UTTLESFORD LCWIP

PROJECT REPORT

04 JULY 2024

PJA

Uttlesford District Council

Version Control and Approval

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1.0	22/05/24	IMT + EC + DB + RJ	RJ	BC
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Prepared for
Uttlesford District Council

1
INTRODUCTION

INTRODUCTION

OVERVIEW

This report summarises the findings from Uttlesford's Local Cycling and Walking Infrastructure Plan (LCWIP) study. LCWIPs identify and prioritise investment in new infrastructure to support a greater number of people making journeys on foot or by cycle. LCWIPs should identify infrastructure interventions over a short, medium, and long-term horizon that meet the transport and movement objectives of Uttlesford. It should be noted that LCWIPs are not intended to be a comprehensive audit of all walking and cycling routes within the District.

The development of an LCWIP for Uttlesford is a key step in increasing active travel in the district. Not only will this serve to improve the health of its residents through building in exercise as part of daily activity, it also helps to reduce car use, improve air quality and reduce social exclusion. Thus, the development of an LCWIP is an important step in realising these benefits and ensuring that Uttlesford delivers on its commitment to achieving net-zero carbon status by 2030.

The development of the LCWIP was led by Uttlesford District Council (UDC) with the support of Essex County Council (ECC), as well as local stakeholders. These groups were represented in the LCWIP working group which met at regular intervals throughout the LCWIP.

From a countywide perspective, active travel is currently being planned primarily through Local Cycling and Walking Infrastructure Plans (LCWIPs). At present, LCWIP's have been approved in Essex (Harlow, Basildon, Braintree, Chelmsford and Colchester) with more at different stages of development (Castle Point, Epping Forest). In addition to this, ECC are currently developing a county-wide LCWIP which will focus on strategic connections within the county. It has been ensured that the proposals outlined in this LCWIP complement these neighbouring LCWIPs.

PROJECT SCOPE

The scope of the LCWIP is shown on the plan opposite (Figure 1.2). In summary this project has looked at the following workstreams:

- Traditional LCWIPs in Saffron Walden and Great Dunmow
- Strategic Cycle Routes connecting key destinations within and neighbouring the district, including the A120 corridor
- "Rural Connections", linking a selection of key villages to neighbouring villages or towns

Given the multifaceted nature of the brief, it was decided, through the working group, that a baseline analysis of the entire district would be undertaken, following the guidance contained within the LCWIP guidance. This would establish the scope of the project and provide a data-led review of demand for walking and cycling in the district. The outputs of this exercise would then be used to identify LCWIP networks in Saffron Walden and Great Dunmow, as well as justify and confirm the strategic cycle route connections.

The "Rural Connections" workstream was progressed as a separate but complementary workstream to the LCWIP and the Strategic Cycle Routes. The findings from the rural connections work have therefore been included as a standalone Appendix (Appendix D), rather than in the main body of this report.

The following diagram (Figure 1.1) shows the overall approach to the project, with further detail provided on the following pages.

Figure 1.1. Project Diagram

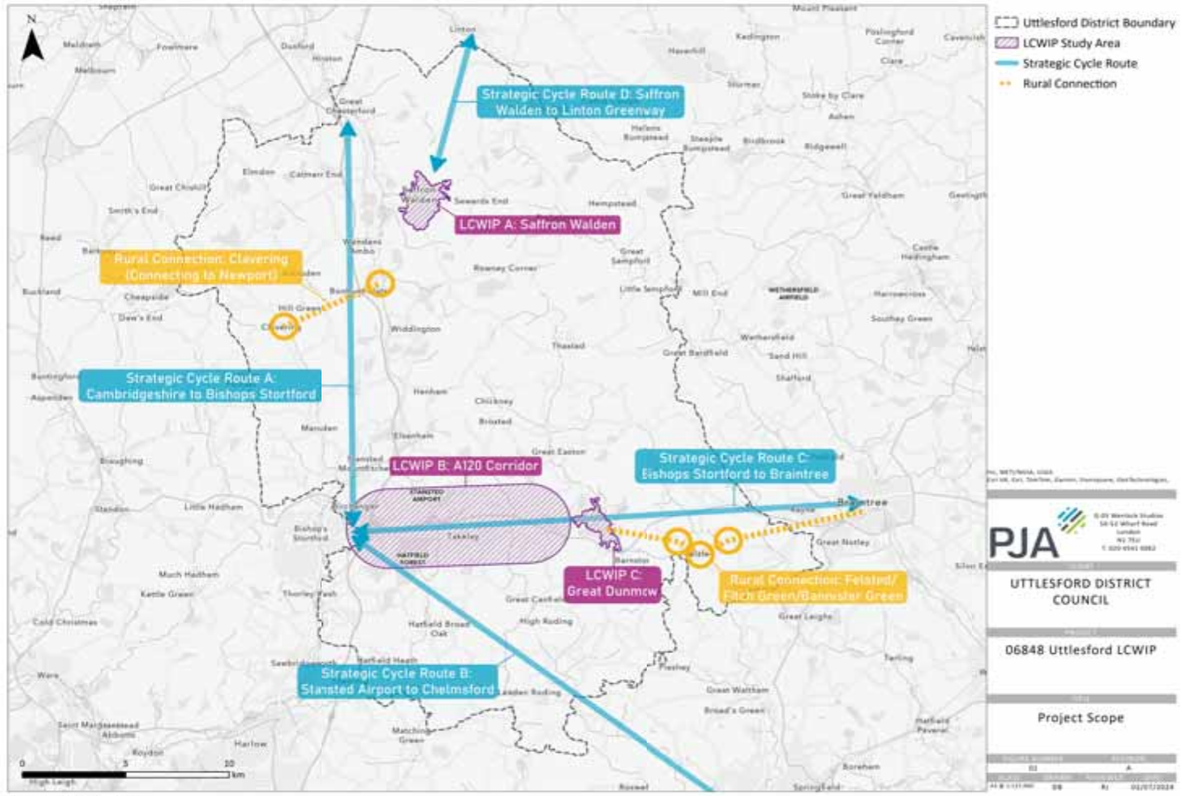


Figure 1.2. Initial Project Scope

LCWIP METHODOLOGY

Overview

This page provides an overview of the LCWIP process and how it has been applied in Uttlesford (Figure 1.3). 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.

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 network is delivered at an appropriate geography (see LCWIP Stages 1 and 2) and that walking, wheeled and cycle 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.

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. Given the compact scale of the LCWIP study areas in Saffron Walden and Great Dunmow and their respective walkability as towns, the LCWIP routes for these study areas have been considered from both a walking and cycling perspective.

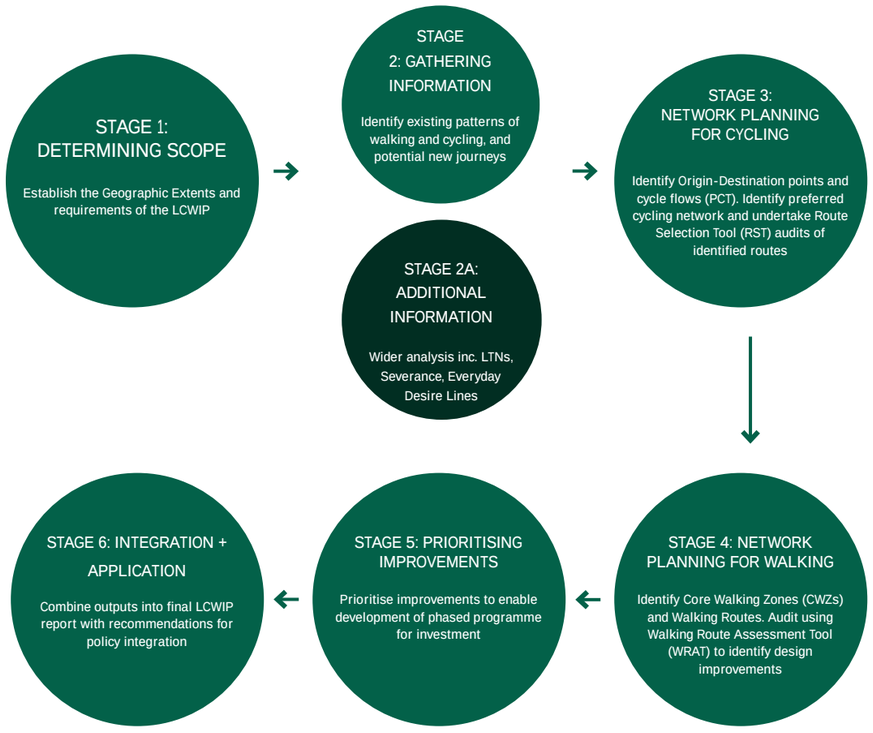


Figure 1.3. LCWIP Methodology

Figure 1.4. Great Dunmow High Street

STRATEGIC CYCLE ROUTE & RURAL CONNECTIONS METHODOLOGY

Overview

The primary aim of the SCR workstream was to develop design recommendations for four inter-urban cycling routes that connect up key destinations and settlements, within and beyond Uttlesford.

The primary aim of the Rural Connections workstream was to identify connections between selected villages and neighbouring towns and public transport options, to help improve connectivity in the more rural areas of the district.

The methodology for this stage of work is shown in Figure 1.5. The first stage of this workstream consisted of a district-wide baseline analysis, which ran concurrently with the town-wide LCWIPs in Saffron Walden and Great Dunmow. The aim of the baseline analysis was to test the suggested SCR and Rural Connection routes and justify these in terms of forecast demand and feasibility. Following this, on the ground alignments were identified for each SCR and Rural Connection and agreed with the project working group. These routes were then audited using the RST tool to identify exiting barriers, as well as opportunities for design interventions. Again, this stage was undertaken concurrently with the town-wide LCWIPs.

Following this, high level design recommendations were identified along each potential alignment and summarised in design summary plans for each route. Within this report, a design commentary has been provided for each route alongside best practice examples from across the UK.

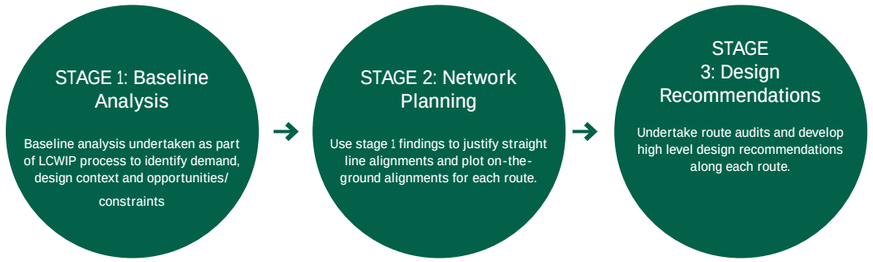


Figure 1.5. Strategic Cycle Route Methodology

Figure 1.6. The Flitch Way

2
POLICY REVIEW

NATIONAL POLICY REVIEW

This chapter summarises the national policy context for this study.

GEAR CHANGE AND LTN 1/20

The Cycling and Walking Plan for England, 'Gear Change: A bold vision for cycling and walking', was published in July 2020. The plan sets out the government's shift in transport policy: to prioritise active travel. The plan set out the following vision:

> "Places will be truly walkable. A travel revolution in our streets, towns and communities will have made cycling a mass form of transit. Cycling and walking will be the natural first choice for many journeys with half of all journeys in towns and cities being cycled or walked by 2030."

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. It will be ensured that all emerging design recommendations from this LCWIP will comply with LTN 1/20.

Figure 2.1 'Gear Change: A bold vision for cycling and walking' front page. Source: DfT, 2020.

CYCLING AND WALKING INVESTMENT STRATEGY

Since the introduction of the first Cycling and Walking Investment Strategy (CWIS11) in 2017, cycling rates have significantly increased and active travel has continued to receive great attention in the government agenda. The second Cycling and Walking Investment Strategy (CSWI2), released in July 2022, reflects on the changes in travel patterns brought by the coronavirus (COVID-19) pandemic and sets objectives for the period between 2021 and 2025. Following the impacts of the pandemic, walking activity decreased by 16% from 2019, whereas cycling activity has increased - from 1.0 billion to 1.2 billion stages between 2019 and 2020 (See figures 2.2 and 2.3). Informed by the CSWI1 and the vision set out at Gear Change (2020), the CSWI2 have set the following objectives:

- To increase short journeys by bike and on foot to 46%
- To double cycling from 0.8 billion stages in 2013 to 1.6 billion stages
- To increase walking activity to 300 stages per person per year
- To increase the percentage of children walking to school to 55%.

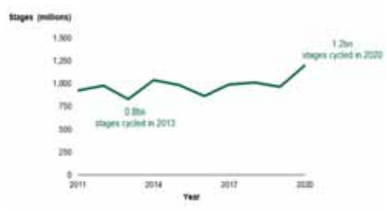


Figure 2.2 Cycling activity between 2011 - 200 in England. Source: DfT, 2022.

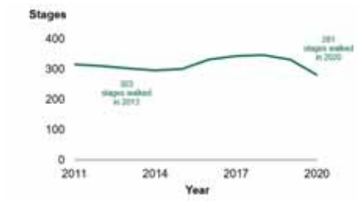


Figure 2.3 Cycling activity between 2011 - 200 in England. Source: DfT, 2022.

LOCAL CYCLING AND WALKING INFRASTRUCTURE PLAN (LCWIP)

A Local Cycling and Walking Infrastructure Plan (LCWIP) is designed to identify potential new walking and cycling routes and associated infrastructure to a support a greater number of people to make journeys on foot or by cycle. The LCWIP should identify infrastructure interventions over a short, medium, and long-term timescale that meet the transport objectives of the local authority for which it is developed.

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 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
- 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

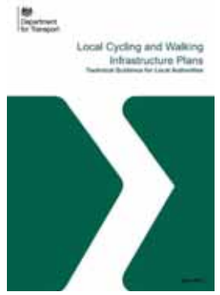


Figure 2.4 LCWIP Guidance Source: DfT, 2017.

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 routes 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 Uttlesford.

The Department for Transport are currently reviewing the LCWIP guidance and are intending to 'refresh' the guidance. The changes are not intended to be significant and instead will be focussed on refreshing specific elements of the methodology to provide more information and to expand on some technical aspects.

NATIONAL PLANNING POLICY FRAMEWORK (NPPF)

The NPPF has been revised to implement policy changes in response to the Building Better Building Beautiful Commission "Living with Beauty" report and incorporates the increased focus on design. The NPPF sets out the Government's planning policies for England and how these should be applied. It must be considered in preparing local development plans and is a material consideration in planning decisions. At the heart of the framework, is a 'presumption in favour of sustainable development'.

Within Chapter 9 'Promoting Sustainable Transport', Paragraph 110 is of particular relevance, requiring the design of streets, parking areas, other transport elements and the content of associated standards reflect current national guidance, including the National Design Guide and the National Model Design Code. Paragraph 106 makes specific reference to LCWIPs as a means for providing attractive and well-designed walking and cycling networks.

Chapter 8 'Promoting healthy and safe communities' also recommends promoting social interaction with 'street layouts that allow for easy pedestrian and cycle connections within and between neighbourhoods, and active street frontages'.

National Model Design Code (2021)

Building on the 2019 National Design Guide, the National Model Design Code is intended to inform local design guides and codes or, in the absence of local guidance, act in their stead. It places local communities at the heart of plans to make sure that new developments reflect the history and unique character of their areas and are beautiful and well-designed. The code places great weight on Manual for Streets and Manual for Streets 2, which continue to represent good practice on street design. Paragraph 58 outlines that 'a connected network of streets, good public transport and the promotion of walking and cycling as key principles'.

Figure 2.5 Cyclist on Thaxted Road, Saffron Walden

LOCAL AND REGIONAL POLICY REVIEW

This chapter summarises the local and regional policy context for this study.

Essex Transport Strategy – the Local Transport Plan for Essex (2011)

The Local Transport Plan sets out the approach for transport in Essex, and summarises the County's aspirations for improving travel and achieving long-term economic growth. The Essex Transport Strategy seeks to achieve five road outcomes:

- Provide connectivity for Essex communities and international gateways to support sustainable economic growth and regeneration
- Reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology
- Improve safety on the transport network and enhance and promote a safe travelling environment
- Secure and maintain all transport assets to an appropriate standard and ensure that the network is available for use
- Provide sustainable access and travel choice for Essex residents to help create sustainable communities

The LCWIP will support the Essex Transport Strategy by setting out a series of design recommendations based on a prioritised list of routes which will improve conditions for walking and cycling, thereby improving connectivity between communities, reducing reliance on car trips and improving safety for pedestrians and cyclists along these routes.

Draft Essex Cycling Strategy (2024)

Essex County Council recently published the draft Cycling Strategy for the county, which is currently undergoing public consultion at the time of writing. The Cycling Strategy sets out ECC's vision, outcomes, and actions for cycling in the county for the next few years and will be a valuable tool to secure funding to improve and maintain cycling facilities and infrastructure across the county.

The Strategy outlines six key outcomes to help achieve the strategy. For each of these outcomes, the strategy identifies specific activities:

1. Changing perceptions: Cycling is a natural and attractive option for people and businesses in Essex
2. The cycle network: The current and future cycle network in Essex is safe, convenient and accessible for all types of trips
3. Communities, health and equality: Cycling helps to create more inclusive and connected communities, as well as improving health and reducing inequalities
4. The economy: Cycling contributes to the economy, and brings jobs and employment to local communities
5. The environment: Cycling improves the environment in Essex by reducing emissions, noise, congestion and enhancin the quality of life
6. Leisure cycling: Essex is a popular destination for leisure cycling and tourism

The Uttlesford LCWIP will help ECC to achieve each of the six outcomes outlined above, by identifying a prioritised list of cycle routes, as well as acting as a tool to secure funding for the delivery of these routes.

Figure 2.6 Essex Transport Strategy (Essex County Council, 2011)

Figure 2.7 Draft Essex Cycling Strategy (Essex County Council, 2024)

Uttlesford District Cycling Action Plan (2018)

The Uttlesford District Cycling Action Plan was prepared by Essex Highways as part of a commitment to create a Cycling Action Plan for every Borough/District. The Action Plan sets out a long term plan to achieve a significant and sustained increase in cycling in Essex, establishing it as the 'normal or regular' mode of travel, especially for short trips. In order to achieve this, ECC is committed to establishing a coherent, comprehensive and advantageous cycling network in every major urban area.

The strategy sets out a series of key recommendations to address barriers to cycling in the District and with consideration of commuter flows and location of committed development. Specific recommendations to the three LCWIP areas include:

- Increase provision of useful cycle routes to town centres and railway stations in Saffron Walden, Great Dunmow and Stansted Airport, in particular
- Consider an area-wide review of town centre one-way working in Saffron Walden, to identify opportunities for cycle contraflow to be implemented and thereby increase cycling permeability of and through the town centre
- Review on-street car parking in and close to town centres, to identify opportunities to provide space for high quality cycle facilities

This document has been reviewed in full as part of the LCWIP and it will be ensured that the LCWIP takes account of the key recommendations and builds on these.

Uttlesford Climate Crisis Strategy (2021 – 2030)

The Climate Crisis Strategy outlines UDC's commitments to achieving net-zero carbon status by 2030 and protecting and enhancing bio-diversity by developing and delivering a new strategy and action plan. The strategy notes that 'Uttlesford has the lowest population density of any district or borough in Essex with high levels of car ownership and a restricted extent of public transport, especially in the more rural areas All these are challenges to achieving sustainable development.'

In 2019, UDC declared a climate and ecological emergency. As part of this, UDC resolved to:

1. To declare a Climate and Ecological Emergency, acting now to prevent a climate and ecological catastrophe that will greatly impact our children, grandchildren and future generations
2. To commit to achieving net-zero carbon status by 2030 and protecting an enhancing biodiversity

As part of UDC's Climate Crisis Strategy, the following priorities for transport are outlined:

1. Prioritise walking and cycling
2. Improve air quality
3. Increased cycle network and separated cycle lanes
4. Grow electric vehicle charging network and infrastructure
5. Promote accessible rights of way
6. Improve digital connectivity to reduce work travel demand

The LCWIP will help UDC meet priorities 1, 2, 3 and 5 and increase the number of people walking and cycling within Uttlesford, which is a key component of achieving net zero status by 2030.

Emerging Uttlesford Local Plan (Expected 2026)

Uttlesford District Council are currently in the process of developing a new Local Plan. The new Local Plan for Uttlesford will bring together all major planning policy for the District into a single document.

A public consultation was held in 2023, inviting comments on the draft Local Plan (Regulation 18). It is anticipated that the Local Plan will be adopted in Spring of 2026.

Figure 2.8 Uttlesford Cycling Action Plan, Essex County Council (2018)

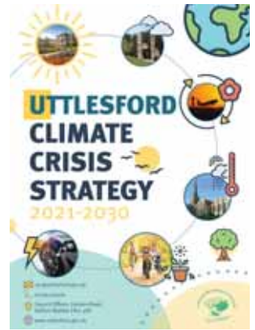


Figure 2.9 Uttlesford Climate Crisis Strategy (2021 - 2030)

3
DETERMINING SCOPE

DETERMINING SCOPE

The purpose of Stage 1 is to establish the Geographic Scope of the LCWIP which forms the subsequent basis of the LCWIP Data Analysis and Site Auditing. The DfT guidance recommends that LCWIPs are concentrated on more urban settlements, with a focus of typical trip lengths of up to 10km for cycling and 2km for walking.

Our approach to determining the scope includes a high-level review of the below datasets which we have found to be highly influential on the extents of LCWIPs:

- Walking + Cycling Catchment Areas: Walking and cycling isochrones help to provide a sense of scale and to better understand the extent to which trips could be walked and cycled. Comparing the isochrones also helps to understand the relationship between future walking and cycling routes in the LCWIP.
- Key Developments: New developments, particularly major housing and employment sites, have significant impacts upon trip generation and also trip distribution. Plotting future development sites therefore is essential for understanding the impacts of developments and how these relate to existing settlements
- Population Density: Data on population density helps to identify areas of Uttlesford where the delivery of walking and cycling improvements would offer the most benefits to the greatest number of people.

Figure 3.1. LCWIP Stage 1 Diagram

Figure 3.2. Wenden Road, Saffron Walden

LOCAL CONTEXT

The opposite plan summarises the distribution of key destinations within the study area, including schools, future development sites, leisure and retail facilities, cycle routes, Public Rights Of Way (PRoW), open spaces, and key employment sites. The plan shows a cluster of destinations around Saffron Walden, Great Dunmow and Stansted Mountfitchet, including hospitals, doctors, dentists and schools.

Key employment sites in the district include Stansted Airport, which is the district's largest employer. The plan also shows the road hierarchy within the study area. The M11 runs from north-south through the district and is a major arterial route connecting London to Cambridge.

The plan also highlights the relatively rural character of the district away from the main settlements. This is particularly evident in the north-east and eastern areas of the district.

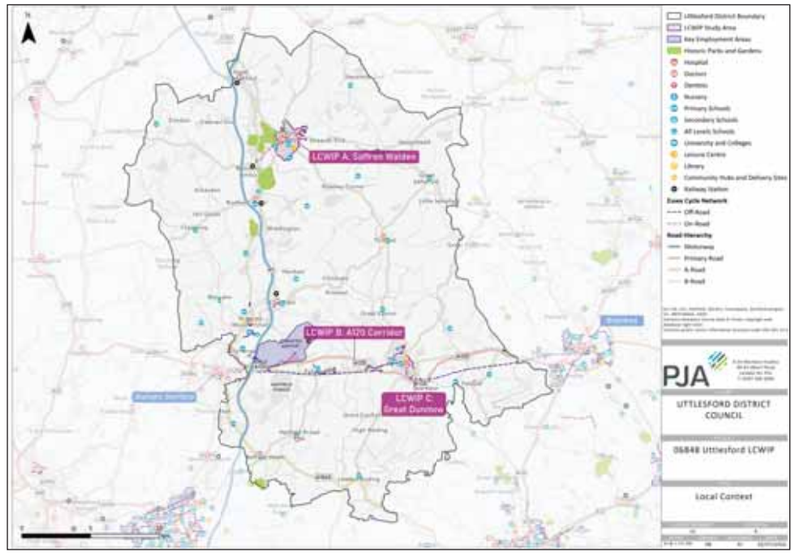


Figure 3.3. Local Context

POPULATION DENSITY

The plan opposite uses data from the 2021 Census to calculate the population density across the study area at a Lower Super Output Area (LSOA) level. Again, the plan highlights the rural nature of the district, with most LSOAs showing a population density of fewer than 150 residents per square kilometre.

The most densely populated areas of the district are Saffron Walden, Great Dunmow, Stansted Mountfitchet and Takeley, where there are areas with a population density of more than 4,000 residents per square kilometre.

Overall, the population density of Uttlesford is almost 50% lower than the national average, with just 142 residents per square kilometre compared to 281 residents per square kilometre nationwide.

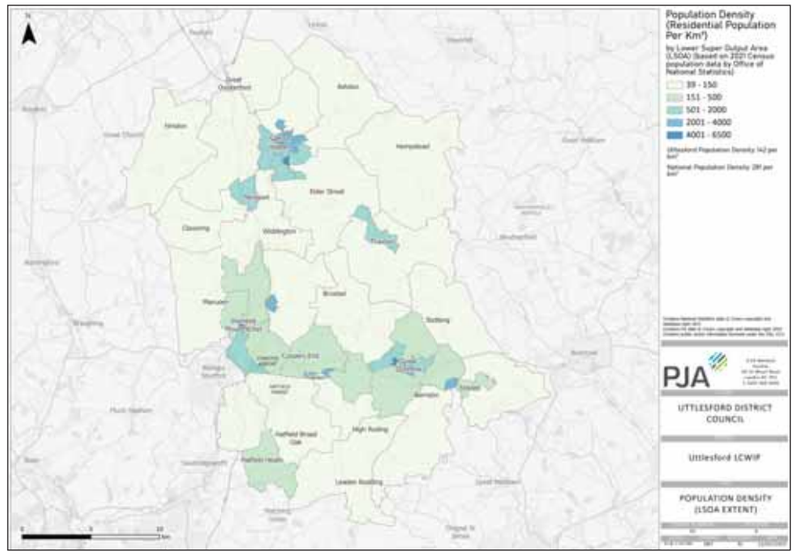


Figure 3.4. Population Density by LSOA

CYCLING CATCHMENT AREAS

The purpose of Stage 1 is to establish the Geographic Scope of the LCWIP. To inform this, cycling catchment areas were generated in ArcGIS, showing a 10km buffer from the two main towns within the district, as well as two important neighbouring towns - Bishop's Stortford and Braintree.

