Public Document Pack

NORTH HERTFORDSHIRE DISTRICT COUNCIL

07/10/2022

Our Ref Cabinet Panel on Transport/18 October 2022
Contact. Committee Services
Direct Dial. (01462) 474655
Email. committee.services@north-herts.gov.uk

To: Members of the Committee: Ruth Brown (Chair), Sam Collins, David Levett, Ian Mantle, Ian Moody, Michael Muir, Sean Nolan, Mandi Tandi and Alistair Willoughby

Substitutes: Councillors Morgan Derbyshire, Claire Strong, Keith Hoskins, Phil Weeder, Val Bryant and Nigel Mason

NOTICE IS HEREBY GIVEN OF A

MEETING OF THE CABINET PANEL ON TRANSPORT

to be held as a

REMOTE MEETING

On

TUESDAY, 18TH OCTOBER, 2022 AT 7.30 PM

Yours sincerely,

Jeanette Thompson
Service Director – Legal and Community

****MEMBERS PLEASE ENSURE THAT YOU DOWNLOAD ALL AGENDAS AND REPORTS VIA THE MOD.GOV APPLICATION ON YOUR TABLET BEFORE ATTENDING THE MEETING****

Agenda
Part I

Item **Page**

1. APOLOGIES FOR ABSENCE

Members are required to notify any substitutions by midday the day of the meeting.

Late substitutions will not be accepted and Members attending as a substitute without having given the due notice will not be able to take part in the meeting.

2. CHAIR'S ANNOUNCEMENTS

Members are reminded that any declarations of interest in respect of any business set out of the agenda, should be declared as either a Disclosable Pecuniary Interest or Declarable Interest and are required to notify the Chair of the nature of any interest declared at the commencement of the relevant item on the agenda. Members declaring a Disclosable Pecuniary Interest must withdraw from the meeting for the duration of the item. Members declaring a Declarable Interest, wishing to exercise a 'Councillor Speaking Right', must declare this at the same time as the interest, move to the public area before speaking to the item and then must leave the room before the debate and vote.

3. NOTIFICATION OF OTHER BUSINESS

Members should notify the Chair of other business which they wish to be discussed at the end of either Part I or Part II business set out in the agenda. They must state the circumstances which they consider justify the business being considered as a matter of urgency.

The Chair will decide whether any item(s) will be considered.

4. PRESENTATION ON ACTIVE TRAVEL BY HERTFORDSHIRE COUNTY COUNCIL

5. CONSULTATION ON LOCAL CYCLING AND WALKING INFRASTRUCTURE PLAN (Pages 5 - 214)

REPORT OF THE SENIOR TRANSPORT POLICY OFFICER

6. WORK PROGRAMME & ACTION TRACKER

7. AGENDA ITEMS FOR FUTURE MEETINGS

The Chair to lead a discussion on what the Panel would like to see at future meetings.

This page is intentionally left blank

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

TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70081936

DATE: JUNE 2022

North Hertfordshire District

LOCAL CYCLING AND WALKING INFRASTRUCTURE PLAN

HCC / NHDC

WSP House

70 Chancery Ln,
London
WC2A 1AF

Phone: 020 7314 500

WSP.com

PUBLIC

QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	DRAFT	FINAL		
Date	March 2022	June 2022		
Prepared by	DK	DK		
Signature				
Checked by	IA	IA		
Signature				
Authorised by	TH	TH		
Signature	TH	TH		
Project number	70081936	70081936		
Report number	NHDC-LCWIP-001	NHDC-LCWIP-001		
File reference				

CONTENTS

1 INTRODUCTION 1

1.1 INTRODUCTION 1
1.2 THE LCWIP PROCESS 3
1.3 REPORT STRUCTURE 4

2 LCWIP GEOGRAPHICAL SCOPE 6

2.1 LCWIP GEOGRAPHICAL SCOPE 6

3 POLICY CONTEXT 8

3.1 OVERVIEW 8
3.2 RELEVANT PLANS IN NEIGHBOURING AUTHORITIES 14

4 GATHERING INFORMATION 18

4.1 INTRODUCTION 18
4.2 PROPENSITY TO CYCLE TOOL 18
4.3 LCWIP GIS MODEL 21
4.4 RIGHTS OF WAY 28
4.5 EXISTING CYCLE FACILITIES AND ROUTES 29
4.6 STRATEGIC ACTIVE TRAVEL ROUTES AND CONNECTIONS 30

5 NETWORK PLANNING FOR CYCLING 33

5.1 INTRODUCTION 33
5.2 IDENTIFYING KEY CYCLING ROUTES 33
5.3 DRAFT NETWORK PLAN FOR CYCLING 34
5.4 STAKEHOLDER ENGAGEMENT 34
5.5 ROUTE AUDITING 37
5.6 NON-AUDITED ROUTES 37

6 NETWORK PLANNING FOR WALKING 40

6.1 INTRODUCTION 40
6.2 IDENTIFYING CORE WALKING ZONES 40
6.3 IDENTIFYING KEY WALKING ROUTES 42
6.4 DRAFT NETWORK PLAN FOR WALKING 43
6.5 STAKEHOLDER ENGAGEMENT 44
6.6 ROUTE AUDITING 44
6.7 NON-AUDITED ROUTES 45

7 WALKING AND CYCLING INFRASTRUCTURE IMPROVEMENTS 47

7.1 OVERVIEW OF INFRASTRUCTURE IMPROVEMENTS 47
7.2 INTERVENTION TYPES 48
7.3 STAKEHOLDER ENGAGEMENT 50
7.4 PROPOSED INFRASTRUCTURE IMPROVEMENTS 52
7.5 OTHER PRIORITY ROUTES 60
7.6 FINAL NETWORK PLANS FOR WALKING AND CYCLING 61

8 ROUTE COSTING AND PRIORITISATION 64

8.1 APPROACH TO ROUTE COSTING 64
8.2 APPROACH TO ROUTE PRIORITISATION 65
8.3 SCORING CRITERIA AND RANGES 66
8.4 COMMENTARY ON THE PRIORITISED LIST 67
8.5 BENEFITS AND LIMITATIONS OF PACKAGING INFRASTRUCTURE INTO PRIORITISED ROUTES 68

9 NEXT STEPS 71

9.1 INTEGRATION WITH TRANSPORT POLICY 71
9.2 INTEGRATION WITH HIGHWAYS DELIVERY PROGRAMMES 71
9.3 MAINTENANCE 72
9.4 FUTURE BIDS FOR EXTERNAL FUNDING 72
9.5 PROCESS OF REVIEW AND UPDATE 72

TABLES

Table 1-1 – LCWIP Process 3

Table 1-2 – Report Structure 4

Table 3-1 - National Strategic Context 8

Table 3-2 - County Strategies, Policies and Plans 10

Table 3-3 - District Strategies, Policies and Plans 12

Table 8-1 - High Level Cost Estimate by Infrastructure Type 64

Table 8-2 – MCAT: Scoring Criteria, Score Ranges and how infrastructure was scored 66

Table 8-3 - Top Twenty Highest Scoring Prioritised Routes 67

FIGURES

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

Figure 2-1 - Geographical Scope of the North Herts LCWIP 6

Figure 4-1 – PCT Output - District-wide “Government Market (Near Market)” Scenario 20

Figure 4-2 – PCT Output - District-wide “Go Dutch” Scenario 20

Figure 4-3 – Model Network (built from Ordnance Survey MasterMap Datasets) 22

Figure 4-4 - LCWIP GIS Model - District-wide Cycling Outputs 26

Figure 4-5 – LCWIP GIS Model - District-wide Walking Outputs 27

Figure 4-6 – Existing Cycle Facilities in North Hertfordshire 29

Figure 5-1 – Draft North Herts District Network Plan for Cycling 34

Figure 6-1 – Hitchin Core Walking Zone 41

Figure 6-2 – Letchworth Garden City & Letchworth Gateway Core Walking Zones 41

Figure 6-3 – Baldock Core Walking Zone 41

Figure 6-4 – Royston Core Walking Zone 42

Figure 6-5 – Knebworth Core Walking Zone 42

Figure 6-6 – Draft North Herts District Network Plan for Walking 43

Figure 7-1 – Selection of Proposed Infrastructure Interventions in Hitchin 53

Figure 7-2 – Selection of Proposed Infrastructure Interventions on Inter-Urban Route 54
Figure 7-3 - Proposed Infrastructure Interventions in Letchworth Garden City 55
Figure 7-4 - Proposed Infrastructure Interventions in Baldock 57
Figure 7-5 - Proposed Infrastructure Interventions in Royston 58
Figure 7-6 - Proposed Infrastructure Interventions in Knebworth 59
Figure 7-7 – North Herts District Network Plan for Walking 61
Figure 7-8 – North Herts District Network Plan for Cycling 62

APPENDICES

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
NORTH HERTS URBAN TRANSPORT PLAN (UTP) UPDATE
APPENDIX I
PRIORITISED COSTED LIST OF INFRASTRUCTURE IMPROVEMENTS
APPENDIX J
KEY FOR PRIORITISED ROUTES
APPENDIX K
LIST OF ACRONYMS USED IN REPORT

1

INTRODUCTION

PUBLIC

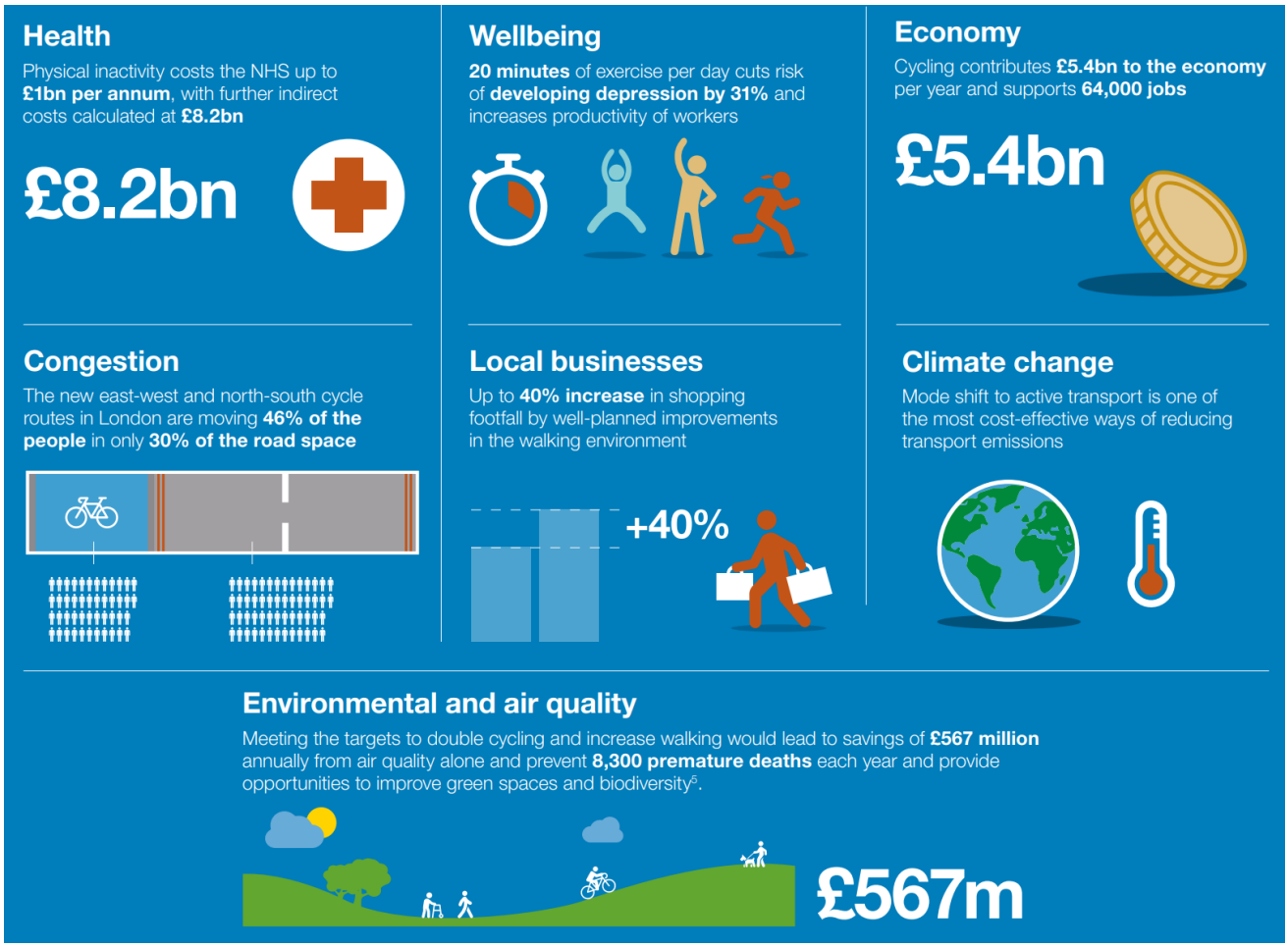
1 INTRODUCTION

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

PUBLIC

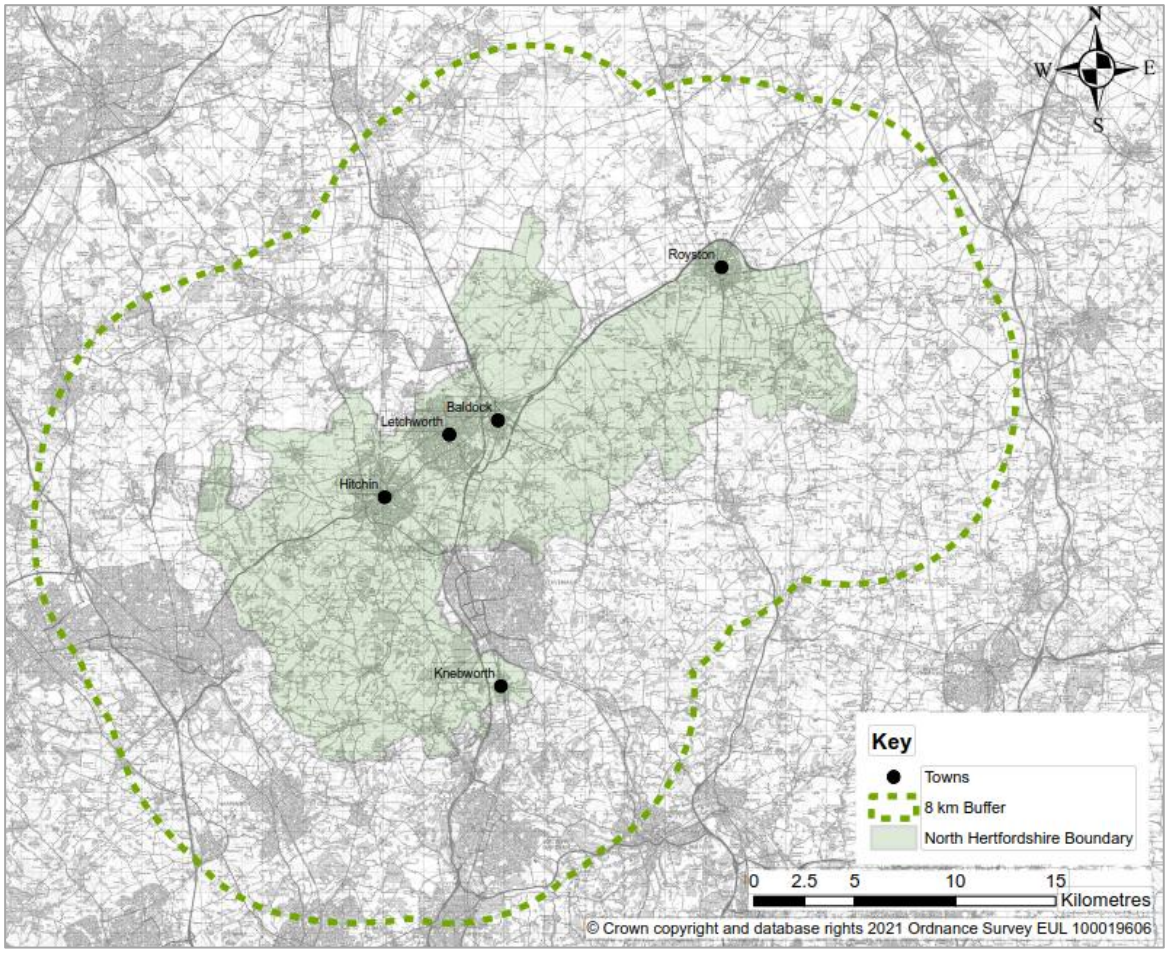
2 LCWIP GEOGRAPHICAL SCOPE

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

PUBLIC

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
Emerging Local Plan (North Herts District Council, 2011-2031)	North Herts District Council	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.
Transport Strategy	North Herts District Council 2017	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).
Letchworth Garden City Cycling Strategy	LGC Heritage Foundation 2018	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.
Knebworth Neighbourhood Plan	Knebworth Parish Council	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

	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 Gravely. 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 enhancementsA602 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

PUBLIC

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

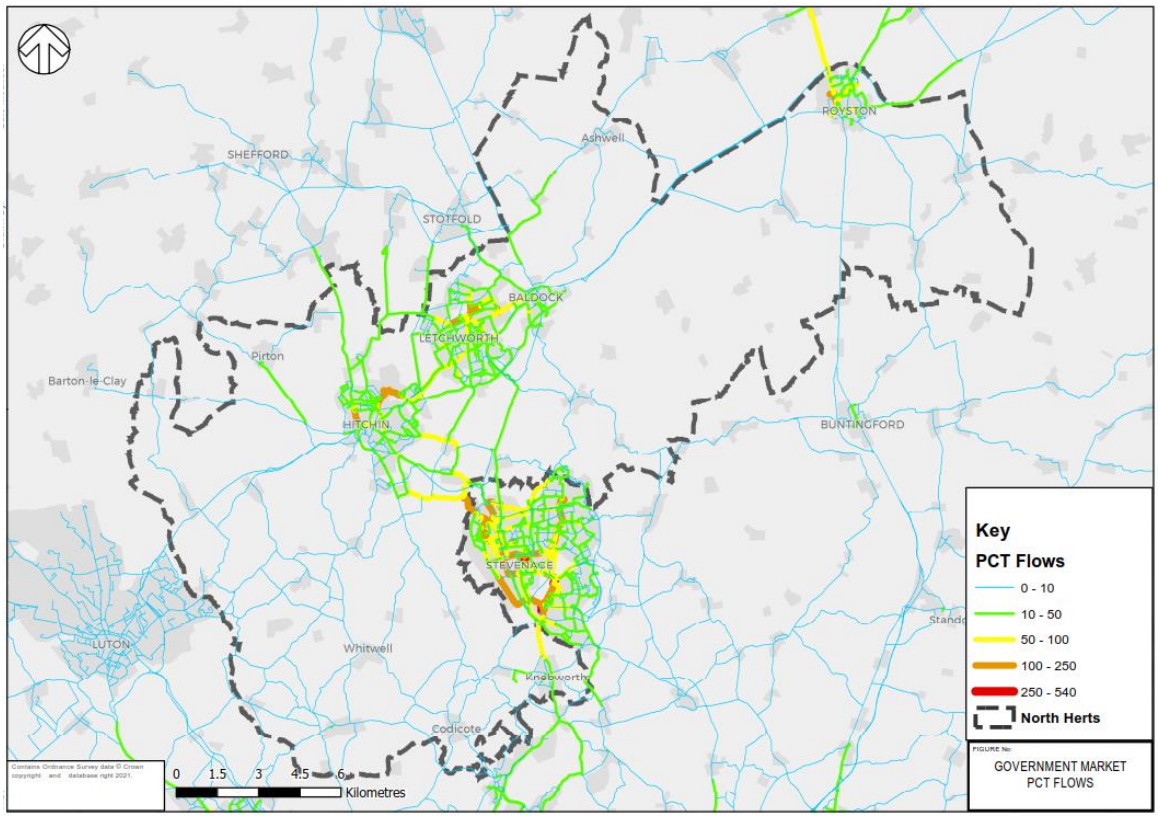
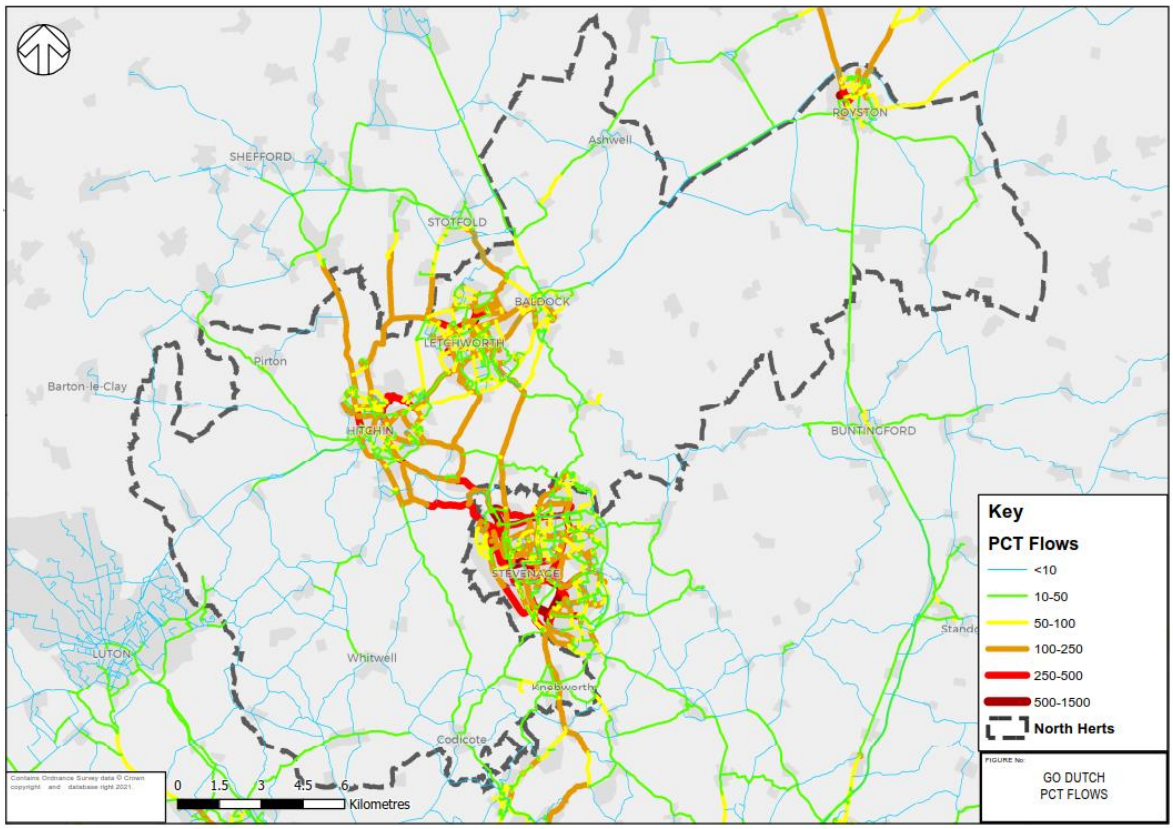


Figure 4-2 – PCT Output - District-wide "Go Dutch" Scenario



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).

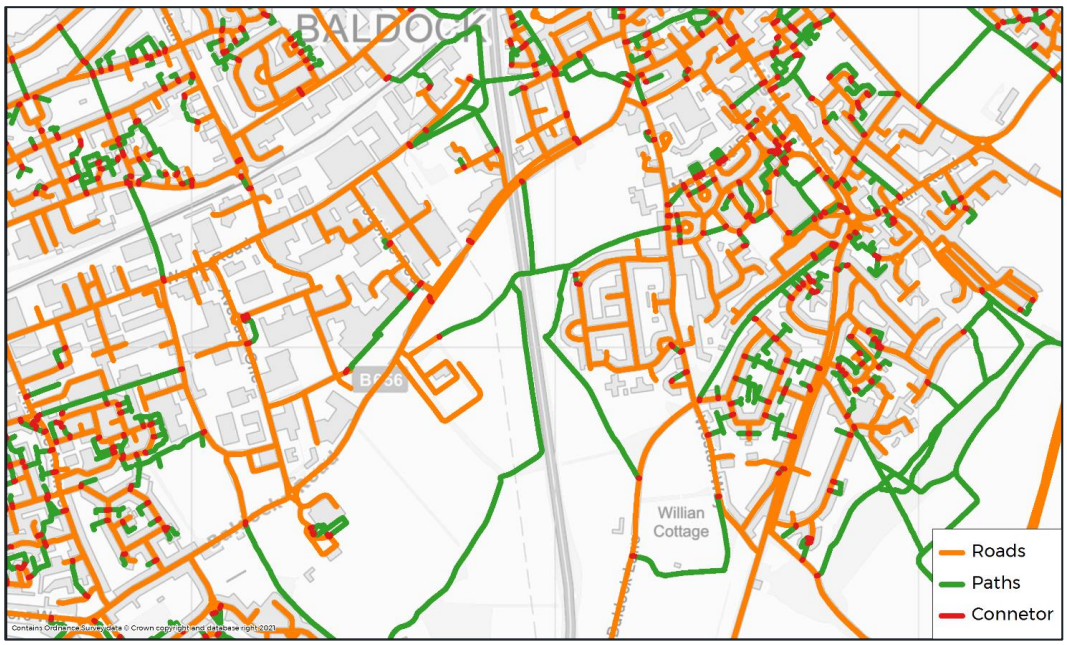
4.3.4. The network consists of two Ordnance Survey MasterMap datasets (as of May 2021): the most detailed road network available and its associated paths dataset. These were merged together as shown in Figure 4-3, with motorways removed from the network.

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

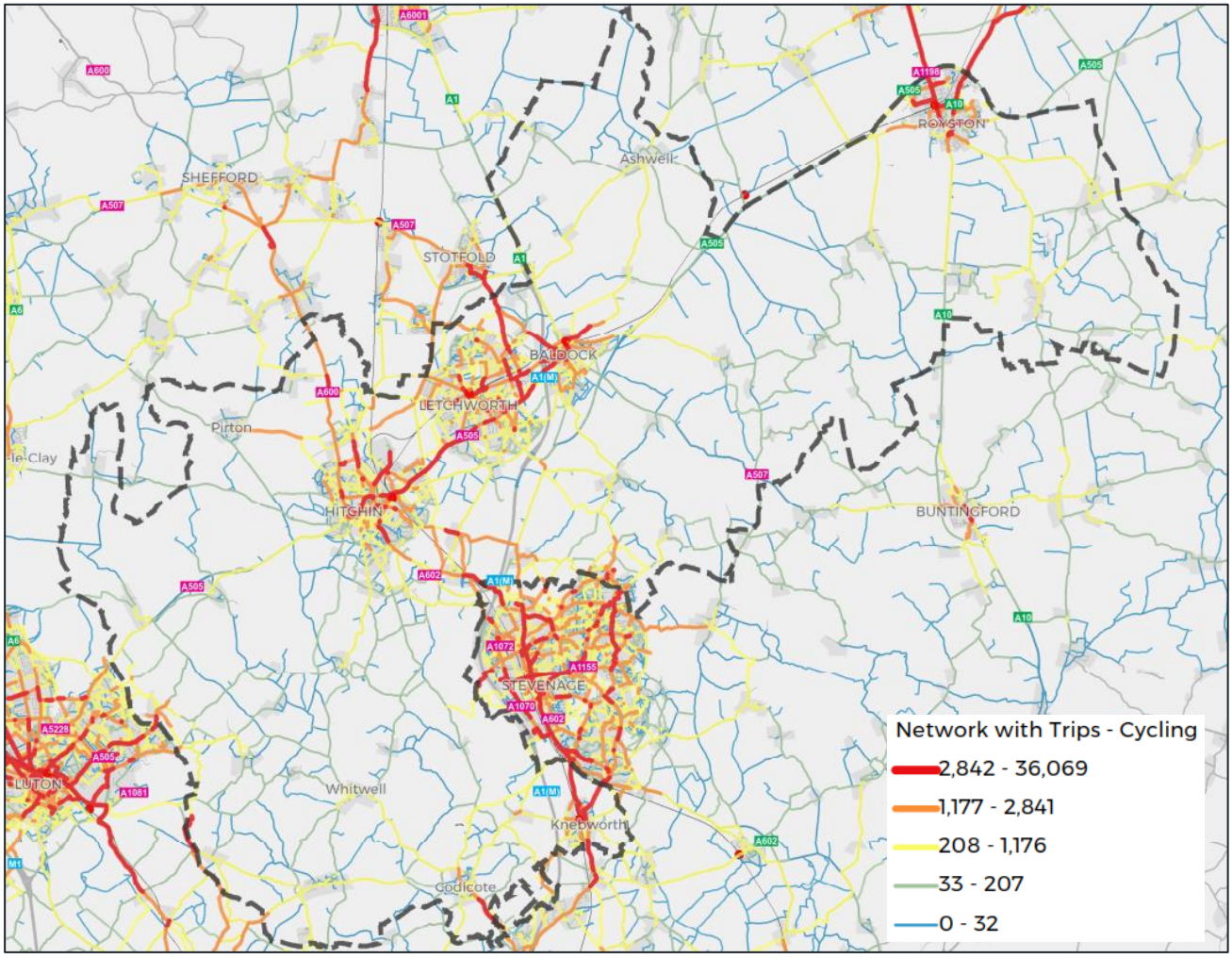
4.3.17. As with the Propensity to Cycle Tool, the WSP/HCC LCWIP GIS model has limitations and is not a perfect representation of reality. This is true of most models in transport planning. In the case of the GIS model, for example, the model does not take into account topography and many assumptions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

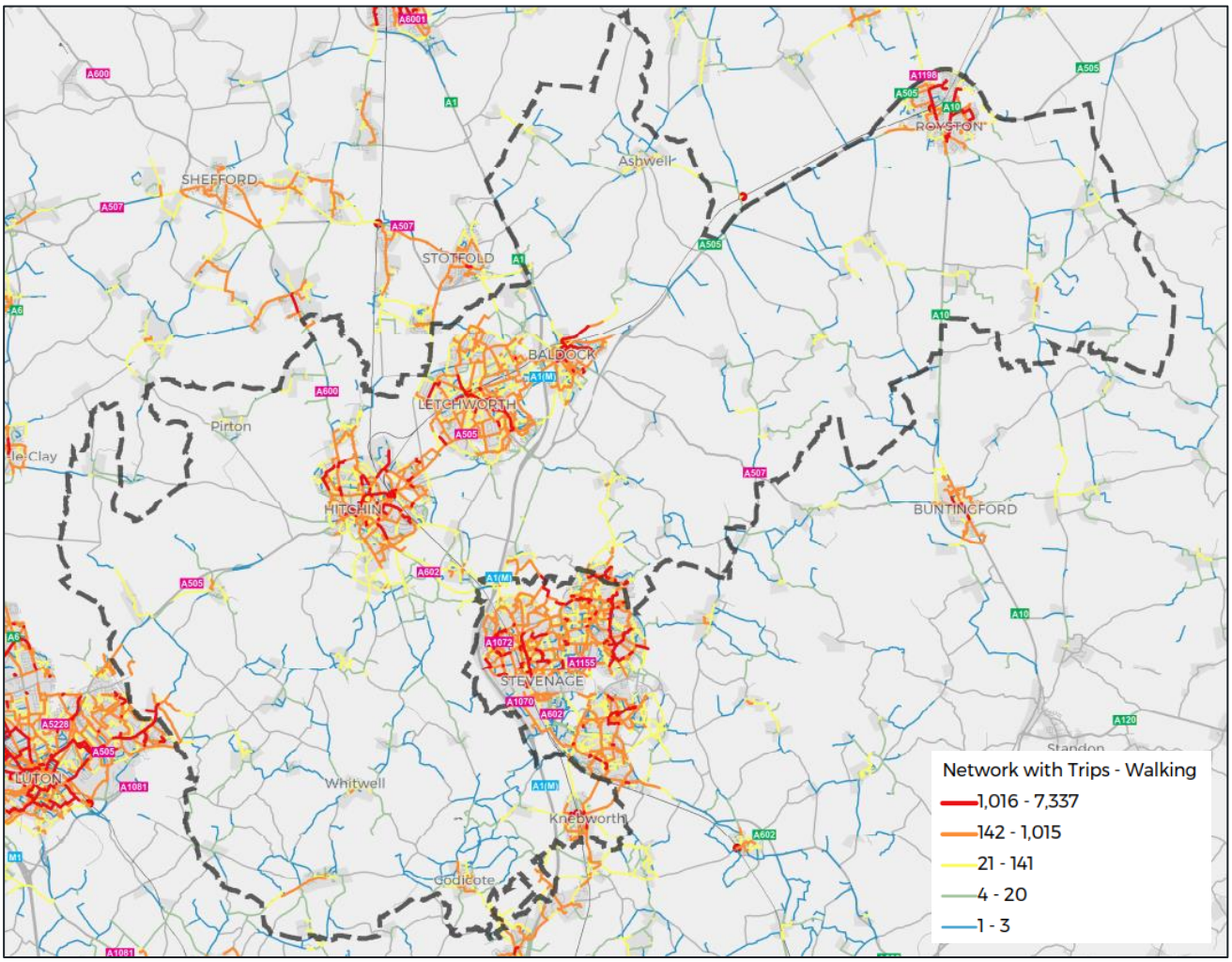
Figure 4-4 - LCWIP GIS Model - District-wide Cycling Outputs



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.

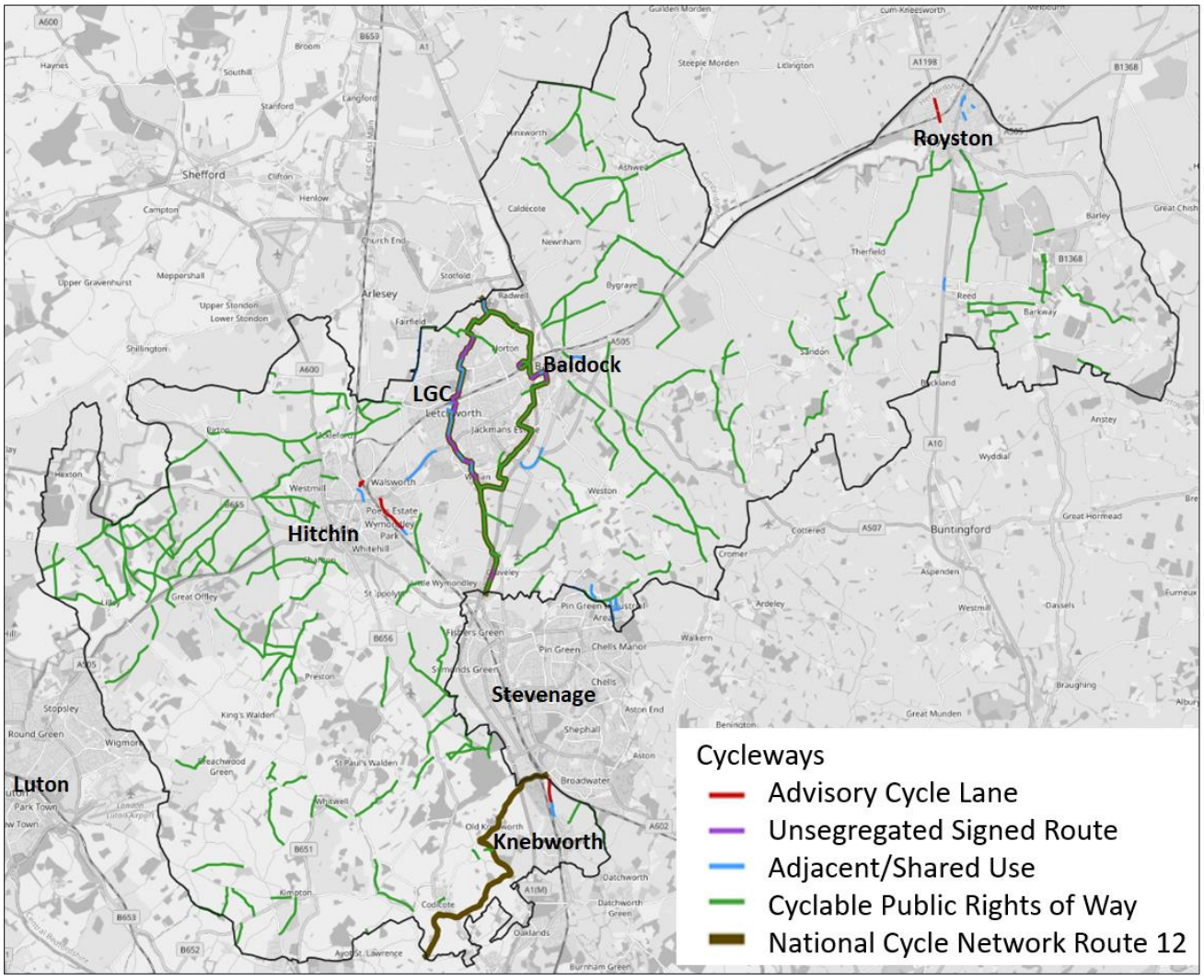
4.4.5. ROW coverage is extensive particularly in the area to the west of Hitchin. It would be useful if, in future, information on surfacing, 'walkability' and 'cyclability' of these (and other) ROW could be logged.

