



North Hertfordshire District

LOCAL CYCLING AND WALKING INFRASTRUCTURE PLAN

HCC / NHDC

FINAL DRAFT FOR CONSULTATION





North Hertfordshire District

LOCAL CYCLING AND WALKING INFRASTRUCTURE PLAN

HCC / NHDC

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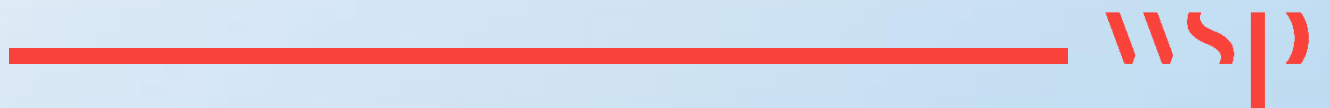
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1

INTRODUCTION

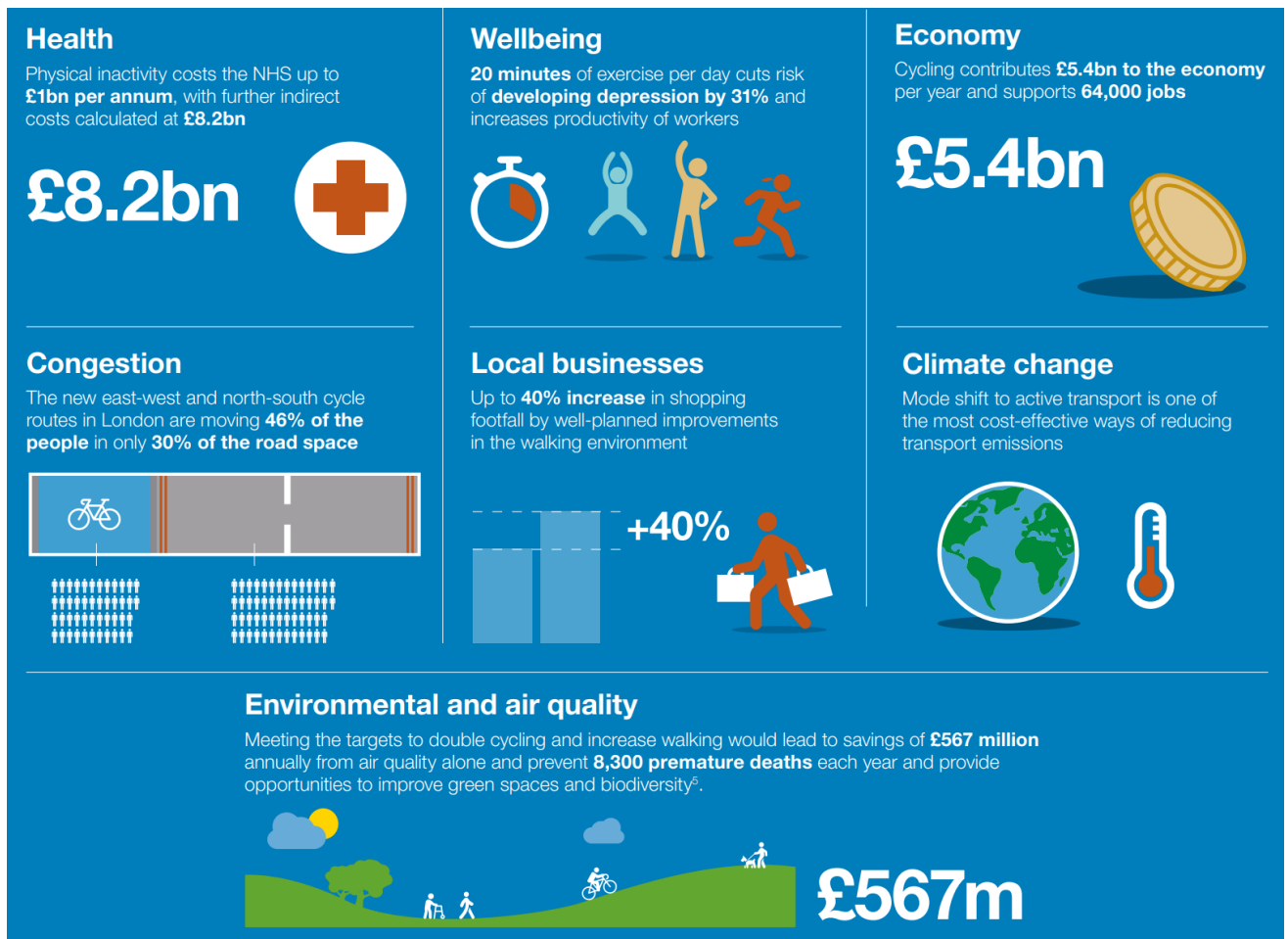


1 INTRODUCTION

1.1 INTRODUCTION

- 1.1.1. This Local Cycling and Walking Infrastructure Plan (LCWIP) covers the North Herts District and showcases that Hertfordshire County Council (HCC) and North Herts District Council (NHDC) share central government’s ambition to make cycling and walking the natural choice for shorter journeys or as part of a 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 district, with the LCWIP approach being applied across the rest of the county in due course.
- 1.1.4. To achieve this the council recognises 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 the councils' strategic corporate objectives and transport, public health, environmental and planning policy.
- 1.1.6. As such, the North Herts LCWIP will be revisited periodically and updated as infrastructure is built throughout the district. While all of North Herts 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 (Hitchin, Letchworth Garden City, Baldock, Royston and Knebworth) and the shorter inter-urban routes (which typically have greater potential). This means that initially the areas and routes in the district 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 district which were not audited in this iteration. These will include (but are not limited to) for example: outer neighbourhoods in Hitchin and Letchworth Garden City, villages such as Ashwell and Pirton, and inter-urban routes such as Stevenage to Letchworth Garden City. This is discussed in more detail in sections 5.6, 6.7, 7.3.5, 7.5 and 9 of this report.
- 1.1.8. WSP has worked in close collaboration with HCC and North Hertfordshire District Council (NHDC) 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 North Herts;
 - 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 NHDC 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 in these stages, 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 NHDC 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.

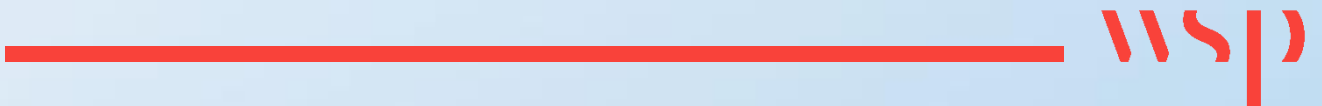
Table 1-2 – Report Structure

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 contents of each appendix is listed in the report context before this introduction. Of particular help to the reader may be Appendix K, which contains a list of acronyms used in this report.

2

LCWIP GEOGRAPHICAL SCOPE

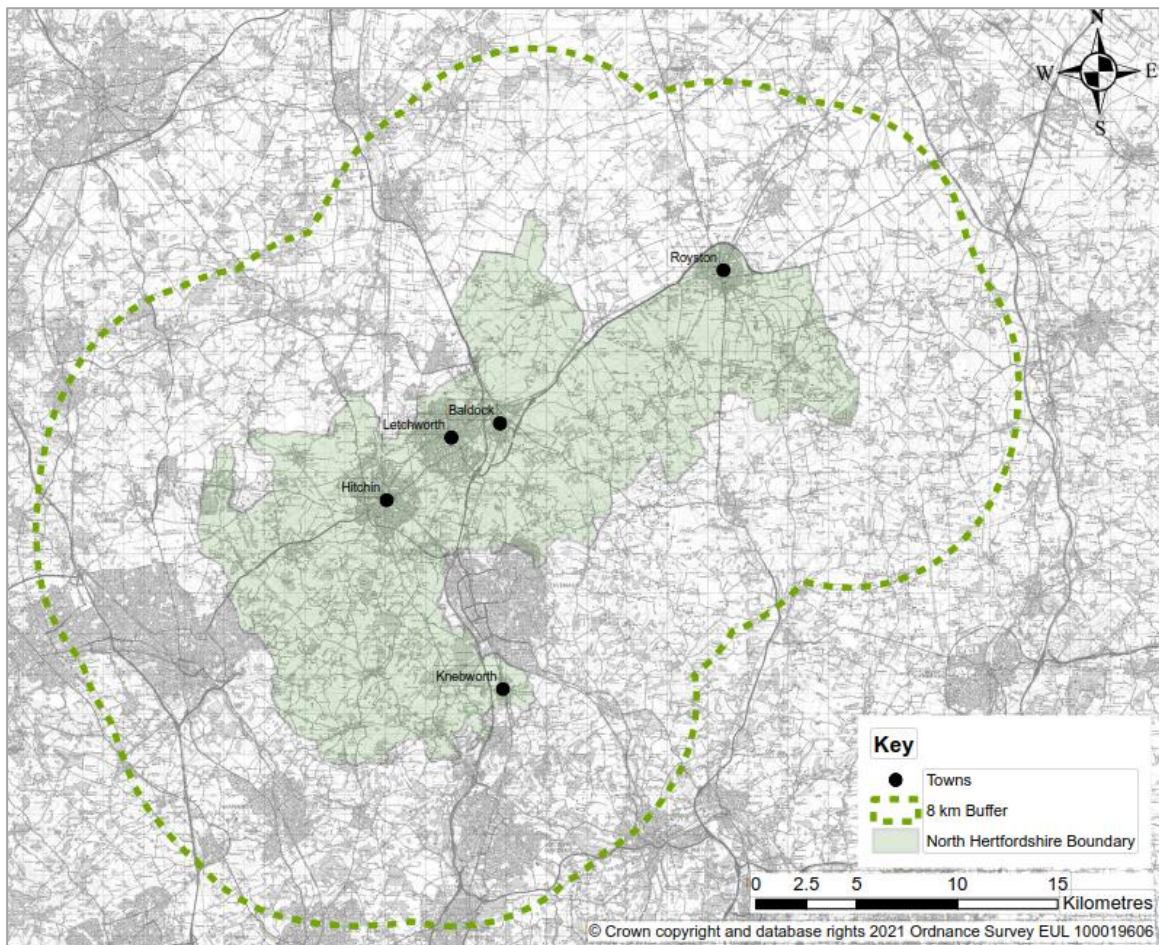


2 LCWIP GEOGRAPHICAL SCOPE

2.1 LCWIP GEOGRAPHICAL SCOPE

- 2.1.1. The routes and infrastructure plans contained within this LCWIP do not extend beyond the North Herts district boundary. However, these routes and infrastructure plans are influenced by the potential for journeys coming in and out of the district from nearby settlements. As such, when developing this LCWIP, a wider area (8km from the district boundary) has been studied. This is shown in Figure 2-1 along with the North Herts district boundary for context.
- 2.1.2. This 8km (5 mile) distance was selected based on the DfT’s Gear Change document, which refers to this as a distance that is ‘suited to cycling’ for ‘many people’. Key settlements within this distance from North Herts include Luton, Stevenage and Welwyn Garden City. The LCWIP has therefore considered trips to/from these settlements and has developed plans for the higher potential connections (e.g. Knebworth to Stevenage and Hitchin to Stevenage).

Figure 2-1 - Geographical Scope of the North Herts 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 district levels. Table 3-1 sets out the national strategic context while



3.1.3. Table 3-2 and

3.1.4. Table 3-3 set out the county and district 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 (see Appendix A for details).
North Central Growth and Transport Plan (NCGTP)	Hertfordshire County Council (HCC)	The suite of GTPs are area-based transport strategies which support LTP4. The area covered by NCGTP includes North Herts District. The NCGTP 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. It contains several intervention packages relating to connections for active and sustainable transport which are relevant to this LCWIPs (see Appendix A for details).
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.
B197 Corridor Study	Hertfordshire County Council (HCC)	The NCGTP and its equivalent for the South Central area identified a need for a sustainable transport corridor along the B197 from Stevenage in the north to Welwyn Garden City in the south via the villages of Knebworth, Woolmer Green and Oaklands. The section between Stevenage and Woolmer Green via Knebworth is in North Herts and the LCWIP project team has seen the emerging findings of this study, which the work in the LCWIP support. More information on this is included throughout the report.

Table 3-3 - District Strategies, Policies and Plans

Document	Publisher and Date Published	Description
<p>Emerging Local Plan</p> <p>(North Herts District Council, 2011-2031)</p>	<p>North Herts District Council</p>	<p>The Emerging Local Plan sets out the planning framework for the borough for the plan period. It seeks to address the key issues facing North Hertfordshire and sets a strategic vision and spatial strategy for the district. It is yet to be adopted but gives an indication of the prevailing policy for the district. The document highlights the challenges facing North Hertfordshire and contains policies to bring about sustainable development, and promote sustainable modes of transport including making appropriate provision for pedestrians and cyclists.</p>
<p>Transport Strategy</p>	<p>North Herts District Council</p> <p>2017</p>	<p>The Transport Strategy was produced as supporting evidence for the Emerging Local Plan and also informed the NCGTP. It assesses the implications of the Local Plan proposals on the local transport networks and recommends a strategic approach to provide for transport through the Emerging Local Plan period. The transport strategy reflects a new approach to transport which places far greater emphasis on more sustainable travel choices such as cycling and public transport, and lower emphasis on highway improvements. The Transport Strategy identifies key principles to be delivered through various policies, some of which reference specific corridors in and around the District (see Appendix A for details).</p>
<p>Letchworth Garden City Cycling Strategy</p>	<p>LGC Heritage Foundation</p> <p>2018</p>	<p>This strategy was produced to assist HCC, NHDC and other external funders in identifying and proposing potential improvements for cyclists in Letchworth Garden City (LGC). It identifies ‘quick-win’, as well as medium- to long-term improvements to cycling conditions in Letchworth. Its objectives include enhancing and extending cycle routes to create a comprehensive network, making cycling an easy, pleasant choice whether in or through residential areas or en route to key destinations in LGC. This LCWIP has reviewed the suggestions identified and, where there was evidence for the improvements and the suggestions conformed with latest best practice and the results of LCWIP auditing, these have been incorporated into the LCWIP.</p>
<p>Knebworth Neighbourhood Plan</p>	<p>Knebworth Parish Council</p>	<p>The Knebworth Neighbourhood Plan (KNP) sets out a plan to make Knebworth a vibrant and inclusive place to live, with aspirations around good design and sustainable</p>

	2021	growth while maintaining a rural character. While it primarily focuses on new developments, it “supports proposals that encourage change of travel mode away from the private car to more sustainable forms of transport” and goes on to talk about “encouraging a switch to walking and cycling by improving the safety and quality of existing facilities”.
Baldock, Bygrave and Clothall Neighbourhood Plan	(Produced by volunteers from community organisations in Baldock, Bygrave and Clothall) 2021	This neighbourhood plan contains policies that complement the Emerging Local Plan, providing additional safeguards and requirements. It supports walking and cycling infrastructure, having highlighted the need for improved infrastructure in certain key locations (for details, see Appendix A). The report also states the importance of reducing congestion and air pollution, suggesting providing walking and cycling routes between key sites within Baldock as a way to tackle this.
Pirton Neighbourhood Development Plan	Pirton Parish Council 2018	This neighbourhood plan sets out a vision for the future of the Pirton up to 2031. Its key purpose is to encourage sustainable development in accordance with the character of the village, with an emphasis on encouraging walking and cycling in and around the village and parish. It highlights certain key areas for this, which the LCWIP supports (for details, see Appendix A).
Ashwell Neighbourhood Plan	Ashwell Parish Council 2021	The stated purpose of the plan is to structure development within the parish. It supports improving walking and cycling infrastructure to encourage short, local journeys to be made by foot, including a complete walking and cycling link between Ashwell and the railway station, which is also supported by this LCWIP.
Wymondley Parish Neighbourhood Plan	Wymondley Parish Council 2019	This neighbourhood plan includes policies which aim to create a more sustainable way of life for residents, recognising the importance of green infrastructure in reducing carbon footprints. It supports appropriate initiatives to maintain, improve and facilitate use of green transport routes, including footpaths and bridleways.
Preston Parish Neighbourhood Plan	Preston Parish Council 2020	This plan includes objectives to promote and improve walking and cycling facilities. Although no specific infrastructure proposals in the Preston area are included in this LCWIP, the need for active travel routes within Preston town and from Preston to Hitchin and Stevenage have been recognised and included in this LCWIP.

3.2 RELEVANT PLANS IN NEIGHBOURING AUTHORITIES

- 3.2.1. At the time of writing, St Albans City and District Council and Welwyn Hatfield Borough 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.
- 3.2.2. The key inter-urban route between these areas relevant to the North Herts LCWIP is the connection south from Knebworth into Welwyn Hatfield Borough along the B197 corridor. This connection passes south through the settlements of Woolmer Green, Oaklands and Welwyn, eventually reaching Welwyn Garden City. For more on this connection please see sections 5.6, 6.7, 7.4 and 9.5 of this report as well as the 'Stevenage LCWIP' section below.
- 3.2.3. HCC has further aspirations to produce LCWIPs for each of the authorities across Hertfordshire County, including East Herts District which also borders North Herts District.

