Essex Highways

Colchester Borough Cycling Action Plan

Highways/Transport Planning

January 2018

RINGWAY JACOBS
integrated expertise

Essex County Council

Contents

Tables

Figures

Executive Summary

Essex Highways was commissioned by Essex County Council to produce a Cycling Action Plan (CAP) for Colchester Borough, as part of a commitment in the Essex Cycling Strategy to create Cycling Action Plans for every Borough/ District.

The purpose of the Essex Cycling Strategy is to set out the key elements of a long term plan that will lead to a significant and sustained increase in cycling in Essex, establishing it in the public's mind as a 'normal or regular' mode of travel, especially for short A-to-B trips, and as a major participation activity and sport for all ages.

To help achieve this, Essex is committed to establishing a coherent, comprehensive and advantageous cycle network in every major urban area, utilising a combination of on-carriageway and off-carriageway cycle facilities. To enable this, each Borough/ District in Essex will have an up-to-date Cycling Action Plan (renewed every five years). These are seen as key elements of a long term plan that will lead to a significant and sustained increase in cycling in Colchester Borough and in Essex.

This Colchester CAP is targeted towards the specific needs of Colchester residents, which will assist Essex County Council (ECC) in tackling wider problems associated with poor health, pollution, traffic congestion and inequalities of opportunities for Colchester's youth population and people on low incomes.

The aims of this Action Plan are to:

- Identify how cycling levels can be increased in the Borough;
- Enable any funding for new cycling schemes in Colchester to be prioritised;
- Create a usable, high-quality cycle network that connects residential areas with key employment locations, railway stations and town centres; and
- Create opportunities to increase recreational cycling in Colchester.

Understanding current levels and conditions for cycling has been important in developing this CAP, which has involved analysis and consideration of 2011 Census data, the Active People Survey (by Sport England), the Essex Cycle Monitor database, Department for Transport count data, collision data, cycle crime statistics and topography.

In order to create an environment where cycling is normal for the residents of Colchester, it will be necessary to remove existing barriers to cycling and a series of cycle routes provided, with the aim of creating a connected cycle network over time. Cycling infrastructure should provide for both key utility journeys and encourage leisure cycling.

The key recommendations and schemes are listed in Sections 6, 7 and 8 of this CAP and are summarised in Section 11 and below.

Key Recommendations

The following key recommendations have been made for cycle enhancements in the Borough:

- Review existing route signage and lighting;
- Improve maintenance of existing routes (it is an aim of the Essex Cycle Strategy to prioritise more frequent and improved maintenance of the cycle network);
- Develop Flagship Routes through Feasibility Studies to Detailed Design;
- Prioritise the East-West Flagship route, providing access to the university, the town centre and the railway station;
- Provide new and improved cycle parking with a focus on satiating the considerable demand for commuter trips at railway stations;
- Fill obvious gaps in the existing cycle-route network (on alignments with cycle-friendly topography);
- Provide new infrastructure on key roads with cycle-friendly topography but no existing facilities;
- Update the existing cycle map every two years taking on board new innovation in cycle-map design, and promote it and disseminate it widely through a range of channels and outlets
- Promote and market Flagship Routes with ‘Cycle Superhighway’ style branding and disseminating techniques;
- Improve cycle infrastructure links between the north of the town, the town centre and railway station.
- Improve existing limited cycle infrastructure provision within Highwoods and Parsons Heath residential areas, to encourage existing high levels of commuter traffic to the town centre and rail station to consider cycle use.
- Cycle route enhancements in the north east of the town linking it to surrounding areas; and

- Improve linkages between south eastern areas of Colchester, particularly in Old Heath and Blackheath and the town centre, to address the high number of car commuter trips to the town centre.

Next Steps

This is a draft Action Plan and, although the potential schemes have been developed in discussion with Council representatives, further consultation is required before the overall Action Plan can be finalised.

The character of the existing highway network has been taken into account, when developing potential cycle routes and schemes – in particular existing traffic levels. Broad costs of schemes have been identified, as well as broadly prioritising schemes against deliverability, directness extension of the existing network and proximity to key attractors. However, the potential routes and schemes have not been constrained to a set budget and the feasibility and the precise cost of the routes can only be established through further study.