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

PUBLIC

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.

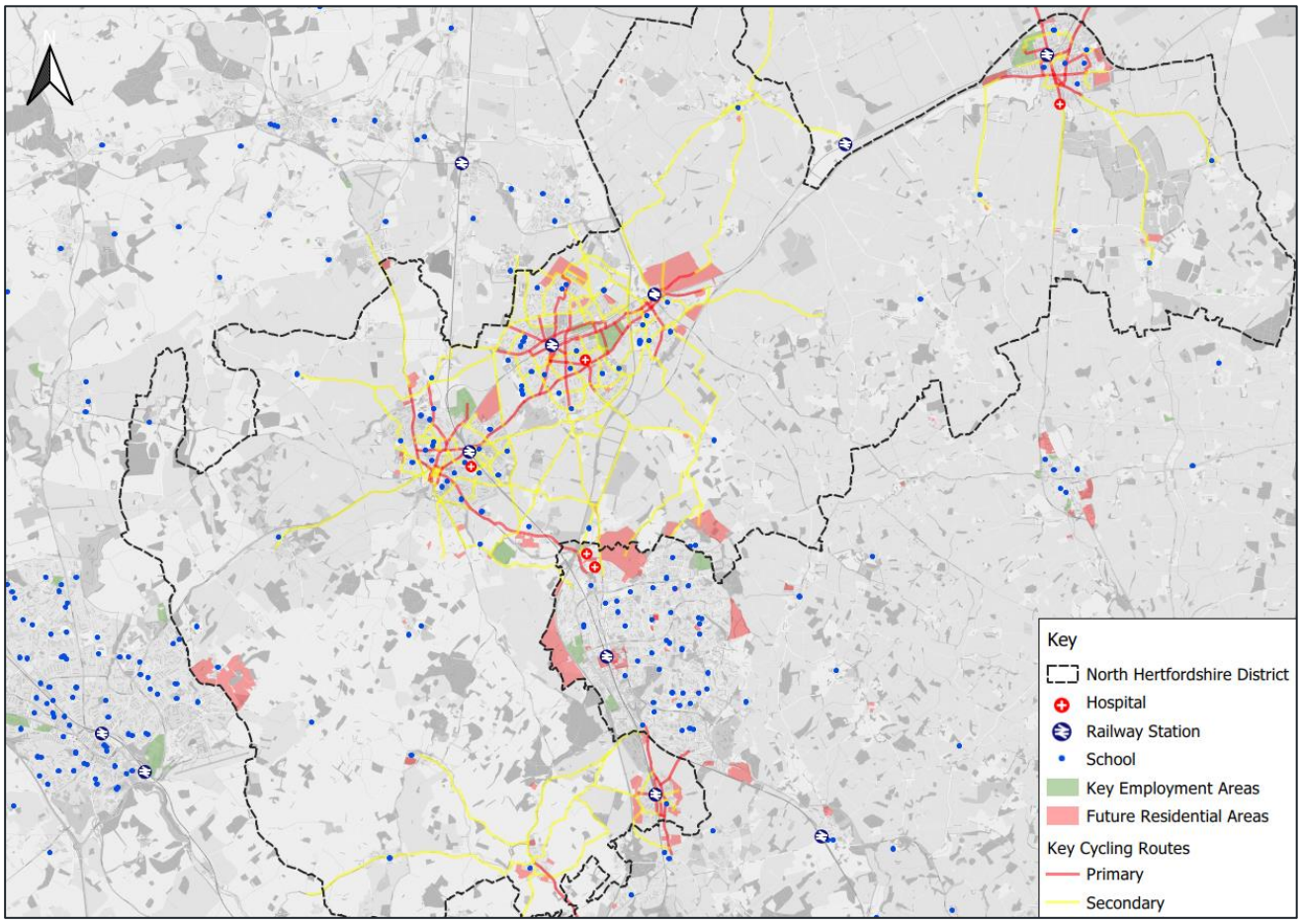
5.2.4. When identifying routes, the LCWIP project team also referred to the existing cycle facilities and routes, to ensure these were either considered as potential secondary or primary routes, or at least connected to the network. For example, the Letchworth orbital greenway and NCN routes were included 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

PUBLIC

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

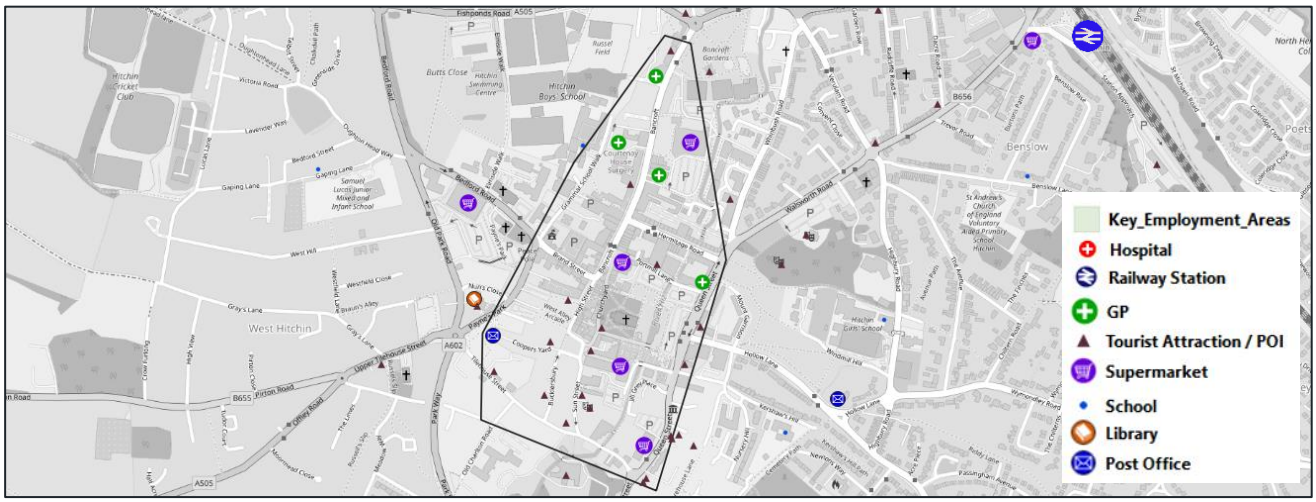


Figure 6-2 – Letchworth Garden City & Letchworth Gateway Core Walking Zones



Figure 6-3 – Baldock Core Walking Zone

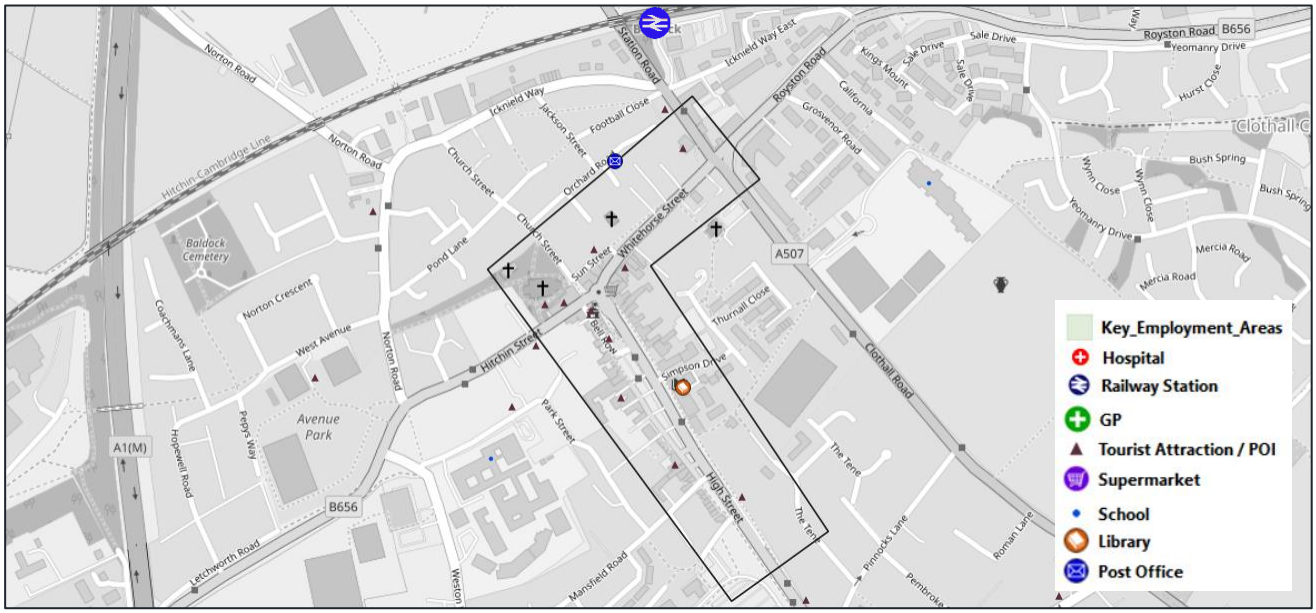


Figure 6-4 – Royston Core Walking Zone

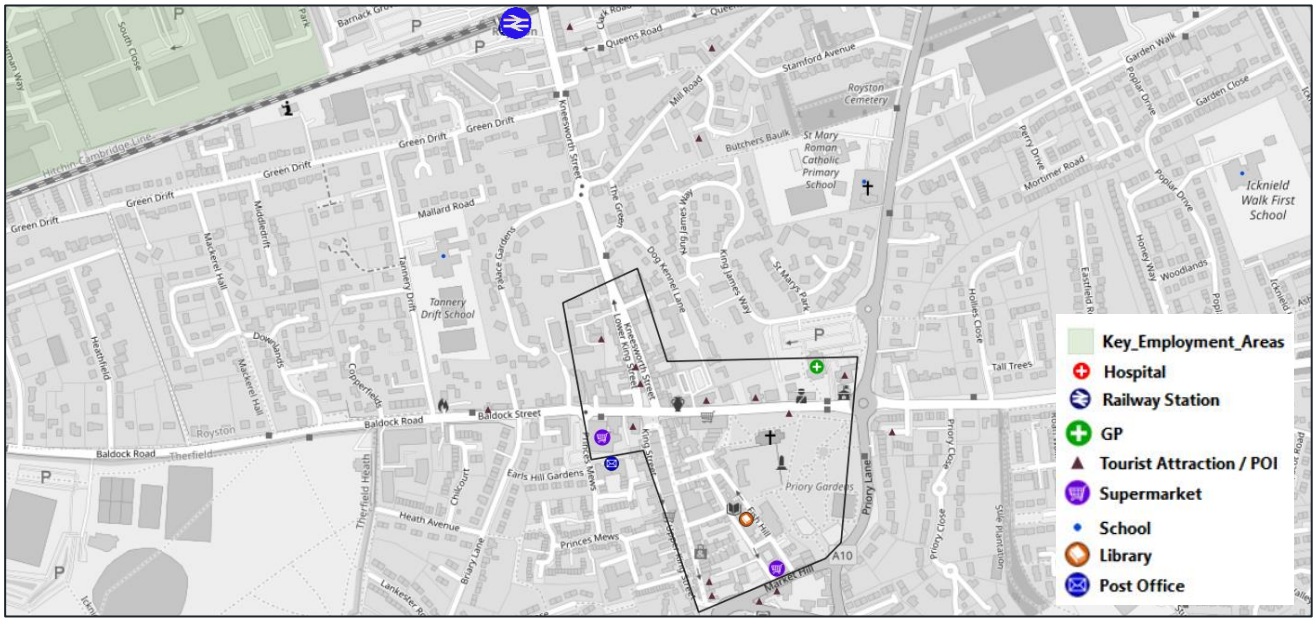
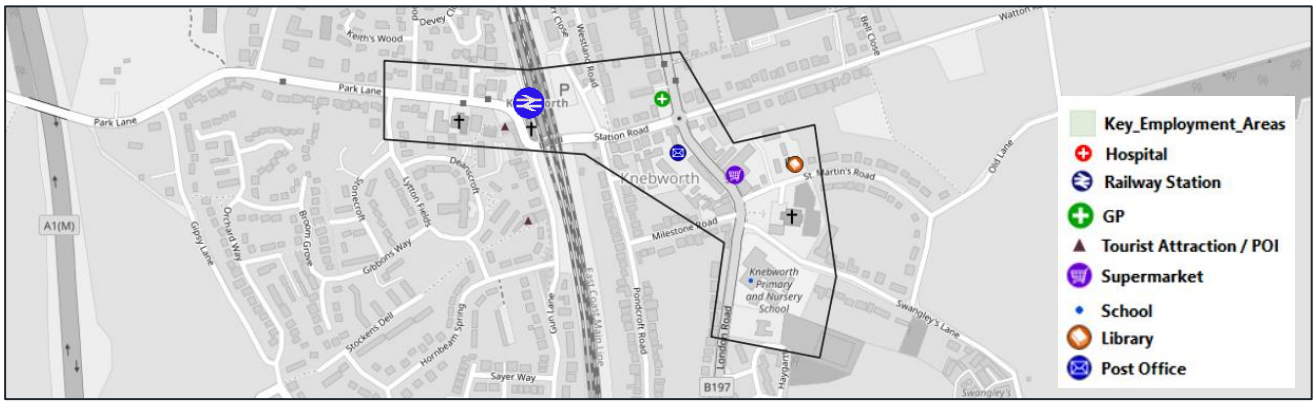


Figure 6-5 – Knebworth Core Walking Zone



6.3 IDENTIFYING KEY WALKING ROUTES

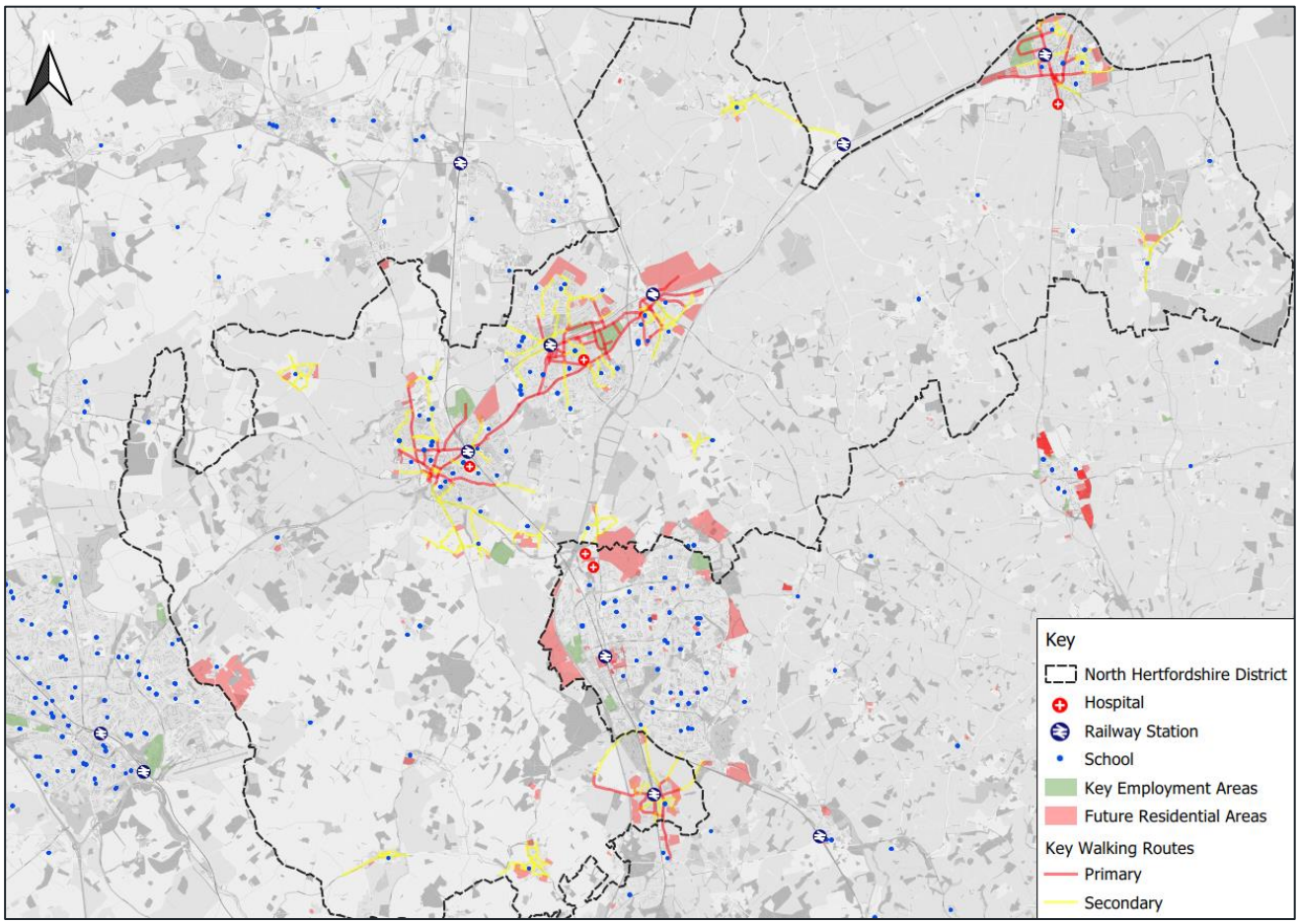
6.3.1. The CWZs represent the focal points for pedestrian journeys within North Hertfordshire, and therefore the starting point for mapping walking routes is to identify those that serve these CWZs. For this first iteration of the LCWIP, primary routes were considered those main pedestrian routes within 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

PUBLIC

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 signalising the junction.
- **Large junction improvement**: at large junctions where a need for junction improvements has been identified, this typically denotes a need for pedestrian crossings and protected cycle infrastructure on all arms. At particularly large junctions this might mean a Dutch-style roundabout (with parallel crossings on each 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 gulley 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.

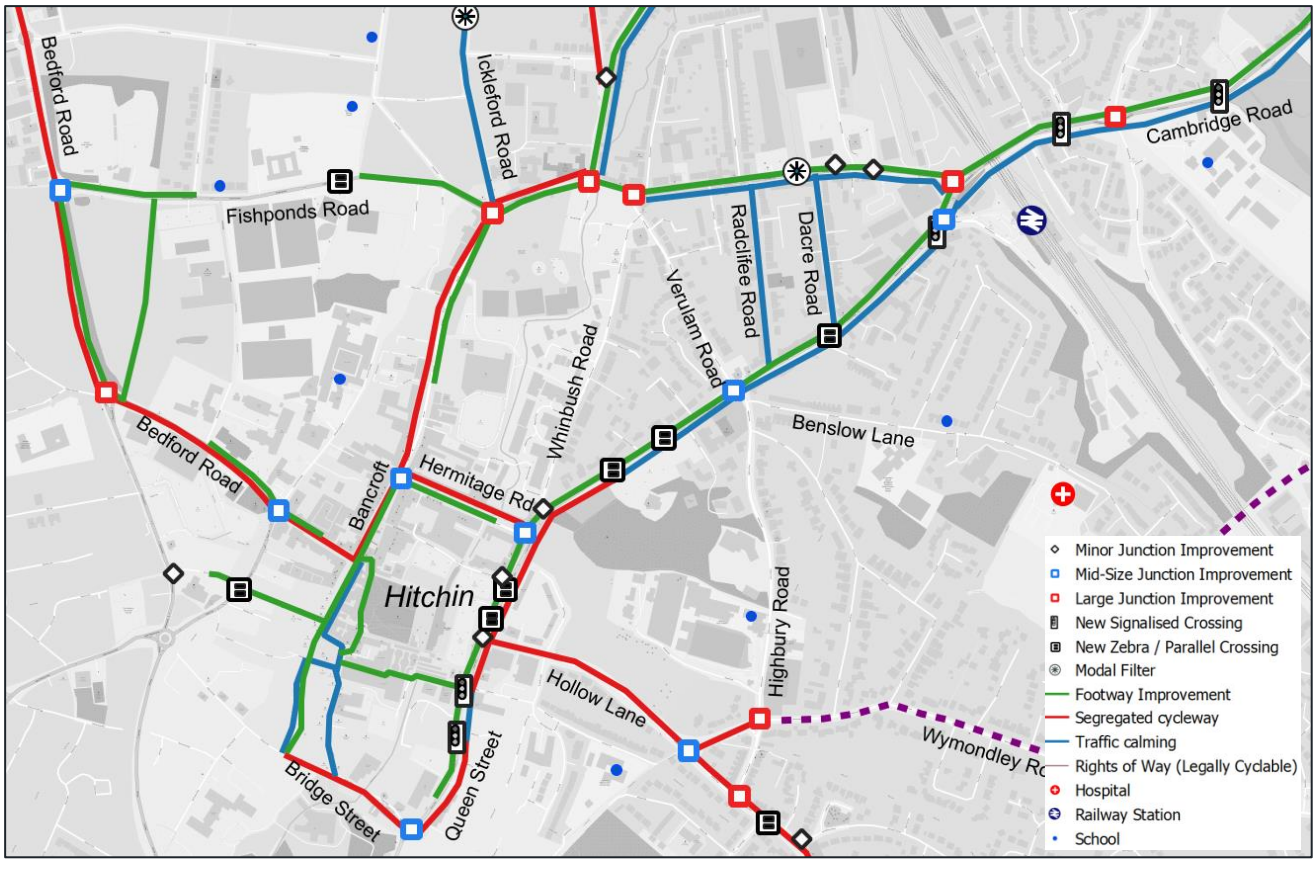
7.4.2. These final versions of the plans take into account the results of all audits (in person and virtual), relevant stakeholder comments from both periods of engagement and further internal discussions between HCC and NHDC officers. It is important to note that where stakeholders expressed opposition 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.

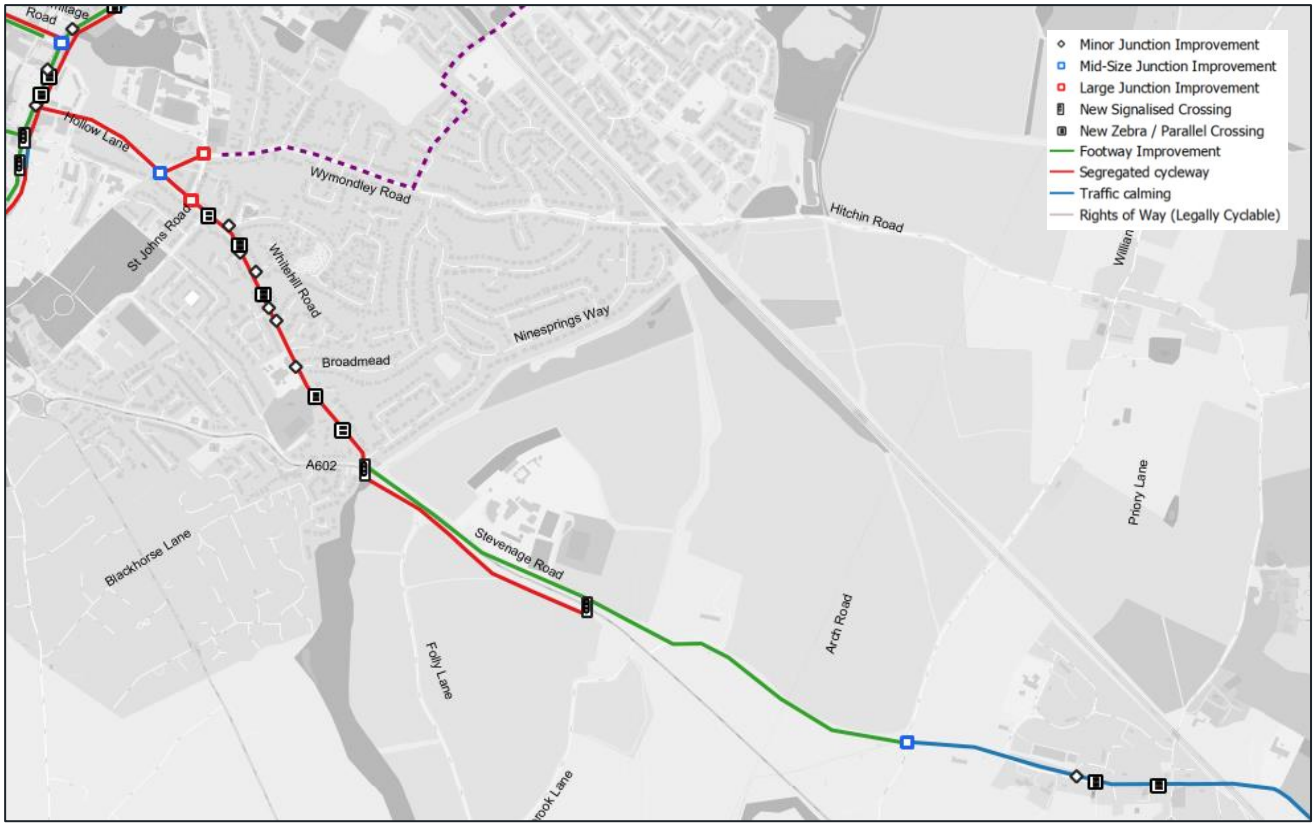
Figure 7-1 – Selection of Proposed Infrastructure Interventions in Hitchin
(Full Map with Additional Detail shown in Appendix G)



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)



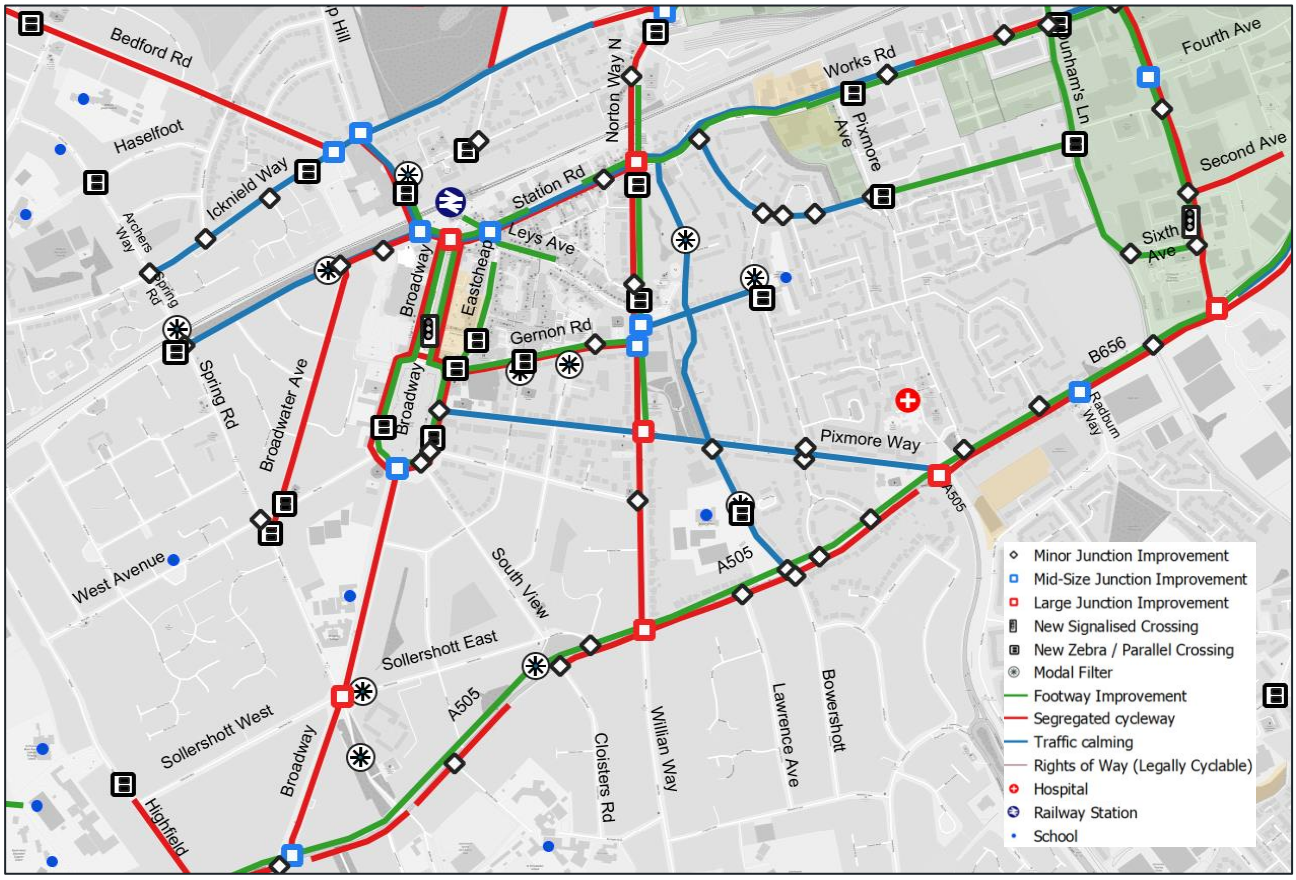
LETCHWORTH GARDEN CITY

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.

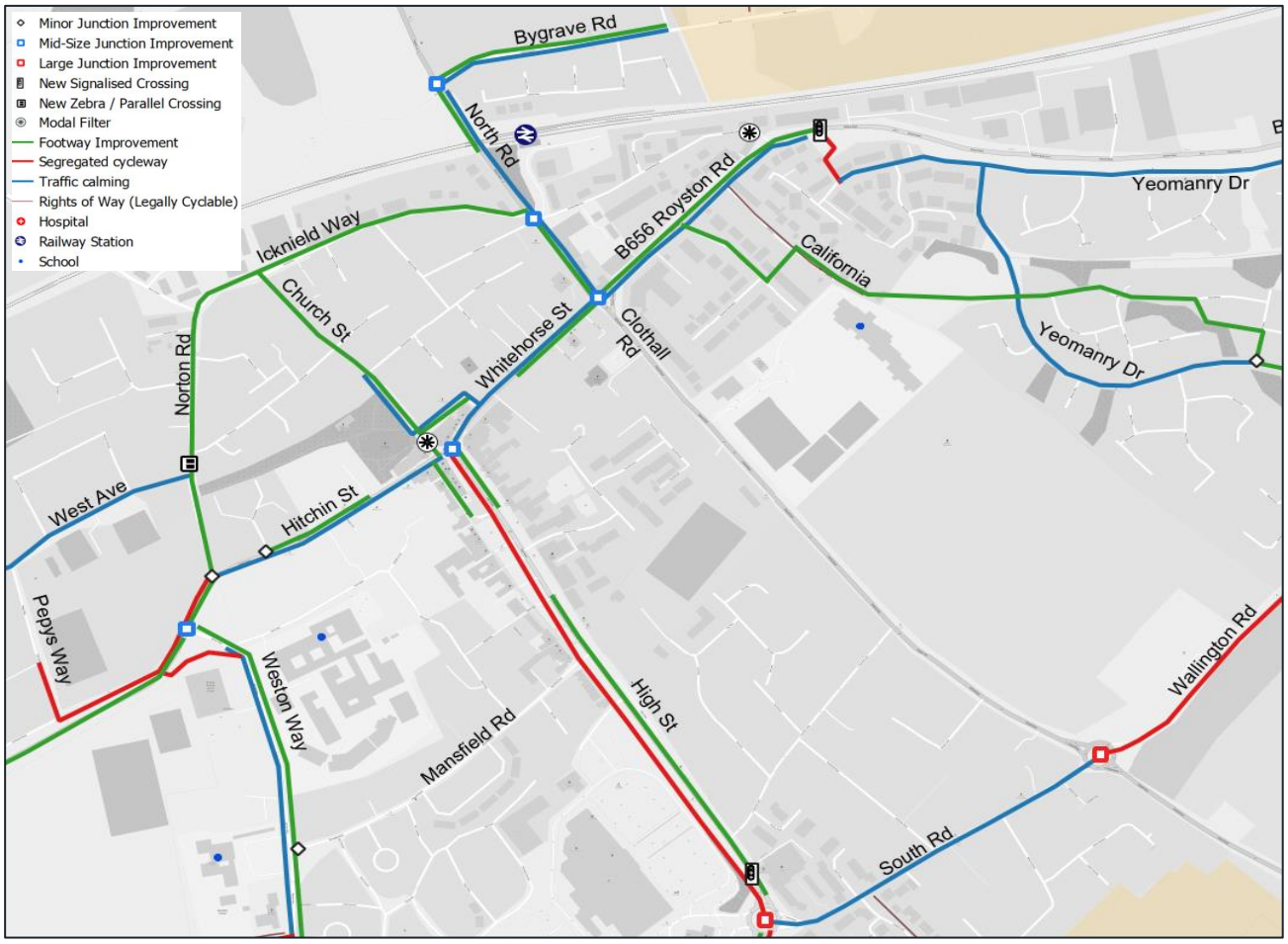
BALDOCK

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 Icknield 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)



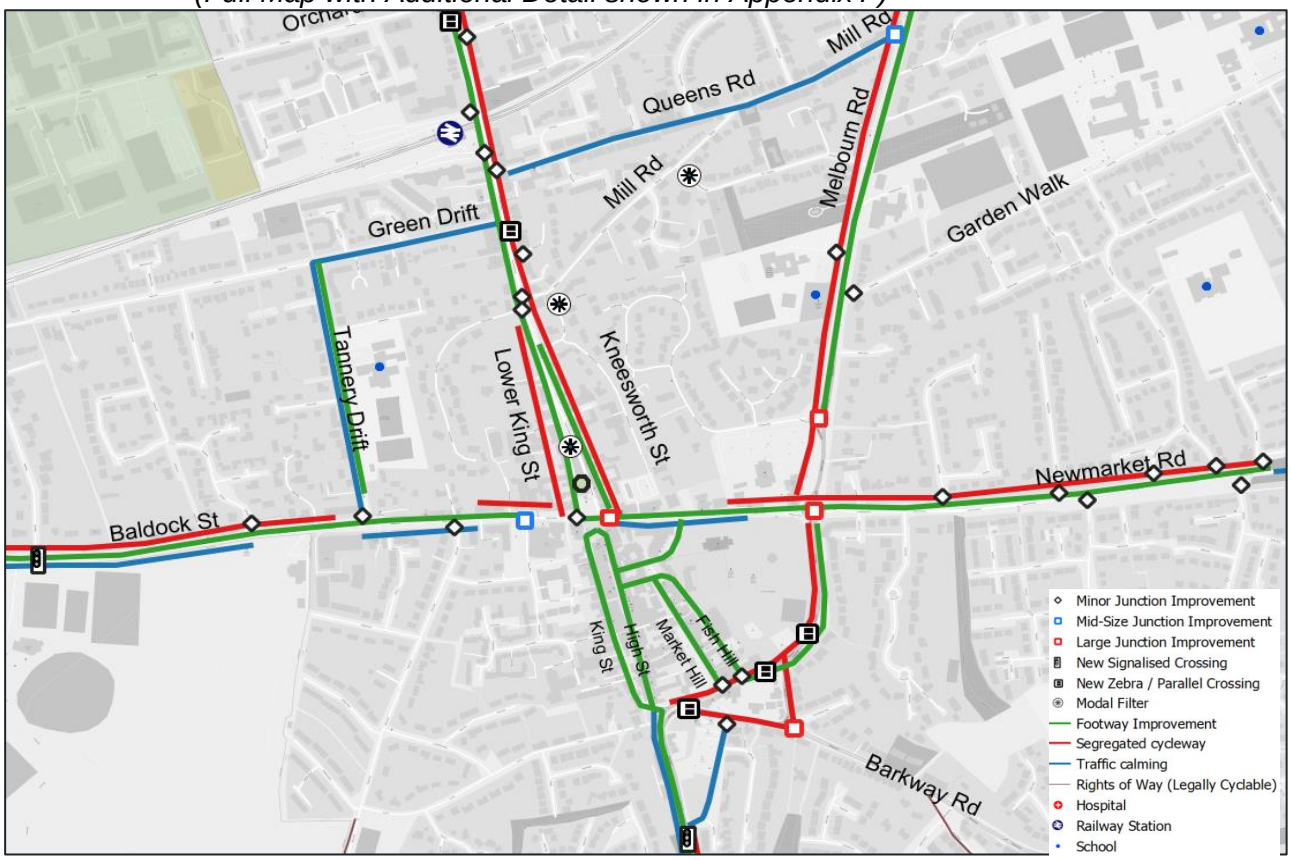
ROYSTON

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)



