Harlow and Gilston Garden Town LCWIP

Final Report

May 2021

Project Code: 03882

PJA
70 Cowcross Street
London
EC1M 6EJ
pja.co.uk

Contents

Appendices

1 Introduction

1.1 Introduction to Harlow and HGGT

1.1.1 The Harlow and Gilston Garden Town (HGGT) authority partnership has commissioned PJA to undertake an LCWIP in Harlow on behalf of a consortium of local authorities: Harlow and Gilston Garden Town (lead client), Epping Forest District Council, Essex County Council, Harlow District Council, Hertfordshire County Council, and East Hertfordshire District Council.

1.1.2 The Harlow and Gilston Garden Town (HGGT) was designated as a Garden Town in 2017, with East Herts, Epping Forest and Harlow District Councils, and Essex and Hertfordshire County Councils working together to deliver new and support existing communities in and around Harlow. Growth in the Garden Town is being planned to deliver at least 23,000 new homes following Garden City principles. At least 16,500 homes will be built in new communities to the north (Gilston Area), south (Latton Priory), east (East of Harlow) and west (Water Lane) of Harlow (collectively referred to as the new Garden Communities). Employment clusters and job growth will be dispersed throughout the Garden Town, including in the town centre, Enterprise Zone sites and employment areas as well as in the new communities.

Figure 1-2: Examples of Harlow's existing walking and cycling routes: Traffic-free route (Harlow Fields), Grade separated walking and cycling route (First/Fifth Avenue), Bi-directional cycle track (First Avenue), Shared use track (Southern Way)

1.1.3 The multi-partite nature of the project's commissioning group reflects Harlow's position in Essex: close to the boundary with Hertfordshire, and with significant housing growth allocated in the neighbouring districts of Epping Forest and East Hertfordshire together with growth in Harlow forming the Harlow and Gilston Garden Town. This includes four new Garden Communities

comprising the Gilston Area in East Herts, Latton Priory and Water Lane in Epping Forest District and East of Harlow extending between the districts of Harlow and Epping Forest.

1.1.4 Sustainable transport policy has been set out in three Local Plans and the two county Local Transport Plans. A key policy within the local policy framework is the need for development to consider a modal hierarchy which prioritises walking and cycling, public transport, over private motor vehicles. This policy is reiterated within the HGGT Transport Strategy which also outlines ambitious targets for sustainable mode share across the Garden Town (50%) and within the new Garden Town communities (60%). The below excerpt from the HGGT Transport Strategy provides additional information of existing commuting travel behaviours.

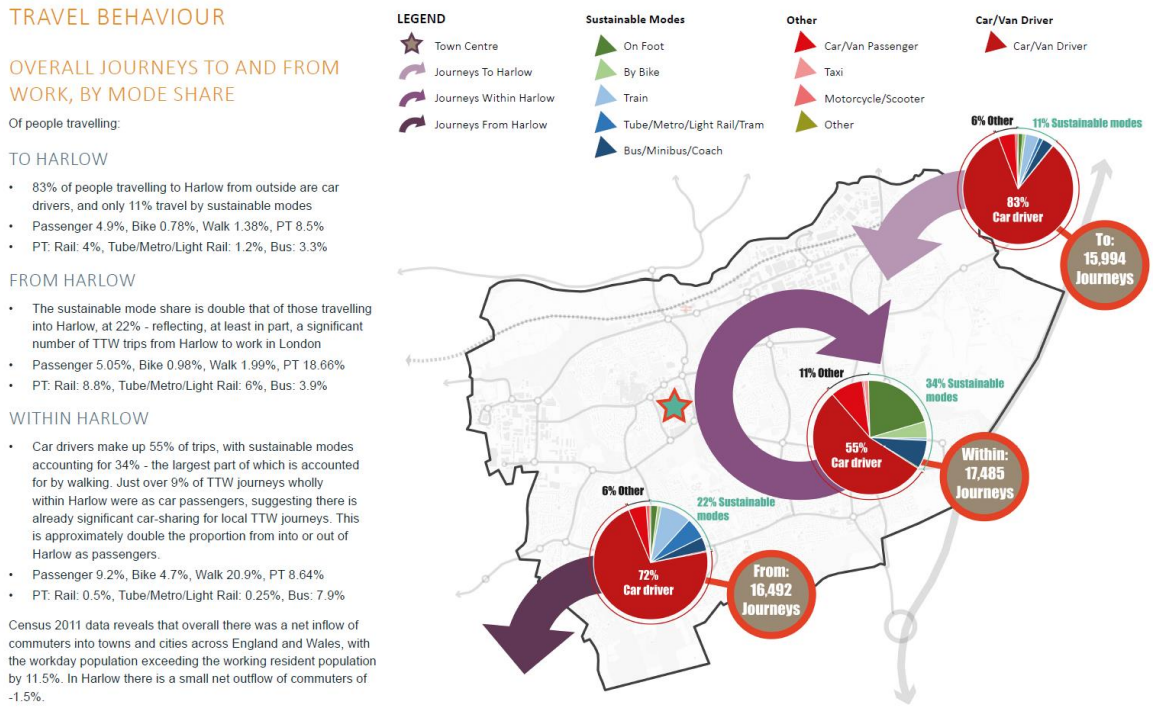

Figure 1-3: Excerpt from HGGT's 2019 Transport Strategy

1.1.5 The HGGT LCWIP builds upon the existing Harlow Cycling Action Plan by including analysis and recommendations for pedestrian infrastructure alongside a more focused and strategic network of cycling routes that account for – and interface with – future development sites in the Garden Town. The HGGT LCWIP has allowed much of the existing cycle network development to be validated and continued, rather than repeating any efforts.

1.1.6 The HGGT LCWIP will sit under the overarching HGGT Transport Strategy providing an evidence base for the development of other work such as the Infrastructure Delivery Plan, Harlow town centre regeneration and Sustainable Transport Corridors. The below plan provides an overview of the HGGT Transport Strategy Evidence Base and the supporting documents.

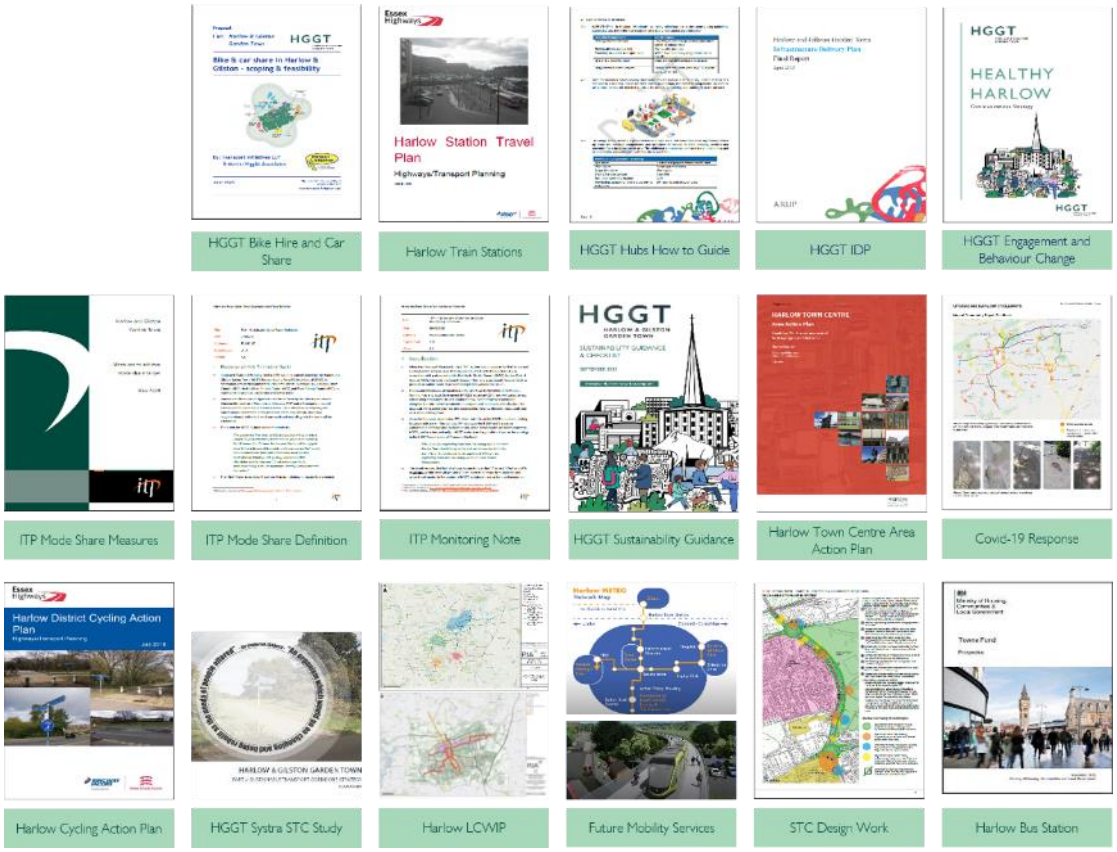

Figure 1-4: Overview of HGGT Transport Strategy Evidence Base

1.2 Introduction to LCWIPs

1.2.1 An LCWIP is a Local Cycling and Walking Infrastructure Plan that identifies priority investment in new infrastructure to support greater number of people making journeys on foot or on cycle. LCWIPs should identify infrastructure interventions over a short, medium, and long-term horizon that meet the transport objectives of the HGGT Transport Strategy, as well as existing and new residents, visitors and commuters.

1.2.2 The process for undertaking an LCWIP is set out in the Department for Transport's (DfT) process guidance, issued in 2017 as part of the Cycling & Walking Investment Strategy (CWIS). A fundamental aim of an LCWIP should be to help meet the government's aspiration of doubling the number of journeys undertaken by walking or cycling, and as such planning infrastructure around existing or forecast travel patterns is a core principle of an LCWIP. A key consideration in the development of an LCWIP is understanding existing conditions for active travel, and how these facilities can be incorporated into the LCWIP networks. The below images illustrate how Harlow already has some high quality walking and cycling infrastructure.

1.2.3 Harlow's LCWIP has therefore considered both the existing urban area and the new Garden Communities. It has also taken into account the emerging proposals for the town centre, which is likely to see a step change in the quality of the street environment in the town centre. These proposals will shift the town centre from its current retail focus towards a more diverse land use strategy to include a better mix of housing and more leisure and cultural activities. This is consistent

with many other town centres across the country that have responded to a change in shopping habits with the rise of the internet, and a renewed desire among many people to live in the heart of a town or city, close to amenities and public transport links.

1.2.4 The key outputs of an LCWIP are as follows:

- A network plan for walking and cycling which identifies preferred routes and core zones for further development (Appendix A combines all GIS mapping completed for the LCWIP)
- A prioritised programme of infrastructure improvements for future investment
- A report which sets out the underlying analysis completed to support the LCWIP's development and recommended LCWIP network

1.2.5 LCWIPs are produced with a ten year timeframe for delivery, however the DfT's intention is that the documents are flexible and therefore should be considered as 'live' documents. This provides local authorities with the flexibility to update their network plans to reflect local changes, including new development sites, funding opportunities and additional routes. On this basis, whilst the plan has recommended initial sites in the town, future work streams should consider expanding and evolving these initial proposals to ensure that a consistent high quality of walking and cycling infrastructure is provided across Harlow.

1.2.6 This LCWIP has identified an initial nine priority LCWIP cycling corridors and four Core Walking Zones in Harlow. Design interventions have been identified for each of the corridors and zones in order to improve conditions for walking and cycling. A programme of investment has been costed and prioritised in order to determine packages over short, medium and long-term funding horizons, consistent with Essex's Advanced Scheme Design (ASD) multi-criteria analysis. The recommended design measures for the LCWIP routes are based on the below principles which have been derived from the DfT's Local Transport Note 1/20:

- **Coherent**: Develop routes which help overcome severance, such as main roads and railway lines, to improve the integration and coherence of the town's existing walking and cycling facilities
- **Direct**: Provide direct and intuitive routes which minimise deviation from natural desire lines, ideally provide routes which are shorter than the equivalent vehicle trip to further increase the convenience of walking and cycling
- **Safe**: Promote walking and cycling facilities that minimise interaction with vehicular traffic: providing protected facilities on routes with higher volumes of vehicular traffic, and developing low-traffic environments in local and residential settings
- **Comfortable**: Provide high quality and well maintained walking and cycling facilities which provide comfortable width for the anticipated number of trips. Avoid the need for creating shared facilities which compromise the level of service for both walking and cycling

- **Attractive**: Develop a network which encourages more people to walk and cycle in attractive and safe environments

1.2.7 Figure 1-5 summarises the geographic extents of the LCWIP's recommended core walking zones and cycling corridors. The LCWIP is a document that will assist highway and planning authorities in obtaining monies from funding partners such as government, local enterprise partnerships and property developers. It is worth noting that the DfT considers LCWIPs to be live documents and therefore modifications/additions to the routes identified in this LCWIP should be included if they help to enhance the initial LCWIP network.

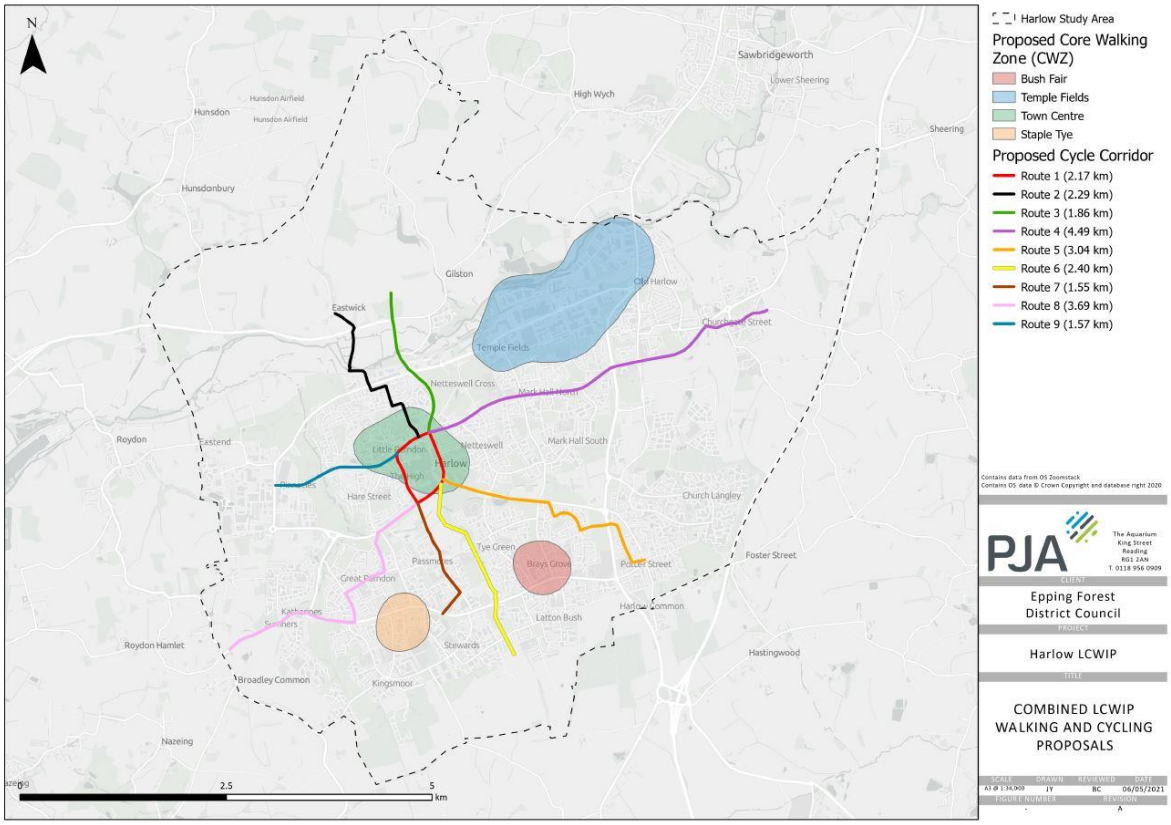

Figure 1-5: Combined LCWIP Walking Zones and Cycling Corridors

2 LCWIP process overview

2.1 Introduction

2.1.1 This chapter provides an overview of the LCWIP process and how it has been applied in Harlow. The DfT technical guidance for authorities developing an LCWIP sets out a methodical approach to the planning and delivery of cycling and walking infrastructure and the process is based on the six stages listed below.

LCWIP 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.

Table 2-1: LCWIP stages from DfT technical process guidance

2.1.2 LCWIPs should be evidence-led, and comprehensive. An LCWIP should identify a pipeline of investment, ideally over a ten year period, so that a complete cycling network is delivered at an appropriate geography (see LCWIP Stages 1 and 2) and that walking and cycling improvements are delivered coherently, in particular within core walking zones (see Stage 4 – Planning for Walking). The goal of an LCWIP should be to increase the use of cycling and walking, which means looking at routes and areas where more people could choose these modes in preference to other means of travel. Therefore, an LCWIP should consider travel demand regardless of mode, rather than looking just at existing walking and cycling trips.