STEVENAGE LCWIP

- 3.2.4. Stevenage Borough Council developed the Stevenage LCWIP in 2019, which sets out a network of preferred and future routes for walking and cycling in the borough. There are a few interfaces between the two LCWIPs identified in this report:
 - This LCWIP has confirmed a need for an active travel link between Hitchin and Stevenage. High-level infrastructure ideas for this link are included in section 7 of this report. Plans included in this LCWIP end at the district boundary, to the west of Junction 8 of the A1(M). The Stevenage LCWIP Route 1 'North Stevenage to Stevenage Central', links this junction to Stevenage town centre via the A602, creating an opportunity for a long, cross-boundary connection. However, plans in the Stevenage LCWIP stop short of continuing the route over the junction, instead continuing the route north along the National Cycle Network route towards Letchworth via Gravelly. While this link is important too, there is a need to address the A602 barrier in order to provide a more direct connection between Stevenage and Hitchin. This would require further collaboration between HCC, Stevenage Borough Council and NHDC.
 - The B197 corridor study links Stevenage in the north with Welwyn Garden City in the south and the North Herts section (from Stevenage to Woolmer Green via Knebworth) is also covered in this LCWIP. However, the first iteration of the Stevenage LCWIP did not include connections to such a route. Further collaboration between the three

authorities is therefore required here too, in order to ensure any future B197 connection is properly integrated into Stevenage's walking and cycling networks.

- There are some developments planned on the edge of the Stevenage urban area (by Great Ashby) which are inside North Herts district. In terms of active travel, the key connections for these developments will be into Great Ashby and Stevenage, which are in Stevenage Borough. These connections have been identified in sections 5 and 6 of this report.

CAMBRIDGESHIRE GREENWAYS

- 3.2.5. The Greater Cambridge Partnership are working on the development of a high-quality greenway network, which will encourage walking and cycling as a mode of travel both into and out of Cambridge. The Melbourn Greenway is relevant to this LCWIP as it proposes to link Royston to Cambridge via Melbourne, Foxton and Trumpington. The analysis conducted for this LCWIP also identifies a need for this connection (see sections 5 and 6) and infrastructure proposed in section 7 would tie in with the Melbourn Greenway's proposal for a bridge over the A505 to link into Royston. Current validation work is being undertaken separately by HCC to look at these links.

LUTON LCWIP

- 3.2.6. Luton Borough Council are currently developing an LCWIP, which is expected to be completed in 2022. There are some developments planned on the edge of Luton which are inside North Herts district. The key walking and cycling connections for these developments will be into Luton, on the other side of the district boundary. These connections have been identified in sections 5 and 6 of this report.

LUTON AIRPORT EXPANSION

- 3.2.7. Luton Airport, which is located on the border of North Hertfordshire is currently consulting on opening a second terminal. To minimise the impact of additional trips on the road network, the proposals for the expansion would include funding for highway improvements. This might also include changes to parking controls, traffic management and calming measures close to the airport and in rural areas to the east of the airport. The proposals assumed that few passengers would walk or cycle to the airport.
- 3.2.8. The mitigations document proposes a number of junctions in Hitchin that would require mitigation to accommodate extra traffic flows to the airport. Any junction improvements will



also need to include walking and cycling enhancements A602 Parkway/ Upper Tilehouse Street

- A505 Offley Road/ Upper Tilehouse St
- A602 Park Way/ Stevenage Road/ Hitchin Hill

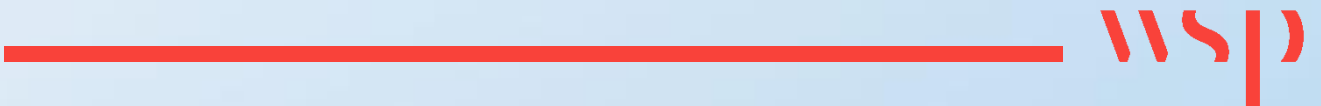
3.2.9. There are also some traffic calming areas identified in the villages to the east of Luton.

3.2.10. The two key documents are:

- Getting to and from the Airport
- Highway Mitigation Drawings (contained in an appendix)

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 strategies, plans and policies detailed 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 district- wide level, applied to the network, in Figure 4-1 and Figure 4-2 respectively. 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 based on more optimistic assumptions. These outputs highlight a number of inter-urban routes which may have moderate to high potential for increased cycle commute trips:
- Hitchin to Stevenage
 - Letchworth Garden City to Stevenage
 - Baldock to Stotfold
 - Letchworth Garden City to Stotfold
 - Henlow Camp to Hitchin
 - Hitchin to Arlesey
 - Letchworth Garden City to Arlesey
 - Royston to Kneesworth/Bassingbourn
 - Royston to Melbourn/Meldreth
 - Knebworth to Stevenage
 - Knebworth to Welwyn via Woolmer Green, Oaklands and Bull’s Green

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

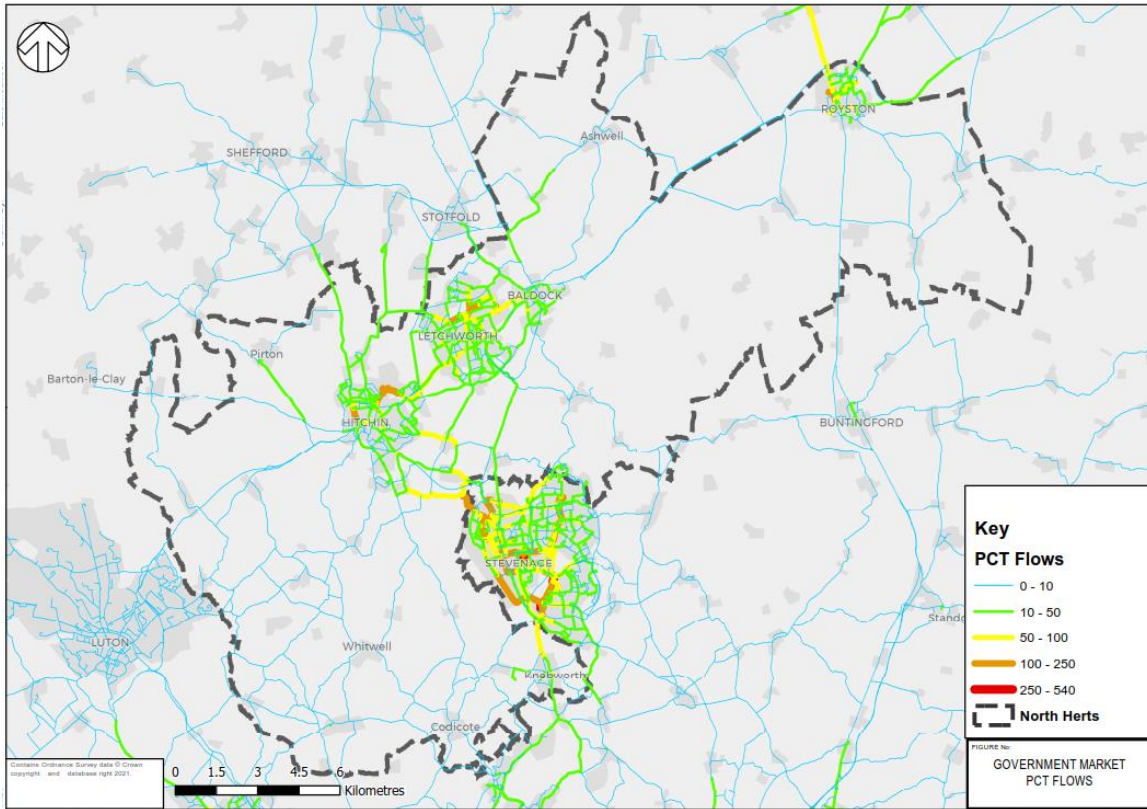
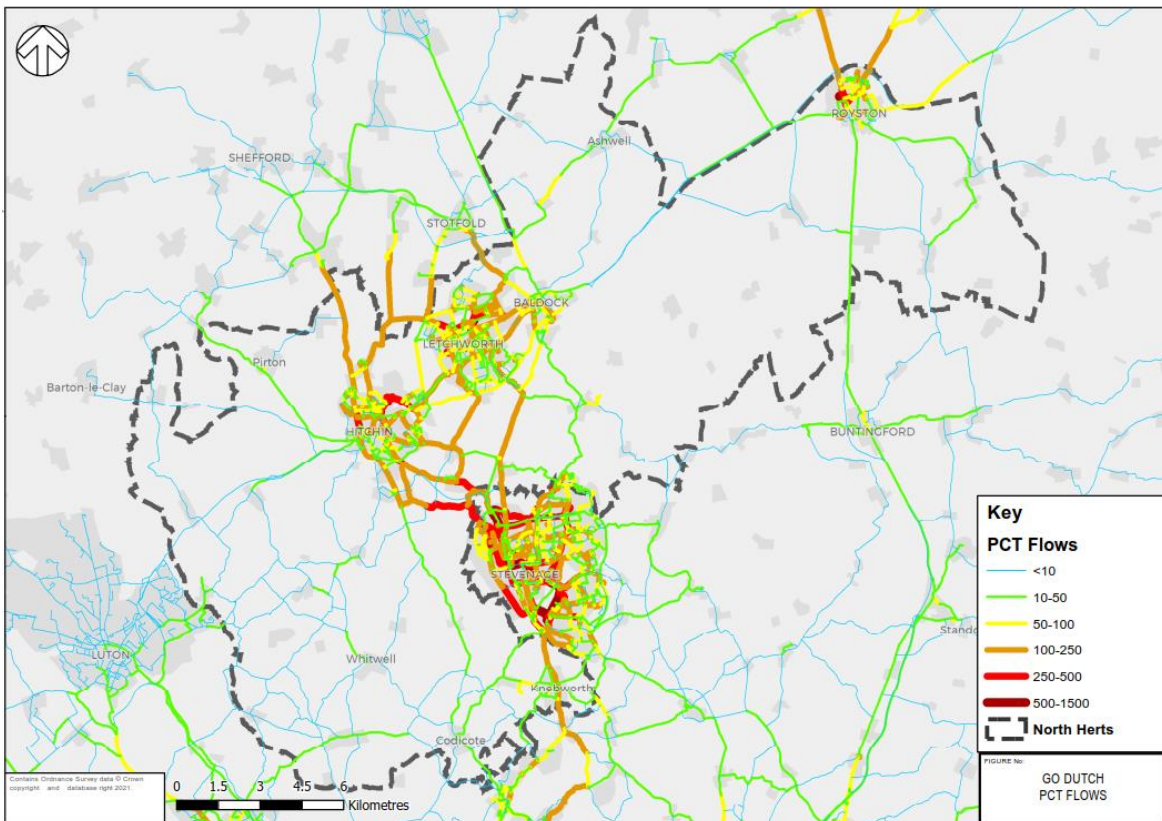


Figure 4-2 – PCT Output - District-wide “Go Dutch” Scenario



LIMITATIONS

- 4.2.8. While the PCT is a very useful tool, it has some key limitations when considering potential demand for cycling, which lead to an underestimate of demand. These are also acknowledged in the DfT 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 stations.
- 4.2.10. A second key limitation is that it is based on old data and does not consider new residential developments built since 2011, nor any future planned developments. It also doesn't take into account any new key employment areas that have been developed since 2011.
- 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

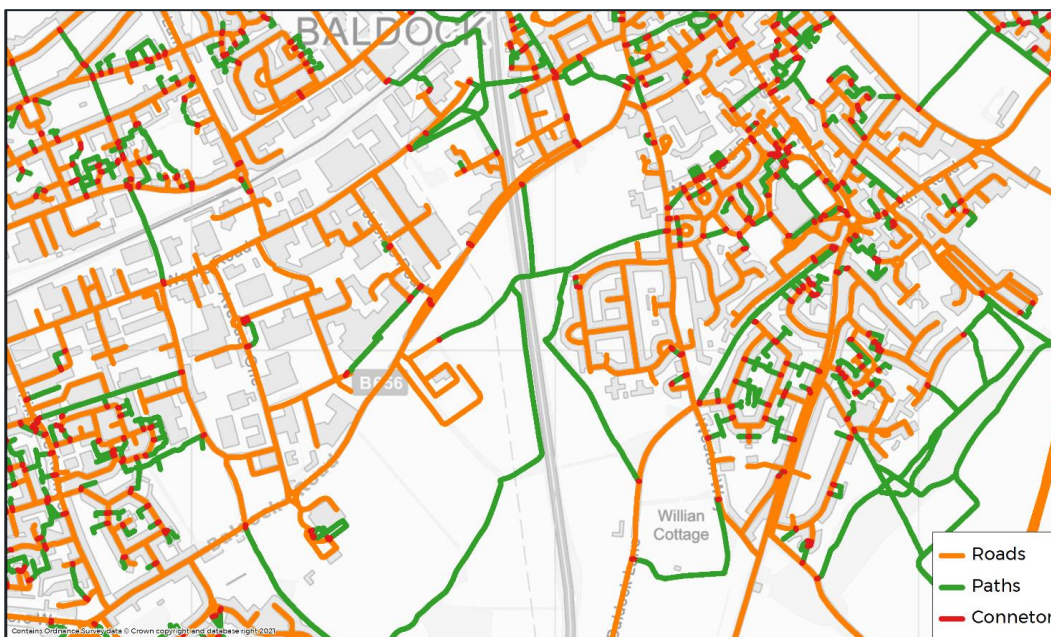
OVERVIEW

- 4.3.1. WSP has built a GIS model for 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 beyond 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 layman's 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 NHDC. 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, including settlements such as Luton, Biggleswade, Harlow and Aylesbury for example).
- 4.3.4. The network consists of two Ordnance Survey MasterMap datasets (as of May 2021): the most detailed road network available and its associated paths dataset. These were merged together as shown in Figure 4-3, with motorways removed from the 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 and paths are cyclable or can be made cyclable, is investigated later.
- 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 three sources:
- Current residential addresses (Source: Experian Mosaic postcodes with 2019/20 population estimates);
 - Recently completed and proposed housing sites (Source: North Herts COMET R6 Housing Completions – these represented completed housing sites as of Autumn 2020) ; and
 - Proposed housing developments (Source: North Herts COMET R6 Perm Sites L3).
- 4.3.9. In the model, this first source represents existing residential origin points while the second and third sources represent potential future origin points.
- 4.3.10. There are a total of 19,628 origin points in the study area (North Herts district boundary plus 8km). Each origin point is weighted to represent its current or likely future population.

DESTINATION POINTS

- 4.3.11. The destination points datasets were supplied by HCC. They 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

4.3.12. The walking destination points dataset combined all of these destinations, creating a total of 9,157 points.

4.3.13. The cycling destination points dataset omitted bus stops (as few cycle trips are made to bus stops), creating a total of 6,839 points.

ASSUMPTIONS

4.3.14. 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.

4.3.15. 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 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’. Trips within this distance generated by the model include trips north from Letchworth Garden City to Stotfold, trips from Hitchin to Stevenage and trips from Royston to Bassingbourn.
- 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.