The catchment areas shown are measured "as the crow flies" and therefore provide a high level indication of the distance that could be cycled from each centre, as well as giving a sense of scale to the study area.

The plan emphasises the isolated nature of the key settlements within and neighbouring to the study area, which are all greater than 10km from one another.

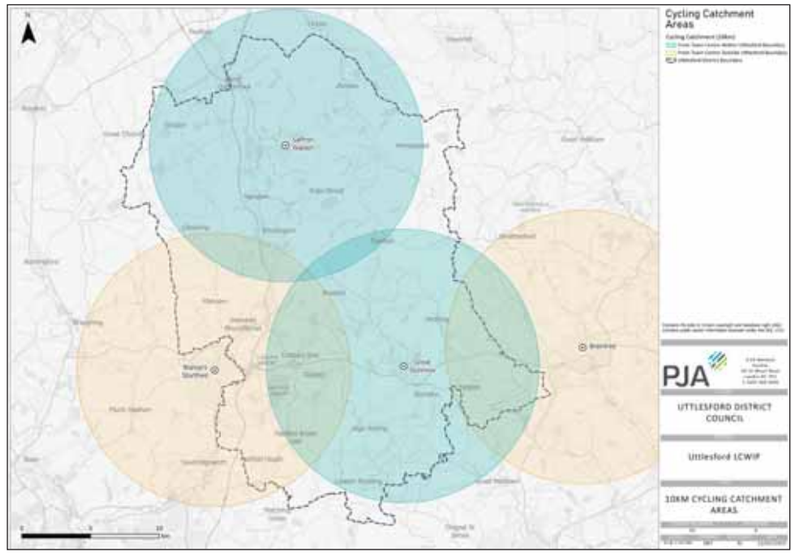


Figure 3.5. Cycling Catchment Areas

CYCLING ISOCHRONES

To complement the catchment areas shown in Figure 3.3, cycling isochrones have also been generated from each of the previously mentioned town centres.

The isochrones were generated using GIS software and are based on a measurement along the road network. This provides a slightly more accurate representation of a 10km cycling distance from the towns, however does not take into account the existing level of service for cycling along these roads and therefore whether these roads are suitable for or would be used regularly by cyclists.

Again, the plan demonstrates limited overlap between the settlements, with large villages such as Thaxted and Clavering more than 10km cycling distance away from their nearest larger settlements.

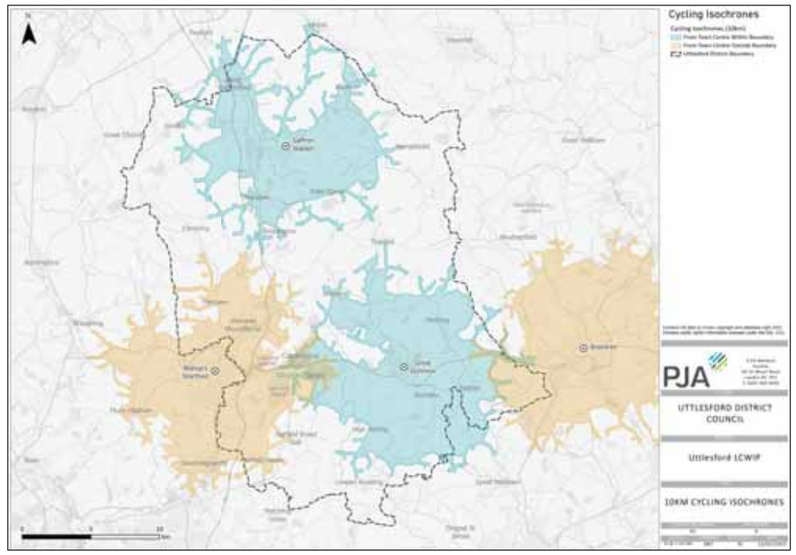


Figure 3.6. Cycling Isochrones

4
DATA COLLECTION

DATA COLLECTION

The focus of Data Collection (LCWIP Stage 2) is to understand the local context to inform the development of the LCWIP walking and cycling networks. DfT guidance recommends that a broad range of information should be gathered to inform the preparation of the LCWIP, including:

- Local context
- Key future developments
- Location of significant trip generators
- Transport network
- Travel patterns
- Existing barriers to cycling and walking

Our LCWIP methodology analyses various datasets, which are summarised on the flow chart opposite. While the LCWIP guidance champions a data-led approach to network planning, also key to the process is building in stakeholder engagement into the development of the LCWIP, and this is represented by the middle box on the diagram.

For the Uttlesford LCWIP, the PJA team attended the Uttlesford Climate Change Working Group meeting in March 2023 to present the emerging results of the Stage 1+2 analysis and begin to gather feedback from key stakeholders, such as local officers and councillors.

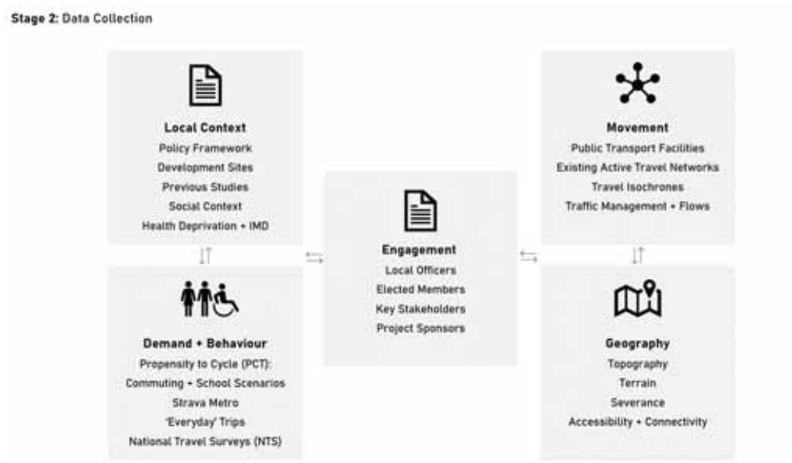


Figure 4.1. LCWIP Stage 2: Data Collection Methodology

CAR OWNERSHIP

This plan summarises the proportion of Uttlesford households that do not own a car, using data from the 2021 Census.

This provides useful context for targeting interventions in areas of the district where car ownership is lower, hence there may be a greater propensity to walk and cycle.

The plan shows that the settlements with the highest proportions of car-free households are within Saffron Walden, Stansted Mountfitchet and Newport, with more than 17% of households being car-free in particular areas within these settlements.

In contrast, many rural areas of the district, particularly in the north-east and north-west have a very low proportion of car-free households, generally in the region of less than 5%.

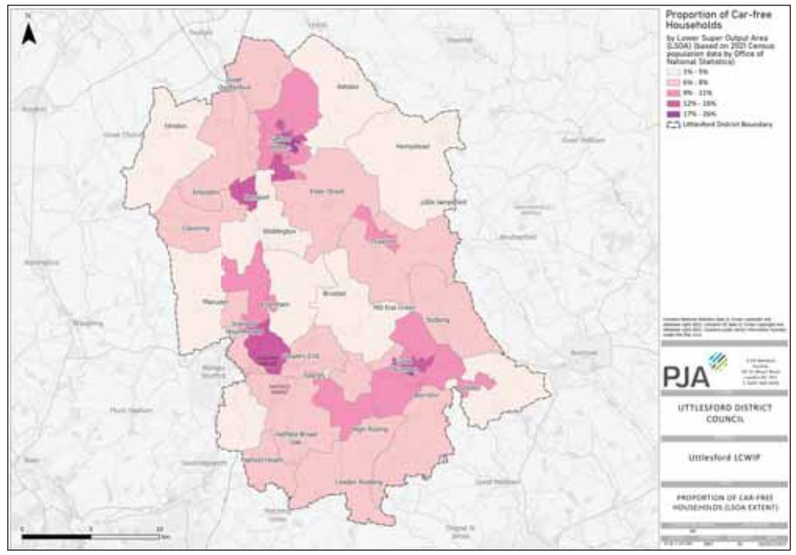


Figure 4.2. Car Ownership

METHOD OF TRAVEL TO WORK - ACTIVE TRAVEL

This plan summarises the proportion of Uttlesford residents which walk or cycling as their main of mode of travel to work using 2021 Census outputs.

It its important to note that the 2021 Census was undertaken during the Covid-19 pandemic when working patterns had been significantly impacted and therefore the results shown should be treated with a degree of caution.

Notwithstanding the above, the data demonstrates that the highest levels of walking and cycling to work are within Saffron Walden, with 15-20% of residents travelling to work by active modes in some areas of the town. Walking and cycling to work in Great Dunmow is generally lower, however higher than the surrounding rural areas.

The majority of the district, which is rural in nature, shows that approximately 0-5% of residents walk or cycle to work.

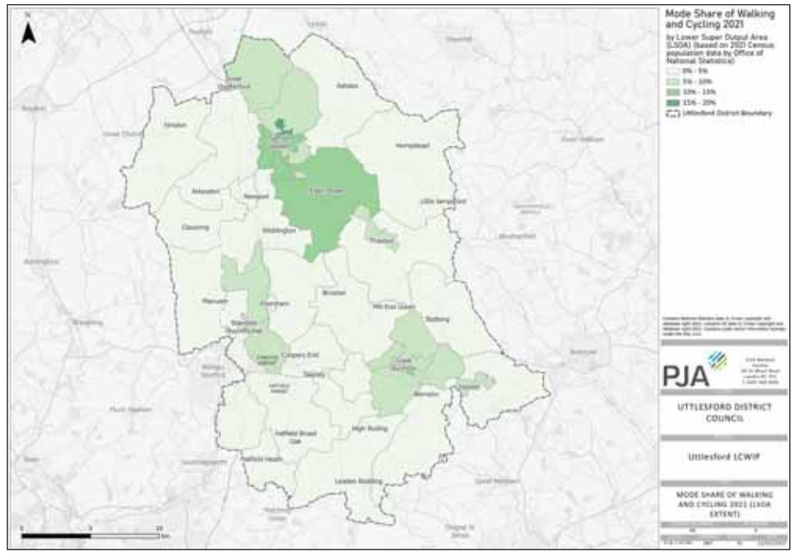


Figure 4.3. Method of Travel to Work (Walking or Cycling)

METHOD OF TRAVEL TO WORK - PUBLIC TRANSPORT

This plan summarises the proportion of Uttlesford residents which use public transport as their main of mode of travel to work using 2021 Census outputs.

This is an important consideration for the LCWIP, as it may highlight opportunities where improving access to key public transport hubs might further increase the percentage of residents travelling to work sustainably.

The data shows that for the vast majority of the district, less than 5% of residents travel to work by public transport. This increases to 5-10% in some settlements with railway stations - particularly Newport, Elsenham and Stansted Mountfitchet.

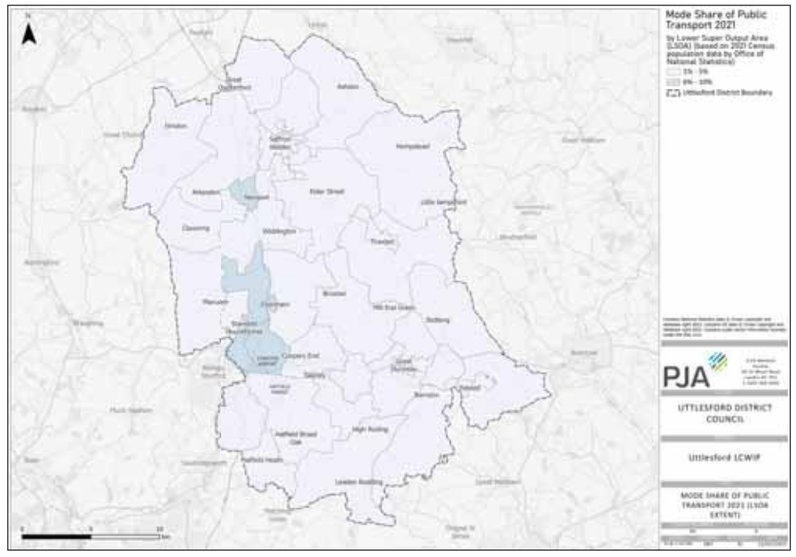


Figure 4.4. Method of Travel to Work (Public Transport)

DEPRIVATION

The Indices of Multiple Deprivation (IMD) is a mathematical dataset calculated using seven 'domains of deprivation' and ranks all LSOAs in England. Each domain is individually weighted in the final IMD calculation: Income (22.5%), Employment (22.5%), Education (13.5%), Health (13.5%), Crime (9.3%), Barriers to Housing and Services (9.3%), and Living Environment (9.3%).

Figure 4.5 summarises the 2019 results for Uttlesford based on 10% intervals and provides insight into levels of deprivation across the district. The data shows that the great majority of LSOAs in Uttlesford are the least deprived, falling within the 7th, 8th, 9th and 10th deciles. Only areas around Broxted, Stansted Airport and Leaden Rodding are classed under the 5th decile category.

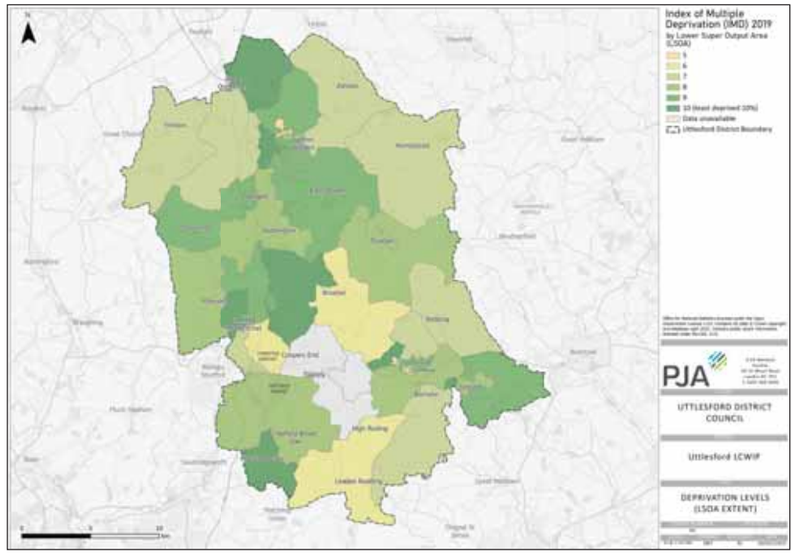


Figure 4.5. Deprivation by LSOA

DAILY TRAFFIC FLOWS (DFT)

This plan shows average daily traffic flows (2021) from the DfT. It highlights the dominant vehicular corridors through the study area.

The plan opposite shows the Annual Average Daily Traffic (AADT) flow at all DfT count points within the LCWIP study area. The DfT data used on the plan provides street-level data for every junction to-junction link on the motorway and 'A' road network, as well as some minor roads in the UK.

The data consists of a combination of manually counted or estimated daily traffic flows at each count point. The data has been obtained for the most recently available year, 2021.

This plan highlights the roads within the study area where traffic flows are highest, and therefore provides an early indication of which roads might be a severance feature for walking or cycling, or which roads would require segregated facilities to enable cycling.

The plan is also useful as an overview to the strategic movement of traffic through the district and how this interacts with the key towns and villages in the study area.

As demonstrated by the plan, the highest motor traffic volumes are along the M11, A120 and A1060.

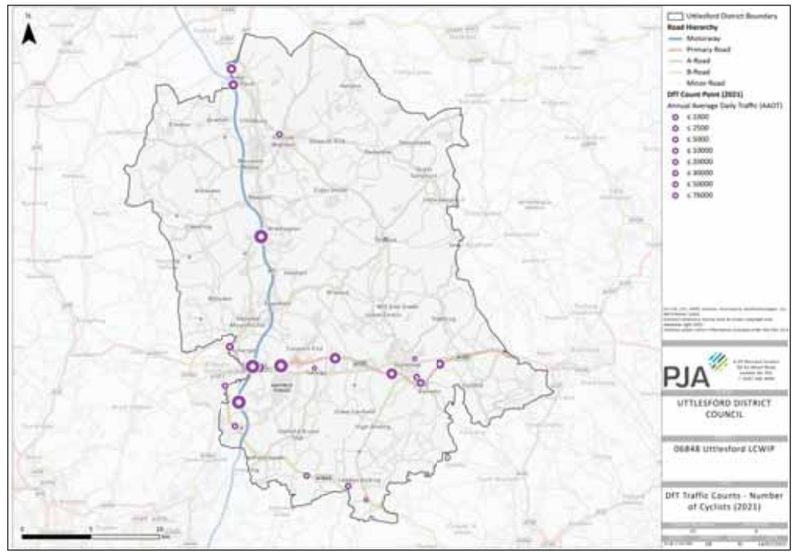


Figure 4.6. DfT Traffic Counts

DAILY CYCLING FLOWS (DFT)

This plan utilises the same DfT data as the previous plan and shows the number of cyclists counted per day at each count point within the study area.

As expected, cycle flows are very low or non-existent on the main roads that traverse the study area, including the M11 and A120.

In contrast, the DfT counts show that 60-80 cyclists per day were recorded on roads such as the B184 in Saffron Walden, Chelmsford Road in Great Dunmow (which forms part of NCN 16) and the A1250 in Bishops Stortford.

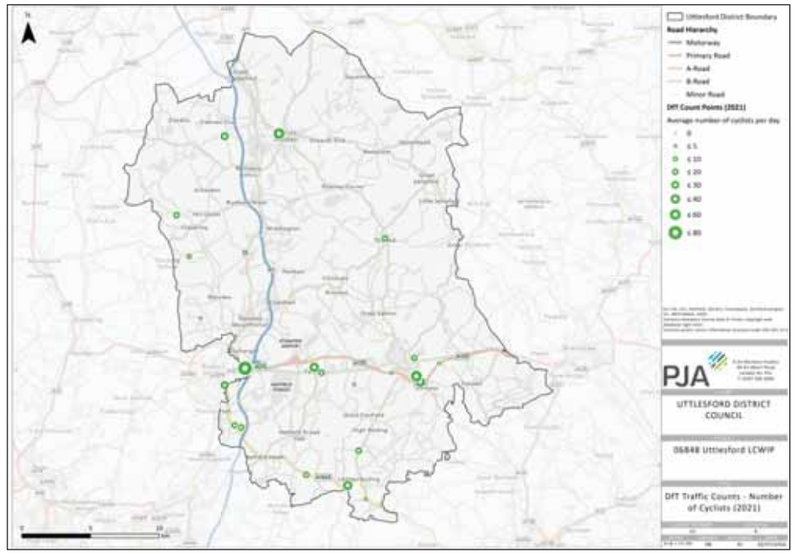


Figure 4.7. DfT Traffic Counts (Cyclists)

AIR QUALITY (NO2)

The figure below summarises Annual NO2 Concentrations across Uttlesford. NO2 is a gas that is mainly produced during the combustion of fossil fuels along with nitrogen oxide (NO). The plan demonstrates that NO2 levels throughout Uttlesford are generally lower than the WHO guideline limit of 10 µg/m3, except from the area south of Stansted Mountfitchet, which shows values of up to 15.14 µg/m3.

Particulate matter (PM) are a mixture of solid particles and liquid droplets which present a great risk to health. Around half of UK concentrations of PM originate from wood burning and tyre and brake wear from vehicles. With regards to those particulates of 2.5 micrometres and smaller (PM2.5), the largest part of Uttlesford presents concentrations surpassing the WHO guideline limit of 5 µg/m3 and, they stay under the UK legal limit. Areas surrounding Great Chesterford, Saffron Walden, Stansted Mountfitchet, Coopers End and Dunmow present some of the highest values across the district, mostly influenced by the presence of the M11 and A120.

As for particulates of 10 micrometres and smaller (PM10), Uttlesford generally presents areas with concentrations below the WHO guideline limit of 15 µg/m3. Only areas in Newport, Stansted Mountfitchet and south of Great Chesterford present higher values.

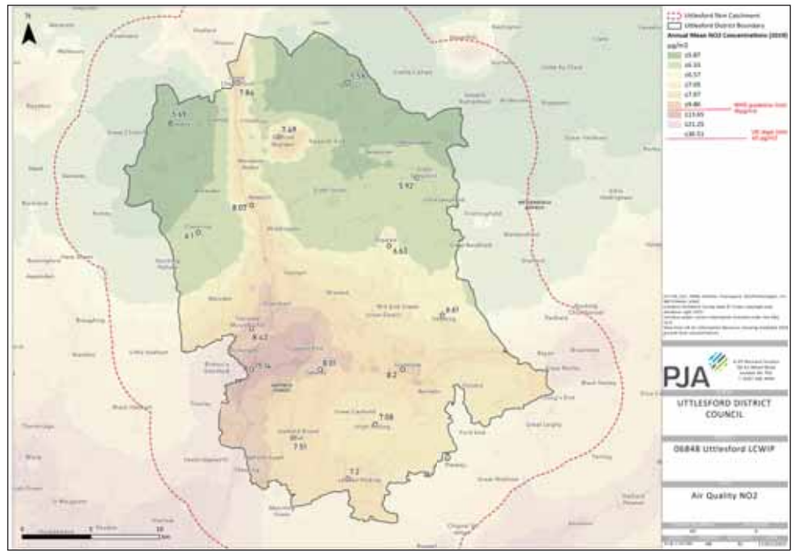


Figure 4.8. Air Quality

TERRAIN

This plan shows the terrain across the District in terms of gradient. The plan highlights that the north-west of the district in particular has the highest concentration of steep inclines and high elevation, particularly in the areas of the district bordering Hertfordshire.

In contrast, the south of the district is relatively low-lying, with limited changes in elevation. This is particularly evident south of the A120, where Uttlesford borders areas of Epping Forest district and Chelmsford district.

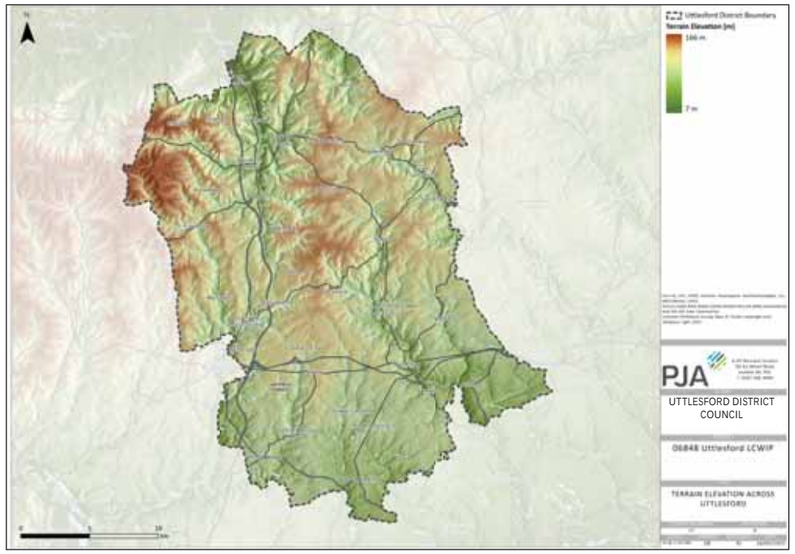


Figure 4.9. Terrain

SEVERANCE

This plan was developed to highlight the key 'Severance' features in the district: 'Severance' typically refers to barriers to movement, and features include road and rail infrastructure and geographic landmarks.

Understanding the impact of severance is critical for contextualising how pedestrians and cyclists currently move through Uttlesford, particularly in relation to major severance features such as the M11 and A120 corridors.

The plan demonstrates that the M11 is the main severance feature in the district, however there are roads which cross it at various points. Similarly, the A120 is a major severance feature in the south of the district which might restrict route choice to key destinations such as Stansted Airport, Bishops Stortford and Great Dunmow.

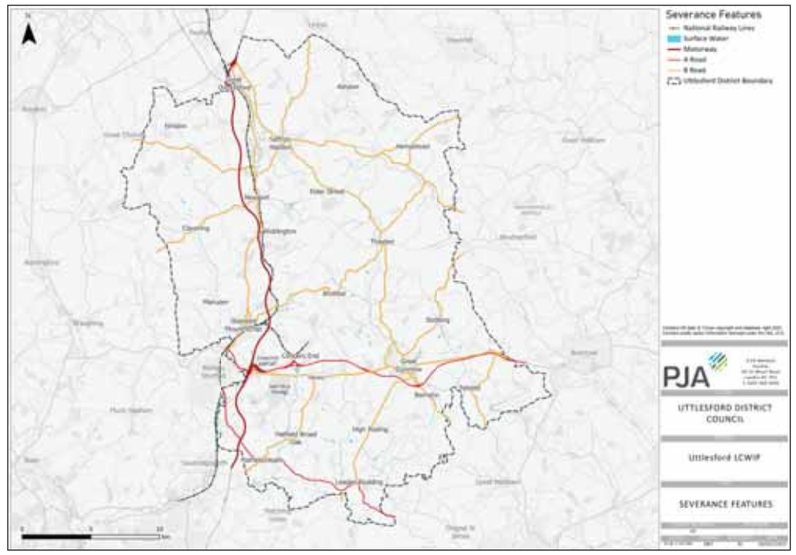


Figure 4.10. Severance

UTTLESFORD ACTIVE TRAVEL SURVEY

In 2022, Uttlesford District Council conducted a three-month survey to gather residents' comments relating to active travel in the district using the Commonplace online feedback forum. This information provides useful context for the LCWIP and can be used to identify particular barriers or opportunities for improving conditions for walking and cycling in the district.

The plan opposite shows the locations of comments receieved, categorised by the sentiment of the response, ranging from "negative" to "positive".