2.1.3 The geographic scope for the cycling element and walking elements need not be the same, but there can be efficiencies where cycling infrastructure also considers walking and vice-versa, and planning them together can avoid one mode compromising the other. There are several instances within the HGGT LCWIP where proposed walking and cycling schemes overlap.

2.1.4 The development of the HGGT LCWIP has been guided by input from HGGT project officers and the wider Partner Authorities. Virtual engagement sessions were also hosted with Members, Developers and local walking and cycling groups during the development of the LCWIP.

3 Local Context

3.1 Introduction

The purpose of this chapter is to provide a short overview of the history of Harlow and the context for the development of the LCWIP.

3.2 1947 New Town Masterplan

3.2.1 Harlow is a new town, built in the years after World War Two to support renewal of and overspill from London. As a planned town, it has a loose grid of primary circulation roads with local distributor roads feeding off them (see Figure 3-2). These link to clusters of discrete neighbourhoods, served by three major neighbourhood centres in addition to the main town centre and smaller shopping parades. Employment land uses are clearly zoned although there are small pockets of employment uses in the local centres and town centres in addition to the retail and services provided there. Harlow New Town subsumed the villages of Old Harlow and Potter Street, which retain many shops and local services.

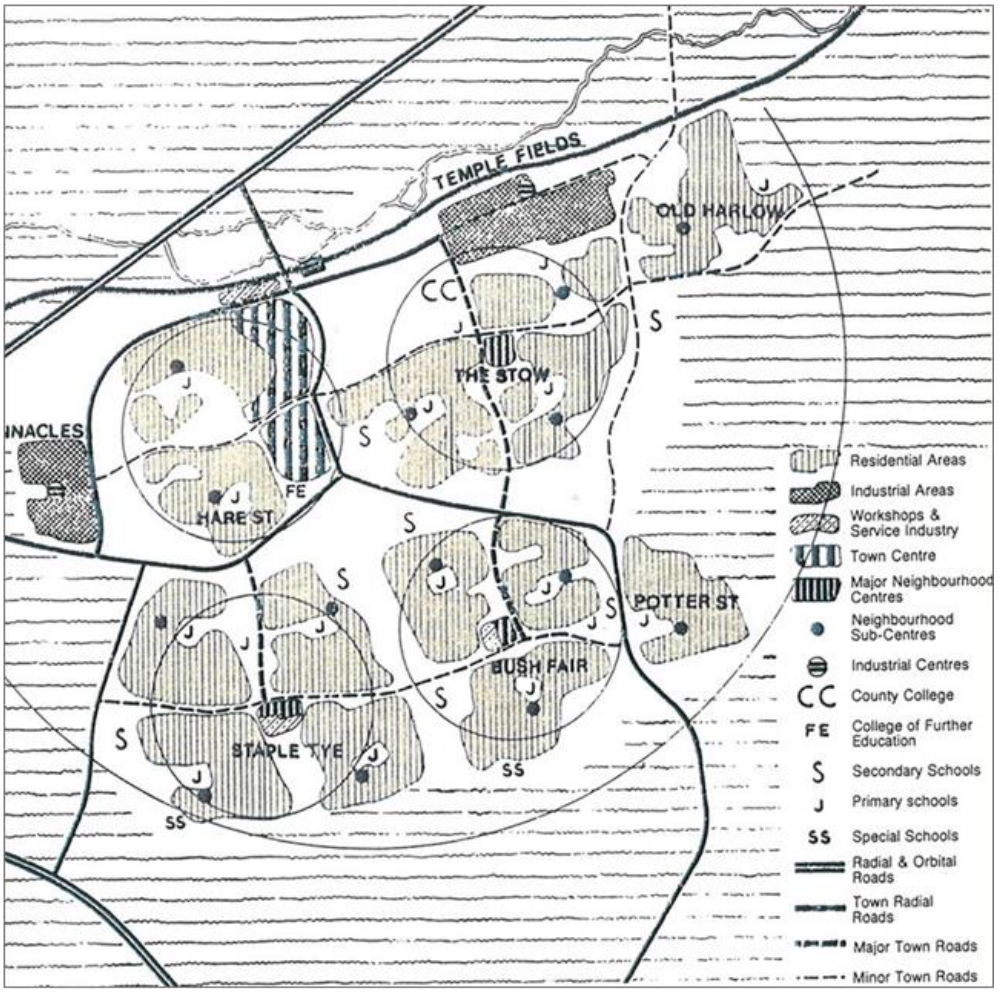

Figure 3-2: Harlow Masterplan (from 'The Design of Harlow', (F Gibberd, 1980)

3.2.2 Before the planned development of Harlow New Town, the area was largely fields with dispersed farmsteads and manors. The commercial centre grew around Old Harlow's medieval market square and the more informal Churchgate Street to the south-east. The population grew from 1,514 people in 1801 to 3,471 in 1931, which is small in comparison to the 60,000 people for whom the new town was planned (later this increased further to 90,000). Frederick Gibberd's vision and masterplan for Harlow New Town reflected the New Town ethos of the 1940s, drawing inspiration from the earlier Garden City movement and the drive to provide high quality and spacious homes with access to clean air and open space.

Figure 3-3: Example of a grade-separated junction underneath Fifth Avenue

3.2.3 The 1952 masterplan was based on three fundamental principles - an essentially human environment (that the design should be based on the pedestrian); an urban atmosphere; and the principle of evolution. According to Gibberd, "the third predicted a flexible approach. The first two were basic to the concept of new towns". Based around these principles, a comprehensive cycling and walking network was therefore planned and built with the new town. This generally consists of dedicated cycleways, separated both from pedestrians and motor vehicles, exhibiting the earliest use of this type of segregation that was later copied by Dutch planners and engineers retro-fitting their cities and building new towns from the 1970s onwards. The examples illustrate the typical walking and cycling infrastructure that was installed in Harlow during this period.

'An organism which would go on changing and being rebuilt as the needs of the people altered'

(Sir Frederick Gibberd)

3.2.4 Where available, these routes can offer seamless and direct walking and cycling connections through the town with minimal interaction with vehicular traffic. The cycling and walking network makes extensive use of grade separation where cycle routes and footpaths are routed under main roads through underpasses which reduces interactions with vehicular traffic. Harlow's cycling and walking network also follows what is called a "displaced grid" approach, meaning they do not always share the same route as the equivalent corridor for vehicular traffic, making use of paths in the town's many green wedges, or old roads that were superseded by the New Town, e.g. Netteswell Road (now part of National Cycling Route 1).

Figure 3-4: Protected cycle track and footway alongside Second Avenue

3.2.5 Such isolated routes in green space or in subways are not attractive to all potential users due to fears of social safety and lack of passive surveillance especially at night or if lightly used. These routes are also hard to follow, as tree cover and earthworks remove people's ability to orientate themselves within the landscape and built environment. Furthermore, new users who may be accustomed to following vehicular routes would not necessarily be aware of the availability of convenient cycling and walking routes if they are hidden from view. Finally, the quality of the Harlow's original cycling network has not been maintained as the town has expanded or new development built, leading to the feeling of a disjointed and incomplete network.

3.2.6 Nevertheless, the core of the historic network gives Harlow an advantage compared to more historic settlements as there is an established network of infrastructure to build upon. Furthermore, Gibberd's flexible approach with generous highway verges in places means there is scope to update existing highway geometries considerably to accommodate improved walking and cycling facilities. The below figure summarises the distribution of the town's existing off-road cycle network.

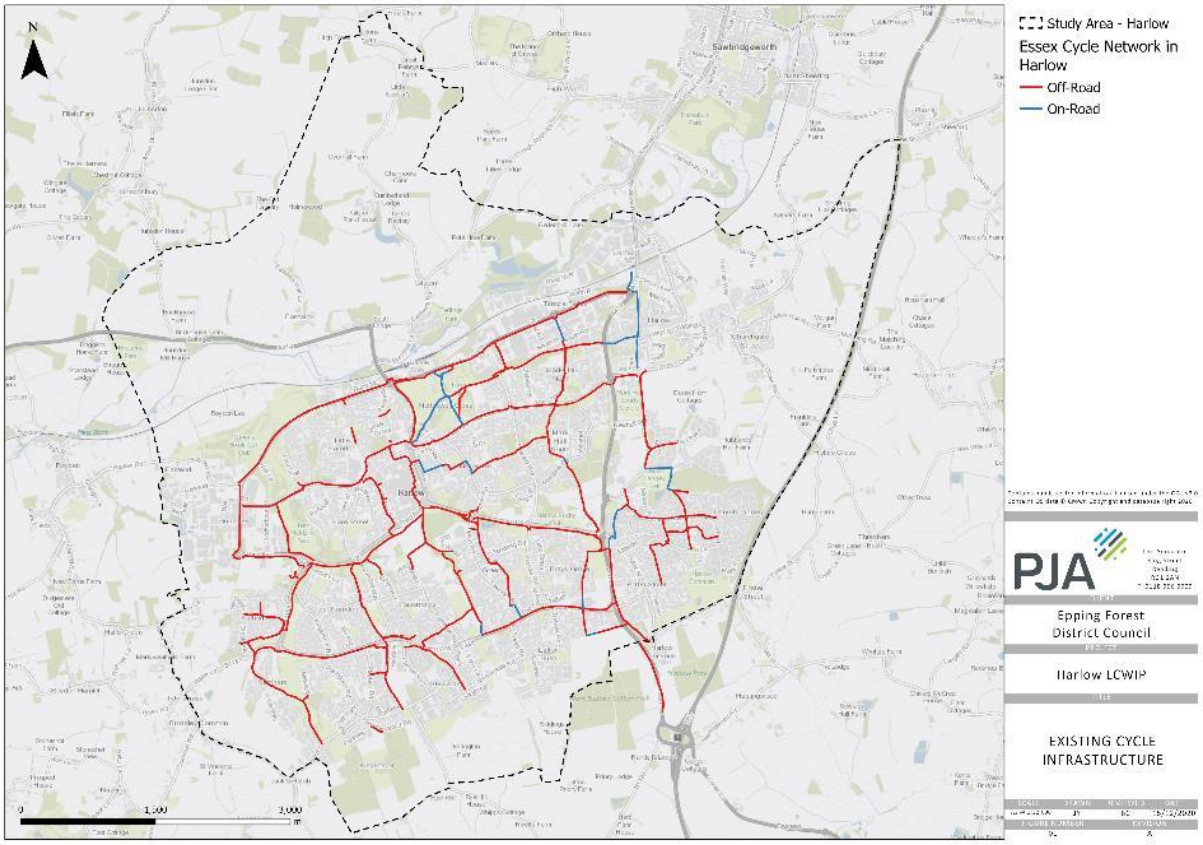

Figure 3-5: Existing Cycle Network

3.2.7 Furthermore, Harlow benefits from being a relatively compact town and the below figure illustrates how a majority of the existing town is within a 20 minute cycle of the town centre. The isochrones are developed using the existing highways network and it is reasonable to assume therefore that the isochrones would have a wider coverage if they considered off-road cycle routes in the town.

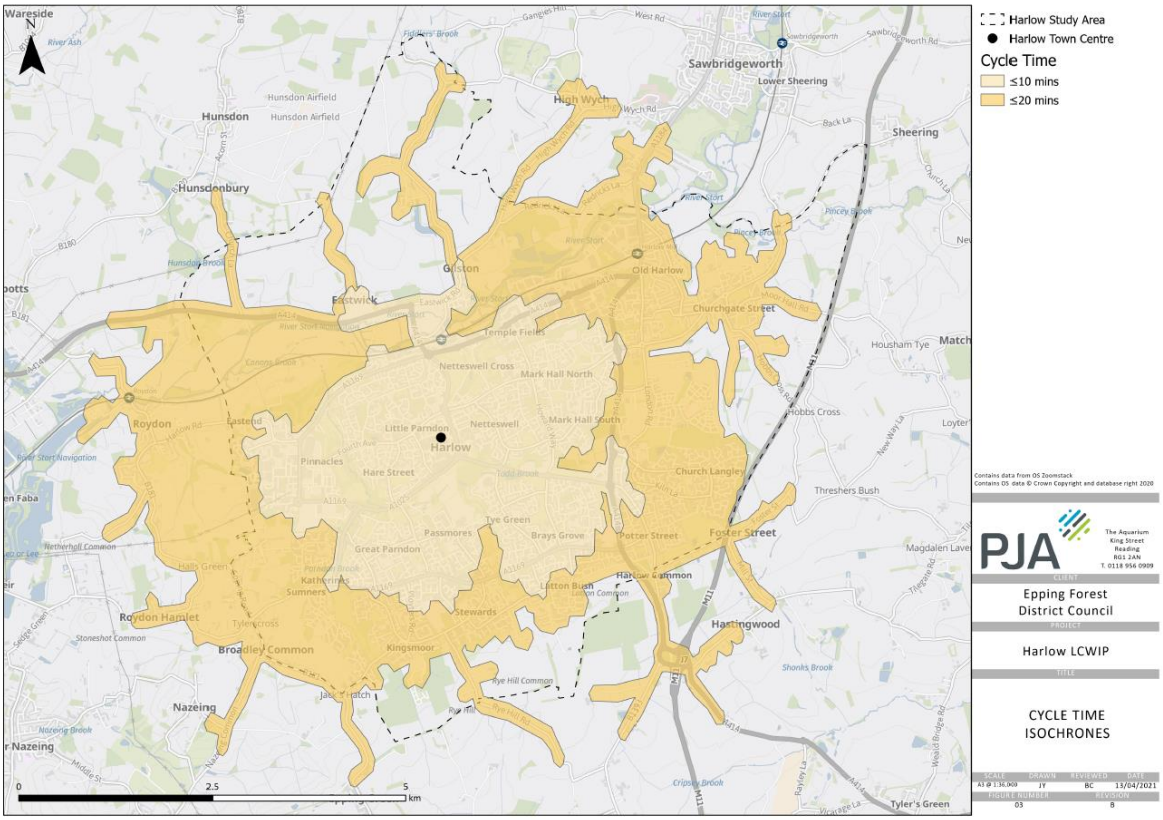

Figure 3-6: Cycling isochrone from Harlow Town Centre

3.2.8 Harlow does not have any meaningful outer orbital route for through traffic, so vehicles making longer journeys such as Hertford to the M11 or Chelmsford will pass through the town on the A414. However, this will be mitigated to an extent through the development of a new junction (J7A) on the M11.

3.2.9 While Harlow has traditionally had a good bus service, this is focused heavily on the town centre. The major employment area of Templefields is poorly served (highlighted below) with the nearest bus stops in current service lying on First Avenue to the south or Station Road to the east.

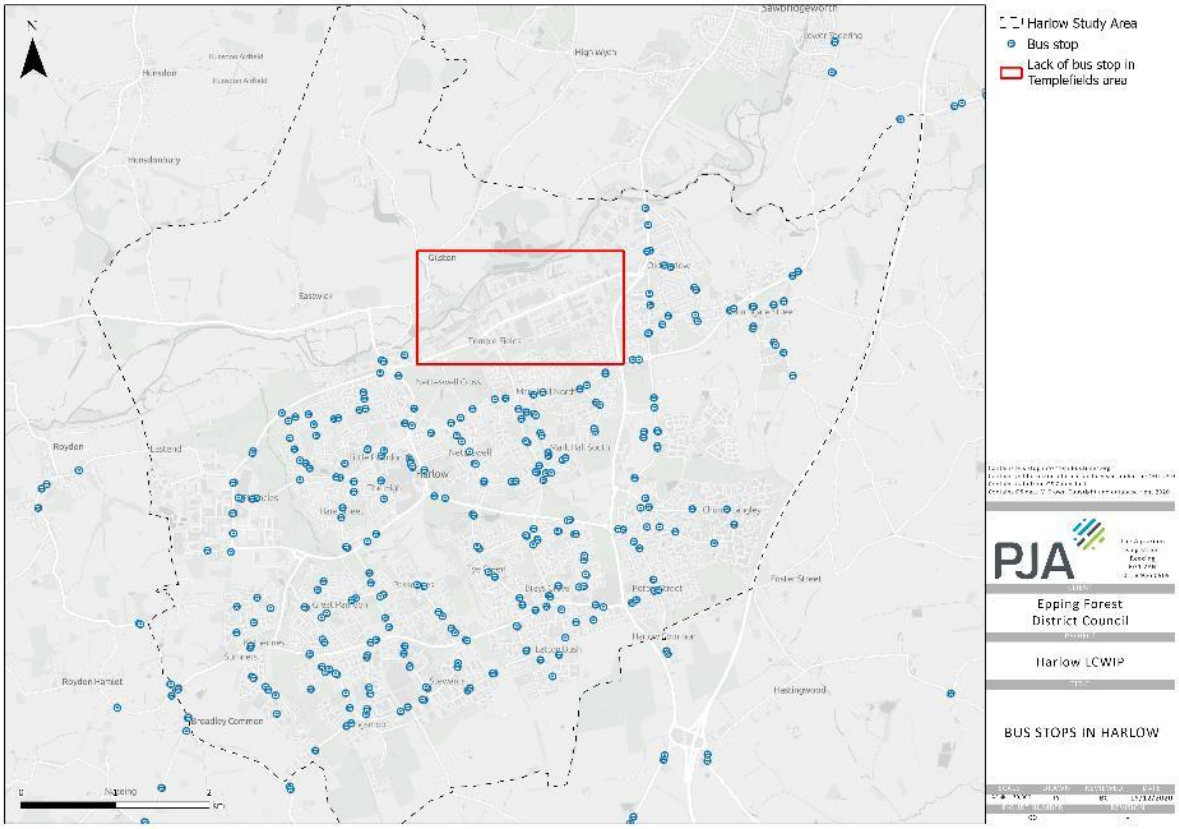

Figure 3-7: Extract of bustimes.org bus stop maps with Templefields area (highlighted in red) highlighting lack of bus stop facilities

3.2.10 Planning for largely road-based mobility means Harlow was not built around its railway access, and consequently the town's train stations lie at the northern edge of the town. However, Harlow sits at the centre of the London-Stansted-Cambridge "growth corridor" with good rail links to London Liverpool Street, Stratford, Tottenham Hale, the Lea Valley, Bishops Stortford, Stansted and Cambridge.