4.3.16. 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

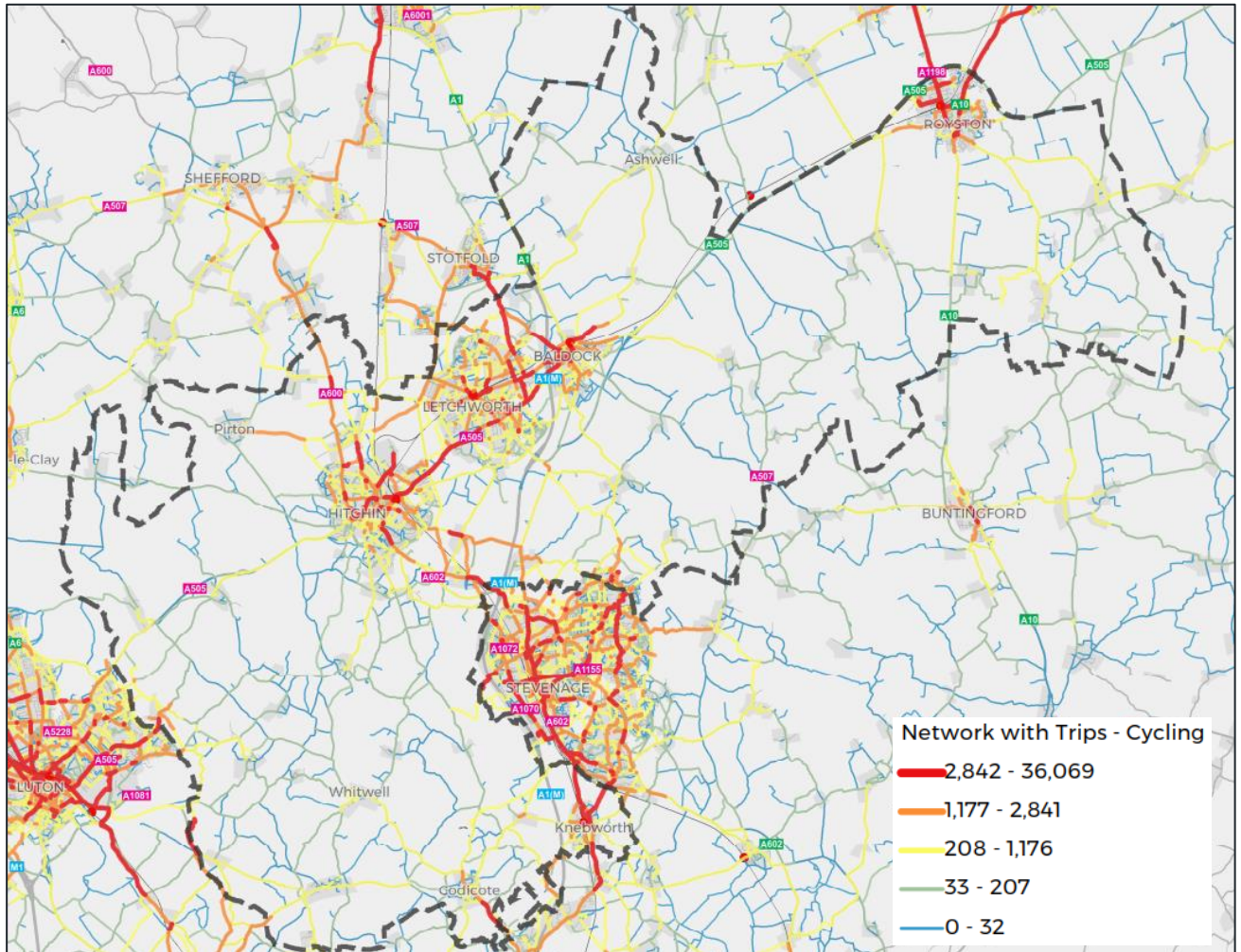
4.3.17. As with the Propensity to Cycle Tool, the WSP/HCC LCWIP GIS model has limitations and is not a perfect representation of reality. This is true of most models in transport planning. In the case of the GIS model, for example, the model does not take into account topography and many assumptions 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 North Herts has been built.

4.3.18. The exclusion of trips over 8km in length keeps the focus on shorter, local journeys which are achievable for more people than longer inter-urban or rural trips on country lanes. However, it is worth noting that there is still great potential for longer trips among some parts of the population and, with the increased uptake of e-bikes, distance constraints are becoming less important. As such, the 8km cut-off used in the model could be considered a limitation. However, as discussed in section 4.2, the PCT outputs do capture the potential for some of these longer trips, such as Letchworth Garden City to Stevenage.

GIS MODEL CYCLING OUTPUTS

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

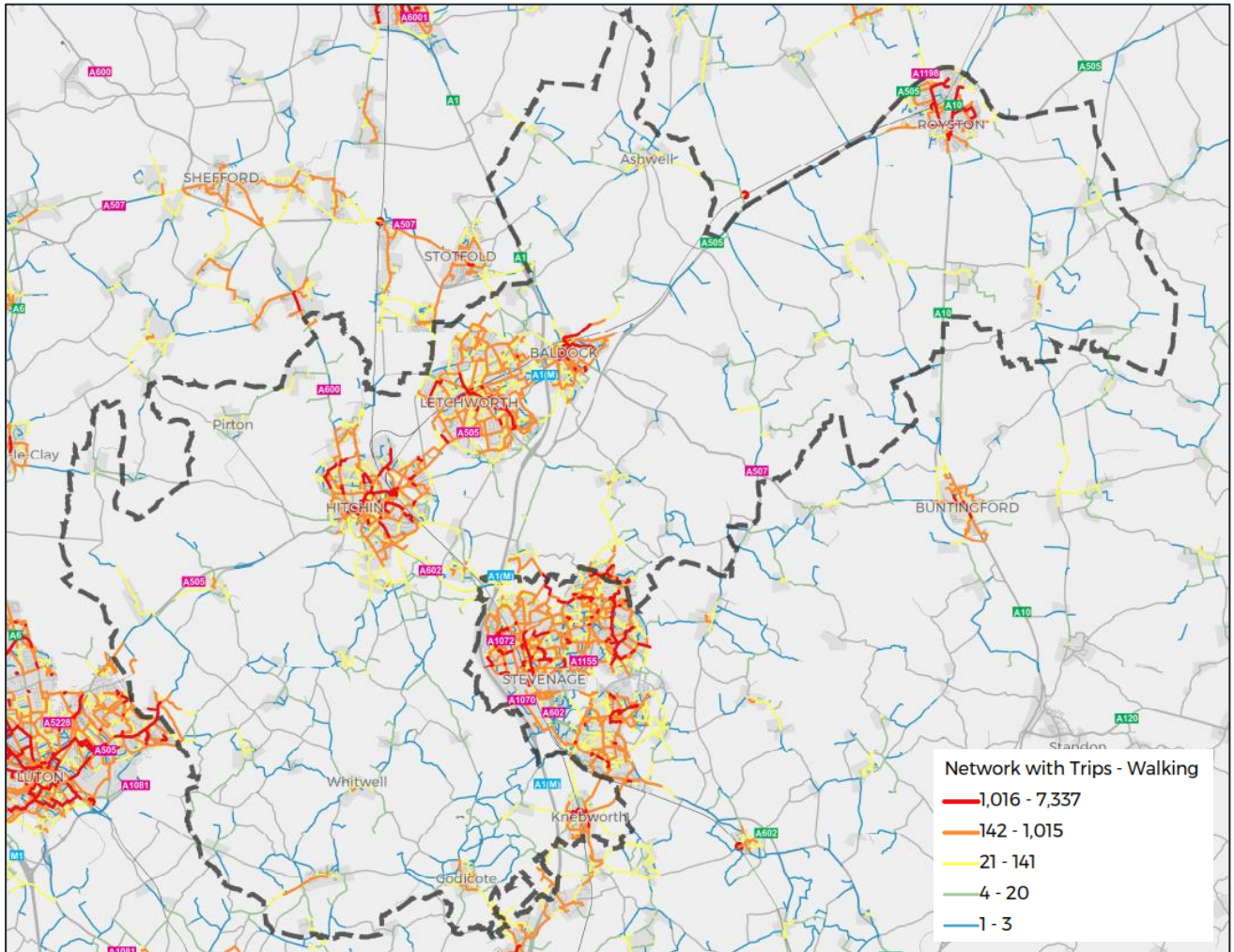
Figure 4-4 - LCWIP GIS Model - District-wide Cycling Outputs



GIS MODEL WALKING OUTPUTS

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

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



DISCUSSION

4.3.21. 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 high demand for inter-urban trips (e.g. between Stevenage and Knebworth, between Stevenage and Hitchin, between Royston and Melbourn, and between Hitchin, Letchworth and Baldock). By contrast, the walking model output shows demand concentrated more within the towns and villages.

4.3.22. 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).

4.3.23. As the cycling model removes any journeys over 8km in length, this results in low demand between Letchworth Garden City and Stevenage according to the cycling model output as this is a distance of 10.7km, while a good demand is shown between Hitchin and Stevenage (Hitchin is slightly closer to Stevenage). However, for those willing to make such inter-urban journeys, a difference of a two or three kilometres may not make much difference in terms of their willingness to cycle, especially if they were using an e-bike. That being said, the potential for inter-urban journeys between Letchworth Garden City and Stevenage is identified in the 'Go Dutch' output of the Propensity to Cycle Tool (see Figure 4-2), and the need to improve this connection also features in HCC's North Central Growth and Transport Plan Policy SM82. For more on this connection, please see sections 7.5 and 9.5.

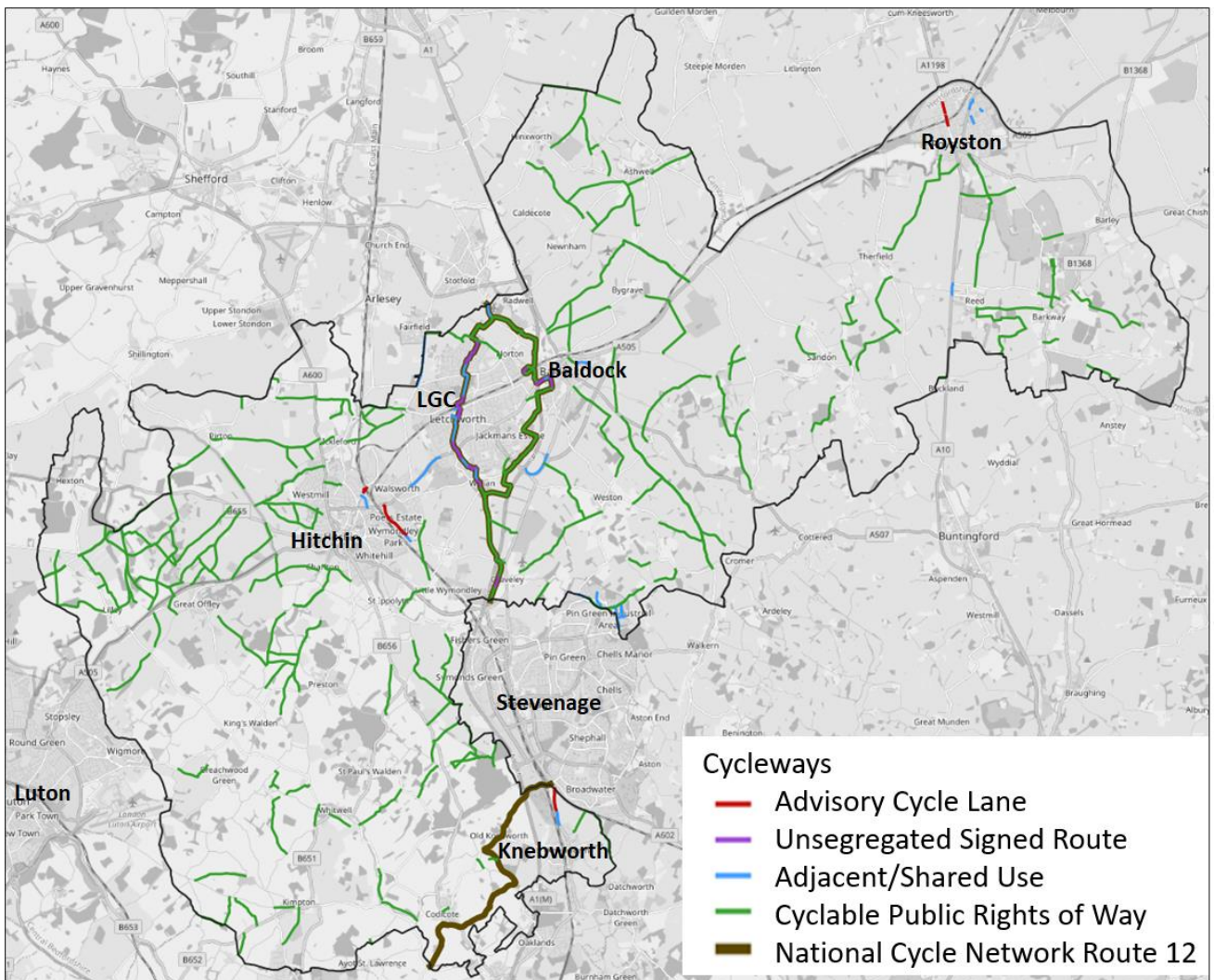
4.4 RIGHTS OF WAY

- 4.4.1. Hertfordshire County Council provided a GIS database of the existing Rights of Way (ROW) across North Herts. This database included three different classifications: Bridleways, Restricted Byways and Byways Open to All Traffic. These are all types of ROW where walking, cycling and horse-riding are permitted and are the main modes of transport. Motor vehicles are only allowed on the latter type of ROW.
- 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 'Cyclable Public Rights of Way'). Based on the definitions above, it was assumed that all identified ROW 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 taken into account when planning the walking and cycling networks – connectivity between the ROW and planned routes has been sought wherever possible.
- 4.4.4. Where ROW were on audited routes, visited and identified as not being fully accessible, improvements such as widening and resurfacing have been suggested. More detail on the improvements proposed is available in section 7.
- 4.4.5. ROW coverage is extensive particularly in the area to the west of Hitchin. It would be useful if, in future, information on surfacing, 'walkability' and 'cyclability' of these (and other) 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 included advisory cycle lanes and shared footways.
- 4.5.2. There are a number of leisure routes and signed cycle routes in North Hertfordshire which make use of ROW, advisory cycle lanes and shared footways, although some of these routes also make use of country lanes (unsegregated from motor traffic). Two notable routes are the Letchworth Greenway (a loop route for walkers, runners and cyclists) and National Cycle Network (NCN) Route 12. An additional cycle facility of note is the high-quality pedestrian/cycle underpass in North Royston, connecting areas either side of the railway line. Figure 4-6 below shows the location of the different types of existing cycle facilities and routes in North Hertfordshire.

Figure 4-6 – Existing Cycle Facilities in North Hertfordshire



- 4.5.3. 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. Where existing cycle routes have been audited, improvements such as converting advisory cycle lanes into segregated facilities and upgrading shared use footways to separate pedestrian have been suggested. More detail on the improvements proposed is available in section 7.

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. Three strategic routes from HCC's Local Transport Plan 4 pass through North Herts District:
- Corridor 3: Luton – Stevenage – Peterborough
 - Corridor 6: Luton – Stevenage, via Hitchin
 - Corridor 7: Stevenage – Cambridge

North Central Growth and Transport Plan

- 4.6.3. The following connections are locations of packages of measures from the NCGTP where improvements for walking and cycling have been identified as being required:
- PK4 Stevenage to Welwyn Garden City
 - PK5 Stevenage to Hitchin, Luton and Luton Airport
 - PK6 Stevenage to Letchworth Garden City
 - PK7 Hitchin centre including the rail station
 - PK8 North Hitchin and industrial estate to Hitchin centre
 - PK9 West Hitchin (Bearton and Westmill) to Hitchin centre
 - PK10 Hitchin to Letchworth Garden City / Baldock
 - PK11 Letchworth Garden City to Letchworth Gateway (industrial estate)
 - PK12 North Letchworth Garden City to Letchworth Garden City centre
 - PK13 Baldock connectivity to rail stations and development sites
 - PK14 Connections to Central Beds from Hitchin and Letchworth Garden City
 - PK15 Royston connectivity

North Herts Transport Strategy

4.6.4. The following connections were identified as desired sustainable transport corridors in NHDC's Transport Strategy:

- Ashwell and Morden connection to railway statopm
- Connect Barley and Barkway
- Sustainable spine along the A505 (including connecting Baldock and Royston)

Letchworth Garden City Cycle Strategy

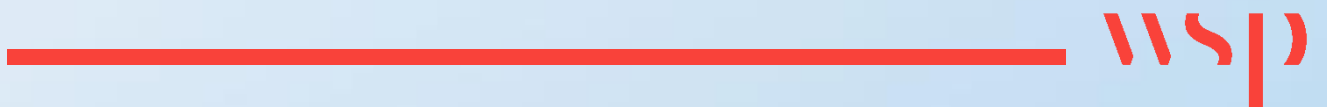
4.6.5. The following connections were identified as key for improving conditions for cycling in Letchworth Garden City in the LGC Heritage Foundation's Cycling Strategy:

- Secondary north / south cycle corridor
- East / west cycle corridor improvements
- Re-route of greenway away from Wilbury Road
- Green link from standalone farm to Norton Common
- Letchworth Gateway to town centre
- Access to North Herts Leisure Centre
- Improve NCN12 route through and north of Norton Common
- Improved NCN12 link to Stevenage
- Cycle improvements north of Grange Estate
- Broadway improvements for cyclists

4.6.6. 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 LCWIP 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