The plan highlights that the majority of resident responses were negative:

- 62% of responses received were negative in sentiment
- 25% of responses were mostly negative in sentiment
- Just 3% of responses were positive in sentiment, with a further 3% mostly positive
- The remaining 7% of responses were neutral

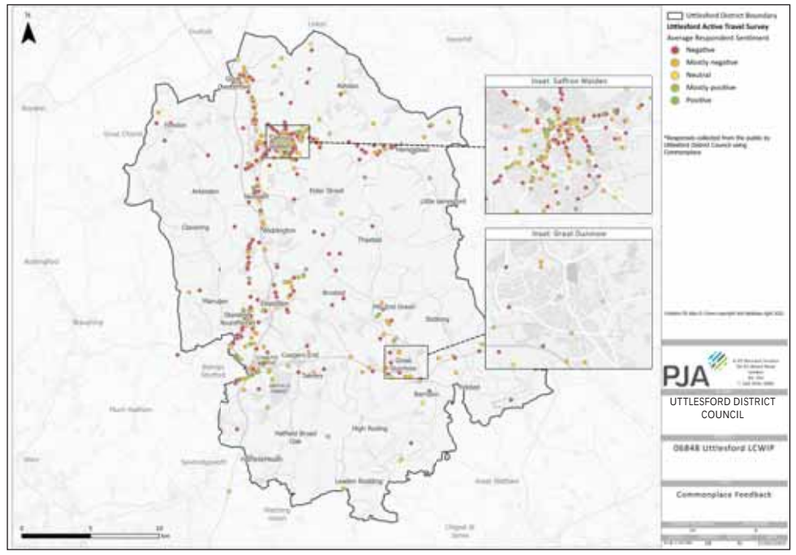


Figure 4.11. Active Travel Survey

ACTIVE TRAVEL SURVEY HEATMAP

The opposite plan displays the survey responses in a heatmap, focusing only on negative responses. The purpose of this plan is to analyse the negative responses to highlight hotspots, or areas where there may be particular barriers or safety concerns relating to walking and cycling.

The plan shows that the densest clusters are within Saffron Walden, particularly in the south-west of the town (B1052) as well as in the town centre. There are also clusters of negative responses within Stansted Mountfitchet and near Stansted Airport and M11 Junction 8.

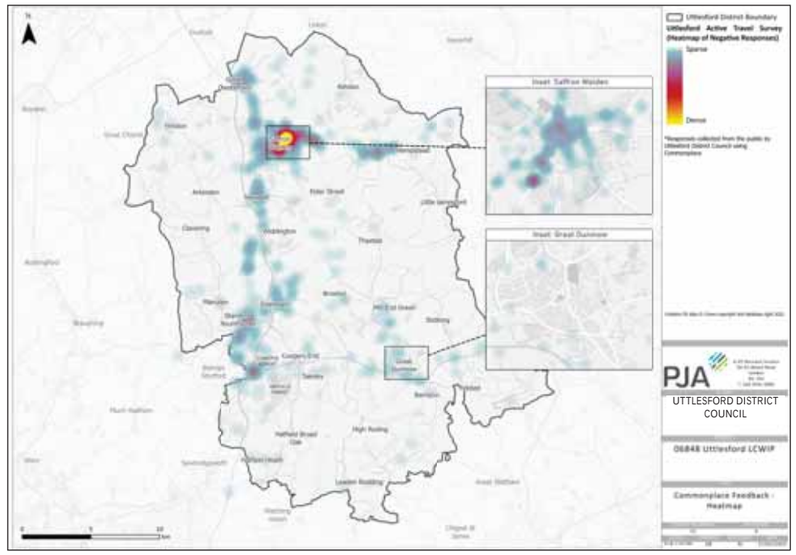


Figure 4.12. Active Travel Survey Heatmap

TRAVEL PATTERNS

OVERVIEW

Understanding existing and potential future travel patterns is an important step in developing the LCWIP network to ensure it reflects local demand. The analysis of travel patterns has combined analysis of commuter patterns (Propensity to Cycle Tool) and non-commuter travel patterns (School Trips, Everyday Trips and Strava analysis).

PROPENSITY TO CYCLE TOOL (PCT)

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. It is important to note that one limitation of the PCT is that it uses the 2011 Census and therefore is not based on recent data.

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). 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

The PCT tool was used to identify the greatest latent demand for cycle and school commuting. The PCT analysis used the 'E-Bike' scenario, which models the same mode share for cycling as in the Netherlands, adjusting for trip distance and topography and includes improved access to E-Bikes. Using the 'E-Bike' 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. To accommodate for future commuting demand from proposed developments, the population forecasts for each proposed site were incorporated into the PCT forecasts to provide a more accurate reflection of a potential future scenario. The forecast populations were assigned to the nearest available LSOA to each development site.

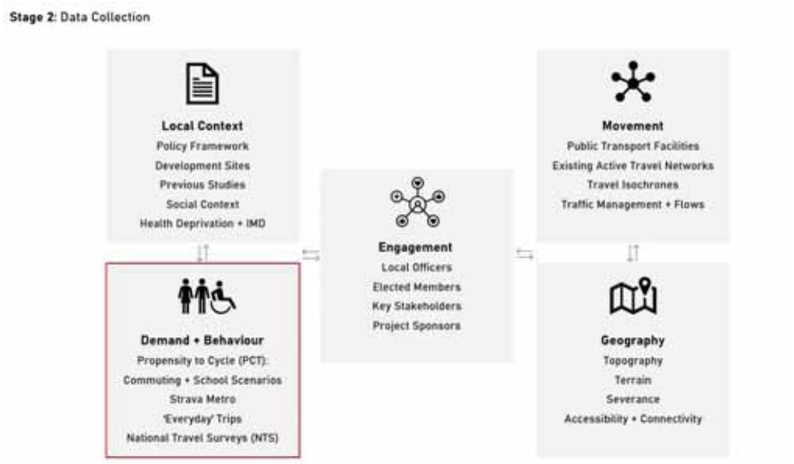


Figure 4.13. Data Collection Methodology

PCT STRAIGHT LINES

The plan in Figure 4.14 shows the top 50 straight desire lines across the study area.

The results demonstrate that commuting demand is mostly contained within Saffron Walden and between Takeley and parts of Bishop's Stortford. The desire lines originating in or terminating in Takeley are most likely related to demand generated by Stansted Airport, given that the airport and Takeley are located within the same LSOA.

From Saffron Walden there are some longer-distance desire lines extending to towns further out, notably to Newport. Other desire lines with lower levels of demand are found between Takeley and Stansted Mountfitchet and Dunmow and between Dunmow and Takeley.

The plan demonstrates that there is commuting cycling demand in each of the three LCWIP study areas.

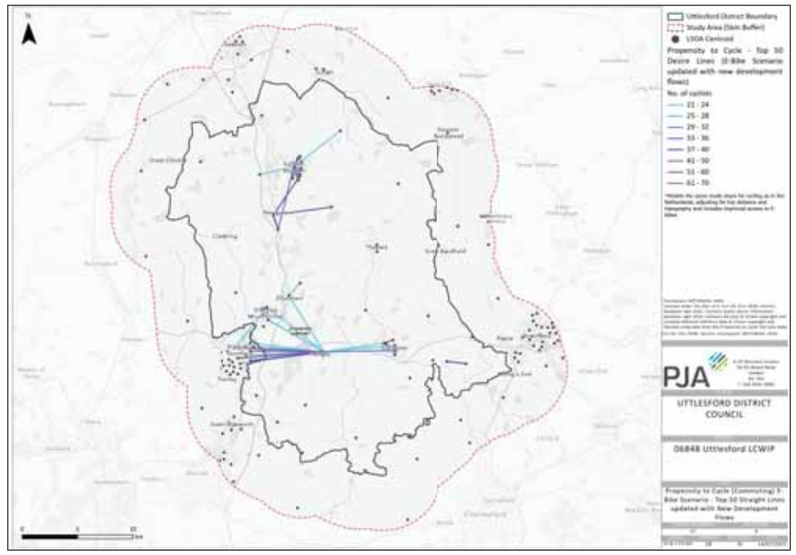


Figure 4.14. PCT Top 50 Straight Lines

PCT APPLIED NETWORK

The PCT tool also provides an 'applied network' scenario which snaps the straight-line desire lines to closest applicable road alignment to provide an indication of more applied demand. This is shown in Figure 4.15.

This plan shows that the strongest demand is concentrated along the B1256 corridor, between Takeley and Bishop's Stortford. There is also high demand around Saffron Walden, Bishop's Stortford and Stansted Mountfitchet. Whilst the applied network outputs are useful, it should be noted that the tool does not consider non-highway routes and does not factor for the level of service for cycling on each route. It therefore tends to favour the most direct roads which are often A-roads and B-roads. .

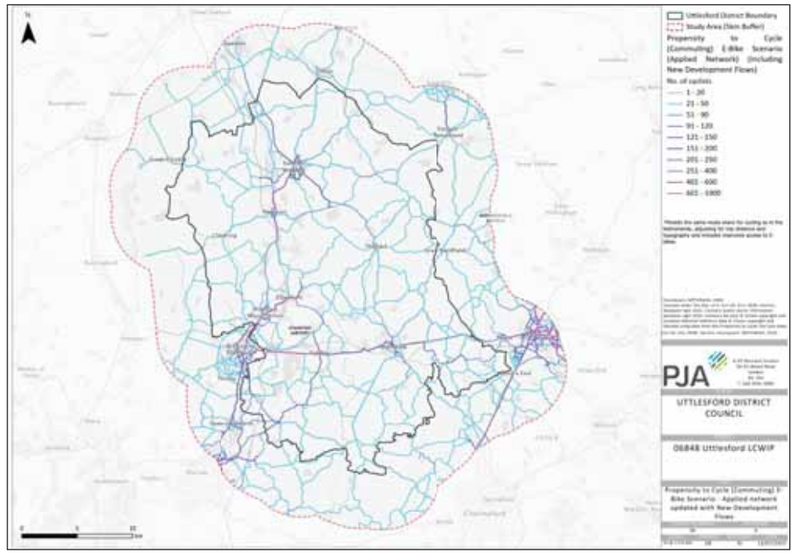


Figure 4.15. PCT Applied Network

PCT SCHOOL TRAVEL

The PCT tool also provides a school travel scenario using the travel to school results from the 2011 Census. Figure 4-16 presents the school travel results for the 'Go Dutch' scenario (the plan also includes school locations in the district). This scenario assumes that there is the same mode share for cycling trips to school as the Netherlands, which is 41%. The plan highlights the location of several clusters of routes which are anticipated to have significant increases in the number of cycling trips to school, including:

- Audley End Road in Saffron Walden
- B1008 Beaumont Hill in Great Dunmow

It is evident from the data that Helena Romanes School and Sixth Form Centre, in Great Dunmow, and Saffron Walden County High School, in Saffron Walden, have a strong influence on the demand for school travel in the town.

A limitation of the PCT is its focus on commuting and school trips which tends to produce outputs focussed on key employment and education sites. For the purpose of the LCWIP, the PCT results were used alongside an analysis of non-commuting and leisure trips to enable the development of a network that covers a wide range of trip purposes.

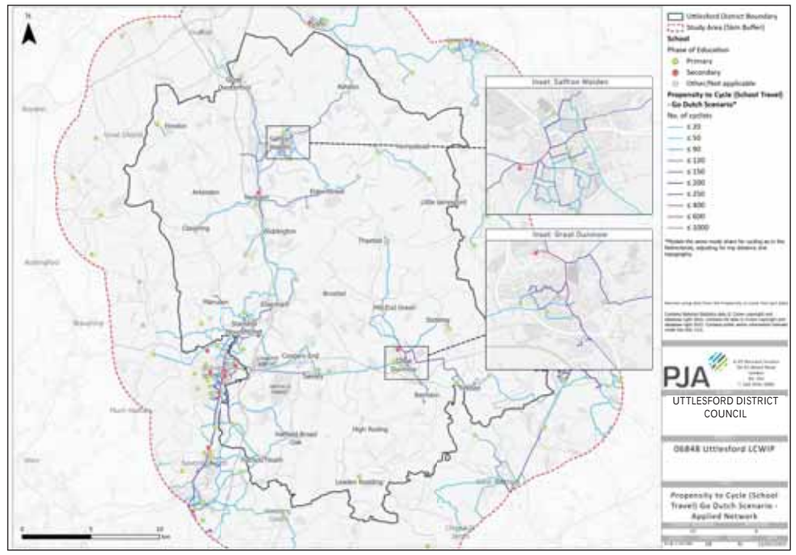


Figure 4.16.PCT School Applied Network

STRAVA (CYCLING)

To help supplement the PCT results, Strava data was used to provide additional information on trips 'on foot' (including walking, running, hiking etc.) and trips 'on bike'. The Strava data was extracted from the Strava Metro website and is gathered from Strava users recording walking, running or cycling trips on their Strava app.

Strava data is available in batches of three consecutive months, data was therefore obtained for June – August 2022, which represented the three months of data with the highest levels of activity from the previous year. Strava data consists predominantly of leisure and recreational trips, however it also includes commuter trips which generally account for c.5-10% of entries.

The June – August 2022 results highlight several alignments where daily cycle trip volumes were higher comparatively to the rest of the district. The distribution of cycle routes is predominantly focused on-carriageway routes. There are many segments of roads with more than 30 trips per day around Saffron Walden and Great Chesterford to the north; and High Roding, Great Dunmow and Felsted to the south. Some of the routes with the highest daily cycling flows are as follows:

- B1383 and Audley End Rd, between Great Chesterford and Saffron Walden
- Quickset Road, to the south from Great Chesterford
- Wenden Road, from Saffron Walden to Audley End Station
- B1039, to the west from Audley End Station
- B184 /Dunmow Road, to the south from High Roding
- Green Street, to the west from High Roding
- A1060, to the west from Leaden Rodding
- The St, between Clatterford End and Stagden Cross, near Leaden Rodding
- B1417/Braintree Road, to the east from Felsted

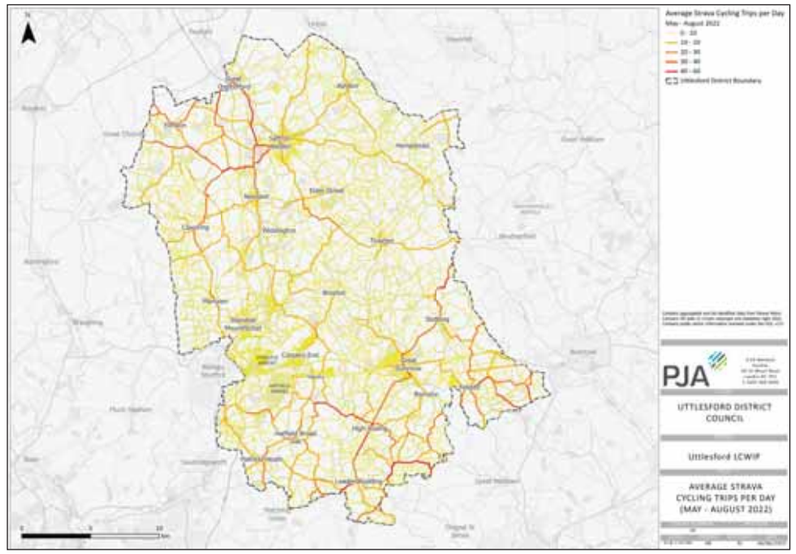


Figure 4.17. Strava (Cycling)

STRAVA (WALKING)

The Strava data also includes trips recorded 'on foot'. These are commuting or leisure trips classified as a walk, hike or run in Strava.

The plan in Figure 4.18 demonstrates that fewer 'on foot' trips were recorded across the study area, compared to the cycling trips shown on the previous page. The areas with the highest numbers of trips on foot are primarily located within the urban areas of the district (Saffron Walden, Great Dunmow), as well as some higher numbers along more rural routes, primarily along the Flitch Way and near Elder Street.

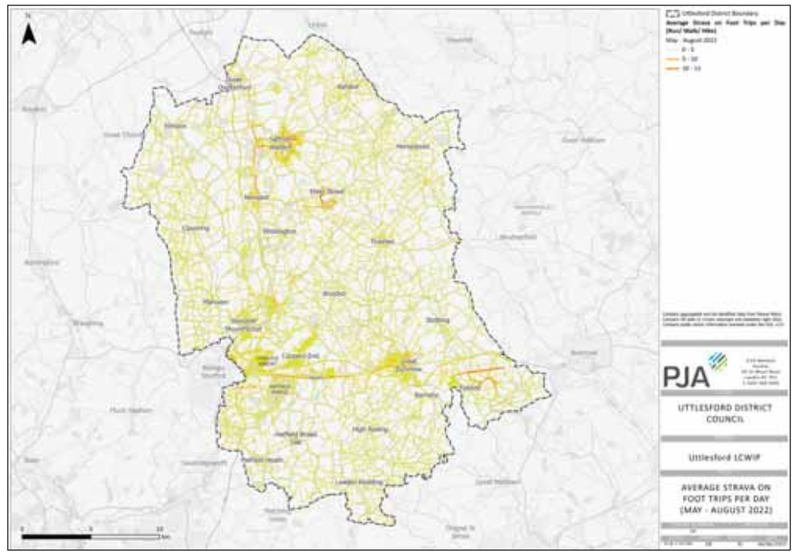


Figure 4.18. Strava (On-Foot)

EVERYDAY TRIPS - ORIGINS

The PCT outputs provided indicative cycling networks based on commuting and school trips, whilst the Strava data is generally focussed on trips for recreation and/or exercise. The purpose of the Desire Line Clustering therefore 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, Strava and PCT outputs provided a comprehensive demand model for developing the LCWIP network. It should be noted that desire lines that were longer than 10km were removed from the analysis for consistency with the LCWIP approach.

Developing the Desire Lines required the identification of all Origins and Destinations within a 5km catchment of Uttlesford district. The catchment area was divided into a hexagon grid using 0.25km2 hexagons.

For the purposes of the analysis, all hexagons which currently contain an LSOA population weighted centroid and/or are anticipated to include >100 residential dwellings in the future were included as Origins.

Figure 4.19 shows the identified origin clusters.The plan shows that the key origins are primarily located within the main settlements of the district, such as Saffron Walden, Great Dunmow and Stansted Mountfitchet. The plan also identifies several new origins created through planned residential development, particularly in Takeley, Saffron Walden, Great Dunmow, Newport and Great Chesterford.

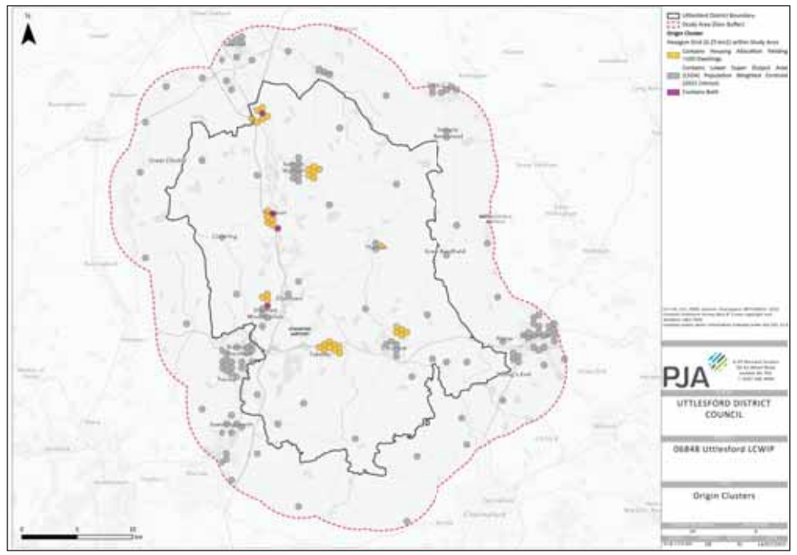


Figure 4.19. Origin Clusters

EVERYDAY TRIPS - DESTINATIONS

Having identified the Origins, Destinations were identified based on data provided by Uttlesford District Council and Essex County Council. All destinations were categorised as below:

- Class 1: Town, Village and Local Centres; Key Employment Sites, Railway Stations.
- Class 2: Bus Stops, Schools, Healthcare Facilities, Supermarkets, Leisure Centres, Post Offices, Libraries, County Parks and Community Hubs.

The combined Origin and Destination datasets were used to develop the walking and cycling networks in Stages 3 and 4. The origin-destination analysis provides an important non-commuting dataset which was compared against the Propensity to Cycle Tool (PCT) outputs to provide a comprehensive review of desire lines both within Uttlesford and to surrounding areas.

Figure 4.20 shows the destinations identified for the everyday trip analysis. The Class 1 destinations are identified as points, and mainly comprise any significant town or local centres in the district which are located in towns and larger villages. The class 2 destinations are shown as a heatmap in blue, with areas of darker blue highlighting areas where there are denser clusters of destinations. The plan identifies that the main clusters are located in Bishop's Stortford, Braintree, Stansted Airport and Saffron Walden.

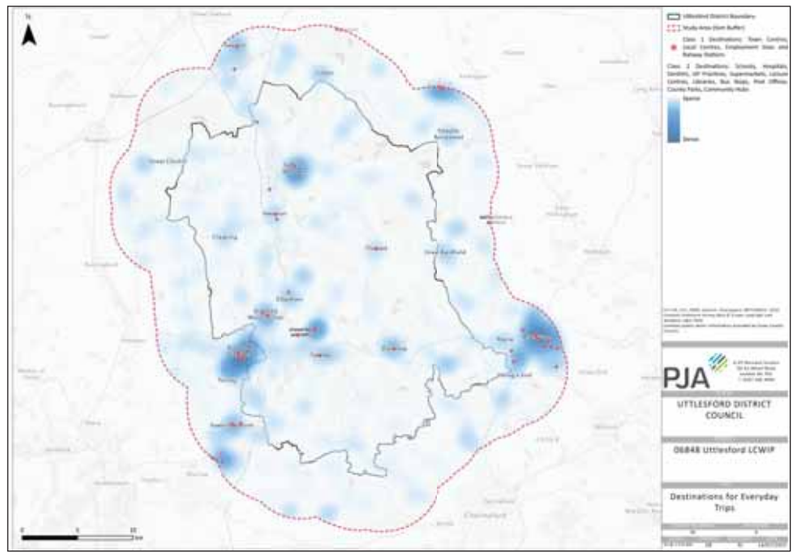


Figure 4.20. Destination Clusters

EVERYDAY DESIRE LINES (LONG LIST)

To determine the key desire lines for Uttlesford's LCWIP, 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 (all desire lines >10km were excluded from the analysis). This was based on the assumption that the Class 1 destinations would generate a higher number of trips and that they are also likely to have a larger catchment area of trips from across the study area, compared to Class 2 destinations which would generate more locally based trips. Figure 4.21 provides an indication of the volume of desire lines that were considered in the development of the LCWIP network.

The plan highlights that densest clusters of desire lines are within the key settlements in the district, with fewer desire lines connecting settlements, which are generally quite isolated and therefore often not within cycling distance of one another. Notwithstanding this, there is a clear dense cluster of desire lines along the A120 corridor, connecting Great Dunmow, Takeley, Stansted Airport and Bishops Stortford/Stansted Mountfitchet. This indicates that this corridor is likely to be an area of high demand for everyday cycling trips.

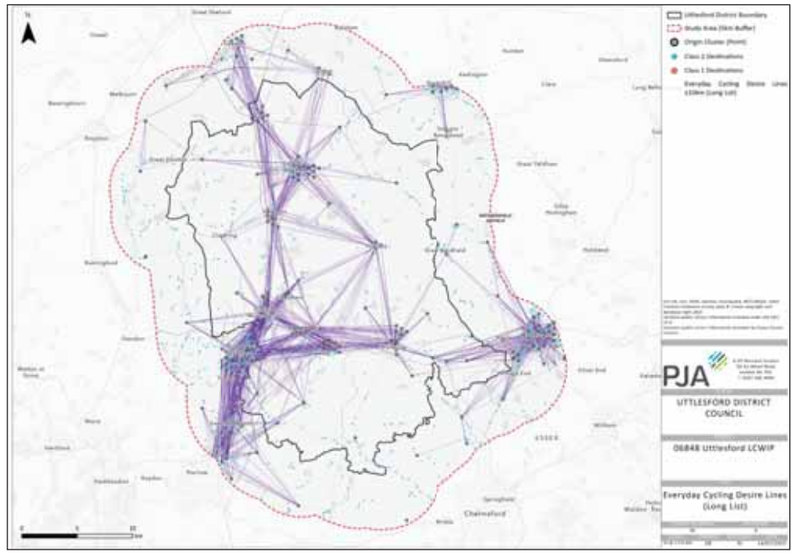


Figure 4.21. Everyday Cycling Desire Lines

CLUSTERED EVERYDAY DESIRE LINES

Having identified all available desire lines, a "Density Based" clustering analysis was used to cluster the above desire lines into a more refined plan which identified the top 100 desire line clusters. First, all desire lines were converted to centroids. Clusters of desire lines were identified using the Density Based Clustering tool in ArcGIS, which identifies clusters of point features within surrounding noise based on their spatial distribution. Once each cluster had been identified, the clusters of points were matched with the corresponding groups of desire lines and the linear directional mean of each group was identified. The cluster groups were then ranked based on the number of desire lines in each cluster. The top 100 lines on the plan below therefore represent the general alignments which are most likely to generate the highest number of everyday trips.

As can be seen in Figure 4.22, the top 100 everyday desire lines are mostly all located within the district boundary, clustered primarily between Stansted Mountfitchet, Bishop's Stortford, Stansted Airport and Takeley. There are clear corridors of everyday demand shown along the A120 corridor, as well as a north to south band of desire lines connecting Great Chesterford, Saffron Walden, Newport, Stansted Mountfitchet and Bishops Stortford.

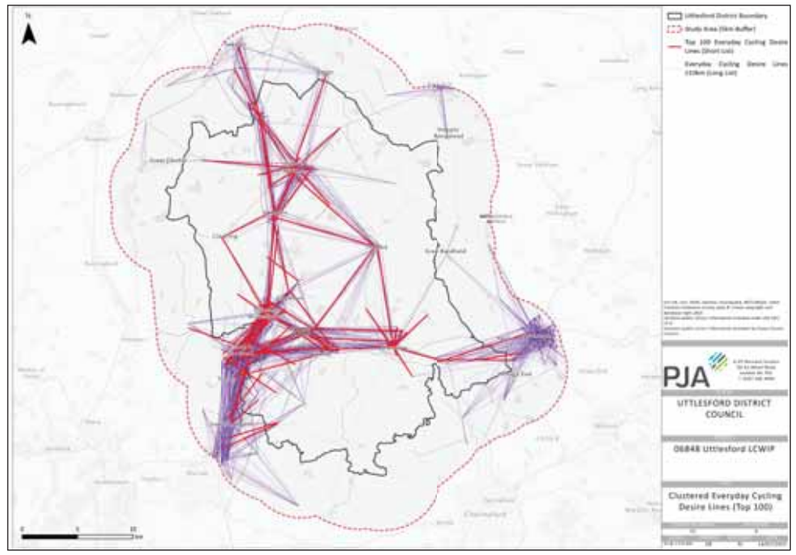


Figure 4.22. Top 100 Clustered Everyday Desire Lines

COMBINED DEMAND ANALYSIS

To help compare the results from the PCT, Strava and Everyday Trip analyses, Figure 4.23 was prepared which highlights where the results overlapped. The study area was first split into a grid of hexagons, which were assigned a colour if they contained a certain type of desire line. Hexagons containing a Strava link with high demand were coloured yellow, a top 50 PCT desire line blue, and a top 100 everyday cycling desire line green. The hexagons outlined in black are key areas where demand from more than one dataset was identified. The key areas of demand identified on the plan are described in further detail below.