1 Introduction

1.1 Preamble

As part of the county-wide Essex Cycling Strategy, Cycling Action Plans are being developed for individual Boroughs and Districts of Essex, including one for the Borough of Colchester. This document provides an opportunity to develop and promote cycling in Colchester through improved infrastructure, together with the wider promotion of cycling by Active Essex, Essex County Council (ECC) and Colchester Borough Council (CBC), to establish it in the public's mind as a 'normal' mode of travel, especially for short a-to-b trips, and as a major participation activity and sport for all ages.

Two key commitments of the Essex Cycling Strategy are to:

- Establish a coherent, comprehensive and advantageous cycle network in every major urban area, utilising a combination of on-carriageway and off-carriageway cycle facilities; and
- Ensure each District has an up to date Cycling Action Plan (renewed every 5 years).

The Cycling Action Plans should help to identify high quality and well planned infrastructure which will be vital in encouraging cycling and improving safety. ECC will ensure that every urban area has a well-planned cycle network that:

- Connects key destinations;
- Supports a network of recreational routes; and
- Caters for all users and abilities.

Coherent cycle networks will ensure that:

- The physical barriers to cycling in many of Essex's urban areas are progressively broken down; and
- Cycling becomes a prioritised mode of transport in the mind of Essex residents.

In addition, Active Essex (County Sports Partnership) priority aims and how cycling helps achieve these aims are included in Table 1.1.

Table 1.1: Active Essex priority aims

Active Essex priority aims	How cycling helps achieve these aims
Increase participation in sport and physical activity	Cycling is one of the most popular sports in Essex and can be enjoyed by people of all ages
Encourage healthy and active lifestyles	Cycling provides a means of active transport that can help to reduce the number of short car journeys
Develop sporting pathways	Alex Dowsett, cycling world record breaker, is from Essex and benefited from Active Essex Sporting Ambassador funding and support when he was a talented young cyclist
Encourage lifelong learning and skills development	Bikeability courses help children and adults to acquire physical skills and road safety awareness

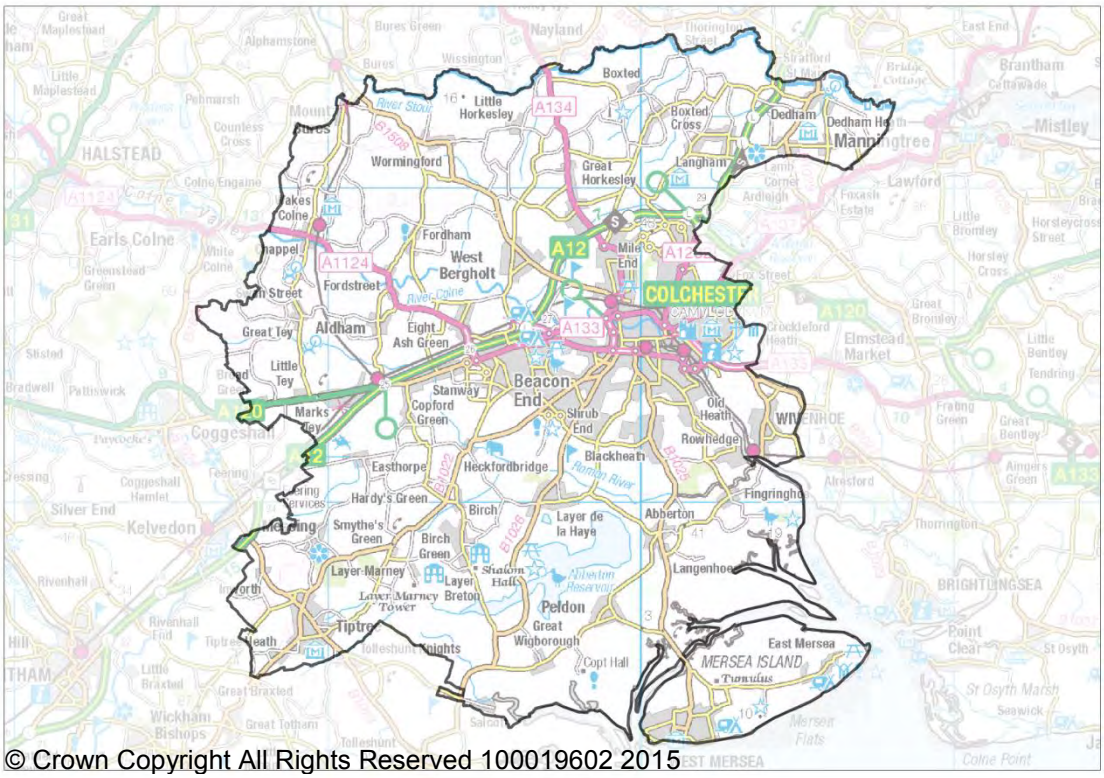
1.2 Background

Colchester is one of the main towns within Essex in the East of England, and is part of the Haven Gateway region of Essex (including Braintree and Tendring). Figure 1.1 shows the extent of Colchester Borough whose major towns include Colchester, Mersea and Wivenhoe. The 2011 Census records the population in Colchester Borough at 173,074.