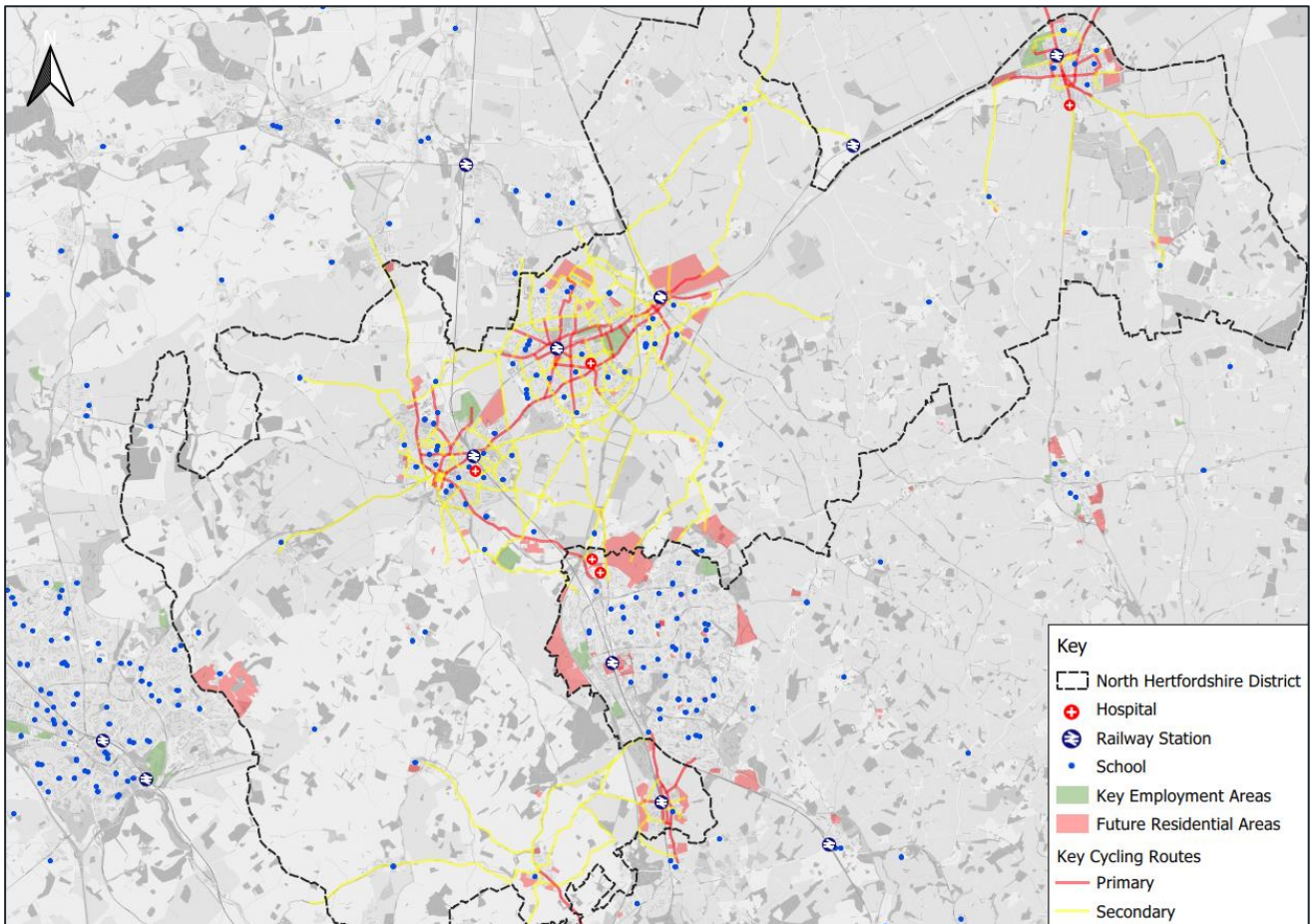
- 5.2.1. As identified in section 4, model outputs, existing cycle facilities and strategic active travel routes and connections were mapped alongside potential future developments and key destinations (rail stations, schools and key employment areas) for reference. The LCWIP project team then used the model outputs to determine ‘primary’ and ‘secondary’ cycle desire lines across North Herts as per the definitions in the LCWIP guidance.
- 5.2.2. Where the model outputs identified desire lines with greater potential demand and/or connected 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. Multiple primary and secondary routes were identified within each of the five key urban areas specified in the scoping report (Hitchin, Letchworth Garden City, Baldock, Royston and Knebworth). Secondary routes were identified connecting these areas with surrounding villages and settlements. Some inter-urban cycle routes were identified, notably linking Hitchin and Knebworth to Stevenage with primary routes. Links between Stevenage and Letchworth Garden City and Baldock were also identified, but due to the model outputs and greater distances involved, these were classed as secondary routes.
- 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, the Letchworth orbital greenway and NCN routes were included as primary / secondary routes. Most county and district strategic routes

and connections were backed up by the model outputs and therefore also catered for with secondary and primary 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 North Herts District 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 began with a virtual workshop using Microsoft Teams and the online whiteboard tool 'Miro'. This workshop took place on 15 July 2021.
- 5.4.3. Both walking and cycling were discussed at this workshop 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. The workshop was attended by representatives from:
- Hertfordshire County Council;
 - North Hertfordshire District Council;
 - Welwyn Hatfield Borough Council;
 - Stevenage Borough Council;
 - Central Bedfordshire Council;
 - Ickleford Parish Council;
 - Knebworth Parish Council;
 - Kimpton Parish Council;
 - Pirton Parish Council;
 - Royston Parish Council;
 - Living Streets;
 - Letchworth Cyclists; and
 - Transition Town Letchworth.
- 5.4.5. The Miro 'whiteboard' provided stakeholders a way to directly comment on a map of the draft network. The whiteboard remained open and available for comment online for two weeks after the workshop. This allowed stakeholders who attended the workshop additional time to digest the draft network plan and comment in full. It also allowed stakeholders who were unable to attend the virtual workshop a chance to view the material and comment in their own time.
- 5.4.6. Stakeholders provided valuable feedback in relation to the draft cycling network, including:
- Identifying existing active travel routes that need integration into the wider network;
 - Highlighting where areas should be linked to the NCN route 12; and
 - Pointing out alternative adjacent routes that are more popular among residents.

- 5.4.7. Some stakeholders had technical difficulty using Miro. The LCWIP project team sent these stakeholders the plans via email and received comments back via email.
- 5.4.8. Extensive comments were received from Letchworth Cyclists, who had already produced an LCWIP-style 'Community Plan for a Letchworth Cycling and Walking Network'. This is a valuable document, written by people who regularly walk and cycle in Letchworth. For methodological consistency, the LCWIP project team took the same approach to developing the LCWIP in Letchworth Garden City as the rest of the district, referring to the Letchworth Cyclists plan principally during the stakeholder engagement windows for verification of routes and infrastructure ideas. However, it is encouraging that the two independent processes have much overlap in terms of findings and recommendations. Two notable differences are:
- The North Herts LCWIP places more emphasis on inter-urban trips (e.g. linking Letchworth Garden City with Hitchin and Baldock) while the Letchworth Cyclists plan focuses on trips within Letchworth. This is particularly noticeable when considering approaches to the primary cycle route on the A505, for example.
 - The Letchworth Cyclists plan has greater coverage of Letchworth Garden City in terms of infrastructure ideas. As the LCWIP project team was covering four other urban areas as part of this LCWIP and time and resource was limited, it was simply not possible to audit routes covering all of Letchworth Garden City in this first iteration of the LCWIP. When this LCWIP is revisited, areas which were not visited and audited (for example, outer neighbourhoods such as the Jackmans Estate) should be prioritised for audit. The Letchworth Cyclists plan will likely still be a valuable resource at that time.
- 5.4.9. Some key stakeholders were invited to the virtual workshop and to engage in the process but did not attend. Representatives were invited from organisations including Sustrans and Cycling UK and various relevant local organisations, but they did not attend the workshop or engage at this stage of the process. However, a representative from Sustrans did attend a virtual workshop and engage later in the LCWIP (described in section 7 of this report).
- 5.4.10. Following the stakeholder engagement, the network plan was updated to reflect relevant comments and suggestions received. The updated network plans are available in section 7.6 and Appendix F.

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. In order to make the process manageable at this stage, the focus was on prioritising a sub-set of primary routes where it was identified there was likely to be the greatest demand for cycling. A subset of primary routes for audit was selected based on stakeholder feedback and discussions between WSP, HCC and NHDC. This included primary routes in Hitchin, Letchworth Garden City, Baldock, Royston and Knebworth as well as three inter-urban routes:

- Hitchin to Stevenage
- Stevenage to Knebworth
- Hitchin to Baldock via Letchworth Garden City

5.5.2. Audits were undertaken by trained WSP 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 too 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 with infrastructure changes

5.5.3. Audits took place in September 2021 with staff from HCC also in attendance on certain days.

5.5.4. At the request of NHDC, additional virtual audits were undertaken for routes in the Hitchin area in early 2022 using Google Streetview.

5.5.5. 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

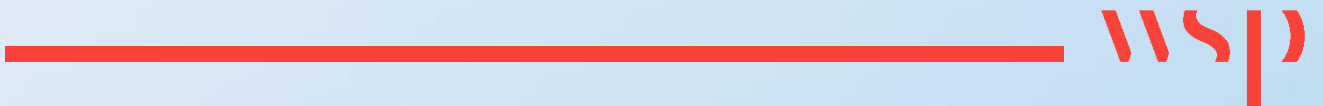
5.6.1. There are many primary and secondary routes which were identified but not fully audited in this first iteration of the LCWIP. Generally, there are no infrastructure improvements proposed on most of these routes for this reason. However, in visiting the towns and engaging with stakeholders, the LCWIP project team inevitably saw opportunities for active travel infrastructure improvements on routes that weren't formally audited. Many of these were

included and presented 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. It should be noted that separate work is already being undertaken by HCC to identify the potential for active travel provision on the following routes:
- B197 corridor (Stevenage - Welwyn);
 - Hitchin - Westmill area to the station;
 - NCN route 12 Stevenage - Letchworth (in conjunction with Sustrans);
 - Royston - links from proposed A505 cycle bridge to the town centre and station.
- 5.6.4. Detailed design work is also underway looking at the North Road corridor in Stevenage.

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. Five core walking zones were identified across North Hertfordshire, located in the town centres of Hitchin, Letchworth Garden City, Baldock, Royston and Knebworth. A sixth core walking zone was also identified at Letchworth Gateway, a large retail and industrial area. The town centres in Hitchin, Baldock and Royston are a short distance from the rail stations which serve them and so these CWZs do not contain rail stations, unlike the CWZs for Letchworth Garden City and Knebworth. (Letchworth Gateway does not have its own rail station). In the cases of Hitchin, Baldock and Royston, routes between the station and CWZ have been included as Key Walking Routes and audited.
- 6.2.3. The extent of each core walking zone considered within this LCWIP are shown in Figure 6-1 to Figure 6-5 below.