The plan demonstrates that the highest levels of overlap between the three datasets are in some parts of Saffron Walden, Newport and Great Dunmow, with some hexagons containing all three types of desire line. This is unsurprising, given that the three towns are home to dense clusters of commercial, employment and also residential land uses. Desire lines are evident near Audley End, west form Saffron Walden and in Saffron Walden's town centre.

The outputs from this plan were used to inform the development of a walking and cycling network for auditing.

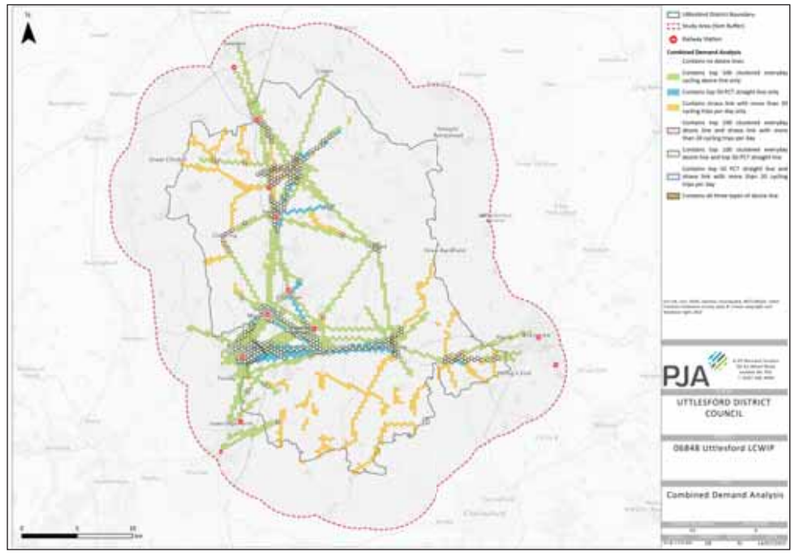


Figure 4.23. Combined Demand Analysis

The plan in Figure 4.24 overlays the project scope with the combined demand analysis. The purpose of this plan is to sense check the results of the demand analysis against the original scope to determine the suitability of the initial workstreams identified.

The results show that:

- The three LCWIP study areas all show high levels of demand for active travel
- Strategic cycle routes A, C and D all contain at least one type of demand. The SCR with the greatest level of demand is SCR C, which connects Bishops Stortford and Braintree.
- SCR B which connects to Chelmsford in comparison only shows limited levels of leisure demand.

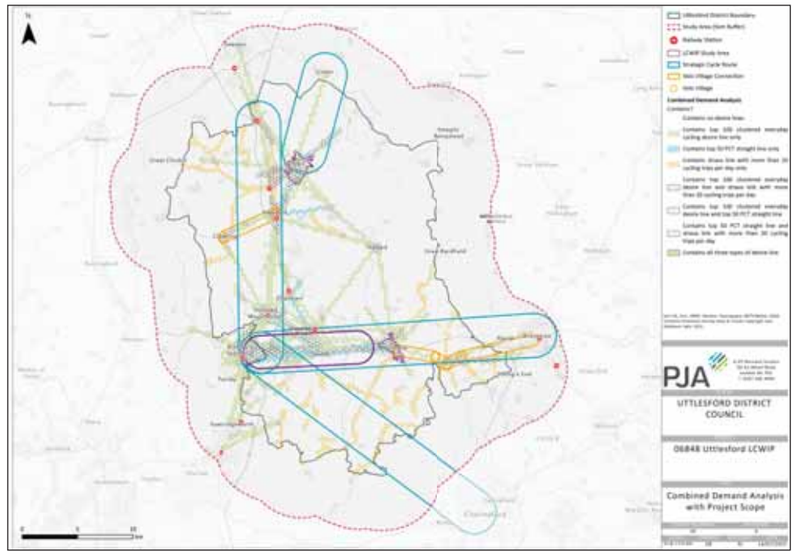


Figure 4.24. Combined Demand Analysis + Scope

5
SAFFRON WALDEN LCWIP

FIRST IMPRESSSIONS OF SAFFRON WALDEN

This section briefly summarises the project team's first impressions of Saffron Walden from our inception site visit. The purpose of the site visit was to better understand the local context, and to review conditions for walking and cycling. This section summarises the findings into the following groups.

HISTORIC STREETSCAPES

The centre of Saffron Walden is characterised by its historic streetscapes, with narrow winding streets and charming historic properties (Figure 5.1). King Street is a particular example where the combination of historic buildings, a low traffic environment and high concentration of retail makes for a pleasant environment. On Tuesdays and Saturdays the town centre is closed to motor traffic for market days.

At points in the town, the historic street layouts can impede on the walkability of the town, particularly in locations where there is limited carriageway width resulting in narrow and "disappearing" footways. The network of one-way streets in the town centre also acts as a severance feature for cycling at present, with no contra-flow facilities in place.

WALKABILITY

Saffron Walden benefits from its fairly compact size, which means that much of the town is located within a 20 minute walk or 5-10 minute cycle. Within the town centre, the street network is porous with several footpaths and cut-throughs that make walking the most direct mode of transport (Figure 5.2).

One limitation of the walking network in the town was often the width and quality of footways, which were usually below 2m in width and often narrowed to less than 1m.

SEVERANCE AND CONNECTIVITY

Saffron Walden is bisected by several B-roads. As there is no bypass for motor traffic, these roads can be busy and were noted to be congested during peak times. There were some instances of junctions with missing crossing points, which can introduce severance for walking trips across the town. At some junctions in the town, hostile street design such as guard railing and barriers were present, which made navigating these junctions challenging when on foot.

CYCLING

Cycling infrastructure in the town was limited, with cyclists having to mix with vehicular traffic most of the time. There were some limited examples of dedicated cycling infrastructure (Figure 5.3), which primarily comprised of shared-use facilities that joined up the town with edge of town destinations (such as Knight Retail Park). This is likely in part due to the lack of design scope on many of the roads within the town, which are narrow with on-street parking on either side of the carriageway.

OUT OF TOWN DESTINATIONS

Saffron Walden is served by Audley End railway station which is located approximately 2.5km from the edge of the town (Figure 5.3). This is a key destination for walking and cycling and the current route is inaccessible on foot. The conditions for cycling are reasonable, however further improvements could be made to make this an attractive route and increase the number of cycle-rail trips.

Another key destination located just outside the town is Audley End House and Gardens. This is a major tourist destination and is within both walking and cycling distance of the town. At present, cyclists are required to cycle on-carriageway and while there is footway provision for pedestrians, it is narrow and poorly surfaced at points.

Figure 5.1 Example of historic streetscape and building types in town centre; narrow footways in town centre leading to pedestrians walking in carriageway; town centre closed to traffic for market day; high quality public realm on Market Place

Figure 5.2 Footpaths and cut-throughs create a porous pedestrian network in the town (left); footway widths commonly are less than 2m; pedestrian waiting to cross a busy road at a controlled crossing; example of zebra crossing to address severance (right)

Figure 5.3 Audley End House and the railway station are key destinations from the town (left); cycling parking at Audley End station; example of traffic calming along Wenden Road to improve conditions for cyclists; example of existing shared use route (right)

NETWORK PLANNING FOR WALKING AND CYCLING

OVERVIEW

Stage 3 used the outputs from Stage 2 to develop a preferred walking and cycling network for site auditing. Given the compact scale of Saffron Walden, the routes identified were treated as both walking and cycling routes.

Much of the town is within a 20-minute walk of the town centre. As such, the entirety of Saffron Walden has been considered as being within a "Core Walking Zone", as defined by the LCWIP guidance.

The site audit results were then informed to develop a programme of infrastructure improvements, benefitting both walking and cycling.

NETWORK DEVELOPMENT

The combined demand analysis (Figure 5.4) was interrogated to develop a network of walking and cycling routes within the town. For the purposes of the network development, the LCWIP methodology recommends developing 'routes' which form the basis of the auditing in Stages 3 and 4.

The combined demand analysis in Figure 5.4 highlights strong demand for walking and cycling in the town centre and the areas north of this, also extending west towards Audley End House. In addition to this, there is strong demand identified towards Wendens Ambo (Audley End Station), as well as demand in the south of the town around the Pleasant Valley residential estate.

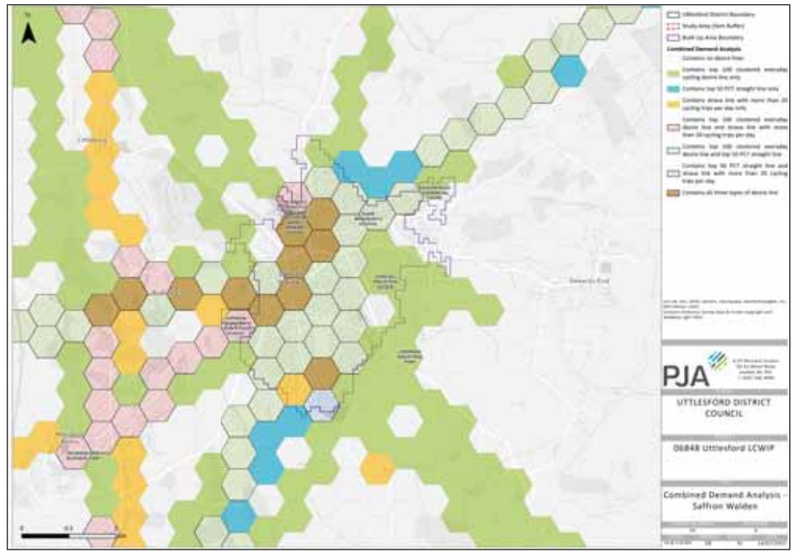


Figure 5.4. Combined Demand Analysis - Saffron Walden

WALKING AND CYCLING NETWORK

The network represents indicative routes which might be followed for walking and cycling, however they are not intended to be routes that will necessarily be followed from beginning to end. A mixture of route types was selected, ranging from main routes into the town centre, routes through residential areas, and routes that provided onward connectivity to the development sites on the edge of the town. A workshop was held with the LCWIP working group at this stage to gather feedback on the routes proposed. Following this workshop, a number of adjustments were made to the routes to reflect the local knowledge of working group members:

- Additional route added connecting the High School to Pleasant Valley
- Additional link provided to Shire Hill Industrial Estate utilising Shire Hill Line.
- Additional route added to connect to Great Chesterford Retail Park
- Short spur added to utilise bridleway east of Thaxted Road

Following this exercise, the following routes were identified for auditing:

- Route 1: Windmill Hill to Audley End Railway Station via B184 High Street
- Route 2: Swan Meadow to Ashdon Road via The Common and King Street
- Route 3: Audley End House to Knight Park via Mount Pleasant Road
- Route 4: High Street to Radwinter Road via Hill Street
- Route 5: Church Street and Ashdon Road
- Route 6: Audley Road to Cromwell Road Local Centre via Debden Road
- Route 7: B1052 Little Walden Road to Mount Pleasant Road via Common Hill
- Route 8: Elizabeth Way
- Route 9: Wenden Road to Debden Road via Beeches Close and Summerhill Road
- Route 10: Chaters Hill to Shire Hill Lane via Thaxted Road
- Route 11: Saffron Walden - Great Chesterford Retail Park (cycle only)
- Route 12: Thaxted Road to Developments east of Shire Hill Lane

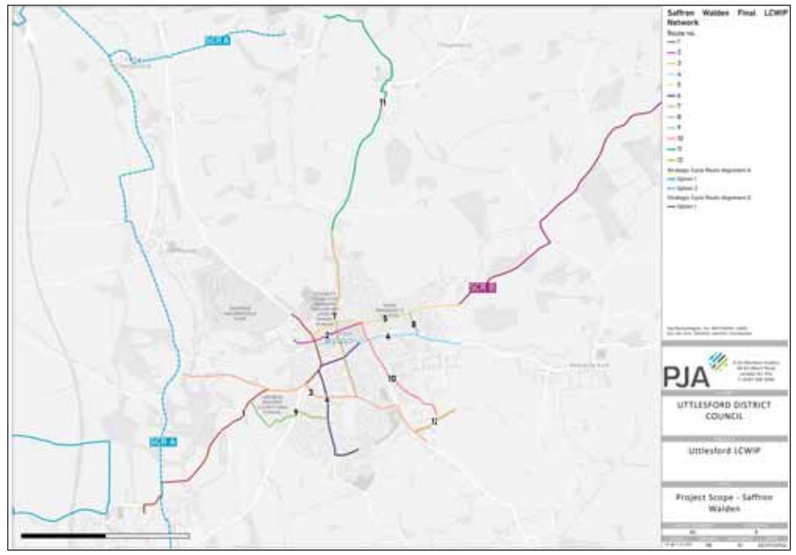


Figure 5.5. Proposed LCWIP Network - Saffron Walden

The routes shown in Figure 5.5 also provide connections to the routes identified as part of the Strategic Cycle Routes workstream, which are described further in Chapter 7.

Route 10 connects to SCR A (Option 2) at Chesterford Research Park and Route 1 connects to SCR A (Option 2) where it crosses the B1383 in Wendens Ambo. The LCWIP network therefore facilitates a strategic north-south connection via Saffron Walden.

AUDITING TOOLS

ROUTE SELECTION TOOL (RST)

The cycling conditions along each route were audited 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.

- 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
- Gradient: Identifies the steepest section of a given cycle route where the section shares similar characteristics (max 1km in length). Routes are scored down where the gradient exceeds 5% for at least 50m.
- 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
- Connectivity: Records the number of individual cycle connections into a section of route – routes should aim to have >4 connections per km.
- 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).
- Critical Junctions: Provides a number of critical junction design issues including: vehicle flows, protection from vehicular traffic, wide junction splays, and junction geometries

WALKING ROUTE AUDIT TOOL (WRAT)

Having confirmed the LCWIP network, each route was then audited on site using the Walking Route Audit Tool (WRAT) methodology set out in the DfT LCWIP process guidance. Walking audits were undertaken on site over a two-day period in August 2023 by PJA.

The Walking Route Audit Tool (WRAT) is divided into several categories for analysis and uses a Red Amber Green (RAG) scoring technique:

- Attractiveness: Considers the impact of maintenance, traffic noise, pollution and fear of crime upon the attractiveness of a route
- 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
- 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
- Safety: Focuses on the impact of vehicle volumes and speeds and interaction with pedestrians
- Coherence: Focuses on the provision of dropped kerb and tactile information for pedestrians


Local Cycling and Walking Infrastructure Plan: Route Selection Tool

ROUTE SUMMARY

Route Name	Route 1
Overall Length	3.86km
Name of Assessor(s)	IMT
Date of Assessment	29.08.23

Criterion	Performance Scores: Existing	Potential
Directness	5.00	0.00
Gradient	3.03	To Be Determined
Safety	1.84	0.00
Connectivity	1.56	0.00
Comfort	0.12	To Be Determined

Route 1

Number of Existing Critical Junctions/Crossings	6
Number of Potential Critical Junctions/Crossings	0
Description of Improvements	
Indicative Cost	

Figure 5.6. WRAT and RST Tools

AUDITING RESULTS

RST RESULTS

The RST results across the ten routes ranged from 46% (Route 8) to 76% (Route 7), as shown in Figure 5.8. There was a high level of variance between the scores, indicating that cycling level of service in Saffron Walden is mixed. Unsurprisingly, the LCWIP routes following the main vehicular routes through the town (Routes 1, 2, 3 and 10) were the lowest scoring routes. The highest scoring routes (Routes 6, 7 and 10) generally followed alignments through quieter residential areas.

The Route Selection Tool consists of five scoring criteria (Directness, Gradient, Comfort, Connectivity, Safety) and the Critical Junctions assessment. The average overall RST score across the LCWIP routes was 65%, and the average scores for each of the five criteria are presented below in Figure 5.7.

Criteria	Highest Score (%)	Lowest Score (%)	Average Score (%)
Directness	100%	100%	100%
Gradient	86%	25%	68%
Safety	69%	41%	41%
Connectivity	100%	19%	58%
Comfort	69%	0%	30%

Figure 5.7. RST Average Results - Saffron Walden

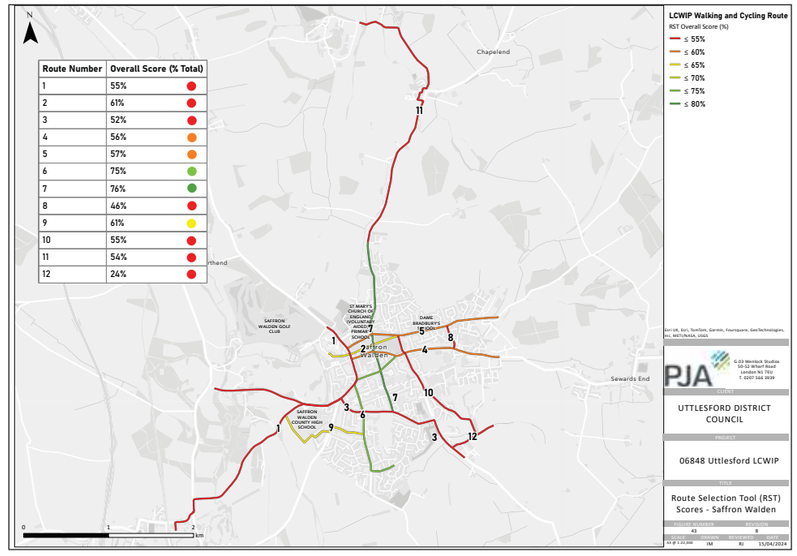


Figure 5.8. RST Results - Saffron Walden

RST RESULTS (CONTINUED)

The average criteria score for Directness (100%) was the highest amongst the RST's scoring criteria. This shows that the proposed LCWIP routes follow direct alignments compared to equivalent motor vehicle routes. Only routes 2 and 9 present shorter distances of travel compared to vehicle routes. The score for Gradient was 68%, however there was a large variance in scores against this criterion, as scores ranged between 25% and 86% across Saffron Walden. This indicates that while some routes present a very low gradient, the high gradient along other routes may negatively impact cyclists' comfort.

Figure 5.9 Example of contraflow access for cyclists on one-way street improves directness (Wenden Road)

The average criteria score for Connectivity (58%) was one of the highest amongst the RST's scoring criteria. Like with Gradient, there was a large variance in the scoring of this criteria, with the lowest score being 25% and the highest 100%. This shows many of the proposed LCWIP routes make use of a dense street network within Saffron Walden, while some other routes do not enjoy the same degree of permeability for walking and cycling

The Safety criteria assesses average vehicle speeds and flows and whether cyclists are protected from vehicular traffic. It is therefore unsurprising that the proposed LCWIP cycle routes in Saffron Walden also scored fairly low for this criterion (41%), which corresponds with the low average score for Comfort (30%), although not to the same degree. As well as demonstrating that cyclists are often required to mix with high volumes of motor traffic, the lower than average score for safety reflects the fact that there are many streets in Saffron Walden where reducing the speed limit from 30mph would improve conditions for cyclists. Moreover, some sections within the town lack passive surveillance, which reduces users' perception of safety, particularly outside of daylight hours/in winter months. Outside the town, some route sections are isolated and unlit, also diminishing people's perception of safety.

The average score for Comfort was 30%, however scores ranged between 0% and 69% across Saffron Walden which suggests that there was a large variance in scores against this criterion. The low average score of 30% indicates that the lack of protected cycling infrastructure along routes with high levels of motor traffic in Saffron Walden is contributing to low Comfort results. This results in cyclists often having to mix with general traffic flows of >2500 vehicles per day which automatically scores a zero score in the Comfort criteria.

Figure 5.10. On-carriageway cycling on approach to Wendens Ambo (B1039 Station Road) and cycle route lacking passive surveillance (Shire Hill Lane)

The Critical Junctions factor assessed all junctions against nine different criteria, including vehicle speeds and volumes, junction geometries and visibility. The assessment records the number of junctions along a route which satisfy at least one of the criteria.

The results from the Critical Junction element of the RST were closely related to the volume and speeds of vehicular traffic at junctions, which corresponds with the results of the RST audits. The critical junctions identified were primarily along the main vehicular routes through the town, including Thaxted Road, Radwinter Road and London Road.

The two most common issues identified at critical junctions were junctions where cyclists are in potential conflict with heavy motor traffic flows and junctions where cyclists cross very wide or flared side road junctions.

Figure 5.11. Example of wide side road junction with multiple entry lanes (top) and signalised junction where cyclists mix with heavy motor traffic (bottom)

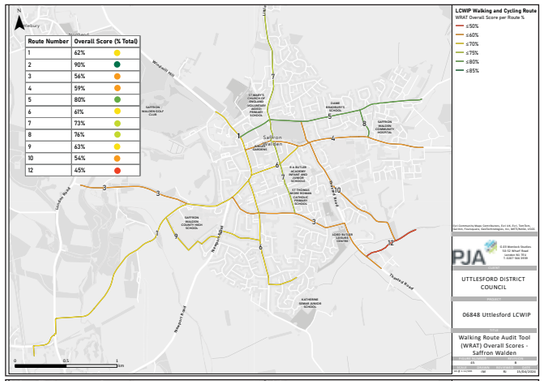
WRAT RESULTS

Figure 5.12 summarises the results from the on-site assessments, focusing on the overall score of each route based on how it scored against the 20 WRAT scoring factors. This provides a useful indication of particular locations on Saffron Walden's walking network where improvements are required, or conversely where there are existing examples of high-quality walking environments. The WRAT guidance recommends that the aim should be for walking routes to achieve a minimum overall score of 70%.

The results in Figure 5.12 demonstrate that less than half of the proposed LCWIP routes scored well in the WRAT assessments, with only four out of ten routes scoring higher than the recommended 70% benchmark score. This suggests that Saffron Walden's walking network is generally of an unsatisfactory quality. There were two routes that scored below 70% (Routes 2 and 3). Again, this is unsurprising given these two routes follow roads that carry a high volume of vehicular traffic, and also navigate a number of busy junctions.

Figure 5.12 shows the WRAT score for each section of each LCWIP route. This allows us to identify particular strong points of the walking network, or where there may be localised issues. The plan demonstrates that the routes with the lowest scores are generally concentrated on routes alongside busier toads, where vehicle volumes and speeds tend to be higher. In particular, sections along Thaxted Road, Audley End Road, Wenden Road, Walden Road and Landscape View score 50% or less. Low scores were also recorded along Mount Pleasant Road, East Street and Debden Road, where maintenance issues and lack of/incorrect dropped kerbs or tactile paving were common issues.

Some of the highest scoring sections were recorded either along traffic-free routes such as King Street and across The Common or vehicle routes like High Street. Routes through residential areas tended to score higher, with well-maintained footways and natural surveillance contributing to these.



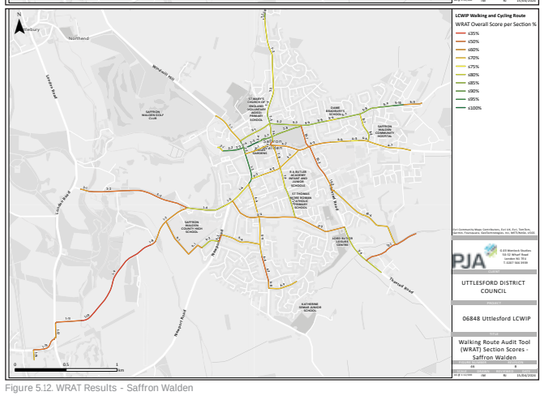


Figure 5.12. WRAT Results - Saffron Walden

WRAT RESULTS (CONTINUED)

This section summarises the results from the on-site assessments focussing particularly on the performance of the walking routes against the 20 WRAT scoring factors. Analysis of the factors' results provides a useful indication of the key strengths and weaknesses of Saffron Walden's walking network, and helps to identify the areas for improvement.

Theme	Criteria	Average Score (out of 2)	Average Score (%)
Attractiveness	Maintenance	1.33	67%
	Fear of crime	1.40	70%
	Traffic noise and pollution	1.20	60%
Comfort	Condition	1.20	60%
	Footway width	0.68	34%
	Width on staggered crossings/ pedestrian islands/ refuges	1.44	72%
	Footway parking	1.66	83%
	Gradient	1.27	63%
Directness	Footway provision	1.57	79%
	Location of crossings in relation to desire lines	1.12	56%
	Gaps in traffic	1.38	69%
	Impact of controlled crossings on journey time	1.88	94%
	Green man time	1.98	99%
Safety	Traffic volume	1.24	62%
	Traffic speed	1.34	67%
	Visibility	1.83	91%
Coherence	Coherence	0.32	16%

Figure 5.13. Average WRAT Scores

Figure 5.13 illustrates that many of the factors scored highly in Saffron Walden, with only two factors scoring below 60%.

Some of the highest scoring factors were related to crossing facilities (Impact of Controlled Crossings on Journey Time (94%), Green Man Time (99%). However, as many of the routes in Saffron Walden did not include signalised crossings, these scores are probably not the best reflection of the town's walking network

Moreover, there were some locations within and further out of Saffron Walden where crossings were either not provided, or not provided along key desire lines, and therefore improvement of crossing provision forms a key component of many of the design recommendations in this LCWIP.

Other factors that achieved particularly high scores were Visibility (91%) and Footway Parking (83%), which was generally not observed to be a prominent issue in the town.

Figure 5.14. Examples of zebra crossing with adequate visibility (top) and a clear 2m wide footway (Radwinter Road, bottom)

The lowest scoring factors were: Coherence (16%) and Footway Width (34%). These factors are particularly important as they suggest the basic functionality of the walking network is poor in places. Narrow footways combined with inconsistent provision of tactile information and dropped kerbs is ultimately not conducive to creating a comfortable and consistent walking network.

The scores for Location of Crossings in Relation to Desire Line, Maintenance, Traffic Noise and Pollution, Condition, Gradient, Gaps in Traffic Volume and Traffic Speed were also below 70% on average. This indicates that many parts of Saffron Walden would benefit from improvements to its walking infrastructure, for instance resurfacing footways, upgrading of crossing provision and clearing vegetation, but also from the introduction of traffic management measures to reduce the volume and speed of motor traffic.