3.3 Policy Context

It is important to understand the local policy context as there are a series of guidance documents and major projects which will directly interface with and influence the outcome of the LCWIP.

3.3.1 National Policy Context

The national policy context for active travel has changed significantly in 2020 with the DfT's publication of 'Gear Change' and the revised Local Transport Note 1/20 'Cycle Infrastructure Design'. These two polices outline significant changes for the future of transport planning and design in the UK and the prioritisation of measures that encourage increased levels of walking and cycling.

> *'We want – and need – to see a step change in cycling and walking in the coming years. The challenge is huge, but the ambition is clear. We have a unique opportunity to transform the role cycling and walking can play in our transport system, and get England moving differently'*
>
> (Gear Change, 2020)

These new documents both fully endorse the Local Cycling and Walking Infrastructure Plan (LCWIP) and Low Traffic Neighbourhood (LTN) approaches as means to help improve conditions for walking and cycling.

3.3.2 Harlow and Gilston Garden Town

3.3.3 Harlow and Gilston was designated as a Garden Town by the Ministry for Homes, Communities and Local Government in January 2017 and will comprise new and existing communities in and around Harlow. Set in attractive countryside, with transformative investment in transport and community infrastructure, new neighbourhoods to the east, west and south and new villages to the north will be established. Garden towns are defined as:

- a purpose built new settlement, or large extension to an existing town
- a community with a clear identity and attractive environment
- it provides a mix of homes, including affordable and self-build
- planned by local authorities or private sector in consultation with the local community

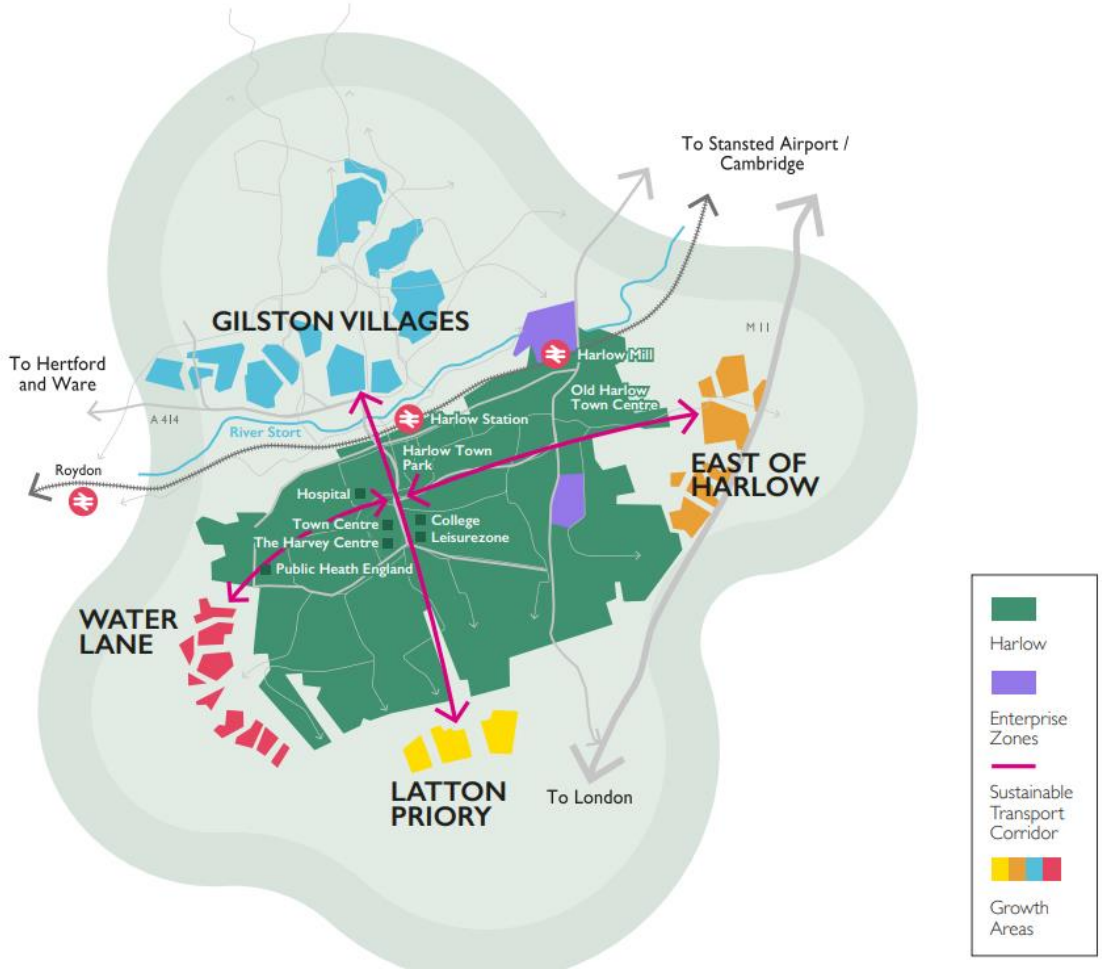

Figure 3-8: Overview of new garden communities providing forming part of the garden town

3.3.4 The Garden Town Vision includes a key principle for integrated sustainable transport, in which walking, cycling and public transport are the most attractive options. The Vision is for a Garden Town with local centres accessible by walking and attractive routes that encourage people to move actively and are inclusive to all abilities. As well as building new homes, the communities develop:

- Employment opportunities
- attractive green space and public realm areas
- transport infrastructure, including roads, buses and cycle routes
- community infrastructure, schools, community and health centres
- a plan for long-term stewardship of community assets

3.3.5 The quantum of new housing development expected to be delivered by HGGT is as follows:

- Approximately 9,000 within Harlow
- Approximately 3,350 new homes at East of Harlow
- Approximately 1,050 new homes at Latton Priory
- Approximately 2,100 new homes at Water Lane
- Approximately 10,000 new homes at Gilston

3.3.6 To accommodate this growth, a Memorandum of Understanding (MoU) of Highways & Transportation Infrastructure for the West Essex / East Hertfordshire Housing Market Area has been produced that identifies a number of required schemes including:

- Upgrade M11 Junction 7 and construct new Junction 7a
- A414 corridor through Harlow (sections not currently either being upgraded or programmed for upgrading)
- The provision of a second River Stort crossing to relieve the Harlow network and also help provide capacity for the provision of a north/south Sustainable Transport Corridor
- Potential relocation of Princess Alexandra Hospital (site to be confirmed) or redevelopment of existing site
- Multi-modal sustainable corridors, north-south and east-west through Harlow town

3.3.7 **Harlow Town Centre Masterplan**

3.3.8 The HGGT LCWIP supports the policies of adopted and emerging development plans of Harlow (Adopted, December 2020), Epping Forest (submission version 2017) and East Herts (Adopted, October 2018) District Councils. These Local Plans include key Garden Town policies on growth

levels, the new communities, infrastructure and transport, supporting the ambition for the HGGT to achieve transformational growth through modal shift.

3.3.9 Harlow Town Centre regeneration masterplanning and guidance is being prepared to guide the development and regeneration of Harlow town centre. The proposals will take into account the key role the town centre plays in the Harlow area, and the need to consolidate and diversify its retail provision as a result of housing growth. The aim is to create conditions for a resilient, successful centre. The masterplan approach will seek a selection of desired outcomes, including *"an inclusive and accessible destination with excellent transport links capitalising on Harlow's strategic location".* Improving intra-town trips in the garden town by active and sustainable modes will be a key objective and the LCWIP will help to support the realisation of this vision.

3.3.10 Similar to many town and city centres across the UK, shifting economic trends have had, and continue to have, a profound impact on the performance and prosperity of Harlow Town Centre. The Town Centre has experienced a decline in its national retail ranking from 168th in 2012 to 185th in 2017 (Harlow Town Centre Market Analysis Final Report, May 2017). Although policies already exist which establish the primacy of the Town Centre and seek to protect and enhance its performance, the planning process has the potential to play a more proactive role in strengthening the vitality and viability of the Town Centre and enabling regeneration. The preparation of a more specific set of planning policies presents an opportunity to create the conditions for a resilient, successful centre.

3.3.11 The preparation of a masterplan and specific guidance presents an opportunity to create the conditions for a resilient, successful centre. The Town Centre masterplan, in combination with the Harlow Local Development Plan (and other guidance) will enable Harlow Council alongside wider stakeholder, landowner and developer partners to plan positively for managed change and a sustainable, coordinated approach to growth, including improved transport provision.

3.3.12 The preparation of a town centre masterplan and specific guidance will sit alongside the Harlow Local Development Plan. This and other guidance will provide a spatial planning framework to guide development and secure the regeneration of the town centre for the period up to 2033. This will take into account the key role the Town Centre performs across the wider Harlow area, reinforced by the need to accommodate additional retail provision, arising from increased housing growth being brought forward. National policies state that the purpose of the planning system is to contribute to the achievement of sustainable development, which has three roles:

- An economic role by contributing to a strong, responsive and competitive economy.
- A social role by supporting strong, vibrant and healthy communities.
- An environmental role by contributing to the protection and enhancement of the environment

3.3.13 Sustainable Travel Corridors

3.3.14 A key ingredient of the vision for HGGT is a network of Sustainable Transport Corridors (STCs) connecting the four growth areas to the rest of Harlow, converging at the town centre. The STC alignments were incorporated into the LCWIP network development as it is likely that alignments will be combined at some locations in the town. The HGGT Sustainable Transport Corridor Strategy outlines the six key project objectives:

- An average of 50% of all journeys are made by active and sustainable modes across the town with 60% in the new garden communities.
- High quality, rapid, and high frequency public transport that competes with single occupier car journeys.
- Harlow and Gilston has a strong walking and cycling culture and most people can identify somewhere they love to walk or cycle to.
- Easy to access, convenient and inclusive active and sustainable travel is available to all, and seen as the first choice.
- The walk and cycle network and associated public spaces are used by all communities and they bring communities together.
- The transport network is resilient and can accommodate and respond to changing technologies and associated opportunities

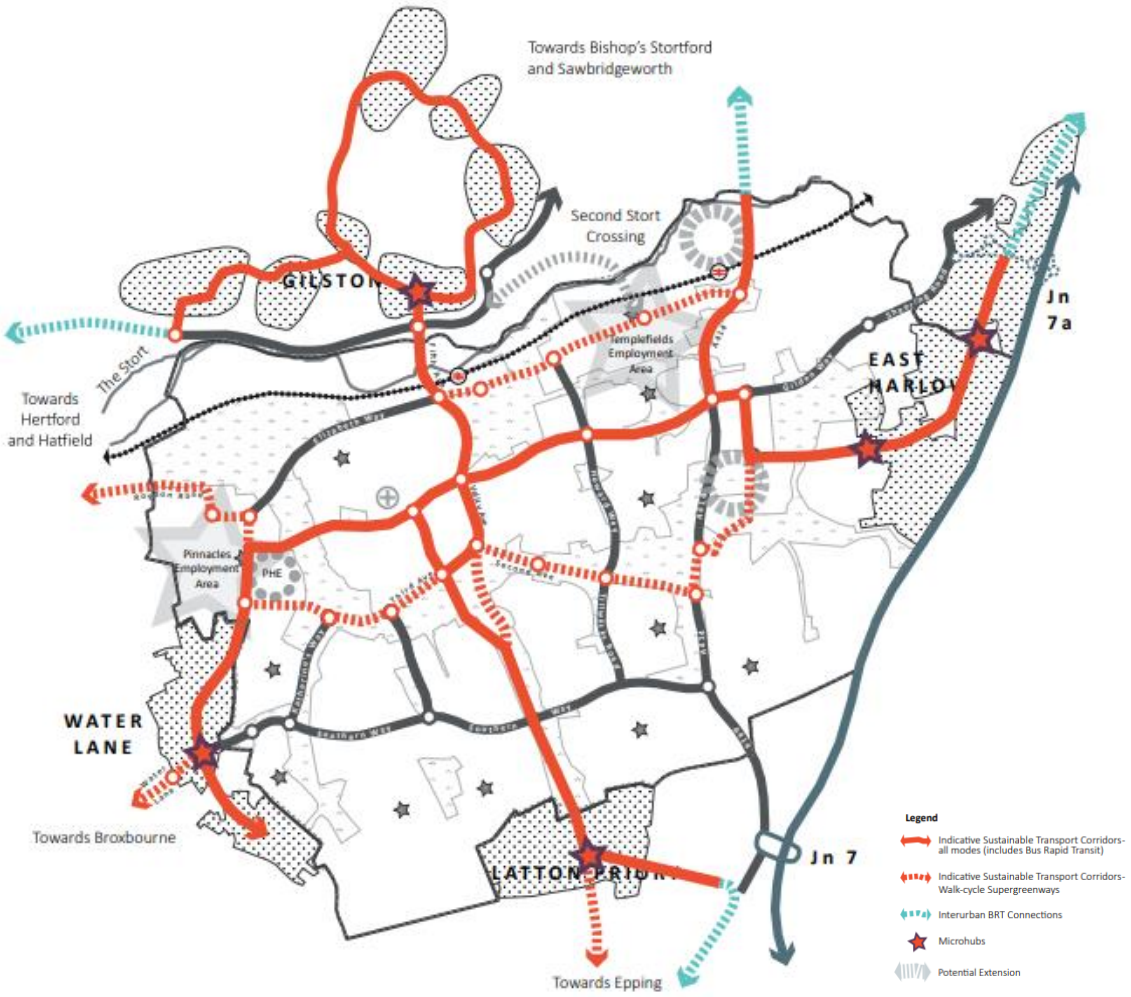

Figure 3-9: Indicative Sustainable Transport Corridors and Inter-Urban BRT connections

3.3.15 The STCS recommends the delivery of a Bus Rapid Transit (BRT) system running along the Sustainable Transport Corridors within the town. The BRT could potentially serve destinations outside the urban area, such as Broxbourne, Epping and Stansted Airport. A core BRT network also presents the opportunity to re-think the conventional bus network, which would provide a different service offer, including:

- New cross-town services (presently the vast majority of routes terminate at Harlow Bus Station)
- Integrated timetables to facilitate interchange
- Re-serving the London Road EZ
- Reacting to the potential relocation of the hospital away from the town centre.

3.3.16 While traditional private operator led public transport networks have dominated the service offer since de-regulation in the 1980s, new powers under the Bus Services Act 2017 could help

authorities shape bus services in a more integrated way. The shock to the system of Coronavirus and the necessary social distancing also presents a revenue opportunity to operators to work with potential franchising local authorities, whereas previously the bus industry has been somewhat sceptical to franchising.

3.3.17 The STCS also acknowledges the opportunity to deliver a core network of very high-quality walk-cycle "Super-greenways", and the need to change hearts and minds. The alignment of the potential corridors has been incorporated into the LCWIP network development and design workshops were hosted at the project outset between representatives of the STC design team and LCWIP project team.

4 Stage 1: Determining Scope

4.1.1 The focus of the LCWIP is on the existing Harlow town and includes the emerging Garden Town communities at Gilston, Latton Priory, Water Lane, and East of Harlow. Because of the different trip distances associated with each mode, walking and cycling have been analysed separately, but using a common set of data and methodology.

4.2 Cycling

4.2.1 The geographic scope for cycling element of the LCWIP was identified by using a 5km radius (20mins bike ride) from the existing town centre as shown in Figure 4-2 and includes the new Garden Communities. This approach for defining the geographic scope is consistent with the method used in Essex's previous LCWIPs and the DfT guidance.