Figure 6-1 – Hitchin Core Walking Zone

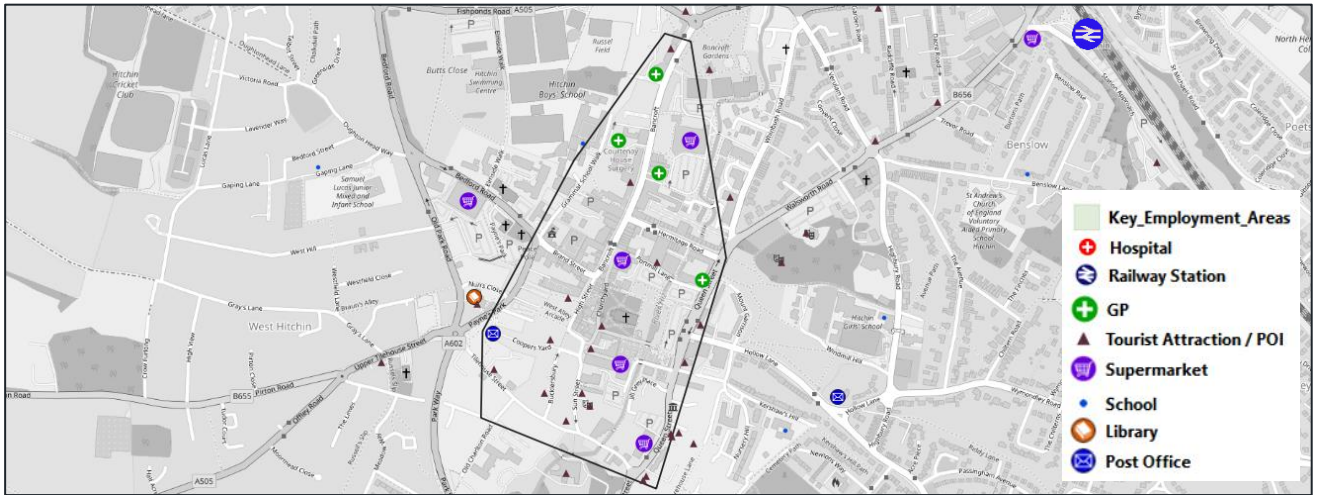


Figure 6-2 – Letchworth Garden City & Letchworth Gateway Core Walking Zones

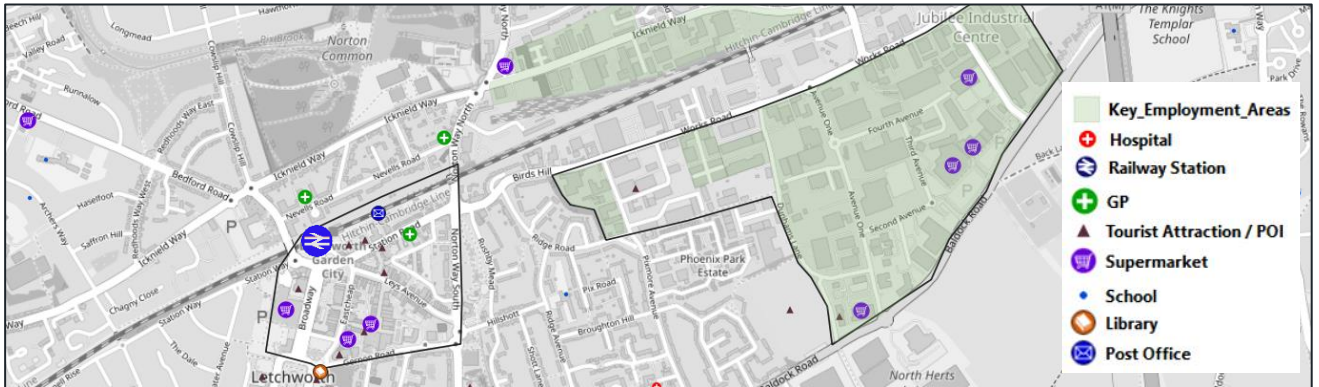


Figure 6-3 – Baldock Core Walking Zone

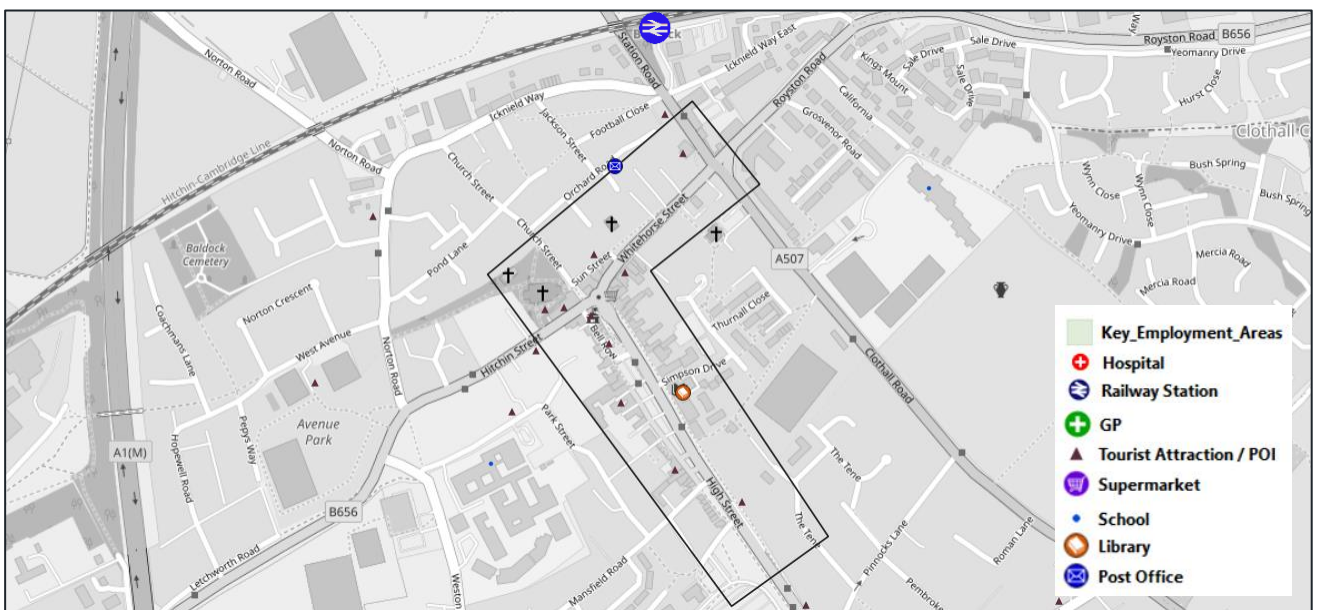


Figure 6-4 – Royston Core Walking Zone

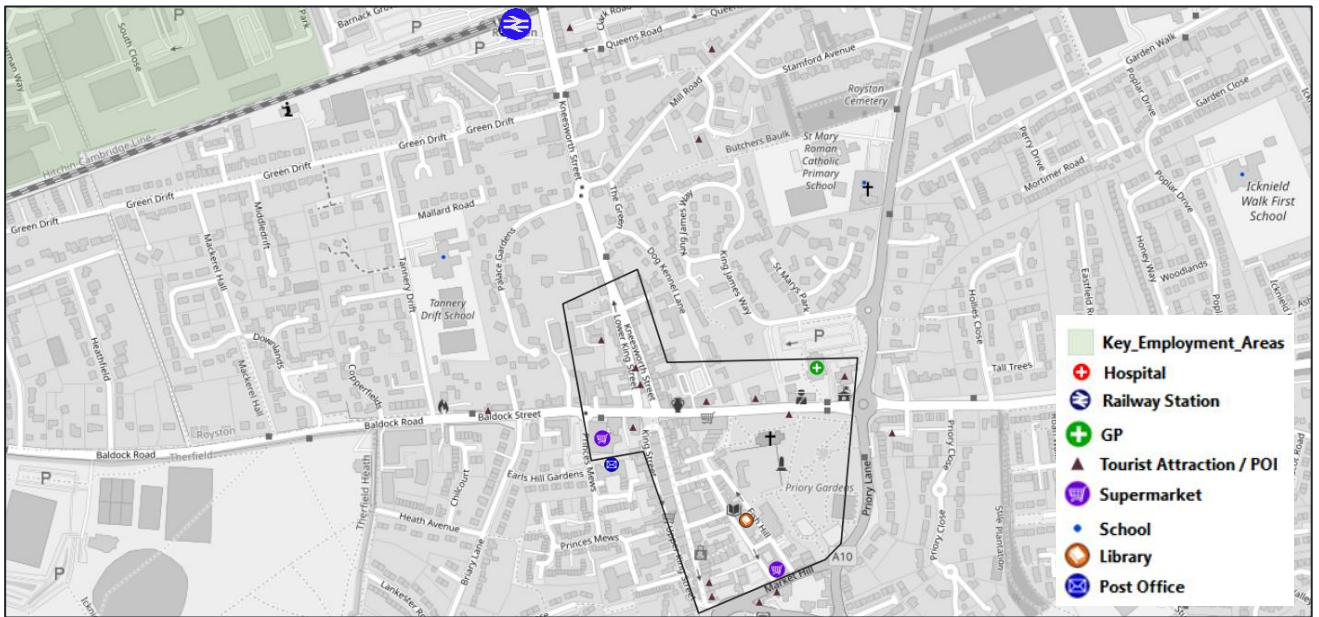
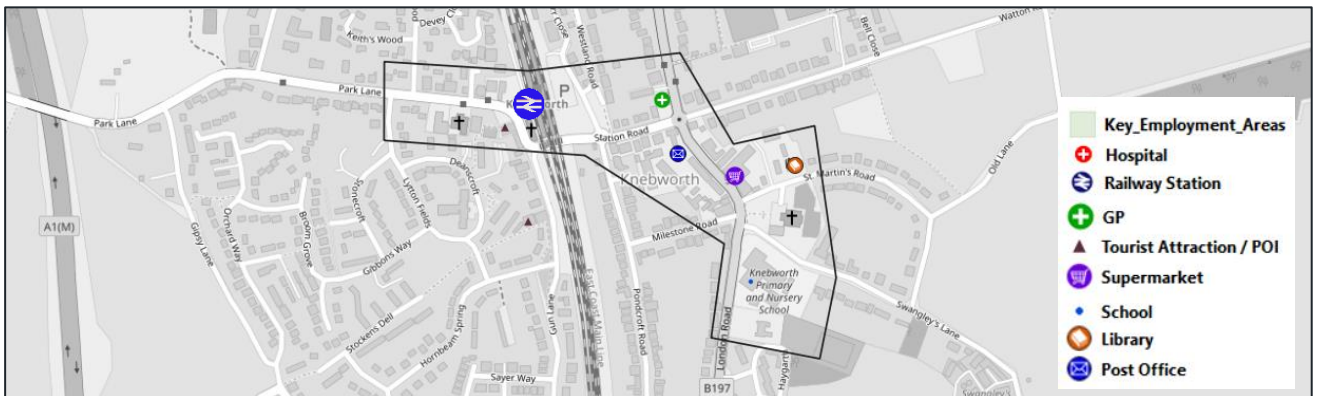


Figure 6-5 – Knebworth Core Walking Zone



6.3 IDENTIFYING KEY WALKING ROUTES

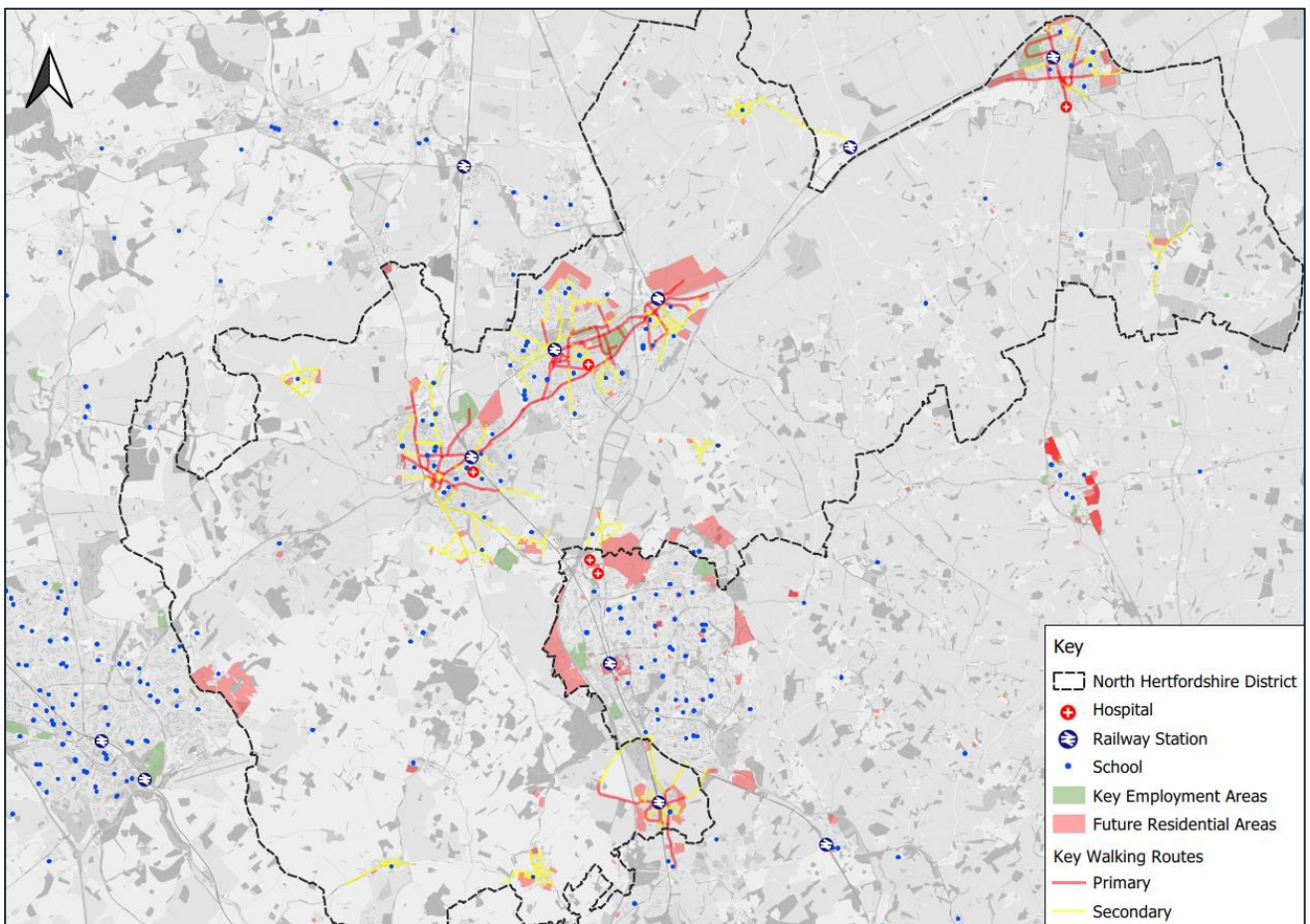
6.3.1. The CWZs represent the focal points for pedestrian journeys within North Hertfordshire, and therefore the starting point for mapping walking routes is to identify those that serve these CWZs. For this first iteration of the LCWIP, primary routes were considered those main pedestrian routes within CWZs as well as routes connecting to the CWZ (up to 2km in length). 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 the CWZ and secondary routes across the district.

6.4 DRAFT NETWORK PLAN FOR WALKING

6.4.1. The draft network plan for walking can be seen in Figure 6-6 below. It is important to note that this is not the final network plan for walking, which is presented later in this report. 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 6-6 – Draft North Herts District Network Plan for Walking



6.5 STAKEHOLDER ENGAGEMENT

- 6.5.1. During the same engagement period described in section 5.4, key stakeholders were given the opportunity to provide feedback on the draft network plans for both walking, 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 workshop described in section 5.4 (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 areas affected by heavy traffic which may deter pedestrians;
 - Identifying locations where crossings would reduce severance;
 - Highlighting areas where steps affect accessibility for some individuals; and
 - Identifying where routes should connect to existing ROW and greenways.
- 6.5.4. Following the stakeholder workshop, the network plan was updated to reflect the comments and suggestions received.

6.6 ROUTE AUDITING

- 6.6.1. Once the network plans were updated following stakeholder comments, the final section of primary routes were considered for auditing. Due to resource limitations, secondary routes and some primary routes could not be audited by the LCWIP project team. A subset of primary routes for audit was selected based on stakeholder feedback and discussions between WSP, HCC and NHDC. The routes audited are all either within, or connected to, the six CWZs.
- 6.6.2. Audits were undertaken by trained WSP 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 September 2021, with HCC staff also accompanying walking audits for training purposes.

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 the next section of this report.

6.7 NON-AUDITED ROUTES

6.7.1. As with the cycle routes, there are many primary and secondary walking routes which were identified but not fully audited in this first iteration of the North Herts 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. Many of these were included and 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.

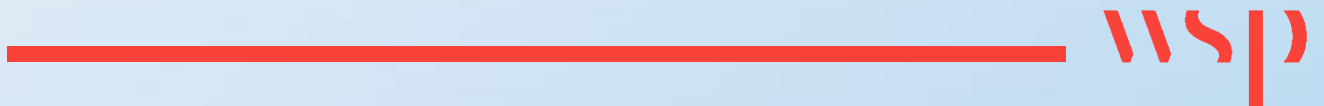
6.7.2. Again, as with the cycle routes, where primary and secondary walking routes were identified but not audited, these should be priorities for further investigation into active travel provision. This is described more in section 5.6 and 9.

6.7.3. There are various infrastructure improvement schemes currently being undertaken by HCC, which has been considered when determining the audit network. These include the identification of walking improvements along the following corridors:

- B197 corridor between Stevenage to Welwyn; and
- Walsworth Road corridor between Hitchin Station and the town centre.

7

WALKING AND CYCLING INFRASTRUCTURE IMPROVEMENTS



7 WALKING AND CYCLING INFRASTRUCTURE IMPROVEMENTS

7.1 OVERVIEW OF LCWIP INFRASTRUCTURE IMPROVEMENTS

- 7.1.1. Following the route audits, auditors generated plans of the high-level infrastructure improvements that would be needed to enable 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 the infrastructure plans discussed in this section of the report and in Appendix G.
- 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 this section of the report 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 these formats. 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 possible, should be investigated further and, if implemented correctly and in appropriate packages, should 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 signalling 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 arms) 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 signalised junctions to provide the required improvements to pedestrians and cyclists.
- **New / improved signalised crossing:** this denotes the installation of new signalised crossings or improving existing signalised crossings through increasing the green time and/or repairing audit aids. Where these are aligned with cycle facilities, these should be pedestrian and cycle crossings, preferably with separate parallel crossing points for pedestrians and cyclists as opposed to toucan crossings. Otherwise, these should be simple pedestrian crossings (i.e. puffin crossings). Whether a crossing should be a zebra/parallel crossing or a signalised crossing should be investigated further in feasibility design – at this stage designations are only indicative.

- **New zebra / parallel crossing:** where these are included in the plans, this denotes includes providing new priority crossings to reduce severance. Where these are aligned with cycle facilities these should be parallel crossings; otherwise, they should be zebra crossings. In some cases these have been proposed to replace existing uncontrolled crossings with traffic islands – an additional benefit in converting these crossings for cyclists is that they remove pinch points on the carriageway. Whether a crossing should be a zebra/parallel crossing or a signalised crossing should be investigated further at the feasibility design stage – at this stage the designations are only indicative.
- **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 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 facilities 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. There is an example of such a system on a bridge over a rail line in Stevenage (Chequers Bridge Road).
- **Pedestrian zone:** this denotes urban realm improvements (similar in style to those on Church Street in Baldock) including high-quality paving, seating, lighting and planting.
- **New Pedestrian and Cycle Bridge:** these are shown on the plans where a long-term plan for a new pedestrian and cycle bridge might bring benefit to the walking and cycle networks. These are accompanied by text boxes giving additional information.

7.3 STAKEHOLDER ENGAGEMENT

- 7.3.1. Following the completion of the route auditing process, possible interventions were identified and six infrastructure plans combining the walking and cycling interventions were created (one each for Hitchin, Letchworth Garden City, Baldock, Royston, Knebworth and one for the Hitchin to Stevenage inter-urban route). These were presented to key stakeholders in a second round of stakeholder engagement. Stakeholders had the choice of attending a virtual workshop, which took place on 29 November 2021, or an in-person workshop which was held on 1 December 2021. 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 post 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 (both officers and councillors)
- North Hertfordshire District Council (both officers and councillors)
- Welwyn Hatfield Borough Council (officers only)
- Stevenage Borough Council (officers only)
- Knebworth Parish Council
- Pirton Parish Council
- Great Ashby Community Council
- Sustrans
- Letchworth Cyclists

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.

7.3.5. Some key stakeholders were invited to the virtual workshop and to engage in the process but did not attend. Representatives were invited from organisations including Living Streets, Cycling UK and various relevant local organisations but they did not attend the workshop or engage at this stage of the process.