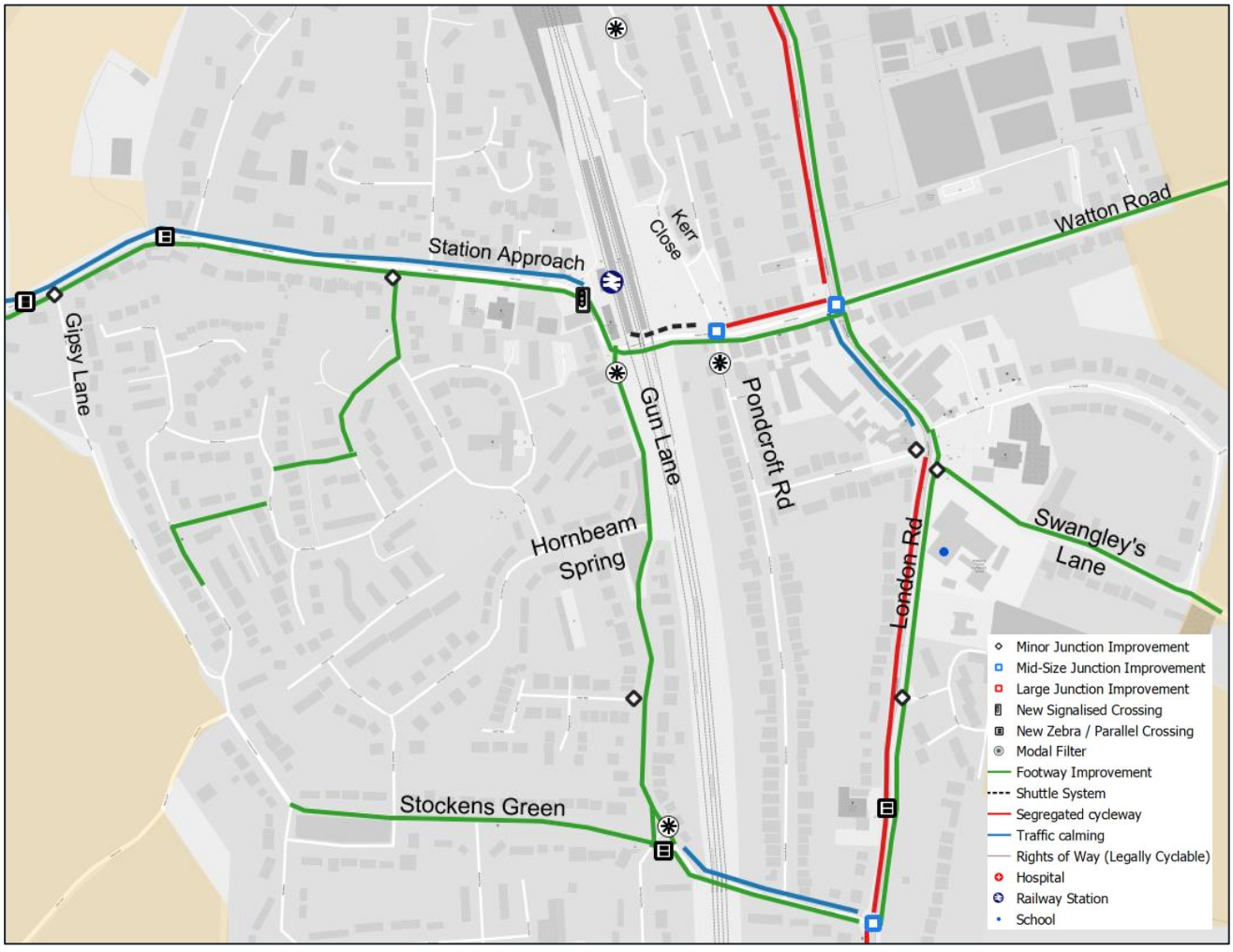
KNEBWORTH

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

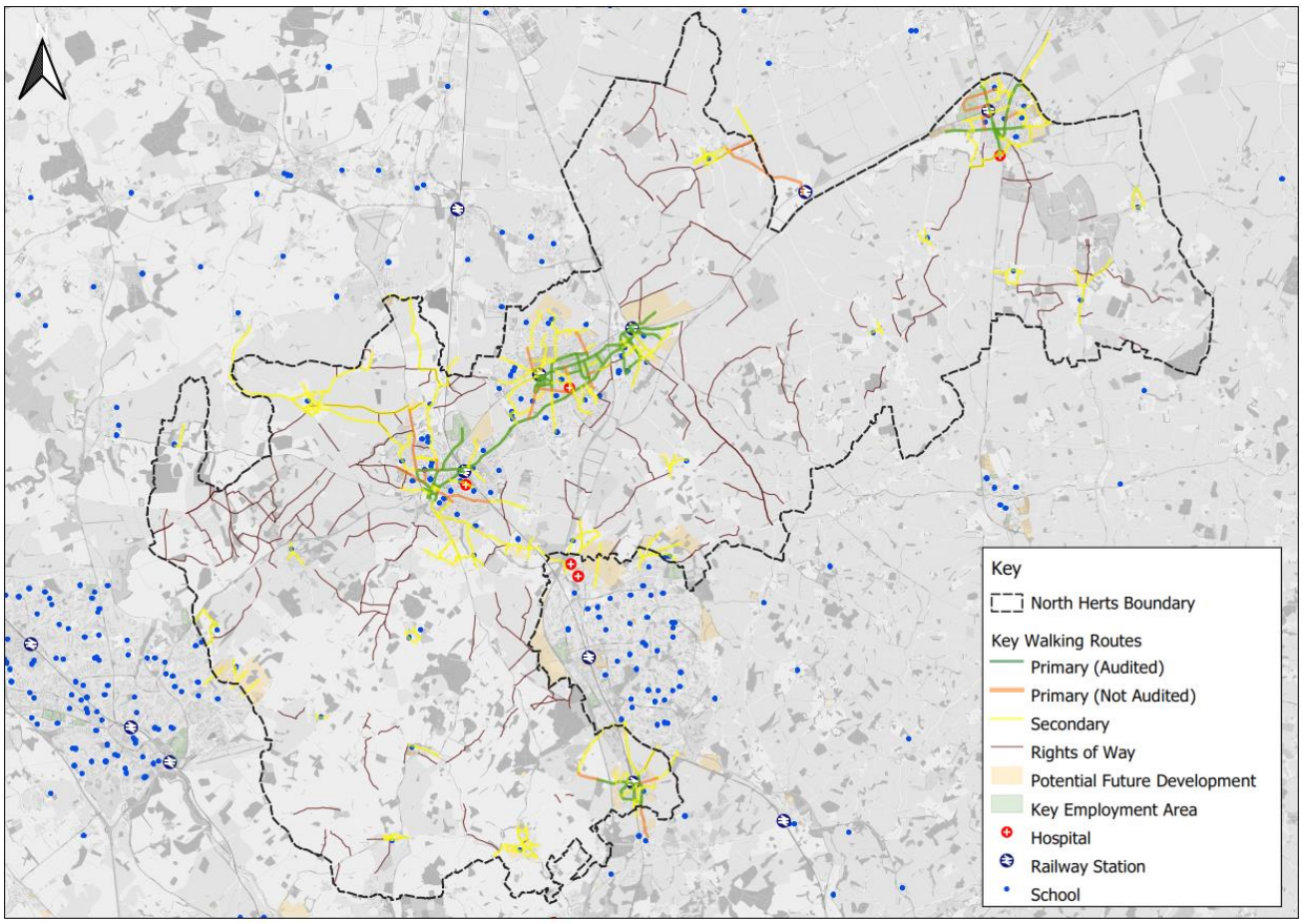
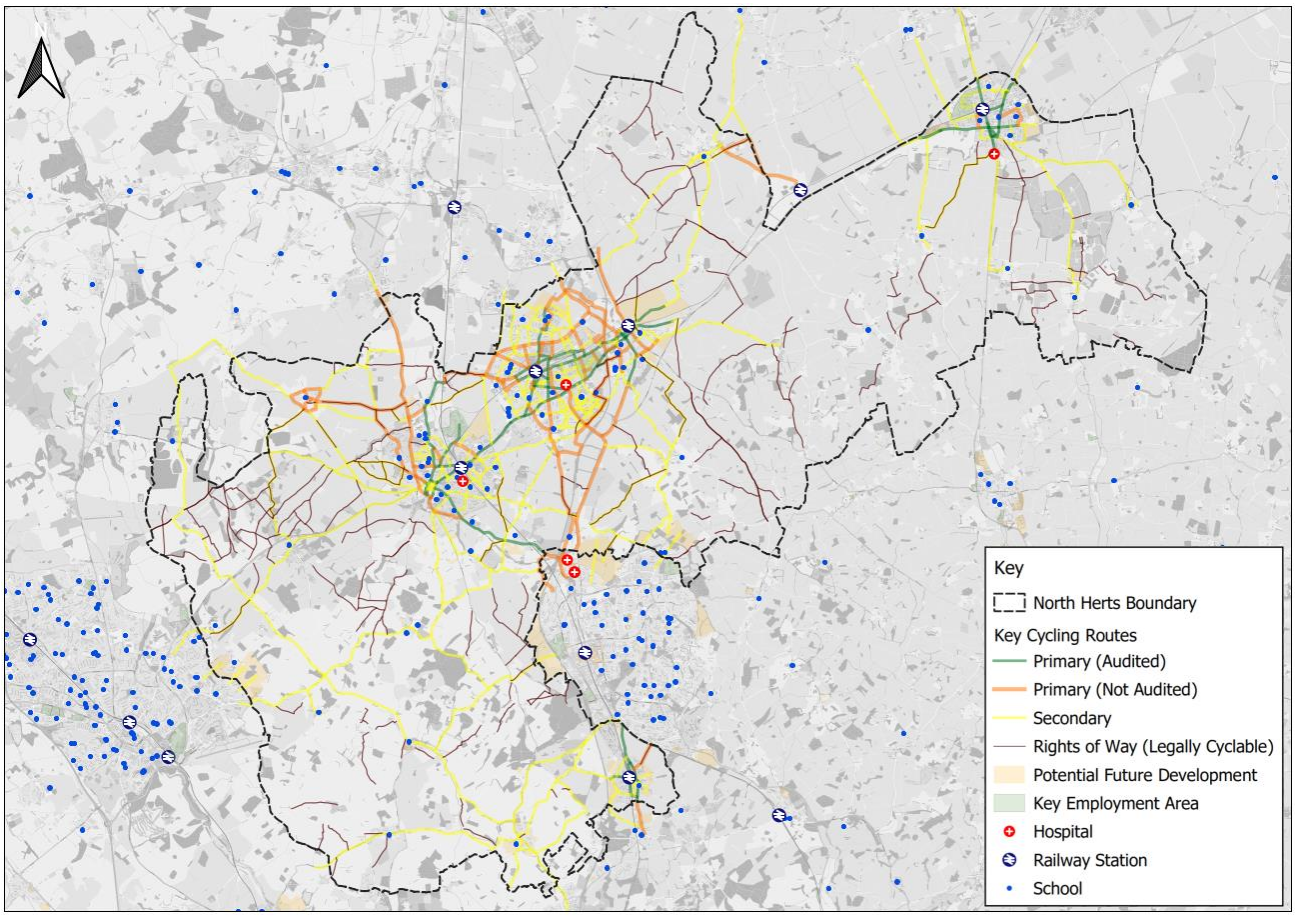


Figure 7-8 – North Herts District Network Plan for Cycling



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

PUBLIC

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

PUBLIC

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 gulley covers (i.e. gulley covers which bike wheels can't get stuck in) and replacing dangerous gulley 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

PUBLIC

Appendix B

PCT OUTPUTS

PUBLIC

Appendix C

GIS MODEL TECHNICAL NOTE

PUBLIC

Appendix D

LCWIP GIS MODEL: DISTRICT WIDE CYCLING OUTPUTS

PUBLIC

Appendix E

LCWIP GIS MODEL: DISTRICT WIDE WALKING OUTPUTS

PUBLIC

Appendix F

NORTH HERTS DISTRICT NETWORK PLANS FOR WALKING AND CYCLING

PUBLIC

Appendix G

DETAILED INFRASTRUCTURE PLANS

PUBLIC

Appendix H

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

PUBLIC

Appendix I

PRIORITISED COSTED LIST OF INFRASTRUCTURE IMPROVEMENTS

PUBLIC

Appendix J

KEY FOR PRIORITISED ROUTES

PUBLIC

Appendix K

LIST OF ACRONYMS USED IN REPORT

PUBLIC



70 Chancery Ln,
London
WC2A 1AF

wsp.com

PUBLIC

North Hertfordshire District

Local Cycling and Walking Infrastructure Plan

HCC / NHDC



JUNE 2022

PUBLIC

North Hertfordshire District

Local Cycling and Walking Infrastructure Plan

HCC / NHDC

Type of document (version) Public

Project no. 70081936

Date: June 2022

WSP House

70 Chancery Ln,
London
WC2A 1AF

Phone: 020 7314 500
WSP.com

PUBLIC

Quality Control

Issue/revision	First issue	Revision 1
Remarks	Draft	001
Date	March 2022	June 2022
Prepared by	DK	DK
Checked by	TH	TH
Project number	70081936	70081936
Report number	NHDC-LCWIP-001	NHDC-LCWIP-001

Contents

1 Policy Context 1

1.1 National Strategic Context 1

1.2 County Strategies, Policies and Plans 8

1.3 District Strategies, Policies and Plans 23

1.4 Relevant Plans in Neighbouring Authorities 35

1.5 Covid-19 and The Active Travel Fund 37

Tables

Table 1-1 – NCGTP Intervention Packages Relevant to North Herts 13

Table 1-2 – NHDC Transport Strategy Policies 26

Table 1-3 – Schemes presented in the LGC Cycling Strategy 29

Figures

Figure 1-1 - Priority Sustainable Transport Corridors Highlighted in LTP4 10

Figure 1-2 - Corridors from NGGTP relevant to the North Herts LCWIP 16

Figure 1-3 - Indicative Core Infrastructure Corridors from the Strategy 18

Figure 1-4 - Sustainable Transport Corridors from the NHDC Emerging Transport Strategy (relevant to the North Herts LCWIP) 28

Figure 1-5 - LGC Cycling Strategy Schemes 31

1 Policy Context

1.1 National Strategic Context

1.1.1. This section presents the existing policy documents that are relevant to this LCWIP on a national level.

Gear Change: A Bold Vision For Cycling And Walking (Department Of Transport, 2020)

1.1.2. Gear Change is the Government's vision to see a step-change in levels of walking and cycling in England. The strategy details how the Government intends to invest £2 billion on increasing the numbers of people walking and cycling.

1.1.3. A core focus of the strategy is on improving safety for all by building high quality cycle infrastructure, the lack of which is a significant barrier to more people choosing to walk or cycle for the everyday journeys. The strategy highlights the need to dramatically improve the quality of cycling infrastructure on England's roads to achieve the substantial increases in cycling required.



1.1.4. The document sets out the actions required at all levels of government, grouped under four themes:

1.1.5. **Theme 1 – 'Better streets for cycling and people'** outlines how the Government will help to fund safe, continuous, direct routes for cycling that help people reach the places they need to get to. The key design principles highlight how routes must be physically separated from pedestrians and from high volumes of motor traffic on links and at junctions. The creation of low traffic neighbourhoods and school streets is also featured due to their role in facilitating local walking and cycling trips and creating better places for people to live in.

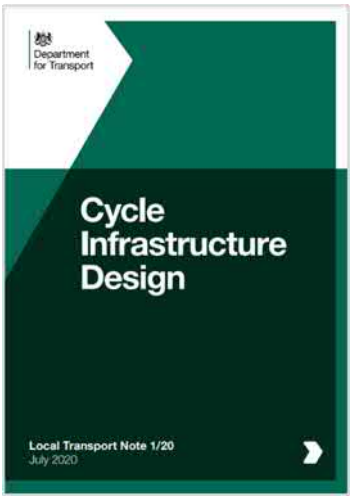
1.1.6. **Theme 2 - 'Putting cycling and walking at the heart of transport, place-making and health policy'** focuses on how cycling and walking should complement and help expand the range of other modes of transport such as bus and rail travel. The strategy mentions how new local and strategic A road schemes should include appropriate provision for cycling and that the tools used to assess transport schemes' value for money will give fair weight to the broader benefits of active travel schemes.

1.1.7. **Theme 3 – 'Empowering and encouraging local authorities'** outlines the new powers and improved assistance for local authorities, such as improving enforcement of traffic violations that impact on pedestrian and bicycle user safety. An important statement under this theme is how funding available for local authorities will only be applied to schemes that meet the new standards and principles described within the first theme.

1.1.8. **Theme 4 – 'Enabling people to cycle and protecting them when they do'** focuses on encouraging more people to cycle by providing people with the confidence and skills to cycle where the appropriate infrastructure facilities cycle journeys. The Government also stipulate their aim to make legal changes to protect vulnerable road users, strengthen the Highway Code to improve safety and mandate higher safety standards on lorries.

Local Transport Note 1/20: Cycle Infrastructure Design (Department for Transport, 2020)

1.1.9. Alongside Gear Change, the DfT also published updated cycle infrastructure design guidance in 2020. LTN1/20 provides guidance and good practice for the design of cycling infrastructure in support of the DfT Cycling and Walking Investment Strategy. LTN 1/20 replaces LTN 2/08: Cycle Infrastructure Design and LTN1/12: Shared Use Routes for Pedestrians and Cyclists have been withdrawn.



1.1.10. The Government expects local authorities to demonstrate they have given due consideration to the guidance when designing new cycle schemes and when applying for Government funding that includes cycle infrastructure.

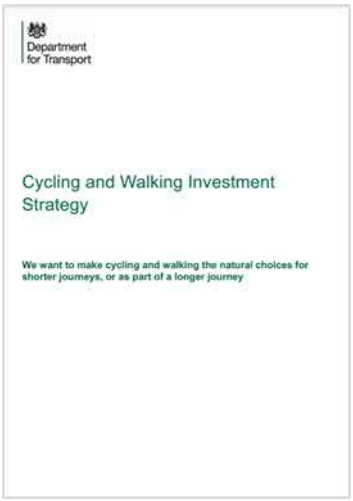
1.1.11. LTN 1/20 is based around five overarching design principles (that cycle routes and networks must be coherent, direct, safe, comfortable and attractive) and 22 further principles that represent the essential requirements to achieve more people travelling by foot or cycle for more of their trips.

1.1.12. The LTN 1/20 explains these principles 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. The LTN also focuses on specific types of cycling infrastructure and the highway network, such as facilities within the highway corridor, motor traffic free routes, quiet mixed traffic streets and junctions and crossings.

1.1.13. LTN 1/20 also covers cycle parking, signage and markings and construction and maintenance which all together provides guidance through the whole process of planning designing and implementing high quality cycle infrastructure.

Cycling and Walking Investment Strategy (Department for Transport, 2017)

1.1.14. The Government published its first Cycling and Walking Investment Strategy (CWIS) in 2017, setting out an ambition to make walking and cycling the natural choice for shorter journeys or as part of a longer journey. The CWIS states that the benefits to doing this would be substantial, potentially leading to cheaper travel and better health, increased productivity for business and increased footfall in shops. Benefits will also include lower congestion, better air quality, and vibrant, attractive places and communities.

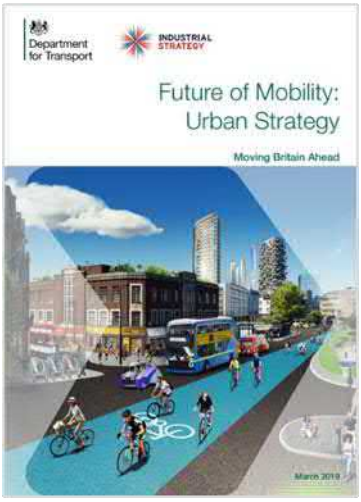


1.1.15. The CWIS outlines ambitious targets for the period to 2025. This includes a doubling of cycling trip stages each year (from 0.8 billion in 2013 to 1.6 billion by 2025), whilst also reversing the current year-over-year decline in walking trip stages. The CWIS also identifies a need to decrease the number of cycle user fatalities and serious injuries each year.

1.1.16. Following the publication of the CWIS (and in line with its strategic objectives), the Government also published its LCWIPs Technical Guide for Local Authorities. As explained in Section 1.2, this document sets out a flexible six-stage methodology for producing an LCWIP. The methodology developed by HCC and WSP for this LCWIP follows this guidance.

Future of Mobility: Urban Strategy (Department for Transport, 2019)

1.1.17. The ‘Future of Mobility: Urban Strategy’ recognises the challenges associated with the rise in motor transport including safety, pollution and space. As the number of people living in urban areas in England is forecast to rise by 4.7 million between 2016 and 2041, towns and cities will become increasingly crowded. This provides us with an opportunity to transform the way we travel and the infrastructure within our towns and cities.



1.1.18. The document sets out principles to guide Government decision making, industry and local authorities, and has recognised active travel as a key area to help shape the future of urban mobility. The principle ‘Walking, cycling and active travel must remain the best option for short urban journeys’ states, in England, 45% of all journeys taken by urban residents are under 2 miles. Many such journeys could be undertaken by sustainable, active modes of transport leading to better air quality, health outcomes and lower congestion. This can be supported by new technologies including intelligent use of real-time data and connectivity making public transport more convenient and responsive. With these improvements active travel can become a more desirable option for multi-stage journeys.

1.1.19. An additional principle identified; ’Mobility as a Service’, suggests introducing well-managed bike-sharing schemes and e-bikes which would encourage people who wouldn’t normally chose cycling as a travel option to switch. This may be especially important given the trend towards an aging population, 62% of e-bikes in the UK are sold to people over the age of 55.

Clean Air Strategy (Department for Environment, Food & Rural Affairs, 2019)

1.1.20. The Clean Air Strategy sets out a comprehensive action required to tackle all sources of air pollution.



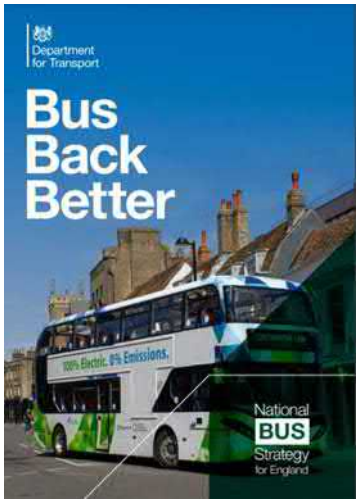
1.1.21. A key action in achieving this is reducing emissions from transport by facilitating modal shift towards low and zero emission options. The report suggests encouraging an increase in cycling and walking for short journeys delivers a reduction in congestion and emissions in addition to the associated health benefits from a more active lifestyle.

1.1.22. Drivers and passengers inside vehicles are often exposed to significantly higher levels of air pollution in comparison to those walking and cycling on the same route. People can be persuaded to walk or cycle in North Herts, as even when there is a build-up of traffic within the town centres, the strategy suggested that those travelling actively, experience lower exposure. Pedestrians and cyclists can be encouraged to use quieter routes away from vehicle traffic to reduce exposure even further.

1.1.23. This method of travel also creates less pollution, with associated health benefits such as improved fitness, mental health and lower risk of obesity and heart diseases. In addition to the funding identified through the Cycling and Walking Investment Strategy, local authorities and mayors have been allocated an additional £700 million to safe infrastructure and other Active Travel projects since the CWIS was published. There has also been £34 million spent to improve cycle facilities at stations, making it easier and more accessible to get to and from station by bike, including 22,000 new cycle parking spaces which as a result increased cycle trips to stations by 40%.

Bus Back Better, National Bus Strategy (Department for Transport, 2021)

1.1.24. Bus Back Better is a long-term strategy for buses in England, outside of London. This new national bus strategy sets 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 strategy includes various ambitions, such as to “make buses more frequent, more reliable, easier to understand and use, better co-ordinated”, and with “simple, cheap flat fares … with daily and weekly price capping across operators.”

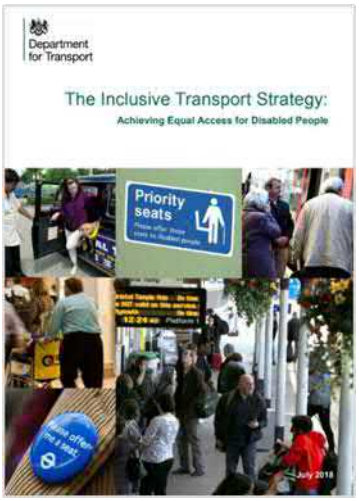


1.1.25. The new strategy challenges councils to give buses greater priority at traffic lights, reallocate road-space for bus lanes, create bus gates, and manage their roads with bus reliability in mind. It recommends looking carefully at street design and locations of bus stops, parking and loading bays and developing ‘Bus Service Improvement Plans’ (BSIPs). Hertfordshire’s BSIP was published in October 2021 and is discussed the next section.

1.1.26. Where bus priority infrastructure is considered for the same corridors as cycle infrastructure and there is limited space, this needs to be taken into account and reconciled. Furthermore, cyclists needs’ should be taken account when designing bus infrastructure and vice versa.

The Inclusive Transport Strategy (Department for Transport, 2018)

1.1.27. The Inclusive Transport Strategy plans to create more inclusive transport system for everyone. The report itself focusses on transport inclusivity, explaining how vehicles, stations and streetscapes can be designed to be inclusive to people with different forms of disability.



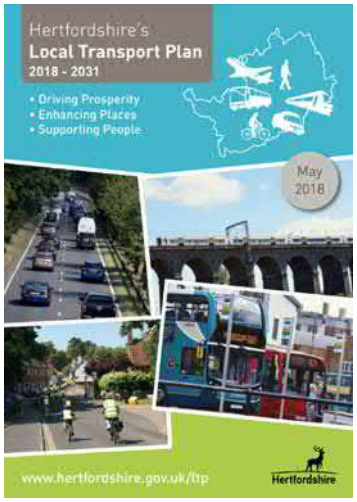
1.1.28. The LCWIP process aims to create a network to support this ambition and allow for users of all abilities to travel safely and comfortably via active travel in and around North Hertfordshire. As part of this LCWIP the council has identified improvements to support a transport system fit for all users, identifying infrastructure interventions to make key cycling and walking routes more accessible and inclusive.

1.2 County Strategies, Policies and Plans

1.2.1. This section will present the existing policy documents that are relevant to this LCWIP on a county level. All of these have been produced by Hertfordshire County Council.

Local Transport Plan 4 (2018-2031)

1.2.2. The Hertfordshire Local Transport Plan 4 (LTP4) sets out a transport vision for Hertfordshire. The plan accelerates the transition from the previous transport strategy (LTP3) 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 (e.g. walking, cycling and passenger transport) wherever possible. LTP4 recognises the potential public health benefits associated with increased levels of active travel, further emphasising active travel improvements as an essential feature of the future transport systems within Hertfordshire.



1.2.3. LTP4 Policy 1 ‘Transport User Hierarchy’ is especially important to this LCWIP as it places vulnerable road users such as pedestrians and cyclists at the top of the user hierarchy.

1.2.4. LTP4 highlights strategic corridors in which sustainable transport is a priority. Of relevance to this study are corridor 3 (London-Stevenage-Peterborough) and corridor 6 (Luton-Stevenage), which are highlighted in Figure 1-1. First and last mile connectivity to these corridors could be improved through the development of infrastructure identified in this LCWIP.

Figure 1-1 - Priority Sustainable Transport Corridors Highlighted in LTP4



1.2.5. The LTP4 also sets out various objectives to help encourage walking and cycling, which are detailed below.

Walking

1.2.6. LTP4 recognises that there is a high walking mode share for trips of up to 1 mile across the county, with 76.5% of such trips being undertaken on foot (County Travel Survey, 2015). Policy 7 – Active Travel (Walking) sets out the objectives to further encourage walking, many of which are captured in this LCWIP:

- Implementing measures to increase the priority of pedestrians relative to motor vehicles, especially in town centres, and creating walking friendly towns and centres;
- Delivering infrastructure to provide safer access to key services, and pedestrian facilities to enable and encourage walking.
- Identifying and promoting networks of pedestrian priority routes.
- Promoting walking as a mode of travel and for recreational enjoyment.
- Supporting the implementation of the Rights of Way Improvement Plan.

Cycling

1.2.7. LTP4 recognises that compared with walking, cycling has a much lower more share across Hertfordshire, only making up 1.7% of trips under 1 mile, 4.8% of trips between 1-3 miles and 3.1% of trips between 3-5 miles. LTP4 highlights that there is significant potential in the county to increase cycling activity. Policy 7 – Active Travel (cycling) sets out the objectives to further encourage cycling, many of which will be captured within this LCWIP:

- Infrastructure improvements, especially within major urban areas to enable and encourage more cycling.
- Implementing measures to increase the priority of cyclists relative to motor vehicles.
- Improved safety including delivery of formal/informal cycle training schemes.
- Supporting promotion campaigns to inform, educate, reassure and encourage cycling provision and education, such as Bikeability.
- Facilitating provision of secure cycle parking.

1.2.8. Given the Government CWIS targets and the significant potential to increase cycling activity in Hertfordshire, the LTP4 shows that the council is seeking to achieve a large increase in cycling and walking over the next 10 years. This will require an increase in investment in active travel to create routes and networks which can attract a broader demographic to walk and cycle. This is exactly what an LCWIP helps to plan and so the LCWIP is very well-aligned with the LTP4.

North Central Growth and Transport Plan (2019)



1.2.9. The North Central Growth and Transport Plan (NCGTP) follows on from the LTP4 to provide more detail on specific measures associated with growth and transport within North Herts and Stevenage. A draft version of this document was consulted on in 2019 but it has not yet been published. The NCGTP proposes measures within this area under the following themes:

- Improved walking links within towns including new crossings on busy roads;
- Improved road junctions to reduce delays on key roads and reduce rat-running on quieter roads;
- Improved bus services and priority for buses at junctions;
- Improved cycle links within and between towns, and cycling parking facilities at key locations; and
- Improved walking, cycling and bus connections to railway stations.

1.2.10. The proposals in the NCGTP are defined as interventions, which are grouped into packages. The following packages relevant to the LCWIP study area are shown in Table 1-1 and, where corridors are mentioned, these are shown indicatively on Figure 1-2. This LCWIP supports these objectives through proposals for routes and infrastructure which align with these packages.

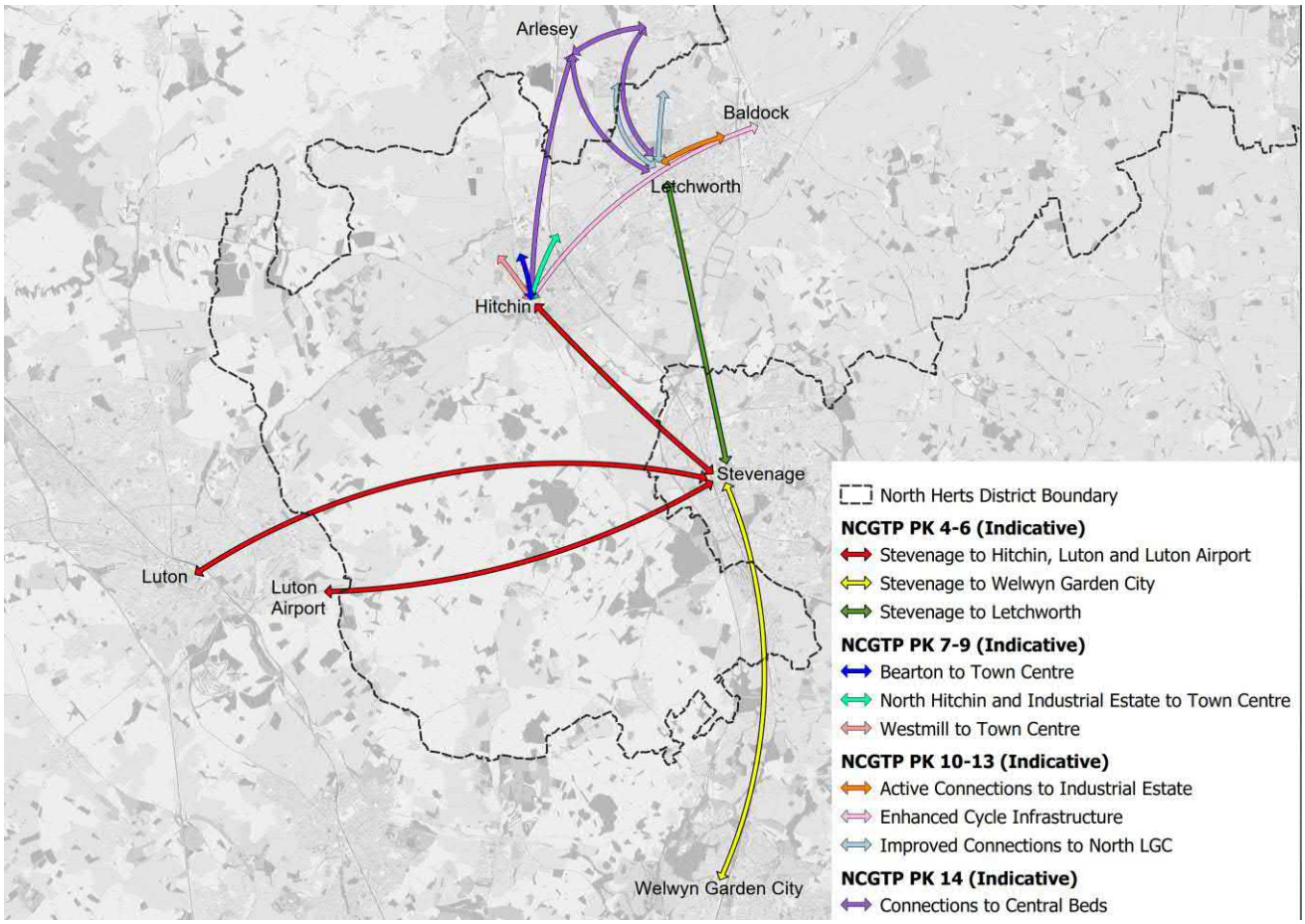
Table 1-1 – NCGTP Intervention Packages Relevant to North Herts

Area	PK	Name	Aim of Package
Stevenage connections to other towns	PK4	Stevenage to Welwyn Garden City	To improve reliability and enable faster journey times for public transport along the B197 from Welwyn to Stevenage
Stevenage connections to other towns	PK5	Stevenage to Hitchin, Luton and Luton Airport	To develop a multimodal corridor between Stevenage, Hitchin and Luton Airport that supports public transport and cycling through improvement of existing infrastructure
Stevenage connections to other towns	PK6	Stevenage to Letchworth	To form a sustainable corridor between Stevenage and Letchworth by upgrading existing cycling infrastructure, improving the public realm in villages on the B197 as well as ensuring bus priority
Hitchin	PK7	Hitchin Centre including Rail Station	To encourage use of public transport through support for services and creation of a safe and attractive corridor to take advantage of the services within Hitchin Centre and Rail Station.
Hitchin	PK8	North Hitchin and Industrial Estate	To build connections to the development site H1 and industrial estate with public transport and increased links to active transport infrastructure.
Hitchin	PK9	West Hitchin	To unlock the potential for active trips with high quality improvements to pedestrian and cycling infrastructure from Hitchin Westmill and Bearton areas to the town centre.

Area	PK	Name	Aim of Package
Hitchin connections to other towns	PK10	Hitchin to Letchworth Garden City/Baldock	To enhance cycling infrastructure between Hitchin, Letchworth Garden City and Baldock; and make it a safe and attractive option for sustainable trips.
Hitchin connections to other towns	PK11	Letchworth Centre Industrial Estate	To increase active transport provision between the centre of Letchworth Garden City and the employment area by providing a signposted and connected active transport network, improve access to the rail station, and improve the safety of routes through the industrial estate (including the link between Avenue One and the B656 and via Works Road to the NMU bridge over the A1.
Letchworth Garden City	PK12	North Letchworth Garden City	To provide improved sustainable connections by supporting a more frequent bus connection as well as a cycling facility between north Letchworth Garden City and the town centre.
Baldock	PK13	Baldock connectivity, railway & dev.	To make Baldock a safe, convenient and attractive place to make sustainable transport trips through improvements to cycling and walking infrastructure and facilities
To Central Beds	PK14	To Hitchin/Letchworth Garden City	Encourage a modal shift in trips from Central Bedfordshire through supporting development trips to use sustainable modes and the creation of inter-urban cycling and walking routes.

Area	PK	Name	Aim of Package
Royston	PK15	Royston	To transform Royston into a town that facilitates safe, attractive and convenient journeys by active and sustainable transport modes.