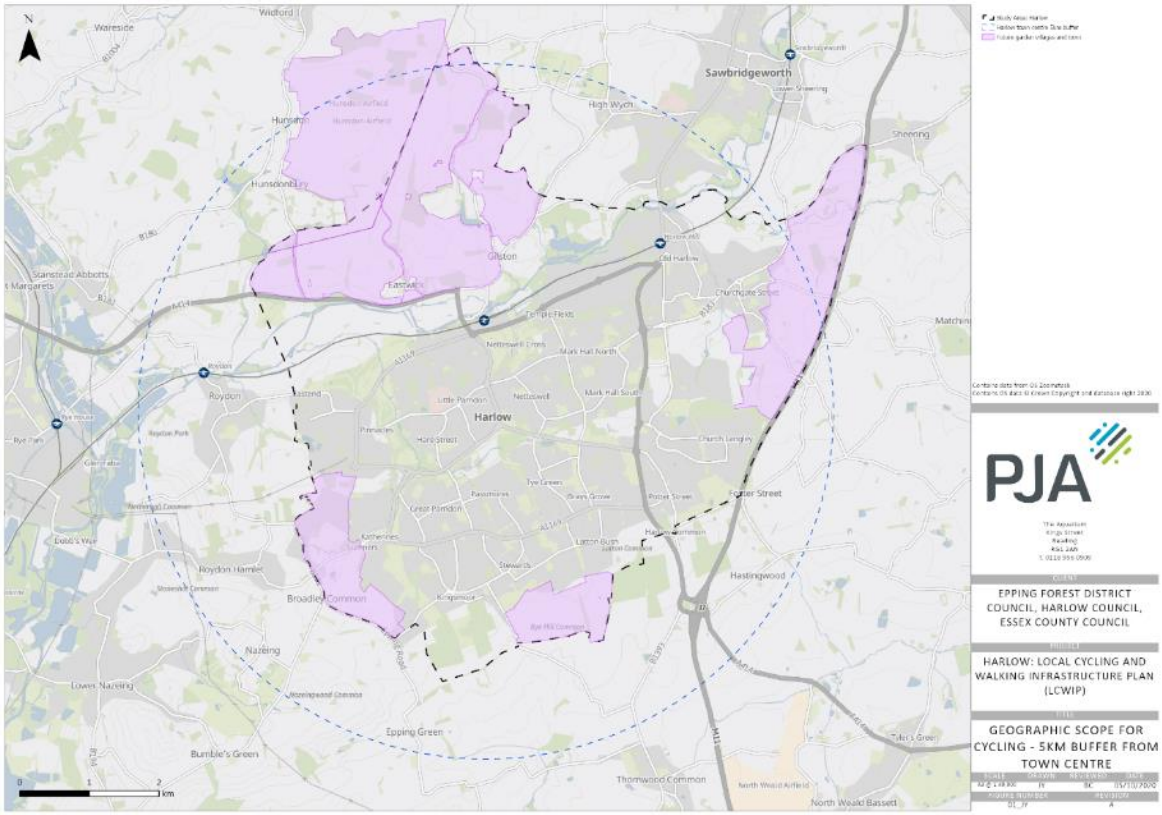

Figure 4-2: 5km radius from town centre including four garden town sites

4.3 Walking

4.3.1 The scope of the walking followed the same study boundary as above; however the geographic scope was further refined in Stage 4 through the identification of Core Walking Zones in the town. This process was through a process of destination clustering, which identified a long-list of seven areas where there was a cluster of desire lines - this is explained further in Section 7.1.

5 Stage 2: Data Gathering

5.1.1 DfT guidance recommends that a broad range of information should be gathered to inform the preparation of the LCWIP. It is recommended that information covering the following themes is provided:

- Transport network;
- Travel patterns;
- Location of significant trip generators; and
- Existing barriers to cycling and walking.

5.1.2 PJA's analysis of the existing transport network and travel behaviour are included in Appendix A and Appendix B respectively.

5.1.3 Existing barriers to cycling have been identified in advance of the LCWIP in ECC's Harlow Cycling Action Plan (HCAP), a gap analysis of the existing network, setting out a road map to a future aspirational network. During the LCWIP, a walking stakeholder workshop with walking groups captured high-level issues and opportunities in respect of the walking network and cycling improvements.

5.1.4 These two elements are set alongside the travel demand evidence base. Further appraisal of the walking and cycling network has been undertaken in the next two stages of the process.

5.2 Origin + Destination data

5.2.1 Understanding the relationship between Origins and Destinations is essential in developing LCWIP networks that respond to the local context. Both the walking and cycling networks were developed around desire lines which were generated by pairing all origin and destinations points within the existing town and also to future developments. This approach enables the LCWIP to provide for both existing and future anticipated demand for increased levels of walking and cycling. ECC have used O-D analysis extensively in the development of the county's previous LCWIPs and the Harlow approach therefore was developed to be consistent with Essex's previous LCWIPs.

5.2.2 To develop the spatial relationship between origins and destinations, the study area was divided into a grid of interlocking hexagons with each hexagon is 0.25km^2 in size (Figure 5-2). In previous LCWIPs, ECC used the below criteria to identify the Origin Hexagons (shown with black dots overleaf):

- Hexagons having more than 50 percent of its area within a housing growth, or
- Containing the population weighted centroid of a Lower Level Super Output Area (census reporting district of 1,000-3,000 population) AND where the hexagon centroid is less than 30m from the road network

5.2.3 The criteria were applied to Harlow however this approach excluded many areas within the town, including the Garden Town communities, as they did not satisfy ECC's criteria. It was confirmed with the Core Project Group to revise the criteria for Harlow to ensure that the future Garden Town settlements were included as well as existing areas that were located further than 30m from a Hexagon Centroid were included. On this basis, future Garden Town settlements were manually included (represented as purple dots in the below figure) and existing residential areas that were located further than 30m from the hexagon centroid were included (orange dots).

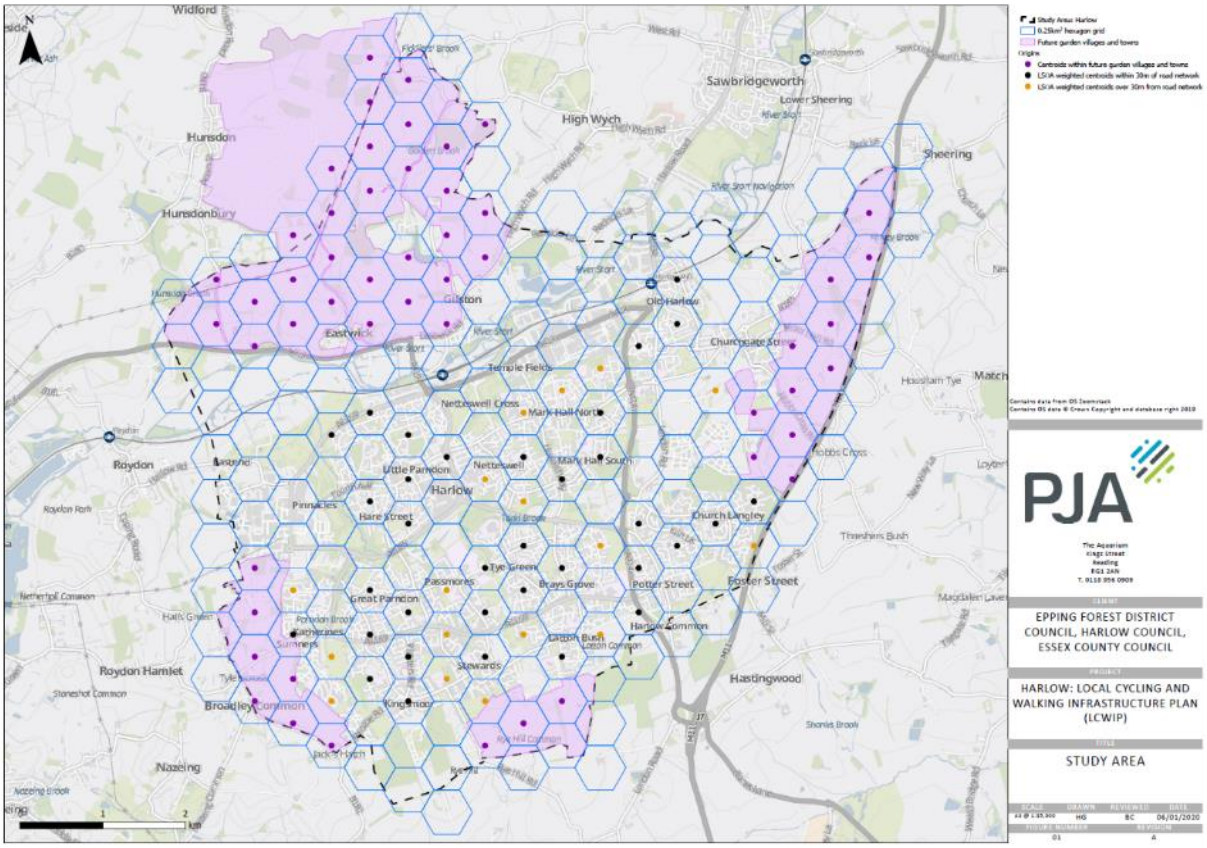

Figure 5-2: Origin cluster hexagons

5.2.4 Having identified the Origins, Destinations were identified based on data provided by HGGT and ECC (Figure 5-3). All destinations were categorised using the below classifications. The classifications have been established in previous ECC LCWIPs and reflect the relative importance of the destinations as trip generators.

- Class 1: Town, Village and Local Centres; Key Employment Sites.
- Class 2: Bus Stops, Existing and Proposed Schools, Railway Stations, Hospitals, Supermarkets, Leisure Centres and Libraries.

5.2.5 The combined Origin and Destination datasets were used to develop the walking and cycling networks in Stages 3 and 4. This analysis provided an important non-commuting dataset which was compared against the Propensity to Cycle Tool (PCT) outputs to provide a comprehensive review of desire lines within Harlow and also to the proposed Garden communities. It was assumed in the analysis that Class 1 destinations would generate a higher number of cycling trips and that they are also likely to have a larger catchment area of cyclists from across Harlow, compared to Class 2 destinations which would generate more locally based trips.

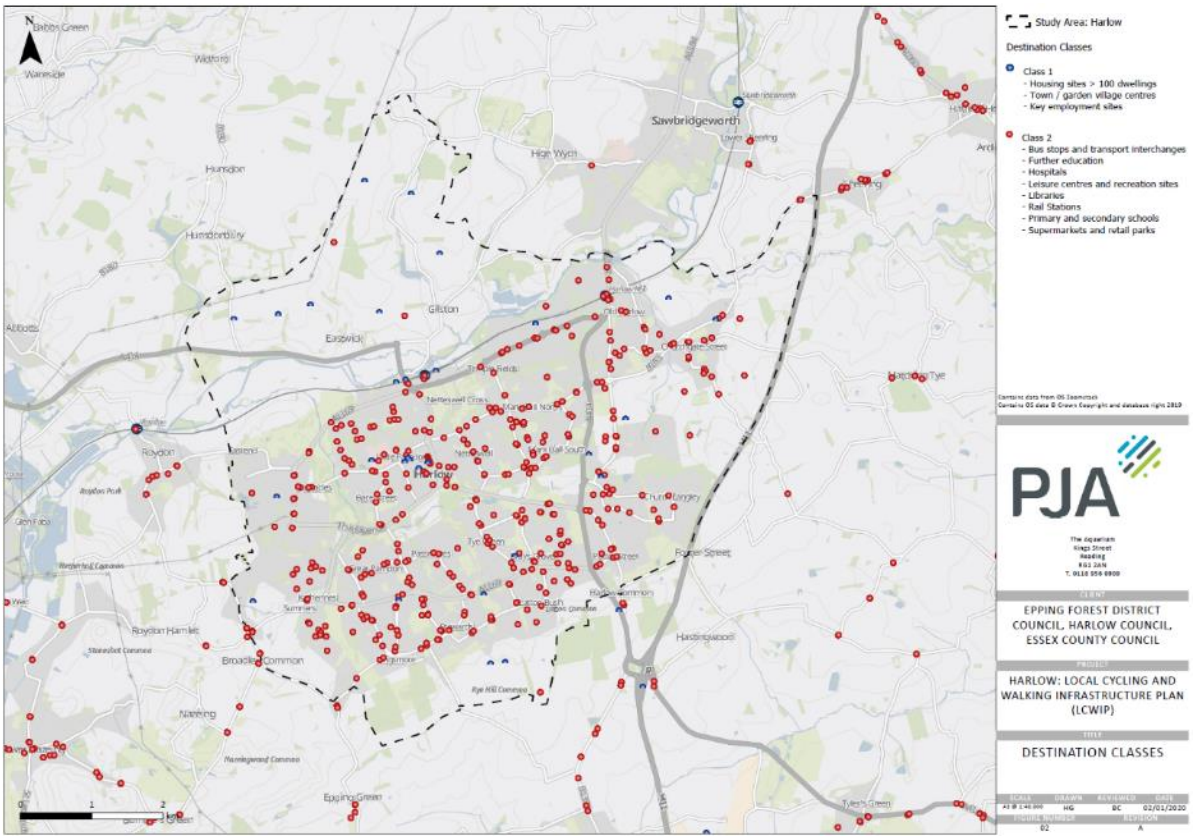

Figure 5-3: Distribution of Destinations

5.3 Harlow Cycling Action Plan (2018)

5.3.1 Prior to the LCWIP, Essex County Council completed the Cycling Action Plan (CAP) for the Harlow District as part of the county's wider commitment to create cycling action plans for all major settlements in the county. https://www.essexhighways.org/getting-around/cycling/cycle-programme.aspx. The CAP consisted of an opportunities-focused gap analysis of the cycling network, aiming to identify future sites and routes for future development. Similarly to an LCWIP, the plan used data collection and the Propensity to Cycle Tool (PCT) to help identify the network.

5.3.2 Figure 5-4 summarises the CAP's key outputs with the recommended cycle routes identified in light-blue. The outputs from the CAP were used during Stage 3 and the development of the LCWIP Cycling Network in consultation with ECC.

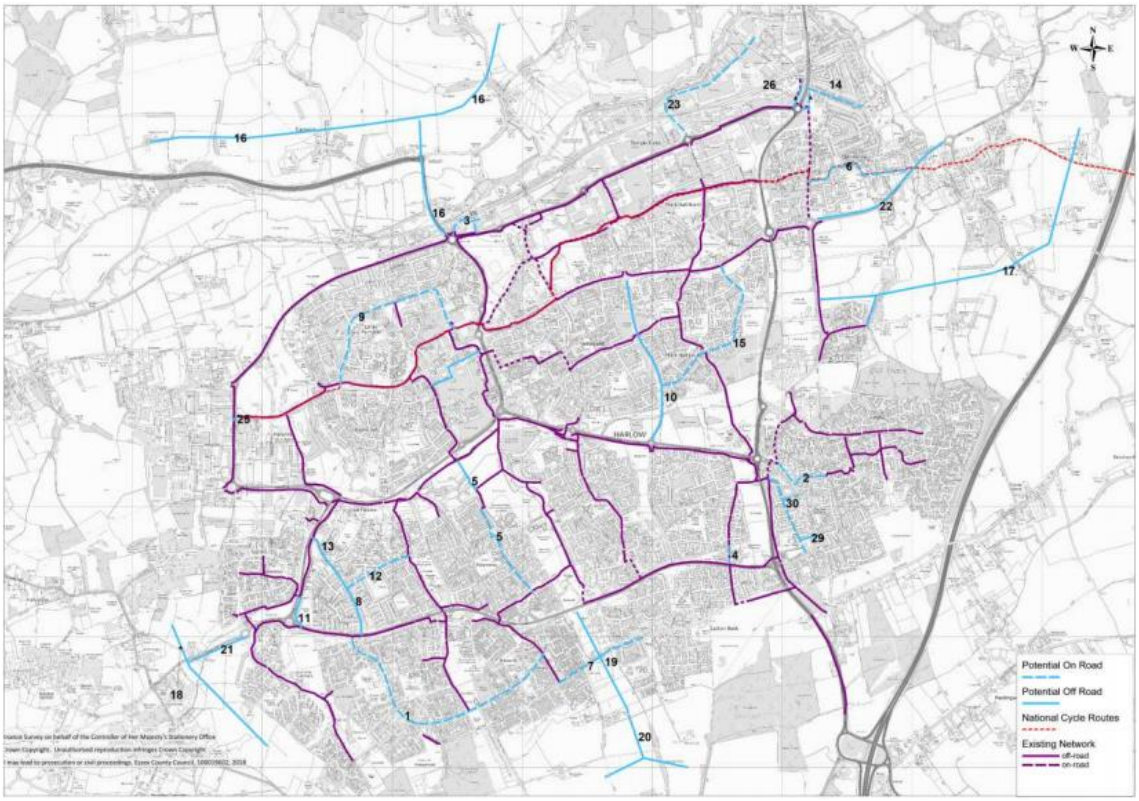

Figure 5-4: Harlow Cycling Action Plan recommendations

5.3.3 The LCWIP has incorporated the recommendations from the Harlow CAP and has developed design recommendations for several of the CAP routes. Throughout the project, ECC has worked closely with the LCWIP project team to review and optimise the relationship between the strategies.

