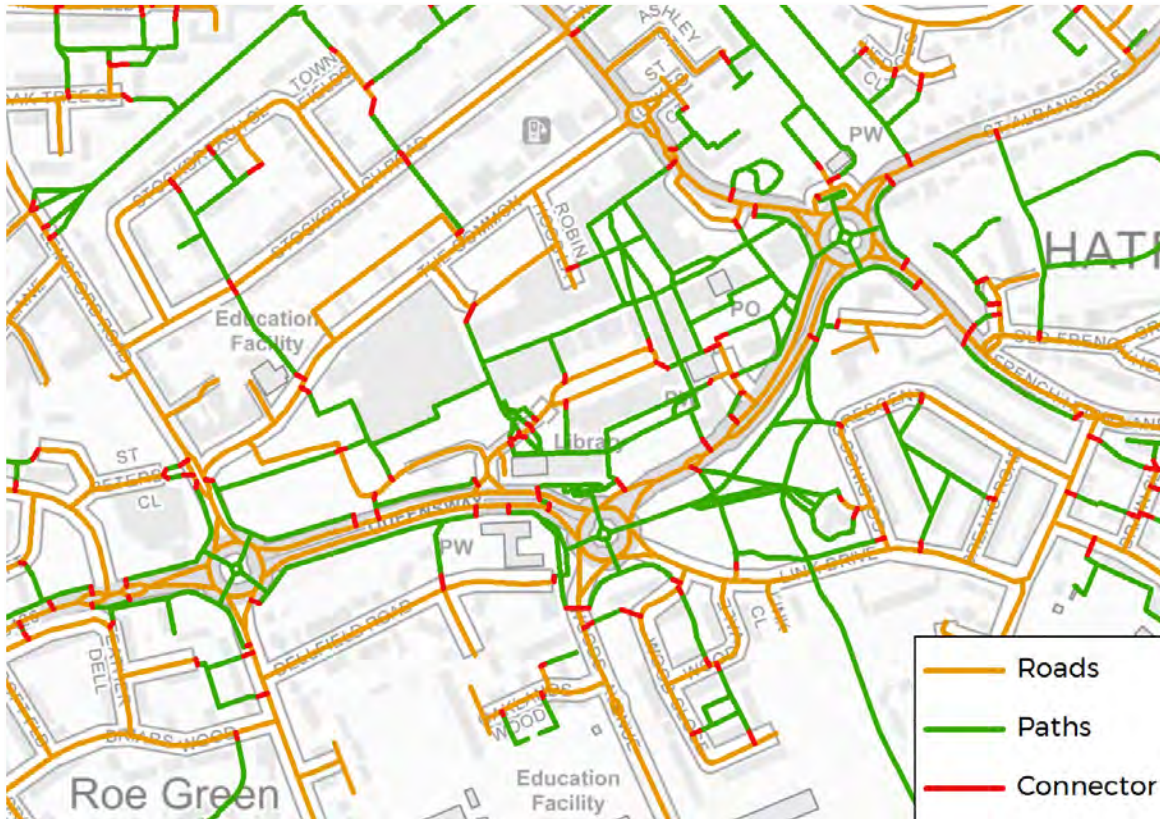
- 4.3.1. WSP has built a GIS model for Hertfordshire County Council (HCC) to use in their LCWIPs. This model compensates for the limitations in the PCT by allowing the latest origin and destination data to be input and applied to a custom network. This gives us an indication of potential demand for cycle and walk trips in addition to the commute and the school run, and also takes into account potential demand from housing built since 2011 and housing planned from the future.
- 4.3.2. This section of the report explains the model in simple terms. A more detailed technical explanation included in Appendix C. In brief, the model consists of a custom network (which trips are assigned to), a series of origin points (based on existing and future housing locations) and a series of destination points. Potential walk and cycle trips are then assigned to the network to link these origins and destinations, based on a set of assumptions agreed between WSP, HCC and WHBC. This gives an indication of where in the network there may be suppressed demand for walking and cycling trips, and/or potential future demand.

NETWORK

- 4.3.3. The model's network consists of all the roads and paths which are assumed to be walkable and cyclable in Hertfordshire and its surrounding areas (the network extends to 8km beyond the county boundary in all directions).
- 4.3.4. The network consists of two Ordnance Survey MasterMap datasets (as of May 2021): one is the most detailed road network available and the second is the associated paths dataset. These were merged together as can be seen in Figure 4-3. Motorways were removed from this network.
- 4.3.5. It is acknowledged that not every road or path on the network will be walkable (as some roads don't have footways etc.). For the purposes of modelling this is okay as the model's purpose is to identify potential demand, which includes suppressed demand due to lack of facilities. Where footways aren't present, this will likely be identified during the audit stage in any case.
- 4.3.6. Similarly, not every road or path on network will be cyclable, either legally or practically (due to traffic speeds, gradients etc.). Again, the purpose of the model is to identify potential demand. Whether roads or paths are cyclable, and can be made cyclable, is investigated later in the process.

4.3.7. One-way streets have been modelled as two-way on this network. For cycling, this is to reflect the fact that many one-way streets can often be converted to two-way streets for cycling with relative ease. This allows us to see where such an intervention may be beneficial.

Figure 4-3 – Model Network (built from Ordnance Survey MasterMap Datasets)



ORIGIN POINTS

4.3.8. The origin points dataset used in the model was created from the following sources:

- Current residential addresses (Source: AddressBase Plus data (for existing households));
- Recently completed and proposed employment sites (Source: Welwyn Hatfield COMET R6 Employment Completions L3); and
- Proposed housing developments (Source: Welwyn Hatfield COMET R6 Perm Sites L3).

4.3.9. There are a total of 289,332 origin points in the study area (Welwyn Hatfield Borough boundary plus 8km). Each origin point is weighted to represent its current or likely future population.

DESTINATION POINTS

4.3.10. The destination points datasets include:

- Bus stops
- Coach stations
- Colleges/universities
- Community centres
- Dentists
- Events spaces
- GPs/walk-in centres
- Hospitals
- Key employment areas
- Libraries
- Local (neighbourhood) centres
- Market areas / marketplaces
- Nurseries
- Parks/open spaces
- Post offices
- Primary schools
- Railway stations
- Retail parks
- Secondary schools
- Sport and leisure centres
- Supermarkets
- Tourist attractions / points of interest
- Town centre areas

4.3.11. The walking destination points dataset combined all of these destinations, creating a total of 9,216 points.

4.3.12. The cycling destination points dataset omitted bus stops (as few cycle trips are made to bus stops), creating a total of 6,394 points.

ASSUMPTIONS

4.3.13. In simple terms, the model connects the origins and destinations using the network, and gives a heat map style output, showing the relative number of trips on different parts of the network. These outputs (for the walking model run and cycling model run) are shown in Figure 4-4 and Figure 4-5 respectively.

4.3.14. There are a series of assumptions that inform these outputs:

- Not all origin points are linked to all destination points. For most destination types, origin points are only linked with the closest of each type (e.g. the closest library, the closest supermarket).
- For some destination types, such as schools, origin points were linked with the nearest 3 or 5 destinations of that type.
- For a small number of destination types, including town centres and key employment areas, origin points were linked with every destination of that type.
- Where origins linked with multiple destinations of a type, the model assigned more trips to closer destinations and, in the case of key employment areas, it additionally factored in the likely number of jobs (based on the size of the key employment area) and would assign more trips to larger, closer employment sites.
- Origins are linked with destinations along the shortest route available on the network, as directness is a key factor when considering walking and cycling desire lines.
- Trips over 2km in length are excluded from the walking model, as the focus in an LCWIP is on short utility trips. 2km is the length referred to in the LCWIP guidance and most people can walk this distance in 20-30 minutes.
- Trips over 8km in length are excluded from the cycling model for a similar reason. Gear Change refers to trips up to 5 miles (roughly 8km) in length as journeys 'perfectly suited to cycling' for 'many people'.
- The model generates more trips to some destinations than others. Trip proportions were initially based on data on trip types from the Hertfordshire Travel Survey, then discussed, adjusted and agreed. Trip proportions are different in the walking and cycling models. More trips were generated to key employment areas, town centres, schools, railways and retail.

4.3.15. Greater detail on the model and its assumptions (e.g. a breakdown of percentages of trips in the model to different destinations) can be found in Appendix C.

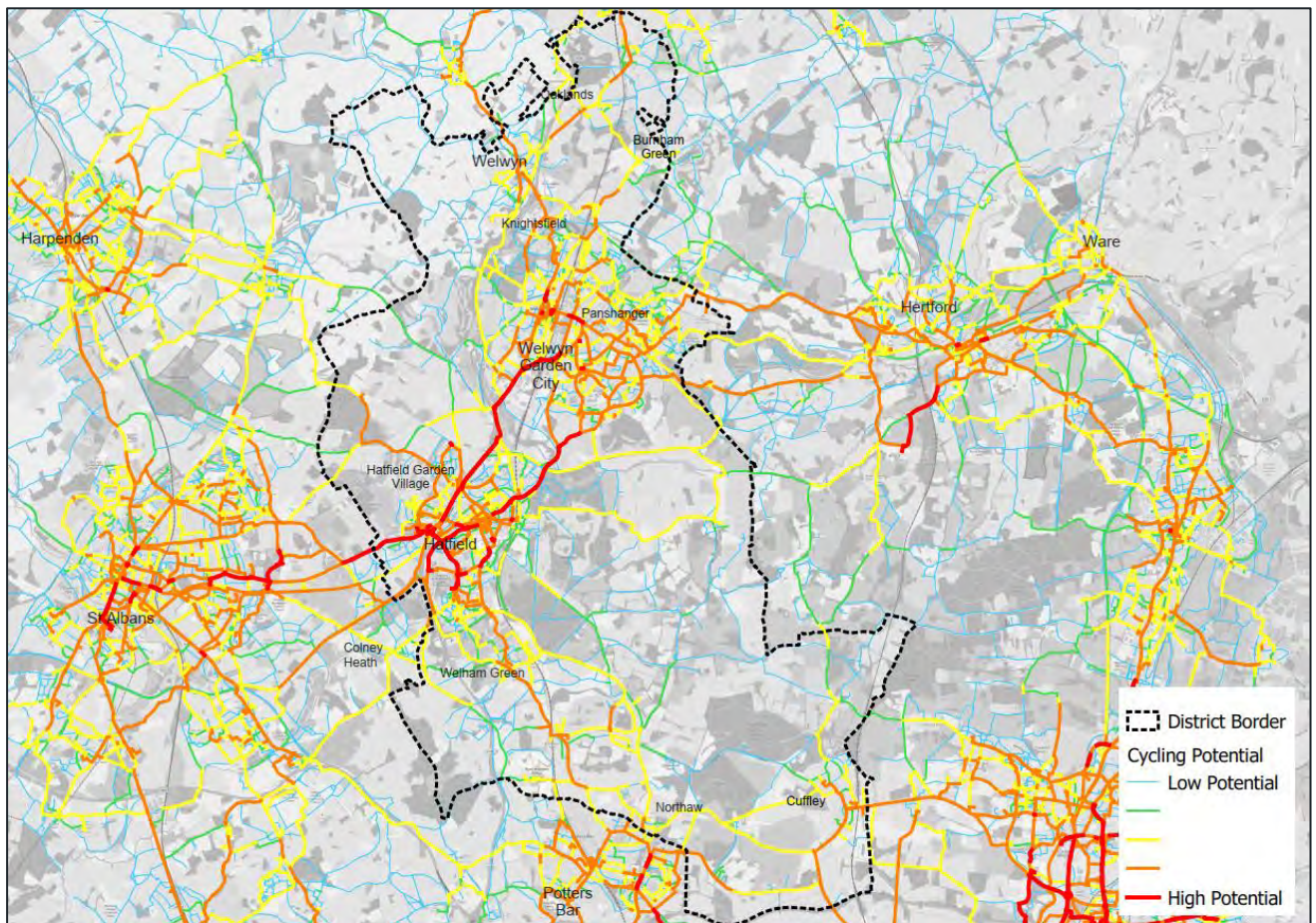
LIMITATIONS

4.3.16. As with the Propensity to Cycle Tool, the WSP/HCC LCWIP GIS model has limitations and is not a perfect representation of reality. This is true of most models in transport planning. In the case of the GIS model, for example, the model does not take into account topography and many assumptions had to be made as listed in the previous section. However, it approximates trips to the network which may be missed by the Propensity to Cycle Tool, and by using the two together (along with other information sources), a fuller picture of potential walking and cycling demand in Welwyn Hatfield has been built.

GIS MODEL CYCLING OUTPUTS

4.3.17. The model outputs for the cycling model run are shown at a Borough-wide level in Figure 4-4. This can be found in greater resolution in Appendix D.