Figure 5.15. Example of narrow, sloping footway alongside busy road (top), example of side road junction with no tactile paving (bottom)

DESIGN RESPONSE

This section looks at some of the key issues identified by the WRAT and RST audits and provides an overview of the design response that would be required to address these weaknesses in the town's walking and cycling network. A full suite of design interventions has also been provided in Appendix A, which identifies specific interventions along specific routes and at key locations.

Comfort and Safety

One of the main weaknesses identified through the audits was the comfort and safety of both pedestrians and cyclists, particularly in relation to traffic volumes and also traffic speeds in some locations.

Saffron Walden's historic streetscape means that there is very limited scope for segregated cycle facilities through the town, owing to narrow carriageway widths and highway boundary constraints. As such, improvements along strategic routes through the town should focus on corridor-wide improvements which aim to increase the overall conditions for walking and cycling. Alternative solutions such as light segregation might also be appropriate in some locations.

Corridor wide schemes should focus on reduction of vehicle speeds through 20mph speed limits, treatment of side-road junctions included tightened geometry, centre-line removal, footway widening where feasible and improved crossing facilities to reduce the severance effect of major roads through the town. To complement this, advisory cycle lanes may also be considered alongside these measures, ensuring a minimum width of 2m in line with LTN 1/20 (or 1.5m as the absolute minimum in more constrained locations). The porous nature of the town also means that there are often quieter alternatives to using the major roads through the town, however in many cases contraflow facilities will be required to enable two-way cycling.

In some locations, segregated infrastructure may be feasible, in particular on the more peripheral routes into the town, such as the easternmost sections of Radwinter Road and Thaxted Road, where there is more highway width available.

Critical Junctions

The RST audits scored poorly on the Critical Junctions assessments due to the lack of protected facilities at the main junctions in the town and in many cases the WRAT audits scored poorly due to insufficient crossing facilities for pedestrians at these junctions. The recommendation at major junctions is to incorporate dedicated cycle crossing facilities which protect cyclists from vehicular traffic. At some locations where the geometry of the junction is more constrained, such as the Debden Road / Mount Pleasant Road crossroads, interventions such as early start facilities and two-stage right turns could be considered as an alternative. For pedestrians, improvements such as tightening of corner radii to shorten crossing distances would be beneficial. As well as improving facilities at major junctions, parallel pedestrian and cycle crossings could be considered in quieter locations.

Similar to the recommendations for cycle crossings, the LCWIP will need to consider improving the provision of controlled crossing points on the main walking routes particularly along the arterial routes into the town, such as Ashdon Road, Radwinter Road, Thaxted Road and Debden Road.

Coherence and Footway Widths

The WRAT audits highlighted that many crossings and side-road junctions in the town scored poorly for coherence. Many walking routes also scored poorly in terms of footway width and surfacing. It should therefore be ensured that dropped kerbs and tactile information is provided as a minimum at each side-road junction. Along routes with a higher footfall, i.e. routes in the town centre such as High Street or Hill Street, it should be investigated whether continuous footway surfacing can be provided, in combination with raised table crossings. These measures enforce pedestrian priority in line with the Highway Code.

It is also recommended that footways could be brought up to a satisfactory provision, or enhanced by: widening to 2m width where feasible, removing street clutter, prohibiting footway parking, providing recessed loading/parking bays to enable local footway widening and resurfacing footways to ensure they are level and free of trip hazards or ponding. These footway improvements should be implemented alongside public realm improvements, in order to create a more desirable walking environment. This could involve incorporating placemaking measures that enhance the town centre's historic character, such as natural stone paving, planting and seating where possible.

Figure 5.16. Example of light segregation where highway width is limited (Royal College St, Camden)

Figure 5.17. Example public realm enhancements in historic town centre environment (Kidderminster)

Figure 5.18. Raised table crossing of side-road (Devon Gardens, Harringay)

DESIGN RECOMMENDATIONS

A series of high level design recommendations were then developed for each of the LCWIP routes, responding to the various barriers highlighted as part of the route auditing process. These recommendations follow the general design principles established on the previous page and aimed to overcome some of hte key issues identified through the auditing process.

Given the scale of the town, both walking and cycling design measures were identified for each route, with the exception of Route 11 which was identified as a cycle only route.

The design summary plan opposite summaries the design approach for each link of the LCWIP network within the town and also highlights how this interfaces with the recommendations for the nearby SCRs, which are covered in further detail in Chapter 7.

Given the constrained nature of many streets in the town, there is limited design scope along many of the routes. Therefore, many of the suggested design recommendations aim to accumulate a series of smaller interventions, such as new crossings, side road treatments, speed limit reduction and centre line removal, in order to improve the overall conditions for cycling and walking along the corridor. Where appropriate, measures to reduce traffic such as modal filtering or school streets have also been considered - for instance along South Road.

One of the main focuses of the design recommendations is improving the permeability of the town for cyclists. At present, there are many one-way streets, particularly in the centre of the town where contraflow cycling is prohibited. By allowing contraflow cycling on these streets, with associated improvements as required, the accessibility of the town centre would improve greatly.

As noted on the previous page, there are some corridors within the study area where segregated cycling facilities may be feasible and these are marked in red on the plan. However, it should be noted that this would be subject to a review of the highway boundary to first determine feasibility.

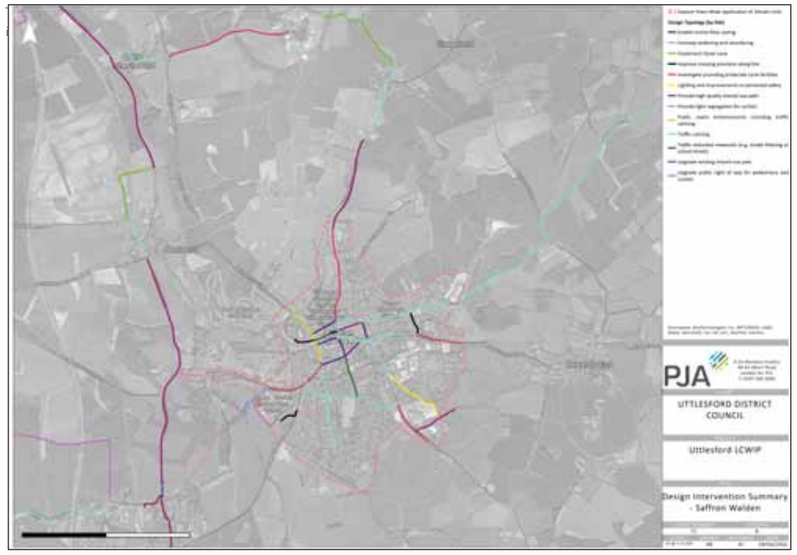


Figure 5.19. Design Intervention Summary - Saffron Walden

PRIORITISATION

Overview

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.

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.

Prioritisation Approach

Essex County Council has developed a multi-criteria analysis tool which is used across all Essex LCWIPs. The tool assesses each LCWIP Route against a series of objectives to produce a prioritisation score which then enables ranking of the LCWIP cycle routes for delivery.

The routes and design measures included within this LCWIP will now be provided to ECC to be processed through the prioritisation tool. The outputs from this tool will enable ECC to identify the highest priority routes within Uttlesford to then be progressed through to delivery.

The use of the tool also allows ECC to compare the strategic priority of routes at a countywide level. This will be particularly useful for the progressing of the longer distance strategic cycle routes, which as well as providing connections between settlements in Uttlesford, also provide important linkages between different local authorities in the county, as well as cross-county connections.

6
GREAT DUNMOW LCWIP

FIRST IMPRESSSIONS OF GREAT DUNMOW

This section briefly summarises the project team's first impressions of Great Dunmow from our inception site visit. The purpose of the site visit was to better understand the local context, and to review conditions for walking and cycling. We have summarised the findings into the following groups

HISTORIC STREETSCAPES

As a typical market town, the centre of Great Dunmow is characterised by its historic streetscapes and is protected as a designated conservation area. Throughout the historic core, there is a range of listed buildings of varying ages and styles fronting the road (Figure 6.1).

The town centre originated as ribbon development around the road layout within the historic core. Shop fronts have been added along the high street and Market Place. The combination of historic buildings and a high concentration of retail establishments creates a pleasant environment and a desirable destination for residents.

The central historic core is surrounded and visually isolated from the approach roads and the outskirts of the town by modern residential developments. There is a distinct contrast in character between the outskirts and the historic centre, however despite this the High Street is still used as a main vehicular through route for vehicles travelling east - west through the town.

WALKABILITY

Great Dunmow benefits from its fairly compact size, which means that much of the town is located within a 20-minute walk or 5-10 minute cycle. Particularly in the town centre, the street network is porous with several footpaths and cut-throughs that make walking the most direct mode of transport (Figure 6.1).

One limitation of the walking network in the town was often the width, maintenance, and quality of footways, which were usually below 2m in width.

SEVERANCE AND CONNECTIVITY

Great Dunmow is bisected by several B-roads. Despite the presence of the B1256, which acts as a bypass to the town centre, many roads within the town felt busy with motor traffic (Figure 6.2). There were also some instances of junctions with missing crossing points, which can introduce severance for walking trips across the town. Another key severance feature in the town is the B1256, which can be crossed via a road bridge (B1008) or a stepped footbridge. This limits the route choice for journeys from the south of the town to the town centre.

CYCLING

Cycling infrastructure in the town was very limited, with cyclists having to mix with vehicular traffic most of the time. There were some limited examples of dedicated cycling infrastructure along Stortford Road in the west of the Great Dunmow town centre, which primarily comprised of shared-use facilities and connected to the town to the recently constructed residential development west of Woodside Way (Figure 6.3). There is a clear missing link in the town, with no cycle facilities provided between the aforementioned shared-use facility and the Flitch Way to the east. Therefore, despite this route forming part of the NCN 16, it is not a pleasant route for cycling at present.

OUT OF TOWN DESTINATIONS

Great Dunmow does not have its own train station, with the nearest stations, Braintree to the east and Bishop's Stortford to the west, approximately 14km away. They provide direct train routes to Liverpool Street, each journey typically taking an hour or less. The town is connected to these stations via regular bus services.

At a distance of 6.5 km from the town lies Stansted Airport, a significant employment centre in the region, also accessible through frequent bus connections. Given the proximity of this major employer to the town, there is potential for providing improved routes and encourage more individuals to opt for cycling as a mode of transport for regular journeys to work.

NEW DEVELOPMENT

The west and north-west of Great Dunmow encompasses a modern residential development, which has significantly contributed to the town's increased population and gives the town a quiet, suburban feel. Improving the routes connecting residential fringe to the town centre will help facilitate smoother and safer travel and encourage active travel.

Figure 6.1 Example of historic streetscape and building types in town centre(left); Signalised crossing on High Street; Alleyway and cut-throughs create a porous pedestrian network in the town; New modern residential development in the west of the town (right)

Figure 6.2 Major walking a cycling route along B1256 connecting the west and the town centre(left); Footway parking compromises the footway width; Under-maintained footway with overgrown vegetation and cracked surface; Example of controlled crossing to address severance(right)

Figure 6.3 Example of a modal filter on Star Lane(left); Tree lined footpath creates a pleasant walking environment; example of traffic calming and road signs for cycling on road; example of existing shared use route(right)

NETWORK PLANNING FOR WALKING AND CYCLING

OVERVIEW

Stage 3 used the outputs from Stage 2 to develop a preferred walking and cycling network for site auditing. Given the compact scale of Great Dunmow, the routes identified were treated as both walking and cycling routes.

Much of the town is within a 20-minute walk of the town centre. As such, the entirety of Great Dunmow has been considered as being within a "Core Walking Zone", as defined by the LCWIP guidance.

The site audit results were then informed to develop a programme of infrastructure improvements, benefitting both walking and cycling.

NETWORK DEVELOPMENT

The combined demand analysis was interrogated to develop a network of walking and cycling routes within the town. For the purposes of the network development, the LCWIP methodology recommends developing 'routes' which form the basis of the auditing in Stages 3 and 4.

The combined demand analysis in Figure 6.4 highlights strong demand for walking and cycling in the town centre, in particular the high street and Market Place, and north of the town centre. In addition to this, there is strong demand identified in the west of town centre where the major new residential development located, as well as along major B road corridors throughout the town. .

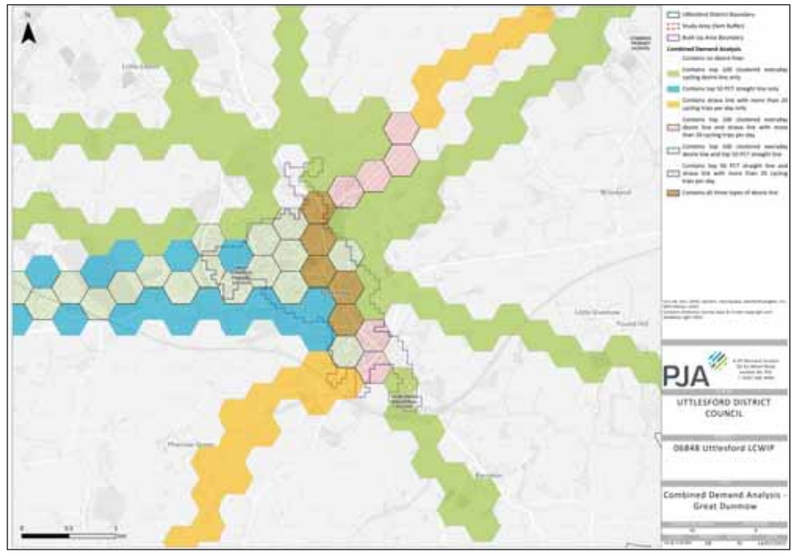


Figure 6.4. Combined Demand Analysis - Great Dunmow

WALKING AND CYCLING NETWORK

The network represents indicative routes which might be followed for walking and cycling, however they are not intended to be routes that will necessarily be followed from beginning to end. A mixture of route types was selected, ranging from main routes into the town centre, routes through residential areas, and routes that provided onward connectivity to the development sites on the edge of the town.

A workshop was held with the LCWIP working group at this stage to gather feedback on the routes proposed. Following this workshop, a number of adjustments were made to the routes to reflect the local knowledge of working group members:

- Additional route through Great Dunmow Recreation Ground to provide more direct link to Churchend
- An extension to Route 2 (referred to on the plan as Route 7) which connects the residential site allocations north and south of The Broadway to the town

Following this exercise, the following routes were identified for auditing:

- Route 1: Junction with B1008 and B1057 - South of Oak Industrial Park (with a spur to Stortford Road through Rosemary Lane and the Downs)
- Route 2: Junction with B1008 and Parsonage Downs - Junction with Church End and Bigods Lane
- Route 3: Beaumont Park – High Street (via B1256 and Stortford Road)
- Route 4: Ongar Road Trading Estate – Junction with Chelmsford Road and Haslers Lane
- Route 5/5A: The Causeway – Tesco Superstore (alternative route 3A via The downs and public right of way)
- Route 6: The Causeway – Church Street (via Great Dunmow Recreation Ground)
- Route 7: The Broadway

The routes shown in Figure 6.5 also provide connections to the routes identified as part of the Strategic Cycle Routes workstream, which are described further in Chapter 7.

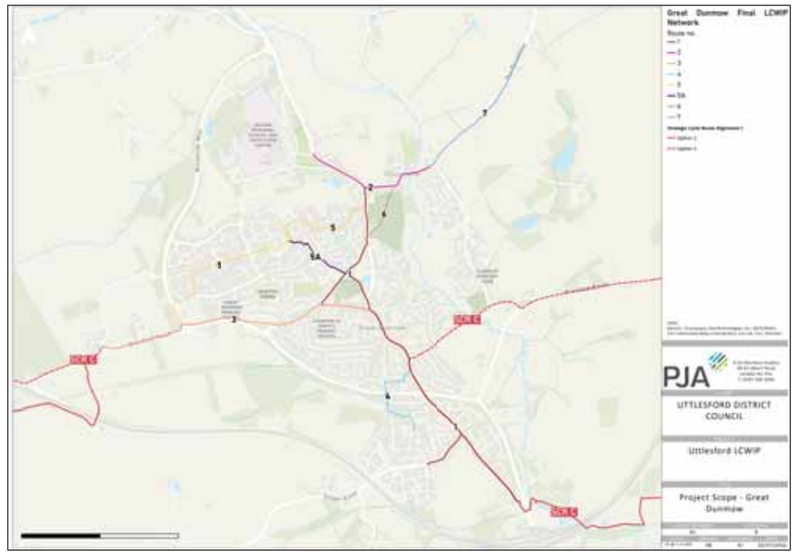


Figure 6.5. Proposed LCWIP Network - Great Dunmow

For instance, both route alignment options for SCR C pass through Great Dunmow from west to east, via Stortford Road and Braintree Road. Therefore there is overlap between SCR C and LCWIP Routes 1 and 3. The delivery of the Great Dunmow LCWIP will therefore help to achieve a joined up strategic connection across the district, linking Bishop's Stortford to Great Dunmow and onwards to Braintree.

AUDITING TOOLS

ROUTE SELECTION TOOL (RST)

The cycling conditions along each route were audited 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.

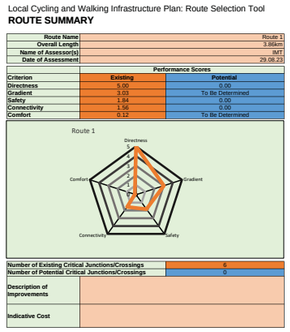
- Directness: Compares the length of cycle route against the equivalent vehicle route with cycle routes that are shorter than the vehicle are scored positively for Directness. Higher scores can be achieved through the introduction of modal filters or routing cyclists through parks/open spaces to provide a more direct connection
- Gradient: Identifies the steepest section of a given cycle route where the section shares similar characteristics (max 1km in length). Routes are scored down where the gradient exceeds 5% for at least 50m.
- 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
- Connectivity: Records the number of individual cycle connections into a section of route – routes should aim to have >4 connections per km.
- 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).
- Critical Junctions: Provides a number of critical junction design issues including: vehicle flows, protection from vehicular traffic, wide junction splays, and junction geometries
-

WALKING ROUTE AUDIT TOOL (WRAT)

Having confirmed the LCWIP network, each route was then audited on site using the Walking Route Audit Tool (WRAT) methodology set out in the DfT LCWIP process guidance. Walking audits were undertaken on site over a two-day period in August 2023 by PJA.

The Walking Route Audit Tool (WRAT) is divided into several categories for analysis and uses a Red Amber Green (RAG) scoring technique:

- Attractiveness: Considers the impact of maintenance, traffic noise, pollution and fear of crime upon the attractiveness of a route
- 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
- 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
- Safety: Focuses on the impact of vehicle volumes and speeds and interaction with pedestrians
- Coherence: Focuses on the provision of dropped kerb and tactile information for pedestrians



Local Cycling and Walking Infrastructure Plan: Route Selection Tool

ROUTE SUMMARY

Route Name	Route 1
Overall Length	3.86km
Name of Assessor(s)	IMT
Date of Assessment	29.08.23

Performance Scores		
Criterion	Existing	Potential
Directness	5.00	0.00
Gradient	3.03	To Be Determined
Safety	1.84	0.00
Connectivity	1.56	0.00
Comfort	0.12	To Be Determined

Route 1

Number of Existing Critical Junctions/Crossings	6
Number of Potential Critical Junctions/Crossings	0
Description of Improvements	
Indicative Cost	

Figure 6.6. WRAT and RST Tools

AUDITING RESULTS

RST RESULTS

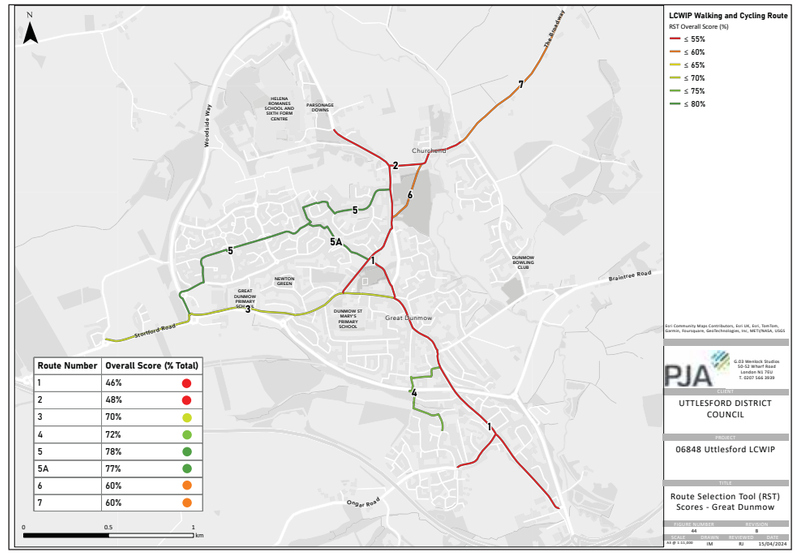
The RST results across the five routes and their alternative alignments ranged from 46% (Route 1) to 78% (Route 5), as shown in Figure 6.8. The lowest scoring route was Route 1. There were also several sections that scored low in terms of safety and comfort due to a lack of dedicated cycling infrastructure, exposure to high-traffic volumes and poor surface quality. It also scored low in gradient because of the steepness of some sections of the route as identified. Route 2 also scored lower than 50%, similarly, they scored low in term of safety, comfort and gradient.

The highest scoring routes, Routes 5 (78%) and Route 5A (77%) generally followed alignments through quieter residential areas and off-road paths, resulting in a higher score in comfort and safety than the others.

The Route Selection Tool consists of five scoring criteria (Directness, Gradient, Comfort, Connectivity, Safety) and the Critical Junctions assessment. The average score across the LCWIP Cycling routes was 64% and the average scores for each of the five criteria are presented below in Figure 6.7, together with the respective highest and lowest scores.

Criteria	Highest Score (%)	Lowest Score (%)	Average Score (%)
Directness	100%	80%	94%
Gradient	82%	9%	45%
Safety	91%	20%	63%
Connectivity	100%	31%	88%
Comfort	73%	0%	32%

Figure 6.7. RST Average Results - Great Dunmow



Route Number	Overall Score (% Total)
1	46%
2	48%
3	70%
4	72%
5	78%
5A	77%
6	60%
7	60%

Figure 6.8. RST Results - Great Dunmow

RST RESULTS (CONTINUED)

The average criteria score for Directness (94%) was the highest amongst the RST scoring criteria. This suggests that the majority of proposed LCWIP routes follow direct alignments compared to their equivalent vehicle routes, and in some cases, the cycle routes are shorter.

The average Gradient score was 70.1%, which reflects the fact that the routes are generally located on flat terrain, however some sections at gradient are present. There was a large variance in scores against this criterion, as scores ranged between 9% and 82% across Great Dunmow. Route 6 scored the lowest in this category, which is a relatively short route with all sections having a gradient of >5% and one section having a gradient of 10%. The other two lowest-scoring routes were Route 2 and Route 4, which are relatively short routes with a gradient across all sections above 5% and some even exceed 10%.

The average score for Connectivity (88%) was also high and shows that many of the proposed LCWIP routes make use of a dense street network within the urban extents of Great Dunmow. However, there was a significant range in the ratings for this criterion, with the lowest score being 31%, indicating that certain routes lack the same level of permeability for pedestrians and cyclists.

The average score for Comfort was 32%, making it the lowest average score among the criteria. This low score indicates that the absence of dedicated cycling infrastructure in Great Dunmow contributes to poor Comfort ratings. In many instances, the lack of dedicated cycling lanes forces cyclists to share the road with general traffic, which often exceeds 2,500 vehicles per day. Such conditions automatically result in a Comfort score of zero.

The Safety criteria assess factors like average vehicle speeds, traffic volumes, and the degree of protection offered to cyclists from vehicular traffic. Therefore, it is not surprising that Safety received the second-lowest average score for the proposed LCWIP cycle routes in Great Dunmow, averaging at 45%. This aligns with the low Comfort score (32%) and underscores the frequent need for cyclists to navigate high volumes of motor traffic. Additionally, the low safety score reflects the fact that many streets in Great Dunmow regularly witness drivers exceeding the 30mph speed limits.

Figure 6.9. Example of mini roundabout with high traffic volume + uncontrolled crossing facilities

Figure 6.10. Example of wide side road junction without tactile paving

Figure 6.11. Example of confusing junction layout with multiple entry lanes

WRAT RESULTS

Figure 6.12 summarises the results from the on-site assessments, focusing on the overall score of each route based on how it scored against the 20 WRAT scoring factors. This provides a useful indication of routes on Great Dunmow's walking network where improvements are required, or conversely where there are existing examples of high-quality walking environments.

The Walking Route Audit Tool (WRAT) scores varied from 84.5% (highest) to 47.5% (lowest) with five of the routes, namely Routes 3, 4, 5, 5A, and 6 scoring above the threshold recommended within the WRAT guidance as the minimum level of provision to aim for, as indicated by the green-coloured and yellow-coloured sections. Conversely, Routes 1 and 2 scored below 70%.

Figure 6.12 shows the WRAT score for each section of each walking route. This allows us to identify particular strong points of the walking network, or areas where there are localised issues. It shows that the lowest scores were recorded along Route 1 and Route 2, in particular along Chelmsford Road which is one of the more heavily trafficked roads in the town, with high HGV percentage due to its proximity to Chelmsford Road industrial estate. Likewise, the scores along route 2 were particularly poor - again this is due to higher traffic volumes, with particularly narrow footways along B1057 and B1008 contributing to the low scores.

Coversely, the sections with the highest scores were in the town centre (route 1 and 3), as well as the quieter residential areas in the north of the town (route 5). The section along High Street is particularly high quality, featuring well-maintained pedestrian facilities and a quieter traffic environment, facilitated by effective traffic management measures. Many sections of route 5 either follow quiet, traffic free footpaths which provide a pleasent walking environment, or follow quiet residential streets with low traffic volumes and footways of adequate width and surfacing. These route sections would only require minor improvements, such as dropped kerb and tactile paving provision.