5.4 Propensity to Cycle Tool (PCT)

5.4.1 The Propensity to Cycle Tool (www.pct.bike) is a nationwide model that identifies where increases in the rates of cycling can be expected through the provision of better infrastructure. It uses census travel to work data and school travel data, and looks at trip distances to see where there may be scope for more short journeys to be undertaken by cycling. The PCT provides seven scenarios for forecasting future levels of cycling which range in ambition from the 'Government Target' (assumes 6% of commuting trips by bicycle) up to the 'E-Bike' scenario (assumes 22% of commuting trips by bicycle and improved access to e-bikes).

5.4.2 The PCT provides two sets of mapping outputs:

- Straight-Line Networks – these plans show direct paths between LSOA Origin-Destination points which gives an overview of the key desire lines for cycling flows
- Applied Networks – applies the straight desire line to the existing road network to provide a more detailed summary of where increased cycle flows would take place on the local network

5.4.3 PJA provided the outputs in Figure 5-5 to illustrate the parts of Harlow's network where greatest latent demand for cycling for commuting and education lies. This was based on the "Go Dutch" scenario, which models the same mode share for cycling as in the Netherlands, adjusting for trip distance and topography. Using the 'Go Dutch' scenario provides a more ambitious and longer-term outlook for cycling flows which is advantageous in network planning as it ensures that the LCWIP cycle network will provide for assumed future advances in the town's cycle network.

5.4.4 The Straight-Line network below summarises the distribution of the 'Top 30' origin-destination cycle routes in Harlow based on the 'Go Dutch' scenario. The 'Top 30' routes were identified by comparing the number of cycle trips expected on each individual desire line and then identifying the Top 30 – it is possible in the PCT to view up to the top 200 desire lines. Figure 5-5 provides the basis for understanding the key desire lines in the town and where cycle flows would be concentrated based on the town's existing layout. The key desire lines are identified predominantly in the town centre and the north east of Harlow with some desire lines extending south towards Latton Bush and east towards Old Harlow and Church Langley.

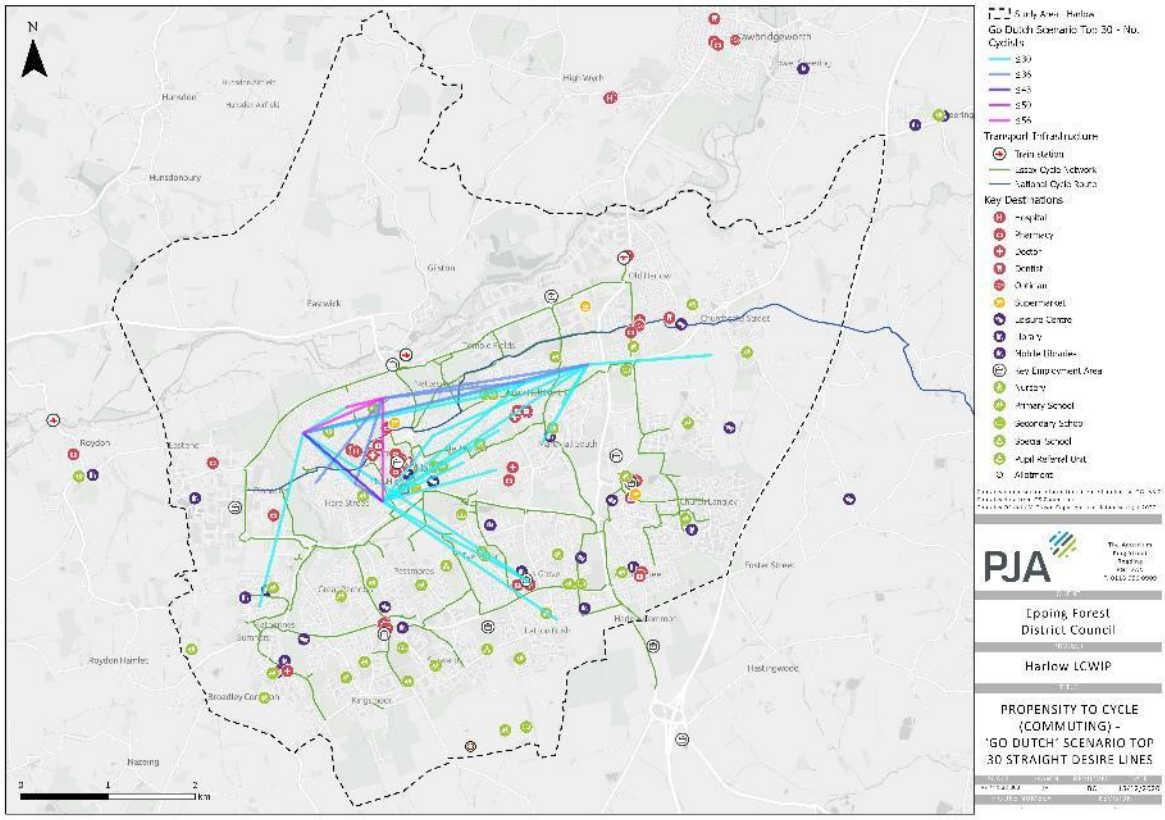

Figure 5-5: Top 30 'Go Dutch' straight Desire Lines

5.4.5 Figure 5-6 applies the Straight-Line outputs onto the existing road network to provide an indication of where the desire lines would be expected to follow on the road network. The outputs provide a basis for understanding the distribution of demand for increased cycle flows and how the LCWIP cycle network could develop.

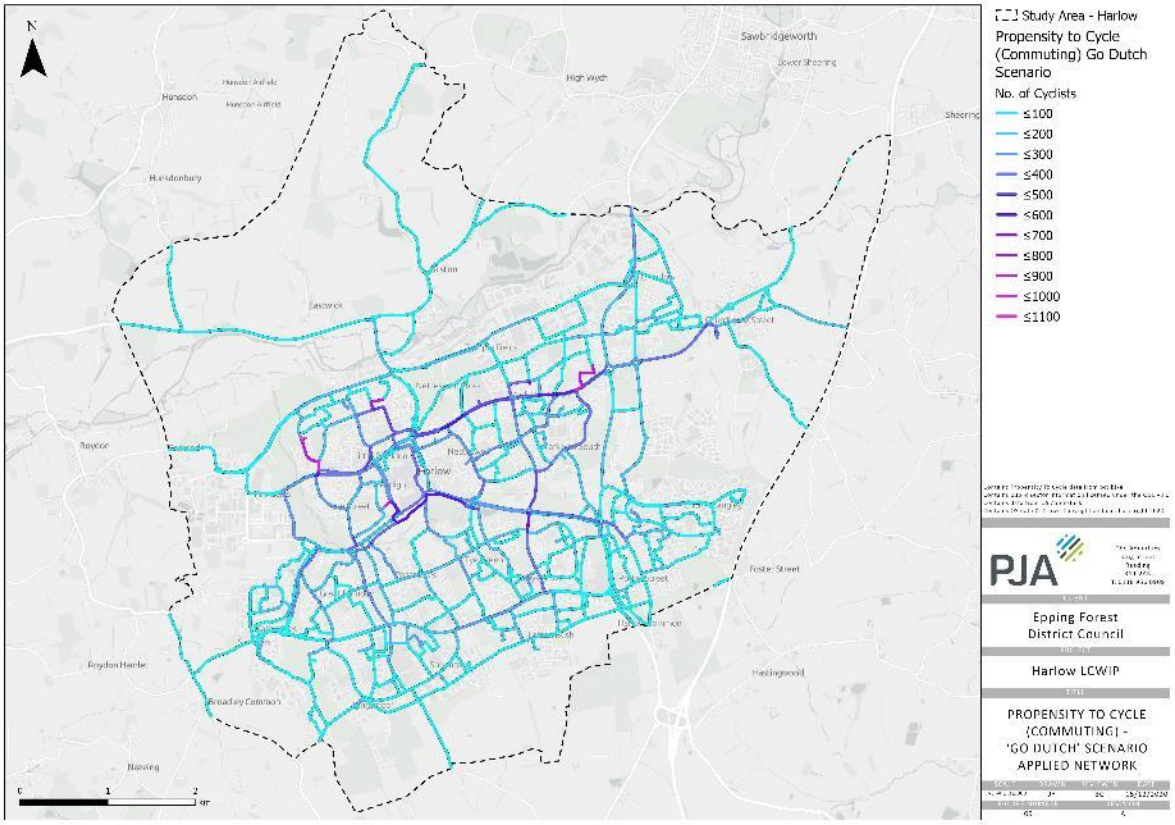

Figure 5-6: PCT "Go Dutch" for commuting journeys

5.4.6 The PCT results suggest that latent demand for commuter cycling generally radiates to the town centre, perhaps unsurprisingly, while school travel is distributed more in the suburban neighbourhoods (Figure 5-7). It should be noted that the PCT model snaps destinations to populated areas to reflect census boundaries meaning that trips to zoned employment sites such as Pinnacles and Templefields do not appear to be strongly represented. However this is not the case- the pink hotspots in Figure 5-6 to the west and east of the town centre are in fact Pinnacles and Templefields respectively. Indeed, the town centre itself is mapped closer to Burnt Mill in the PCT model.

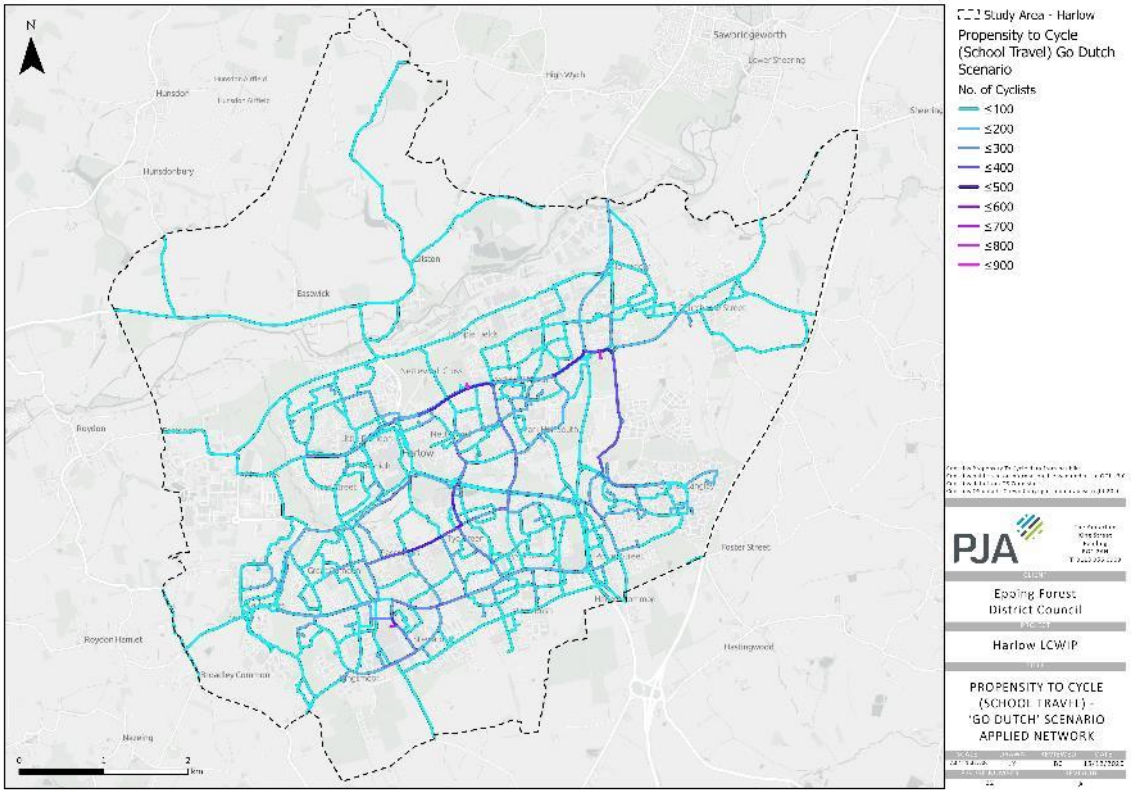

Figure 5-7: PCT "Go Dutch" for education journeys

5.4.7 A limitation of the PCT is its focus on commuting and school trips which tends to produce outputs focussed around key employment and education sites. The PCT results were used alongside an analysis of non-commuting/school trips in Section 6.2 to enable the development of a cycle network that also includes leisure and recreation trips.

6 Stage 3: Planning for Cycling

6.1 Overview of Process

6.1.1 Stage 3 is focussed on the development of a 'Cycling Network Map' supported by a 'Programme of Cycle Infrastructure Improvements'. The outputs from Stage 2 have been used to identify the key locations of demand for future cycling flows which have been used to inform the preferred network. This process was completed in collaboration with colleagues at ECC to ensure that the outputs were consistent with the County's previous LCWIPs in Braintree, Chelmsford and Colchester.

6.1.2 The LCWIP guidance recommends that 'if an authority has already developed a long-term cycle network plan, the tools and techniques outlined in Stage 3 could be used to validate or enhance a programme of investments'. Given that Harlow already has an extensive cycle network and ECC have recently completed the CAP, the LCWIP cycle network was developed to enhance existing facilities within the existing network as well as infilling gaps in the network where new infrastructure is required.

6.1.3 Given the level of anticipated development around Harlow through the Garden Town proposals, Stage 3 included specific analysis of future demand for cycle flows that would be generated by these areas. An additional layer of GIS analysis was undertaken to complement the Propensity to Cycle Tool (PCT) to ensure the anticipated future desire lines were captured.

6.1.4 The LCWIP planning for cycling process involved the following steps:

- Clustering of origin-destination desire lines
- Triangulation of origin-destination analysis against Harlow's Cycling Action Plan (CAP) and Propensity to Cycle Tool (PCT) outputs
- Route audits and recommendations.

6.1.5 A summary of each of these steps is provided in this chapter with more information provided in Appendix B.

6.2 Desire line clustering

6.2.1 The PCT outputs from Stage 2 provided indicative cycling networks based on commuting and schools trips. The purpose of the Desire Line Clustering was to provide an additional layer of analysis that focussed on 'everyday' cycling trips which would include: leisure and recreation, trips to local centres, and amenity trips. Combining the 'Everyday' trips and PCT outputs provided a comprehensive demand model for developing the LCWIP cycle network. It should be noted that desire lines that were longer than 5km were removed from the analysis for consistency with the LCWIP approach. This should not preclude the development of longer distance cycling routes in the wider area which could connect into Harlow. Indeed, future development of 'inter-urban' cycling routes will be an important step in enhancing cycle network coverage.

6.2.2 To determine the key desire lines that Harlow's cycling network should cater for, the spatial relationship between Origin and Destinations was analysed. 'Everyday' Origin-Destination desire lines were created from each origin centroid to its nearest Class 2 destination, and then also to all Class 1 destinations in the Study Area. This was based on the assumption that the Class 1 destinations would generate a higher number of cycling trips and that they are also likely to have a larger catchment area of cyclists from across Harlow, compared to Class 2 destinations which would generate more locally based trips. Figure 6-2 has been included to give an indication of the volume of desire lines that were considered in the development of the cycling network.