Figure 1-2 - Corridors from NCGTP relevant to the North Herts LCWIP



Intalink Hertfordshire Bus Strategy (February 2020)

1.2.63. The Intalink Hertfordshire Bus Strategy sets out in greater detail the plans to grow the local bus network to support the shift towards more sustainable transport within Hertfordshire (as shown in LTP4).



1.2.64. The strategy states that there is clear potential for growth in bus travel in Hertfordshire, noting that only 3% of journeys to work in Hertfordshire are made by bus, which is less than half the national average. It also notes the large numbers of residents who make multi-modal trips to London on the train and the LTP4 declaration that “with 175,000 additional residents by 2031, it will not be acceptable in environmental, economic or social terms to continue to depend on cars.”

1.2.65. 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.

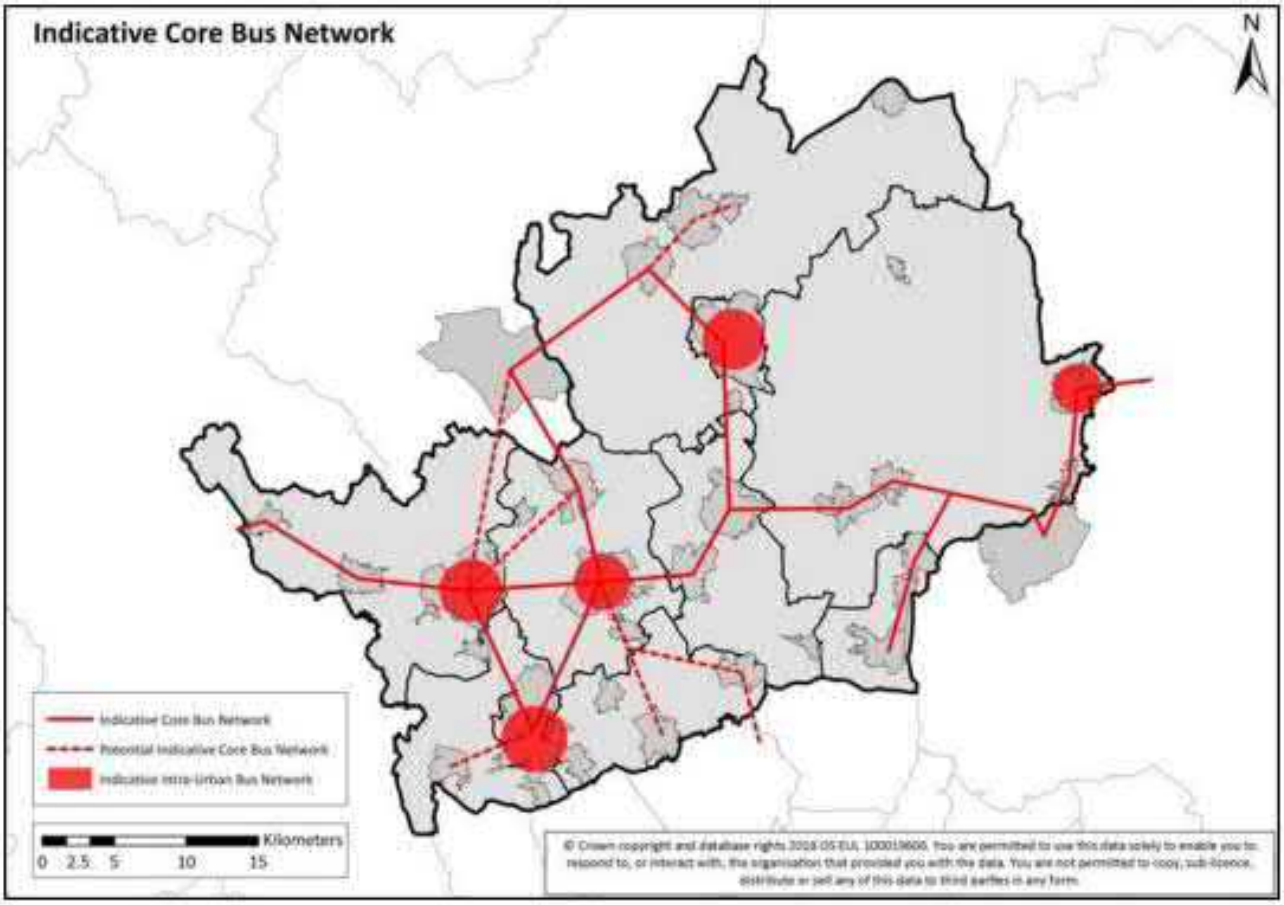
Walking & Cycling

1.2.66. The Intalink Bus Strategy recognises that infrastructure improvements should also be targeted to enhance access to the bus network by walking and cycling. The location, nature and design of interchanges is evolving, and these should consider current and future growth requirements and capacity.

1.2.67. The Strategy focuses on the prioritised improvements presented within LTP4, stating that the prioritised corridors and towns should be well-served in terms of frequency and investment will support patronage growth on routes serving them.

1.2.68. Figure 1-3 shows the indicative core infrastructure corridors identified in LTP4. Routes connecting Hitchin with Stevenage and Luton are identified as part of the indicative core bus network. Another route on the indicative core bus network connects Stevenage with Welwyn Garden City via Stevenage. A route connecting Hitchin with Letchworth Garden City and Baldock is included as part of the potential indicative core bus network.

Figure 1-3 - Indicative Core Infrastructure Corridors from the Strategy



1.2.69. Short and long-term packages for improving bus services and facilities across Hertfordshire have been identified as part of the Bus Service Improvement Plan. The interventions proposed as part of this LCWIP aim to improve pedestrian and cyclist accessibility in Hitchin, Letchworth Garden City, Baldock and Knebworth, which provide an opportunity to enable more walking and cycling as the first or last stages in multi-modal journeys.

Bus Service Improvement Plan (October 2021)

1.2.70. The Hertfordshire Bus Service Improvement Plan (BSIP) acts as the vision for how bus services will be developed and enhanced across Hertfordshire County in the coming years.

1.2.71. Work on Hertfordshire's BSIP began after the LCWIP was underway and was published in October 2021. It should be noted that this document was not available when the key routes contained in this LCWIP were developed. However, future iterations of this LCWIP should compare and align the plans to complement one another. Co-ordination between the development of walking and cycling networks and the bus network provides a great opportunity to maximise the potential for multi-modal travel in North Herts and ensure new developments are well-connected. It should also be noted that new DfT funding for bus priority improvement schemes may even be able to fund certain LCWIP improvements if well-coordinated.

1.2.72. Key corridors where there are gaps in the bus network across Hertfordshire have been identified within the BSIP. These are key corridors that would benefit from increased frequencies and enhanced connectivity particularly during the weekday peak and interpeak periods. Those relevant to North Herts include Hitchin to St Albans, Hitchin to Luton, Hertford to Royston and Letchworth to Royston. However, there is not yet much information on this and whether additional infrastructure would be proposed to support these connections.

1.2.73. A feasibility study has been conducted for Hitchin to identify a package of short- and long-term measures to improve bus travel. A total of nine schemes have been proposed in Hitchin, with an estimated investment of £1.5 million, although there is no information in the BSIP about what these nine schemes comprise.

1.2.74. A challenge could be if bus priority infrastructure is planned on the same corridor as cycle infrastructure and there is limited space available. However, where there is sufficient space, infrastructure (such as bus stop bypasses and bus stop boarders) is available to enable pedestrians, cyclists and buses all to use the same corridors.

Place and Movement Design Guide – Incomplete Draft (March 2021)

1.2.75. The Place and Movement approach is a technical approach intended to recognise the needs of different road users in Hertfordshire and manage the interfaces between them. It intends to provide a way of looking at the appropriate function of any section of highway and therefore a basis for deciding which activities should be prioritised. In doing so, it aims to provide a means to translate LTP4 policies into practice.

1.2.76. As part of this work, each street on Hertfordshire's highway network has been categorised into 9 different street types based on each street's place and vehicle movement function as designed by the guide. The nine street types take the form of a 3x3 matrix and are based on the Healthy Streets approach developed by Transport for London. The LCWIP project team has been given a GIS layer which maps the North Herts highway network onto these street types. Wherever possible, we have sought to match the proposals in this LCWIP with the functionality of the street type. However, due to physical constraints on some streets, it is only possible to provide the infrastructure needed to enable mode shift to walking and cycling by reallocating roadspace away from motor vehicles or adding crossings which may slow down traffic. Where this is the case, further work and consultation may be needed to decide the best way forward as schemes are progressed.

1.2.77. This design guide supports a mode shift towards walking and cycling and is therefore aligned with this LCWIP. The document emphasises that routes should be carefully positioned and easily accessed by all, with particular consideration given to those routes connecting communities to local centres, healthcare facilities and schools.

Sustainable Hertfordshire Strategy (2020)

1.2.78. Following its Climate Emergency Declaration in July 2019, Hertfordshire County Council started developing a Sustainable Hertfordshire Strategy to set out initial policies and strategies needed to embed sustainability across all its council operations and services throughout the county. The strategy has the aim of enabling environmental action across the county; from delivering net zero carbon to preparing for extreme weather.

1.2.79. The strategy identifies that increasing mode-shift away from car towards walking and cycling will help achieve the county's plans for fighting climate change. The document sets out targets, and what is required in order to achieve these. The aims and objectives of the Sustainable Hertfordshire Strategy and the North Herts LCWIP are aligned. Enabling more walking and cycling across North Herts will reduce greenhouse gases and air pollution for those in the district, including any HCC staff that live, travel or work there.

Speed Management Strategy (2020)

1.2.80. The Speed Management Strategy (SMS) is a supporting document to the fourth Local Transport Plan, LTP4. Its purpose is to establish a consistent approach to the setting of speed limits based on the function and nature of the route as set out in DfT Circular 01/2013 Setting Local Speed Limits. The document is an update of the previous strategy adopted in 2014 and reflects changes in regulation, guidance and policy. A key change is the adoption of LTP4, which places much greater emphasis on the consideration of the needs of vulnerable road users such as pedestrians and cyclists.

1.2.81. In order to support this the council has also adopted a place and movement approach which takes account of the varying functions and uses of its roads and categorises them based on whether they are places people want to visit or whether they are primarily focussed on vehicle movement. This helps identify locations which may be suitable for the application of lower speed limits.

1.2.82. To enable the SMS to both deliver LTP4 policies and to provide a consistent approach to setting speed limits across the county, the following core principles have been developed:

- To encourage speed limit changes that support active travel;
- Lower speed limits, where appropriate;
- To change the design of roads in order to change behaviour, where appropriate; and
- Where it has been established that speed limits are too low for the environment, speed limits may be raised.

1.2.83. There is an opportunity to create more suitable environments for active modes where speeds are lowered, such as in 20mph zones. However, 20mph may need to be accompanied by changes in road design (e.g. cycle friendly traffic calming) to ensure that speeds do in fact reduce.

1.2.84. Given the first and third core principles, it is assumed that the proposals in the LCWIP will be supported by the SMS. This is especially important when considering inter-urban cycling trips. Speed limits on roads between settlements (for example between Hitchin, Letchworth and Baldock) often increase to over 30mph. On many of these roads there is limited roadspace for fully kerbed cycle tracks (the only LTN 1/20 compliant infrastructure solution) and there are few or no alternative routes available for cyclists. As such, speed limits (and design speeds) on these roads would need lowering in order to enable on road cycling in a safe manner in accordance with LTN 1/20 guidelines. The LCWIP has proposed this in places, despite the fact that this may be at odds with other strategic transport priorities around the speed and flow of motor traffic and would need to be assessed in line with the SMS guidelines.

Other County Policy, Strategies and Plans

Sustainable Travel Towns

1.2.85. Letchworth and Royston are part of the Sustainable Travel Town programme which aims to reshape the local highway network in line with the sustainable transport objectives set out in LTP4. Each Sustainable Travel Town (STT) will contain a package of measures that will aim to achieve a significant switch to walking, cycling and public transport. The types of potential measures range from: new infrastructure for walking, cycling and public transport; behaviour change programmes; lighting; planting; promotion and marketing; and maintenance.

1.2.86. Action plans are currently being developed for each of the towns and the schemes identified as part of this LCWIP will feed into this process.

B197 Corridor Study

1.2.87. The North Central and South Central Growth and Transport Plans identified the need for a sustainable transport corridor along the B197 from Stevenage in the north and 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. Validation work has been undertaken and has identified a number of options for the improvement of walking, cycling and bus routes along this corridor.

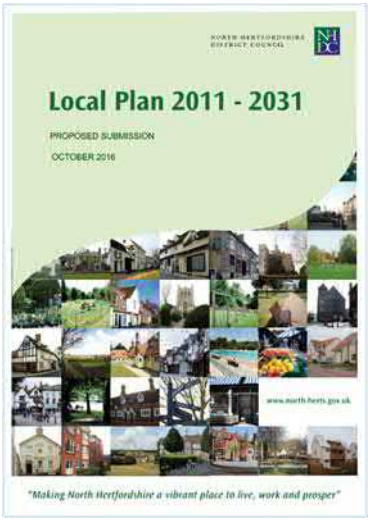
1.2.88. The LCWIP project team has seen the emerging findings of this study, which included suggestions for new crossings in Knebworth, modal filters and a signalised shuttle system under the rail bridge near the station. The work in this LCWIP supports these suggestions and more information is included within the main body of the report.

1.3 District Strategies, Policies And Plans

1.3.1. This section will present the existing policy documents that are relevant to this LCWIP on a district level.

Emerging Local Plan (North Herts District Council, 2011-2031)

1.3.2. The emerging local plan has been prepared by North Herts District Council in order to replace the previous Local Plan, released in 1996. The Local Plan seeks 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. The Local Plan is yet to be adopted but gives an indication of the prevailing policy for the district.



1.3.3. The document highlights that there are a number of challenges facing North Hertfordshire over the next 15 years which the Local Plan will need to address in terms of national policy and at the district and local level. It also highlights that there are also a number of opportunities associated with development which the Council should seek to utilise for the benefit of the district as a whole.

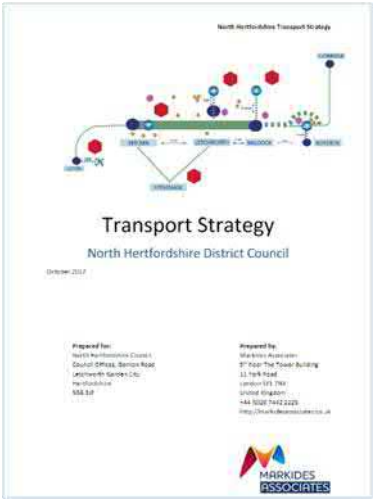
Walking and Cycling

1.3.4. Policy SP6: Sustainable Transport details how the council will deliver accessibility improvements and promote the use of sustainable transport modes insofar as reasonable and practicable. This includes:

- Complying with the provisions of the Local Transport Plan and other supporting documents as considered necessary;
- Encouraging development in locations which enable sustainable journeys to be made to key services and facilities;
- Working with Hertfordshire County Council, Highways England and service providers to ensure that a range of sustainable transport options are available to all potential occupants or users. This may involve new or improved pedestrian, cycle and passenger transport (including rail and/or bus) links and routes;
- Seeking the early implementation of sustainable travel infrastructure on Strategic Housing Sites in order to influence the behaviour of occupiers or users, along with supporting Travel Plans in order that sustainable travel patterns become embedded at an early stage;
- Assessing development proposals against the parking standards set out in this Plan and relevant supplementary advice;
- Requiring applicants to provide assessments, plans and supporting documents to demonstrate the safety and sustainability of their proposals; and
- Protect existing rights of way, cycling and equestrian routes and, should diversion be unavoidable, require replacement routes to the satisfaction of the Council.

Transport Strategy (North Herts District Council, 2017)

1.3.5. The Transport Strategy was produced as supporting evidence for the emerging North Hertfordshire District Council (NHDC) Local Plan covering the period 2011-2031 and also informed the NCGTP discussed earlier. It will sit alongside the Local Plan and be updated over its lifetime, and NHDC will continue to work in close cooperation with the highway authority (Hertfordshire County Council) and other stakeholders, including Highways England, and adjacent local authorities.



1.3.6. The Strategy assesses the implications of the Local Plan proposals on the local transport networks and recommends a strategic approach to provide for transport through the Local Plan period. In recent years, Hertfordshire County Council (HCC) signalled a shift in strategic thinking about transport. The new approach places far greater emphasis on more sustainable travel choices such as cycling and public transport, and lower emphasis on highway improvements. The Transport Strategy has developed from this view and is focused on the potential for solutions and mitigations to better reflect the new sustainable transport priorities of HCC.

1.3.7. The Strategy has identified key principles which will be delivered through various policies. These are detailed in Table 1-2 below and relevant corridors from these are shown on Figure 1-4.

Table 1-2 – NHDC Transport Strategy Policies

Policy Name	Policy Description
New developments have sustainable transport 'built-in'	New developments need excellent walk and cycle links to adjacent areas and key destinations, and good public transport connections. These modes should generally take precedence over highway access and offer easy direct access by sustainable modes to attractions such as schools, railway stations and town centres.
Transport user hierarchy	Remove the priority of designing roads and urban areas for vehicle movements and give priority to other sustainable modes of transport such as walking, cycling and public transport.
Step change in cycling and improved walking within the main urban centres	This requires dedicated travel behaviour change staff based locally, with sufficient resources to develop campaigns and events during the plan lifetime, and who can develop relationships with local stakeholders.
Improvement in bus-based public transport in urban centres	Discussions with the local operators to determine if amendments or enhancements to bus services can be considered, potential bus priority schemes, improved information, better passenger facilities and marketing.
'Sustainable Spine' corridor along the A505	The corridor should be reconsidered in relation to its 'people movement' function, rather than as a highway link only.
A traffic management plan for each main urban town,	This plan should review existing traffic movements and capacity, air quality issues and links to other measures such as buses, walking and cycling. It should then propose a management framework for future changes.
Rural management and improvement measures	These will be site specific measures aimed at resolving traffic issues or taking opportunities to improve the 'place' function of the village or to better link villages to each other or the main urban towns.

Policy Name	Policy Description
Review, provide for and utilise technology improvements	Technological innovation is rapidly changing the transport sector. Many of these are likely to improve highway capacity and/or reduce the cost of highway travel, which may work against measures to encourage more sustainable modes.

Figure 1-4 - Sustainable Transport Corridors from the NHDC Emerging Transport Strategy (relevant to the North Herts LCWIP)



Letchworth Garden City Cycling Strategy (LGC Heritage Foundation, 2018)

1.3.8. The overall aim of this strategy is to assist HCC, NHDC and other external funders in identifying and proposing potential improvements for cyclists in Letchworth Garden City.

1.3.9. The purpose of this strategy is therefore to build on the strong foundations of Letchworth Garden City's built environment for active travel modes and to identify 'quick-win', as well as medium- to long-term improvements to cycling conditions in Letchworth. The strategy also considers what cycling schemes / improvements could be included within new developments.

1.3.10. The objectives of this strategy are:

1. Enhance and extend cycle routes to create a comprehensive network, making cycling an easy, pleasant choice;
2. Make it easier and safer for all to cycle in and through residential areas;
3. Improve access by bicycle to key destinations in Letchworth Garden City including the town centre, the station and the leisure centre; and
4. Give people the confidence and skills to cycle and encourage positive and safe interactions between cyclists and other road users.

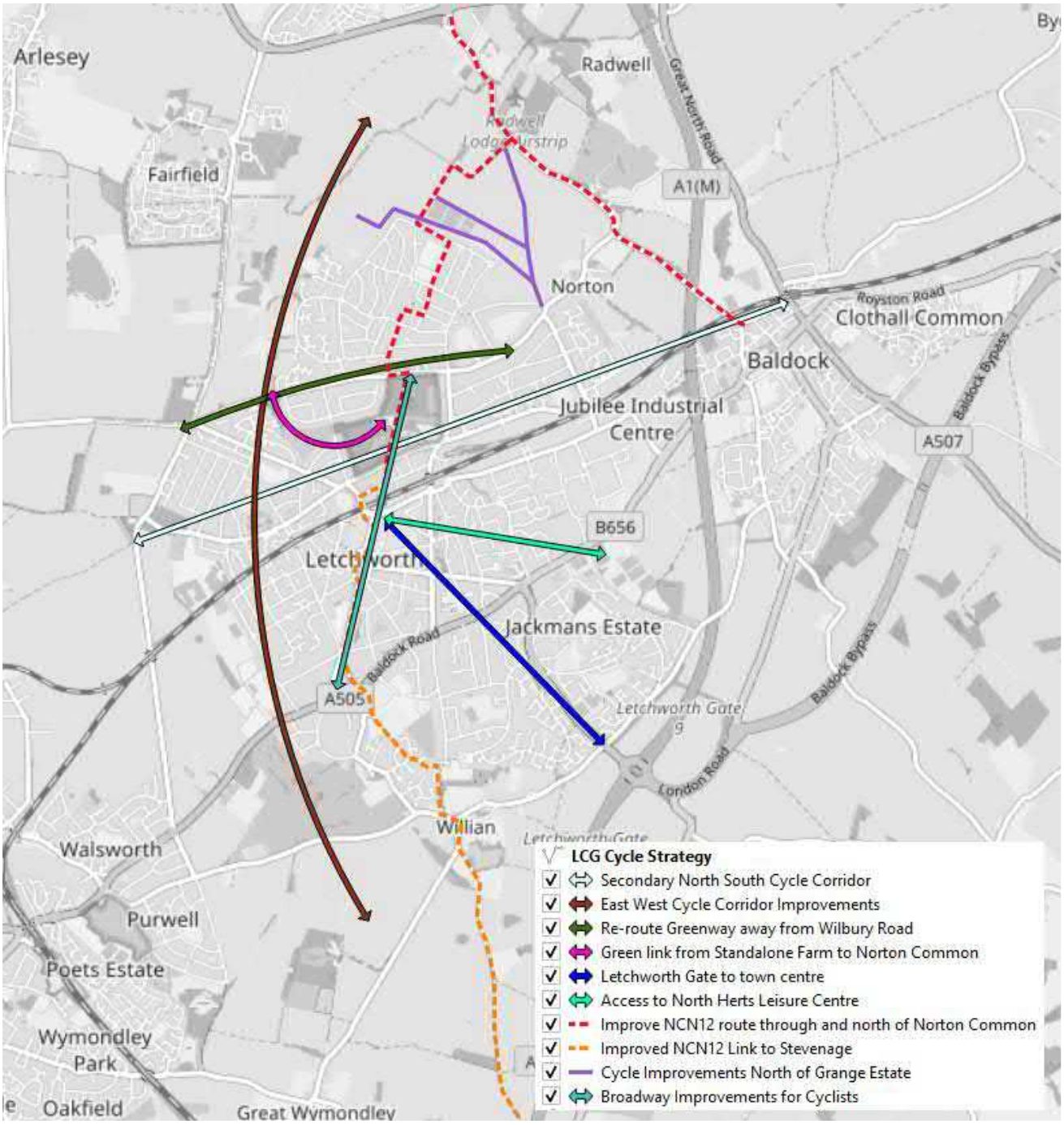
1.3.11. The strategy proposes potential recommended schemes to improve conditions for cycling in Letchworth. These are shown in Table 1-3 and mapped on Figure 1-5.

Table 1-3 – Schemes presented in the LGC Cycling Strategy

ID	Scheme Description
1.1	Improve NCN12 route through and north of Norton Common
1.2	Development of secondary north-south cycle corridor
1.3	East-west cycle corridor improvements
1.4	Re-route Greenway away from Wilbury Road mini-roundabouts
1.5	Surfacing and access improvements to Greenway
1.6	Green link from Standalone Farm to Norton Common
1.7	Improve NCN12 link to Stevenage
1.8	Create cycling link from Letchworth Gate to town centre
1.9	Improvements to the cycling network in and north of the Grange Estate
2.1	Improved wayfinding for cyclists
2.2	Cycle track priority over junction mouths
2.3	Tightening junction turning radii
2.4	Designating more footways as shared use
3.1	Creation of a leisure cycle hub
3.2	Town centre access improvements for cyclists
3.3	Broadway improvements for cyclists
3.4	Town centre cycle parking improvements
3.5	Improving cyclist access to North Herts Leisure Centre

ID	Scheme Description
3.6	Development of a cycle to school strategy
4.1	Mitigating path user conflict on the Greenway
4.2	Driver behaviour cycle awareness campaign
4.3	Extend the programme of cycle training
4.4	Develop a programme of community cycling events

Figure 1-5 - LGC Cycling Strategy Schemes



1.3.12. This LCWIP 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. The scheme prioritisation in Section 8 also takes into account the location of the infrastructure improvements in relation to this strategy in its scoring system.

Knebworth Neighbourhood plan (Knebworth Parish Council, 2021)

1.3.13. The Knebworth Neighbourhood Plan (KNP) sets out a plan to make Knebworth a vibrant and inclusive place to live, with aspirations around good design, environmental performance and sustainable growth while maintaining its rural character.

1.3.14. Several policies in the neighbourhood plan are in alignment with the goals of the LCWIP, notably KBT1. While this policy is primarily focused on new developments, the text states that the Parish Council "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".

1.3.15. The main barriers to improving the active travel network in Knebworth are the very busy 'high street' section of the B197 and the constraints under the rail bridge near Knebworth station. In order to create a continuous quality cycle facility on the B197, at least some of the parking on the 'high street' would need to be relocated. The KNP does not currently support this and so the LCWIP has instead identified a need for traffic calming in this area with a note that there should be a long-term goal to relocate the parking if possible. Under the rail bridge, a shuttle system has been proposed but this would require much further work and consultation to determine its feasibility and the level of local support.

Baldock, Bygrave and Clothall Neighbourhood Plan (2021)

1.3.16. This neighbourhood plan has been produced by a small number of volunteers drawn from community organisations in Baldock, together with representatives from Bygrave and Clothall. The plan contains policies that complement the emerging North Hertfordshire Local Plan, providing additional safeguards and requirements.

1.3.17. The plan supports walking and cycling infrastructure, having highlighted the need for improved infrastructure in key areas, as detailed below:

- Improving the link between Baldock High Street and Tesco superstore;
- Improving access to Baldock station;
- Providing a sustainable link between Bygrave and Baldock, via Bygrave Road/Ashwell Road; and
- Upgrading Royston Road to become a sustainable travel corridor.

1.3.18. The report also emphasises the importance of reducing congestion and improving air quality within Baldock, stating that a key way to combat this to provide walking and cycling routes that allow safe and convenient access between the sites and Baldock town centre, railway station, employment areas and primary and secondary schools.

1.3.19. This LCWIP supports these plans and in some cases identifies the infrastructure needed.

Pirton Neighbourhood Development Plan (Pirton Parish Council, 2018)

1.3.20. This neighbourhood plan was developed by Pirton Parish Council in conjunction with numerous local organisations and sets out a vision for the future of the Pirton up to 2031.

1.3.21. The key purpose of this plan is to encourage sustainable development in accordance with the character of the village and Parish of Pirton, with an emphasis on encouraging walking and cycling in and around the village and parish. Key areas highlighted within the plan which this LCWIP supports include:

- Safe pedestrian links to the principal village facilities, including the village centre and recreation ground; and
- Improved access to the Icknield Way path and the Chiltern Cycleway;

Ashwell Neighbourhood Plan (Ashwell Parish Council, 2021)

1.3.22. This neighbourhood plan was produced by a working group acting on behalf of the Parish Council, incorporating the views of the residents of the Parish of Ashwell. The purpose of the plan is to structure development within the parish and provide guidance to any interested parties wishing to submit planning applications for development within the parish.

1.3.23. The plan supports improving walking and cycling infrastructure to encourage short, local journeys to be made by foot. The plan supports the need for improved walking and cycling connections within the area as well as a complete walking and cycling link between Ashwell and the railway station, both of which are supported by this LCWIP.

Wymondley Parish Neighbourhood Plan (Wymondley Parish Council, 2019)

1.3.24. This neighbourhood plan was produced by the Wymondley Neighbourhood Plan Committee, a sub-committee of Wymondley Parish Council. The plan includes policies which strive to create a more sustainable way of life for residents, resulting in Wymondley Parish becoming a safer, healthier and greener place to live and work.

1.3.25. The plan recognises the importance of green infrastructure in reducing carbon footprints and supports appropriate initiatives to maintain, extend, improve, promote or facilitate use of these transport routes. Plans in this LCWIP complement the plan's intentions around improving footpaths and bridleways to facilitate safe walking and cycling within the Parish and reduce motoring.

Preston Parish Neighbourhood Plan (Preston Parish Council, 2020)

1.3.26. Preston Parish Council have developed this neighbourhood plan to establish a vision for the whole Parish and to help deliver the local community's wishes and needs for the plan period 2018 – 2031.

1.3.27. The plan presents various objectives in relation to the promotion and improvement of walking and cycling facilities, including:

- To support and encourage safe and sustainable transport, including walking and cycling.
- To support and encourage safe use of roads, paths and bridleways for all users: walkers, joggers, cyclists and horse riders.

1.3.28. Policy TC1 'Safe and Sustainable Transport' further emphasises Preston Parish's desire to improve sustainable transport infrastructure, stating that development proposals will be supported where "amenities in the village can be readily and safely accessed by pedestrians and cyclists".

1.3.29. 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.

1.4 Relevant Plans in Neighbouring Authorities

Cambridgeshire Greenways

1.4.1. 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, 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.

Stevenage LCWIP

1.4.2. 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 Gravely. 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.

Luton LCWIP

1.4.3. 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

1.4.4. 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.

1.4.5. 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 enhancementsA602 Parkway/ Upper Tilehouse Street

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

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

1.4.7. The two key documents are:

- Getting to and from the Airport
- Appendix D Highway Mitigation Drawings

1.5 COVID-19 and the Active Travel Fund

1.5.1. As with the rest of the country, travel patterns in North Hertfordshire in 2020 were massively disrupted by the covid-19 pandemic. Many workers started working from home rather than commuting and schools were closed, impacting these trips as well. People were advised by the government to avoid non-essential trips, to not use public transport, and to prioritise walking or cycling rather than driving to help avoid streets becoming gridlocked. Cycle sales in the UK were much higher than usual in 2020 and the DfT reported increases of around 200% in cycling trips made between March 16th and June 1st compared to the year before.

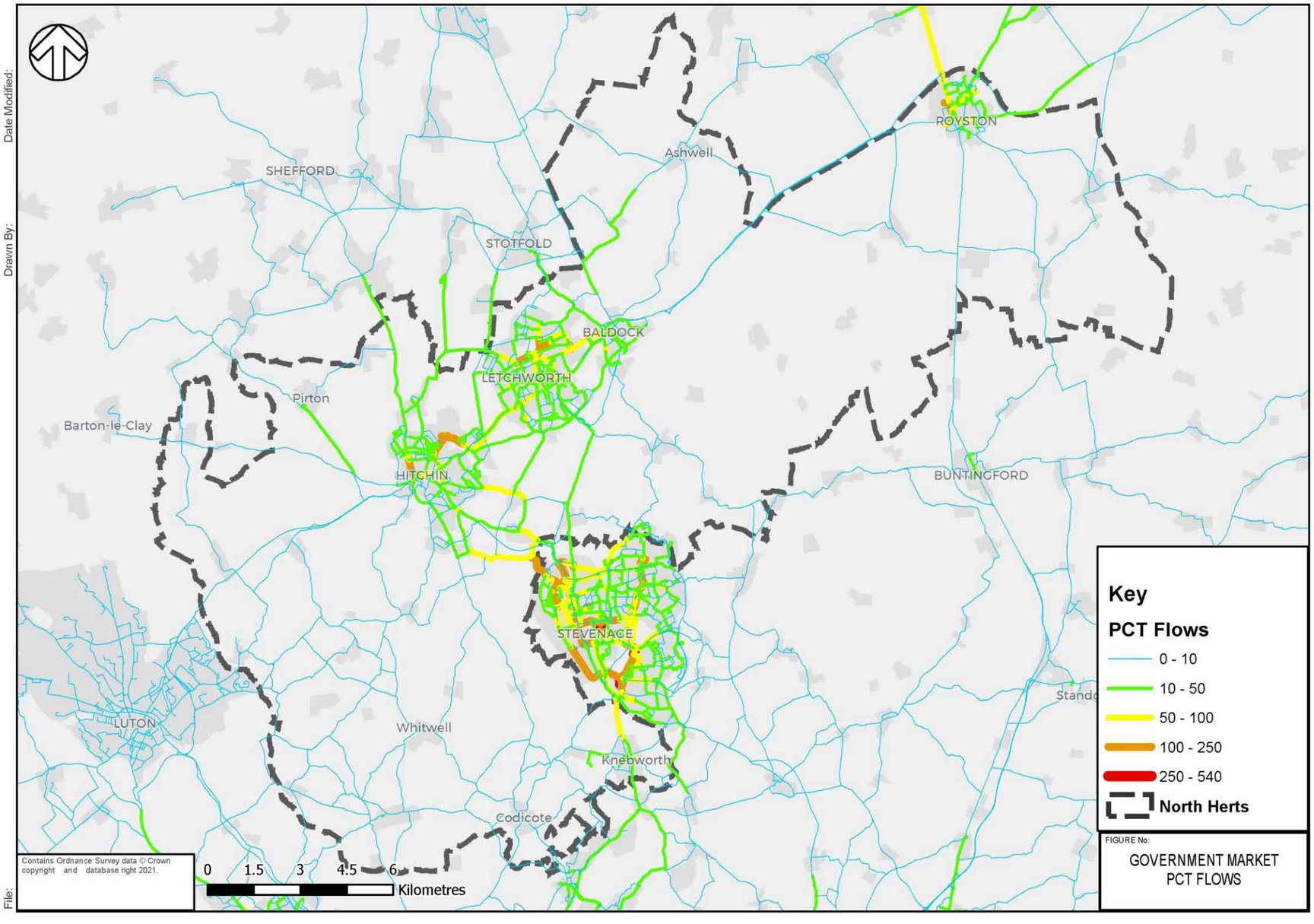
1.5.2. To support this desired shift to walking and cycling, and to make social distancing easier, on 11 May 2020 the government announced a £250m Emergency Active Travel Fund (EATF). This fund was distributed to local authorities across England in two tranches. The council used funding from the first tranche to improve active travel infrastructure across Hertfordshire. This included measures in Hitchin and Royston town centres to support social distancing by providing more space for pedestrians.

1.5.3. The fund was then renamed the Active Travel Fund and the second tranche of funding was awarded based on plans submitted to the DfT by the council. This includes development of a new cycle route along North Road in Stevenage. Later tranches of funding are increasingly dependent on authorities having LCWIPs in place. It is hoped that some of the proposals in this LCWIP can be funded through this route, once the LCWIP has been adopted.

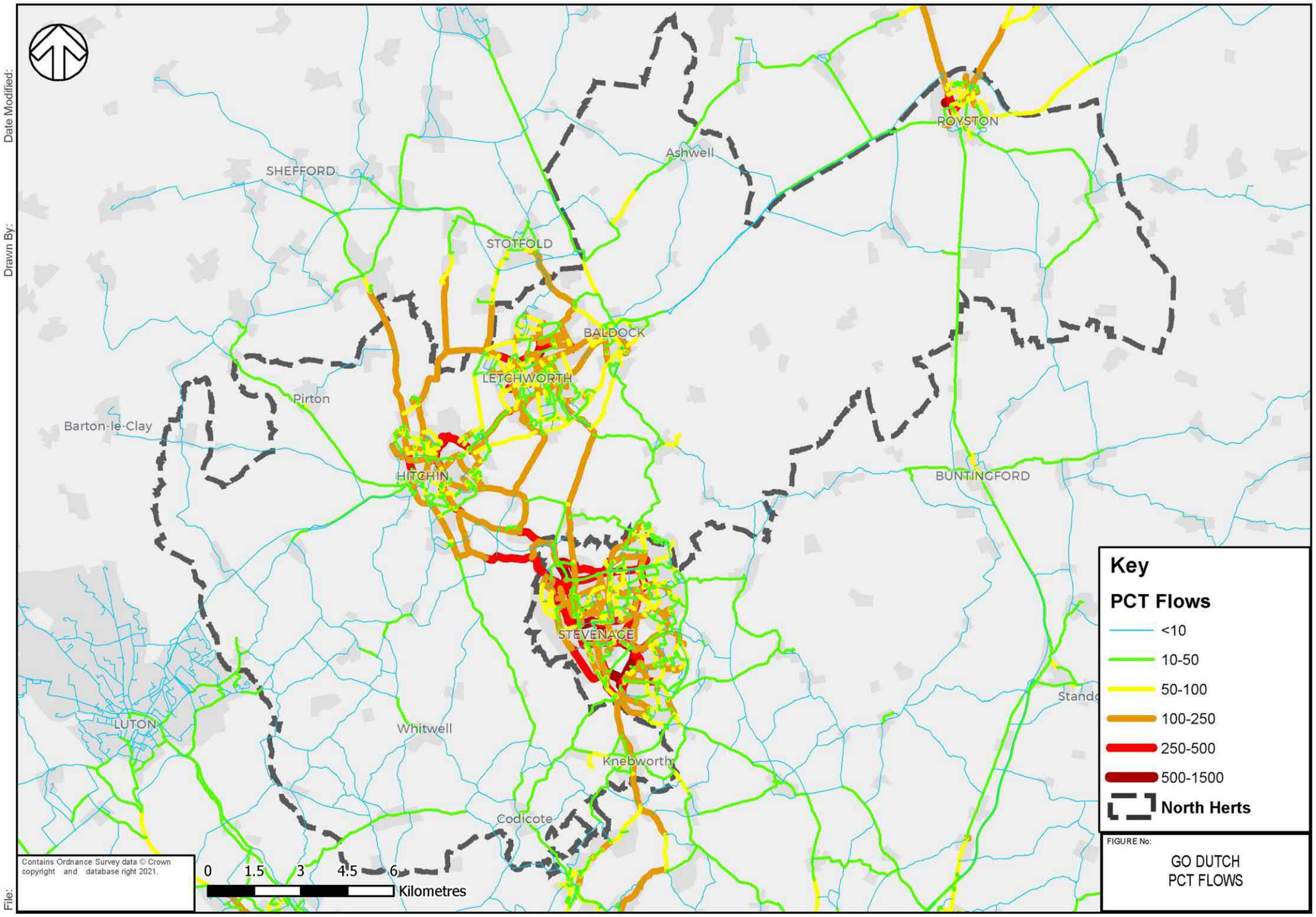
PUBLIC

Appendix B – PCT Outputs

A map showing the PCT outputs for both journeys to work in the Government Target (Near Market) scenario at a district-wide level.