Colchester is one of the fastest growing Boroughs in the East of England and is required to make a minimum provision of 14,720 homes between 2017 and 2033 in accordance with its evidence based housing target. A figure of 920 homes per year has been determined as the Objectively Assessed Need for Colchester. With this growth comes the need for more sustainable travel options in the Borough to help prevent traffic congestion and air pollution consequences of the increased population.

The Borough has good rail connections to and from London. Colchester, Colchester Town and Hythe rail stations are the local stations. Colchester and Colchester Town are on the Liverpool Street line, with a frequency of 5 trains per hour passing Colchester in one direction (usual destinations are Ipswich, Norwich, Colchester Town, and Clacton-On-Sea). There is one train per hour on the Liverpool Street line to and from Colchester Town. Abellio Greater Anglia trains also run from Colchester Town to Walton-on-the-Naze passing Colchester and Hythe each hour.

Figure 1.1: Colchester Borough



1.3 Aims of the Action Plan

This Colchester Cycle Action Plan focuses primarily on improving cycle infrastructure within Colchester town, as that is where the predominant increase in development is planned within the Borough. It provides a justifiable list of interventions aimed at promoting cycling within Colchester Borough and in particular Colchester Town, building on the legacy of the 2012 'Colchester Cycle Delivery Strategy'.

The aims of this Action Plan are to:

- Identify how cycling levels can be increased in the Borough;
- Enable any funding for new cycling schemes in Colchester to be prioritised;
- Create a usable, high-quality cycle network that connects residential areas with key employment locations, rail stations and town centres; and
- Create opportunities to increase recreational cycling in Colchester.

This is a draft Action Plan and, although the potential schemes have been developed in discussion with Council representatives, further consultation is required before the overall Action Plan can be finalised.

1.4 Report Structure

The remainder of this action plan is set out as follows:

- Section 2 - Policy Review;
- Section 3 - Data Analysis;
- Section 4 - Existing Network Provision and Barriers;
- Section 5 - Colchester's Cycling Potential;
- Section 6 - Potential Infrastructure Improvements;
- Section 7 - Prioritisation and Costings of Potential Schemes
- Section 8 - Flagship Routes
- Section 9 - Smarter Travel Measures;
- Section 10 - Delivery and Funding; and
- Section 11 - Key Recommendations.

2 Policy Review

2.1 Introduction

This section provides a summary of the relevant national, regional and local policies related to cycling. Relevant National, Regional and Local Policy contexts have been examined, through consideration of the following documents: the UK Government's Cycling and Walking Investment Strategy (CWIS, 2017), the Essex Transport Strategy (2011) and the Colchester Borough Council's Emerging Local Plan 2017-2033.

These documents indicate that there is a great deal of support for cycling at all levels. At a national level, there is a long term vision for cycling to become the normal mode of choice for short journeys or as part of a longer journey. At a regional level, there is a particular emphasis on providing sustainable access and travel choice for Essex residents. It is recommended that cycling will be promoted as a way to reduce congestion within urban areas, to encourage healthier lifestyles, and as a valuable leisure and tourism opportunity that is important to the local economy.

At a local level, to support the planned growth in Colchester Borough and to enable more existing journeys to be made by bike, extending and upgrading the cycle networks is a key objective, along with promoting their use. The area's strategic road and rail network is heavily used, particularly given the proximity to and connectivity with London. While there are high levels of commuting to London, many residents work and live within the area, commuting across city and district boundaries, many of which could potentially be attracted to cycle, given the right conditions. The emerging Local Plan recognises that the urban traffic congestion which occurs in the Colchester area at certain times of day is not able to be changed by significantly altering the urban road network and must therefore be addressed by providing greater opportunities for short trips to be made by walking, cycling and public transport instead. The emerging Local Plan emphasises the need to develop sustainable land use patterns that maximise accessibility between jobs, homes, services and facilities.