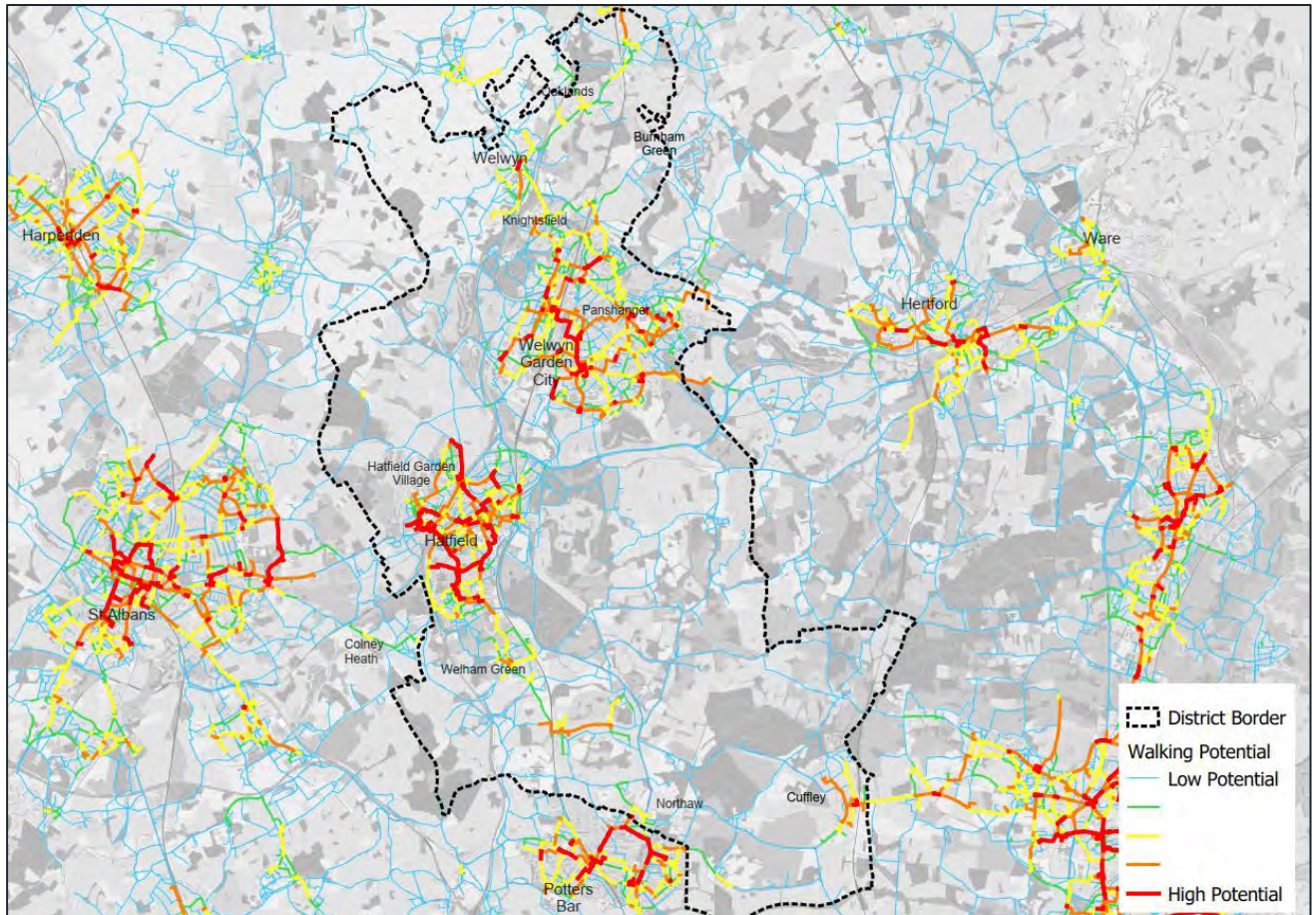
Figure 4-4 - LCWIP GIS Model - Borough-wide Cycling Outputs



GIS MODEL WALKING OUTPUTS

4.3.18. The model outputs for the walking model run are shown at a Borough-wide level in Figure 4-5. This can be found in greater resolution in Appendix E.

Figure 4-5 – LCWIP GIS Model - Borough-wide Walking Outputs



DISCUSSION

4.3.19. The effect of the different assumptions made in the two different models can clearly be seen when comparing the two outputs. The cycling model output, with the greater trip distance of up to 8km, shows inter-urban trips (e.g. between Welwyn-Garden City and Hatfield, Welwyn-Garden City and Hertford, Hatfield and St Albans). By contrast, the walking model output shows demand concentrated more within the towns and villages. In future iterations of the LCWIP, there may be merit in looking at increasing the 8km limit for cycles to consider the potential for e-bikes helping to facilitate longer inter-urban journeys.

4.3.20. It should be noted that the numbers referenced in the legend are relative and not absolute (i.e. they do not represent that there is more potential for cycling trips than walking trips).

4.4 RIGHTS OF WAY

- 4.4.1. Hertfordshire County Council provided a GIS database of the existing Rights of Way (ROW) across Welwyn Hatfield Borough. This database included three different classifications:
- Bridleway: a path where walking, cycling and riding a horse is permitted. Motor vehicles are not permitted.
 - Restricted byway: these have the same permissions and restrictions as bridleways but are often former byways/roads and so tend to be surfaced.
 - Byway open to all traffic: where there is a right of way for vehicular and all other traffic, but the way is used mainly by pedestrians and cyclists.
- 4.4.2. For the purpose of this LCWIP, these layers were combined and shown as a singular layer 'Rights of Way' (also sometimes referred to in the LCWIP as 'Rights of Way (Legally Cyclable)'). Based on the definitions above, it was assumed that all identified ROW included were legally accessible for pedestrians and cyclists, although it is acknowledged that many of these may not be fully accessible at all times of year and in all weather conditions and would therefore require specialist equipment for people to use such as walking boots or specialist bikes. Furthermore, during consultation some stakeholders reported cycling bans on certain ROW.
- 4.4.3. These ROW were considered when planning the walking and cycling networks – connectivity between the ROW and planned routes has been sought wherever possible. Some ROW were on routes which were visited and audited. Where these ROW were not fully accessible, improvements such as widening, and resurfacing have been suggested. More detail on the improvements proposed is available in section 7.
- 4.4.4. It would be useful if, in future, information on surfacing, 'walkability' and 'cyclability' of these ROW could be logged.

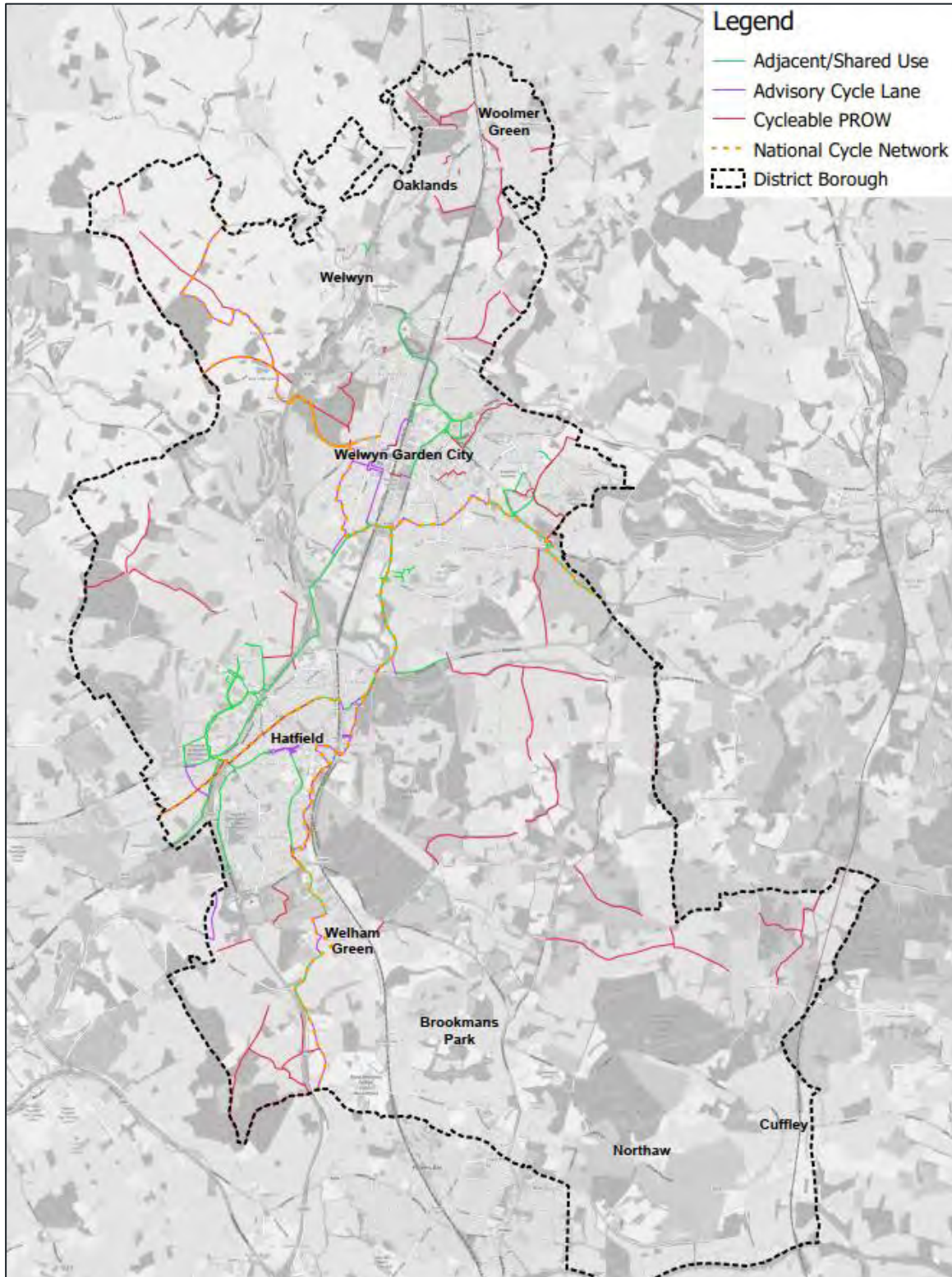
4.5 EXISTING CYCLE FACILITIES AND ROUTES

- 4.5.1. In addition to the ROW layers, HCC also provided details of other existing cycle facilities. These include off-road cycle tracks (sometimes referred to as 'adjacent use'), shared footways and advisory cycle lanes.
- 4.5.2. There is a concentration of off-road cycle facilities in northeast Welwyn Garden City and west Hatfield. Signage across the two urban areas links these facilities with ROW, advisory cycle

lanes to create a simple network of cycle routes, although some of these routes also direct cyclists onto busy roads where they are unsegregated from motor traffic.

- 4.5.3. Notable routes include the Alban Way (a route between St Albans and Hatfield for walkers, runners and cyclists) and National Cycle Network (NCN) Route 61 which connects Welwyn Garden City with Hertford. Figure 4-6 shows the location of the different types of existing cycle facilities and routes in Welwyn Hatfield.
- 4.5.4. It should be noted that WSP has not assessed each of these for suitability (only those which were on routes selected for audit). However, it is not expected that many are LTN 1/20 compliant, as LTN 1/20 discourages shared use footways and advisory cycle lanes, and requires off-road cycle tracks to be wide and have priority crossings over side roads and major junctions. Where existing cycle routes have been audited, improvements such as converting advisory cycle lanes into segregated facilities and upgrading shared use footways to separate pedestrians from cyclists have been suggested. More detail on the improvements proposed is available in section 7.

Figure 4-6 – Existing Cycle Facilities in Welwyn Hatfield



4.6 STRATEGIC ACTIVE TRAVEL ROUTES AND CONNECTIONS

4.6.1. Specific strategic active travel routes mentioned in section 3 (shown in detail in Appendix A) were mapped and considered when developing the draft walking and cycling networks. These are listed below, organised by their document of origin.

Local Transport Plan 4

4.6.2. Two strategic routes from HCC's Local Transport Plan 4 pass through the Welwyn Hatfield area. These are:

- Corridor 3: Luton – Stevenage – Peterborough
- Corridor 5: Hemel Hempstead & Watford – St Albans – Harlow)

South Central Growth and Transport Plan

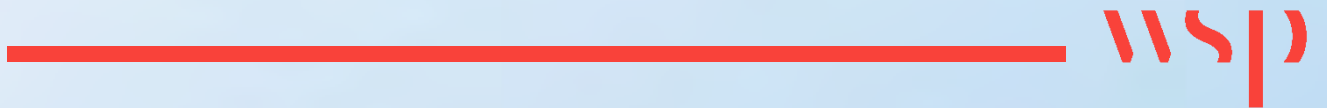
4.6.3. The following connections are locations of packages of measures from the SCGTP where improvements for walking and cycling have been identified as being required. Connections marked with an asterisk originated from the **Hatfield 2030+ Transport Strategy**.