A map showing the PCT outputs for both journeys to work in the Go Dutch scenario at a district-wide level.



GIS Model Overview

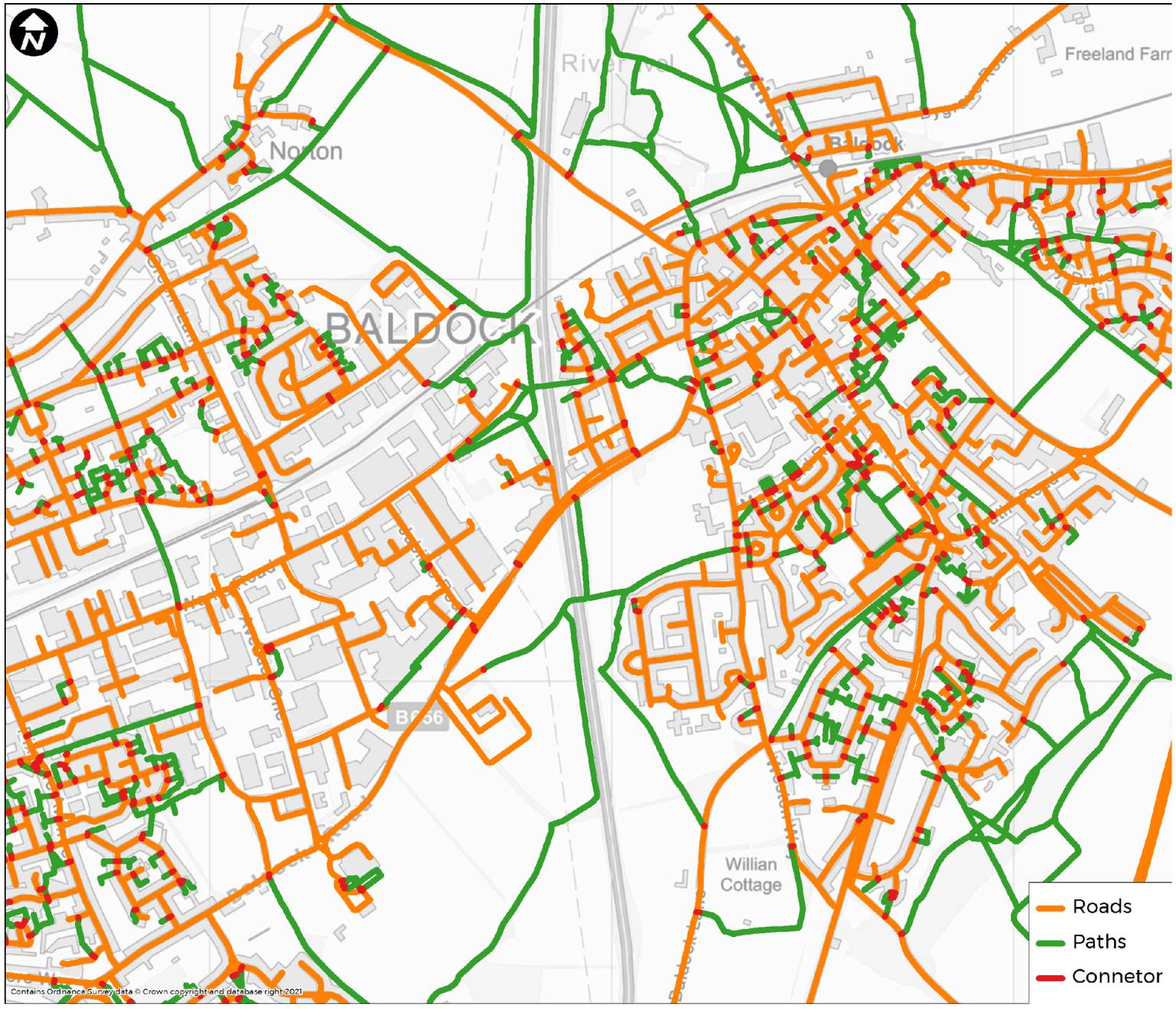
Introduction

- A suite of models has been developed to automate the creation of desire lines for walking and cycling.
- The models require the following inputs: a walk/cycle network, origins, destinations and associated parameters.
- The models create two types of output:
  1. ‘As crow fly’ lines with the number of trips calculate between respective origins and destinations
  2. Walk/cycle network based lines that aggregate the number of trips to the actual network

Inputs

Input 1: Walk/Cycle Network

- A walk/cycle network has been built for the whole of Hertfordshire plus an 8km buffer.
- The datasets were downloaded from the vendor (Emapsite) on 4th May 2021.
- The data consist of two Ordnance Survey MasterMap datasets, one is the most detailed road network available and the second is the associated paths dataset. These two datasets have been merged together correctly before building the network.
- The walk/cycle network can be used for any of Hertfordshire County Council's LCWIPs projects.
- One-way streets have not been modelled.



Input 2: Origin Points

- The origin points dataset has been created from three sources:
    1. Experian Mosaic postcodes with 2019/20 population estimates
    2. North Herts COMET R6 Housing Completions L3
    3. North Herts COMET R6 Perm Sites L3
- The COMET datasets were supplied by Hertfordshire County Council. It is understood that the council has its own Acorn data and in future runs this can be used instead of the Experian Mosaic dataset.
- There are a total of 19,628 origin points across North Hertfordshire plus an 8km buffer
- Each origin point has a weight score, representative of the population at each point.

Input 3: Destination Points

- The destination points dataset has been created from 25 individual datasets supplied by Hertfordshire County Council.
- The extent of destinations was North Hertfordshire plus an 8km buffer
- The combined walk destinations dataset includes all 25 individual datasets, which includes bus stops, and contains 9,157 points
- The combined cycle destinations dataset does not include bus stops, and contains 6,839 points
- Each destination dataset is referred to as a "Destination Type". The Key Employment Areas destination type is made up of three individual destination datasets combined together (Key Employment Areas, Employment Completions, Employment Perm Sites)
- Every destination point within each destination type is given a weighting, however, in the majority of cases, the weighting is a value of one, meaning that all destinations within that destination type, have the same attractiveness as one another. Some destination types have a specific weighting that represents the varying attractiveness of each point, such as number of jobs.
- Each destination type is assigned two pieces of information:
    1. Model Run Category – one of four options (All2All, Nearest1, ClosestX, ClosestY)
    2. Assignment Proportion – each destination type is given a value that represents the proportion of trips being generated by an origin that go to the corresponding destination type. E.g. 10% of all trips from an origin will go to a secondary school.
- The run category will determine how this proportion of trips generated at an origin point is distributed between the respective destinations within the destination type.

Destination Parameters: Run Category Types & Values

Run Category	Description	Example Destination Type
All2All	This run category will generate data between each origin and every one of the destination points within the corresponding destination type. Serious consideration should be given to using this run category as it can generate millions of data rows which will cause the models to fail (run out of memory).	Town centres
Nearest1	This run category will generate data between each origin and the single nearest destination point within the corresponding destination type.	Train stations, secondary schools
ClosestX	When running the models, the user assigns a value for X, and this run category will generate data between each origin and the X closest destination point within the corresponding destination type.	Primary schools, bus stops
ClosestY	When running the models, the user assigns a value for Y, and this run category will generate data between each origin and the Y closest destination point within the corresponding destination type.	Business parks, retail centres

Run Category	Value for North Herfordshire Model Runs
ClosestX	3
ClosestY	5

Walk Destination Parameters

Destination Type	Run Category	Proportion (Total = 100%)
Bus Stops	ClosestY	6%
Coach Stations	Nearest1	1%
Colleges/Universities	Nearest1	5%
Community Centres	Nearest1	1%
Dentist	Nearest1	1%
Event Spaces	ClosestX	1%
GPs/Walk-in Centres	Nearest1	1%
Hospitals	All2All	5%
Key Employment Areas / Acorn Data /Future Employment	All2All	10%
Libraries	Nearest1	1%
Local/Neighbourhood Centres	Nearest1	20%
Market Areas / Marketplaces	ClosestX	1%
Nurserys	ClosestX	1%
Parks/Open Spaces	Nearest1	1%
Post Office	Nearest1	1%
Primary Schools	ClosestX	9%
Railway Stations	Nearest1	5%
Retail Parks	All2All	1%
Secondary Schools	ClosestX	10%
Sport and Leisure Centres	Nearest1	1%
Supermarkets	Nearest1	5%
Tourist Attractions / Points of Interest	Nearest1	3%
Town Centre Area	All2All	10%

Cycle Destination Parameters

Destination Type	Run Category	Proportion (Total = 100%)
Coach Stations	ClosestY	1%
Colleges/Universities	Nearest1	5%
Community Centres	Nearest1	1%
Dentist	Nearest1	1%
Event Spaces	ClosestX	1%
GPs/Walk-in Centres	Nearest1	1%
Hospitals	All2All	5%
Key Employment Areas	All2All	30%
Libraries	Nearest1	1%
Local/Neighbourhood Centres	Nearest1	5%
Market Areas / Marketplaces	ClosestX	1%
Nurserys	ClosestX	2%
Parks/Open Spaces	All2All	1%
Post Office	Nearest1	1%
Primary Schools	ClosestX	6%
Railway Stations	Nearest1	6%
Retail Parks	All2All	5%
Secondary Schools	Nearest1	6%
Sport and Leisure Centres	Nearest1	1%
Supermarkets	Nearest1	5%
Tourist Attractions / Points of Interest	All2All	5%
Town Centre Area	All2All	10%

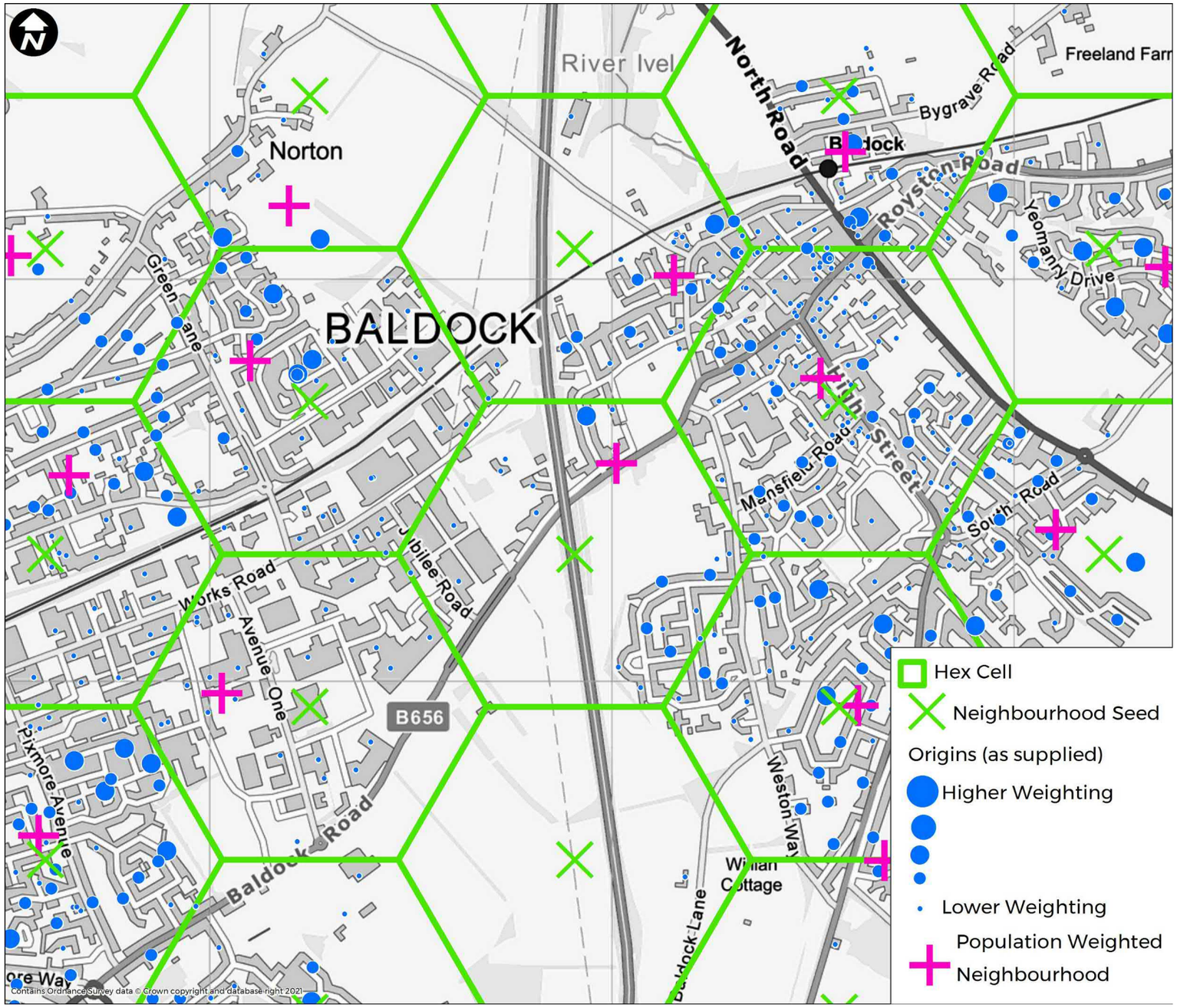
Methodology

Workflow

- A suite of models have been created that run though Esri ArcGIS Desktop.
- Running the models requires an ArcGIS Desktop Advanced license and Network Analyst license.
- The workflow for the models is as follows:
    1. The user manually pre-processes the origin and destination points to ensure both datasets have the required fields and attribute values.
    2. The user selects the required model inputs: walk/cycle network, origin points, destination points and hex cells
    3. The user manually inputs the values of X and Y for ClosestX and ClosestY run categories
    4. The origin and destination points are automatically aggregated to neighbourhood points so that less data is used by the model, however there is no loss to the weighting values associated with origins/destinations. This is essential as with 19,000 origins and 9,000 destinations, up to 171,000,000 trip lines could be generated and a normal computer would not be able to process this.
    5. The model creates an Origin-Destination Matrix (OD Matrix) from all origins to the appropriate destinations destinations, respecting the Run Category parameters for the respective destination type. For example, trips are made from each origin to all hospitals (All2All) and trips are made from each origin to the closest three nurseries (ClosestX). The OD Matrix distances are based on network distances not straight line distances.
    6. The OD Matrix is used to generate the 'as crow flies' lines between origins and destinations. A series of table joins add the origin weight value and destination proportion value to the respective OD lines. A gravity model calculates the number of trips being assigned to each line. The gravity calculation assigns trips based on a formula that balances the distance between origin and destinations and the attractiveness of the destinations. The output dataset is then run through a python script (outside of ArcGIS) to create the clustered desire lines
    7. The OD Matrix is used to generate the walk/cycle network based lines between origins and destinations. A series of table joins add the origin weight value and destination proportion value to the respective OD lines. A gravity model calculates the number of trips being assigned to each line. The gravity calculation assigns trips based on a formula that balances the distance between origin and destinations and the attractiveness of the destinations. Additional processes then aggregate the network based lines to the underlying road network, summing the total number of trips along concomitant sections of road.

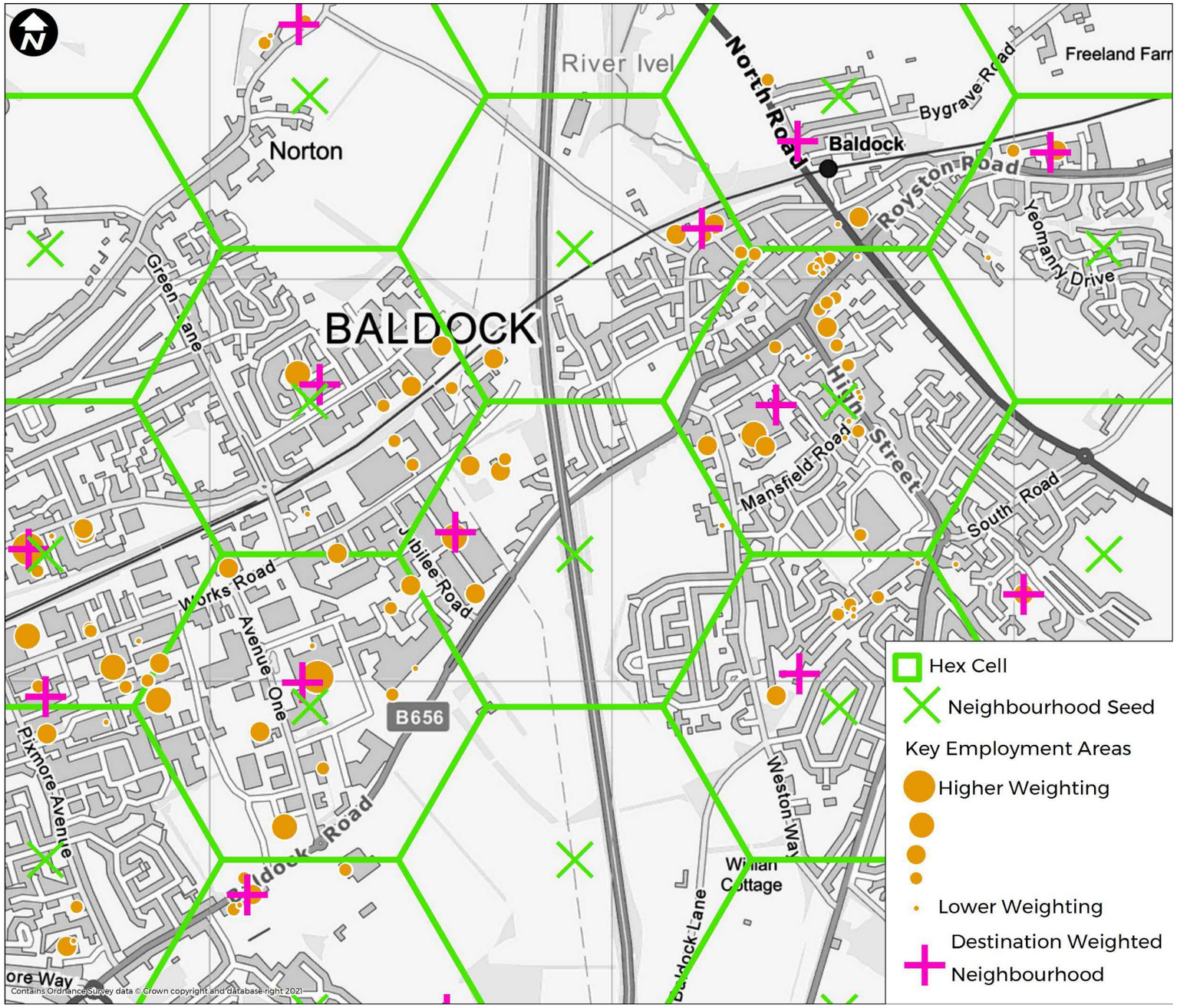
Aggregating Origins

- A grid of hex cells is used as a proxy for neighbourhoods and the centroid of each hex cell used as a ‘first step’ neighbourhood seed.
- The supplied origins are assigned to the nearest neighbourhood seed using the road network and the total origin weight for each neighbourhood seed calculated (sum of all origin weights)
- A new location to best represent the respective origins is calculated creating a population weighted neighbourhood point
- The population weighted neighbourhood point is now a proxy for all origins deemed to be within a neighbourhood.
- Note that an origin can be physically located in one hex cell, but the closest neighbourhood seed when using the road network is actually in another hex cell. The origin is assigned to the other neighbourhood seed instead.

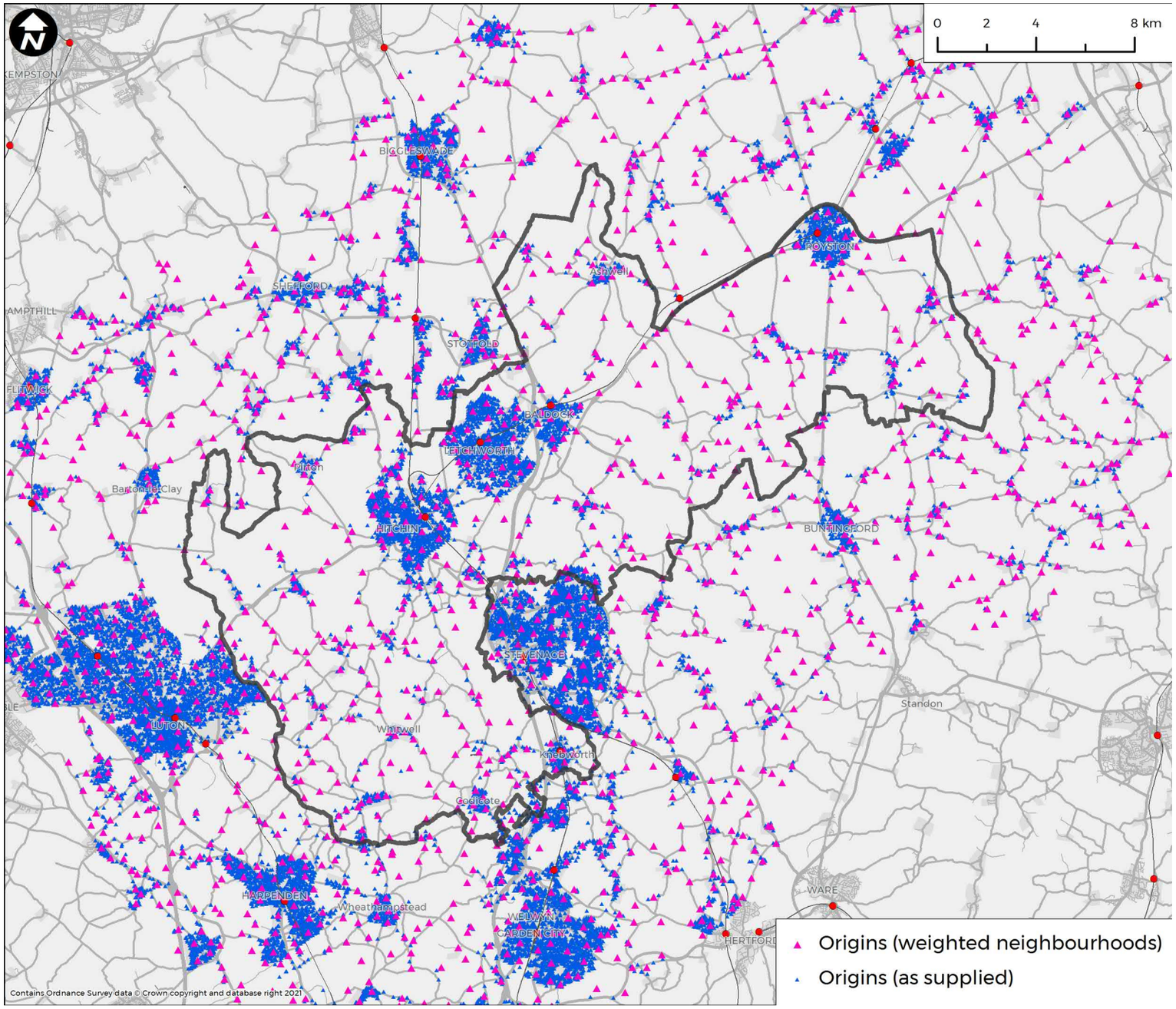


Aggregating Destinations

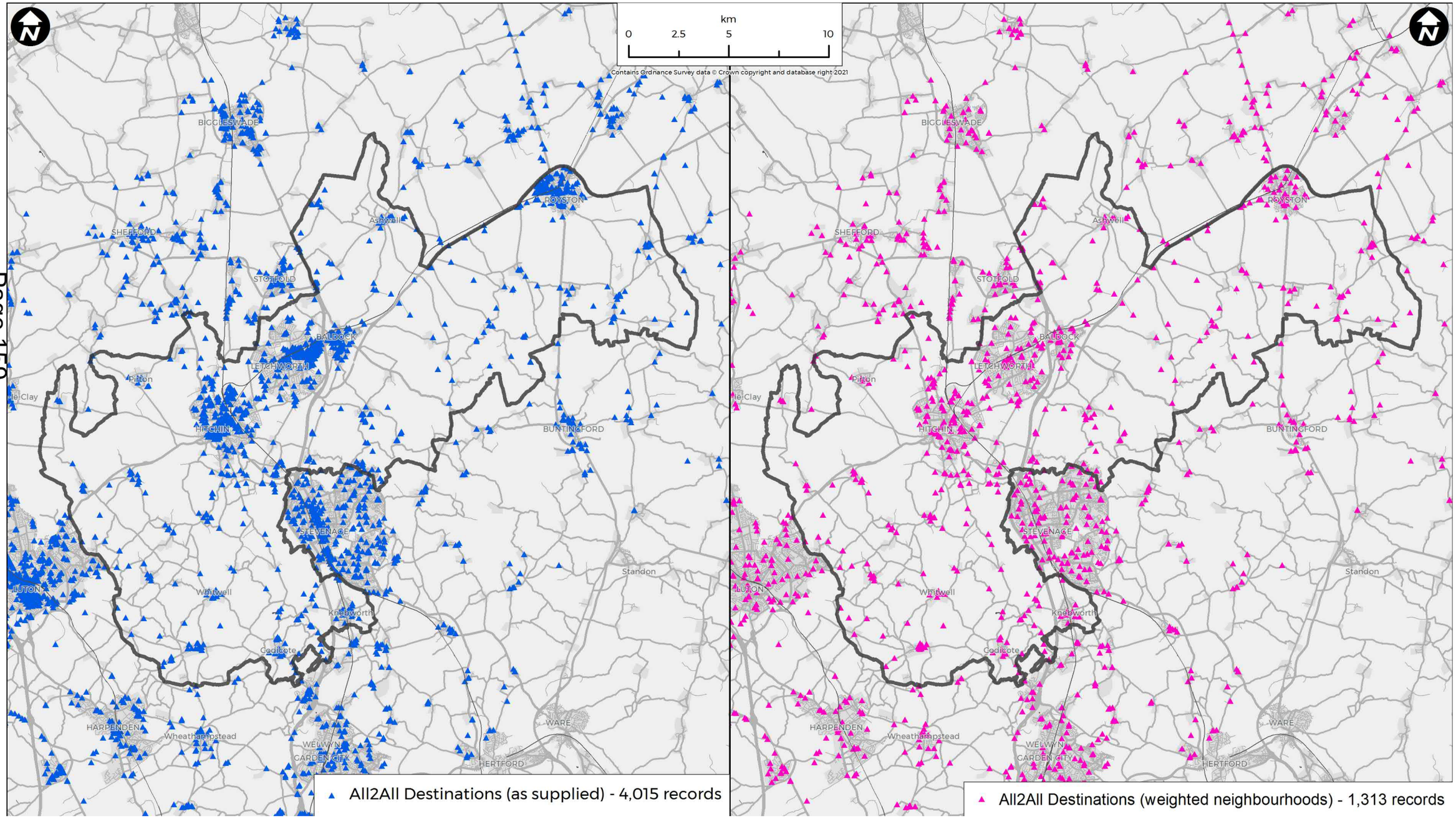
- The same methodology was used as for aggregating origins to weighted neighbourhood points
- A specific set of destination weighted neighbourhood point was created for each of the destination types – the image illustrated the destination type of Key Employment Areas only.
- All sets of destination specific weighted neighbourhood points were merged into one final dataset used by the model.



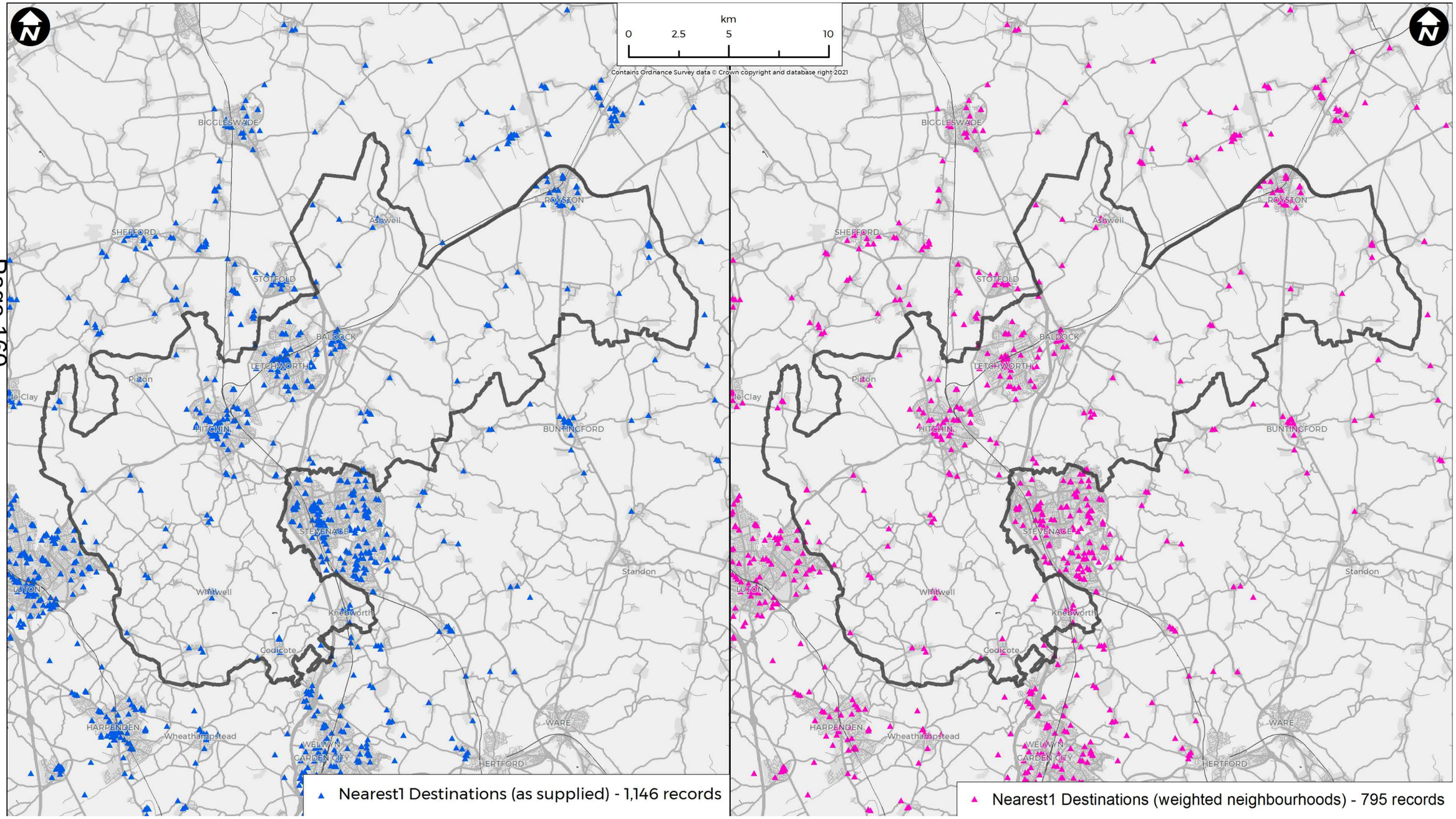
Origins: As supplied & Aggregated to Neighbourhoods