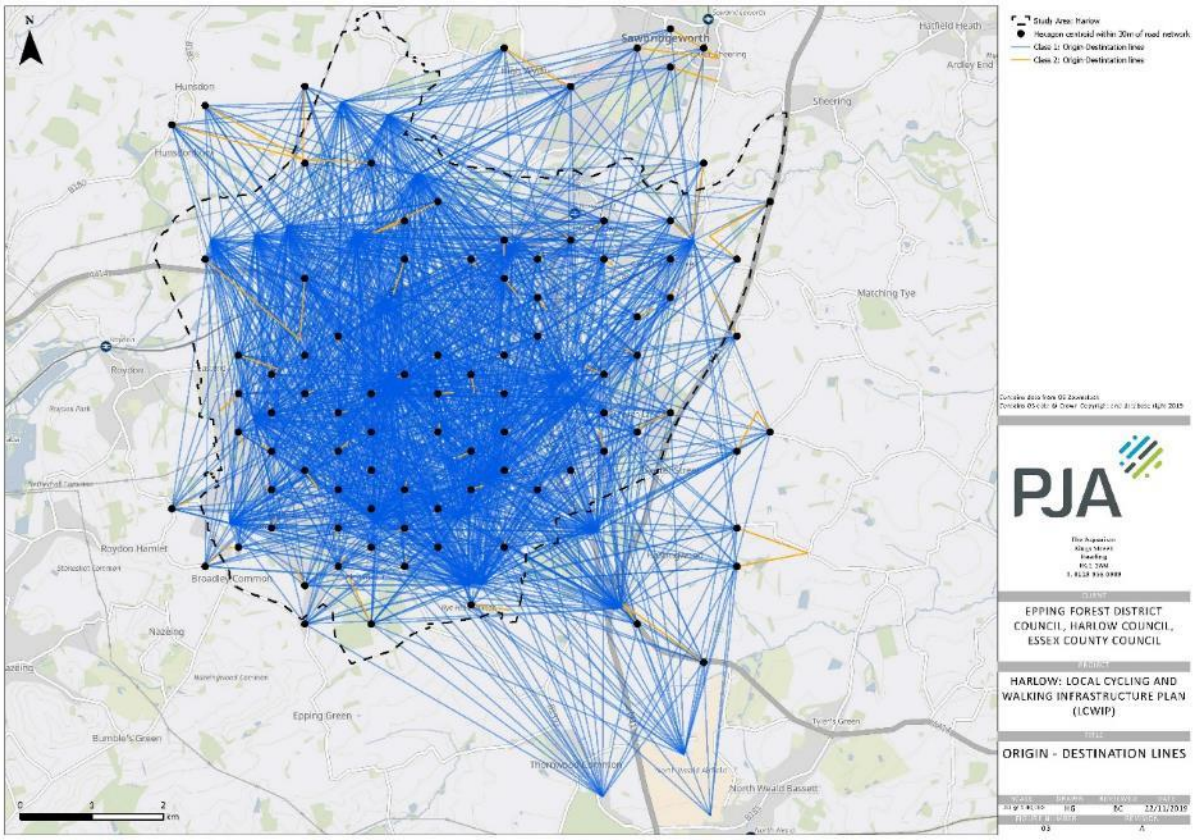

Figure 6-2: Summary of all Origin-Destination Pairs in Harlow

6.2.3 Having identified all available desire lines, a “K-means” clustering analysis was used to cluster the desire lines from Figure 6-2 into a more refined plan (Figure 6-3) which shows the top 20 routes. The K-means methodology identifies individual desire lines which are within close proximity to each other and combines these into grouped desire lines. The line widths in the below plan are proportionated to the number of desire lines that have been incorporated i.e. thicker desire lines combine more individual desire lines. The distribution of the K-means outputs has a clear emphasis on a north-south axis through the town centre with direct links out to the proposed Garden Town settlements. The combined sets of ‘top’ desire lines for Commuting and Everyday cycle trips provided a comprehensive baseline for understanding desire lines to inform the LCWIP cycle network development.

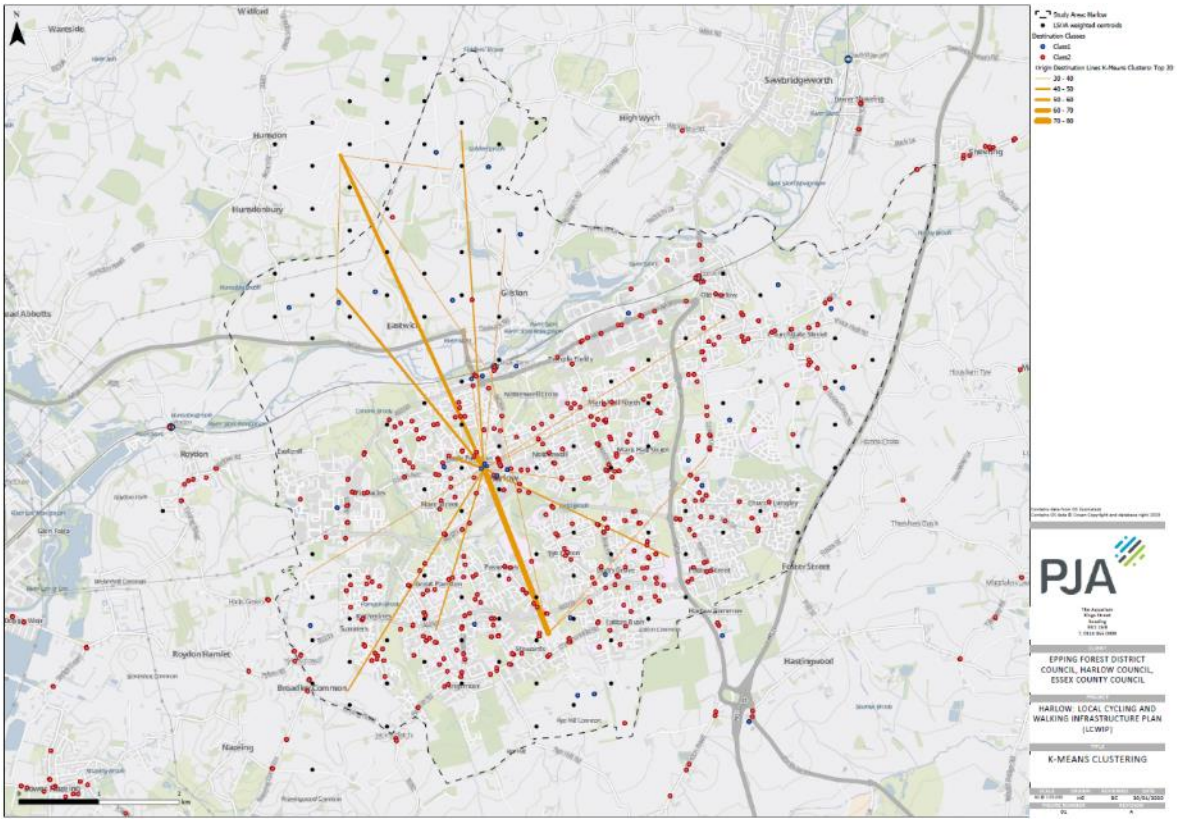

Figure 6-3: Top 20 clustered ‘Everyday’ desire lines

6.2.4 The ‘Everyday’ routes (orange) were then combined in Figure 6-4 with the outputs from the Propensity to Cycle Tool (Pink/Green). Comparing the outputs highlights key differences between the distribution of the different trip types with Commuting/School trips focussed in the traditional centre of the Town, whilst the ‘Everyday’ trips extend further into the future development sites.

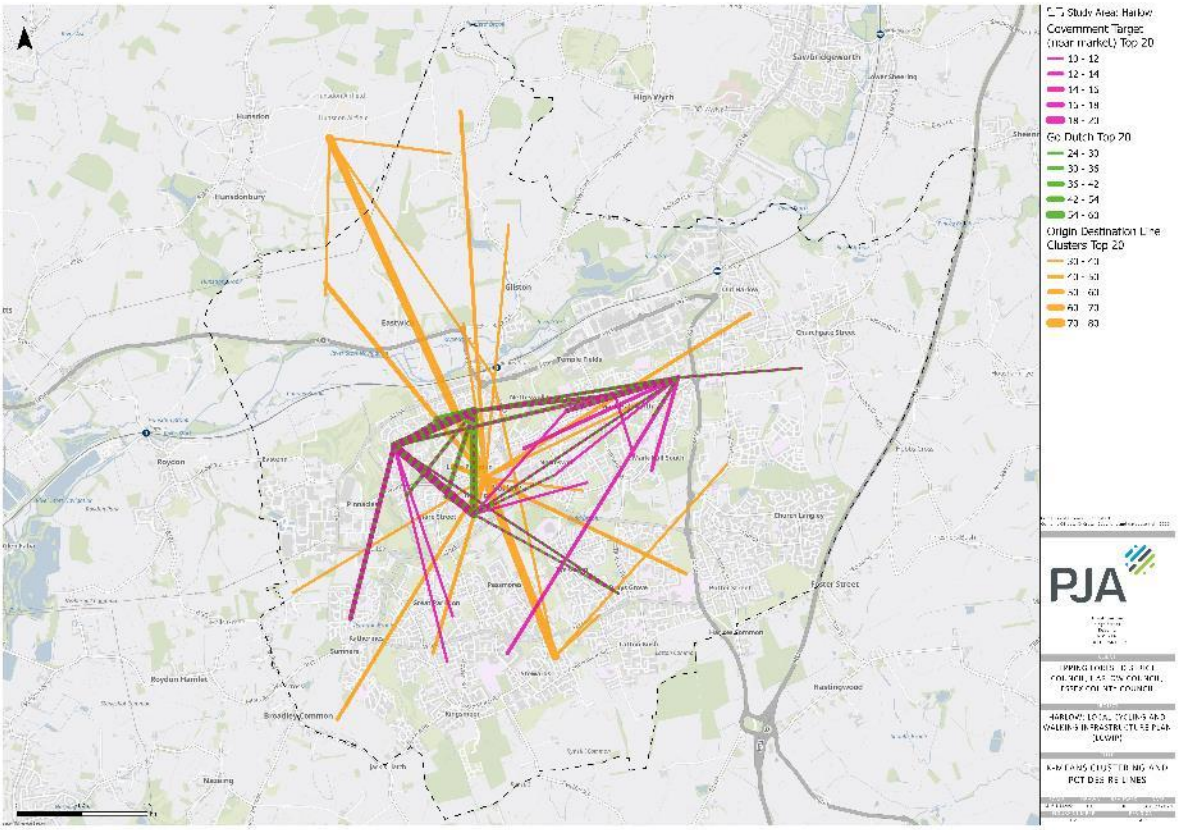

Figure 6-4: Combined PCT and ‘Everyday’ Desire Lines

6.3 Triangulation against CAP and PCT

6.3.1 Having combined the PCT and Everyday Trip outputs, these were then triangulated against the proposed Harlow CAP recommended cycle network. The below plan overlays the Top 20 'Everyday' desire lines and Top 20 "Go Dutch" PCT desire lines onto the recommendations of the CAP. The purpose of this exercise was to better understand how the different networks compared and to identify the opportunities for further enhancing the CAP's outputs through the LCWIP.

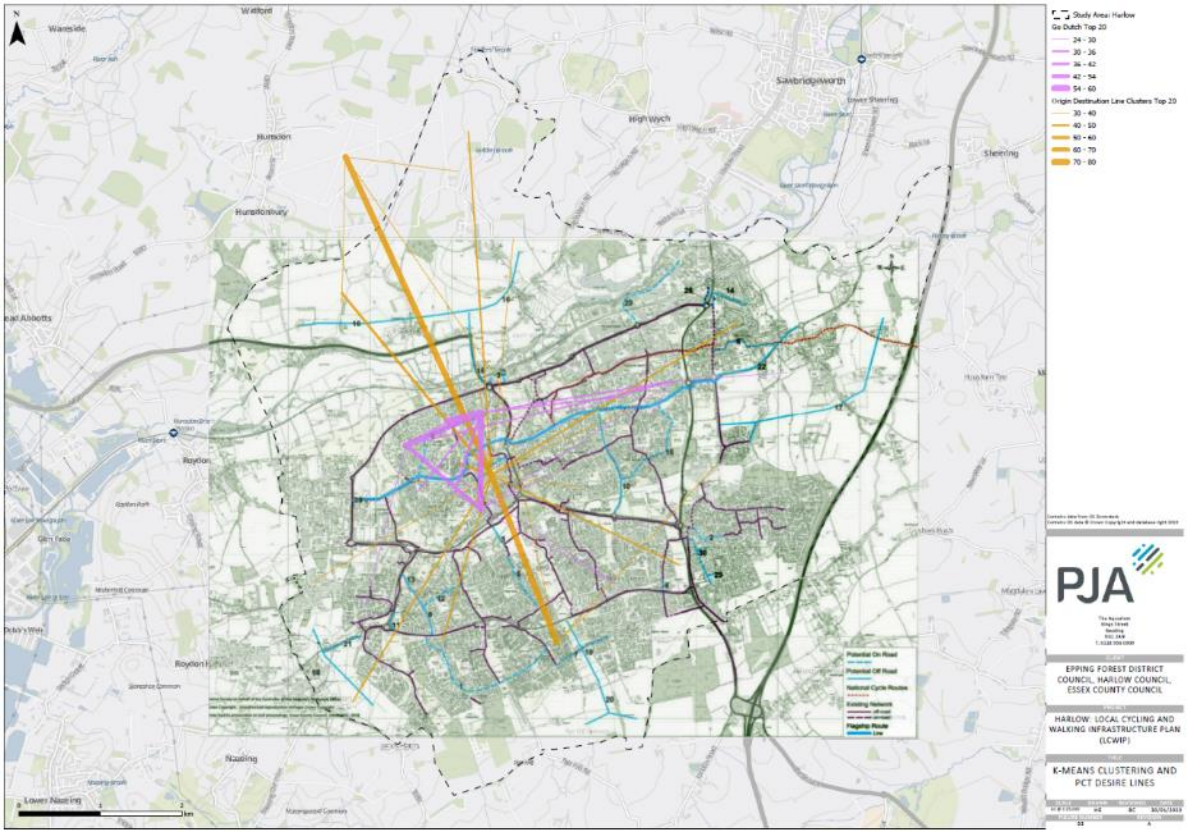

Figure 6-5: Triangulation analysis between desire lines, propensity to cycle tool, and Harlow Cycling Action Plan

6.4 Route audits and recommendations

6.4.1 A workshop was held with ECC officers to discuss the relationship between the CAP and LCWIP outputs and to identify the LCWIP cycle routes. A network of nine corridors was identified to be developed further in the cycling element of the LCWIP. A mixture of route types was selected (Figure 6-6), ranging from existing routes that require minor upgrades and maintenance, through to new routes that currently have no cycle infrastructure. This approach would provide ECC with a pipeline of schemes that could be delivered over the LCWIP's ten year project span.

- Route 1: Town Centre orbital
- Route 2: Gilston (west) – Parndon Mill – Town Centre
- Route 3: Gilston (central) – Burnt Mill – Town Centre
- Route 4: Town Centre – First Avenue – Churchgate Street – East of Harlow
- Route 5: Town Centre – Brays Grove – Potter Street
- Route 6: Town Centre – Tye Green – Latton Bush – Latton Priory
- Route 7: Town Centre – Passmores – Staple Tye
- Route 8: Town Centre – Great Parndon – Water Lane
- Route 9: Town Centre – Fourth Avenue - Pinnacles

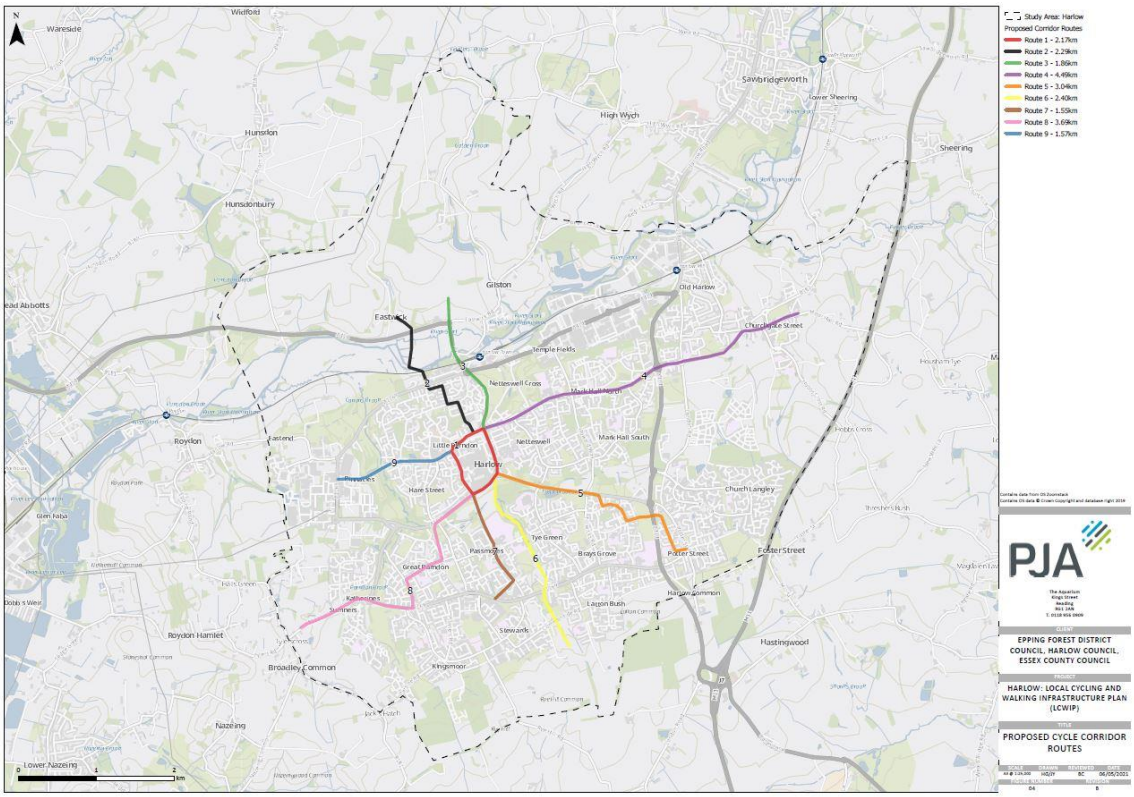

Figure 6-6: Map of recommended LCWIP cycle route network

6.4.2 Each route was audited on-site using the "Route Selection Tool" as set out in the LCWIP guidance. The Route Selection Tool (RST) is an appraisal methodology that allows practitioners to determine the best route to fulfil a particular straight line corridor, referencing against existing conditions and the shortest available route. It considers the six important criteria that determine the quality of a cycling route which are described below. The RST divides routes into shorter sections which should reflect changes in the character and layout of the alignment.