7.4 PROPOSED INFRASTRUCTURE IMPROVEMENTS

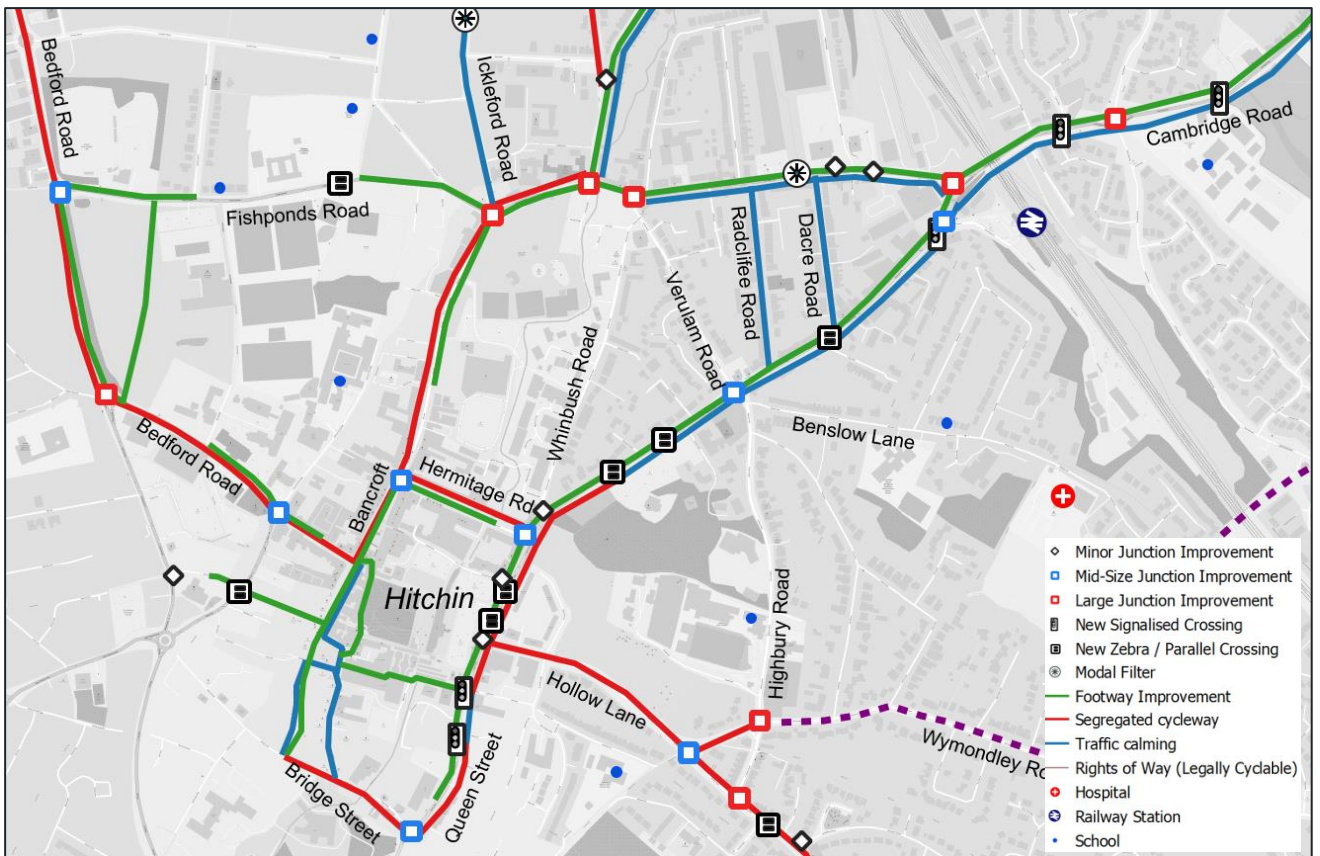
- 7.4.1. Following the second round of stakeholder engagement, final versions of the six infrastructure plans were developed. These are presented in full in Appendix G (with additional text boxes). Previews of the plans are shown in this section of the report from Figure 7-1 to Figure 7-6 below without these text boxes but accompanied by some overview text.
- 7.4.2. These final versions of the plans take into account the results of all audits (in person and virtual), relevant stakeholder comments from both periods of engagement and further internal discussions between HCC and NHDC officers. It is important to note that where stakeholders expressed opposition to certain infrastructure, this has not necessarily resulted in removal of the infrastructure from the plans. Rather, the opposition has been captured in the prioritisation process (see section 8 of the report). Moreover, any infrastructure identified in this LCWIP would undergo additional stakeholder consultation as part of the standard design and development process – allowing a fuller picture of support/opposition.

HITCHIN

7.4.3. Infrastructure improvements proposed in Hitchin are generally centred in the old town centre, where footway and junction improvements are accompanied by new crossings and segregated cycle facilities on Queen Street, Bancroft and Hollow Lane among others. Allowing contraflow cycling on the streets around Market Square would be a quick win that would help cyclists navigate the centre. Infrastructure ideas for North-South routes to Ickleford and along Bedford Road are also prominent in the plans.

7.4.4. The ability to improve cycling conditions in Hitchin is greatly hampered by constraints on the Nightingale Road, Cambridge Road and Walsworth Road, which link the town with the station and Letchworth Garden City. These roads are heavily trafficked and physically constrained, especially under the rail bridge. To fit cycle infrastructure on these streets, a traffic lane would need removing and a one-way system implementing. This will require extensive traffic analysis and substantial political support. Further work to investigate this, beyond this study, is required to identify whether there is a workable solution.

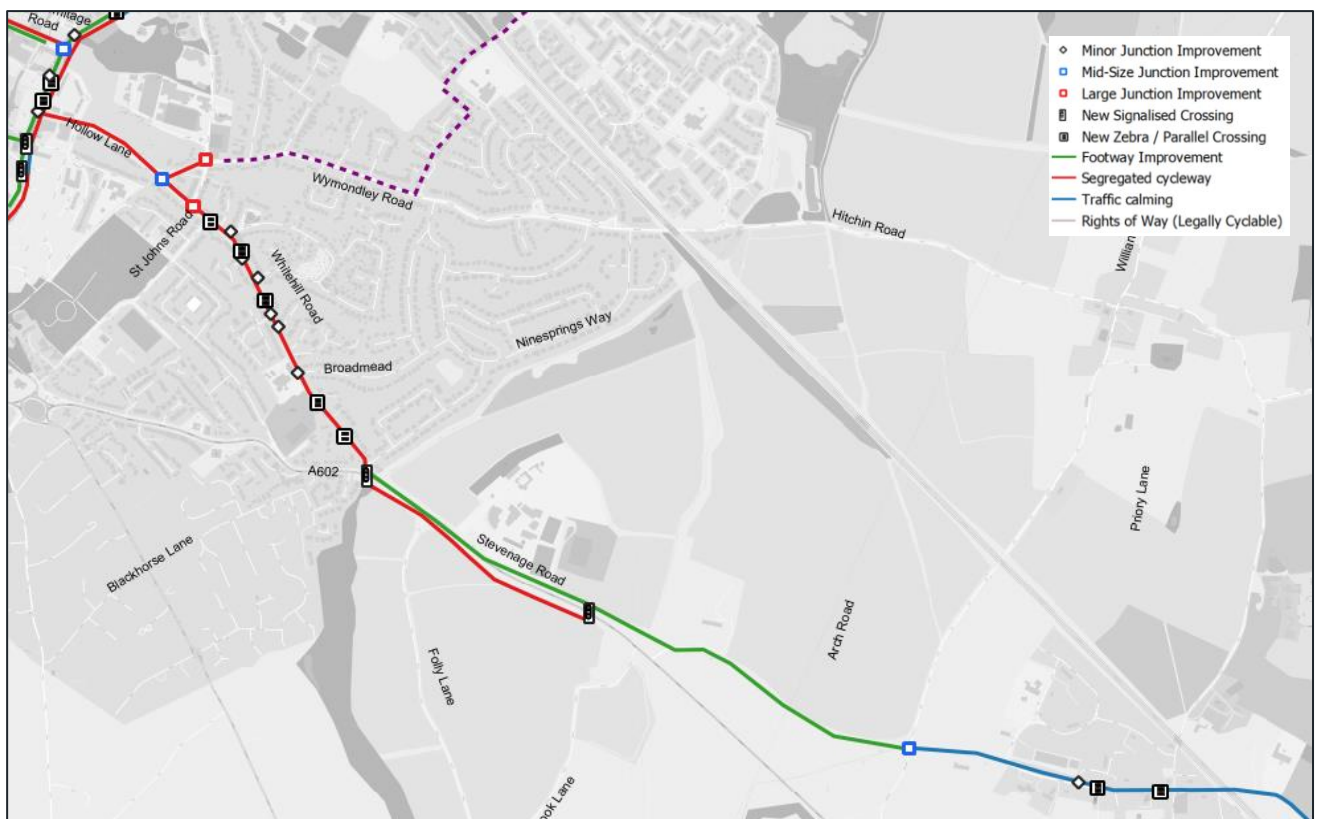
Figure 7-1 – Selection of Proposed Infrastructure Interventions in Hitchin
(Full Map with Additional Detail shown in Appendix G)



INTER-URBAN ROUTE (HITCHIN TO STEVENAGE)

7.4.5. Coming out of Hitchin, the proposals include a major design of the triangular gyratory (Hollow Lane / Highbury Road / Whitehill Road), to provide for pedestrians and cyclists. It should be possible to provide segregated cycle infrastructure on Whitehill Road if roadspace is reallocated from right turn pockets and traffic islands. At Stevenage Road, however, the highway becomes very constrained and there are sections where there is a 1m wide footway adjacent to a 60mph road. Land take may be required here to provide for cyclists, whether by removing carriageway and widening the existing highway or creating a parallel route, accessed by new crossings. East of Ash Brook, there may be scope to use the grass verge to widen the existing footway and create a wide shared footway. Through Little Wymondley, traffic calming is proposed alongside new crossings. On the approach to A1(M) junction 8, once speed limits are higher, segregated cycleway would again be required. Segregated infrastructure is required over the A1(M) junction (this is in Stevenage Borough) and to link with routes in the Stevenage LCWIP. Further work is required on this link.

Figure 7-2 – Selection of Proposed Infrastructure Interventions on Inter-Urban Route
(Full Map with Additional Detail shown in Appendix G)

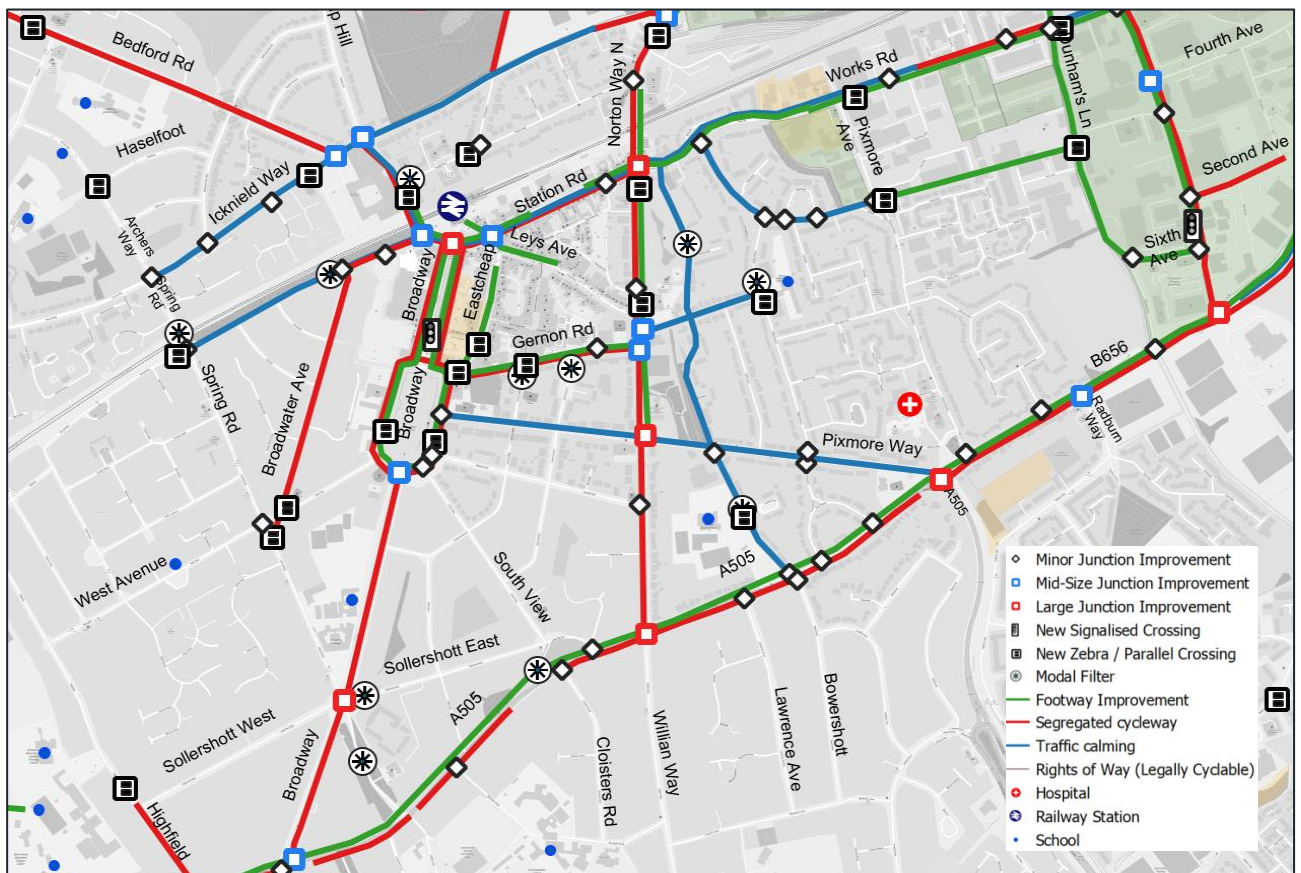


LETCHWORTH GARDEN CITY

- 7.4.6. The infrastructure improvements proposed in Letchworth Garden City centre on key changes near the rail station and on Broadway. On Bridge Road, Station Place and Station Road, the physical constraints mean that roadspace would need reallocating to provide LTN 1/20 compliant cycle infrastructure. The proposals therefore include a one-way system for traffic on these roads, with one lane replaced with a two-way cycle track. This would enable many more people to choose to walk and cycle short or multi-modal journeys in Letchworth. This would require traffic analysis and political support, but without it there would likely be a large gap in the cycle network in the centre due to the physical constraints.
- 7.4.7. Around Broadway Gardens, there is lots of space available, but due to the importance of green space here it is proposed to instead reallocate a lane of traffic to create a segregated carriageway facility for cyclists. The current shared footway (part of the National Cycle Network) does not meet current best practice for cycling. On Broadway (south of the gardens), an off-road cycle facility may be preferable.

Figure 7-3 - Proposed Infrastructure Interventions in Letchworth Garden City

(Full Map with Additional Detail shown in Appendix G)



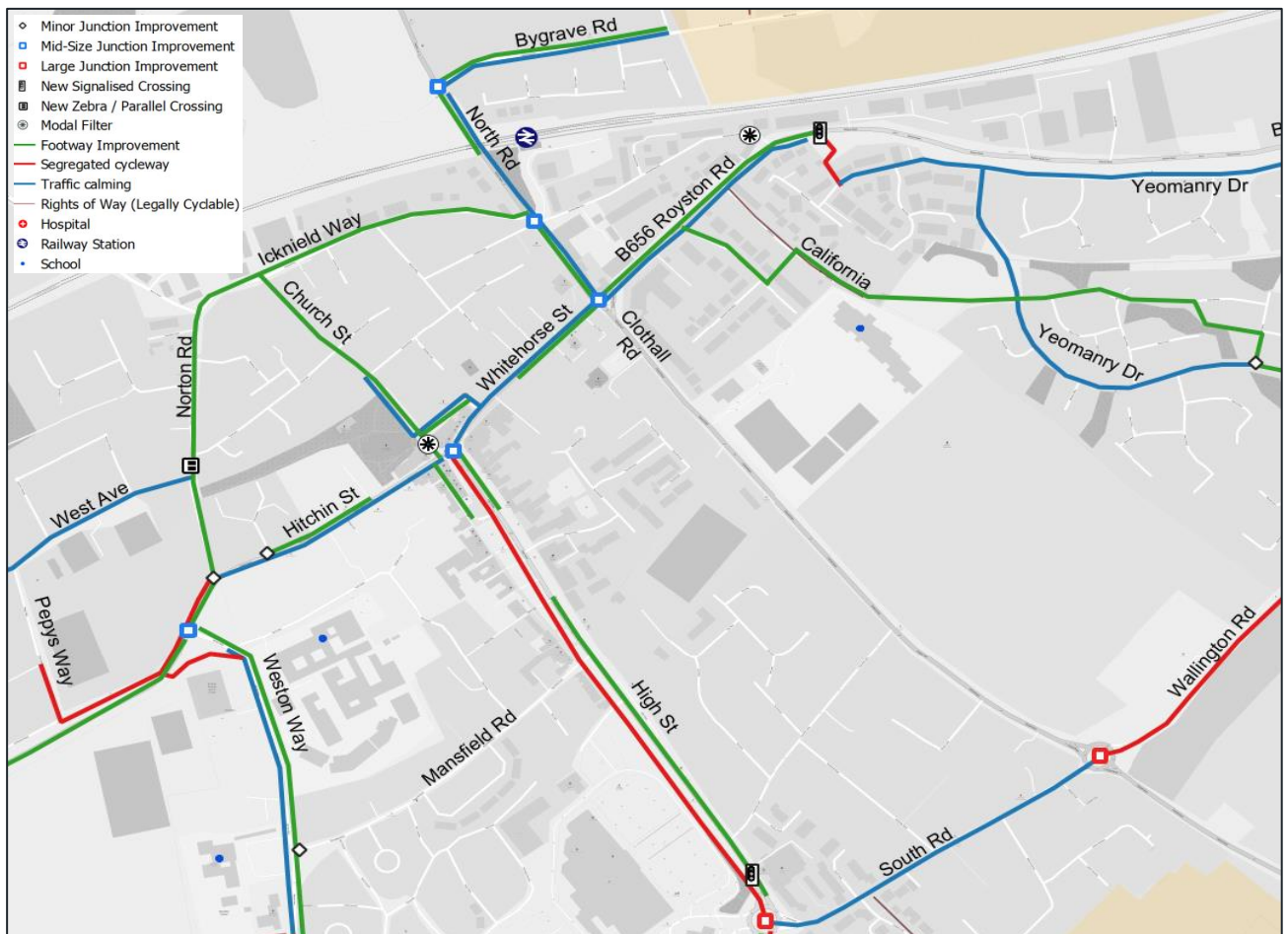
- 7.4.8. Elsewhere, modal filters and crossings are proposed throughout Letchworth Garden City to reduce severance and create quiet routes for pedestrians and active travel.
- 7.4.9. Physical constraints on Works Road mean that segregated cycle infrastructure is not possible along the whole of the route, unless a one-way system is implemented (this could be considered in the long-term). As such the infrastructure proposed there currently is not fully LTN 1/20 compliant.
- 7.4.10. There are similar constraints in places along the Hitchin Road A505/ Baldock Road B656 route, meaning that a continuous facility may not be possible unless more radical solutions are considered. However, proposals for segregated cycle infrastructure on this route are nonetheless included wherever possible as it is a key inter-urban route connecting Hitchin, Letchworth Garden City and Baldock. It is acknowledged however that this route is not particularly helpful for journeys within Letchworth, though junction improvements on this route would help make it easier to cross and therefore facilitate more north-south journeys.