2.2 National Policy Context

2.2.1 Cycling and Walking Investment Strategy (CWIS)

Under the Infrastructure Act 2015, the UK Government is required to set a Cycling and Walking Investment Strategy (CWIS) for England. A Draft First CWIS was published at the end of March 2016, which set out the UK Government's ambition

for creating a walking and cycling nation, the targets and objectives they are working towards, the financial resources available to meet their objectives, the strategy for delivering the objectives, and the governance arrangements that will review this delivery. Following consultation, a final version of the Strategy was published in 2017.

The final Cycling and Walking Investment Strategy states that the Government "wants to make cycling and walking the natural choices for shorter journeys, or as part of a longer journey". The aim is for more people to have access to safe, attractive routes for cycling and walking by 2040. By 2040, the ambition is to deliver:

Better Safety (a safe and reliable way to travel for short journeys), through:

- Streets where cyclists and walkers feel they belong, and are safe;
- Better connected communities;
- Safer traffic speeds, with lower speed limits where appropriate to the local area; and
- Cycle training opportunities for all children.

Better mobility (more people cycling and walking – easy, normal and enjoyable), through:

- More high quality cycling facilities
- More urban areas that are considered walkable;
- Rural roads which provide improved safety for walking and cycling;
- More networks of routes around public transport hubs and town centres; with safe paths along busy roads;
- Better links to schools and workplaces;
- Technological innovations that can promote more and safer walking and cycling;
- Behaviour change opportunities to support increased walking and cycling; and
- Better integrated routes for those with disabilities or health conditions.

Better streets (places that have cycling and walking at their heart), by:

- Places designed for people of all abilities and ages so they can choose to walk or cycle with ease;
- Improved public realm;
- Better planning for walking and cycling;

- More community-based activities, such as led rides and play streets where local places want them; and
- A wider green network of paths, routes and open spaces.

The document recognises that great progress has been made on cycling in the past six years. Cycling rates have increased in areas where dedicated funding has been made available and spend on cycling has risen from around £2 per person in 2010 to £6 per person in England in 2016-17. The Government want to build on these successes and to help achieve this have made over £1 billion of Government funding available to local bodies that may be invested in walking and cycling over the next five years. The £1.2 billion is allocated as follows:

- £50 million to provide cycling proficiency training for further 1.3 million children;
- £101 million to improve cycling infrastructure and expand cycle routes between the city centres, local communities, and key employment and retail sites;
- £85 million to make improvements to 200 sections of roads for cyclists;
- £80 million for safety and awareness training for cyclists, extra secure cycle storage, bike repair, maintenance courses and road safety measures;
- £389.5 million for councils to invest in walking and cycling schemes; and
- £476.4 million from local growth funding to support walking and cycling.

In addition, the government is investing an extra:

- £5 million on improving cycle facilities at railway stations;
- £1 million on Living Streets' outreach programmes to encourage children to walk to school; and
- £1 million on Cycling UK's 'Big Bike Revival' scheme which provides free bike maintenance and cycling classes.

By 2020, the objectives of the CWIS are to:

- Increase cycling activity, where cycling activity is measured as the estimated total number of cycle stages made;
- Increase walking activity, where walking activity is measured as the total number of walking stages per person;
- Reduce the rate of cyclists killed or seriously injured on England's roads, measured as the number of fatalities and serious injuries per billion miles cycled; and

- Increase .the percentage of children aged 5 to 10 that usually walk to school.

2.2.2 Cycling and Walking Infrastructure Plans (CWIP)

A National CWIP is being developed to inform the CWIS. This will include the identification of nationally significant locations/infrastructure. Six outputs are currently being developed (three national and three local outputs):

- The national outputs focus on identifying criteria for national significance and developing a pipeline of potential schemes; and
- The local outputs are focused on developing a Level of Service tool, and guidance to Local Authorities on developing their own local CWIP.

Local Cycling and Walking Infrastructure Plans (LCWIPs), as set out in the Government's Cycling and Walking Investment Strategy, are a new, strategic approach to identifying cycling and walking improvements required at the local level. They enable a long-term approach to developing local cycling and walking networks, ideally over a 10 year period, and form a vital part of the Government's strategy to increase the number of trips made on foot or by cycle.