(1) Directness: Compares the length of cycle route against the equivalent vehicle route with cycle routes that are shorter than the vehicle are scored positively for Directness. Higher scores can be achieved through the introduction of modal filters or routing cyclists through parks/open spaces to provide a more direct connection

(2) Gradient: Identifies the steepest section of route within the proposed alignment with gradients that exceed either 5% in gradient and/or 50m in length scoring lower

(3) Safety: Considers vehicle flows and speeds to better understand the exposure of cyclists to vehicular traffic. Routes with either protected cycle facilities or low traffic environments score highest

(4) Connectivity: Records the number of individual cycle connections into a section of route – routes should aim to have >4 connections per km.

(5) Comfort: Assesses the space available for cycling and the quality of surfacing with a preference for protected cycle facilities of >3m (bi-directional) or >2m (uniflow).

(6) Critical Junctions: Provides a number of critical junction design issues including: vehicle flows, protection from vehicular traffic, wide junction splays, and junction geometries.

6.4.3 The RST audit then informs recommendations for improvements along each corridor, with the exception of Route 1, which is to be delivered as part of the Town Centre masterplan. Route 1 is an orbital route around the town centre, recognising the sensitivity to cycling within the pedestrianised town centre streets, and thus the need to provide alternative access to people making cross-town journeys. It should also be noted that LCWIP routes 1, 3, 4, 6 and 9 closely follow the proposed STC corridor alignments which are currently being developed separately. It is assumed that the LCWIP design proposals will be reflected in the final STC design layouts.

6.4.4 The LCWIP's design recommendations for cycling generally follow the below overarching design principles:

1 **Junctions** – A majority of major junctions in Harlow use grade-separation which provides subway access for cyclists and pedestrians underneath the main junction. The LCWIP recommends reviewing some of these junctions and exploring opportunities for providing at-grade crossing facilities that would improve the directness of the cycle facilities. These proposals are consistent with those contained in the Town Centre Masterplan which proposes to convert existing major junctions around the town centre to at-grade. The LCWIP also recommends improving the quality of junction design on minor road junctions and in residential areas where the current level of service is generally poor. The recommendation is to use measures which promote pedestrian priority including raised tables and continuous footway treatments which will provide continuous and comfortable crossing facilities. This issue is particularly pertinent around local centres and residential streets within the town – many of the junctions did not provide basic facilities such as dropped kerbs and/or tactile paving. The report also recommends introducing more informal crossings, such as parallel walking and cycling crossings, to connect existing off-road paths in the town. The below examples provide illustrate of high quality crossing points which have incorporated cycle access and public realm improvements.

Figure 6-7: Parallel Pedestrian + Cycle Crossing, Lea Bridge Road (left), and dedicated cycle signalised crossing (Cycleway 6, Kings Cross)

2 **Low Traffic Neighbourhoods (LTNs)**: The LCWIP includes recommendations for the installation of several LTNs in the town to further reduce flows of through-vehicular traffic in predominantly residential areas. The key objectives of installing the LTNs is to improve conditions for walking and cycling by reducing interaction of vehicular traffic. The proposed LTNs would be created through the installation of modal filters which would remove vehicular traffic but maintain through access for bicycles, local buses and emergency service vehicles. The LTN approach is an increasingly familiar tool in active travel strategies and is particularly complementary to the LCWIP approach as both adopt an area-wide focus in improving conditions for active travel. Local Authorities are increasingly developing Low Traffic Neighbourhood strategies as complementary

documents to their LCWIPs which provides those authorities with a much more comprehensive approach to promoting active travel. LTN strategies typically prioritise the delivery of LTNs based on multi-criteria assessments of individual neighbourhoods. The structure of the strategies varies depending on the local authority's requirements, for example deliverability has been the key motivation for some authorities which have focussed on the design feasibility on LTNs, whilst other authorities have focussed on the health and environment impacts of LTNs and based their prioritisation around these factors. LTNs have been installed by many authorities in their 2020 Emergency Active Travel Fund responses, including Birmingham, LB Lambeth and LB Waltham Forest. The below images provide different exemplar layouts for introducing modal filters as part of wider public realm improvements.

Figure 6-8: Combined informal crossing and modal filter (Downs Road, Hackney), and Modal Filter installed with cycle access (Grove Road, LB Waltham Forest)

3 **Avoid Shared Use** – where practicable, the LCWIP recommends removal of existing shared use paths and introduction of improve separated facilities. There are many examples in the town of shared use facilities which do not provide sufficient width to be comfortable for either pedestrians and cyclists. Shared Use paths are increasingly recommended against as a design approach and the recently released LTN 1/20 Cycle Infrastructure has further reinforced this message *'In urban areas the conversion of a footway to shared use should be regarded as a last resort. Shared use facilities are generally not favoured by either pedestrians or cyclists, particularly when flows are high*' (LTN 1/20, Cycle Infrastructure Design, p.67). The LCWIP makes recommendations for widening existing facilities where feasible to provide the required width for comfortable facilities on several routes. The below examples illustrate the importance of provide clear and continuous cycle tracks, but also shows how these can be co-ordinated with pedestrian footways if space is limited.

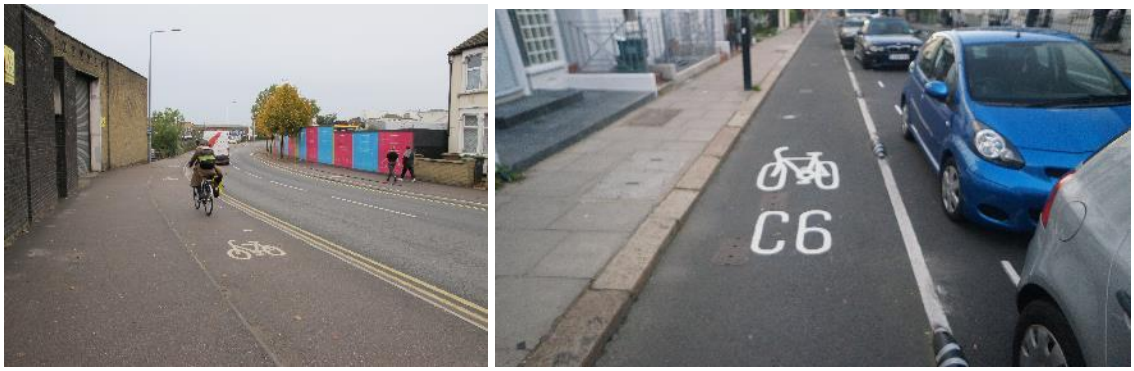

Figure 6-9: Blackhorse Lane (left) has installed narrow cycle tracks alongside the existing footway with a small kerb upstand, and Cycleway 6 (right) has used light segregation to provide cycle tracks in narrower sections of the route

4 **Maintenance and De-Cluttering** – this was raised as a key issue during stakeholder engagement sessions and was also observed by the project team. This is a particular issue on older sections of cycle path where the surface quality had started deteriorating. The LCWIP also recommends the removal of street clutter such as pedestrian guardrailing and bollards which reduces the effective width of cycle facilities and also reduce access for mobility impaired users of the facilities. The examples below highlight the importance of designing legible and clearly designed cycle facilities.

Figure 6-10: Bi-Directional cycle track (Blackfriars Bridge), and Leyton Road crossover treatment at side-entry junction (right)

6.4.5 The cycling design recommendations are presented in the appendices.

7 Stage 4: Planning for Walking

7.1 Overview of process

7.1.1 Similarly to Stage 3, the purpose of Stage 4 is to develop a Network Plan of walking measures accompanied by a series of infrastructure improvements. The main focus of the design outputs is to improve and extend the quality and coverage of the existing walking network. Figure 7-2 illustrates how the development of the LCWIP walking network is based upon the identification of 'Core Walking Zones' (CWZ) which represent areas that are expected to contain key walking trip generators and therefore likely to create higher levels of footfall. As well as reviewing walking conditions within the CWZ itself, the site audits review conditions on the key walking routes into the CWZ. This ensures that the wider connectivity and permeability of the CWZs is considered during the network development.

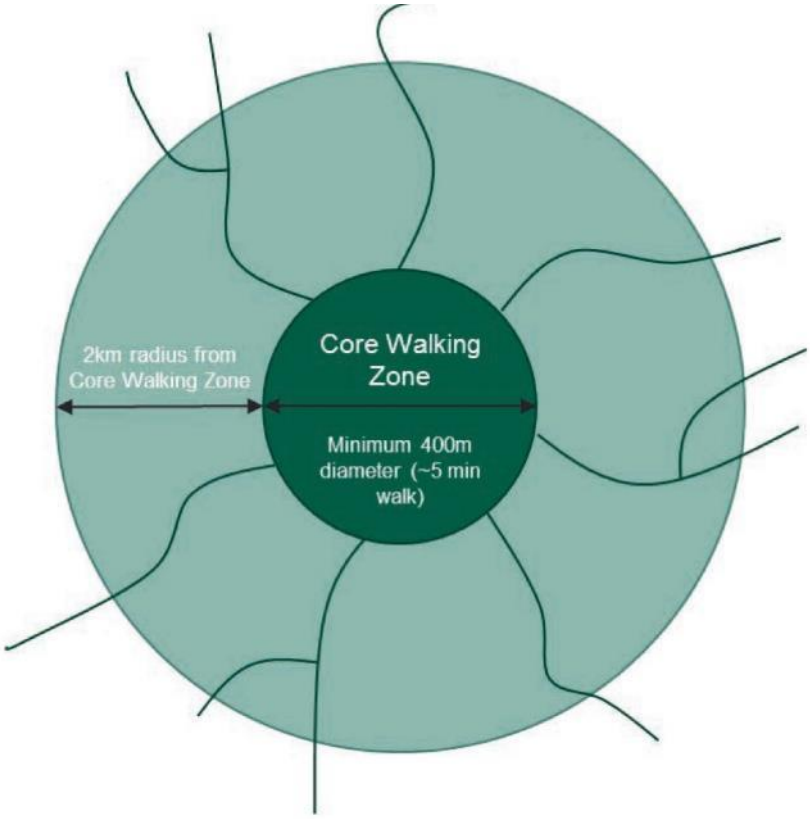

Figure 7-2: Illustration of Core Walking Zones and key walking routes

7.1.2 The process for planning for walking involved the following steps:

- Origin-Destination Clustering
- Core Walking Zone selection
- Stakeholder workshop; and
- Stakeholder audits and recommendations.

7.2 Core Walking Zone selection

7.2.1 The destinations identified in Stages 2 and 3 were used to determine the location of the LCWIP Core Walking Zones (Core Walking Zones) as shown in Figure 7-3. Key Employment Zones (e.g. Templefields) were split into component destinations to provide greater granularity within the analysis at the request of the core project team. The proximity and density of destinations were analysed using a Geographic Information System (GIS) software process called the Kernel Density Method. This method reviews the distribution of the Destinations relative to each other and identifies clusters around the areas with the highest concentration of destinations. This approach is consistent with the LCWIP methodology that recommends identifying key clusters of walking destinations in order to develop walking zones.

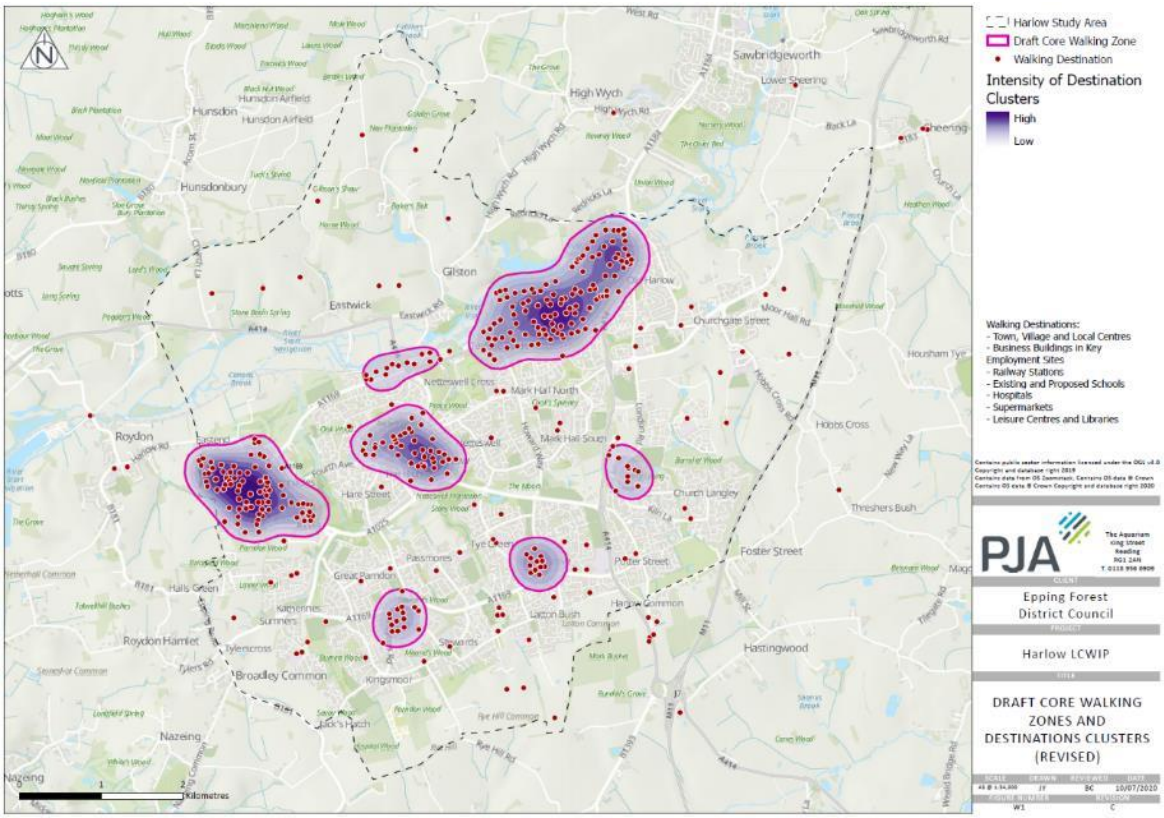

Figure 7-3: Destination clustering analysis to identify draft Core Walking Zones

7.2.2 The Kernel Density exercise identified an initial long list of CWZs which were presented to the core project team:

- Pinnacles
- Town Centre
- Temple Fields
- Burnt Mill

- Church Langley
- Bush Fair
- Staple Tye

7.2.3 The Core Project team acknowledged that the number of Core Walking Zones for further study would need to be reduced to three zones in order for the LCWIP to produce manageable outputs. The DfT process guidance expects that LCWIPs are living documents, and therefore this long list of zones would be retained for consideration at later phases of LCWIP-making (or more locally-targeted LCWIPs). A prioritisation exercise was therefore performed to identify the preferred walking zones for site auditing which was based upon scoring against four core indicators which were agreed with the Project's Core Working Group. A 400m catchment area was applied around the boundary of each of the walking zones for the prioritisation.

- Walkability Potential – records how many people live and/or work in the catchment and therefore considers how many residents would benefit from walking improvements in an area. Walkability Potential was given a higher weighting compared to Destination Potential as home addresses are a more stable and consistent data source. The ongoing impacts of COVID-19 also increase the likelihood of prolonged home working which further justifies the need for increased weighting of this category.
- Destination Potential – how many different types of destination there are in the catchment area which provides an indication of the number of walking trips that could be generated by each zone This weighting against employment also reflects the journey purpose split of walking in the National Travel Survey, where commuting and business is a very small proportion of overall journey purpose for walking, while there is a much bigger focus on purposes that are more likely to be supported by a resident population. i.e. leisure, education, education escort, and retail. The destination potential took the original destination points used in the clustering analysis, and segmented them to look at three different destination types:
  - Employment
  - Education
  - Retail and Leisure
- Health Inequality – assesses the extent of health deprivation that exists in each catchment and therefore how improved walking facilities could help reduce health inequality through increased exercise and active travel. The health inequality score was the only element that diverges from the data set used over the course of the LCWIP. This scoring mechanism used the specific health inequality deprivation domain from the MHCLG dataset, and combined the scores over each LSOA within the CWZ based on the proportion of each LSOA within the CWZ.
- Policy Fit – reviews how closely aligned each zone is against three key areas of policy focus: development, strategic allocations, and sustainable transport corridors. The policy fit score took

a combined score based on the amount of overlap between each CWZ catchment and a 400m buffer around the development site allocations (more than 10 units), strategic allocations, and sustainable transport corridors. This included the town centre AAP boundary as strategic allocation to reflect its importance to the town as a whole.