BALDOCK

- 7.4.11. Infrastructure improvements in Baldock centre around the provision of a segregated cycle facility on the High Street and the creation of quiet routes north of the B656. Much of north Baldock can be made suitable for utility cycling without a need for segregated infrastructure if contraflow cycling is permitted on Church Street, a crossing over Norton Road is provided and a modal filter is added to Hopewell Road. This would also help connections to Letchworth Garden City via the bridge over the A1(M), for which improvements are also suggested.
- 7.4.12. Elsewhere, a new crossing is provided over Royston Road to help connect east Baldock with the rail station via Ickniel Way East and it is proposed to redesign several junctions with improvements to walking and cycle facilities.

Figure 7-4 - Proposed Infrastructure Interventions in Baldock

(Full Map with Additional Detail shown in Appendix F)

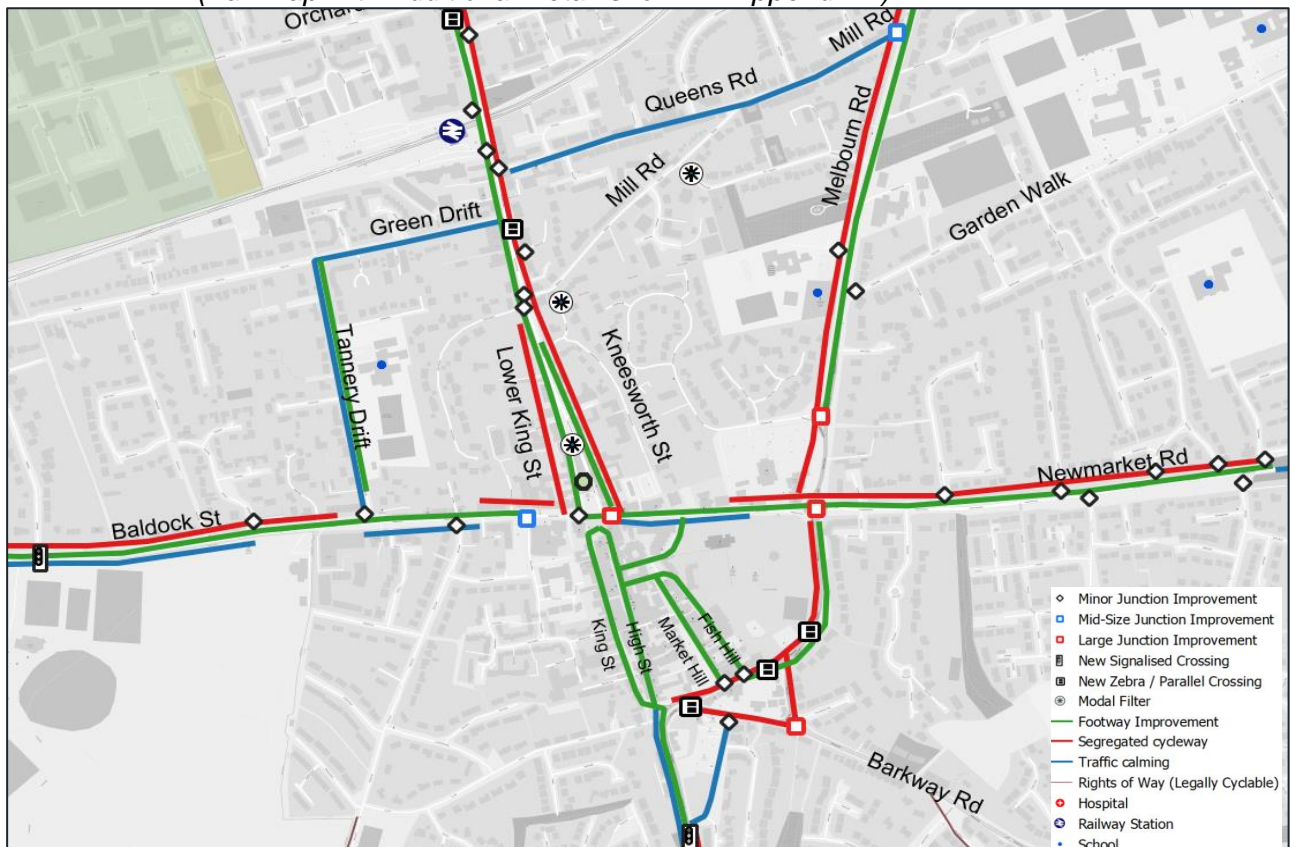


ROYSTON

- 7.4.13. A key improvement needed in Royston is better walking and cycling connections between the old centre and the rail station. Currently on both Lower King Street and Kneesworth Street, footways are extremely narrow and motor traffic is prioritised at the expense of active travel. As such, a modal filter is proposed on Lower King Street (creating space for a pedestrian zone). Motor traffic wishing to travel from south Royston to North Royston (e.g. to the rail station) would instead have to go via the A10 or Tannery Drift.
- 7.4.14. Segregated cycle facilities are proposed along the length of A10 Melbourn Road and Kneesworth Street / Old North Road, as well as the triangular A10 gyratory. Constraints on Baldock Street and Newmarket Road prevent a continuous segregated cycle facility, but segregation has been proposed where there is space, with traffic calming proposed where there is not. Junction improvements are proposed at several larger junctions, where there are currently many risks for cyclists. Modal filters are proposed to reduce through traffic issues / create quiet routes. Crossings are proposed to improve active connections to the hospital, sports clubs and other locations.

Figure 7-5 - Proposed Infrastructure Interventions in Royston

(Full Map with Additional Detail shown in Appendix F)

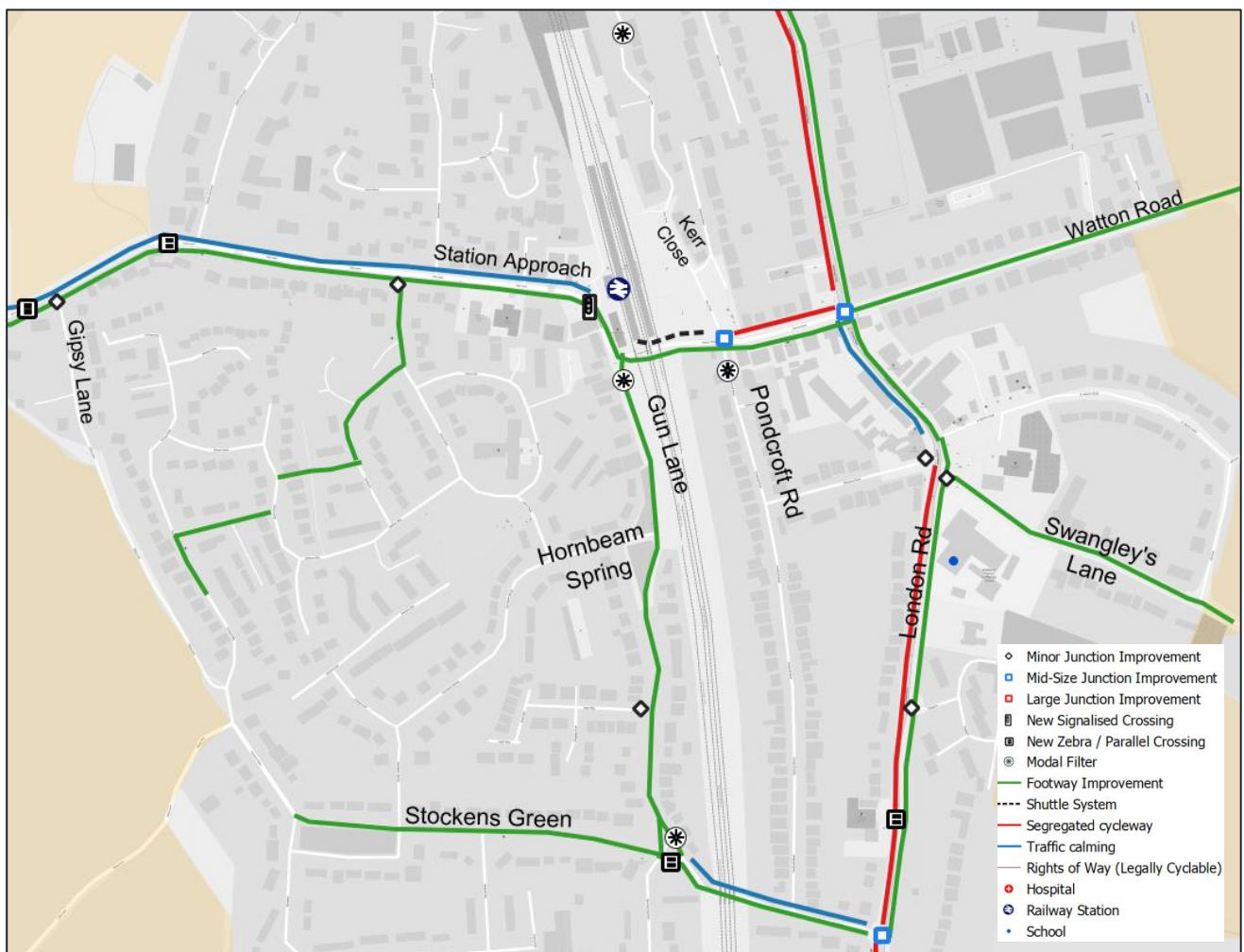


KNEBWORTH

- 7.4.15. A major constraint in Knebworth currently is the rail bridge, under which motor traffic has been prioritised at the expense of walking. The footway under the bridge is narrow and unpleasant. A key proposal in this LCWIP is to investigate the potential for a signal shuttle system under the bridge, to allow for a widened footway (and possibly cycle facilities) under the bridge, to increase the attractiveness of active modes. A signal crossing is proposed to improve access to the station.
- 7.4.16. Modal filters are proposed on Gun Lane and Pondcroft Road to create quiet routes for active modes and simplify junctions on Station Road. Segregated cycle facilities are proposed on the B197 to connect Knebworth with Stevenage, Woolmer Green and beyond. Parking in the High Street section needs addressing if a continuous facility is to be provided.

Figure 7-6 - Proposed Infrastructure Interventions in Knebworth

(Full Map with Additional Detail shown in Appendix F)



OTHER INFRASTRUCTURE IMPROVEMENTS

- 7.4.17. 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. Infrastructure plans have not been produced for these improvements, but they are listed here for reference.
- 7.4.18. In Pirton, reports of road safety issues merit consideration of traffic calming solutions on:
- Holwell Road, Waterloo Lane and Pirton Road
 - Royal Oak Lane
 - High Street
 - Grove Lane and Shillington Road
- 7.4.19. Additionally in Pirton, suggestions for improvements on the Hambridge Way path connecting to Hitchin are supported by the LCWIP.
- 7.4.20. In Great Ashby, crossings were suggested at the junction of Great Ashby Way and Whitehorse Lane to improve pedestrian access to two schools.
- 7.4.21. The improvements in Pirton and Great Ashby have been costed and prioritised separately from the rest of the infrastructure improvements identified, but the list and digitised shapefiles have been passed to HCC.

7.5 OTHER PRIORITY ROUTES

- 7.5.1. There are two other key connections in North Herts for which audits have not been completed and no infrastructure improvements have been identified in this first iteration of the LCWIP. These are:
- Letchworth Garden City / Baldock to Stevenage
 - Ashwell to Ashwell and Morden rail station
- 7.5.2. Improvements to walking and cycling conditions on these routes are of equal priority to improvements listed in section 7.4. These routes* should be audited, with improvements identified, at the earliest possible opportunity, with the LCWIP updated accordingly.

*It may not be necessary to audit the Letchworth Garden City to Stevenage connection, as there are already proposals to upgrade this between the HCC ROW team and Sustrans as part of NCN 12 improvements.

7.5.3. It is important to note that these routes extend beyond the North Herts district and so cross-boundary collaboration (with South Cambridgeshire District and Stevenage Borough Council respectively) would be required to improve these connections.

7.6 FINAL NETWORK PLANS FOR WALKING AND CYCLING

7.6.1. During the second round of stakeholder engagement stakeholders were also shown updated district-wide network plans for walking and cycling. As well as showing stakeholders how primary and secondary route designations had changed following the first round of stakeholder engagement, these plans also identified which 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 7-7 and Figure 7-8 respectively. Higher resolution versions of these plans are shown in Appendix F.