- Hatfield-College Lane/Cavendish Way*
- Hatfield-Cavendish Way/Queensway
- Bishop's Rise*
- Woods Avenue/Travellers Lane*
- Hatfield-French Horn Lane*
- Hatfield-Comet Way/Wellfield Road*
- Hatfield-St Albans Road East/Hertford Road*
- North West Hatfield and Lemsford
- St Albans-Welwyn Garden City
- Hatfield – Welwyn Garden City
- Mundells Area Non-Car Accessibly and Travel Planning
- Welwyn Garden City Active Travel Improvements
- Bridge Road Transformation – Welwyn Garden City Town Centre
- Welwyn Garden City – Stevenage and Hitchin
- Luton-Wheathampstead – Hatfield and Welwyn Garden City
- Hatfield – Potters Bar Cycle Corridor Enhancements

4.6.4. The location of these strategic routes was considered when identifying primary and secondary walking and cycling routes as described more in sections 5.2 and 6.3. For example, where a particular route was identified as high potential in the GIS Model, the PCT outputs, and was also included in the list of strategic routes above, this was a clear case for a route to be a primary route rather than a secondary route.

5

NETWORK PLANNING FOR CYCLING



5 NETWORK PLANNING FOR CYCLING

5.1 INTRODUCTION

- 5.1.1. This section explains how the information gathered in the previous section was used to develop an initial draft network. It goes on to explain how this draft network was presented to stakeholders, amended, and then used to determine the relative importance of different routes and thus which routes to audit and develop infrastructure plans for.
- 5.1.2. A key goal at this stage was to determine where the greatest propensity for cycling exists – where targeted infrastructure improvements could generate the most new cycle trips.

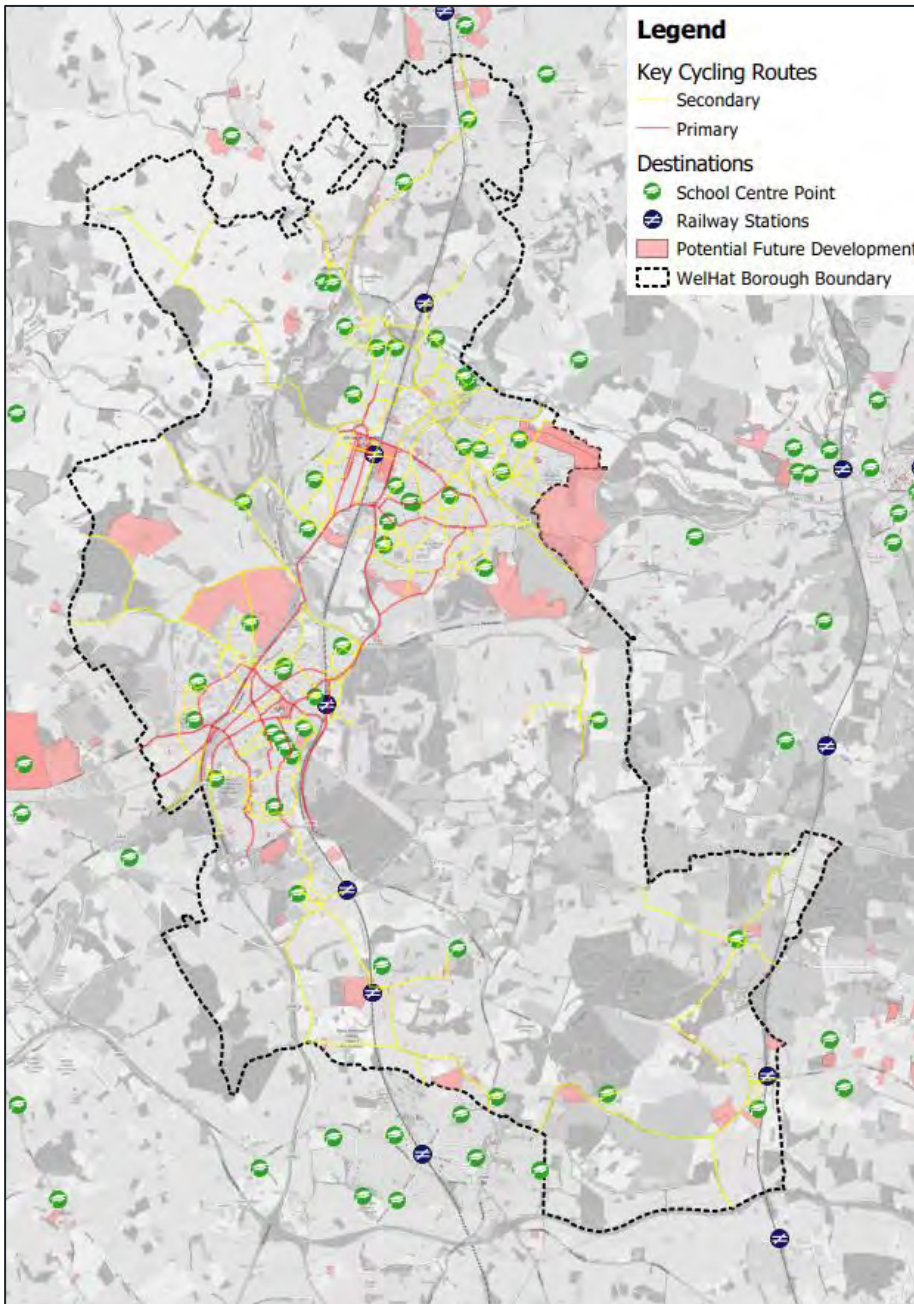
5.2 IDENTIFYING KEY CYCLING ROUTES

- 5.2.1. As identified in section 4, model outputs, existing cycle facilities and strategic active travel routes and connections were mapped alongside potential future developments and key destinations (rail stations, schools and key employment areas) for reference. The LCWIP project team then used the model outputs to determine ‘primary’ and ‘secondary’ cycle desire lines across Welwyn Hatfield as per the definitions in the LCWIP guidance.
- 5.2.2. Where the model outputs identified desire lines with greater potential demand (especially those connecting large residential areas with key destinations such as town centres), these were classed as primary desire lines / primary routes. Other routes, connecting to schools, colleges and employment sites were classed as secondary desire lines / secondary routes
- 5.2.3. The majority of primary routes were identified within (and between) the two key urban areas specified in the scoping report (Welwyn Garden City and Hatfield). Some additional primary inter-urban cycle routes were identified, notably the B197 corridor from Welwyn towards Knebworth in the north of the borough, and links between Welham Green, the Royal Veterinary College, Brookmans Park and Potters Bar in the south. Secondary routes were identified connecting the remaining neighbourhoods and smaller settlements to the network.
- 5.2.4. When identifying routes, the LCWIP project team also referred to the existing cycle facilities and routes, to ensure these were either considered as potential secondary or primary routes, or at least connected to the network. For example, NCN routes 12 and 61 were identified as primary and secondary routes. Most county and borough strategic routes and connections were backed up by the model outputs and therefore also catered for with secondary cycle routes as a minimum.

5.3 DRAFT NETWORK PLAN FOR CYCLING

5.3.1. The draft network plan for cycling was developed and can be seen in Figure 5-1 below. It is important to note that this is not the final network plan for cycling, which is presented later in this report and in Appendix F. This draft plan was presented to key stakeholders to gain feedback on the routes selected and identify any key routes that may have been omitted or misclassified. More information on the initial round of stakeholder engagement is available in the following sub-section.

Figure 5-1 – Draft Welwyn Hatfield Borough Network Plan for Cycling



5.4 STAKEHOLDER ENGAGEMENT

- 5.4.1. Key stakeholders were given the opportunity to provide feedback on the draft network plans for cycling, review the trip attractors mapped in the data gathering process and identify any key origin points, destination points and routes that were missing from the plan.
- 5.4.2. This stakeholder engagement took place over a three-week period and began with a presentation and workshop using Microsoft Teams and the online whiteboard tool 'Miro'. There were two workshops: one for the north of the Borough (30 November 2021) and one for the south of the Borough (7 December 2021).
- 5.4.3. Both walking and cycling were discussed at these workshops and stakeholders were able to comment on the draft network plans for walking as well as cycling. For more information on the aspects of this stakeholder engagement period regarding network planning for walking, please see section 6 (section 6.5 in particular).
- 5.4.4. Furthermore, stakeholders were also shown plans of barriers (such as rail lines, rivers and busy roads) causing severance between areas, alongside existing and potential future junctions and crossings providing connectivity over these barriers. This was to encourage stakeholders to consider connectivity between areas as well as along routes. Stakeholders were asked to consider whether the barriers shown were correct, whether any were missing, and where new crossings and junctions improvements might help reduce severance. These plans referred to barriers for both pedestrians and cyclists and so stakeholders were encouraged to consider severance to walking routes (as well as severance to cycling routes), leaving the feedback together on the same plans.
- 5.4.5. The workshops were attended by representatives from:
 - Hertfordshire County Council
 - Welwyn Hatfield Borough Council
 - Arlington
 - North Mymms Parish Council
 - Welwyn Hatfield Cycling
 - Hertfordshire County Council Countryside and Rights of Way
 - Living Streets
 - Sustrans
 - Gascoyne Cecil Estates

- University of Hertfordshire Estates
- Royal Veterinary College

5.4.6. The Miro 'whiteboard' provided stakeholders with a way to comment on a map of the draft network. The whiteboard remained open and available for comment online for two weeks after the workshops. This allowed stakeholders who attended the workshops additional time to digest the draft network plan and comment in full. It also gave stakeholders who were unable to attend the virtual workshop a chance to view the material and comment in their own time.

5.4.7. Stakeholders provided valuable feedback in relation to the draft cycling network, including:

- Identifying cycle routes that need integrating into the network plan
- Highlighting areas that are currently dangerous for cyclists and need safety improvements
- Pointing out alternative adjacent routes that are more popular among residents
- Noting routes that should be considered as primary in the cycle network
- Highlighting where cycle routes are missing within the borough
- Confirming locations of barriers between areas, and where crossings and junctions might best be located to overcome this severance

5.4.8. Some stakeholders had technical difficulty using Miro. The LCWIP project team sent these stakeholders the plans via email. All email feedback from stakeholders then came to a single dedicated address which was set up for the consultation.

5.4.9. Over 300 comments relating to cycling were left on the board, with comments distributed fairly evenly across the geography of the borough. Extensive comments were received on the condition of the existing streets for cycling, cycling on rights of way, details of forthcoming developments, the suitability of the suggested routes and finally additional routes which should be added to the plan.

5.4.10. Following the stakeholder engagement, all comments were logged, reviewed and, where relevant, changes were made to the network plans. The updated network plans can be seen in section 7.5.1 and Appendix F. All comments have been collated and passed to HCC as a resource for future reference.

5.5 ROUTE AUDITING

- 5.5.1. Once the network plans were updated following stakeholder comments, the final selection of primary routes were considered for auditing. As there were more primary routes than could be audited with the resources available, a sub-set of primary routes was selected for audit based on stakeholder feedback and discussions between WSP, HCC and WHBC. This included the vast majority of primary routes in Welwyn Garden City and Hatfield as well as a links to from Welwyn Garden City to Welwyn and from Hatfield to Welham Green.
- 5.5.2. Audits were undertaken in January 2022 by trained WSP and HCC personnel visiting each route corridor on location using the [Department for Transport's Route Selection Tool \(RST\)](#). The tool was used to assess the suitability of a route in its existing condition against the core design outcomes of directness, gradient, safety, connectivity and comfort. The process of scoring routes against the criteria in the RST identified issues (e.g. cyclists mixing with high volumes of traffic) which informed the identification of infrastructure solutions (e.g. segregated infrastructure). The RST also identified critical issues at junctions to be addressed.
- 5.5.3. Once route audits were complete, infrastructure improvements were identified in cycle infrastructure improvement plans. These were combined with walking infrastructure improvement plans. These are introduced and discussed in section 7 of this report.

5.6 NON-AUDITED ROUTES

- 5.6.1. There are a number of primary and secondary routes which were identified but have not been fully audited in this first iteration of the LCWIP. Generally, there are no infrastructure improvements proposed on most of these routes for this reason. However, in visiting the towns and engaging with stakeholders, the LCWIP project team inevitably saw opportunities for active travel infrastructure improvements on routes that weren't formally audited. The opportunity was taken to present these to stakeholders in a second round of engagement discussed in section 7 and additional suggestions were added after that engagement too.
- 5.6.2. Where primary and secondary routes have been identified but not audited, these should be priorities for further investigation into active travel provision. This could be as part of a formal revision to this LCWIP or taken forward separately on a case-by-case basis. For example, where there are routes in the vicinity of proposed developments, Section 106 money could potentially be used to fund the auditing of these routes, the identification of infrastructure changes needed, and the design and construction of this infrastructure.

5.6.3. The most notable cycle routes which have not been audited in this first iteration of the LCWIP are the following primary routes:

- The B197 corridor from Welwyn to the boundary with North Herts via Woolmer Green.
- The routes south of Welham Green (including connections to the Royal Veterinary College, Brookmans Park and Potters Bar).