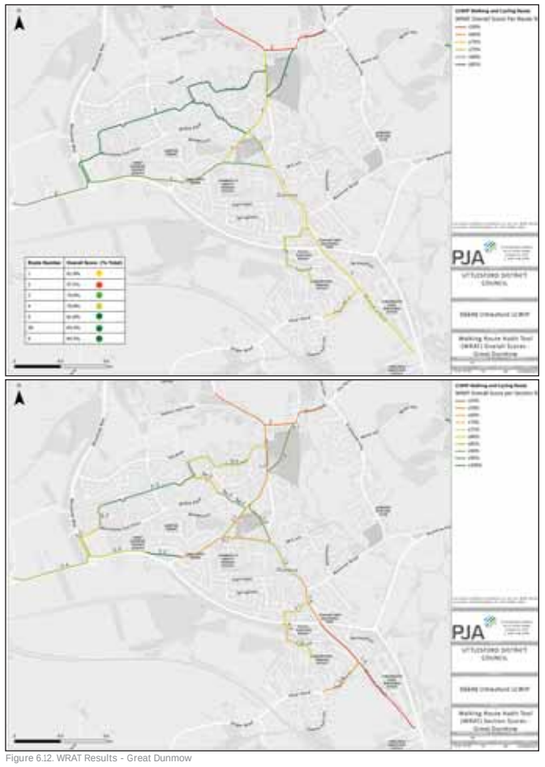


Figure 6.12. WRAT Results - Great Dunmow

WRAT RESULTS (CONTINUED)

This section summarises the results from the on-site assessments focussing particularly on the performance of the walking routes against the 20 WRAT scoring factors. Analysis of the factors' results provides a useful indication of the key strengths and weaknesses of Saffron Walden's walking network, and helps to identify the areas for improvement.

Theme	Criteria	Average Score (out of 2)	Average Score (%)
Attractiveness	Maintenance	1.43	72%
	Fear of crime	1.43	72%
	Traffic noise and pollution	1.39	70%
Comfort	Condition	1.26	63%
	Footway width	1.04	52
	Width on staggered crossings/ pedestrian islands/ refuges	1.52	76%
	Footway parking	1.52	76%
	Gradient	1.30	65%
Directness	Footway provision	1.52	76%
	Location of crossings in relation to desire lines	1.35	67%
	Gaps in traffic	1.57	78%
	Impact of controlled crossings on journey time	1.96	98%
	Green man time	1.96	98%
Safety	Traffic volume	1.48	74%
	Traffic speed	1.48	74%
	Visibility	1.78	89%
Coherence	Coherence	0.78	38%

Figure 6.13. WRAT Results

Figure 6.13 illustrates that the highest scoring factors were Impact of controlled crossings on journey time (96%), Green man time (96%), and Visibility (89%). It should be noted that to ensure routes were not penalised for not having a controlled crossing where it may not be needed, any routes without a controlled crossing were scored the full mark of 2, for any factors relating to controlled crossings. Therefore, these scores may not be the best reflection of the walking network, as they do not indicate where controlled crossings do not currently exist but may be needed, for example.

The lowest average overall scoring factors were: Provision of Dropped Kerbs and Tactile Paving (38%), Footway width (52%), Condition (63%) and Gradient (63%). The low scores for Coherence, Condition, Gradient and Footway Width are particularly important as these factors suggest that the basic functionality of the walking network is poor. The combination of narrow footways with poor surface quality, alongside inconsistent provision of dropped kerbs and tactile paving is ultimately not conducive to creating a comfortable and consistent walking network and may deter some users (particularly vulnerable user groups) from walking in Great Dunmow.

The average scores for Traffic Noise and Pollution, as well as Traffic Volume, exceed 70%. This indicates that the level of vehicular traffic in Great Dunmow is not significantly affecting the quality of its walking network, particularly in terms of safety and air quality. This positive outcome is largely attributed to the choice of route alignment, which carefully navigates through quiet residential streets.

However, it's important to note that on-site assessments included certain sections of the route that run alongside major roads. In these areas, pedestrians face risks due to the substantial traffic flow and elevated noise levels.

Figure 6.14. Example of footway parking compromising effective footway width

Figure 6.15. Example of a lack of crossing facilities on a desire line

Figure 6.16. Example of 'disappearing' footway on one side of the road with no crossing point for pedestrians to cross the road

DESIGN RESPONSE

This section looks at some of the key issues identified by the WRAT and RST audits and provides an overview of the design response that would be required to address these weaknesses in the town's walking and cycling network. A full suite of design interventions has also been provided, which identifies specific interventions along specific routes and at key locations.

Comfort and Safety

Similar to the Saffron Walden LCWIP, one of the main weaknesses identified through the audits related to the comfort and safety of both pedestrians and cyclists, particularly in relation to traffic volumes and also traffic speeds in some locations. This was particularly evident along roads such as Chelmsford Road, where general traffic flows and HGV percentages were high. In locations such as this, segregated facilities for cyclists should be explored where the highway width allows. This could take the form of stepped cycle tracks.

Towards the centre of the town, where there are more width constraints, corridor-wide improvements should be explored which aim to increase the overall conditions for walking and cycling. As part of this, speed reduction should be considered and a town-wide 20mph speed limit could be pursued as one way to achieve this. In addition, treatment of side-road junctions included tightened geometry, centre-line removal, footway widening where feasible and improved crossing facilities to reduce the severance effect of major roads through the town.

The town also benefits from quieter alternatives to using the major roads – for instance the Woodlands Walk route which provides a quiet east – west link through the north of the town, or High Fields, which provides a quieter alternative to the High Street for those passing through the town. Wayfinding solutions would therefore help to direct less confident cyclists onto quieter routes.

As well as actual safety, perceived safety was also recorded as an issue through the auditing, particularly along traffic free routes in the north of the town. Therefore, in order to improve the year-round usability of routes, lighting should be provided where feasible. Lighting solutions which reduce the impact on wildlife could be considered such as sensor operated lighting, low level lighting on bollards or solar LED studs.

Junctions and Crossings

The RST and WRAT audits scored poorly at several locations due to the quality of crossing facilities at key junctions in the town, particularly due to the lack of controlled crossings for pedestrians. Some junctions were also noted to have confusing layouts and excessively wide geometries, for instance the B1008 / Station Road junction near the town centre. The LCWIP will therefore need to consider improving the provision of controlled crossing points on the main walking routes particularly around the town centre and at key junctions along the main vehicular routes through the town. This will help to enhance the continuity of key walking routes and prioritise the walking network over vehicular traffic.

Coherence and Footway Widths

The WRAT audits highlighted that many crossings and side-road junctions in the town scored poorly for coherence. It should therefore be ensured that dropped kerbs and tactile information is provided as a minimum at each side-road junction. Along routes with a higher footfall, i.e. routes in the town centre such as Stortford Road, it should be investigated whether continuous footway surfacing can be provided, in combination with raised table crossings. These measures enforce pedestrian priority in line with the Highway Code.

The WRAT audits highlighted that many walking routes also scored poorly in terms of footway width and surfacing. This was particularly evident in the north of the town, such as in Churchend, where there instances of "disappearing footways" which left pedestrians stranded on one side of the road, without safe provision. It is therefore recommended that footways be brought up to a satisfactory provision, or enhanced by: widening to 2m width where feasible, removing street clutter, prohibiting footway parking, providing recessed loading/parking bays to enable local footway widening and resurfacing footways to ensure they are level and free of trip hazards or ponding. Footway improvements should be implemented alongside public realm improvements, in order to create a more desirable walking environment. This could involve incorporating SuDS (Sustainable Drainage Systems) alongside footways to create a greener environment and provide drainage solutions where footway ponding occurs.

As noted above, there were many locations in the town where footways were missing, or abruptly ended, leaving pedestrians stranded on one side of the carriageway without crossing provision. In these locations, it should be investigated whether new sections of footway can be provided to ensure a continuous provision. Where this isn't possible, it should be ensured that crossing points are provided to the opposite footway, or on-carriageway solutions could be explored, such as advisory footway markings on carriageway, or over-runnable footways.

Figure 6.18. Stepped cycle track in industrial area (Blackhorse Lane, Waltham Forest)

Figure 6.19. Clear footway incorporating SuDS (Crossway, Hackney)

DESIGN RECOMMENDATIONS

A series of high level design recommendations were then developed for each of the LCWIP routes, responding to the various barriers highlighted as part of the route auditing process.

Given the scale of the town, both walking and cycling design measures were identified for each route.

The design summary plan opposite summaries the design approach for each link of the LCWIP network within the town and also highlights how this interfaces with the recommendations for the nearby SCRs, which are covered in further detail in Chapter 7.

Similarly to Saffron Walden, there is limited design scope along many of the routes given the lack of width. Therefore, many of the suggested design recommendations aim to accumulate a series of smaller interventions, such as new crossings, side road treatments, speed limit reduction and centre line removal, in order to improve the overall conditions for cycling and walking along the corridor. Specifically along the High Street, the recommendation is to follow this approach, with a focus on public realm enhancements to emphasise the historic character of the town and reduce the dominance of motor traffic on the environment.

In the residential areas of the town, the improvements primarily focus on walking improvements such as upgrading footways, improving side road crossings and reviewing dropped kerbs and tactile paving.

On the more peripheral routes connecting into the town, where there may be more highway width available, it should be investigated whether segregated cycle facilities could be provided, however this would be subject to a review of the highway boundary to first determine feasibility.

The full suite of design recommendations for each route is included in Appendix A.

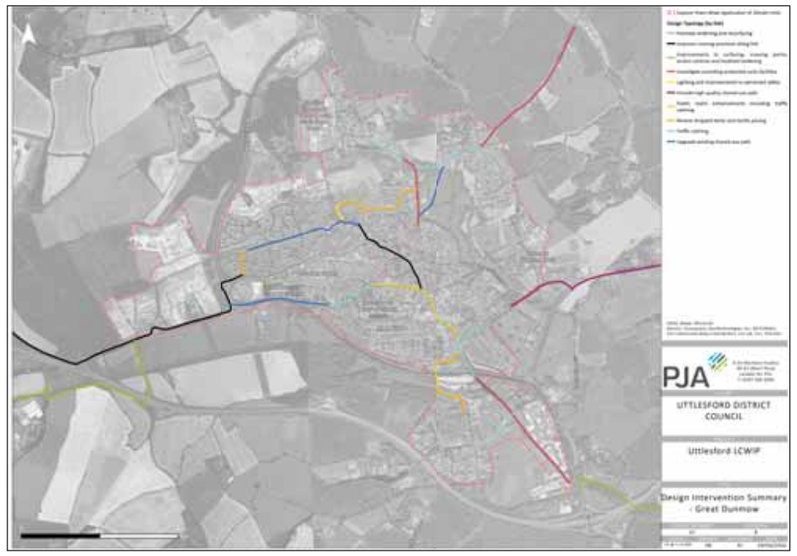


Figure 6.20. Design Intervention Summary - Great Dunmow

PRIORITISATION

Overview

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.

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.

Prioritisation Approach

Essex County Council has developed a multi-criteria analysis tool which is used across all Essex LCWIPs. The tool assesses each LCWIP Route against a series of objectives to produce a prioritisation score which then enables ranking of the LCWIP cycle routes for delivery.

The routes and design measures included within this LCWIP will now be provided to ECC to be processed through the prioritisation tool. The outputs from this tool will enable ECC to identify the highest priority routes within Uttlesford to then be progressed through to delivery.

The use of the tool also allows ECC to compare the strategic priority of routes at a countywide level. This will be particularly useful for the progressing of the longer distance strategic cycle routes, which as well as providing connections between settlements in Uttlesford, also provide important linkages between different local authorities in the county, as well as cross-county connections.

7
STRATEGIC CYCLE ROUTES

INTRODUCTION

To help improve cross-district cycle connection and link up key destinations, it is necessary to increase the availability of routes between the District's main settlements. This study looked at the following four Strategic Cycle Routes (SCR):

- SCR A - Bishops Stortford & Stansted Airport to Cambridgeshire
- SCR B - Bishops Stortford to Chelmsford
- SCR C - Bishops Stortford to Braintree
- SCR D - Saffron Walden to the Linton Greenway

As outlined in Chapter 4, all four routes have been tested in terms of their relative potential demand.

For each route, multiple alignments were identified, in collaboration with the project working group. In general, alignments were identified comprising contrasting typologies and therefore contrasting design responses. Where appropriate, spurs were identified from the SCRs to connect these to key destinations in the district. A key example of this is SCR C, which has a spur connecting the A120 corridor to Stansted Airport – a major destination and employer in the district.

The following chapter provides a general description of each route, summarises the auditing results for each alignment, and provides a high level summary of the suggested design recommendations.

Full route profiles are provided in tables within Appendix B.

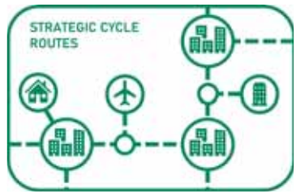


Figure 7.1. The Flitch Way

STRATEGIC CYCLE ROUTE A - ROUTE PROFILE

Alignment 1

Route A, alignment 1 provides a north-south connection from Bishop's Stortford in the south to Great Chesterford, Ickleton and the Wellcome Genome campus in the north, which is located on the boundary between Essex and Cambridgeshire and is a key local employer. Alignment 1 also provides direct connections to villages such as Ickelton, Manuden, Rickling Green, Wicken Bonhunt, Arkesden and Catmere End, with spurs to link into Wendens Ambo, Newport and Stansted Mountfitchet. It therefore has the potential to improve short linkages between settlements and facilitate regular utility cycling trips, as well as operating as a longer distance route which might be popular as a more leisure focused cycle route.

The alignment of route 1 is primarily along unclassified rural roads which likely carry low volumes of vehicular traffic, however are mostly subject to national speed limit and therefore vehicle speeds are likely to be high in places. Although much of the route is suitable for a percentage of cyclists at present, there are interventions to further reduce traffic volume, reduce traffic speed and improve visibility of cyclists that could be implemented to ensure the route is attractive and safe for all users. Traffic volumes are likely to be higher on the southern section of the route on Hazel End Road and therefore further interventions may be required (subject to traffic counts) in order to provide segregation from traffic for cyclists.

There are some short sections of bridleway, in particular linking Coploe Road to Great Chesterford and Bromley Lane to Wendens Ambo. Although cyclists are permitted to use these routes at present, interventions will be required in order to bring the route up to a sufficient standard for regular cycling.

Alignment 2

Route A, Alignment 2 provides an alternative to the northern section of Alignment 1, mainly utilising busier yet more direct B-roads. The route extends from Great Chesterford, which is located at the northern border between Uttlesford and Cambridgeshire, at its most northern point, passing through Little Chesterford (with a spur connecting to Chesterford Research Park), Littlebury, Newport, Quendon, Stansted Mountfitchet and Birchanger. This route provides important linkages to four railway stations (Stansted Mountfitchet, Newport, Audley End and Great Chesterford) and also connects to Audley End House which is a major tourist attraction in the district, as well as providing a connection to Stansted Airport and the western end of the Flitch Way.

The majority of the route comprises on-carriageway cycling along B-roads with traffic flows up to c. 5,000 vehicles per day. Therefore, the conditions for on-carriageway cycling are likely to be unsuitable for most users. Speed limits vary along the route, with sections of 50mph along the more isolated stretches of the B1383 to 30mph on the approach to Great Chesterford, through Newport, Littlebury, Quendon and Stansted Mountfitchet. There is a short section of shared-use path between Station Road and Walden Road, west of Church Road as the route passes through Stansted Mountfitchet and another short section of shared-use connecting into Birchanger. There are sections of footway at various points along the route.

The northern section of this route, between Audley End and Great Chesterford was subject to a cycle route feasibility study in 2014, which provided a series of recommendations for a new route alongside the B1383.

There are also regular bus services along the route – including the 301, 444, 441, 419, 321 and 320.

Figure 7.2. Strategic Cycle Route A

STRATEGIC CYCLE ROUTE B - ROUTE PROFILE

Alignment 1

Route B, Alignment 1, provides a north-west to south-east connection between Bishop's Stortford and Chelmsford, a large portion of which is within the Uttlesford District boundary. As well as linking up these two towns, the route also connects multiple small villages and offers potential as a leisure route due to the low traffic levels and mostly level terrain – this is reflected in the Strava data collected in the area.

The western section of the route starts from the B1383 in Bishop's Stortford and uses Pig Lane through Twyford to connect up with the network of minor roads which traverse the countryside east of the M11 and south of the A120. The route mostly relies on lightly trafficked lanes, some of which already have suitable conditions to be converted to Quiet Lanes. The sections of the route through Hatfield Broad Oak and High Easter could provide an opportunity to implement traffic calming and placemaking measures that would both enhance the quality of the cycle route while also improving general conditions for pedestrians within the village centres and for residents.

There is a short section of PROW at the eastern end of Cammas Lane, east of Hatfield Broad Oak, which provides a missing link in the route and avoids the need to cycle along A1060 Chelmsford Road to the south. This is currently unsurfaced and generally not suitable for cycling at present.

Alignment 2

Route B, alignment 2, provides an alternate option for connecting Bishop's Stortford to Chelmsford. The southern section of the route connects to alignment 1 in High Easter and extends north on School Lane. It then crosses the B184 at High Roding before continuing north through Great Canfield. At its northern extent, the route connects to the Flitch Way and the B1256, which are both alignment options for SCR C and provide a connection to Bishop's Stortford to the west, or Stansted Airport to the north.

The roads along the route are lightly trafficked and should therefore be considered to implementing Quiet Lanes to further enforce the priority of pedestrians, cyclists and horse riders. A key barrier on the route is the severance created by the B184 at High Roding, where there is no crossing and the geometry of the B184 encourages high vehicle speeds through the major arm of the junction.

Figure 7.3. Strategic Cycle Route B

STRATEGIC CYCLE ROUTE C - ROUTE PROFILE

Alignment 1

Route C provides a connection between Bishop's Stortford and Braintree and utilises the existing Flitch Way Route (NCN 16). As such, the majority of the route is traffic-free, apart from the central section of the route which passes through Great Dunmow and is considered in greater detail as part of the Great Dunmow LCWIP. The section of the route through Great Dunmow requires on-carriageway cycling with fairly high traffic flows and therefore interventions would be required to ensure there is a continous route that is suitable for the majority of users.

The Flitch Way is a popular leisure route in the area and is well-used by local walkers and cyclists. A full review of the route and connections to the route was undertaken by Transport Initiatives in April 2023 and this provides a detailed audit of the route and recommends various improvements.

The route alignment along the Flitch Way is primarily an unbound gravel surface, however some sections of the route are muddy which detracts from the overall comfort of the route. Widths vary along the route and there are many pinch points which can create difficulties in terms of accessibility.

The route also considers additional connections from Takeley and the Flitch Way to Stansted Airport and Stansted Business Park, as well as connections to development sites in Takeley, north of the B1256. It is noted that the sections of this route within the Stansted Airport boundary are within airport land ownership and therefore would require the airport to deliver any proposed improvements.

Alignment 2

This route follows the alternative road alignment to the Flitch Way, providing an east to west connection across the district to link Bishop's Stortford with Takeley and Great Dunmow, before continuing eastwards towards Braintree. A route spur also connects Dunmow Road with Warish Hall Farm to the north, via Smiths Green.

The analysis undertaken as part of this project shows that this is a corridor with high potential demand for both commuting and everyday cycling trips and therefore there are clear benefits to implementing a route along the B1256 as a more utility-focused alternative to the Flitch Way, which lends itself more to leisure trips.

The route primarily follows the B1256 which is a busy road with limited cycling infrastructure along its length, meaning that cyclists are often required to mix with vehicular traffic in the region of 8-10,000 vehicles per day. The road is also a busy bus route, particularly given the proximity to Stansted Airport and Bishop's Stortford, both of which are key centres of employment. Therefore, at present, conditions are fairly hostile and uninviting for cyclists and the focus of improvements should be to provide protected facilities that enable safe and accessible cycling.

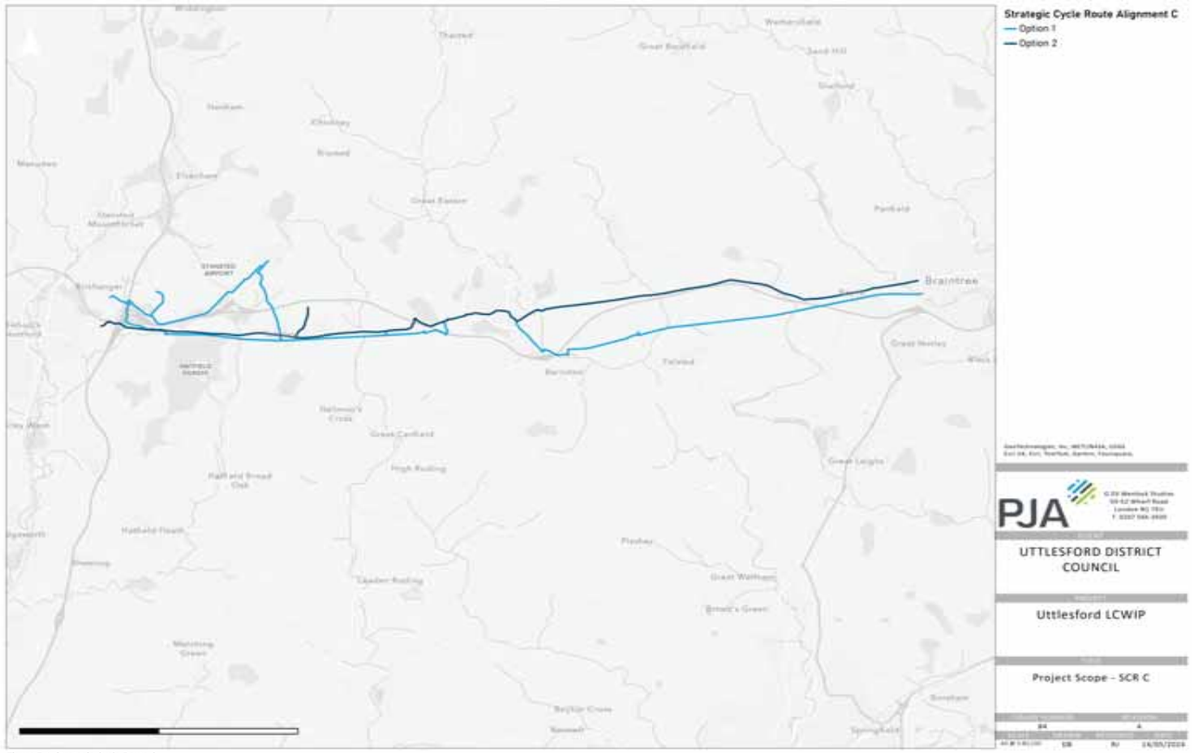


Figure 7.4. Strategic Cycle Route C

STRATEGIC CYCLE ROUTE D - ROUTE PROFILE

Alignment 1

Route D, alignment 1, provides a connection between the north of Saffron Walden and Linton. The primary aim of the route would be to provide a connection onto the Linton Greenway, which is currently being implemented in phases as part of the Cambridge Greenways programme and once complete will provide a connection to Cambridge.

Alignment 1 follows minor roads, from Ashdon Road in the north-east of Saffron Walden, through Church End and Ashdon and finally through Bartlow before terminating at the junction with the A1307 on the edge of Linton. The northern section of the route on the approach to Linton is outside of the Uttlesford district boundary and therefore would be the responsibility of CCC as the local highway authority to implement.

Traffic flows along the route are likely to be fairly low and conducive to cycling on the carriageway. However, there is a mixture of speed limits with sections of 60mph in between the villages along the route which reduces the safety and comfort of the route. As such, most of the interventions recommended focus on corridor approaches to reducing vehicular speeds, including traffic calming and extension/reduction of speed limits.

Alignment 2

This route provides an alternative to the northern section of Route D. It primarily uses PROWs (bridleways and byways) to link the on-carriageway section of the route along Bartlow Road to Long Lane in Linton and ultimately the A1307 where the Linton Greenway begins.

The southern section of the route is currently designated as a byway and is therefore permits use by cyclists, however the conditions/surfacing of the route is poor and would require improving to enable regular use. The middle section of the route follows Bartlow Road which is very lightly trafficked and offers ideal conditions for conversion to a 'Quiet Lane'. Finally, the route follows a bridleway to connect into Linton to the north which would also require a series of interventions to improve its accessibility and usability.

Figure 7.5. Strategic Cycle Route D

STRATEGIC CYCLE ROUTE A - AUDIT COMMENTARY

Introduction

This section provides an overview of how each route alignment scored against the five RST tool categories. This provides a useful comparison of the key issues and opportunities associated with each alignment option.

Section Scores

The plan opposite shows the overall RST score per section along each of the route alignment options. The results demonstrate that the sections scores are generally less than 70%, which indicates that improvements would be required to achieve a satisfactory level of service for cycling.

The lowest scoring sections on are located along Alignment 2, in particular parts of the B1383 where traffic speeds and flows are high, with no existing infrastructure in place. This is particularly evident on the rural sections of the B1383 to the north of Audley End.

The highest scoring route sections are generally located along lightly trafficked roads and within the villages along the route alignments, for instance Quendon, Ickleton and parts of Stansted Mountfitchet.

Alignment 1

Directness: The route scored highly for Directness with a score of 100%. The proposed route is primarily on-carriageway and is therefore just as direct as the equivalent vehicle route. The short section of PROW on the approach to Great Chesterford provides a shorter route than the vehicular alternative.

Gradient: The route, for the most part, is reasonably flat, and therefore scored reasonably well for gradient with an overall score of 69% (3.45 out of 5). The flattest sections of the route were around Great Chesterford, Rickling Green and Wendens Ambo. The most challenging gradient recorded along the route was 4.1% on the section between Catmere End and Arkesden. The overall score for gradient is therefore unlikely to deter most users from travelling along this route.

Safety: The route scored poorly for safety, with an overall score of 11% (0.57 out of 5). The primary reason for this low score was the fact that the majority of the route is on-carriageway, unlit and without passive surveillance. Although traffic flows are generally lower than 2,500 (AADT), many sections of the route were on roads subject to national speed limit where vehicle speeds could regularly exceed 30mph.

Connectivity: The route scored fairly low for connectivity, with an overall score of 26% (1.29 out of 5). This reflects the rural and often isolated nature of the route, which passes through areas of the district where there is a fairly sparse street network. The lowest scoring sections of the route are therefore the links between the various settlements, for instance the section between Ickleton and Strethall scores particularly poorly.

Comfort: The route scored highly for comfort, with an overall score of 86% (4.28 out of 5). The vast majority of sections scored 5/5, as they were smooth, machine-laid bituminous surfacing with traffic flows of less than 2,500 vehicles per day. There were two sections which scored 0 and these were both unsurfaced sections of PROW.