Figure 7-7 – North Herts District Network Plan for Walking

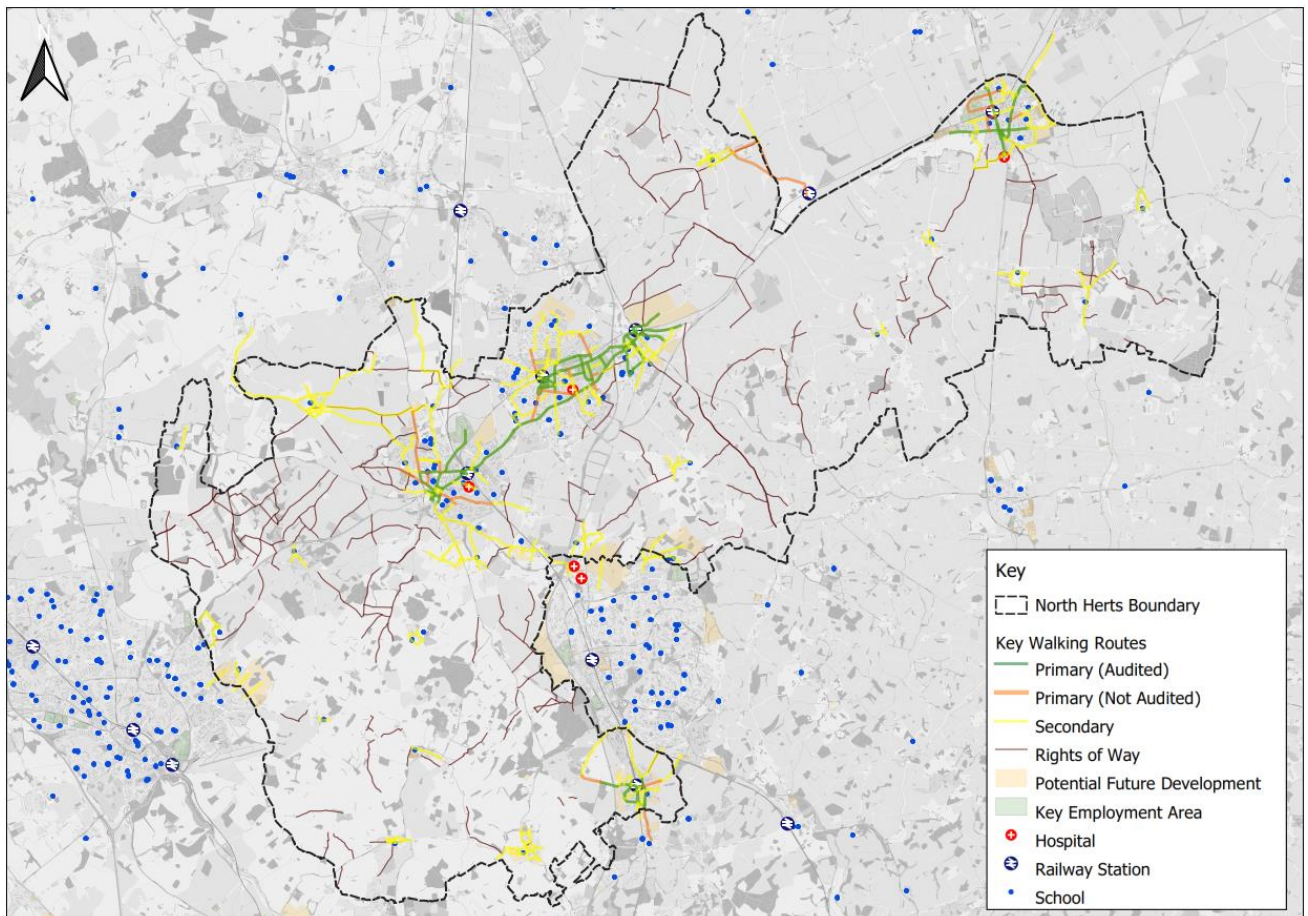
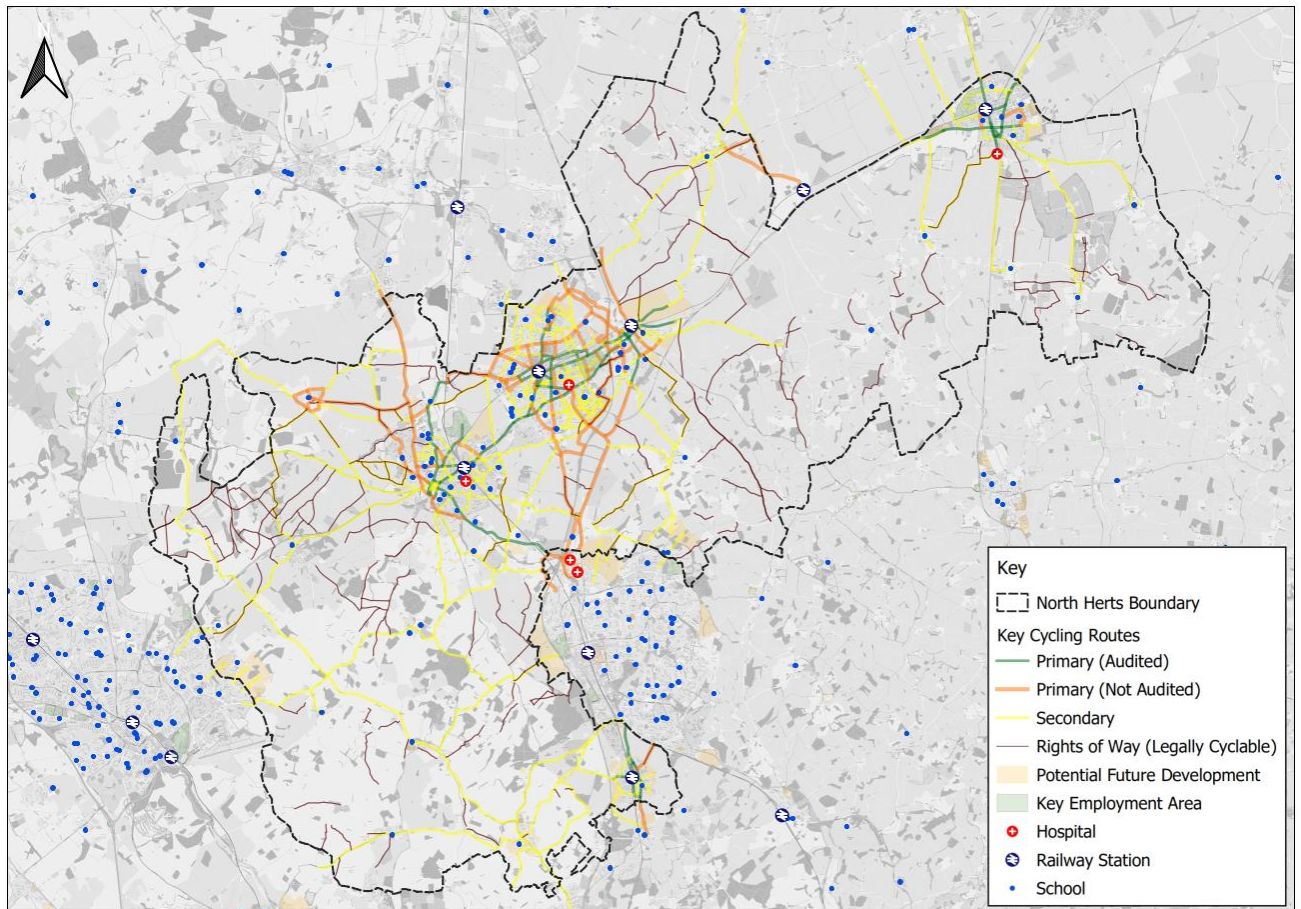


Figure 7-8 – North Herts District Network Plan for Cycling



7.7 OTHER ACTIVE TRAVEL INFRASTRUCTURE IMPROVEMENTS

- 7.7.1. This section has so far focussed on infrastructure improvements that have been identified as part of the LCWIP six-stage process. However, as mentioned in section 3.1 and Appendix A, there are a number of pre-existing plans to improve active travel infrastructure in North Herts District. These are primarily high-level plans for route improvements or small-scale measures, such as plans for new crossings. They are mostly contained within the North Central Growth and Transport Plan (NCGTP) which brought together several earlier plans for Hitchin, Letchworth/Baldock and Royston.
- 7.7.2. These plans are summarised in Appendix H, which includes a table giving each measure a unique reference number, describes them and gives the status of each as of July 2022. Each measure is then also compared against what has been identified in the LCWIP – in some cases the LCWIP proposal may eventually replace the earlier measure, although it depends on the status of the measure. Appendix H also contains mapping showing the location of these measures in Hitchin, Royston and Letchworth/Baldock.

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 NHDC 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
New signal crossing	£65,000
New zebra crossing	£65,000
New parallel crossing	£65,000
Modal filter	£20,000
Signalised shuttle system	£750,000
Pedestrian zone	£350,000
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 two groups of criteria:

- Desired Outcomes:
 - Modelled increase in walking & cycling trips (from the LCWIP GIS Model)
 - The likely impact of the infrastructure on facilitating more active travel trips
 - How well it fits with existing strategic priorities
 - Whether it supports new housing developments
 - Whether it supports access to jobs
- Technical Deliverability:
 - 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 costs of individual infrastructure items were summed to create a total cost for each prioritised route. Concurrently, the average scores for all the infrastructure on a route were determined. The score for Desired Outcomes was calculating by multiplying the route's score for 'Modelled increase in walking & cycling trips' by the sum of its scores in the other four criteria. This was then added to the score for Technical Deliverability to give prioritisation scores for the routes. These were then used to rank the routes in a prioritised list.

8.2.3. 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 required before any routes are taken forward through design and implementation.

8.2.4. The costed, prioritised list of routes can be seen in Appendix I.

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 and impact. 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 – MCAT: Scoring Criteria, Score Ranges and how infrastructure was scored

Criteria	Range	Description of How Scheme Was Scored
Modelled Increase in walking & cycling trips	0 to 2	Locations of proposed scheme 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.
Infrastructure 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 schemes were on or connected to existing or planned strategic connections, these were scored higher than schemes which were far from any strategic routes.
Support for new housing	0 to 2	Where schemes 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 schemes 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 schemes 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	Schemes with no major technical or land ownership obstacles were considered 'quick wins', scoring higher than others with such challenges.
Dependency	-1 to 1	Schemes which could be implemented in isolation and would still bring benefit if implemented were scored higher than schemes 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.

8.4 COMMENTARY ON THE PRIORITISED LIST

8.4.1. A total of 80 routes were identified. The 20 highest scoring routes are detailed in Table 8-3 below, with the full list available in Appendix I.

8.4.2. A map showing where each route is located can be seen in Appendix J. 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

Route / Area	Location	Total Cost	Total Score
Bedford Road	Hitchin	£7,140,000	15.7
Woolgrove Road	Hitchin	£4,775,000	13.6
A1(M) Pedestrian Bridge	Baldock	£220,000	13.0
Cambridge Road	Hitchin	£8,809,500	12.8
Grove Road & Wilbury Way	Hitchin	£5,244,500	12.2
Norton Common N-S	Letchworth Garden City	£600,000	12.0
Bedford Road (One-Way) & Brand Road	Hitchin	£1,786,000	12.0
Baldock Road (A505 & B656)	Letchworth Garden City	£10,465,000	11.9
B656 Royston Road	Baldock	£750,000	11.4
Fishponds Road & Butts Close	Hitchin	£2,285,000	11.4
Station Place & Station Road & Bridge Road	Letchworth Garden City	£5,868,750	11.3
Nightingale Road	Hitchin	£6,844,000	11.1
Baldock High Street	Baldock	£2,865,000	10.9
Hitchin to Stevenage Route	Inter-Urban	£4,285,000	10.8
A505 Hitchin Road	Letchworth Garden City	£1,725,000	10.8
Icknield Way & Green Lane	Letchworth Garden City	£5,868,000	10.6
Baldock Road – Baldock St	Royston	£3,422,500	10.5
California	Baldock	£206,000	10.3
Melbourn Road	Royston	£6,770,000	10.3
Workers Path & Bridge	Letchworth Garden City	£2,116,000	10.2

- 8.4.3. Of the twenty highest scoring routes: seven are in Hitchin, six are in Letchworth Garden City, four are in Baldock, two are in Royston and one is the inter-urban route between Hitchin and Stevenage.
- 8.4.4. Four of the five top scoring routes are corridor schemes on busy roads which would generally require the installation of segregated cycleways and pedestrian/cycle crossings as well as the redesign of larger junctions and side roads. The exception to this is the A1(M) Pedestrian Bridge improvements, for which a few small changes to surfacing, lighting, bollards and vegetation management would help improve cycle (and pedestrian) links between Letchworth Garden City and Baldock.
- 8.4.5. 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
- 8.4.6. The high percentage of routes in Hitchin, Letchworth Garden City and Baldock in the top twenty routes can be explained by the fact that there are more existing or planned strategic connections in these areas compared to Royston and Knebworth. It may also reflect the distribution of key employment areas and potential new housing across North Herts District.
- 8.4.7. In Knebworth, the highest scoring route was the B197 corridor, a strategic route which HCC are already developing as a separate project. The plans in this LCWIP align with that work.

8.5 BENEFITS AND LIMITATIONS OF PACKAGING INFRASTRUCTURE INTO PRIORITISED ROUTES

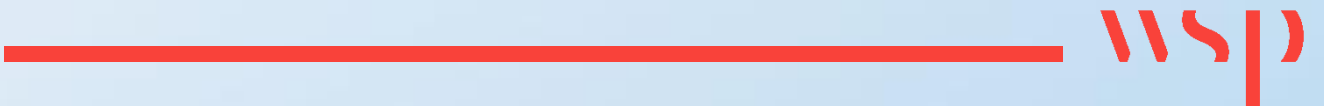
- 8.5.1. Packaging infrastructure improvements into routes has many benefits. One principal benefit is that it fits with HCC's method of taking schemes forward and makes it easier to apply for funds, which are often deliberately targeted at corridor schemes (for example, requiring the use of the DfT's 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 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. North Herts District Council has prepared an updated Local Plan and a supporting Transport Strategy which seek to address the key issues facing North Hertfordshire and sets a strategic vision and spatial strategy for the district over the period of 2011 to 2031. This LCWIP together with the North 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. This LCWIP will also support local policy such as Letchworth Garden City Cycling Strategy and the Knebworth Neighbourhood Plan.

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. These would then go through HCC's project validation process, have concept design developed, undergo further stakeholder engagement and, if there are no major obstacles and funding is available, the schemes would then be designed in detail and delivered.
- 9.2.2. Highway improvement programmes separate from the LCWIP will continue to be delivered in coming years. A firm commitment to following the principles of Gear Change and the design guidance contained in LTN 1/20 when delivering new highways infrastructure would help align delivery of non-LCWIP highway schemes with the LCWIP. Some important examples of what this might look like include:
- 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 bike wheels can't get stuck in) and replacing dangerous gully covers for cyclists (e.g. on Grove Road in Hitchin).

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 modes of transport.

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 district.

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 Hitchin, Letchworth Garden City, Baldock, Royston and Knebworth 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, inter-urban routes which should be looked at as soon as possible (and updated in the LCWIP) are:

- Letchworth Garden City / Baldock to Stevenage*
- Ashwell to Ashwell and Morden rail station
- Hitchin to Stevenage
- Baldock to Stotfold
- Letchworth Garden City to Stotfold
- Henlow Camp to Hitchin

- Hitchin to Arlesey
- Letchworth Garden City to Arlesey
- Royston to Kneesworth/Bassingbourn
- Royston to Melbourn/Meldreth

*The Letchworth Garden City to Stevenage connection is being looked at as part of ongoing work on National Cycle Route 12 by Sustrans. The Baldock to Stevenage connection could potentially be covered by an extension to the B197 corridor validation work.

- 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 audits and infrastructure improvement plans for neighbourhoods in the five urban areas which were not looked at in detail in this first iteration (e.g. Jackmans Estate in Letchworth Garden City), as well as routes to and within smaller settlements including (but not limited to) Ashwell, Barkway, Codicote, Gravely, Ickleford, Kimpton, Little Wymondley, Pirton, St Ippolyts and Gosmore, Weston, and, Great Ashby.
- 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 North Herts District and its neighbouring authorities.
- 9.5.4. HCC and NHDC will work in partnership to review this first iteration of the LCWIP and its effect within a 2 year timeframe and will be subject to available funding and resources both locally and nationally.

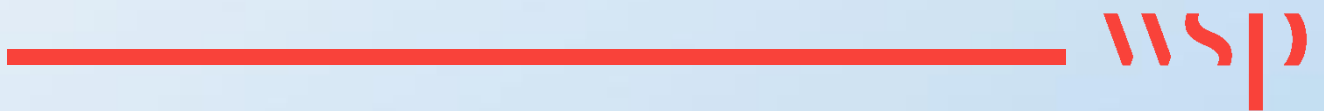
Appendix A

POLICY CONTEXT



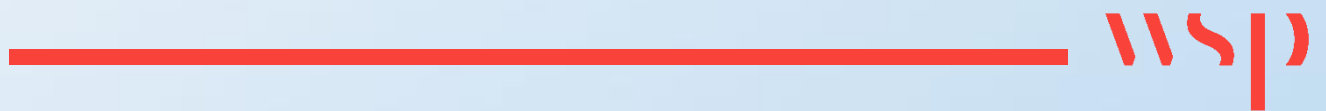
Appendix B

PCT OUTPUTS



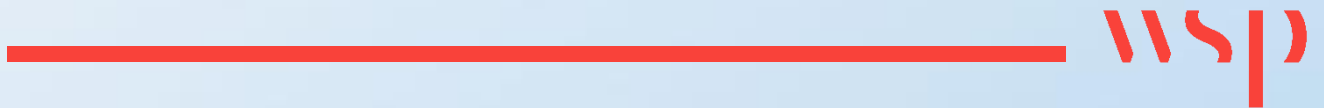
Appendix C

GIS MODEL TECHNICAL NOTE



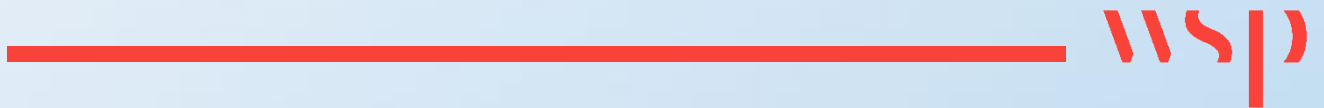
Appendix D

LCWIP GIS MODEL: DISTRICT WIDE CYCLING OUTPUTS



Appendix E

LCWIP GIS MODEL: DISTRICT WIDE WALKING OUTPUTS



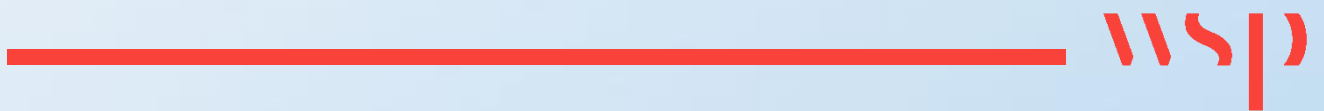
Appendix F

NORTH HERTS DISTRICT NETWORK PLANS FOR WALKING AND CYCLING



Appendix G

DETAILED INFRASTRUCTURE PLANS



Appendix H

OTHER NORTH HERTS ACTIVE TRAVEL INFRASTRUCTURE IMPROVEMENTS (UTP, NCGTP)



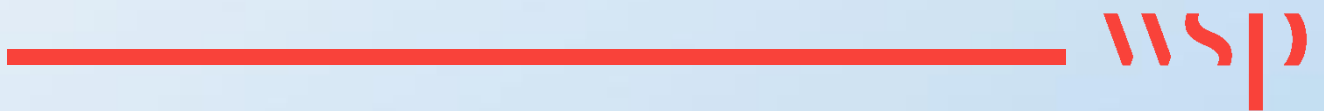
Appendix I

PRIORITISED COSTED LIST OF INFRASTRUCTURE IMPROVEMENTS



Appendix J

KEY FOR PRIORITISED ROUTES



Appendix K

LIST OF ACRONYMS USED IN REPORT





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PUBLIC