5.6.4. More information on these routes is included in section 7.5.

6

NETWORK PLANNING FOR WALKING



6 NETWORK PLANNING FOR WALKING

6.1 INTRODUCTION

- 6.1.1. This section explains how the information gathered in section 4 was used to develop a draft network plan for walking, with core walking zones and key walking routes. It goes on to describe how this draft network was presented to stakeholders, amended and then used to determine the relative importance of different routes and thus which routes to audit and develop infrastructure plans for.
- 6.1.2. As with the network planning for cycling, a key goal at this stage of the LCWIP was to determine where the greatest propensity for walking exists – where targeted investment in infrastructure improvements could generate the most new walking trips.

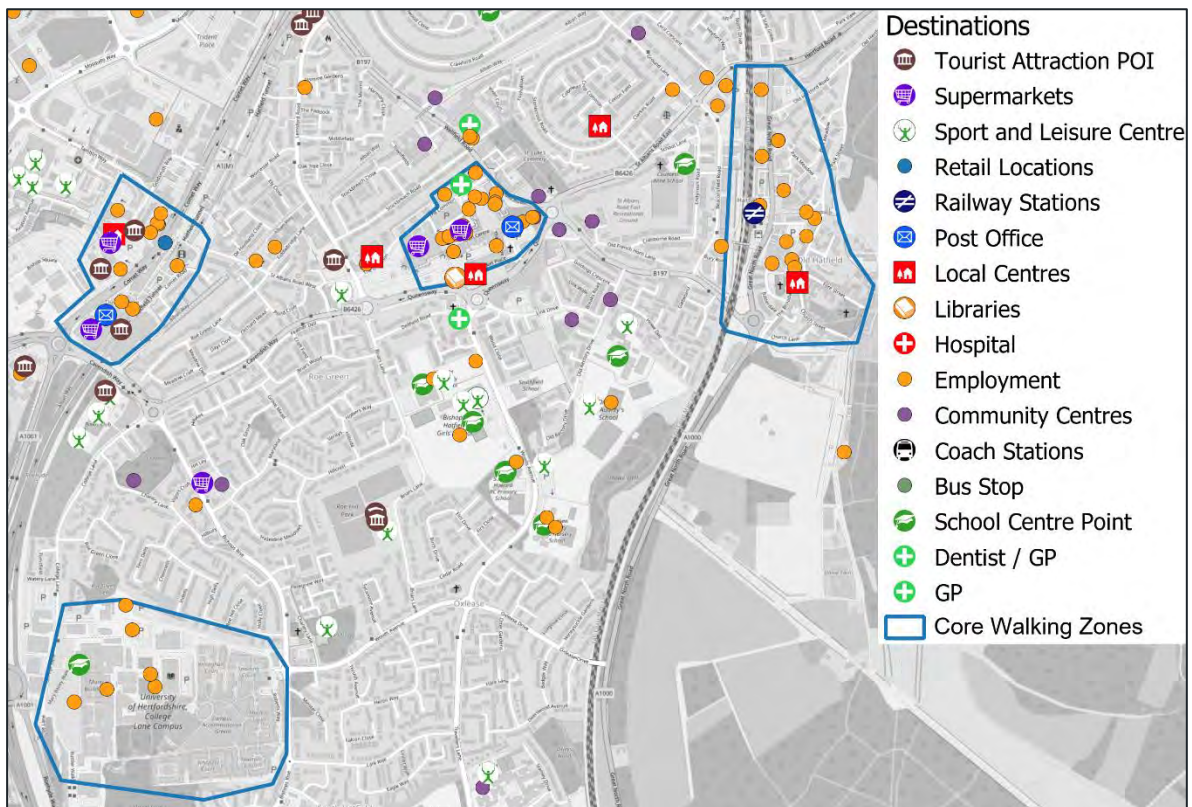
6.2 IDENTIFYING CORE WALKING ZONES

- 6.2.1. Core Walking Zones (CWZs) are defined in the LCWIP guidance as areas consisting “of a number of walking trip generators that are located close together – such as a town centre or business parks”. It states that “within CWZs, all of the pedestrian infrastructure should be deemed to be important”, i.e., the pedestrian infrastructure within CWZs (and connections to surrounding areas) should be of a high standard to support and encourage more walking trips.
- 6.2.2. One CWZ was identified in Welwyn Garden City, in the town centre. The extent of this CWZ is shown in Figure 6-1 below.
- 6.2.3. A number of potential CWZs were identified in Hatfield:
- The town centre shopping area (just north of Queensway)
 - Old Hatfield and Hatfield train station
 - The Galleria shopping centre
 - The University of Hertfordshire College Lane Campus
- 6.2.4. These are shown in Figure 6-2 below.

Figure 6-1 – Welwyn Garden City Core Walking Zone



Figure 6-2 – Hatfield Core Walking Zones



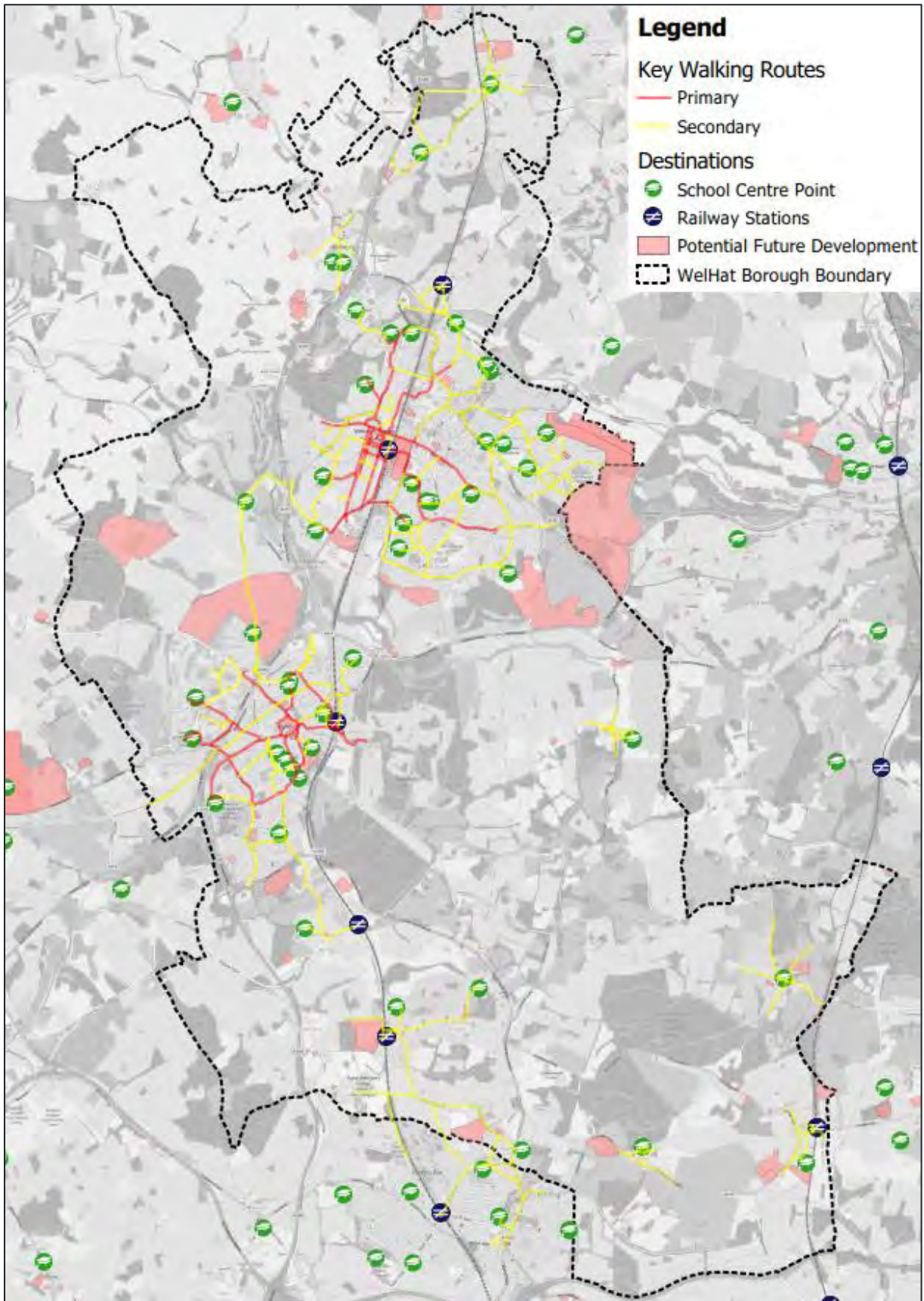
6.3 IDENTIFYING KEY WALKING ROUTES

- 6.3.1. The CWZs represent the focal points for pedestrian journeys within Welwyn Hatfield, and therefore the starting point for mapping walking routes is to identify those that serve these CWZs. For this first iteration of the LCWIP, primary routes were considered those main pedestrian routes within CWZs as well as routes connecting to the CWZ (up to 2km in length) and, in Hatfield, connecting the different CWZs to one another. Secondary routes (e.g., through local areas and connecting to primary routes) were added to increase the coverage in the urban areas. Secondary routes were also added within each of the key villages as identified in the scoping report.
- 6.3.2. The output of the LCWIP GIS model's walking run was mapped alongside the CWZs, ROW, strategic active travel routes and connections, potential future developments and key destinations (rail stations, schools and key employment areas) for reference. The LCWIP project team used the model output and the location of key destinations to identify primary walking routes to (and between) the CWZs and secondary routes across the Borough.

6.4 DRAFT NETWORK PLAN FOR WALKING

- 6.4.1. The draft network plan for walking can be seen in Figure 6-3 below. It is important to note that this is not the final network plan for walking, which is presented later in this report and in Appendix F. This draft plan was presented to key stakeholders to gain feedback on the routes selected and identify any key routes that may have been omitted or misclassified. Stakeholders were also shown zoomed-in plans of Hatfield and Welwyn Garden City which showed the locations of the Core Walking Zones alongside the draft primary and secondary routes. More information on the initial round of stakeholder engagement is available in the following sub-section.

Figure 6-3 – Draft Welwyn Hatfield Borough Network Plan for Walking



6.5 STAKEHOLDER ENGAGEMENT

- 6.5.1. During the same three-week stakeholder engagement period described in section 5.4, key stakeholders were also given the opportunity to provide feedback on the draft network plans for walking, review the locations and extents of the CWZs, review the trip attractors mapped in the data gathering process and identify any key origin and destination points that were missing from the plan.
- 6.5.2. This stakeholder engagement began at the same virtual workshops described in section 5.4 (please also see this section for the stakeholder attendance list). Again, stakeholders could comment on the walking plans on the Miro board for up to two weeks after the session. Some stakeholders preferred to receive plans and comment via email.
- 6.5.3. Stakeholders provided valuable feedback in relation to the draft walking network, including:
- Identifying where routes should connect to existing ROW
 - Reviewing and commenting on the locations and extents of the CWZs
 - Highlighting locations where footways are narrow and need maintenance
 - Identifying areas where connectivity is needed
 - Identifying locations where crossings need improvement
 - Confirming locations of barriers between areas, and where crossings and junctions might best be located to overcome this severance
- 6.5.4. Over 200 comments relating to walking were left on the board, with comments distributed fairly evenly across the geography of the borough. Extensive comments were received on the condition of the existing streets for walking, the status of rights of way, routes to schools, the suitability of the suggested routes and additional routes which should be added to the plan.
- 6.5.5. Extensive comments were left about the severance to walking routes caused by the construction of major roads, notably the construction of the A1(M) motorway in the late 1970s and early 1980s. These comments highlighted important issues although they primarily relate to leisure walking routes rather than utility walking routes, which is the primary focus of this LCWIP. Moreover, the solutions available and proposed by stakeholders would be very costly and challenging to implement. As such, in this first iteration of the LCWIP, the focus has remained on walking routes in the more densely populated urban areas, where improvements

would be less expensive and easier to implement, and would bring benefit to a larger number of people making walking utility trips (e.g. to workplaces, schools and shops).

- 6.5.6. As with comments on the cycling plans, all comments on the walking plans were logged, reviewed and, where relevant, changes were made to the network plans. The updated network plans can be seen in section 7.5.1 and Appendix F. All comments have been collated and passed to HCC as a resource for future reference.

6.6 ROUTE AUDITING

- 6.6.1. Once the network plans were updated following stakeholder comments, all the finalised primary walking routes in Welwyn Garden City and Hatfield were audited by the LCWIP project team. Due to resource limitations, the primary walking routes outside of these two areas and the secondary walking routes were not audited.

- 6.6.2. Audits were undertaken by trained WSP and HCC personnel visiting each route corridor on location using the [DfT's Walking Route Audit Tool \(WRAT\)](#). This tool assesses existing infrastructure on the routes against five core design outcomes for pedestrian infrastructure: attractiveness, comfort, directness, safety and coherence. The WRAT process considers the needs of all users, including vulnerable pedestrians, such as those who are older; visually impaired; mobility impaired; hearing impaired; with learning difficulties; buggy users or children. The process of scoring routes against the criteria in the WRAT identified issues (e.g., lack of crossing points) which informed the identification of infrastructure solutions (e.g., new zebra or signalised crossings).

- 6.6.3. Audits took place at the same time as the RST audits, in January 2022.