While only focusing on cycling it is hoped that ECC's suite of Cycling Action Plans will contribute to the future development of an Essex CWIP by providing:

- A network plan for cycling which identifies preferred routes and core zones for further development;
- A prioritised programme of infrastructure improvements for future investment; and
- A report which sets out the underlying analysis carried out and provides a narrative which supports the identified improvements and network.

2.3 Regional Policy Context

2.3.1 Essex Transport Policy

The Essex Transport Strategy (2011) seeks to achieve the following five broad 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; and
- Provide sustainable access and travel choice for Essex residents to help create sustainable communities.

'Policy 14 – Cycling' states that Essex County Council will encourage cycling by:

- Promoting the benefits of cycling;
- Continuing to improve the cycling facilities within the main urban areas of Basildon, Chelmsford, Colchester and Harlow;
- Developing existing cycling networks in other towns where cycling offers an appropriate local solution;
- Working with schools and employers to improve facilities for cyclists;
- Improving access to local services by integrating the Public Rights of Way, walking and cycling networks to form continuous routes; and
- Providing training opportunities to school children and adults.

Cycling will be promoted as a way to reduce congestion within urban areas, to encourage healthier lifestyles, and as a valuable leisure and tourism opportunity that is important to the local economy.

Improving the safety of the cycling network is also a key concern within the *Essex Transport Strategy*. Policy 14 of the plan sets out Essex County Council's approach to encouraging cycling, which includes developing cycle networks within towns across Essex and improving access to local services and schools for cyclists. In terms of locational priorities in relation to cycling, Colchester, the main town in the Haven Gateway region has a number of priorities and include:

- Providing for and promoting access by sustainable modes of transport to development areas;
- Continuing improvements to the Colchester cycle network; and
- Improving awareness of and promoting sustainable travel choices.

The *Essex Transport Strategy* seeks to promote sustainable travel, by providing the infrastructure for sustainable travel and promoting the use of travel plans. With regard to cycling, the *Essex Transport Strategy* considers actions to improve access for cyclists and pedestrians in particular, and identifies the following improvements as essential:

- Addressing gaps in existing networks;
- Better linkages for walking and cycling routes within the Public Rights of Way network;
- Improving signing;
- Improving crossing facilities; and
- Ensuring that pedestrian routes are accessible for everyone.

The *Infrastructure Act 2015* includes a new legal requirement for the Government to produce a cycling and walking investment strategy. The DfT's *Cycling Delivery Plan (2014)* refers to a new national cycling target, to double the number of cycling stages (trips) nationally over a 10 year period. This new target will be adopted by Essex County Council as part of the *Essex Cycle Strategy (2015)*.

Additionally, the Government has introduced a £6bn Local Growth Fund for cycling and walking. It has also set a target of achieving an annual cycling spend of £10 to £20 per head of the population. In the Borough this could see between £1.7m and £3.5m per year spent on improving cycling provision.

2.3.2 Essex Cycle Strategy (2016)

In response to the legal requirement, and also the requirements of the Essex Transport Strategy, the Essex Cycle Strategy has been prepared with the aim of setting out a strategy for providing coherent cycle networks. The purpose of the strategy is to set out the key elements of a long term plan that will lead to a significant and sustained increase in cycling in Essex, establishing it in the public's mind as a 'normal' mode of travel, especially for short a-to-b trips, and as a major participation activity and sport for all ages. The strategy has been produced in conjunction with Essex County Council, the 12 Essex Districts/ Boroughs, the two Unitary Authorities (Southend-on-Sea and Thurrock) and other key stakeholders. It has taken account of current UK policy, data on cycling levels within Essex and best practice from around the world. Specifically, it commits to:

I. Establishing a coherent, comprehensive and advantageous cycle network in every major urban area, utilising a combination of on-carriageway and off-carriageway cycle facilities;
II. Ensuring each Borough or District has an up to date cycling action plan (renewed every 5 years);
III. Providing well placed and high quality cycle parking at key public destinations such as town centres, leisure facilities and railway stations;
IV. Ensuring that all new housing includes secure and easily accessible cycle storage and that new secure cycle storage is facilitated in existing housing developments;

V. Ensuring that cycling is prioritised over motorised transport in all new developments – making it easier to carry out short trips by bicycle than by car. Cycle routes within commercial and residential developments will be more direct and convenient than car routes and will connect in to existing cycling infrastructure on leaving the site;
VI. Prioritising more frequent and good maintenance of our cycle network;
VII. Providing a clear and consistent standard of good quality, well placed cycle signage – to an appropriate density, with provision of journey times as well as distances (to cater for all audiences) where possible;
VIII. Continuing to improve cycle safety at sites with actual and perceived safety problems; and
IX. Developing an improved mechanism for the reporting of safety issues.