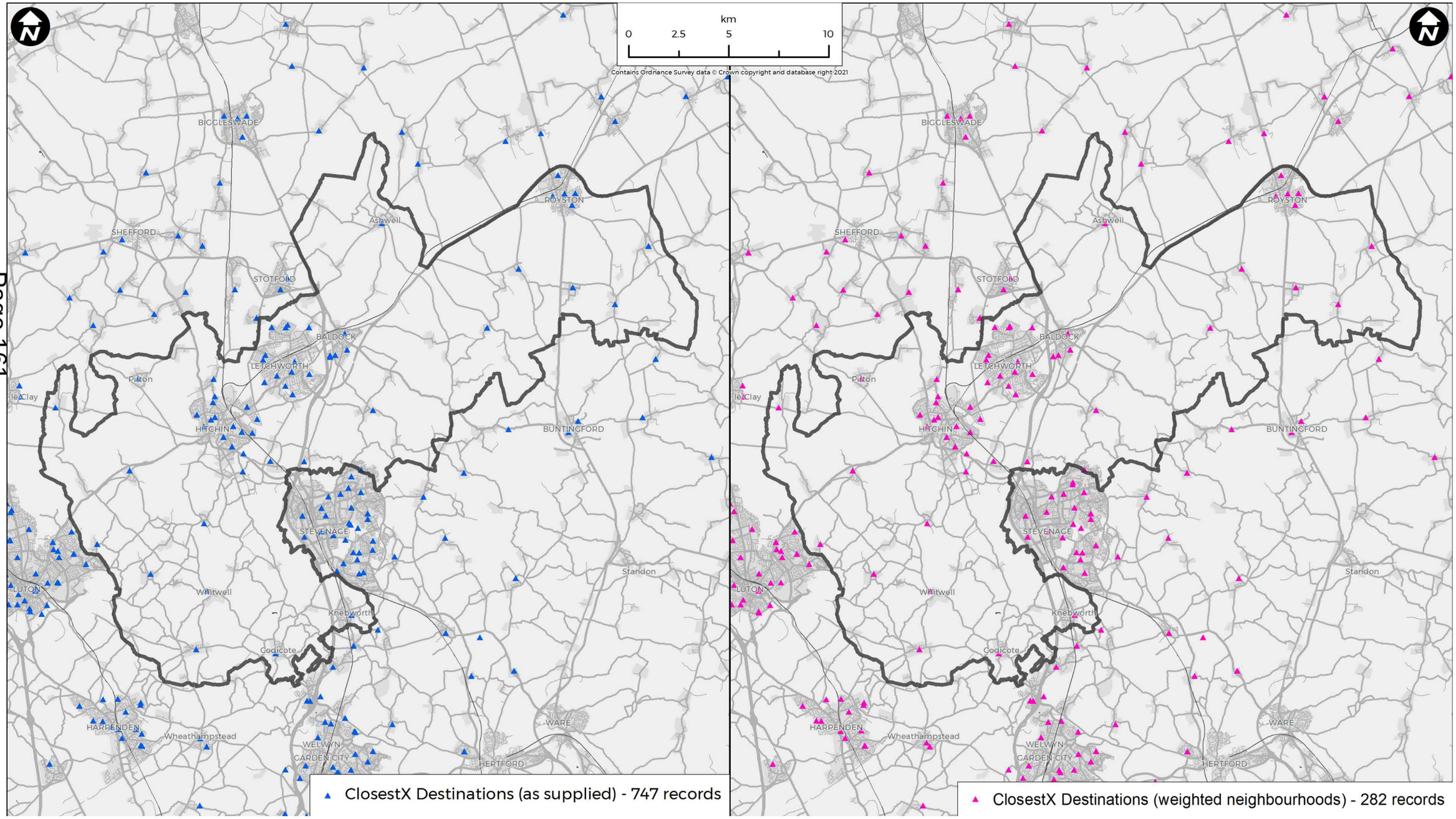
Aggregating All2All Destination Types



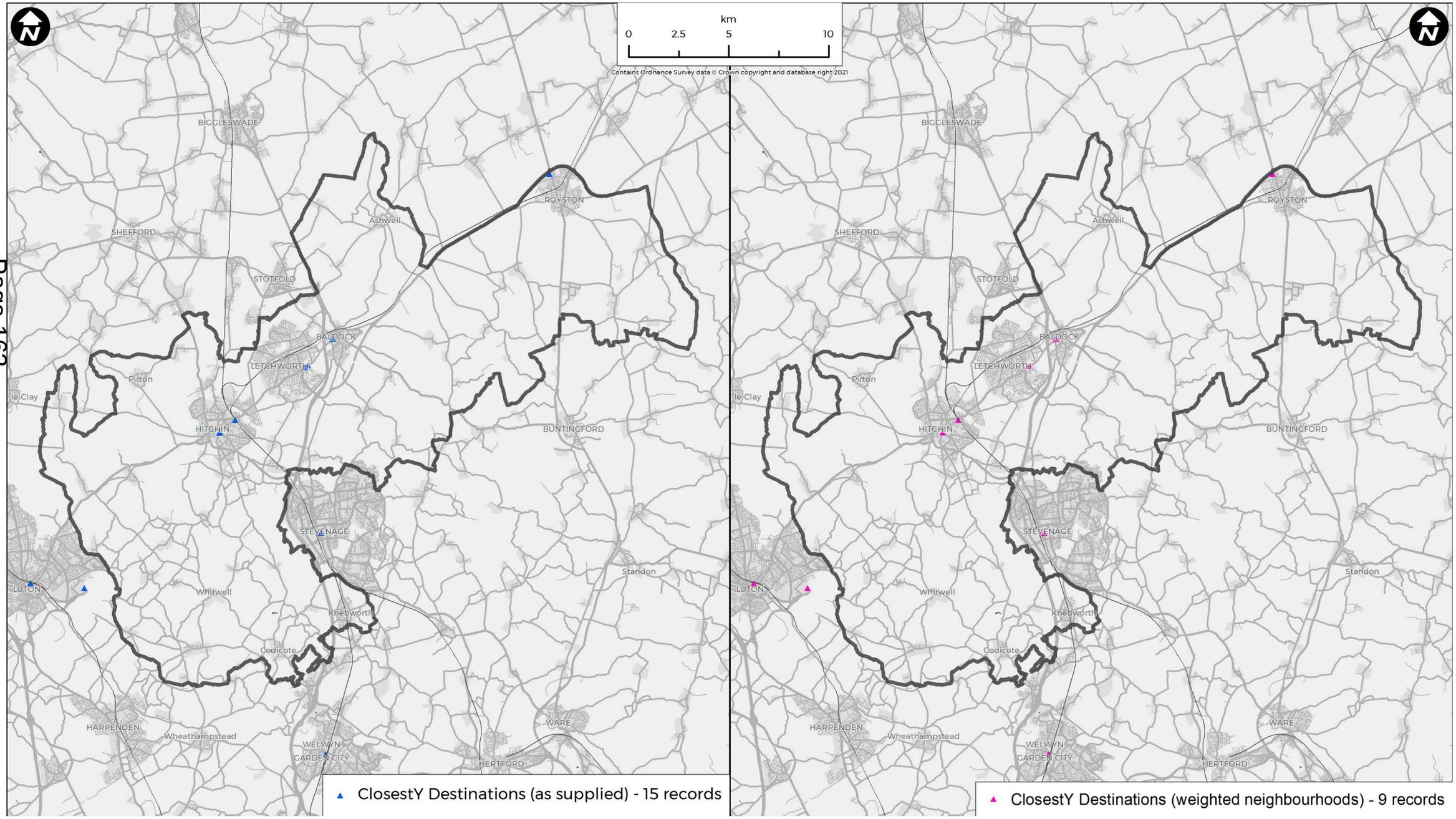
Aggregating Nearest1 Destination Types



Aggregating ClosestX Destination Types

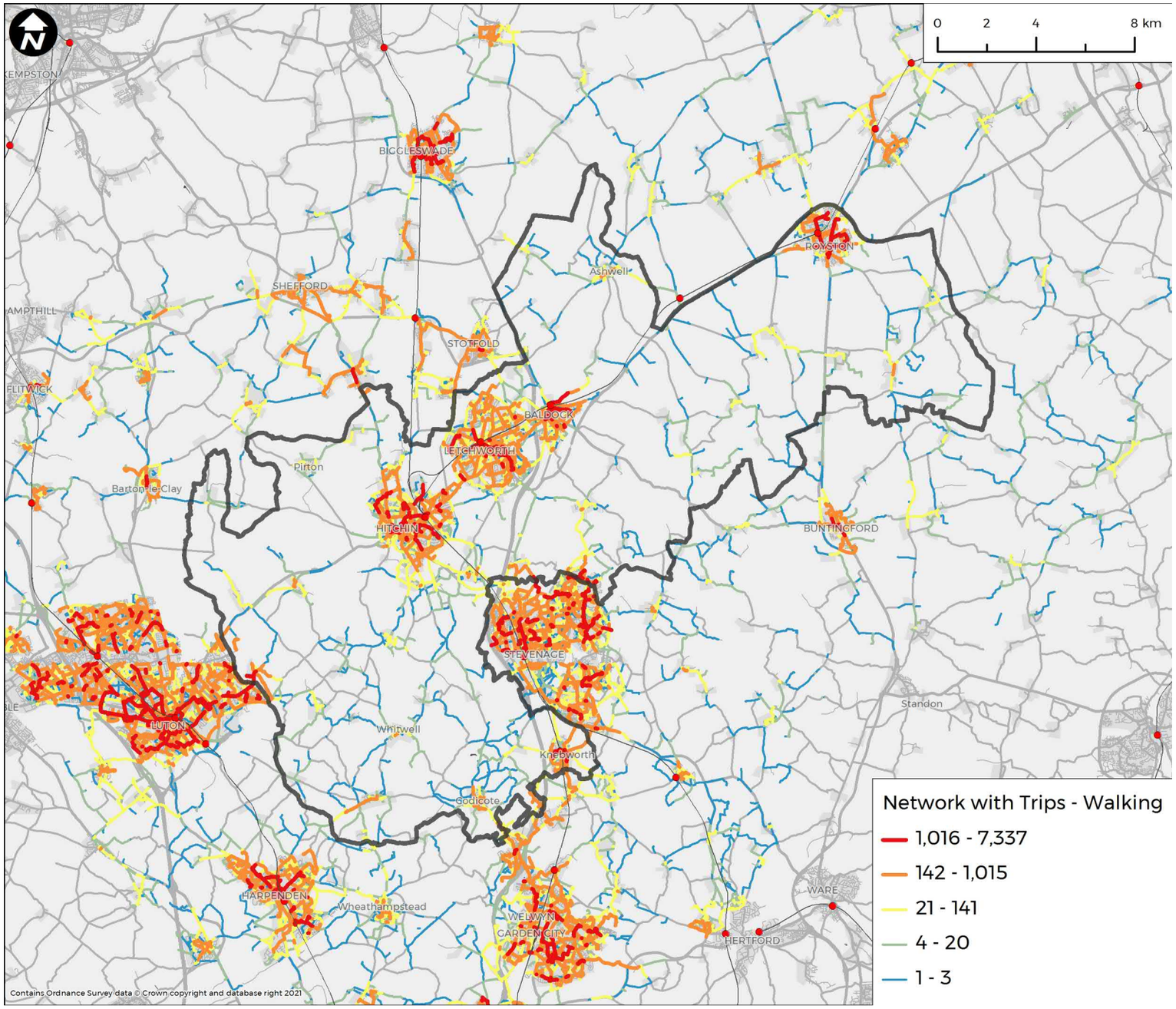


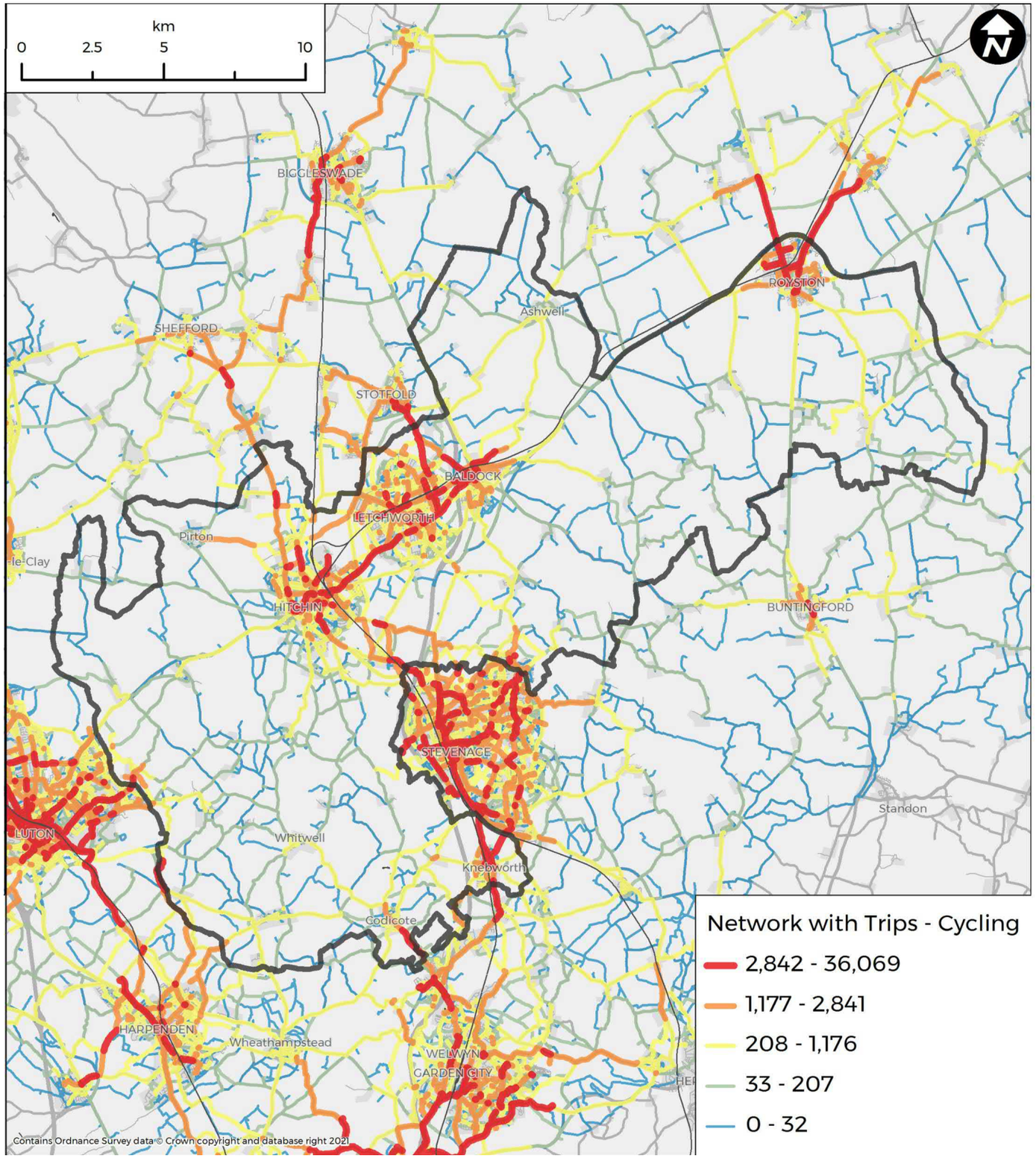
Aggregating ClosestY Destination Types



Outputs

Aggregating Destinations




km
0
2.5
5
10
BIGGLESWADE
SHEFFORD
Ashwell
ROYSTON
STOTFOLD
BALDOCK
LETCHWORTH
Pirton
HITCHIN
BUNTINGFORD
STEVENAGE
Standon
LUTON
Whitwell
Knebworth
Codicote
HARPENDEN
Wheathampstead
WELWYN
GARDEN CITY
Contains Ordnance Survey data © Crown copyright and database right 2021
Network with Trips - Cycling
2,842 - 36,069
1,177 - 2,841
208 - 1,176
33 - 207
0 - 32

WSP House

70 Chancery Lane

London

WC2A 1AF

Appendix C2 – LCWIP report

GIS model technical note

Software requirements

- ArcGIS Desktop Advanced license
- Network Analyst extension

LCWIPS model (summary)

- This suite of models has been developed to help complete and add value to stages 2, 3 and 4 of the DfT LCWIP six-stage process. The models allow the user to input origin data, destination data, and a network. These are then manipulated by the models to identify potential trips across the study area. The key output is a plan of the network with flows assigned to it, allowing the user to see where future demand for trips may be concentrated.
- This suite of models has several advantages over the widely-used 'Propensity to Cycle Tool' (PCT), which was also developed for LCWIPs. The PCT is based on Census 2011 data, only considers trips to school and workplaces, and does not account for developments built since 2011, or planned for the future. This suite of models allows users to input more recent population data, any type of destination data they like and a more up-to-date network layer too.
- The current version of the model suite is v4.3, and the toolbox is called *LCWIPS_Model_Suite_v4_3.* It is located within the geodatabase called *LCWIPS_Model.gdb*. The toolbox has been created inside a geodatabase to facilitate its portability across servers and local drives.
- The toolbox contains nine models however only the four models prefixed with "Step … " are to be run by the user. The five models prefixed with "SubModel_... " are called by the other models, where applicable, and should not be interacted with by the user at all. The nine models are as follows:
- Step 1 – Create GDB Environment
- Step 2 – Process Model Inputs
- Step 3 – Run LCWIPs Model – Generate OD Matrix
- Step 4 – Run LCWIPs Model – Create Network-based Output

- SubModel_Clipping_Iterator
- SubModel_NA_All2All
- SubModel_NA_ClosestX
- SubModel_NA_ClosestY
- SubModel_NA_Nearest1
- The four interactive models are run through ArcCatalog by either double-clicking the model, or right-clicking the model and selecting “Open“. Both ways require the user to input the appropriate required parameters.

Compatibility

- This suite of models has been created using *Esri ArcGIS Destop 10.5* (“Desktop”), which will allow them to be compatible with *ArcGIS Pro* (“Pro”) in the future. The key incompatibility between Desktop and Pro is the *Calculate Field* tool. In Desktop, the tool is defaulted to Visual Basic (VB), however, Pro does not support VB. Python has been used for all instances of the Calculate Field tool, however a reasonable amount of reworking will still be required to remedy unforeseen incompatibility issues with other tools, as and when Esri update them, and change the underlying code.

Workflow overview

- Process the input feature classes.
- Run model: *Step 1 - Create GDB Environment* to create the geodatabases in the appropriate model run folder.
- Run model: *Step 2 - Process Model Inputs* to import the model input feature classes.
- Manually populate *In_Destination_Type_Proportions* (this is created by the second model run) with the appropriate values for Dest_Proportion and Run_Category fields (see Table 3, below).
- Run model: Step 3 - Run LCWIPs Model - Generate OD Matrix.
- Run model: Step 4 - Run LCWIPs Model - Create Network-based Output.
- QA and map the output feature class called *Out_Network_with_Utilisation_Data* that will be located within *LCWIPs_Model_Run_GDB.gdb.*

Network dataset

- The network dataset used for the model has been pre-built and covers Hertfordshire plus 8km buffer.
- The network dataset is derived from OS MasterMap data sourced from Emapsite on 4th May 2021. The network contains the full OS MasterMap Highways Network RAMI and OS MasterMap Highways Network Paths, which have been correctly merged with networking junctions. As the analysis concerns walking and cycling, one-way restrictions have not been included (in the case of cycling, the outputs of the model may build a case for introducing a contraflow facility on an existing one-way street, for example).
- Both the network dataset and network feature class are located within a feature dataset called *Network__RAMI_Paths* and are located in the geodatabase called *Hertfordshire_Network__OS_Roads_Paths.gdb.*
- The network impedance field used to build the network dataset is simply the default length value (where the units are metres), and the models are hardcoded to use this.
- The model will require the user to input two aspects of the road network:
    i The network dataset, called *Network__RAMI_Paths_ND*. This is used by the Network Analyst tools within the models to calculate least-cost paths from all origins to the required destinations (as specified in Table 4).
    ii The network feature class, called *Network__RAMI_Paths*. This is the line feature class associated with the network dataset.

Processing the input feature classes

- The inputs of the models, which are manually pre-processed by the user prior to being consumed by the model, require specific fields to be present. Additional fields will not affect the model. The prescribed data structure of the data inputs is detailed in the following sections.
- Emphasis should be placed on meticulous data preparation.

Origin points

- Origins must be a point feature class, projected to British National Grid.
- The prescribed data structure is shown within Table 1, below.

Table 1: Data structure for origins

Field name	Type	Description
O_ID	Text, 50	A unique ID, containing alpha-numeric characters as well as underscores (“_”) or dashes (“-“).Spaces should not be used.
Weight	Double	A numeric value representing the population at the origin. This can be the population at a postcode or total number of people forecast on a new development. The value must not be blank, null or zero.

Destination points

- Destinations must be a point feature class, projected to British National Grid.
- The prescribed data structure is shown within Table 2, below.

Table 2: Data structure for destinations

Field name	Type	Description
Dest_ID	Text, 100	A unique ID, containing alpha-numeric characters as well as underscores (“_”) or dashes (“-“). Ideally, this will acknowledge what type of destination it is, e.g. “PrimSchool_1”. Spaces should not be used.
Dest_Type	Text, 50	A value that describes succinctly the type of destination. Examples include: GP, Hospital, School Primary, School Secondary, Bus Stop, Rail Station. The string must only contain alpha-numeric characters as well as underscores (“_”) or dashes (“-“). Spaces should not be used.

Field name	Type	Description
Weight	Double	A numeric value representing the attractiveness of the destination, in comparison to the other destinations of the same destination type. This can be a factual value - such as number of jobs, number of buses/trains per hour, or floor area, or subjective value - such as a score between 1-10, where 10 is the most attractive. A value of one is assigned to all destinations within a destination type, where an attractiveness factor is not relevant. The value must not be blank, null or zero. In this North Herts LCWIP, the attractiveness of an employment site was calculated from its floor area. It was assumed that 50% of the floor area was usable and that there was one job per 30m^2.

Hex cells

- A polygon feature class called *HexCells__Herts_plus_8km* has been supplied and is located in the geodatabase called *Hertfordshire_Datasets.gdb*.
- The hex cell feature class is projected to British National Grid and covers Hertfordshire plus 8km buffer. The size of each hex cell is 500,000m^2 and a diameter (east to west vectors) of 877m.
- The purpose of the hex cell feature class is to create pseudo neighbourhoods to aggregate the origin and destination datasets and reduce the number results being generated, which would otherwise cause the model to fail due to the processing computer running out of memory.
- Each origin and destination point is assigned to a hex cell (“neighbourhood”) using Network Analyst which calculates the least cost path between the origin and the closest hex cell centroid across the walk/road network. This means that because of the layout of the relevant local road network, an origin point can be assigned to a different hex cell to the one that it is contained within.

- A subset of the *HexCells__Herts_plus_8km* feature class should be created that covers the extent of the required project area. This subset, and not the full dataset, should be the input to the model.

Clipping cells

- A polygon feature class called *ClippingCells__Herts_plus_8km* has been supplied and is located in the geodatabase called *Hertfordshire_Datasets.gdb*.
- The clipping cell feature class is projected to British National Grid, and covers Hertfordshire plus 8km buffer. The size of each square clipping cell is 100,000,000m^2 with a width of 10,000m.
- The purpose of the clipping cell feature class is to physically split and then batch process certain elements of the analysis in order to reduce the size of datasets being processed, which would otherwise cause the model to fail due to the processing computer running out of memory.
- A subset of the *HexCells__Herts_plus_8km* feature class should be created that covers the extent of the required project area. This subset, and not the full dataset, should be the input to the model.

Run model: Step 1 - create GDB environment

- This model creates two creates two file geodatabases in the folder that the user specifies (the only parameter).
- These two geodatabases are used by the subsequent models and are called *LCWIPs_Model_Run_GDB.gdb* and *Scratch_GDB.gdb*. Once all the models have been run, all the important feature classes and tables will be within the former.
- The user selected folder should be unique to this scenario test.
- The folder name must only contain alpha-numeric characters and underscores (“_”). Spaces and dashes (“-“) should not be used.

Run model: Step 2 - process model inputs

- This model has six parameters, as detailed in Table 3, below. The abbreviation “FC” refers to the parameter being a feature class.

Table 3: Model parameters

Parameter	Description
Select Project Folder	The user specifies the correct folder for this scenario test (the same as the previous model).
Select Network Dataset	The user specifies the *Network__RAMI_Paths_ND* network dataset.
Select Origin Points (FC)	The user specifies the correctly processed origin points feature class.
Select Destination Points (FC)	The user specifies the correctly processed destination points feature class.
Select HexCells (FC)	The user specifies the correct subset of the supplied Hex Cells feature class.
Select Clipping Cells (FC)	The user specifies the correct subset of the supplied Clipping Cells feature class.

- This model will create copies of all the input feature classes and apply numerous geoprocessing steps to prepare them for subsequent models. They are saved within *LCWIPs_Model_Run_GDB.gdb* and can be useful for auditing purposes in the future.
- This model creates a new table called *In_Destination_Type_Proportions* within *LCWIPs_Model_Run_GDB.gdb*, that requires the user to manually input certain additional values before the next model is run. The table lists each unique Destination Type (as per the Dest_Type field of the input Destination points feature class), and the user must manually populate the two fields, as detailed in Table 3, below, with specific values determined by subject matter experts for each Destination Type.

Table 4: Destination type additional data

Required information	Description
Destination Type Proportion	Each destination type is assigned a numeric value, where the sum of this value for all destination types is 1. This numeric value therefore represents the proportion of trips produced by an origin that go to the respective destination type.
Run Category	Each destination type is assigned with one of four types of run category. These are: ▪ All2All ▪ Nearest1 ▪ ClosestX ▪ ClosestY N.B. These four string values must match exactly the text shown above. Additional details of these are given in Table 5.

Table 5: Run categories

Run category	Description	Example destination type
All2All	This run category will generate data between each origin and every one of the destination points within the corresponding destination type. Serious consideration should be given before using this run category as it can generate millions of data rows which will cause the models to fail (run out of memory).	Town centres

Run category	Description	Example destination type
Nearest1	This run category will generate data between each origin and the single nearest destination point within the corresponding destination type.	Train stations, secondary schools
ClosestX	When running the model called *Step 3 - Run LCWIPs Model - Generate OD Matrix*, the user assigns a value for X, and this run category will generate data between each origin and the X closest destination points within the corresponding destination type.	Primary schools, bus stops
ClosestY	When running the model called *Step 3 - Run LCWIPs Model - Generate OD Matrix*, the user assigns a value for Y, and this run category will generate data between each origin and the Y closest destination points within the corresponding destination type.	Business parks, retail centres

Run model: Step 3 - run LCWIPS model - generate OD matrix

- This model has five parameters, as detailed in Table 6, below.
- Although the model says some parameters are options, please assume that they are not optional. Insert a value of 0 (zero) if ClosetX or ClosestY are not required. A value must be inserted for *Trip Cut off Distance (m)* – failure to do so will generate enormous amounts of data that will cause the preceding model to fail (run out of memory).

Table 6: Model Parameters

Parameter	**Description**
Select Project Folder	The user specifies the correct folder for this scenario test (the same as the previous model).
Select Network Dataset	The user specifies the *Network__RAMI_Paths_ND* network dataset.
Number of Destination for ClosestX	The user specifies the value of X (see Table 5) for this Run Category.
Number of Destination for ClosestY	The user specifies the value of Y (see Table 5) for this Run Category.
Trip Cut off Distance (m)	The user specifies the maximum network distance (as opposed to straight line 'as crow flies' distance) that is allowed for trips between an origin and destination. The units are in metres. For example, in the North Herts LCWIP, the *Trip Cut off Distance* was 8000 for cycling and 2000 for walking.

- This model uses Network Analyst to generate an Origin-Destination Matrix (OD Matrix) table that is consumed by the preceding model. The OD Matrix comprises network trips between all origins and all destinations, conforming to the specification of Destination Types and the associated Run Category (see Table 2, Table 4 and Table 6).
- This model uses iterators to iterate between the individual Destination Types within each Run Category and merges all the individual OD Matrices together.

- The processing within this model principally utilises Network Analyst, is stable and should run until completion.

Run model: Step 4 - run LCWIPS model - create network-based output

- This model has two parameters, as detailed in Table 7below.

Table 7: Model Parameters

Parameter	Description
Select Project Folder	The user specifies the correct folder for this scenario test (the same as the previous models).
Select Network Dataset	The user specifies the *Network__RAMI_Paths_ND* network dataset.

- This model uses Network Analyst to post-process the OD Matrix table (generated in the preceding model) and generate a line feature class that follows the underlying network dataset. A series of computationally and memory intensive geoprocessing tools are then used to aggregate the line feature class version of the OD Matrix.
- As detailed in Table 5, unnecessary use of the *All2All* Run Category, or unrealistic (large) values for *ClosestX* and *ClosestY* will generate enormous amounts of data that will cause the model to fail.
- Within the model, an iterator is used to split and batch-process the line feature class using the *Clipping Cells* feature class that was processed by the *Step 2 - Process Model Inputs* model. This process aims to mitigate the amount of data being processed at any one time; however, as this increases the number of processes being run, there is a commensurate impact on the overall model run time.

Output feature class

- The output line feature class generated by the Step 4 - Run LCWIPs Model - Create Network-based Output model is called Out_Network_with_Utilisation_Data and is located in the geodatabase called LCWIPs_Model_Run_GDB.gdb.
- The output feature class is projected to British National Grid.

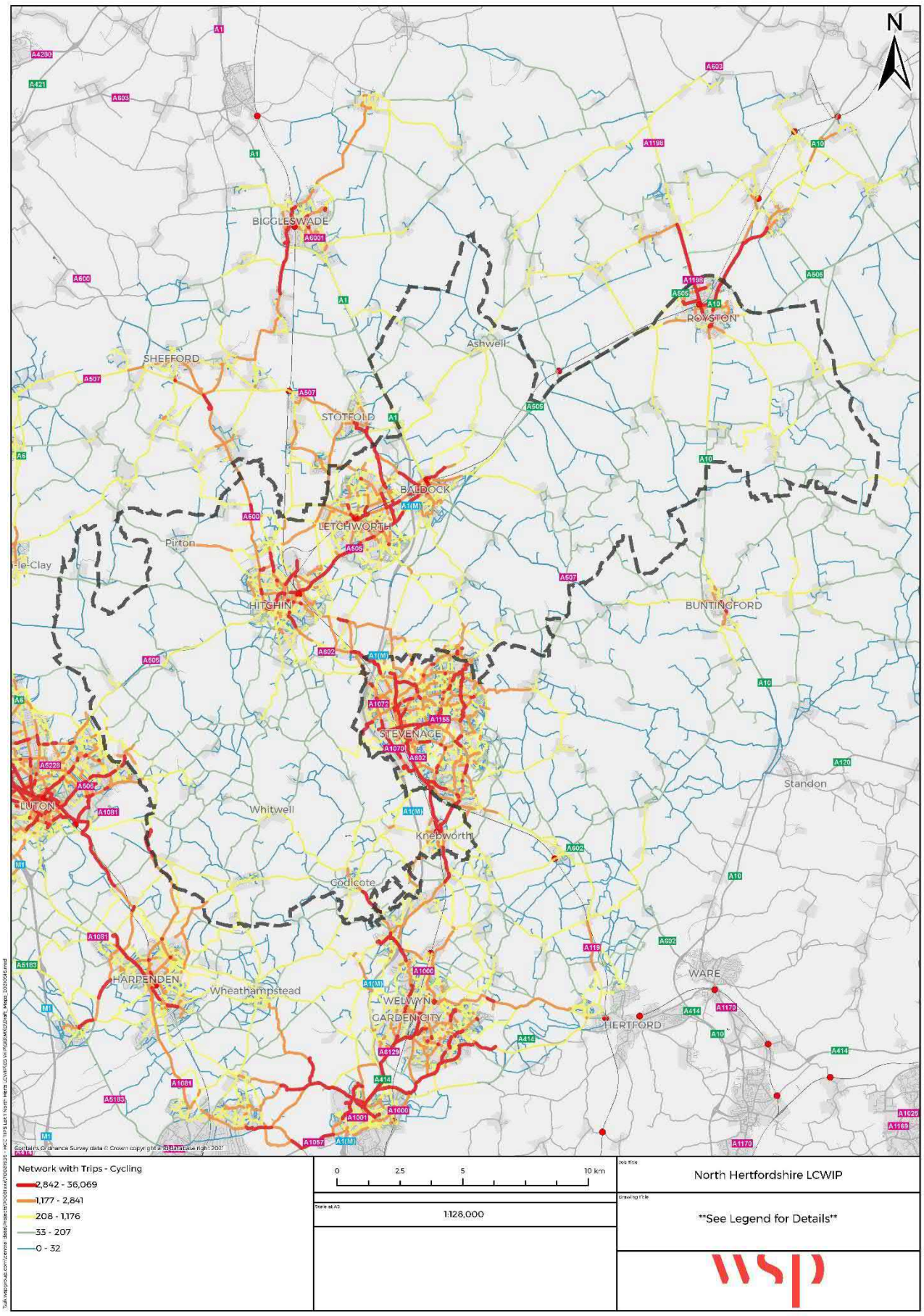
- This feature class has three fields that can be mapped, which are detailed in Table 5, below.

Table 8: Mappable fields

Field name	Description
Trips	The total number of trips calculated and aggregated to the unique segment of road or footpath.
Trips_Reclassed	The total number of trips normalised so that the value is between 0 and 1, where 0 = the lowest value in the data range and 1 = the highest value in the data range.
Trips_Ranked	Each unique segment is ranked in order of the number of trips the segments has. The segment with a rank of 1 has the most trips using it.

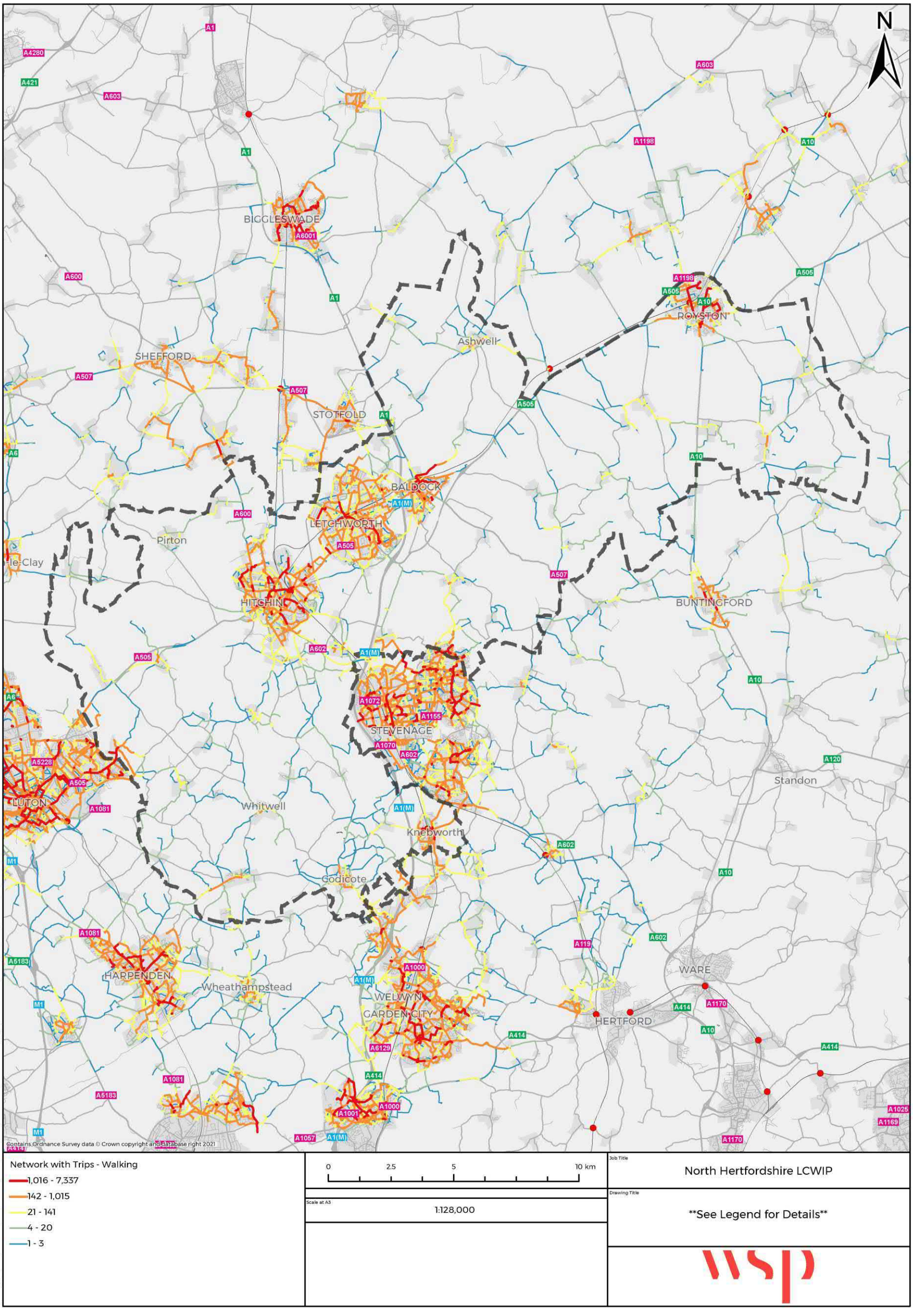
Appendix D – LCWIP GIS Model District-Wide Cycling Outputs

A map showing the model outputs for the cycling model run at a district-wide level.



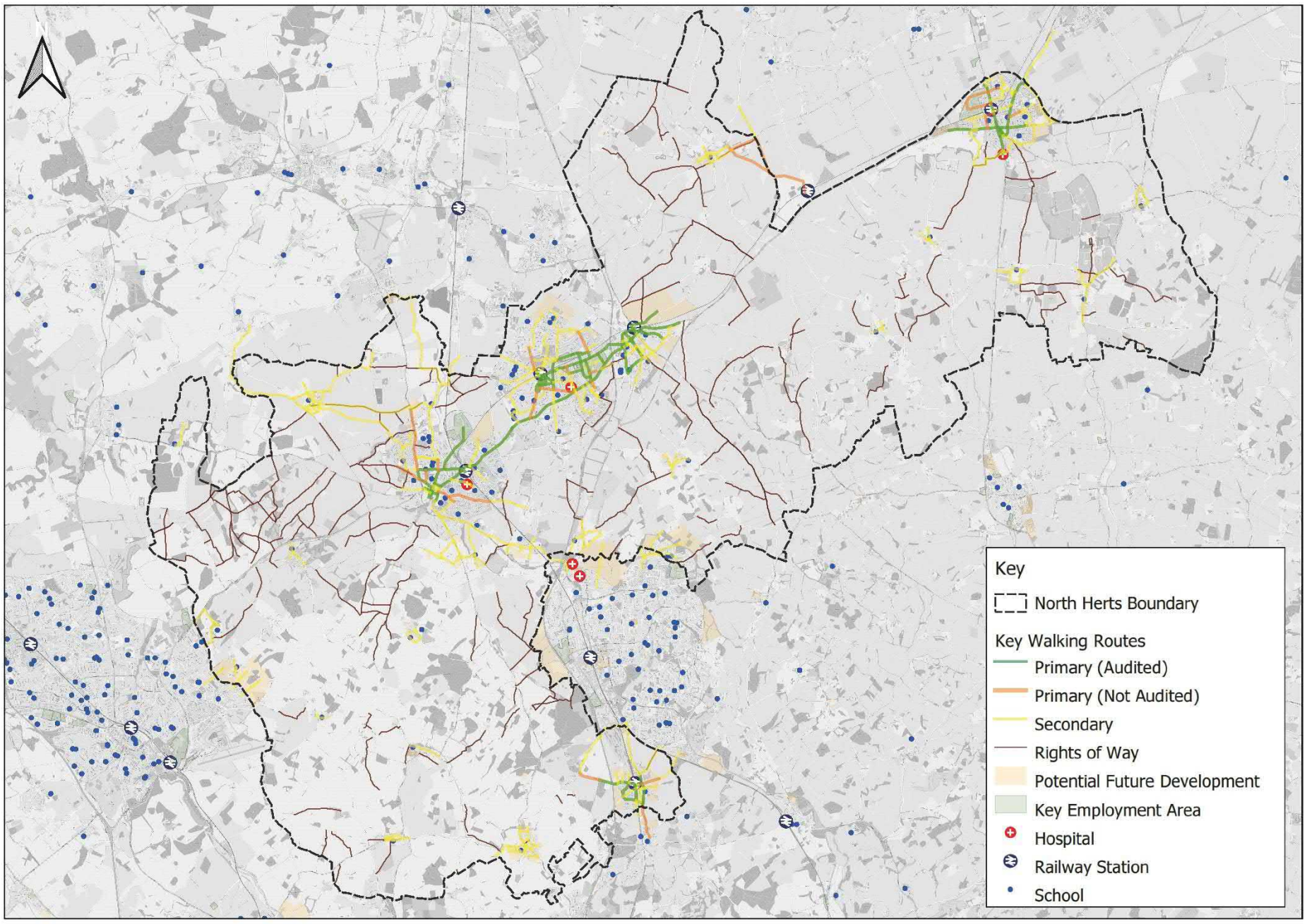
Appendix E – LCWIP GIS Model District-Wide Walking Outputs

A map showing the model outputs for the walking model run at a district-wide level.