- 6.6.4. Once route audits were complete, walking infrastructure improvements were identified in walking infrastructure improvement plans. These were combined with cycling infrastructure improvement plans. These plans are introduced and discussed in section 7 of this report.

6.7 NON-AUDITED ROUTES

- 6.7.1. As with the cycle routes, there are a number of walking routes which were identified but not fully audited in this first iteration of the Welwyn Hatfield LCWIP. Generally, there are no infrastructure improvements proposed on most of these routes for this reason. However, as was the case with non-audited cycle routes (described in section 5.6), opportunities for active travel infrastructure on non-audited routes were identified while visiting the towns and

engaging with stakeholders and were presented to stakeholders in a second round of engagement discussed in the next section of this report, and additional suggestions were added after that additional engagement too.

6.7.2. Again, as with the cycle routes, where primary and secondary walking routes were identified but not audited, these should be priorities for further investigation into active travel provision. This is described more in section 5.6, 7.5 and 9.

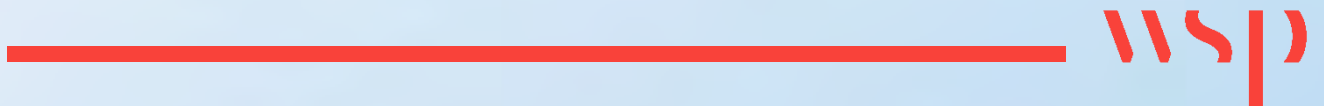
6.7.3. The most notable walking routes which have not been audited in this first iteration of the LCWIP are similar to the cycling routes mentioned in section 5.6.3. These are the following primary routes:

- The B197 corridor from Welwyn to the boundary with North Herts via Woolmer Green. (While this route in its entirety is unlikely to be walked regularly, the B197 corridor as a whole should still be considered a primary route as many walking trips within the settlements of Oaklands and Woolmer Green will make use of the B197).
- The routes south of Welham Green (including connections to the Royal Veterinary College, Brookmans Park and Potters Bar).

6.7.4. More information on these routes is included in section 7.5.

7

WALKING AND CYCLING INFRASTRUCTURE IMPROVEMENTS



7 WALKING AND CYCLING INFRASTRUCTURE IMPROVEMENTS

7.1 OVERVIEW OF INFRASTRUCTURE IMPROVEMENTS

- 7.1.1. Following the route audits, auditors generated plans of the high-level infrastructure improvements that would be needed to enable significant mode shift to walking and cycling. This was originally done individually by auditors (i.e., walking infrastructure improvements were generated separately from cycling infrastructure improvements). The plans were then checked against one another (to ensure there were no clashes where walking routes and cycling routes overlapped), then combined into two draft infrastructure plans, one for Welwyn Garden City and one for Hatfield. The final versions of these plans can be seen in section 7.4 (without annotations) and Appendix G (with annotations).
- 7.1.2. The completed and detailed walking and cycling audit forms are not included in this report but have been retained by HCC for information for use when schemes are taken forward.
- 7.1.3. The completed walking audit forms (and associated documentation) contain the specific information on what specific footway improvements (e.g., widening, resurfacing, lighting) would be needed where in order to bring walking provisions in line with current best practice. The plans shown in section 7.4 and in Appendix G do not go into this level of detail for footway improvements as this is simply too much information to convey in the report format. The plans in the report and appendices instead identify the locations where footway improvements are needed (without specifying precisely what these are), alongside the locations where there is a need for new/improved crossings and other relevant walking (and cycling) infrastructure.
- 7.1.4. In terms of cycle infrastructure, all the detail of the suggested improvements is contained in this report and its appendices. Certain specifics are not included (for example bus stop treatments where segregated cycleways are proposed) but general principles and assumptions are given where possible.
- 7.1.5. The infrastructure improvements identified in this section of the report have not been taken through feasibility design. Rather, they are concepts of the types of infrastructure which are believed appropriate, should be investigated further and, if implemented correctly and in appropriate packages, should help bring about modal shift.

7.2 INTERVENTION TYPES

7.2.1. Information on each type of intervention shown in the infrastructure plans is given below:

- **Minor junction improvement (side road):** where a need for minor junction improvements has been identified at side roads, this typically denotes a need to build out the footways (to tighten junction geometry, reduce turning speeds and shorten crossing distances) and add dropped kerbs and/or tactile paving where missing. In some cases, it might be good to consider additional measures, such as banned turns, raised tables, continuous footway crossings, cycleways or modal filters.
- **Minor junction improvement (mini roundabout):** where a need for minor junction improvements has been identified at junctions which are currently mini roundabouts, this denotes a review against LTN 1/20 guidance and potentially tightening of the junction geometry and/or improving the crossing facilities. In some cases, especially where there are double mini roundabouts it may be better to simply replace them with unsignalised priority T-junctions.
- **Mid-size junction improvement:** at mid-size junctions, improvements typically denote a need for pedestrian crossings and protected cycle infrastructure on all arms. In some cases, this might mean signalising the junction.
- **Large junction improvement:** at large junctions where a need for junction improvements has been identified, this typically denotes a need for pedestrian crossings and protected cycle infrastructure on all arms. At particularly large junctions this might mean a Dutch-style roundabout (with parallel crossings on each arm) or a signalised 'CYCLOPS' style junction (as have been installed in Manchester in recent years). Some large junctions which are roundabouts may need converting to signalised crossroads or other forms of signalised junction to be able to provide the required improvements to pedestrians and cyclists.
- **New / improved pedestrian crossing:** where these are included in the plans, this denotes providing new priority (controlled) crossings for pedestrians to reduce severance or improving existing crossings. In some cases, this might mean installing new zebra or signalised pedestrian crossings. In other cases, this may refer to improving an existing crossing, for example by increasing the green time available at signalised crossings, or replacing informal traffic island crossings with zebra crossings. This has the added benefit of reducing pinch points on the carriageway for cyclists.

- **New / improved pedestrian + cyclist crossing:** where these are included in the plans, this denotes providing new priority (controlled) crossings for pedestrian and cyclists. In some cases, this might mean installing a new parallel crossing, or a new signalised pedestrian and cycle crossing (ideally not toucan crossings as these rely on shared use which is discouraged in LTN 1/20). In other cases it might mean improving an existing crossing, for example by upgrading a zebra crossing to a parallel crossing which cyclists can also use.
- **New modal filter:** these typically refer to LTN 1/20 compliant infrastructure on the carriageway which filters out vehicles but allows cyclists to pass. This could take the form of bollards or planters and could potentially have camera enforcement. Where these are proposed on bus routes, these would take the form of a camera-enforced bus gate (which also allows cyclists through).
- **Traffic calming:** this denotes adding cycle-friendly traffic calming features to streets and/or reducing speed limits to safe levels for cyclists following LTN 1/20 guidance. Where traffic calming features are considered, these should be cycle friendly (e.g., narrowing traffic lanes and carriageways, removing centre lines or raising tables). Speed cushions in particular should be avoided as a form of traffic calming, as they result in motor traffic and cyclists changing their positions in the carriageway, which increases the potential for conflict between modes. Furthermore, non-standard cycles such as tricycles can have issues with balance when going over speed cushions. Additional measures could include parking restrictions, resurfacing and gulley cover replacement. Some traffic-calmed streets may also be suitable for contraflow cycling (either with or without cycle lanes/tracks) – this has been indicated on the plans where it may be especially useful for the cycle network.
- **Footway improvements:** this could refer to a number of different types of footway improvement. It could denote ensuring footways have 1.5m clear width to allow wheelchairs and buggies to pass, widening and/or relocation of permanent/temporary footway obstructions as necessary (including footway parking). It could also denote resurfacing to fix surface issues (patching, trenching, uneven surfaces, trip hazards), lighting improvements, and/or the removal of excess bollards, guard railing and vegetation.

- **Segregated cycleway:** this denotes the addition of LTN 1/20 compliant segregated cycle facilities such as kerb-segregated tracks, stepped cycle tracks, footway level tracks, off-road cycle tracks or lightly segregated cycle lanes (whichever is judged most suitable in feasibility design). It also includes the necessary traffic calming and speed limit changes need to make the route LTN 1/20 compliant, as well as bus stop redesign (i.e., to bus stop bypass or shared use bus border) resurfacing, wayfinding and gully cover replacement as necessary. Generally, where this is shown on the plans, a single red line will refer to a one-way cycle facility on both sides of the road. In some cases, a two-way track on one side of the road may be preferable. Indications of where this may be the case have been given in text boxes on the plans in Appendix G but all options should remain open for investigation at the feasibility design stage.
- **Signalised shuttle system:** this denotes the installation of a signal-controlled system to alternate flows on a narrowed section of road. This is proposed where there are width constraints (e.g., under a rail bridge) and the street currently provides traffic lanes in both directions at the expense of having very narrow footways for pedestrians. By installing a shuttle system, footways can be widened making this a more appealing, comfortable and safe route for pedestrians and cyclists.
- **New/Improved Pedestrian and Cycle Bridge:** these are shown on the plans where a long-term plan for a new pedestrian and cycle bridge or widening of an existing pedestrian and cycle bridge might bring benefit to the walking and cycle networks. These are accompanied by text boxes giving additional information.

7.2.2. Furthermore, the plans also show a number of 'quiet alternative routes' which may not necessarily require new physical infrastructure but could be appealing routes for pedestrians and especially cyclists. In many cases these routes have been created through the installation of modal filters. The plans also show existing Rights of Way and National Cycle Network routes.

7.2.3. Finally, the plans also show the locations of existing shared footways and cycleways. In some cases, these are of a decent standard and upgrading them should not be an immediate priority (in favour of instead creating new infrastructure). In other cases, some improvements to these have been suggested on the plans (both through other infrastructure proposed and suggestions in the textboxes).

7.3 STAKEHOLDER ENGAGEMENT

- 7.3.1. The two draft infrastructure plans were presented to key stakeholders in a second round of stakeholder engagement in March 2022. Two virtual workshops were held: one for the north of the borough on 15 March 2022 and one for the south held on 16 March 2022. The purpose of this second period of stakeholder engagement was to inform the stakeholders about the infrastructure improvements identified and give stakeholders an opportunity to comment and provide additional improvements that could be considered. Stakeholders were also shown updated network plans which had changed following stakeholder comment from the first period of stakeholder engagement.
- 7.3.2. As with the first period of stakeholder engagement, feedback was primarily obtained using Miro, an online collaborative whiteboard platform that enabled the stakeholders to view the plans and provide location-specific comments and feedback. Access to the Miro board was available for two weeks after the workshop to ensure all stakeholders had an opportunity to review the materials. Stakeholders were also provided with the materials and given the option to provide feedback via email.
- 7.3.3. The workshops were attended by representatives from:
- Hertfordshire County Council
 - Welwyn Hatfield Borough Council
 - Welwyn Hatfield Cycling Forum
 - Hatfield Town Council
 - Herts Sports & Physical Activity Partnership
 - Living Streets
 - University of Hertfordshire (including University of Hertfordshire Estates)
- 7.3.4. Stakeholders provided valuable feedback in relation to the infrastructure plans, including:
- Whether they were supportive of particular infrastructure or not
 - Potential issues and opportunities which might be associated with implementing the infrastructure
 - Further issues and opportunities for active travel (some of which were not raised in the first period of engagement)
 - Suggestions for additional routes and infrastructure