2.4 Local Policy Context

2.4.1 Colchester Borough Council's Emerging Local Plan 2017-2033

The emerging Local Plan recognises that car currently dominates the way people travel, with the 2011 Census showing that the car represents 55% of all journeys to work in the Borough. The Local Plan will need to manage the continuing pressures of vehicle congestion and parking while developing practical solutions to minimise the need to travel and provide non-car based alternatives to movement around the Borough.

The new Local Plan will set out the built environment strategy for Colchester Borough, informing the future growth of the Borough up to 2033 and beyond. Colchester Borough Council (CBC) have created a strategic approach to the first part of their new local plan, taking into consideration Braintree District Council and Tendring District Council. One of CBC's strategic objectives is *"Providing New and Improved Infrastructure"*.

Within the objective, the focus is to make efficient use of existing infrastructure and to ensure sustainable transport opportunities are promoted in all new development, which encompasses cycling. CBC identify that growth in Colchester will require additional transport infrastructure and with relation to cycling this would mean promotion, as well as better integration across transport modes. CBC will use travel planning and smart choices initiatives to achieve this.

Under SP4: Infrastructure and Connectivity, CBC outline their strategic priorities for infrastructure provision/improvements and no cycling infrastructure was specifically mentioned here. The three garden communities in North Essex are considered within this that will include cycling infrastructure and soft measures.

CBC also outline their 'Spatial Strategy' and this focuses their developments in the most sustainable locations. For this, they plan to locate developments where accessibility is good or can be improved including cycling facilities and services. Aside from the North Essex garden communities, there are few other large housing allocation sites that should be specifically considered for cycling infrastructure.

At the time of writing, the Local Plan Committee consideration of the Publication Draft Local Plan is scheduled for 12th June, with a six week consultation to follow from 16th June to 28th July.

2.4.2 Supplementary Planning Document: Colchester Cycling Delivery Strategy 2012

In 2008 Colchester was designated as a Cycling Town. The project has enabled Colchester Borough Council, working in partnership with Essex County Council, to improve the town's cycling network, increase the number of cycle parking spaces and deliver a number of training and promotional campaigns. The Borough Council wishes to build on this work and this Supplementary Planning Document (SPD) sets out how it intends to do so.

The purpose of this SPD is to:

- Support sustainable growth in line with the adopted Core Strategy;
- Promote the importance of cycling facilities, training and promotional activities;
- Ensure the provision of cycle facilities, training and promotion;
- Inform developers what can be expected regarding contributions for cycling;
- Protect and improve existing cycling facilities;
- Attract investment from other sources.

The Cycling Delivery Strategy has already identified the following:

- The requirement of developers to fund cycle enhancements within any development in Colchester, including the need for advanced stop lines at junctions (ASLs), cycle parking (in line with standards), providing continuous cycle routes which do not have gaps at junctions, signing of routes within development, providing cycle maps and marketing within the development;
- The identification of major desirable destinations for cyclists including: Colchester town centre, Colchester rail station, general hospital, cuckoo

farm and North Colchester Business Park, Tollgate Business Park and Retail Park, University of Essex, secondary schools and leisure facilities;

- The identification of 4 specific cycle zones within Colchester:
    - North Zone: Highwoods and Ipswich Road;
    - North West Zone: West Bergholt and Mile End;
    - South and West Zone: Lexden, Boudicca and Garrison; and
    - East Zone: Wivenhoe Trail and Greenstead / Salary Brook.;
- The need to provide new cycle connections between existing routes within the zones to complete existing network;
- Although the SPD focuses on the main routes in the urban area, it recognises that there is a need to link to routes where the destination is further than the urban boundary, for example the National Cycle Network which runs through the Borough (NCN1 Dover to Scotland, NCN51 Colchester to Harwich and Oxford and NCN 13 London to Fakenham);
- The need to connect routes as part of development; and
- The need to create links between zones and within residential neighbourhoods.