Alignment 2

Directness: The route is on-carriageway and primarily follows the most direct route in terms of driving and cycling, therefore scores 100% for directness.

Gradient: The route scores highly for gradient with a score of 73%. This means the route is overall reasonably flat with a few steeper sections.

Safety: The route scores poorly for safety with an overall score of 16%. This is due to the vast majority of the route being on-carriageway with traffic flows of between 2500-5000 vehicles and vehicle speeds in excess of 30mph, meaning most sections of the route score 0 under this criterion. There are some shorter sections of the route which scored higher than 0 and these were within Newport, Littlebury, Quendon and Stansted Mountfitchet, where 30mph speed limits are in place. It should also be noted that some sections of the route between the settlements lack passive surveillance and lighting.

Connectivity: The route scored moderately for connectivity, with an overall score of 54%. Generally, the route sections within the settlements of Littlebury, Newport and Stansted Mountfitchet scored more highly due to the denser street network. The remainder of the route is rural and fairly isolated with limited connections onto other routes.

Comfort: The route scored poorly for Comfort (15%) which suggests that conditions for cyclists are currently uninviting for the vast majority of cyclists. Generally, route sections are on-carriageway with traffic flows of greater than 2,500 which results in a default score of 0 under this criteria. As mentioned, there are three short sections of shared-use between Wendens Ambo and south of Stansted Mountfitchet and another going into Birchanger from the north with an approximate width of 3m.

Figure 7.6. Strategic Cycle Route A - RST Results

STRATEGIC CYCLE ROUTE B - AUDIT COMMENTARY

Introduction

This section provides an overview of how each route alignment scored against the five RST tool categories. This provides a useful comparison of the key issues and opportunities associated with each alignment option.

Section Scores

The plan opposite shows the overall RST score per section along each of the route alignment options. The results demonstrate that alignment 2 generally scores higher than 70%, which indicates that conditions for cycling are already of a relatively high standard. Conversely on alignment 1, scores are generally lower than 70% which suggests that improvements would be required.

Although alignment 1 mainly follows quiet rural roads, many of sections of the route are isolated, poorly surfaced, narrow and subject to high traffic speeds despite the low traffic flows. Therefore some improvements would be required to improve the safety of these sections.

Other sections of the route which score poorly on the RST audits include the short section of bridleway between Hatfield Broad Oak and Aythorpe Roding which is currently an unsurfaced, muddy track.

Alignment 1

Directness: The route scores 100% for directness as it primarily follows the most direct vehicular route, with a short section of PROW to maintain a direct alignment.

Gradient: The route scores highly for gradient with an overall score of 94%. The majority of sections do not have gradients steeper than 2% and therefore score 5/5. The exception to this is the section through Hatfield Broad Oak, where there are gradients of up to 7.5% over a distance of greater than 150m which results in a score of 0. There are also some slightly steeper gradients of <3.5% on the western section of the route along Pig Lane. Overall, gradient is unlikely to deter users from travelling along this route.

Safety: The route scores poorly for safety, with an overall score of 7%. Generally, the route follows roads with traffic flows of less than 2,500 vehicles, however the speed limits are generally national speed limit (60mph) with short sections of 30mph where the route passes through villages. As such, vehicle speeds are likely to exceed 30mph for most of the route. The route is also unlit and lacks passive surveillance along most of its length, which further reduces the score for safety.

Connectivity: The route scores relatively poorly for connectivity, with an overall score of 33%. This is mainly due to the rural nature of the route and the sparse nature of the highway network meaning there are limited connections along the route. The exception to this is the western end of the route, near Bishop's Stortford and the section of the route passing through Hatfield Broad Oak.

Comfort: The route scores well for comfort, with an overall score of 97%. Most sections of the route are along lightly trafficked roads with less than 2,500 vehicles per day and smooth machine-laid surfacing, which automatically scores a 5. The exception to this is the short section of PROW which is currently unsurfaced and therefore scores a 0 for this criterion.

Alignment 2

Directness: The route scores 100% for directness as it follows the most direct vehicular route.

Gradient: The route scores highly for gradient with an overall score of 100%, meaning it is very flat throughout its length.

Safety: The route scores relatively poorly for safety, with an overall score of 44%. Generally, the route follows roads with traffic flows of less than 2,500 vehicles, however the speed limits are generally national speed limit (60mph) with short sections of 30mph. As such, vehicle speeds could exceed 30mph on some sections of the route. The route is also unlit and lacks passive surveillance along most of its length, which further reduces the score for safety.

Connectivity: The route scores relatively poorly for connectivity, with an overall score of 40%. This is mainly due to the rural nature of the route and the sparse nature of the highway network meaning there are limited connections along the route, apart from at its northern and southern points.

Comfort: The route scores well for comfort, with an overall score of 100%. All sections of the route are along lightly trafficked roads with less than 2,500 vehicles per day and smooth machine-laid surfacing, which automatically scores a 5.

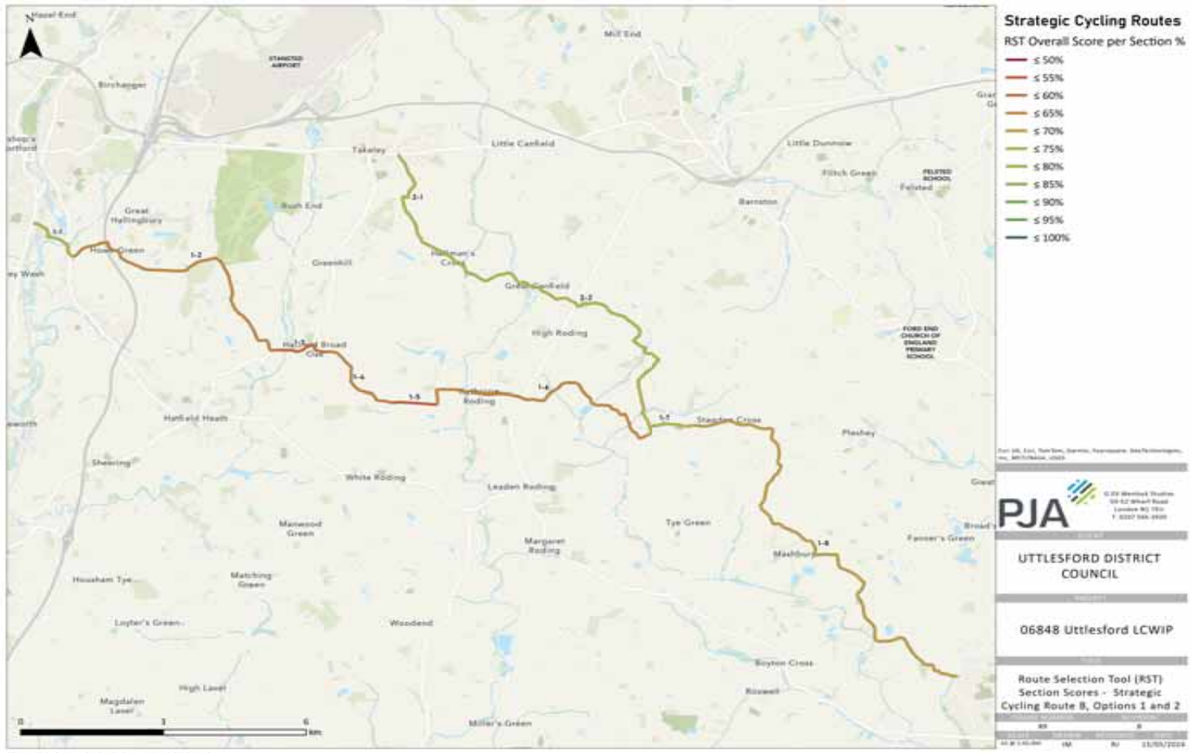


Figure 7.7. Strategic Cycle Route B - RST Results

STRATEGIC CYCLE ROUTE C - AUDIT COMMENTARY

Introduction

This section provides an overview of how each route alignment scored against the five RST tool categories. This provides a useful comparison of the key issues and opportunities associated with each alignment option.

Section Scores

The plan opposite shows the overall RST score per section along each of the route alignment options. The results demonstrate that the sections scores are generally less than 70%, which indicates that improvements would be required to achieve a satisfactory level of service for cycling along both alignments.

The lowest scoring sections on are located along Alignment 2, in particular along sections of the B1256 where there is no dedicated cycling infrastructure, high traffic volumes and high vehicle speeds, particularly outside of the settlements along the route. Similarly, the sections with the airport site currently score poorly in terms of the overall RST score. This mainly applies to sections of the airport's internal road network where there is no dedicated cycling infrastructure, or where there is infrastructure in place, it comprises either on-road advisory cycle lanes or narrow shared-use paths.

The scores indicate that the Flitch Way is generally has a relatively poor level of service at present, mainly due to the surface quality, narrow widths at points and general isolated and unlit nature of the route. However, this route does benefit from being traffic free, which means that alignment 1 scores more highly in terms of safety than alignment 2.

Alignment 1

Directness: The route scores 100% for directness as the route for cyclists is more direct than the equivalent driving route.

Gradient: The route scores relatively well for gradient, with a score of 80%. Gradients for the most part of less than 2%, apart from a small number of specific locations along the Flitch Way where there are short, steep sections.

Safety: The route scored moderately for safety, with an overall score of 56%. The sections of the route running along the Flitch Way are traffic-free, which score positively for safety, however these sections are unlit and lack passive surveillance, which impacts on perception of safety for users and therefore reduces the score. Sections of the route within the airport boundary provide a combination of sections of shared-use path, cycling mixed with traffic and advisory cycle lanes. The scores along these sections are also impacted by lack of lighting and passive surveillance.

Connectivity: The sections of the route along the Flitch Way score fairly low for connectivity, contributing to the low overall score of 34%. Despite the fairly low number of connections per km, the Flitch Way does provide a reasonable number of connections onto adjoining routes, such as the B1256 and connections into Takeley, connections via the minor roads to the south which link into various villages, and a number of connections in Flitch Green, Bannister Green and Felsted which form part of the Velo Villages scope of work. The additional sections of the route connecting to the airport and parts of Takeley present none or few connections per km.

Comfort: The route scored low for Comfort (0%). This is primarily due to the muddy/unsurfaced sections of Flitch Way which automatically score a 0 in the RST criteria. The additional sections of the route connecting to the airport present a smooth, machine-laid bituminous surface, but where cyclists mix with traffic, sections score 0.

Alignment 2

Directness: The route scores 100% for directness as it follows the most direct vehicular route.

Gradient: The route scores highly for gradient with an overall score of 81%. Most sections of the route have no gradients steeper than 2.5% however there is a short section of 10% gradient on Stortford Road and a short section of 4% gradient along Rayne Road which slightly bring down the overall score.

Safety: The route scores poorly for safety, with an overall score of 11%. Generally, the route follows roads with traffic flows of more than 5,000 vehicles per day which automatically scores a 0 in the RST tool. There are some short sections of shared-use path in Takeley and at the roundabout between the B1256 / A120 which provide protection from motor traffic, however the scores on the B1256 section are reduced by the lack of passive surveillance. Similarly, the route spur connecting into Warish Hall Farm, lacks lighting and passive surveillance and despite accommodating low traffic flows (below 2,500 vehicles per day) scores 1.

Connectivity: The route is mixed in terms of connectivity, with an overall score of 57%. The route does provide several connections through settlements (Takeley, Great Dunmow and Rayne) however there are some more isolated stretches of route in between settlements which bring the overall score down.

Comfort: The route scores poorly for comfort, with an overall score of 6%. This is due to most sections of the route requiring cycling in mixed traffic with daily traffic volumes of greater than 2,500 vehicles. As mentioned there are two sections of shared-use which score more highly for comfort.

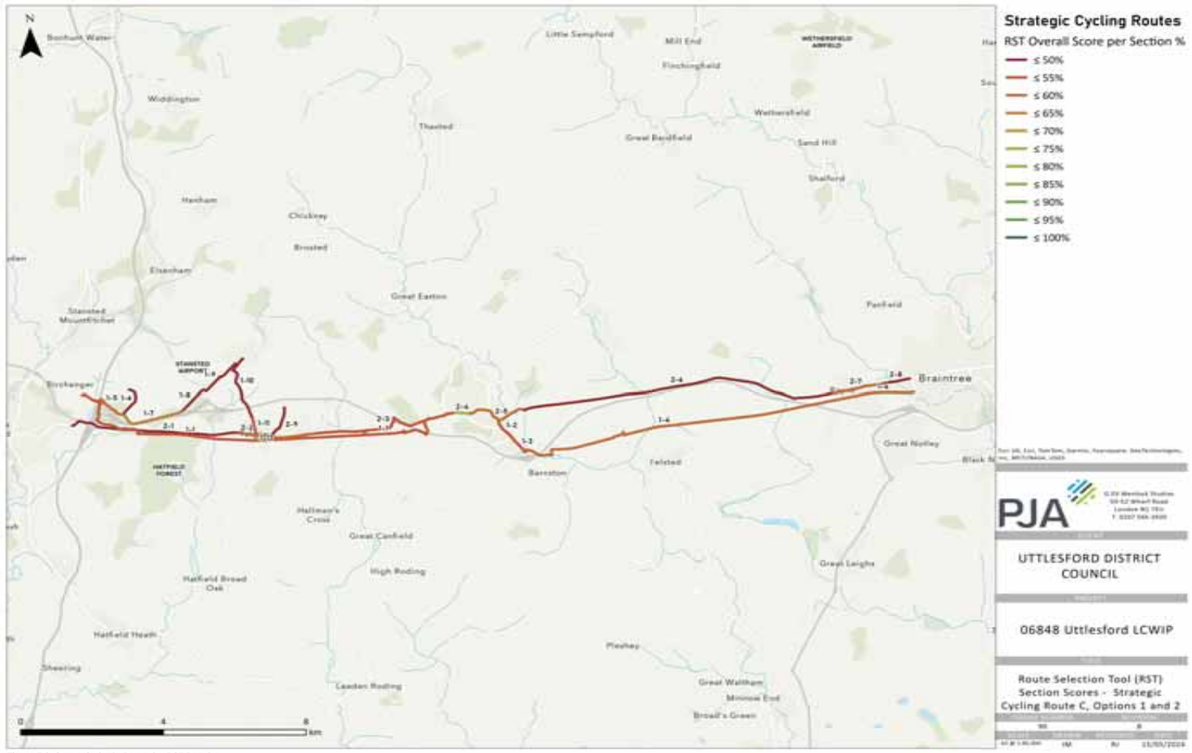


Figure 7.8. Strategic Cycle Route C - RST Results

STRATEGIC CYCLE ROUTE D - AUDIT COMMENTARY

Introduction

This section provides an overview of how each route alignment scored against the five RST tool categories. This provides a useful comparison of the key issues and opportunities associated with each alignment option.

Section Scores

The plan opposite shows the overall RST score per section along each of the route alignment options. The results demonstrate that the sections scores are generally higher than 70%, which indicates that the level of service for cycling along both alignments is already to a relatively high standard.

Alignment 1 generally follows quiet rural roads and the highest section scores are found as the route passes through villages of Ashdon and Bartlow.

Alignment 2 utilises existing public rights of way to provide a more direct connection into Linton and subsequently the Linton Greenway. Given the bridleways are unsurfaced routes at present and narrow in places, alignment 2 scores poorly in terms of comfort compared to alignment 1, however has a higher score for safety given the traffic-free nature of the route.

Alignment 1

Directness: The route scores 100% for directness as it follows the most direct vehicular route.

Gradient: The route scores 100% for gradient and there are no slopes with a maximum gradient of more than 2%.

Safety: The score for safety could be improved, with an overall score of 44%. Although the roads along the route are lightly trafficked, there are posted speed limits of greater than 30mph on some sections which reduces the overall score for safety. This is particularly the case on the northern and southern extents of the route on the approaches to Linton and Safron Walden.

Connectivity: The route scores fairly low for connectivity, with an overall score of 43%. This is unsurprising given the inter-urban nature of the route, with a fairly sparse and rural road network meaning connections are limited.

Comfort: The route scores well for comfort, with a score of 100%. This is because the roads along the route are lightly trafficked (<2,500 vehicles per day) which scores an automatic 5 in the RST scoring criteria.

Alignment 2

Directness: The route scores 100% for directness as its is more direct than the equivalent vehicular route due to its use of PROWs.

Gradient: The route scores reasonably well for gradient (74%), with most sections scoring 5 and containing no gradients greater than 2.5%. The exception to this is the southern end of the route on the initial section of byway from Bartlow Road, where there is a 4% gradient over a slope of 650m.

Safety: The route follows either PROWs or very lightly trafficked roads and therefore scores fairly well in terms of safety with an overall score of 60%. The route is unlit for its length and also lacks passive surveillance which brings down the overall score in terms of safety.

Connectivity: The route scores low for connectivity, with an overall score of 29%. This is due to the route, particularly the PROW sections, being isolated with limited interface with settlements.

Comfort: The route scores relatively poorly for comfort with an overall score of 37%. The score is brought down by the sections along PROW, which are unsurfaced and therefore automatically score 0 in the RST criteria. The on-carriageway sections are along roads with fewer than 2,500 vehicles per day and are smooth machine-laid surfacing, therefore automatically score a 5 in the RST criteria. The focus of improvements on this route would therefore be to improve the comfort along the sections which currently score a 0 under this criterion.

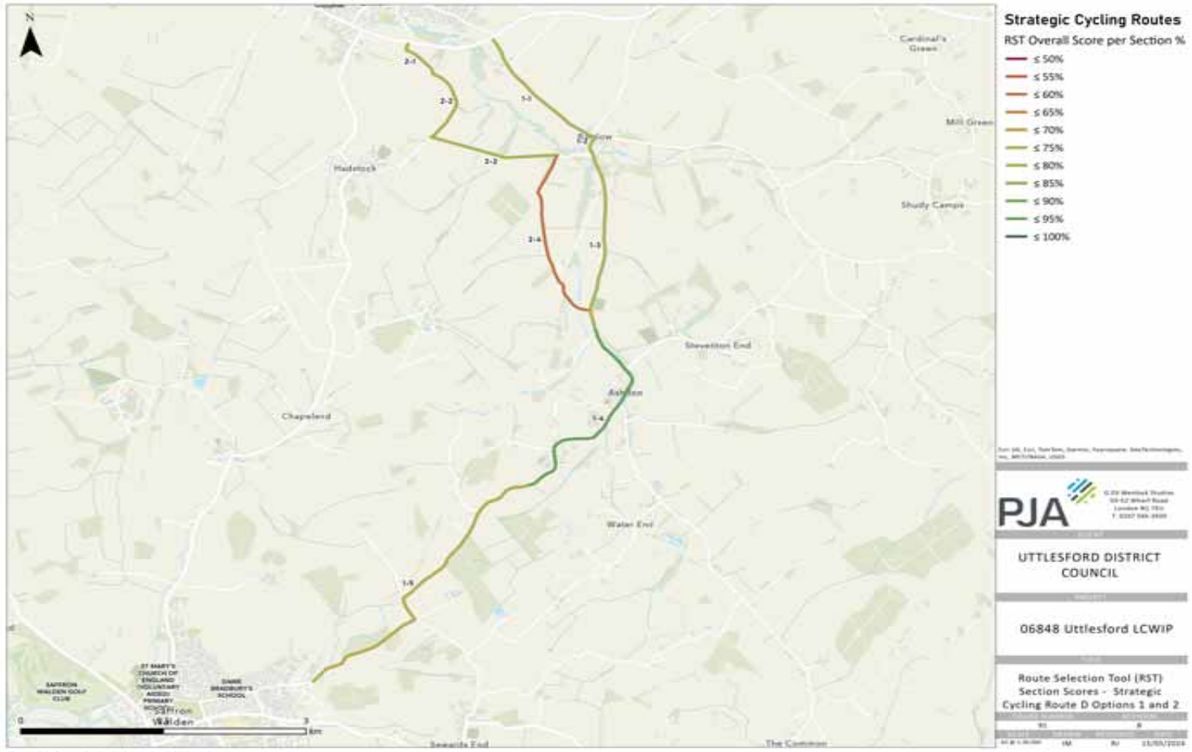


Figure 7.9. Strategic Cycle Route D - RST Results

DESIGN COMMENTARY

Introduction

This section provides an overview of the recommended design approach for each of the identified SCR alignments. Given the scale of the study area, and the high level nature of the project, these design recommendations are intended as suggestions on what could be achieved, or areas to investigate further, rather than specific design interventions.

As routes are taken forward to the design stage, a more detailed assessment of design feasibility will need to be undertaken.

The design summary plan opposite, shows a high level overview of the design approach on all of the SCR routes across the district. This plan is useful as it highlights how the SCR routes, if developed, could join to form a coherent district-wide network for inter-urban cycling.

A series of smaller scale plans, summarising the design approach for each SCR are provided in Appendix C.

Design Approach

The plan highlights the range of design approaches considered. On quiet, rural roads, the general recommendation is to investigate the feasibility of formalising and implementing quiet lanes. These would generally enforce existing conditions, or in some locations complementary measures might be required to reduce vehicle speeds and enforce pedestrian and cyclist priority, such as speed limit reduction, or light-touch traffic calming interventions.

On many sections of the SCRs, it is recommended that the feasibility of high quality shared-use facilities are investigated. This would provide cyclists with segregation from high traffic volumes and enable safe cycling on busier roads, such as the B1383. It should be noted that this approach is generally only appropriate in locations where pedestrian flows are anticipated to be low, for instance on inter-urban routes between settlements.

On roads where existing conditions are not suitable for on-carriageway cycling, however there is limited design scope for providing segregated cycle facilities, some alternative approaches have been suggested. This generally applies to busier rural lanes away from the main A-roads and B-roads. On these busier rural roads, it is recommended that a suite of traffic calming measures are introduced alongside carriageway markings that would enforce priority for cyclists. An example of this would be centre line removal, alongside speed limit reduction and advisory lanes for cyclists. Some further examples are provided later on in this chapter.

Finally, there are also a number of sections of the SCRs which utilise existing public rights of way. In the vast majority of cases, these are unsurfaced and as such unsuitable for most cyclists at present. The recommended design approach is to surface and widen these links where appropriate, however careful consideration is required to ensure that any improvements are sympathetic of the rural context and do not exclude other user groups, such as equestrian users. To mitigate this, it is recommended that the feasibility of providing 2m wide "trotting paths" are provided alongside any routes utilising existing bridleways. Careful consideration of ecological factors will also be required along these routes.

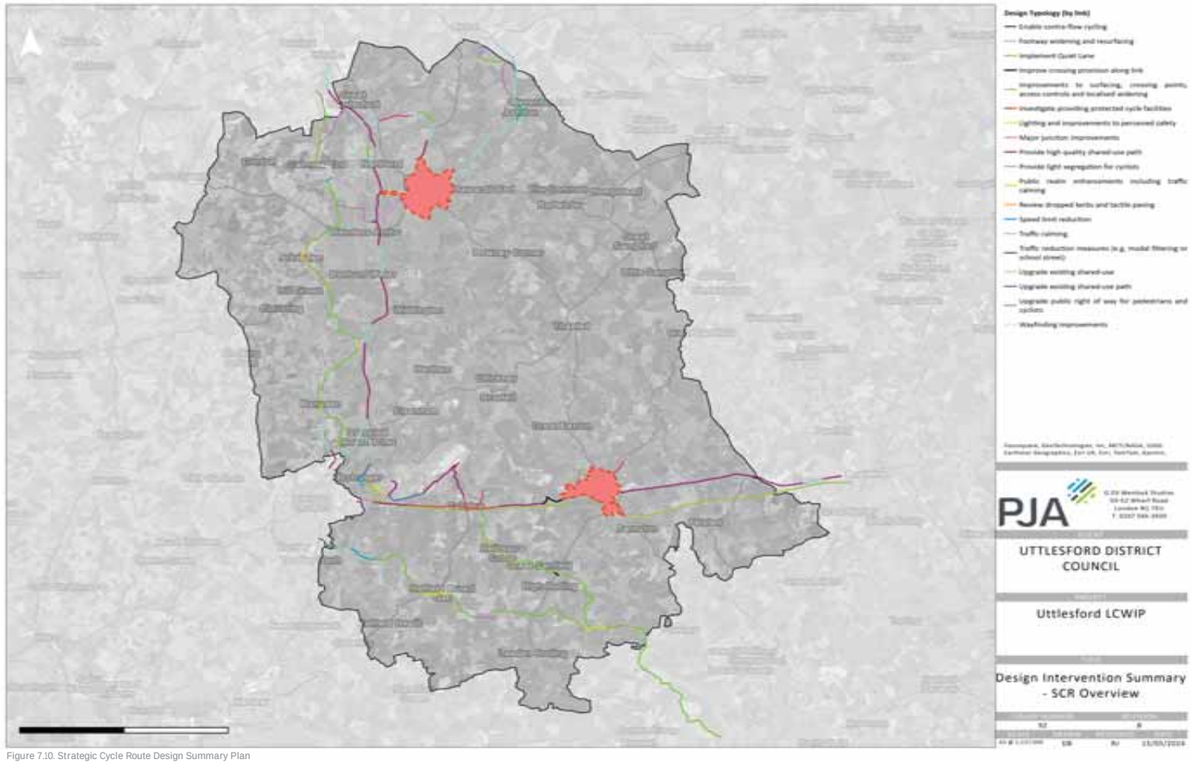


Figure 7.10. Strategic Cycle Route Design Summary Plan

STRATEGIC CYCLE ROUTE A - DESIGN COMMENTARY

Alignment 1

Many rural sections along the route are suitable for 'Quiet Lane' interventions to reduce vehicle speeds and improve conditions for vulnerable road users. Much of the northern half of the route, including the section between Ickleton and the Wellcome Genome Campus, is located along NCN 11 so these interventions would also improve the quality of this existing leisure route.

There are sections of the route which pass through villages, which provide an attractive streetscape and contribute to the overall attractiveness of the route. These village centres may benefit from interventions to further reduce vehicle speeds using interventions such as centre line removal, visual narrowing and gateway features on approaches into the village. Villages that might benefit from these interventions include Ickleton, Arkesdon and Manuden.

Much of the route follows rural lanes subject to the national speed limit. A review of publicly available collision data highlights some collision locations, including a fatal collision involving a cyclist on Wenden Road. The main focus of improvements should therefore be to reduce vehicle speeds and improve visibility of vulnerable road users. In some cases, this could be achieved by extending the existing speed limit changes within the village extents to also include the roads leading into the village. Along some lanes the traffic conditions are suitable to implement 'Quiet Lanes' in line with existing ECC guidance.