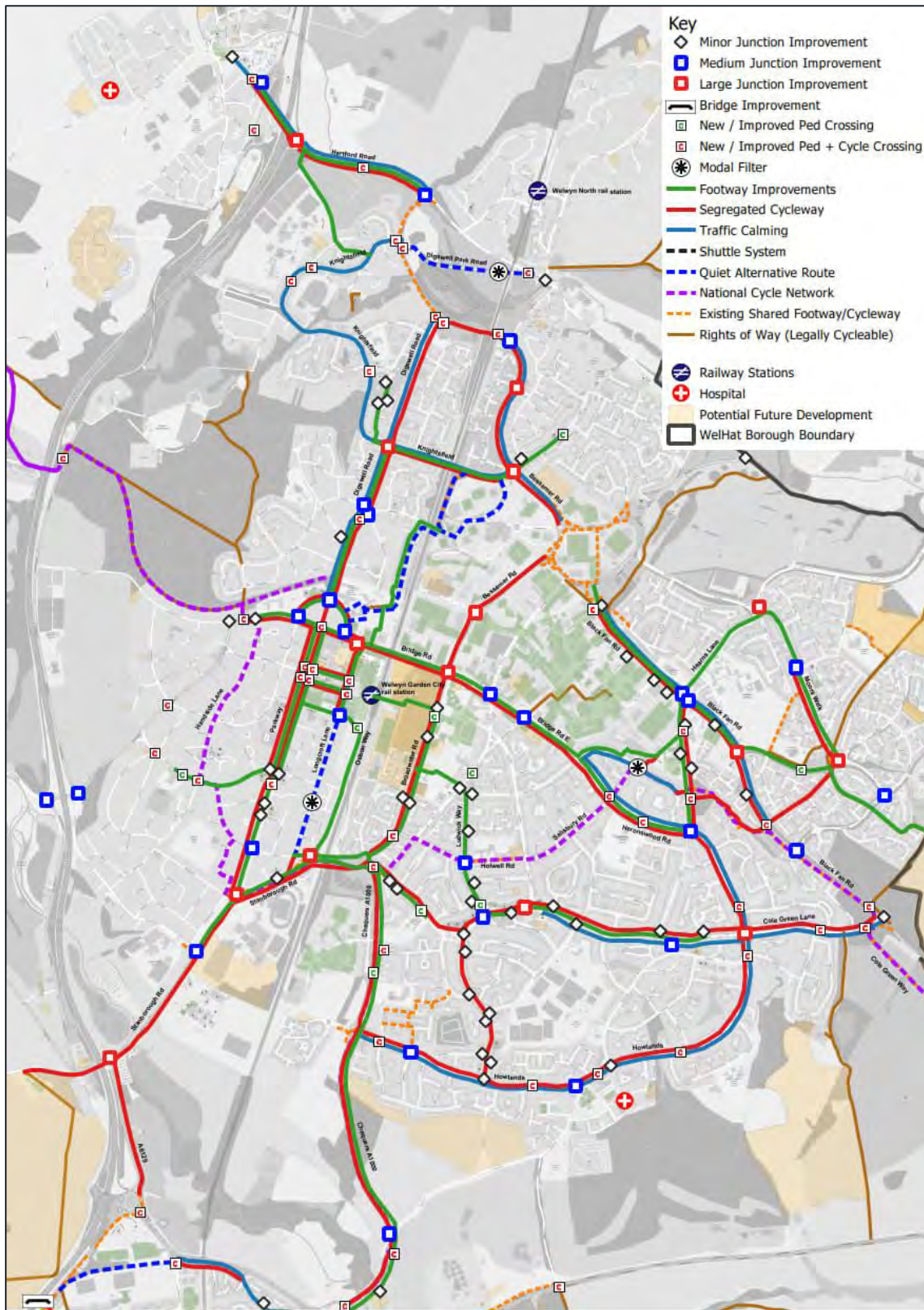
7.4 PROPOSED INFRASTRUCTURE IMPROVEMENTS

- 7.4.1. Following the second round of stakeholder engagement, final versions of the infrastructure plans were developed. These are presented in full in Appendix G (with additional text boxes giving further explanation and context regarding the proposed measures). Previews of the plans are shown in this report in Figure 7-1 and Figure 7-2 below without these text boxes.
- 7.4.2. These final versions of the plans take into account the results of all audits, relevant stakeholder comments from both periods of engagement and further internal discussions between HCC and WHBC officers. It is important to note that where stakeholders expressed support or scepticism regarding certain infrastructure, this has not necessarily resulted in changes to the plans. However, any comments of this nature have been noted and captured in the prioritisation process (see section 8 of the report). Any infrastructure identified in this LCWIP would go undergo further feasibility design checks as well as further stakeholder engagement. This means that any physical constraints or stakeholder concerns will be investigated further before any decisions are taken regarding implementation.

WELWYN GARDEN CITY

- 7.4.3. The proposed infrastructure improvements in Welwyn Garden City are generally centred around the town centre and railway station, where suggested footway and junction improvements are accompanied by new/improved pedestrian and cycle crossings on Parkway and Fretherne Road, among others. Providing these pedestrian and cycle crossings would allow better connectivity across Welwyn Garden City for people walking and cycling, especially to key locations such as the station, town centre and hospital. Junction improvements are proposed at several larger junctions where there are currently many risks for cyclists, especially the junctions on Bridge Road, Bridge Road East and The Campus.
- 7.4.4. Segregated cycle facilities are proposed on many of the busier roads in Welwyn Garden City. In some cases, this would mean improving existing facilities; in other cases, creating entirely new facilities. This could be achieved by reallocating roadspace or widening the carriageway. This would enable cyclists to have safer cycling routes, with the added benefit in places of taking cyclists off footways, giving pedestrians their own dedicated space.
- 7.4.5. Footway improvements are proposed along most of the streets audited, ranging from widened footways to improved lighting. In some cases, such as Osborn Way (the most direct route to the station from certain directions), potential improvements centre on security concerns.

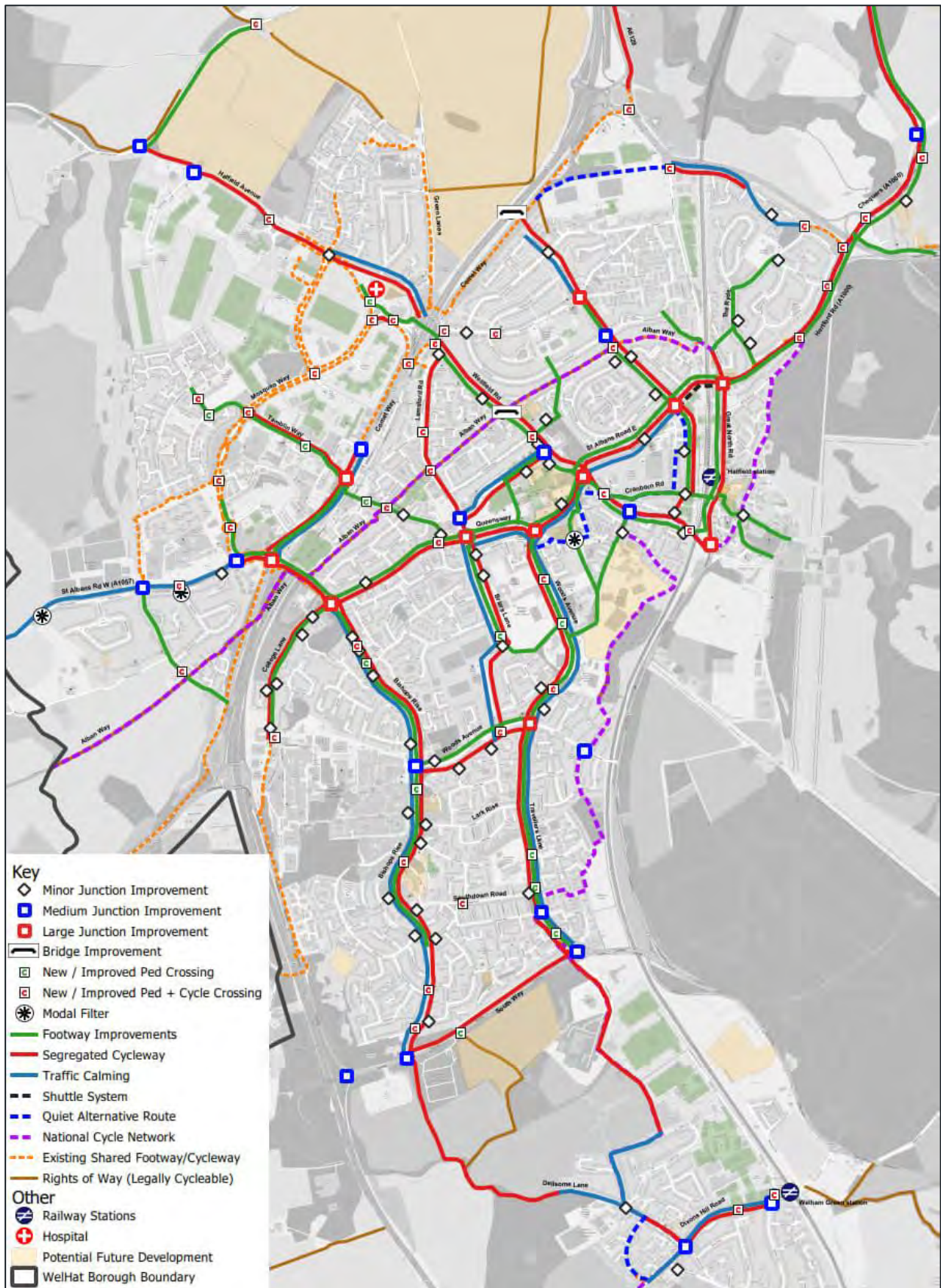
Figure 7-1 - Proposed Walking and Cycling Interventions in Welwyn Garden City



HATFIELD

- 7.4.6. A key improvement needed in Hatfield is junction improvements to improve safety for cyclists and allow more direct, comfortable and coherent movements for all active modes. Especially important are the roundabouts on Queensway which may currently deter even confident cyclists and are also difficult to cross for pedestrians. HCC are currently investigating these roundabouts to provide at-grade facilities. Other key junctions which need improving include the junction of Great North Road and Hertford Road, which is difficult to cross for pedestrians as well (due to a lack of green man signals).
- 7.4.7. Segregated cycleways are proposed across many of the busiest roads in Hatfield, most of which could be implemented by reallocating of space from the carriageway and/or verges.
- 7.4.8. Several new/improved pedestrian and cycle crossings are proposed across Hatfield to improve active connections to key areas such as the hospital, University of Hatfield, and other locations. In the longer-term, a new pedestrian and cycle bridge across the A1(M) would greatly improve active connectivity between the potential future development in North Hatfield and the centre and rail station.
- 7.4.9. The Alban Way is a key active route between Hatfield and St Albans. As the Alban Way is managed differently to other routes in Welwyn Hatfield, this LCWIP has instead focussed on the other routes. However, the Alban Way was audited and, from the perspective the LCWIP, key improvements there should include:
- Widening where possible, in line with widths for shared routes given in LTN 1/20
 - Removal of bollards which currently prevent non-standard cycles from passing
 - Better management of vegetation to improve visibility and space available
 - Adding environmentally sensitive lighting (e.g. solar powered uprights) and creating more access/egress 'escape' points to address personal security concerns
 - Replacing the bridge over Wellfield Road with a wider bridge to provide more space for pedestrians and cyclists (this would be a longer-term objective).
- 7.4.10. While the Alban Way is a key route between Hatfield and St Albans, the PCT and GIS Model outputs show huge demand for this connection. Therefore, the A1057 was also audited to see if improvements could be made there for an on-carriageway connection. There are currently physical constraints on the A1057, but other improvements have been suggested including traffic calming and junction improvements.

Figure 7-2 - Proposed Walking and Cycling Interventions in Hatfield



OTHER INFRASTRUCTURE IMPROVEMENTS

- 7.4.11. During the engagement periods, stakeholders raised issues and suggested improvements in places which were not audited as part of the first iteration of this LCWIP. Many of these suggestions were reasonable and fit with the philosophy of the LCWIP. As most of these improvements were in Welwyn Garden City, Hatfield and their surrounding areas, they have been included on the same infrastructure plans shown above and in Appendix G. These improvements include suggestions for crossings by schools and junction improvements to reduce severance, for example at the Lemsford interchange.
- 7.4.12. Elsewhere in the borough, stakeholders suggested a need for one or more crossings in Woolmer Green and pedestrian and cycling improvements in the vicinity of the Royal Veterinary College. These are discussed in the next section (7.5).

7.5 OTHER PRIORITY ROUTES

- 7.5.1. There are two other key connections in Welwyn Hatfield Borough for which audits have not been completed and no infrastructure improvements have been included in this first iteration of the LCWIP. These are:
- The B197 corridor from Welwyn to the boundary with North Herts via Woolmer Green.
 - The routes south of Welham Green (including connections to the Royal Veterinary College, Brookmans Park and Potters Bar).
- 7.5.2. Improvements to walking and cycling conditions on these routes should be considered of equal priority to improvements listed in section 7.4. Plans for improving these routes should be developed in line with this LCWIP and LTN 1/20 guidance as soon as possible, with the LCWIP updated accordingly. More information on the routes is included below:

B197 CORRIDOR

- 7.5.3. The B197 corridor linking Welwyn and Woolmer Green with Knebworth was identified as a primary route for both walking and cycling, but not been audited as part of this LCWIP. One reason this route was not audited is that HCC have already done project validation work on this corridor, which has identified a number of options for the improvement of walking, cycling and bus routes along the corridor.
- 7.5.4. The LCWIP project team has seen the options put forward in this study, which included suggestions for new crossings in Woolmer Green and segregated cycle infrastructure along

the corridor. The work in this LCWIP supports these suggestions, especially the proposals for crossings as stakeholders in the LCWIP workshops left comments about the severance and lack of good crossing facilities in Woolmer Green.

CONNECTIONS TO THE ROYAL VETERINARY COLLEGE

- 7.5.5. As a key employment site and educational facility in Welwyn Hatfield, the Royal Veterinary College (RVC) was engaged with throughout the LCWIP process.
- 7.5.6. The most important connections to be improved to facilitate more walking and cycling trips to the RVC are acknowledged as the connections from the RVC to Brookmans Park Station in the north, and Potters Bar Station in the south (via the Cranborne Industrial Estate). Both connections are served by some existing paths and rights of way, which follow the railway line on its western side but are in need of improvement. Further provision between the campuses on Hawkshead Lane has also been identified as important and should be further investigated.
- 7.5.7. There is ongoing communication between the RVC and various departments within HCC around requirements of the routes.