7.2.4 Table 7-1 summarise the performance of each Core Walking Zone against the Prioritisation Factors. The town centre scored highest on three of the four scores, coming second to Bush Fair on health inequality. Bush Fair and Staple Tye ranked in the top four on all indicators except Policy Fit, where they scored poorly.

Draft CWZ Name	Walkability Potential (WP)	Destination Potential (DP)	Health Inequality (HI)	Policy Fit (PF)	Combined Score
Pinnacles	0.27	0.24	0.36	0.46	1.33
Town Centre	1	1	0.98	1	3.98
Temple Fields	0.56	0.79	0.37	0.35	2.11
Burnt Mill	0.13	0.13	0.68	0.34	1.27
Church Langley	0.21	0.25	0.13	0.13	0.72
Bush Fair	0.45	0.51	1	0.23	2.19
Staple Tye	0.48	0.35	0.89	0.21	1.93

Table 7-1: Core Walking Zone selection scoring by core indicators

7.2.5 Sensitivity testing was then undertaken to determine how much the scoring and rankings would be affected by different weightings applied to the core indicator score (Table 7-2). This sensitivity test considered 15 different weighting profiles, either weighting one, two or three factors, with an exhaustive permutation of weightings. In the overall score, the Town Centre still ranked highest in all 15 weightings and Bush Fair appeared in the top three in all cases as well. However, there were four weighting scenarios where Templefields was replaced by Staple Tye. These were in the scenarios where health inequality received a higher weighting, or where destination potential received a lower weighting in comparison to the other factors.

Table 7-2: Sensitivity test of CWZ selection by the variability of overall score ranking by varying score weightings

Rank Counts	1	2	3	4	5	6	7
Pinnacles	0	0	0	0	8	7	0
Town Centre	15	0	0	0	0	0	0
Temple Fields	0	7	4	4	0	0	0
Burnt Mill	0	0	0	0	7	8	0
Church Langley	0	0	0	0	0	0	15
Bush Fair	0	8	7	0	0	0	0
Staple Tye	0	0	4	11	0	0	0

7.2.6 Having previously committed to three CWZs, it was clear that the closeness of scoring between Staple Tye and Bush Fair meant that the below four CWZs were selected for further study:

- Town Centre
- Templefields

- Bush Fair
- Staple Tye

7.2.7 These four areas provide a balanced approach for Harlow: the town centre being a mixed use environment, Templefields being an aggressively zoned employment cluster but with big box retail attached and links to residential hinterlands, and the last two being local centres serving a much more residential catchment. It's worth noting that all four priority working zones now align to the four original town and local centres of the 1952 masterplan.

7.3 Stakeholder workshop

7.3.1 The selection of the proposed core walking zones was presented to the Harlow Regeneration Working Group in August 2020. The process of sifting was understood however the exclusion of The Stow and Old Harlow from the analysis was queried by the group. The exclusion of these areas was due to the lower number of destinations in the area, particularly in terms of diversity of destinations. It was explained to the group that the extents of the proposed core walking zones was flexible and that the proposed walking routes would extend where necessary beyond the zone's extents. On this basis, additional walking routes were included to connect into Old Harlow and The Stow.

7.3.2 The stakeholder group also raised the previous work undertaken on reviewing the pedestrian infrastructure throughout Harlow's smaller "Hatches", which are the local shopping parades in residential neighbourhoods.

7.4 Walking audits

7.4.1 Having confirmed the Core Walking Zones, individual walking routes were identified for each zone which were then audited on site using the Walking Route Audit Tool methodology set out in the DfT LCWIP process guidance. The walking routes for each zone radiate out from the centre and connect out into surrounding areas based on a 20mins walking distance. Key walking routes were identified ideally radiating in all directions from the Core Walking Zones to ensure that the walking network catered for desire lines in all directions surrounding the zones.

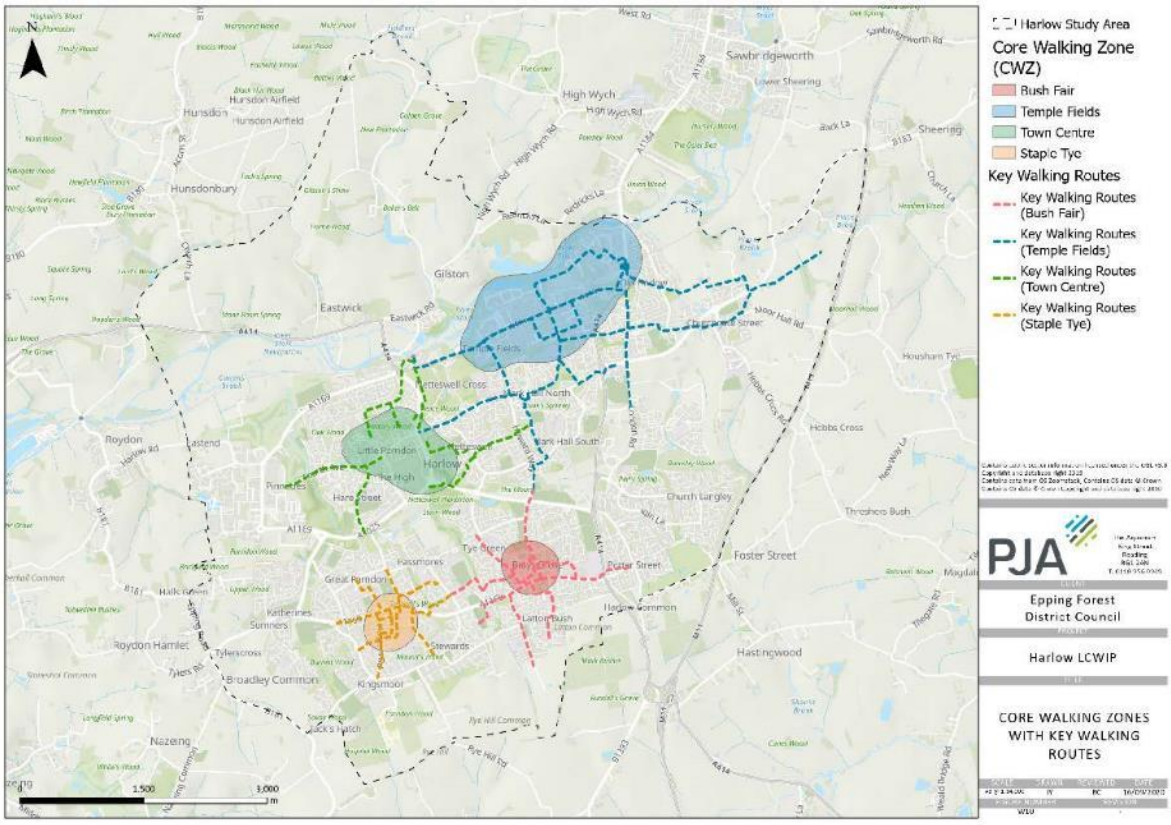

Figure 7-4: LCWIP Core Walking Zones and Key Walking Routes

7.4.2 Walking audits were undertaken by members of the Core Client Group with assistance and guidance provided by PJA and local residents. The Walking Route Audit Tool (WRAT) is divided into several categories for analysis and uses a Red Amber Green (RAG) scoring technique:

(1) Attractiveness: Considers the impact of maintenance, traffic noise, pollution and fear of crime upon the attractiveness of a route

(2) Comfort: Reviews the amount of space available for walking and the impact of obstructions upon walking such as footway parking, street clutter and staggered crossings

(3) Directness: Assesses how closely pedestrian facilities are aligned with the natural desire line and accommodating the crossing facilities are for pedestrians to follow their preferred route

(4) Safety: Focusses on the impact of vehicle volumes and speeds and interaction with pedestrians

(5) Coherence: Focuses on the provision of dropped kerb and tactile information for pedestrians

7.5 Walking audit recommendations

7.5.1 The findings of the walking audits were translated into design measures for each of the four walking zones. The design measures were grouped by area and also by the below design themes which provides the option of delivering the design measures either by zone or by addressing a town-wide theme across Harlow. For example, the LCWIP identifies many sites across the town which lack tactile information and/or dropped kerb provision - it might be more logical for ECC to undertake a town-wide approach to this issue rather than zonal. Some elements may also be delivered separately with the wider area in which they sit if this provides efficiencies, i.e. where they align to Sustainable Transport Corridors or LCWIP Cycle Route packages.

Junction Treatment: Identified location which require new crossing facilities or an upgrade of the existing facilities with particular focus on existing roundabouts in the town. There were many locations in the town where crossings were not provided on desire lines and this issue was further compounded by roundabouts which encouraged free-flowing vehicle movements and therefore made crossing more difficult. The images below from Brighton and London exemplify good practice of providing crossings on desire lines through major junctions.

Figure 7-5: Seven Dials Brighton (right), and Victoria Street Diagonal Crossings (London)

Missing Dropped Kerb/Tactile Information: Locates crossings which are either missing or have substandard provision of dropped kerb and/or tactile information. This was a particular issue in residential areas where missing facilities combined with wide splayed junctions cumulatively undermined the cohesiveness and walkability of walking routes. The design minimum at these locations is to provide dropped kerbs and tactile information to enable safe crossing of the junctions, however a more transformative approach should be considered which upgrades the whole design of junctions to design continuous footways across junctions with much reduced corner radii. This will not only improve continuity and comfort, but will also prioritise pedestrian movements across these junctions.

Figure 7-6: Junction crossover treatment (Blackhorse Lane), and Willow Street with recently installed continuous footway (right)

Missing Footway: Recommends sites where a new footway should be installed mainly in residential areas or open spaces. A basic requirement of the LCWIP and developing the walking networks is filling gaps in the existing provision of pedestrian footways – particularly where there is evidence of demand for using an alternative alignment. The two examples below are both examples where there is clear demand for facilities and also where the existing provision is particularly poor.

Figure 7-7:Pedestrian Desire Line towards Velizy Avenue (left), and sub-standard footway provision in Templefields

De-Cluttering: Focussed on sites where street clutter, such as pedestrian guardrailings or bollards, reduces the effective width of either pedestrian and/or cycle facilities. Clutter on the footways also increases crossing distances and moves pedestrians away from the desire lines – de-cluttering will enable more effective and intuitive routes for pedestrians to follow. The below examples illustrate clutter-free and attractive walking routes that have positively used the space to include vegetation and other street features in the space previously occupied by clutter.

Figure 7-8: Bonnington Square (left) and Highbury Gyratory Removal (right)

Maintenance: Focussed on maintenance issues mainly around surface quality, lack of lighting, and vegetation overgrowth. This was a particular issue on sections of footway located away from carriageway where the existing path is unlit and not clearly defined. The 'off-carriageway network' is a key strength of Harlow's new town layout and the recommendation is to enhance these routes by providing continuous lighting and wayfinding, as well as general maintenance, to increase the overall attractiveness of the routes.

Figure 7-9: Bespoke historic wayfinding (Dulwich Village) and sympathetic uplighting of pedestrian route (Eagle Place)

7.5.2 The walking zones and audit findings are presented in the appendices.

8 Stage 5: Prioritisation

8.1 Prioritisation

8.1.1 The purpose of the Prioritisation stage is to establish a prioritised programme for the delivery of the walking and cycling measures identified in Stages 3 and 4 of the LCWIP. The prioritised list of measures should aid future network development by outlining the top priority schemes for delivery. The results can also be used as a mechanism for funding applications or seeking developer contributions towards new walking and cycling infrastructure. As noted previously, LCWIPs are considered to be 'live' documents by the DfT and local authorities therefore should consider updating/revising the prioritisation table to reflect latest developments.

8.1.2 The format of the Prioritisation for the HGGT LCWIP was confirmed with ECC colleagues to ensure that the format was consistent with their previous LCWIPs. On this basis, the measures were prioritised as follows:

(1) Cycling Prioritisation: ECC has developed an Advanced Scheme Design (ASD) multi-criteria analysis which has been used in their previous LCWIPs. The ASD assesses each LCWIP Cycle Route against a series of objectives to produce a prioritisation score which then enables ranking of the LCWIP cycle routes for delivery.

(2) Walking Prioritisation: The walking measures were prioritised based on the exercise completed in Stage 4 with the immediate focus on delivering the recommended measures in the four priority Walking Zones.

8.2 Cycling prioritisation

8.2.1 Prioritisation of cycling interventions followed the ASD multi-criteria analysis used by ECC in the previous Essex LCWIPs. 34 x routes are currently contained in ECC's ASD programme (inclusive of the nine Harlow routes). The ASD considers the likely cost of infrastructure and deliverability, including complementary funding streams, and assign these into tranches of short (0-4 years), medium (4-7 years) and long term (7+ years) implementation. The ASD is based upon the below themes:

(1) ECC Organisation Objectives: Focussed on the achievement of ECC's objectives around Economic Growth, Quality of Life, and Effective Delivery.

(2) DfT LCWIP Objectives: Evaluates the extent to which proposals will increase levels of cycling and reduce the rate of collisions involving cyclists

(3) Effectiveness: Considers how many people would benefit from a new cycle route and the extent to which the route aligns with other work programmes

(4) Deliverability: Assesses the likely cost and feasibility of delivering the proposed measures with consideration for political feasibility

8.2.2 Table 8-1 summarises the results for each route against the key ASD themes. The 'Overall ECC ADC Ranking' scores are not necessarily final and maybe subject to change.

LCWIP Route	ECC Organisation Objectives (%)	DfT LCWIP Objectives (%)	Effectiveness (%)	Deliverability (%)	HGGT LCWIP Ranking (n)	Overall ECC ASD Ranking (out of 34)
1: Town Centre Orbital	**95**	**100**	95	73	1	Joint 5th
2: Eastwick to Town Centre	80	50	75	73	9	34
3: Gilston to Town Centre	75	60	80	93	7	23
4: East Harlow to Town Centre	**95**	**100**	**90**	73	2	Joint 5th
5: Potter Street to Town Centre	75	90	70	93	6	22
6: Latton Priory to Town Centre	90	80	85	87	3	11
7: Staple Tye to Town Centre	75	70	70	93	8	25
8: Water Lane to Town Centre	90	80	85	80	4	14
9: Pinnacles to Town Centre	80	70	80	**100**	5	19

Table 8-1: Advanced Scheme Design: HGGT LCWIP Results

8.3 Walking prioritisation

8.3.1 The prioritisation of walking zones follows on from the Prioritisation exercise in Stage 4 with the recommendation that the four LCWIP Walking Zones prioritised for delivery before developing measures for the remaining Core Walking Zones that were identified in the long-list. It was confirmed with ECC colleagues that the Walking interventions would be prioritised to align with the cycling prioritisation tranches, i.e. following the Advance Scheme Design process.

8.3.2 As the initial CWZ process only identified walking zones for the purpose of identifying the highest priority interventions, it is recommended that future funding programmes concentrate on the remaining Core Walking Zones of Pinnacles, Burnt Mill, and Church Langley. This should also incorporate on areas (/Hatches) outside of the waking zones but still represent cluster of destinations where short trips should be optimised for walking and cycling. There are also synergies between the local Hatches and Low Traffic Neighbourhoods (LTN), some of which have been identified in the LCWIP Cycling measures. It is therefore recommended that a town-wide LTN study is undertaken to complement both the LCWIP walking and cycling proposals.

8.3.3 It is recommended that within each walking zone package, specific measures should be considered for concurrent delivery with the LCWIP cycling measures and also wider packages such as the Town Centre Masterplan and STCs.

Walking Zone Package	0-4 Years	4-7 Years	7+ Years	Notes
Pinnacles	Route Identification & Walking Audits	Design & Build	-	Early measures delivered by LCWIP Cycle Route 9
Town Centre	Design & Build	-	-	-
Temple Fields	Design & Build	-	-	-
Burnt Mill	Route Identification & Walking Audits	Design & Build	-	Early measures delivered by STC workstream
Church Langley	Route Identification & Walking Audits	Design & Build	-	-
Bush Fair	Design & Build	-	-	-
Staple Tye	Design & Build	-	-	-
Local Hatches	Hatch-Oriented LCWIP study, with audits	Design & Build	Design & Build	Local Hatches aligned to LTNs for delivery
Low Traffic Neighbourhoods	LTN study	Design & Build	Design & Build	Some LTNs delivered through LCWIP cycling schemes

Table 8-2: Prioritisation of core walking zone delivery packages

8.4 Stage 6: Integration

8.4.1 The recommendations of the LCWIP are integrated with wider work packages by virtue of alignment to the Essex ASD template. However, it is recommended that the findings of this LCWIP are reviewed in detail, to determine synergies with other non-highways programmes, e.g. development, regeneration, and parks improvement.

Appendix A Combined LCWIP Mapping Outputs

Appendix B Cycle Infrastructure Recommendations

Appendix C Walking Infrastructure Recommendations