Traffic count data along the southern section of the route should be obtained and reviewed to determine whether segregated cycle facilities are required on the northern approach/exit from Bishop's Stortford. Due to low pedestrian flows, this could take the form of a high quality 3m wide shared path.

Similarly, the northern section of the route which utilises Frogge Street and provides a connection between Great Chesterford and Ickleton could also be upgraded to provide a high quality 3m wide shared path, utilising the existing footway on the eastern side of the carriageway.

Due to road width constraints, the provision of a shared-use facility is not feasible along the section running through Ickleton and connecting to the Wellcome Genome Campus. While the 20mph speed limit and narrow carriageway should help to keep speeds low, it is recommended that the existing traffic calming measures are reviewed and upgraded if required to create a safer environment for cycling through the village. Speed data for this route, as well as general traffic flow data would help to inform this further.

The existing wayfinding on the route isn't very legible and therefore a 'quick win' would be to introduce more visible and attractive wayfinding along the route. For the northern section of the route, this should include a review of the existing NCN wayfinding provision.

There are locations on the route which would benefit from junction improvements. These are primarily rural junctions such as Strethall Road / Batt's Lane, where there is likely to be high vehicle speeds on the major arm of the junction and visibility could be impeded by overgrown vegetation. In these locations, improvements could be made by introducing traffic calming measures to reduce vehicle speeds on the junction approach and improving visibility from the minor arms through maintenance of vegetation to achieve the appropriate visibility splays.

There are two short sections of bridleway that link into Wendon's Ambo and Great Chesterford. These would need to be upgraded by widening and resurfacing to enable safe, year-round access for cyclists.

For any traffic-free sections, including bridleways and byways in particular, consideration should also be given, where space permits, to including "trotting paths" parallel to the route to maintain the quality of the route for equestrian use.

Bucklebury Quiet Lane, Oxfordshire

Village Gateway Feature + Centre Line Removal, Burliton

Broomfield Cycleway, Essex

Figure 7.11: Strategic Cycle Route A Option 1 Design Summary Plan

Alignment 2

This route primarily follows the B1383 as it passes through Littlebury, Newport, Quendon and Stansted Mountfitchet. It therefore mainly follows relatively highly trafficked roads subject to 50mph speed limits where segregated cycling facilities would be required to deliver a route to LTN 1/20 standards.

For the urban sections through Littlebury, Newport, Quendon and Stansted Mountfitchet it is likely that it will be more challenging to deliver a segregated facility within the existing highway boundary. Therefore, where segregated facilities are not feasible, improvements should focus on improving crossing facilities, side-road treatments, tightening geometry at side-road junctions, consideration of 20mph speed limit, centre-line removal and footway widening where possible. All of these improvements combined would contribute to a safer environment for both pedestrians and cyclists.

There is existing footway provision along the B1383 for most of the route, except from the section to the north between Littlebury and Great Chesterford. Therefore, the design approach for this route would be to investigate widening the existing footways, using the verge space available to provide a consistent shared-use facility alongside the B1383 and the entirety of the route, aiming for a minimum width of 3m. Where feasible, a grass verge should be provided between this facility and the carriageway to improve the safety of pedestrians and cyclists using the facility from motor traffic. This would be LTN 1/20 compliant, given the low pedestrian flows.

There are existing shared use facilities through Wendens Ambo with a wide carriageway, which provides further scope for improvements to this facility. There is therefore the potential to upgrade and widen the existing shared-use facilities, or provide a segregated cycle facility given that pedestrian flows are likely to be higher in this location. This section of the route also forms part of the Saffron Walden LCWIP Route 1.

Although, as noted above, there is no footway between Littlebury and Great Chesterford, there is ample verge space to provide a shared-use facility alongside the carriageway. This should also be designed to connect with the recently constructed shared use facility adjacent to the Chesterford Meadows development. Again, pedestrian flows are likely to be low throughout this section of the route, so a shared-use facility would be acceptable provided it is designed in accordance with LTN 1/20 standards and minimum width requirements are adhered to.

The provision of cycle facilities is not feasible due to width constraints along the section of route on Gipsy Lane, south of Stansted Mountfitchet. Therefore, the recommended design approach is to implement traffic calming measures to create a safer environment for cyclists. Speed data for this route, as well as general traffic flow data would help to inform this further. If flows are too high to have cyclists mixing with general traffic, then a route behind the hedgerow may be an option.

For the spur which connects the B1383 to Chesterford Research Park (via Little Chesterford), it is recommended that:

- B1383 / High Street junction is improved to tighten junction radii and improve north-south crossing movement along proposed shared-use path
- Wayfinding is provided to direct users from the B1383 to the research park
- A village-wide 20mph limit is considered in Little Chesterford to reduce slower vehicle speeds
- Dedicated crossing provision in the form of a toucan crossing is provided for cyclists at the High Street / Walden Road roundabout, upgrading the existing uncontrolled crossing points. Reducing the speed limit at the roundabout to 30mph is also recommended to slow turning movements and improve safety.

A21 Parallel Cycle Route, Kent

Chicane Give-Way, Cobham

Stepped Cycle Track, Bicester

Figure 7.12. Strategic Cycle Route A Option 2 - Design Summary Plan

STRATEGIC CYCLE ROUTE B - DESIGN COMMENTARY

Alignment 1

The majority of this route could be unlocked by implementing Quiet Lanes along quiet rural roads.

There are some locations where traffic flows would need to be checked and if necessary, implement traffic calming and/or traffic reduction measures.

It is also recommended that localised improvements in villages such as Hatfield Broad Oak and High Easter are provided to improve public realm, general conditions for walking and provide a traffic calming effect. This could include centre line removal, rationalisation of junctions + formalising parking arrangements, further speed limit reduction and provision of new crossings along desire lines.

Where the route interfaces with B-roads, consideration should be given to providing crossing facilities for cyclists. There may be a need to widen short sections of footway to provide short sections of shared-use where there is a "dog-leg" in the route at these crossing points.

There is a short section of public right of way which is a missing connection in the route. This is currently a muddy track (designated as a bridleway) so would need to be surfaced to enable year-round cycling. Consideration should also be given where feasible to including a "trotting path" parallel to the route to maintain the quality of the route for equestrian use.

For the western section of the route through Twyford, there is scope to investigate filtering through-traffic as this appears to be a rat-run between London Road and the A1060. Due to very narrow carriageway widths, particularly over the River Stort, it is unsuitable for high traffic volumes and signals are used over the bridge. There may be a need to consider exemptions for residents in order to achieve local support for such a scheme. This would be the responsibility of Hertfordshire County Council rather than ECC as it falls outside the Uttlesford district boundary.

Alignment 2

Similar to Alignment 1, this route is largely low-traffic and generally suitable for cycling on-carriageway. The route is effectively split into two sections, bisected by the B184. The aim would therefore be to implement 'Quiet Lane' style improvements on the northern and southern sections of the route, to enforce priority for vulnerable road users and reduce traffic speeds and volumes.

There is a chance the northern section of the route is used as a rat-run from the B184 to Takeley and onwards to Stansted Airport. If so, it may be appropriate to either consider rural modal filtering, or traffic calming measures, however there isn't an obvious alternative route for drivers so this may be unfeasible/unpopular.

The key severance issue along the route to address is the B184. A crossing would need to be provided in High Roding across the B184 to accommodate the route and enable cyclists and pedestrians to safely cross the road.

To the north, this alignment provides a valuable connection to the Flitch Way and therefore also could facilitate a route to Stansted Airport, which is the largest employer in the district.

Carriageway Narrowing in Pattingham

Rural Modal Filter, Hollow Lane - Chelmsford

Centre-Line Removal, West Meon (Hampshire)

Figure 7.13. Strategic Cycle Route B - Design Summary Plan

STRATEGIC CYCLE ROUTE C - DESIGN COMMENTARY

Alignment 1

The majority of the route follows the Flitch Way, which is an existing traffic-free route providing a connection between Bishop's Stortford and Braintree.

The main constraint of this route is the quality of surfacing along the route and the fact that the route is unlit and lacks passive surveillance along the traffic-free sections. This means that the route is not suitable as a utility route for regular commuting trips, and/or trips undertaken outside of daylight hours or in poor weather conditions.

The focus of improvements along the route therefore is to upgrade the existing surfacing in sections to a smooth, bound surface that is clear of debris, cracks and has suitable drainage in place. It may not be possible to provide lighting along the route due to ecological constraints, however this should be investigated and alternative solutions such as recessed stud lighting could be considered.

The route also varies in width and for the most part is less than 3m wide. It should therefore be investigated whether some localised widening could be undertaken at the narrower parts of the route to reduce potential conflict between pedestrians and cyclists. The focus of widening should be on pinch points initially, before rolling out improvements across the rest of the route.

There is also a gap in the route as it passes through Great Dunmow. This section of the route also forms part of LCWIP Route GD 1 and a series of improvements have been recommended, including footway upgrades, new crossing points and corridor-wide measures to reduce traffic speeds and volumes. These interventions will help address the severance created by this on-carriageway section of the NCN route and ensure a continuous level of service from start to finish.

As part of the package of design measures for this route the access controls along the route should be reviewed and upgraded to ensure they are accessible for all users. The Transport Initiatives report identifies a number of locations for this.

The Flitch Way crosses a number of roads along its length and the Transport Initiatives report identifies a series of crossings where improvements are required in order to meet LTN 1/20 standards.

Recessed Stud Lighting + Artwork, River Frome

Great Western Greenway, Mayo

Crossing to Acess Traffic-Free Route, Burgess Hill

Figure 7.14. Strategic Cycle Route C Option 1 - Design Summary Plan

STRATEGIC CYCLE ROUTE C - DESIGN COMMENTARY

Alignment 1 - Connections to Stansted Airport

The route connects Takeley to Stansted Airport via Parsonage Road. Vehicle volumes and speeds are unlikely to be suitable for cyclists to mix with traffic and there is an existing 2m wide footway which runs alongside the carriageway. Given the low pedestrian flows, it is recommended that this facility is upgraded to a high quality shared-use route, measuring at least 3m in width. Within Takeley itself, it would be preferable to separate pedestrian and cycle traffic given the higher pedestrian flows, likely through provision of segregated cycle tracks on either side of the carriageway along Parsonage Lane. Where there are width constraints, alternative on-carriageway solutions or short sections of shared-use might be necessary.

As a more ambitious future measure, the role of traffic along Parsonage Road should be investigated and whether there is any potential to restrict motor traffic and reduce traffic levels, perhaps through a modal filter north of the A120.

As part of any improvements, key junctions along the route, such as B1256 / Parsonage Rd and the Coopers End Roundabout should be upgraded to include dedicated crossing provision for cyclists. Reducing the speed limit at the roundabout to 30mph is also recommended to slow turning movements and improve safety.

Within the airport site, the route utilises the internal road network to connect to the terminal and to the business park. As noted, there are some sections of on-carriageway cycle lanes along Long Border Road, as well as a footway separated from the carriageway by a grass verge. Given likely vehicular flows and proportion of HGVs within the airport site, cyclists should be separated from motor traffic. Therefore, it is recommended that the existing footway is upgraded and widened to provide a high quality shared use route alongside the carriageway, aiming for a minimum width of 3m. Where no footway provision exists, as in the section along Round Coppice Road, the feasibility of providing a new route alongside the carriageway should be investigated. This will likely require the removal of vegetation and trees, and is dependent on the extent of land within airport ownership.

As part of any improvements, junctions along Round Coppice Road will need to be upgraded to included dedicated crossing provision for cyclists, including priority cycle crossings at side road junctions (see opposite Chingford example). Reducing the speed limit to 30mph at junctions is also recommended to slow turning movements and improve safety.

For the shared-use section connecting Birchanger with the airport site, lighting provision should be reviewed to ensure that the route is accessible 24 hours.

For the short connection into Takeley, along Smiths Green, sufficient pedestrian and cycle facilities will need to be provided as part of any development that comes forward in this area. As a minimum, this should include 2m wide footways for pedestrians and consideration given to whether segregated facilities for cyclists are required (subject to future traffic volumes).

Stepped Cycle Track in Industrial Location, Waltham Forest

Toucan Crossing at Major Junction, Bicester

Priority Cycle Crossing at Side Road, Chingford

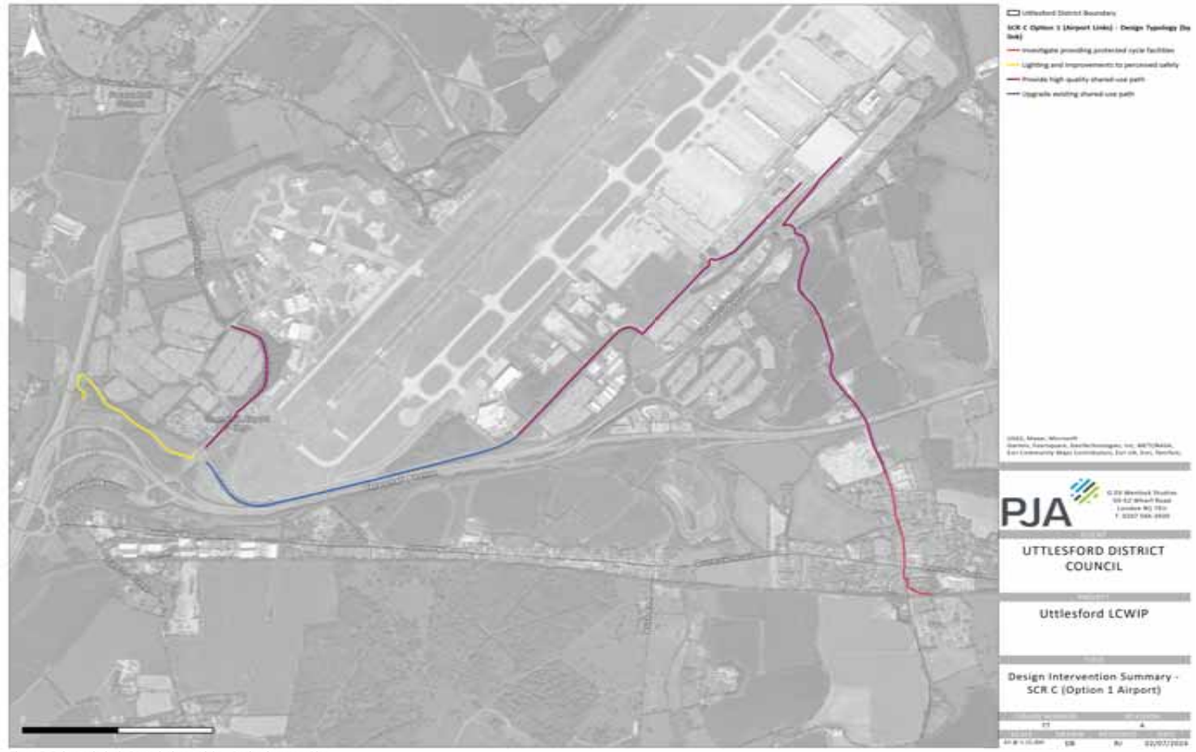


Figure 7.15. Strategic Cycle Route C Airport Links - Design Summary Plan

STRATEGIC CYCLE ROUTE C - DESIGN COMMENTARY

Alignment 2

There is an existing shared-use footway cycle route through Takeley, via the residential area north of the B1256. This starts east of Parsonage Lane and terminates at Thornton Road. It then starts again east of Bluegates Farm and continues into Great Dunmow. Therefore, a critical issue to address along this route is the gap in provision along the B1256 between these two points. To do so, widening of the existing footway would be required and land purchase may be necessary to provide a "behind the hedge" type facility if there is not sufficient width available within the highway boundary (see photo opposite).

Likewise, west of Parsonage Lane and up to the A120 junction there are no dedicated facilities and on-carriageway cycling would not be suitable due to high traffic volumes and speeds. As such, a new facility would be required, likely widening the existing footway on the northern side of the carriageway and again potentially requiring land purchase to the north of the carriageway. Given the low pedestrian flows, this could be a shared-use facility.

Some sections of the shared-use facility through Takeley are not LTN 1/20 compliant, particularly given that pedestrian flows are higher in this area. Although this isn't a critical issue to address on the route, upgrades to this section to provide separate cycle facilities should be considered as a longer-term intervention. Likely to be constrained by carriageway width so might not be feasible.

Junction 8 of the M11 is currently a major barrier to cycling and there are no dedicated facilities for cyclists and limited facilities for pedestrians. This junction is currently being upgraded, however improvements to walking and cycling are focussed on the A120 / Birchanger Lane junction to the west of the main motorway junction. This scheme would need to be extended to link up with any proposed facilities along the B1256, including dedicated crossing facilities across the M11 northbound on-slip and southbound off-slip. A key constraint here will be the width on the bridge over the M11, where there appears to be limited scope to provide a facility for cyclists. A cantilevered cycling bridge may however be an option here. An example of how a bridge has been used to enable a cycle route between Lewes and Berwick is provided to the right.

Recommendations within Great Dunmow are summarised within the LCWIP, as part of routes GD 1 and GD 3.

The recommendations for Braintree and Dunmow Road, east of Great Dunmow align with the recommendations for the B1256 east of Takeley i.e., upgrading the existing footway to widen and convert to an LTN 1/20 compliant shared-use facility, aiming for a minimum of 3m width.

Through Takeley/Little Canfield and Rayne, traffic calming and speed reduction should be investigated and could be provided alongside public realm improvements to reduce the impact of motor traffic on these settlements. An example from Norwich is provided on the right, which uses centre line removal and traffic calming to reduce vehicle speeds and enable safer cycling.

Through the section connecting to Warish Hall Farm, provision of a shared-use facility along the section that is LTN 1/20 compliant should be investigated.

"Behind the Hedge" Cycle Path - A21 (Tunbridge Wells - Tonbridge)

Bridge on Lewes - Berwick Cycle Path

Centre Line Removal - Traffic Calming, Norwich

Figure 7.16. Strategic Cycle Route C Option 2 - Design Summary Plan

STRATEGIC CYCLE ROUTE D - DESIGN COMMENTARY

Alignment 1

This route primarily follows minor roads and connects Saffron Walden with Linton via Ashdon and Bartlow

Along the initial section of Walden Road, there are daily vehicular flows of circa 2,000 vpd - therefore this link would be suitable for on-carriageway cycling if speeds can be reduced. For this section, the potential to extend the 30mph speed limit from Saffron Walden to Church End should also be investigated to create a more consistent provision and improve compliance with the speed limit.

Other traffic calming measures could be explored along Walden Road, including visual narrowing and centre-line removal.

In Church End itself, the main focus should be on providing a consistent footway provision throughout the village. At present there is a sharp gradient on the footway which links Walden Road to Church Hill and this should be addressed. This section of the footway should also be widened to a minimum of 2m using the verge space available.

Between Church End and Ashdon, traffic calming measures such as centre line removal and visual narrowing are recommended, given the winding nature of the road which might impede visibility to cyclists. This could be implemented alongside a reduction in the speed limit.

The focus in Ashdon should be the junction between Crown Hill and Radwinter Road, which is currently very wide. The layout of the junction should be simplified and the geometry tightened. As part of this, public realm improvements (seating, greening etc) could be implemented to create a focal point in the village.

A 20mph speed limit should also be implemented throughout the village, particularly given the presence of the primary school. At present there is a temporary 20mph limit during school hours which shows there is precedent for a reduction in speed limit in the local area.

The remainder of the route follows Bartlow Road, which will require traffic calming measures in order to reduce vehicle speeds and enable safer on-carriageway cycling conditions.

Alignment 2

This alternative route primarily utilises existing public rights of way to provide an alternative connection between Ashdon and Linton for the northern section of the SCR.

The initial section of the route follows a byway that runs parallel to Bartlow Road. The majority of this byway is wide enough for cycling, however would require resurfacing to be suitable for the majority of bicycles.

Bartlow Road (west of the village) would be designated as a 'Quiet Lane' as it is a narrow single track road with low traffic flows.

At the northern end of the route, a bridleway connects Bartlow Road to Long Lane. Again, this would require resurfacing to provide a sufficient quality route for cyclists. Widening would be required at certain pinch points to achieve a minimum width for cyclists, i.e. at the northern end of the route where the bridleway joins Long Lane.

For the sections of PROW along the route, including bridleways and byways in particular, consideration should also be given where feasible to including "trotting paths" parallel to the route to maintain the quality of the route for equestrian use.

For both SCR D alignments, consideration will need to be given at the northern end of the route as to how the routes connect into Linton and/or with the start of the Linton Greenway. This might require the extension of the Linton Greenway further east from its current starting point near Linton Village College, or by providing an improved crossing over the A1307 so that cyclists can continue into the village

Centre-Line Removal + Advisory Cycle Lanes, Cardiff

Tightened Junction Radii, Buriton, Hampshire

'Green Lane', Jersey

Figure 7.17. Strategic Cycle Route D - Design Summary Plan

8 RECOMMENDATIONS

SUMMARY AND RECOMMENDATIONS

Overview

This report has provided a summary of the Uttlesford LCWIP, as well as the Strategic Cycle Routes workstream. In addition to this, complementary work has been undertaken looking at potential rural connections which will help to improve connectivity between villages and neighbouring towns and railway stations - this is included in Appendix D.

The plan opposite demonstrates how the three workstreams join together to provide a comprehensive district-wide network. This would provide connections within and between key settlements and enable regular everyday trips to be made by cycling, as well as routes which would enable safe and enjoyable leisure journeys to be undertaken by all users.

Within the key settlements, the traditional LCWIP methodology has been followed and a series of interventions to improve conditions for walking and cycling within these towns has been developed. The next stage is for these interventions to be prioritised by ECC which will provide a clear programme for implementation over the next 10 years.

Integration

It is recommended that the LCWIP (including Strategic Cycle Routes) is considered in all future developments and applications in the district which either directly impact upon the LCWIP networks or are likely to affect conditions for walking and cycling in general. Whilst the LCWIP has developed measures only for the LCWIP network, a majority of these recommendations could be adopted and applied to sites across the district to further improve the walking and cycling conditions.

It is also recommended that the LCWIP is integrated with ongoing strategies and policies in the district, as well as the delivery of planned walking and cycling infrastructure through ECC. It will be important to ensure that the LCWIP is integrated with the emerging county-wide LCWIP, currently being development by ECC. It will be important to ensure that the county-wide LCWIP aligns with the Uttlesford LCWIP, to ensure that the strategic connections identified as part of this report are given full consideration by ECC when prioritisting projects across the county. Therefore, it is recommended that there is close collaboration between UDC and ECC to ensure this alignment as the county-wide LCWIP is finalised in the coming months.

Moreover, the LCWIP should also be incorporated into the policies contained within the emerging Uttlesford Local Plan.

Uttlesford District Council, as the planning authority, will act as the guardian of this LCWIP, however it will ultimately be the responsibility of ECC as the highway authority to implement the schemes.

Funding

This LCWIP is an important tool that will enable UDC and ECC to secure funding on walking and cycling schemes across the district. Although not formally required by Active Travel England, the development of an LCWIP will help UDC and ECC to make a strong case for future investment in active travel infrastructure in the district.

The identified routes and the design recommendations included within provide UDC and ECC with a list of active travel schemes to which sources of funding can be applied for. Potential sources of funding for these routes include:

- Funding from central government, obtained through funding applications by ECC to Active Travel England
- Developer contributions from S106 funding

Any new developments in the district that are within or near to the geographical scope of this LCWIP should be reviewed for opportunities to make funding contributions towards the delivery of, or help to deliver the proposals contained within this LCWIP.

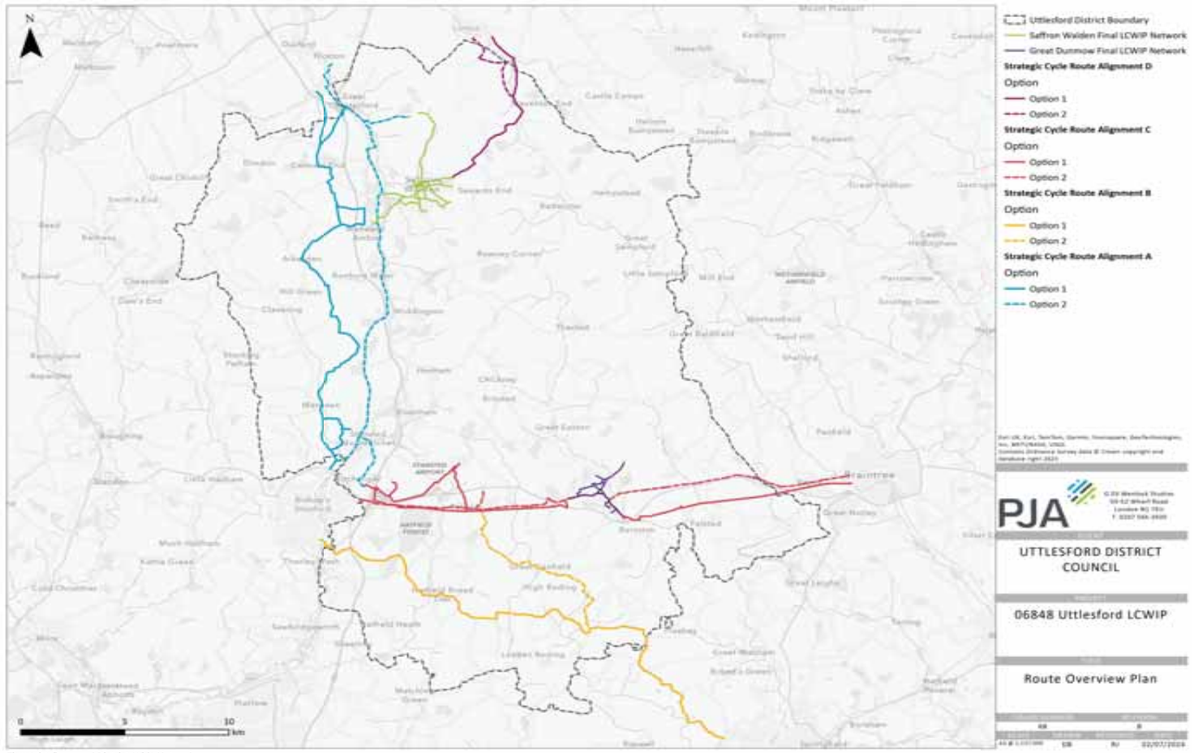


Figure 8.1. Proposed District-Wide Network

PJA

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