7.6 FINAL NETWORK PLANS FOR WALKING AND CYCLING

- 7.6.1. During the second round of stakeholder engagement stakeholders were also shown updated boroughwide network plans for walking and cycling. As well as showing stakeholders how primary and secondary route designations had changed following the first stakeholder workshops, these plans also identified which of the primary routes had been audited.
- 7.6.2. After the second round of engagement, these plans were again updated with routes added and/or reclassified following stakeholder feedback.
- 7.6.3. The final network plans for both walking and cycling can be seen in Figure 7-3 and Figure 7-4 respectively. Higher resolution versions of these plans are shown in Appendix F.

Figure 7-3 - Welwyn Hatfield Borough Network Plan for Walking

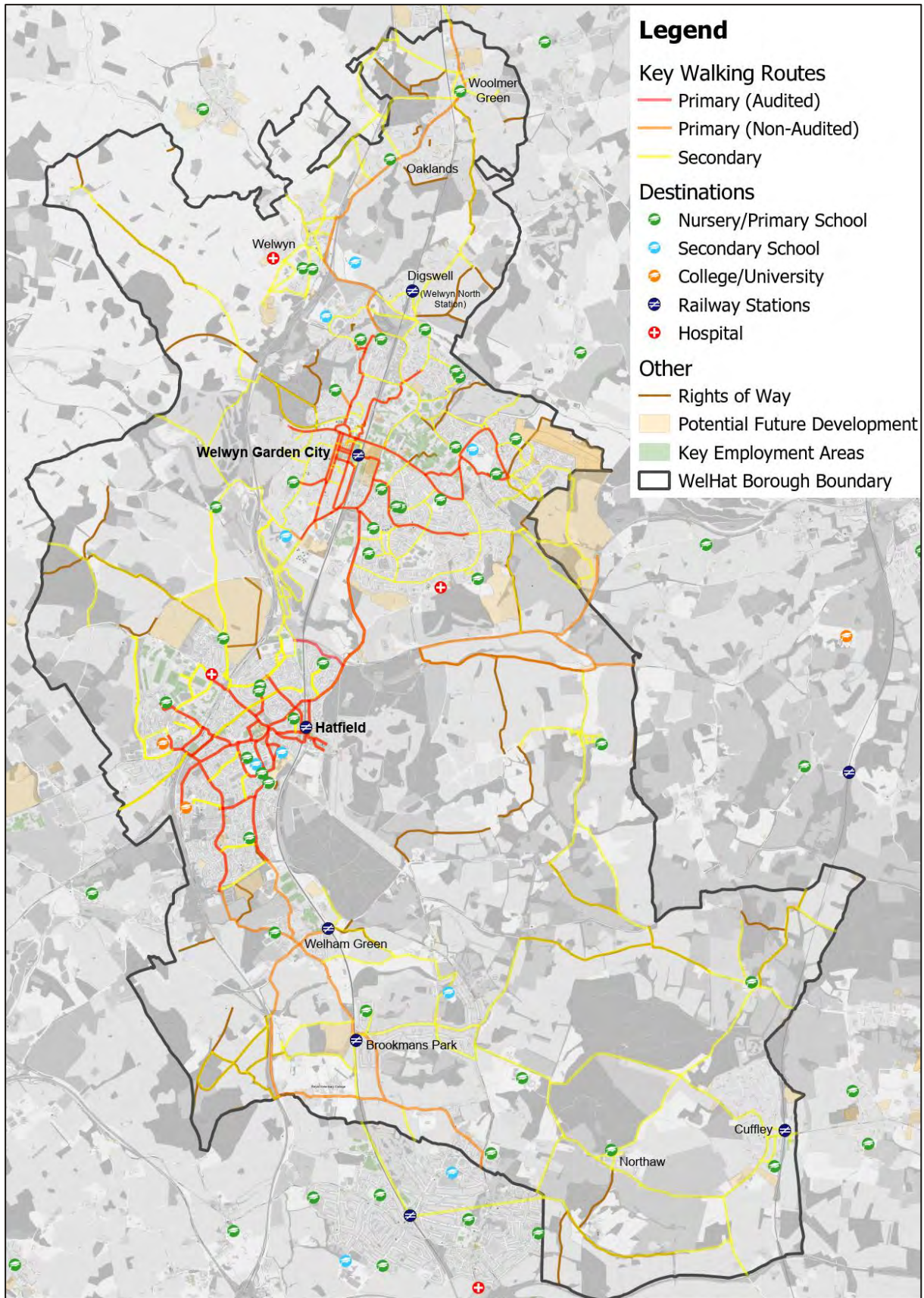
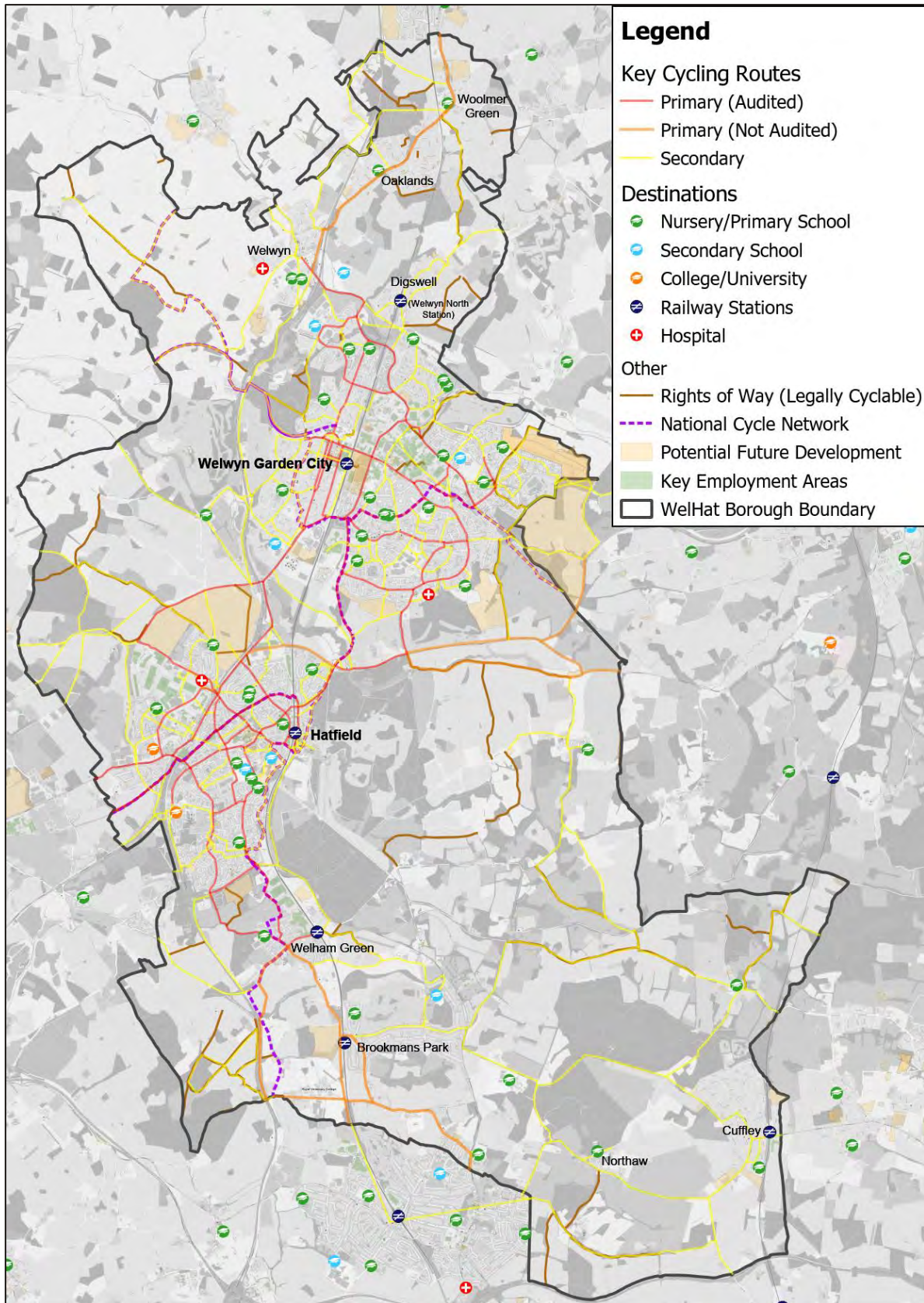
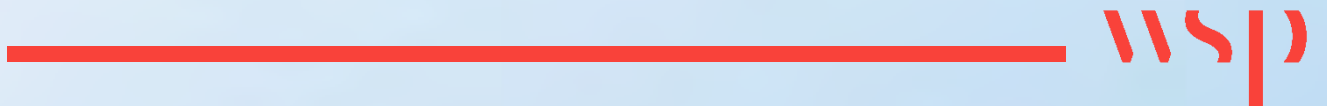


Figure 7-4 - Welwyn Hatfield Borough Network Plan for Cycling



8

ROUTE COSTING AND PRIORITISATION



8 ROUTE COSTING AND PRIORITISATION

8.1 APPROACH TO ROUTE COSTING

8.1.1. Each infrastructure improvement or 'scheme' was given a high-level costing estimate based on the type of infrastructure alone. Indicative costs were sourced from LCWIP guidance and reference schemes in Hertfordshire and nearby counties. These were agreed between WHBC and HCC and are given in Table 8-1.

Table 8-1 – High Level Cost Estimate by Infrastructure Type

Infrastructure	Cost
Segregated cycleway	£1000 per metre
Traffic calming	£350 per metre
Footway improvements	£200 per metre
Large junction improvement	£1,580,000
Mid-size junction improvement	£500,000
Minor junction improvement	£30,000
Pedestrian crossing	£65,000
Pedestrian / cycle crossing	£65,000
Modal filter	£20,000
Signalised shuttle system	£750,000
New pedestrian and cycle bridge	£2,000,000

8.1.2. It is very important to note that these costs are high level approximations of construction costs only. They do not account for inflation and do not include design, risk and contingency costs. They also do not account for optimism bias. Further feasibility design work accompanied by a more detailed costing process will be needed for any scheme which is being considered for funding or further development.

8.2 APPROACH TO ROUTE PRIORITISATION

- 8.2.1. Initially, the individual infrastructure improvements were scored using a high-level scheme prioritisation, resulting in a joint prioritised list of cycling and walking schemes. Each individual infrastructure improvement was considered and scored in terms of:
- How likely it is to increase walking and cycling trips
 - Likely impact on active travel
 - How well it fits with existing strategic priorities
 - Whether it supports new housing developments
 - Whether it supports access to jobs
 - How well it aligns with LTN 1/20
 - How technically feasible it is likely to be
 - Its dependency on other schemes and projects
- 8.2.2. Individual infrastructure improvements were then grouped to form a selection of 'prioritised routes', which combine all the infrastructure improvements on an alignment (including both pedestrian and cycling improvements). The average scores for all the infrastructure on a route were determined to give prioritisation scores for the prioritised routes, which were then sense checked. Concurrently, the costs of individual infrastructure items were summed to create a total cost for each prioritised route. The total scores of each route were then used to rank the routes in a prioritised list.
- 8.2.3. The costed, prioritised list of routes can be seen in Appendix H. This list includes both routes which have been audited and additional routes which consist of infrastructure improvements that were added following stakeholder engagement and internal verification by the LCWIP project team. These additional routes are clearly marked in the list and two different rankings are given in the table: one for the audited routes only and one for all routes.
- 8.2.4. Likely level of stakeholder support was considered as a metric, but there isn't enough information available at this stage to accurately quantify and score this. As such, likely level of stakeholder support has not fed into the prioritisation process, In any case, more stakeholder engagement will be undertaken before any routes are taken forward through design and implementation.

8.3 SCORING CRITERIA AND RANGES

8.3.1. Different scoring ranges were given for the criteria listed in paragraph 8.2.1, based on their perceived relative importance. Details of the scoring ranges of the different criteria are outlined in Table 8-2, along with a commentary of how they were scored.

Table 8-2 - Scoring Criteria, Score Ranges and how infrastructure was scored

Criteria	Range	Description of How Scheme Was Scored
Increase in walking & cycling trips	0 to 2	Locations of proposed route were compared against the outputs from the relevant LCWIP GIS Model run (e.g., footway improvements were compared against the walking model output; segregated cycleways were compared against the cycling model outputs). Where outputs indicated higher potential for trips, higher scores were given.
Impact on active travel	-1 to 3	The type of infrastructure improvement and its role within the network was considered in these scores. For example, large junction improvements, segregated cycleways, modal filters and crossings were considered high impact, and scored higher, compared to minor junction improvements and traffic calming.
Strategic fit	-1 to 1	Where routes were on or connected to existing or planned strategic connections, these were scored higher than routes which were far from any strategic routes.
Support for new housing	0 to 2	Where routes were on or connected to routes to potential future housing, these were scored higher than infrastructure improvements which were further away.
Access to jobs	0 to 2	Where routes were on or connected to routes to key employment areas, these were scored higher than infrastructure improvements which were further away.
LTN 1/20 compliance	-1 to 3	Where routes strongly supported the principles of LTN 1/20 (e.g., modal filters, segregated cycleways), these were scored higher than other infrastructure improvement types (e.g., traffic calming).
Technical feasibility	-2 to 1	Routes with no significant technical or land ownership obstacles were considered 'quick wins' and scored higher than those with such challenges.
Dependency	-1 to 1	Routes which could be implemented in isolation and would still bring benefit if implemented were scored higher than routes which were dependent on the implementation of other infrastructure for success.