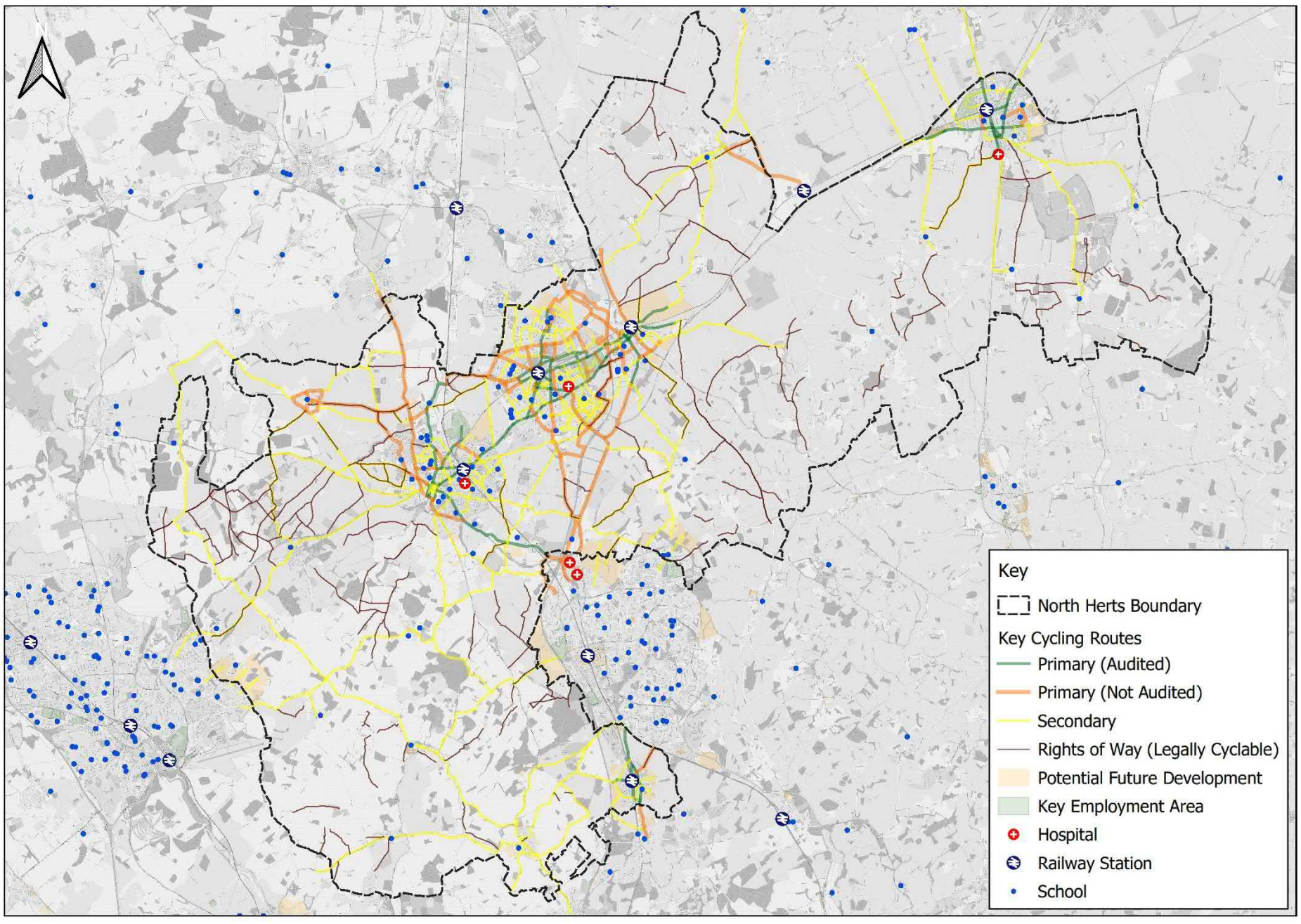


Appendix F – North Herts District Network Plans for Walking and Cycling

A map showing the final network plans for walking.

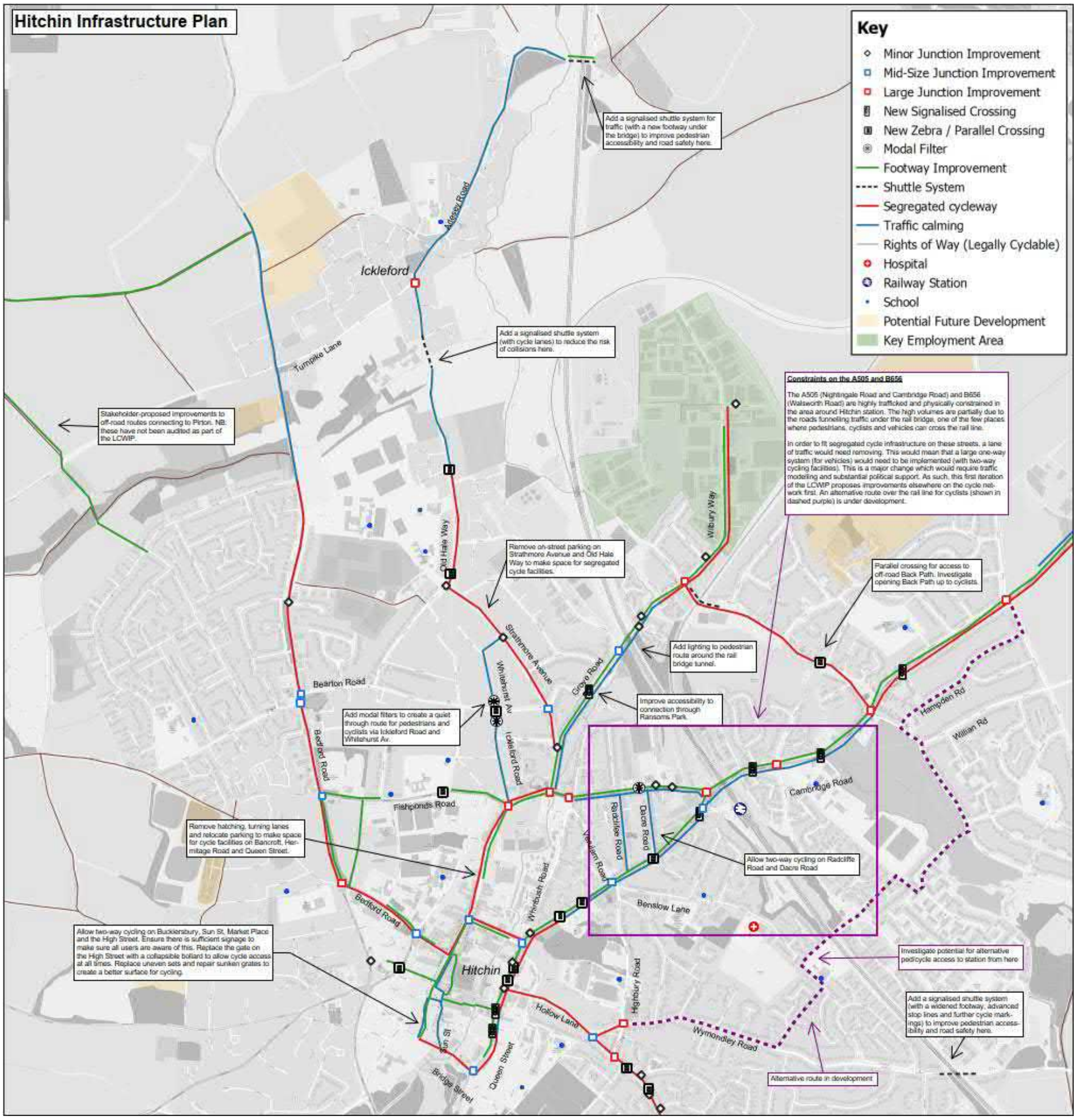


A map showing the final network plans for cycling.

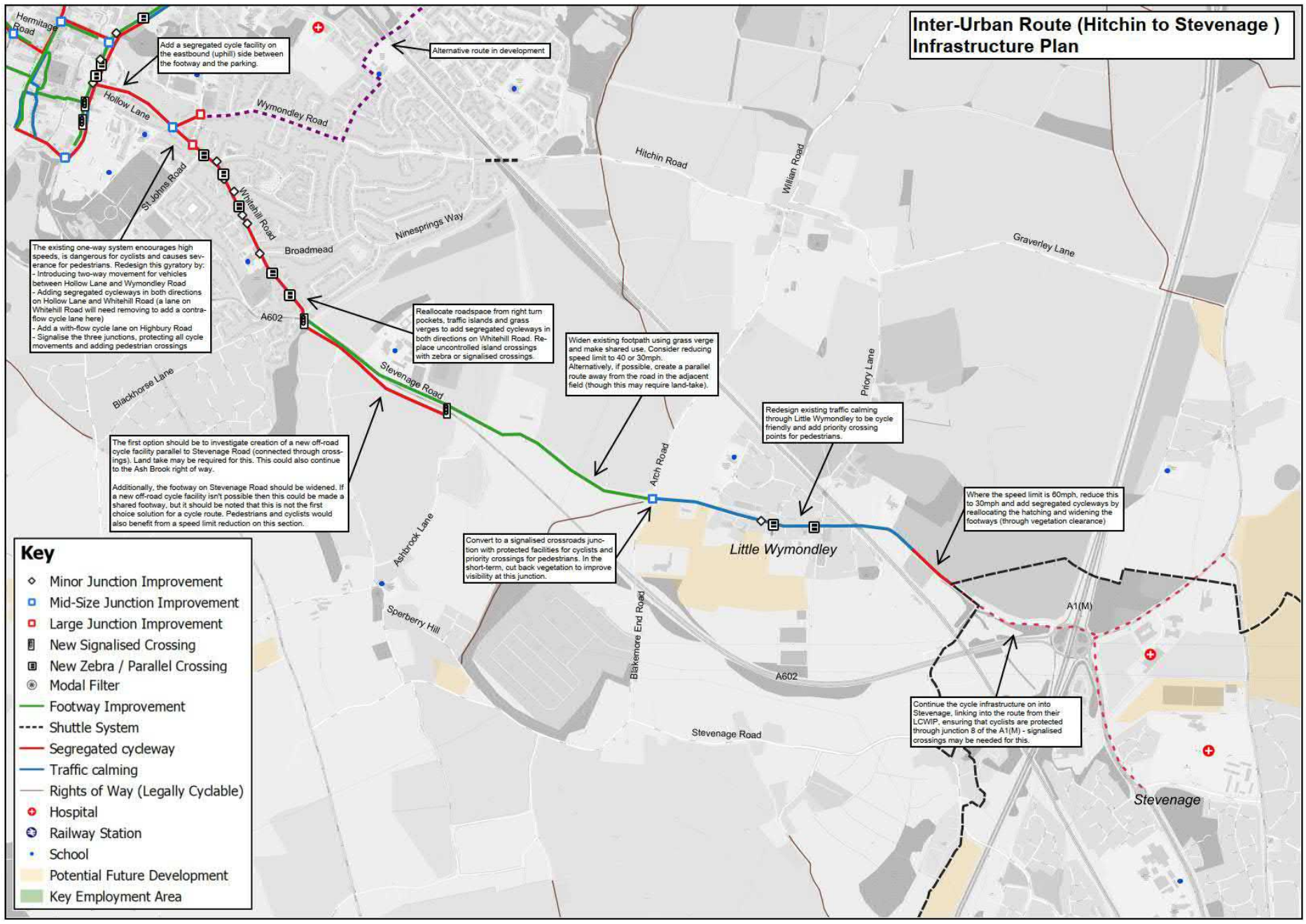


Appendix G – Detailed Infrastructure Plans

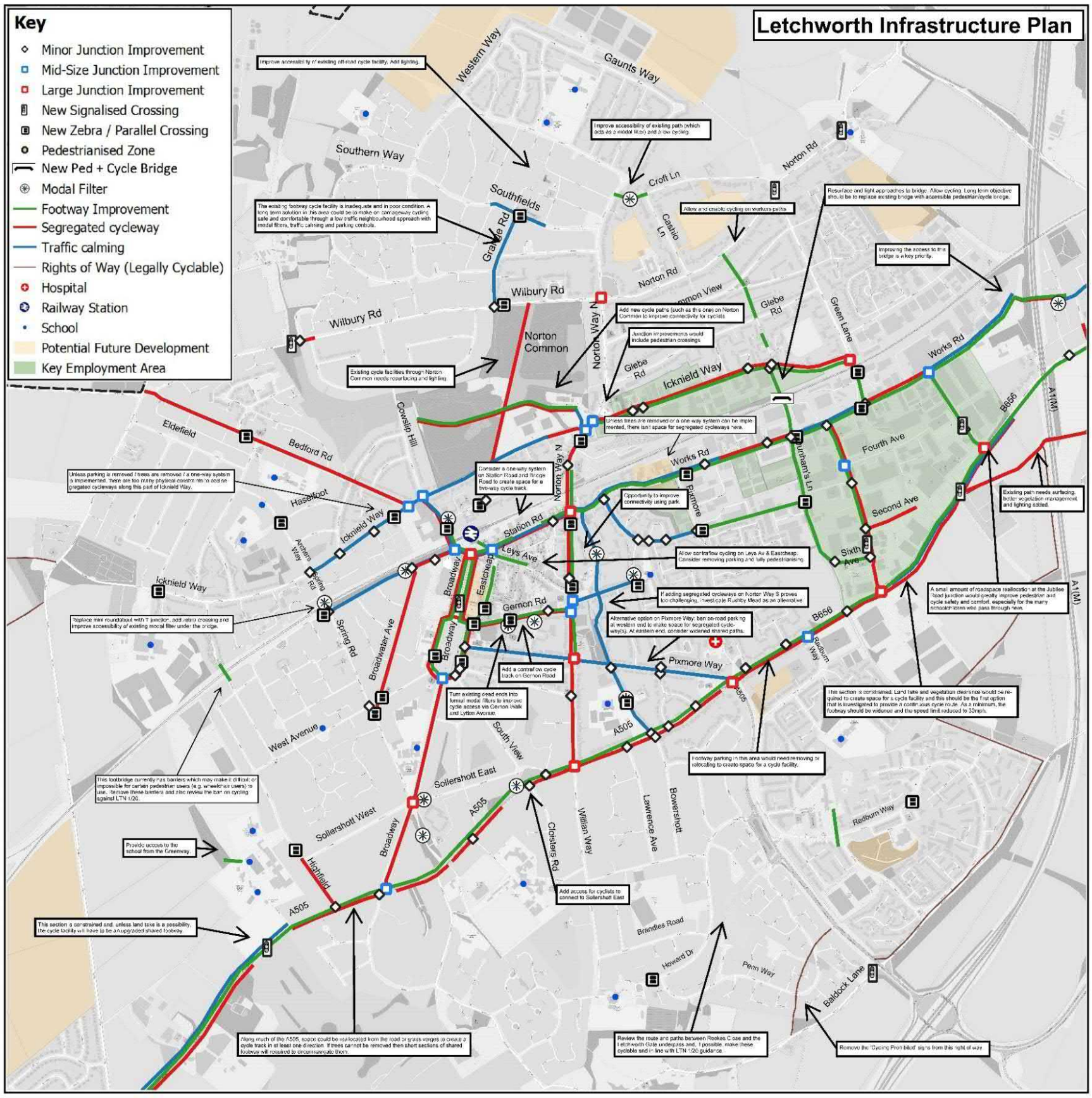
A map showing the proposed infrastructure interventions identified in Hitchin.



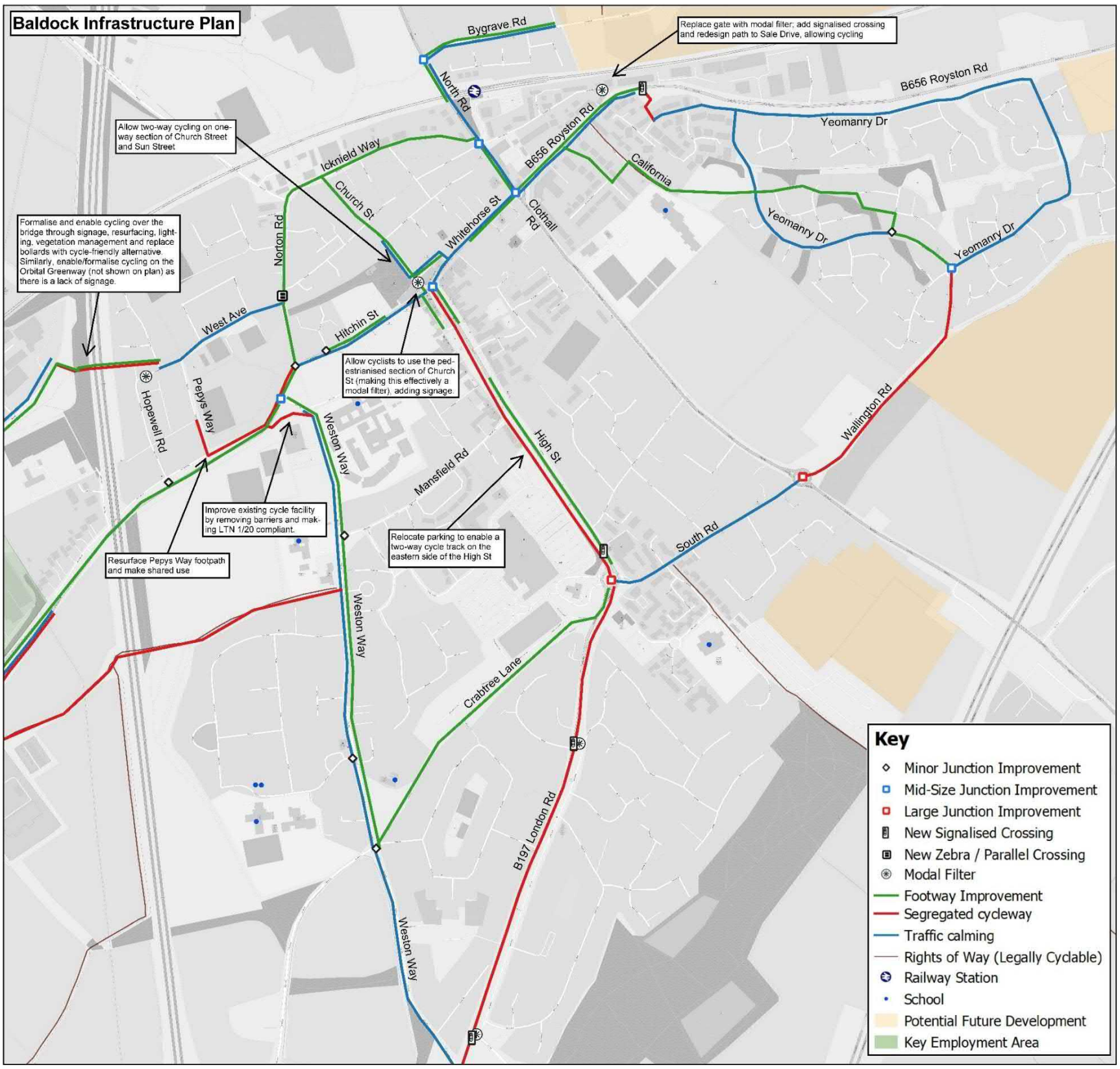
A map showing the proposed infrastructure interventions identified on the inter-urban route between Hitchin and Stevenage



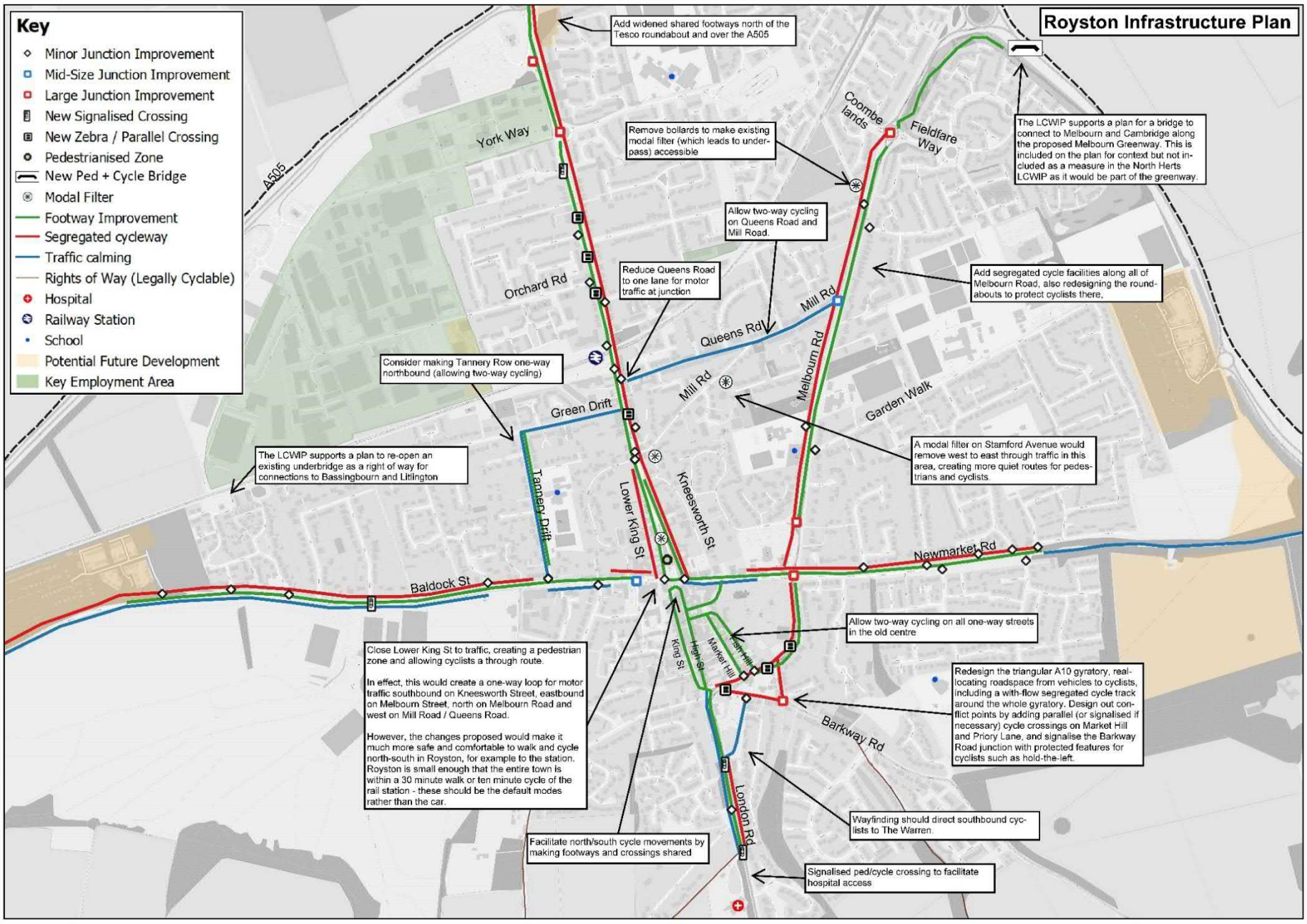
A map showing the proposed infrastructure interventions identified in Letchworth Garden City.



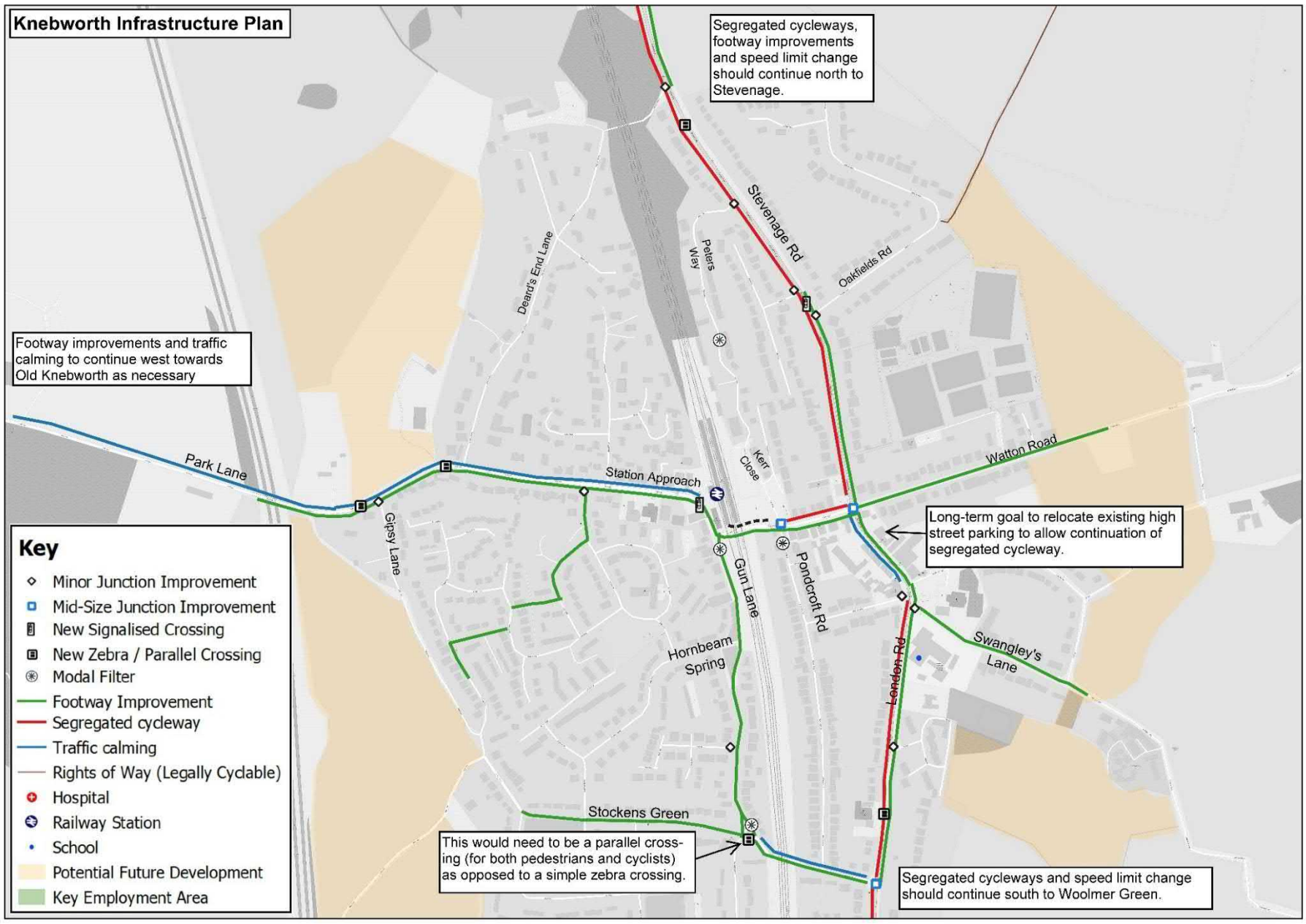
A map showing the proposed infrastructure interventions identified in Baldock.



A map showing the proposed infrastructure interventions identified in Royston.



A map showing the proposed infrastructure interventions identified in Knebworth.



North Herts Urban Transport Plan (UTP) update

The GTP and LCWIP

The North Central Growth Transport Plan (GTP) and Local Cycling and Walking Intervention Plan (LCWIP) have been developed to provide a new long-term strategic vision for walking and cycling within North Herts. The plans identify the key issues and opportunities which currently exist or may occur in the future and the interventions needed to address these issues and improve the transport network.

Urban Transport Plans

Both the GTP and LCWIP have been developed in partnership with North Herts and in-line with the latest local and national policy and DfT guidance to act as successors the previous Urban Transport Plans (UTPs)

UTPs were developed for the towns of Hitchin, Letchworth /Baldock and Royston. They predated HCC's Local Transport Plan 4 and the North Herts Local Plan development and were generally focussed on smaller scale schemes to address existing issues on the transport network with less emphasis on improving conditions for pedestrians and cyclists or catering for future growth than the more recent Growth and Transport Plan.

Where relevant and still appropriate the schemes identified in the UTPs have been fed into the LCWIP and GTP process. Other schemes have already been implemented and some are no longer appropriate as they are not aligned with our current Local Transport Plan policies. In a small number of cases more localised walking and cycling schemes may not have been picked up by the GTPs or LCWIP as they were away from growth areas or the key prioritised LCWIP corridors. Where this is the case, details of these will be retained for reference to help inform future discussions with developers or further iterations of the GTP and LCWIP.

For reference, the table below provides a summary of the individual walking and cycling schemes identified within North Herts UTPs and a brief update on each project and the status in the context of the GTP/LCWIP.

Key:

Green	Scheme completed
Amber	Scheme superseded by the GTP/LCWIP and/or the research retained
Red	Scheme not pursued or included as a GTP/LCWIP intervention

Where cells have been greyed out with N/A in them = not included as a 'like-for-like' scheme in the GTP/LCWIP (although elements of the scheme may be included, or the information retained for future reference)

Where entire rows have been greyed out with N/A = measures considered as standard for any new active travel schemes/interventions

Table 1: Summary of UTP walking/cycling schemes

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
CM2	Cycling	Hitchin	Upgrade existing cycle routes, for example from the industrial areas to the town centre	Addressed through CM10 - CM15	N/A	N/A	N/A
CM3	Cycling	Hitchin	Segregate cyclists and pedestrians along the High Street and Market Square	Scheme to be considered as part of the ongoing High Street improvement project	Amber	N/A	N/A
CM4	Cycling	Hitchin	Provide new two-way routes for cyclists around Hitchin	Multiple new routes and interventions identified within the NCGTP and LCWIP	Amber	Multiple interventions	Multiple interventions
CM5	Cycling	Hitchin	Introduce designated pedestrian and cycle routes to and from schools	New walking and cycling routes identified in the NCGTP and LCWIP with particular consideration given to those routes connecting communities to local centres, healthcare facilities and schools.	Amber	Multiple interventions	Multiple interventions

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
CM7	Cycling	Hitchin	Provide cycleways along the B656, A602 and A600	New interventions along the B656, A602 and A600 identified in the NCGTP and LCWIP	Amber	Scheme reference/s: SM38: B656 Walsworth Road Pedestrian Priority Corridor & SM53: Cycle Route	Multiple interventions
CM8	Cycling	Hitchin	Improve signing on the cycle network	New/improved signage to be considered alongside any new interventions	Amber	N/A	N/A
CM9	Cycling	Hitchin	Provide (covered) cycle parking at entrances to the town centre	Scheme to be considered as part of the ongoing High Street improvement project	Amber	N/A	N/A
CM10	Cycling	Hitchin	Implement Route 2 (Town Centre to industrial area) identified through the Cycle Route Network Survey	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	SM91: Employment area connectivity	Multiple interventions
CM11	Cycling	Hitchin	Implement Route 5 (Town Centre to Ickleford) identified through the Cycle Route Network Survey	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	SM52: North Hitchin Cycle Route	Multiple interventions

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
CM12	Cycling	Hitchin	Implement Route 6 (Town Centre to west Hitchin) identified through the Cycle Route Network Survey	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Amber	SM53: West Hitchin Cycle Route	Multiple interventions
CM13	Cycling	Hitchin	Implement Route 8 (Town Centre to east Hitchin) identified through the Cycle Route Network Survey	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Amber	N/A	Key elements of the route included as part of the primary and secondary routes identified within the LCWIP (Appendix E)
CM14	Cycling	Hitchin	Implement Route 11 (Rail station to south Hitchin) identified through the Cycle Route Network Survey	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Amber	N/A	Key elements of the route included as part of the secondary routes within the LCWIP (Appendix E)
CM15	Cycling	Hitchin	Implement Route 12 (Southern Hitchin) identified through the Cycle Route Network Survey	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Amber	N/A	Key elements of the route retained as part of the secondary routes within the LCWIP (Appendix E)

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
CM16	Cycling	Hitchin	Implement the medium and low priority routes identified through the Cycle Route Network Survey	N/A	N/A	N/A	N/A
CM16-1	Cycling	Hitchin	Route 1 – Ickleford to Chaucer Way via Purwell Valley: This is a north-south route linking Ickleford with Cadwell Lane making use of a number of traffic-free paths	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Amber	N/A	Scheme encapsulated within LCWIP primary and secondary routes (Appendix E)
CM16-2	Cycling	Hitchin	Route 4 – Westmill to railway station: This is an east-west link between the Westmill estate and the station, with additional connectivity to the industrial area via routes 2 and 1	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Green	SM53: West Hitchin Cycle Route	Multiple interventions. New proposed scheme outlined and designed.