8.3.2. The total number of points a proposed route could score was 15. Routes were then sorted by total score, creating a ‘ranked order’ of prioritised routes. The route score is a sum of the individual infrastructures along the route length. This has led in some places to a decimal place, in these instances rounding has been included within the table. A copy of the table with the decimal places can be provided if requested.

8.4 COMMENTARY ON THE PRIORITISED LIST

8.4.1. A total of 56 routes were identified, across Welwyn Garden City and Hatfield. The 20 highest scoring audited routes are detailed in Table 8-3 below, with the full list in Appendix H.

8.4.2. A key, showing where each route is located in Welwyn Garden City and Hatfield is shown in Appendix I. It should be noted that in some cases, routes have been combined in such a way that it makes more sense to refer to them as ‘areas’.

Table 8-3 – Top Twenty Highest Scoring Prioritised Routes (Audited Routes Only)

Route / Area	Location	Total Cost	Total Score
Cranborne Road	Hatfield	£185,000	11
Knella Road to Lords Wood rbt	Welwyn Garden City	£2,955,350	10
Chequers	Welwyn Garden City and Hatfield	£3,870,000	10
Stanborough Road	Welwyn Garden City	£7,521,800	10
Wellfield Road & French Horn Lane	Hatfield	£8,586,000	10
The Common	Hatfield	£1,727,500	10
Old Rectory Drive	Hatfield	£680,000	10
Hatfield Avenue & Manor Road	Hatfield	£3,416,000	10
Queensway	Hatfield	£5,836,000	10
Heronswood Road	Welwyn Garden City	£3,989,500	10
Bessemer Road	Welwyn Garden City	£9,274,300	10
Mosquito Way	Hatfield	£1,390,000	10
Parkway	Welwyn Garden City	£3,220,000	10
Great North Road	Hatfield	£4,124,000	10
Moors Walk & Herts Lane	Welwyn Garden City	£5,130,000	10
Hertford Road (Hatfield)	Hatfield	£2,795,000	10
Bridge Road & The Campus	Welwyn Garden City	£9,015,400	9
St Albans Road East	Hatfield	£5,018,500	9
Lemsford Road	Hatfield	£2,975,000	9

Black Fan Road	Welwyn Garden City	£6,276,000	9
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- 8.4.3. Of the twenty highest scoring audited routes, 11 are in Hatfield, eight are in Welwyn Garden City and one route covers both geographies.
- 8.4.4. The top scoring audited route is Cranborne Road, which was audited as a short walking route and scored 11/15. This route scored highly due to its proximity to residential and employment sites, its location on a key desire line (according to the GIS model) and being comprised of potentially LTN 1/20 compliant interventions.
- 8.4.5. The remaining routes in Table 8-3 are almost all simple, linear routes with improvements suggested for both pedestrians and cyclists.
- 8.4.6. It should be noted that one route which wasn't audited scored higher than the top scoring audited route: Coopers Green Lane. This route consists of one infrastructure suggestion from an audited route which ends at Coopers Green Lane, and two infrastructure suggestions received from stakeholders during the engagement periods. It scored highly for similar reasons to the Cranborne Road route but has not been included in Table 8-3 as it wasn't audited. Nevertheless, it is an important route and is also included in the South Central Growth and Transport Plan, which sets out proposals to investigate further active travel improvements on Coopers Green Lane
- 8.4.7. Many of the routes which had the highest scores included the following types of infrastructure improvement, which may be a reflection of the higher 'impact on active travel' and 'LTN 1/20 compliance' scores these types of infrastructure received:
- Mid-size junction improvement
 - Large junction improvement
 - New parallel crossing
 - New/improved signal crossing
 - Modal filter
 - Segregated cycleway
- 8.4.8. It is also important to note that there are plans for active travel improvements in Welwyn Hatfield Borough being taken forward independently of this LCWIP. Some of these plans are on prioritised routes identified in this LCWIP while others are not.

8.4.9. In future revisions of the LCWIP, such plans should be included within the LCWIP so that it can become the single point of reference for walking and cycling schemes in the borough. This process has begun with this LCWIP identifying schemes independently as well as identifying existing infrastructure and incorporating some existing plans including Active Travel Fund schemes. This provides a solid foundation for other plans to be added to in future revisions.

8.5 BENEFITS AND LIMITATIONS OF PACKAGING INFRASTRUCTURE INTO PRIORITISED ROUTES

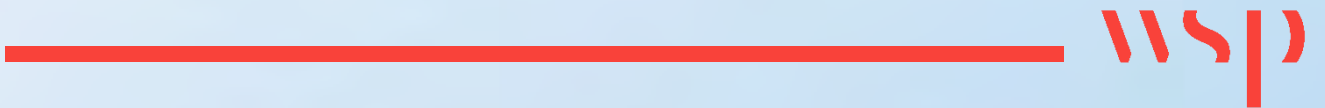
8.5.1. Packaging infrastructure improvements into routes has many benefits. One principal benefit is that it fits with HCC's method of taking schemes forward and makes it easier to apply for funds, which are often deliberately targeted at corridor schemes (for example, requiring the use of the DfT's Active Mode Appraisal Toolkit). Another benefit is that it combines pedestrian and cycling improvements, to ensure that both modes of transport are catered for when plans are taken forward.

8.5.2. One limitation of this approach is that it can double, triple or even quadruple count junction improvements, as junctions often sit at the intersection of multiple routes. Therefore, summing the total cost of all improvements in this LCWIP would count junctions multiple times and therefore be inaccurate. Care must be also be taken when schemes are taken forward that junctions are not just improved to facilitate the connection that is being made along the single linear corridor being developed.

8.5.3. Another limitation of packaging infrastructure into routes is that there are a number of schemes identified in this LCWIP that do not easily align with any particular routes, such as individual crossings by schools on streets which were not audited (or do not require other improvements). It is important that these infrastructure improvements are not forgotten about simply because they don't fit neatly into a linear route. Similarly, just because an infrastructure improvement (such as a crossing) has been packaged into a particular prioritised route doesn't mean that it can't or shouldn't be taken forward on an individual basis if there is a good opportunity to do so.

9

NEXT STEPS



9 NEXT STEPS

9.1 INTEGRATION WITH TRANSPORT POLICY

- 9.1.1. This LCWIP has identified specific walking and cycling infrastructure schemes that can be incorporated into local transport policy and capital investment programmes.
- 9.1.2. Welwyn Hatfield's submitted Local Plan seeks to guide development in the Borough over the period from 2016 – 2036 and sets out a vision and policies to address a number of challenges to be faced in that time. This LCWIP together with the South Central Herts Growth and Transport Plan provide focus on where and why targeted investment in active travel infrastructure will be taken forward across the district, along with the other measures identified in the Infrastructure Delivery Plan.
- 9.1.3. The LCWIP will also support other local policy such as implementation of the Hatfield 2030+ Transport Strategy.

9.2 INTEGRATION WITH HIGHWAYS DELIVERY PROGRAMMES

- 9.2.1. Once some packages of routes/schemes to be delivered in the short-term have been identified and confirmed, these should be added into HCC's highways delivery programmes. This would then see schemes go through HCC's project validation process, have concept designs developed, undergo further stakeholder engagement and, if there are no major obstacles and funding is available, the schemes can then be designed in detail and delivered.
- 9.2.2. Highway improvement programmes separate from the LCWIP will continue to be delivered in the coming years but there are a few key steps that could be taken to align delivery of non-LCWIP highway schemes with the LCWIP. Most of which would be covered by a firm commitment to following the principles of Gear Change and the design guidance contained in LTN 1/20 when delivering new highways infrastructure. Some important examples of this would be:
- Minimising the delivery of shared footways on new schemes, and instead seeking to provide separate facilities for pedestrians and cyclists wherever possible.
 - Committing to avoiding speed cushions when adding traffic calming to streets, instead referring to LTN 1/20 for guidance on cycle-friendly traffic calming

- Using cycle-friendly gully covers (i.e., gully covers which wheels can't get stuck in) and replacing dangerous gully covers for cyclists

9.3 MAINTENANCE

- 9.3.1. Walking and cycling facilities, both new and existing, require ongoing maintenance if they are to remain safe, comfortable and attractive for users. Examples of issues arising from a lack of maintenance include uneven pavements (loose sets) causing rainwater to pool, blocked drains, vegetation encroaching onto pavements, potholes and sunken gullies. These types of issues can create safety issues for pedestrians and cyclists as well as making the experience of walking and cycling less comfortable and attractive as a mode.

9.4 FUTURE BIDS FOR EXTERNAL FUNDING

- 9.4.1. HCC will explore any opportunities to apply for funding from external sources, such as any future Government capital grants or funding competitions for active travel infrastructure such as future tranches of the active travel fund. In these instances, additional business case development may be undertaken on schemes outlined in this LCWIP to help form the basis for strong applications to secure funding for design and delivery.
- 9.4.2. This LCWIP may also be a reference point for any Section 106 funds which become available. In addition to the infrastructure improvements identified for further investigation, the LCWIP can be taken as evidence of the need for high quality walking and/or cycling provision along any primary or secondary routes identified in the network plans, throughout the borough.

9.5 PROCESS OF REVIEW AND UPDATE

- 9.5.1. This LCWIP represents the culmination of a first round of developing cycling and walking networks and infrastructure improvement plans. While the initial focus has been on the urban areas of Welwyn Garden City and Hatfield due their density and associated higher potential for more active travel trips, future iterations of this LCWIP should look to expand this process to other areas and routes. In particular, plans for the B197 corridor and the links between the Royal Veterinary College and local train stations should be incorporated into the LCWIP as soon as is possible.
- 9.5.2. The next formal revision of the LCWIP should include audits of all primary routes which were not audited in this first iteration of the LCWIP. It should include further audits and infrastructure proposals for various villages and rural areas in the borough.



- 9.5.3. Revisiting the LCWIP to include infrastructure improvement plans for these routes and areas will ensure a more inclusive district-wide approach to the LCWIP is taken over time, and one which maximises opportunities for active travel trips between Welwyn Hatfield Borough and its neighbouring authorities.
- 9.5.4. HCC and WHBC will therefore review and update this LCWIP document going forward in response to new funding and delivery opportunities as a commitment to having an on-going and sustained investment plan for active travel infrastructure.

Appendix A

POLICY CONTEXT



Appendix B

PCT OUTPUTS



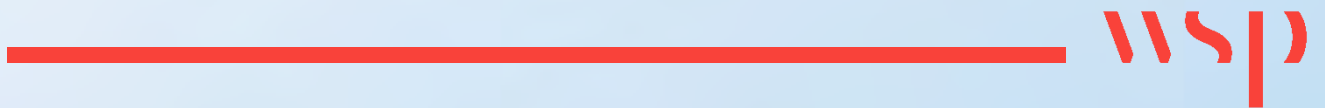
Appendix C

GIS MODEL TECHNICAL NOTE



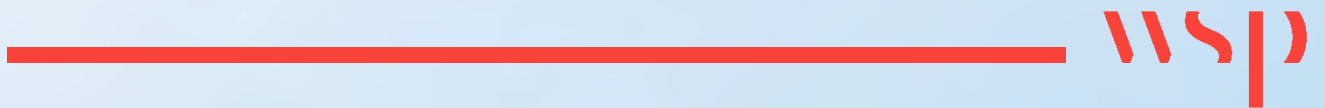
Appendix D

LCWIP GIS MODEL: CYCLING
OUTPUTS



Appendix E

LCWIP GIS MODEL: WALKING
OUTPUTS



Appendix F

NETWORK PLANS FOR WALKING
AND CYCLING



Appendix G

INFRASTRUCTURE PLANS FOR
WELWYN GARDEN CITY AND
HATFIELD



Appendix H

PRIORITISED COSTED LIST OF
INFRASTRUCTURE IMPROVEMENTS



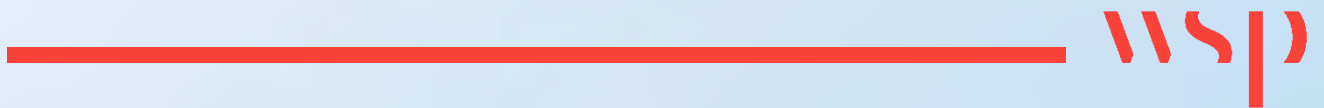
Appendix I

KEY FOR PRIORITISED ROUTES



Appendix J

LIST OF ACRONYMS USED IN
REPORT





70 Chancery Ln,
London
WC2A 1AF

wsp.com

PUBLIC