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
CM16-3	Cycling	Hitchin	Route 7 – Westmill Road to Old Hale Way: A series of short routes which improve access to the Priory school from the west, south and east	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Green	SM53: West Hitchin Cycle Route	Multiple interventions. New proposed scheme outlined and designed.
CM16-4	Cycling	Hitchin	Route 9 – Stevenage to Hitchin: This is a proposed route is intended to provide a direct link between the two towns and build upon the existing cycle network in Stevenage.	Scheme picked up by interventions identified in the NCGTP and LCWIP	Amber	SM29: Hitchin to Stevenage Cycle route	Multiple interventions
CM16-5	Cycling	Hitchin	Route 14 – St. Michaels Road to Highover: This route would provide a link from the railway station to the east of Hitchin, expanding upon the identified high priority routes 8 and 11	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Amber	N/A	Eastern cycle routes identified as part of the secondary routes within the LCWIP (Appendix E)

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
CM16-6	Cycling	Hitchin	Route 15 – Hollow Lane, Wymondley Road and Highbury Road: This is a series of short routes to improve cycle access to Hitchin Girls School and to the town centre from the south-east	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Amber	N/A	Southern cycle routes identified as part of the secondary routes within the LCWIP (Appendix E)
CM16-7	Cycling	Hitchin	Route 3 - Cadwell Lane to Old Hale Way: This provides a route between the north-west of the town and the Cadwell Lane area, supporting high priority routes 2 and 5.	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Amber	SM91: Employment area connectivity / SM52: North Hitchin Cycle Route	LCWIP interventions: NH52 – H50/H51

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
CM16-8	Cycling	Hitchin	Route 10 – Gosmore Road to Town Centre: This proposed link would provide a route into the town centre from the area to the south-east of Stevenage Road which would complement high priority route 12	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	N/A	Alternate route identified in LCWIP along London Road (adj. to Gosmore Road) as a secondary route (Appendix E)
CM16-9	Cycling	Hitchin	Route 13 – Letchworth to Ickleford: This proposed link would connect the northern part of Hitchin with the northern part of Letchworth and supporting route 1	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	N/A	Key elements of the route included as part of the secondary routes within the LCWIP (Appendix E)
CM16-10	Cycling	Hitchin	Route 16 – Letchworth to North Herts College: This coincides with high priority route 8	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Amber	SM59: A505 Cycle Route and Junction Treatment for Cycle Priority	Multiple interventions

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
CM17	Cycling	Hitchin	Upgrade Nightingale Road Pelican Crossing to a Toucan crossing	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	SM59: A505 Cycle Route and Junction Treatment for Cycle Priority	LCWIP intervention: NH47
WM1	Walking	Hitchin	Provide footpath access to new residential developments	Ensuring sustainable transport access to new developments is a key priority within the NCGTP and LCWIP	Amber	Multiple interventions	Multiple interventions
WM2	Walking	Hitchin	Provide more pedestrian crossings in Hitchin	Multiple new crossings and crossing improvements identified within the LCWIP	Amber	N/A	Multiple interventions
WM2.1	Walking	Hitchin	Provide a pedestrian crossing facility at Stotfold Road/Cambridge Road junction	Completed	Green	N/A	N/A
WM2.2	Walking	Hitchin	Introduce a crossing facility at Bancroft by Regal Chambers	Completed	Green	N/A	N/A
WM2.3	Walking	Hitchin	Upgrade existing pedestrian crossings at Bedford Road/Fishponds Road	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	PR54: Bedford Road, Pedestrian Crossings	NH14 – H1>H10, Multiple interventions

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
WM2.4	Walking	Hitchin	Introduce a pedestrian crossing facility at Queen Street by Bridge Street*	Completed.	Green	N/A	N/A
WM2.5	Walking	Hitchin	Introduce pedestrian crossing facilities over Stevenage Road/Hitchin Hill Roundabout*	Completed.	Green	N/A	N/A
WM2.6	Walking	Hitchin	Introduce more pedestrian crossings along the length of Stevenage Road	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	N/A	NH38 – X12, Multiple inter-urban interventions (Hitchin to Stevenage)
WM3	Walking	Hitchin	Improve the lighting and cleanliness of alleyways around the town centre	Opportunities to be explored as standard as part of any route improvements around the town centre	N/A	N/A	N/A
WM4	Walking	Hitchin	Introduce walking buses to schools	Multiple schemes introduced	Green	N/A	N/A
WM5	Walking	Hitchin	Increase pedestrianisation of the town centre, in particular on market days	Scheme to be considered as part of the ongoing High Street improvement project	Amber	N/A	N/A

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
WM6	Walking	Hitchin	Improve pedestrian links to the industrial area	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	SM91: Employment area connectivity	Multiple interventions
WM6.1	Walking	Hitchin	Upgrade the crossing facilities at the Cadwell Lane crossroads (provision of pedestrian islands etc)	Scheme investigated but not pursued as not feasible given space constraints	Red	N/A	N/A
WM7 / WM10	Walking	Hitchin	Review the quality and provision of footways across Hitchin (including lighting)	Footway quality to be reviewed as standard as part of any route improvements	N/A	N/A	N/A
WM8	Walking	Hitchin	Provide a southern access to the rail station	Scheme investigated but superseded by prioritising Eastern access - project ongoing	Amber	N/A	N/A
WM11	Walking	Hitchin	Increase the provision of facilities for disabled or mobility impaired people (ramps, dropped kerbs etc)	All proposed improvements designed to be inclusive to people with different forms of disability	N/A	N/A	N/A

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
WM12	Walking	Hitchin	Provide a pedestrian footbridge over the railway line around Cambridge Road	Considered as part of Cycle Route 8. Scheme outlined and designed but not implemented.	Amber	N/A	Eastern cycle routes identified as part of the secondary routes within the LCWIP (Appendix E)
WM01	Walking	Royston	Introduction of new pedestrian crossing facilities at Market Hill, Melbourn Street, A10 Green Street, Baldock Street, Kneesworth Street and Burns Road	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	PR79: Royston Cycle Network / PR104 Industrial estate connectivity / SM81: Melbourn Greenway connection to Royston	Multiple interventions
WM02	Walking	Royston	Enhanced pedestrian facilities at The Cross	Scheme investigated but not pursued	Red	N/A	N/A
WM03	Walking	Royston	Improvements to Angel Pavement	Scheme to be considered as part of the ongoing High Street improvement project	Amber	N/A	N/A
WM04 / WM08	Walking	Royston	Improved signage in town centre and for visitors from car parks and rail/bus stations	N/A	N/A	N/A	N/A

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
WM05	Walking	Royston	Pavement widening on Fish Hill Square and Kneesworth Street	Scheme designed with successful trial in 2017. Further designs carried out with investigations into potentially affected underground services undertaken in Nov 2018 and Feb 2019. Scheme deferred due to cost and scale of additional construction works required. Designs and studies to be retained to help inform any future schemes in the area, such as the Royston Cycle Network.	Amber	PR79: Royston Cycle Network	NH64 – R85, footway improvements
WM15+A9:A18	Walking	Royston	Provide improved crossing to the rail station	Completed.	Green	N/A	N/A
WM06	Walking	Royston	Improve pedestrian access to island site across the A10 at top of Market Hill	Completed.	Green	N/A	N/A
WM07	Walking	Royston	Improvement of pavement surfaces	N/A	N/A	N/A	N/A
WM09	Walking	Royston	Demonstration project to encourage walking to shops	N/A	N/A	N/A	N/A

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
WM10	Walking	Royston	Improve pedestrian/cycle/rail crossing from Green Drift to South Close	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	PR79: Royston Cycle Network / PR104 Industrial estate connectivity	NH53-R70, New parallel crossing
WM13	Walking	Royston	As the former farmland abutting the A505 is developed, preserve a 6m strip to provide a link to other paths, which the A505 effectively severs en route to Cambridgeshire. This link could potentially connect to the rail underpass and other links across Royston	Scheme investigated but not pursued.	Red	N/A	N/A
WM14	Walking	Royston	Divert Footpaths 2 and 17 to share the farm bridge located approximately halfway between the two	Scheme investigated but not pursued.	Red	N/A	N/A

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
WM16	Walking	Royston	Resurface the verge along the A10 between Buntingford and Royston, as well as the villages Chipping, Buckland and Reed, to provide a safe route to work / school / recreation facilities in Royston suitable for all nonmotorised users	Scheme investigated but not pursued.	Red	N/A	N/A
WM12	Walking	Royston	The Icknield Way Regional Trail runs parallel to the A505 at Burloes and on farmland, under a 10-year permissive access agreement. This route could be upgraded to a permanent arrangement & upgrade to shared use	Scheme investigated but not pursued.	Red	N/A	N/A
CM01	Cycling	Royston	Completion of new rail underpass	Completed.	Green	N/A	N/A

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
CM02 (CM13)	Cycling	Royston	Completion of new cycle measures linking the new rail crossing, and promoting cycle network and safety in schools	Scheme investigated but required significant support/investment from Network Rail. New cycle measures and interventions identified within the NCGTP and LCWIP.	Amber	PR79: Royston Cycle Network	Multiple interventions
CM05	Cycling	Royston	Widening of existing cycle lanes	All cycleway improvements to be developed in line with LTN 1/20 guidance (in instances where this may not be possible, LTN 1/20 recognises that there may be constraints that prevent delivery of an optimal scheme and provides guidance on how compromises should be made).	N/A	N/A	N/A
CM07	Cycling	Royston	Additional cycle parking in Market Square and at Rail Station	Ongoing.	Green	PR77: Cycle Parking	N/A
CM14	Cycling	Royston	Introduce Toucan Crossing on Newmarket Road	Completed.	Green	N/A	N/A

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
CM03	Cycling	Royston	Implementation of town wide cycle network	Scheme superseded by interventions identified in the NCGTP and LCWIP	Green	PR79: Royston Cycle Network	Multiple interventions. New proposed scheme outlined and designed.
CM8	Cycling	Royston	Improved formalised rail crossing at Western side of town	Scheme investigated but not pursued.	Red	N/A	N/A
CM9	Cycling	Royston	Cycle facilities along and across A505 around the North side of town	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	PR79: Royston Cycle Network / SM81 Melbourn Greenway Connection to Royston	Multiple interventions
CM10	Cycling	Royston	Improve connectivity between existing and proposed cycle links	N/A	N/A	N/A	N/A
CM11	Cycling	Royston	Improve permeability between housing estates for cyclists	N/A	N/A	N/A	N/A
CM12	Cycling	Royston	Improve conditions for cyclists at roundabouts	N/A	N/A	N/A	N/A

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
CM15	Cycling	Royston	Upgrade cycle link between Hitchin & Royston identified in Hertfordshire Strategic Cycle Network (Regional Route 69)	Improved connections identified between Royston and Baldock/Letchworth via the A505 within the GTP and LCWIP. Ongoing improved connections between Baldock/Letchworth and Hitchin provide a sustained route from Royston to Hitchin.	Amber	SM59: A505 Cycle Route and Junction Treatment for Cycle Priority	Multiple interventions
NM1	Cycling	Letchworth	Cycle corridor 1: Road (A505) to Town Centre and Station via Broadway	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Amber	SM59: A505 Cycle route and junction treatment priority	Multiple primary and secondary interventions identified in LCWIP (Appendix E)
NM2	Cycling	Letchworth	Cycle corridor 2: Jackmans Estate to Grange Estate via Works Road	Scheme constructed in March 2017.	Green	SM67: Connections to North Letchworth developments sites	Multiple interventions
NM3	Cycling	Letchworth	Cycle corridor 3: Grange Estate to Town Centre	The outline designs for this scheme have been developed and will be retained for reference to help inform any new interventions within this area.	Amber	SM67: Connections to North Letchworth developments sites	Multiple interventions

Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
NM4	Cycling	Letchworth	Cycle corridor 4: Jackmans Estate to Town Centre and Highfield School	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	N/A	Multiple primary and secondary interventions identified in LCWIP (Appendix E)
NM5	Cycling	Baldock	Cycle corridor 5: A1(M) Bridge to Baldock Station	Prep work completed. Scheme to be considered within the context of the new BA1 (North Herts) development (as well as other smaller developments within and adjacent to Baldock) as part of the GTP and LCWIP	Amber	SM103: Baldock Multi-modal road links	Multiple interventions
NM6	Cycling	Baldock	Cycle corridor 6: Clothall Common to Baldock Station	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	PR72: Access to Baldock Station and Sustainable Spine via Icknield Way East.	Multiple interventions
NM7	Cycling	Baldock	Cycle corridor 7: Clothall Common to A1(M) Underpass via Baldock Town Centre and Knights Templar School	Scheme superseded by interventions identified in the NCGTP and LCWIP	Amber	PR72: Access to Baldock Station and Sustainable Spine via Icknield Way East.	Multiple interventions

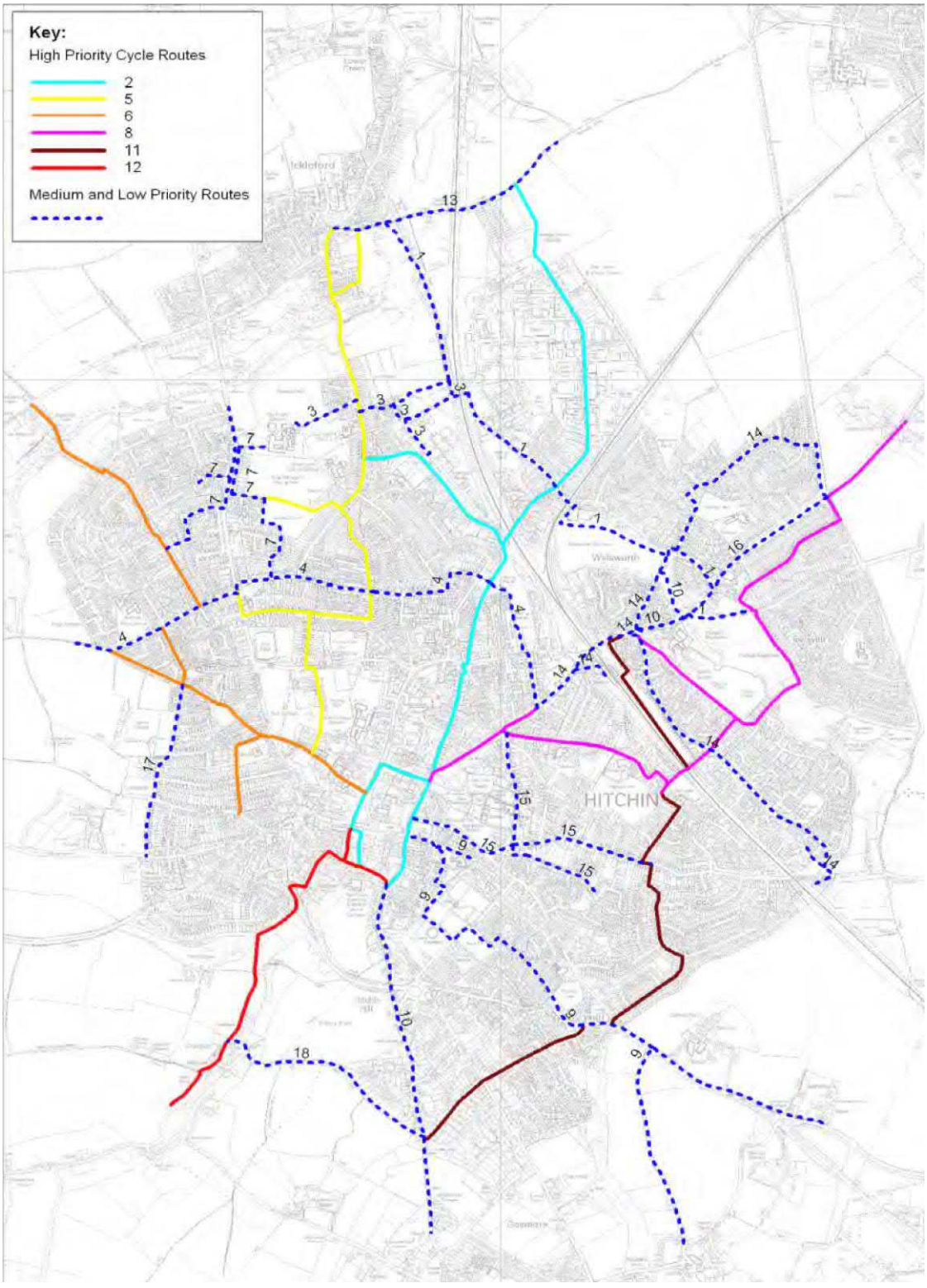
Measure reference	Walking / Cycling	Location	Description of the UTP measure	Status / Update	RAG	Measure identified in GTP	Measure identified in LCWIP
NM8	Cycling	Letchworth	Cycle corridor 8: Broadway Gardens Crossing	Completed.	Green	N/A	N/A

Scheme Plans for Hitchin, Royston, Letchworth and Baldock

Hitchin:

Source: [Hitchin Cover 2 May 2011.ai (hertfordshire.gov.uk)]

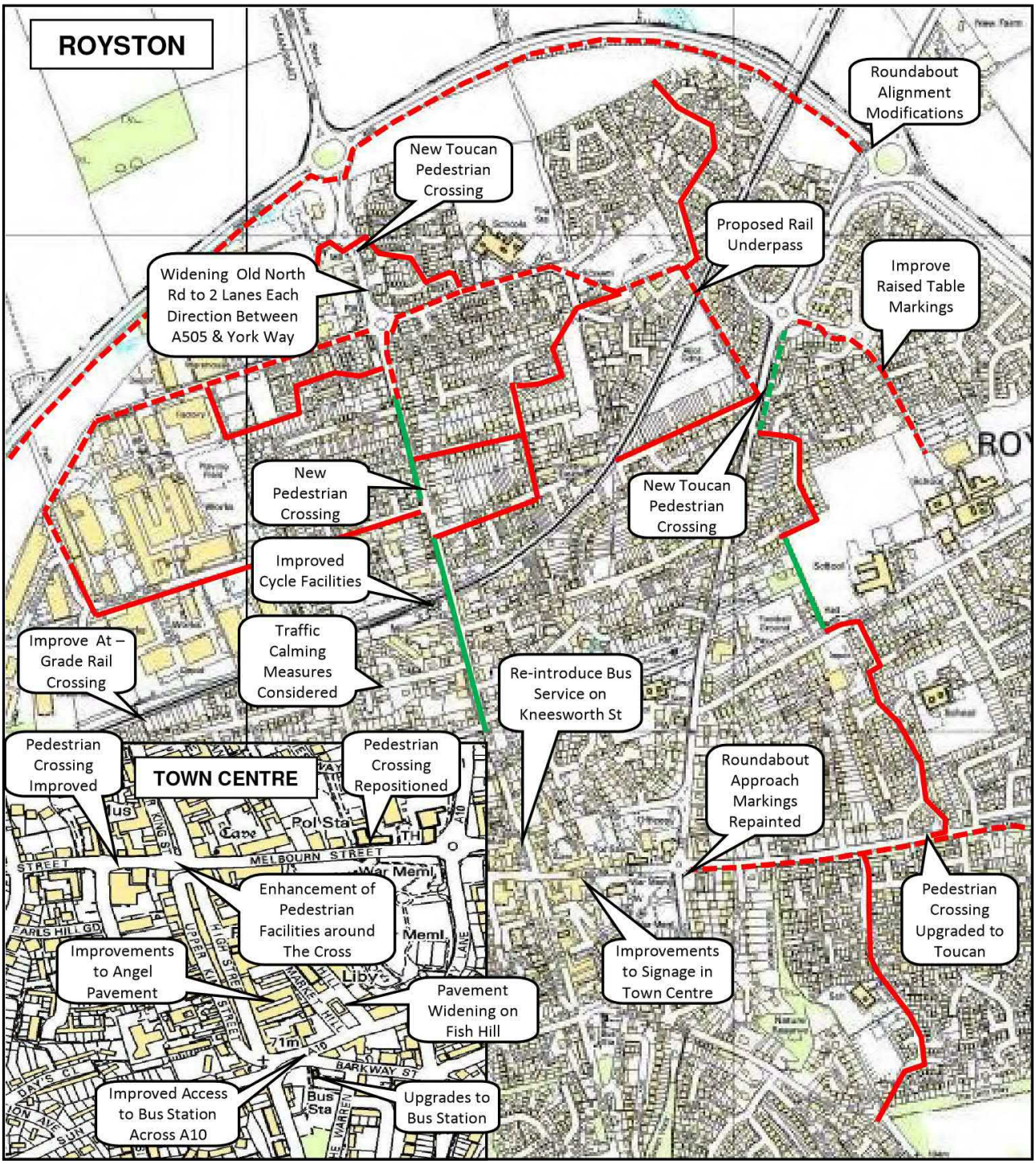
Location Plan/outline Scheme Plan



Proposed high, medium and long term cycle routes identified through the Cycle Network Survey

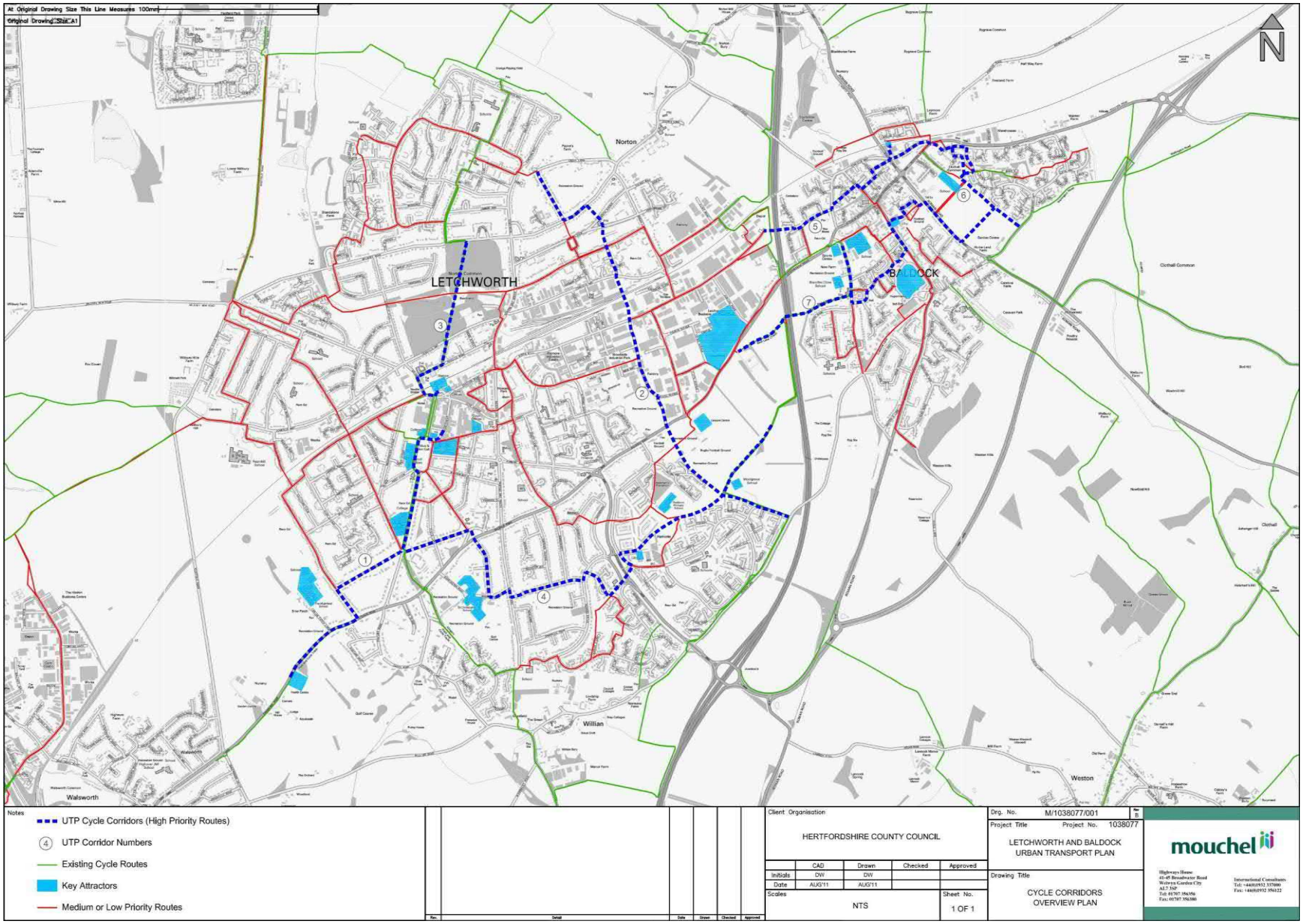
Royston:

Source: [royston-urban-transport-plan-vol-2.pdf (hertfordshire.gov.uk)]



Letchworth/Baldock:

Source: [Letchworth and Baldock Urban Transport Plan (hertfordshire.gov.uk)]



Route	Area	Location	Total Cost	Modelled increase in walking & cycling trips	Infrastructure impact on active travel	Strategic Fit	Support for new housing	Access to jobs	LTN 1/20 compliance	Technical feasibility	Dependency	TOTAL
NH14	Hitchin	Bedford Road (Hitchin)	£7,140,000.00	2.0	2.2	1.0	1.7	1.7	2.4	-0.3	0.4	**15.7**
NH78	Hitchin	Woolgrove Road	£4,775,000.00	2.0	2.4	0.2	1.4	1.6	2.4	-0.4	0.4	**13.6**
NH1	Baldock	A1(M) Pedestrian Bridge	£220,000.00	2.0	2.0	1.0	0.5	1.5	2.0	0.5	0.5	**13.0**
NH23	Hitchin	Cambridge Road	£8,809,500.00	2.0	2.3	1.0	0.7	0.9	2.5	-0.3	0.7	**12.8**
NH32	Hitchin	Grove Road & Wilbury Way	£5,244,500.00	1.9	1.5	1.0	0.9	1.7	1.6	-0.1	0.9	**12.2**
NH50	Letchworth Garden City	Norton Common N-S	£600,000.00	2.0	2.0	1.0	2.0	0.0	2.0	0.0	0.0	**12.0**
NH16	Hitchin	Bedford Road (One-Way) & Brand Road	£1,786,000.00	2.0	1.7	0.7	1.3	1.3	2.0	-0.7	0.7	**12.0**
NH12	Letchworth Garden City	Baldock Road (A505 & B656)	£10,465,000.00	2.0	1.6	0.9	0.5	1.7	1.8	-0.3	0.9	**11.9**
NH7	Baldock	B656 Royston Road	£750,000.00	2.0	1.6	1.0	1.6	0.4	1.6	0.2	0.4	**11.4**
NH29	Hitchin	Fishponds Road & Butts Close	£2,285,000.00	1.8	1.5	0.8	0.7	1.7	2.0	-0.2	1.0	**11.4**
NH67	Letchworth Garden City	Station Place & Station Road & Bridge Road	£5,868,750.00	2.0	2.4	0.9	0.4	0.7	2.2	-0.1	0.6	**11.3**
NH47	Hitchin	Nightingale Road	£6,844,000.00	2.0	2.1	0.9	0.1	1.1	2.1	-0.2	0.8	**11.1**
NH10	Baldock	Baldock High Street	£2,865,000.00	1.9	1.9	1.0	0.9	1.1	1.7	-0.4	0.6	**10.9**
NH38	Inter-Urban	Hitchin to Stevenage Route	£4,285,000.00	1.9	1.6	1.0	1.3	1.0	1.3	-0.3	0.5	**10.8**
NH2	Letchworth Garden City	A505 Hitchin Road	£1,725,000.00	2.0	1.8	1.0	0.2	1.2	1.7	0.0	0.8	**10.8**
NH40	Letchworth Garden City	Icknield Way & Green Lane	£5,825,000.00	1.9	1.6	0.8	0.5	1.5	1.6	0.0	0.8	**10.6**
NH11	Royston	Baldock Road - Baldock Street	£3,422,500.00	2.0	1.1	1.0	2.0	0.5	1.1	-0.2	0.4	**10.5**
NH22	Baldock	California	£206,000.00	1.5	1.0	0.5	2.0	2.0	1.0	0.0	1.0	**10.3**
NH45	Royston	Melbourn Road	£6,770,000.00	2.0	1.7	0.9	0.7	0.8	1.5	-0.3	1.0	**10.3**
NH79	Letchworth Garden City	Workers Paths & Bridge	£2,116,000.00	2.0	1.2	0.6	1.4	1.2	1.0	-0.4	0.8	**10.2**
NH48	Baldock	North Road - Station Road	£1,645,000.00	2.0	1.3	0.7	1.7	0.7	0.8	0.0	0.7	**10.2**
NH17	Letchworth Garden City	Birds Hill & Works Road	£2,272,500.00	2.0	1.2	0.9	0.0	1.9	1.3	-0.1	0.7	**10.1**
NH34	Hitchin	Hermitage Road	£1,230,000.00	2.0	2.5	0.3	0.0	0.8	2.5	-0.3	0.8	**10.0**
NH44	Royston	Lower King Street	£542,000.00	2.0	2.0	0.2	1.6	0.6	1.0	0.0	0.2	**10.0**
NH3	Letchworth Garden City	Avenue One & Second Avenue	£3,211,000.00	1.8	1.8	0.0	0.0	2.0	2.2	-0.1	0.9	**9.8**
NH41	Baldock	Icknield Way & Norton Road	£731,000.00	2.0	1.4	0.8	0.8	0.8	1.4	-0.2	1.0	**9.8**
NH42	Letchworth Garden City	Jubilee Road	£2,180,000.00	1.8	1.8	0.5	0.0	2.0	1.5	-0.3	1.0	**9.7**
NH51	Letchworth Garden City	Norton Way (N & S)	£8,489,000.00	1.8	2.2	0.1	0.4	1.4	2.1	-0.2	0.7	**9.6**
NH6	Baldock	B656 Letchworth Road	£890,000.00	1.8	1.2	1.0	0.4	1.2	1.8	0.2	0.6	**9.4**
NH52	Hitchin	Old Hale Way & Arlesey Road	£4,156,500.00	1.6	1.5	1.0	0.9	1.4	1.6	-0.2	0.3	**9.4**
NH73	Hitchin	Walsworth Road	£3,206,500.00	2.0	1.9	1.0	0.0	0.6	1.8	-0.2	0.9	**9.3**
NH8	Baldock	B656 Whitehorse Street	£606,500.00	2.0	1.0	1.0	1.0	1.0	0.7	0.0	0.7	**9.3**
NH13	Hitchin	Bancroft	£2,708,000.00	2.0	2.2	0.0	0.0	1.0	2.2	-0.2	0.8	**9.2**
NH37	Baldock	Hitchin Street (Baldock)	£682,000.00	2.0	1.0	1.0	0.8	1.0	1.0	0.0	0.6	**9.2**
NH72	Royston	Tannery Drift - Green Drift	£310,500.00	2.0	1.3	0.3	1.3	1.0	0.3	0.0	0.7	**9.0**
NH20	Letchworth Garden City	Broadway	£6,565,000.00	1.7	2.1	1.0	0.1	0.3	2.0	0.2	0.7	**8.8**
NH27	Letchworth Garden City	Dunham's Lane & Sixth Avenue	£285,000.00	2.0	1.2	0.2	0.0	2.0	1.0	0.0	1.0	**8.8**
NH61	Royston	Queens Road - Mill Road	£803,000.00	1.8	1.8	0.0	0.8	0.7	1.8	0.3	0.5	**8.8**
NH18	Hitchin	Bridge Street (Hitchin)	£640,000.00	1.5	2.5	0.5	0.0	0.5	3.0	0.0	0.5	**8.8**
NH53	Royston	Old North Street - Kneesworth Street	£5,547,000.00	2.0	1.6	-0.6	1.2	1.0	1.6	-0.1	1.0	**8.7**
NH56	Letchworth Garden City	Other LGC Improvements	£2,320,000.00	1.4	1.8	0.4	0.9	0.8	2.2	0.0	0.9	**8.5**
NH65	Letchworth Garden City	Rushby Mead	£487,000.00	1.8	1.3	0.2	0.0	1.5	1.7	0.3	0.8	**8.3**
NH15	Letchworth Garden City	Bedford Road (LGC)	£1,565,000.00	2.0	2.0	0.3	0.0	0.7	2.0	-0.3	0.7	**8.3**
NH46	Royston	Melbourn St - Newmarket Road	£2,980,500.00	2.0	1.1	-0.2	1.9	0.6	0.8	-0.2	0.8	**8.3**
NH24	Baldock	Church Street & Sun Street	£112,500.00	2.0	1.8	1.0	0.0	0.0	1.8	0.3	0.8	**8.3**
NH70	Hitchin	Strathmore Avenue & Water Lane	£1,300,000.00	1.8	1.6	0.6	0.4	0.8	1.4	-0.2	0.8	**8.1**
NH21	Baldock	Bygrave Road	£637,500.00	2.0	1.0	0.0	2.0	0.3	1.0	0.3	0.0	**8.0**
NH68	Letchworth Garden City	Station Way	£1,060,500.00	1.7	2.1	0.3	0.0	0.4	2.2	0.2	0.7	**7.9**
NH76	Baldock	Weston Way	£1,098,500.00	1.9	1.0	0.6	0.1	1.4	1.3	0.0	0.7	**7.8**
NH31	Letchworth Garden City	Grange Road & Southfields	£366,500.00	1.4	1.2	0.6	1.2	0.8	1.8	0.0	0.6	**7.7**
NH39	Hitchin	Hollow Lane	£3,650,000.00	1.3	2.3	0.5	0.8	1.0	2.3	-0.8	0.3	**7.4**
NH4	Knebworth	B197 Corridor (Knebworth)	£4,087,500.00	2.0	1.1	1.0	0.0	0.6	1.4	-0.3	0.8	**7.3**
NH30	Letchworth Garden City	Gernon Road & Hillshott	£1,763,500.00	1.5	2.0	0.0	0.0	0.5	2.5	0.3	0.6	**7.3**
NH66	Baldock	South Road and Wallington Road	£4,256,000.00	1.4	1.6	0.4	1.4	1.2	1.8	-0.6	-0.4	**7.2**
NH60	Hitchin	Queen Street	£1,858,000.00	1.3	2.1	1.0	0.0	0.3	1.8	0.0	0.8	**7.1**
NH57	Knebworth	Park Lane - Station Approach - Station Road	£2,747,000.00	1.7	1.9	0.1	0.3	0.7	1.8	-0.4	0.5	**7.1**
NH59	Royston	Priory Lane & A10 Gyratory	£4,141,000.00	1.7	1.8	0.1	0.2	0.6	1.9	-0.4	1.0	**7.1**
NH77	Hitchin	Whitehurst Avenue & Ickleford Road	£1,928,500.00	1.7	2.2	0.0	0.0	0.2	2.3	0.3	0.5	**7.1**
NH55	Knebworth	Other Knebworth Improvements	£120,000.00	2.0	1.0	0.0	0.5	0.5	2.0	0.0	1.0	**7.0**
NH75	Baldock	West Ave & Pepys Way	£114,500.00	1.5	1.5	0.5	0.0	1.0	2.0	0.0	0.5	**7.0**
NH5	Baldock	B197 London Road (Baldock)	£2,730,000.00	1.3	1.4	1.0	0.1	0.4	2.6	-0.4	0.4	**6.4**
NH80	Baldock	Yeomanry Drive	£1,225,000.00	1.3	1.0	0.0	1.3	1.3	1.5	0.3	0.3	**6.4**
NH58	Letchworth Garden City	Pixmore Way	£3,589,500.00	2.0	1.3	0.0	0.3	0.4	1.6	-0.1	0.7	**6.1**
NH35	Letchworth Garden City	Highfield (including School Access)	£329,000.00	1.3	1.3	-0.3	0.0	2.0	1.8	-0.3	0.8	**6.0**
NH28	Letchworth Garden City	Eastcheap & Leys Ave	£720,000.00	1.4	1.8	0.2	0.0	0.4	1.8	0.0	0.8	**6.0**
NH43	Royston	London Road & The Warren	£719,500.00	2.0	1.3	-0.3	0.0	1.3	1.1	-0.1	0.4	**5.9**
NH19	Letchworth Garden City	Broadwater Avenue	£750,000.00	1.2	1.6	-0.8	0.0	1.4	2.2	-0.2	0.8	**5.4**
NH33	Knebworth	Gun Lane - Gun Road	£774,500.00	2.0	0.8	0.3	0.0	0.2	2.0	-0.3	0.8	**5.2**
NH25	Baldock	Crabtree Lane	£128,000.00	1.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	**5.0**
NH26	Hitchin	Dacre Road	£80,500.00	1.0	3.0	0.0	0.0	0.0	2.0	0.0	0.0	**5.0**
NH62	Hitchin	Radcliffe Road	£94,500.00	1.0	3.0	0.0	0.0	0.0	2.0	0.0	0.0	**5.0**
NH36	Hitchin	Hitchin Centre Routes	£444,500.00	1.5	2.0	-0.5	0.3	0.2	1.5	-0.1	0.6	**5.0**
NH63	Letchworth Garden City	Ridge Road & Path	£518,000.00	1.2	1.2	-0.3	0.0	1.1	1.2	0.0	0.9	**4.6**
NH69	Knebworth	Stockens Green	£157,000.00	1.3	0.7	0.0	0.0	0.0	2.3	0.0	1.0	**4.2**
NH71	Knebworth	Swangley's Lane	£68,000.00	1.0	1.0	0.0	2.0	1.0	1.0	0.0	-1.0	**4.0**
NH54	Hitchin	Other Hitchin Improvements	£750,000.00	1.0	2.0	1.0	1.0	0.0	1.0	-1.0	0.0	**4.0**
NH9	Baldock	Back Lane (Baldock - LGC Off-Road Link)	£820,000.00	0.0	2.0	1.0	0.0	2.0	2.0	1.0	0.0	**3.0**
NH9	Letchworth Garden City	Back Lane (Baldock - LGC Off-Road Link)	£65,000.00	0.0	2.0	1.0	0.0	2.0	2.0	1.0	0.0	**3.0**
NH74	Knebworth	Watton Road	£90,000.00	1.0	1.0	0.0	2.0	0.0	1.0	0.0	-1.0	**3.0**
NH64	Royston	Royston Centre Routes	£230,000.00	1.1	1.0	0.0	0.0	0.1	0.3	0.0	1.0	**2.6**
NH49	Letchworth Garden City	Norton Common E-W	£768,500.00	0.7	1.0	-0.3	0.0	0.0	1.3	0.0	0.3	**2.1**
Not applicable	*Not applicable*	*Not applicable*	Minimum Possible Score	0	-1	-1	0	0	-1	-2	-1	-6
Not applicable	*Not applicable*	*Not applicable*	Maximum Possible Score	2	3	1	2	2	3	1	1	15

Appendix J - Acronyms Used in this Report

(listed in alphabetical order)

BSIP	Bus Service Improvement Plan
CWZ	Core Walking Zone
CWIS	Cycling and Walking Investment Strategy
DfT	Department for Transport
GIS	Geographic Information System
HCC	Hertfordshire County Council
KNP	Knebworth Neighbourhood Plan
LCWIP	Local Cycling and Walking Infrastructure Plan
LGC	Letchworth Garden City
LTN 1/20	Local Transport Note 1/20 (Cycle Infrastructure Design)
LTP4	Local Transport Plan 4 (published by HCC)
NCGTP	North Central Growth and Transport Plan
NCN	National Cycle Network
NHDC	North Herts District Council
PCT	Propensity to Cycle Tool
ROW	(Public) Rights of Way
RST	Route Selection Tool (a DfT tool developed for LCWIP audits)
SMS	Speed Management Strategy (supporting document to LTP4)
STT	Sustainable Travel Town
WRAT	Walking Route Audit Tool (a DfT tool developed for LCWIP audits)
WSP	WSP UK (the engineering consultancy firm)

This page is intentionally left blank