Following the production of the 2012 Colchester Cycle Delivery Strategy, a number of initiatives have been implemented within Colchester including LEP funding for a number of additional cycle routes, including:

- A cycle route along Straight Road in Lexden, operating north / south to the west of the town;
- A cycle connection between Straight Road and the A1124 via Heath Road, Beech Hill and an off-road section through Lexden Park;
- Enhancements along the A132 to the north east to connect Colchester Business Park with Cowdray Avenue;
- Enhancements to cycle routes at Westway / Colne Bank Avenue roundabout; and
- Cycle connections through Brinkley Grove Park.

3 Data Analysis

3.1 Introduction

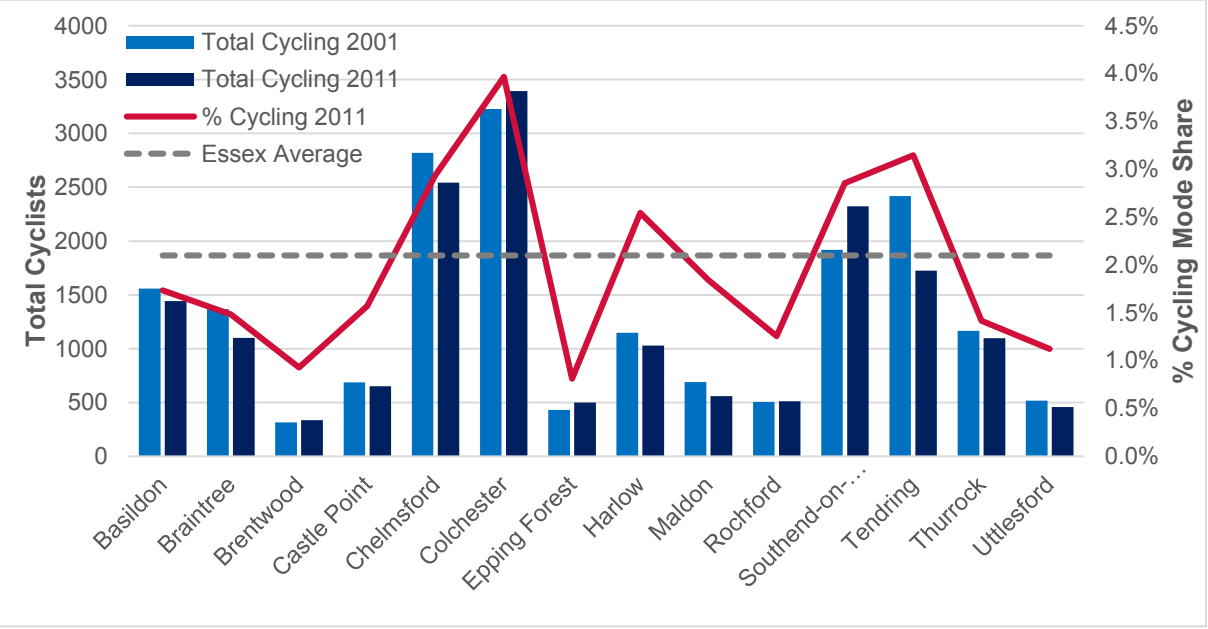
When planning for cycling infrastructure it is important to first understand current levels and conditions for cycling. This section includes analysis of:

- 2011 Census data;
- The Active People Survey (by Sport England);
- The Essex Cycle Monitor database;
- Local Surveys;
- Department for Transport count data;
- Collision data;
- Cycle crime statistics; and
- Topography.

3.2 Census Data

As part of the 10 year national census, respondents are asked to state their main mode of travel to work by distance. The 2001 and 2011 Census results for Colchester Borough are provided below in Figure 3.1.

Figure 3.1: Cycle to Work by District/ Borough, Census 2001-2011



Total cycling rates in Colchester fell by 9.2% between the 2001 and 2011 Census and as a percentage of total mode share from 2.5 to 2.1%, which largely mirrored

the trend found elsewhere in England and Wales outside of London and areas with well-developed cultures of cycling.

Colchester Borough has the highest level of total cycling within Essex. The borough has the highest cycling mode share with 4% of the population cycling to work. It has also had a significant 5% increase, this likely reflective of the investment the area has received as part of the Cycle Towns funding project.

The 2011 Census also provides origin/destination data by Middle Super Output Area, in places these zones can be combined to represent urban areas. Table 3.1 below shows the cycling levels of urban areas where a significant level of internal journeys occur.

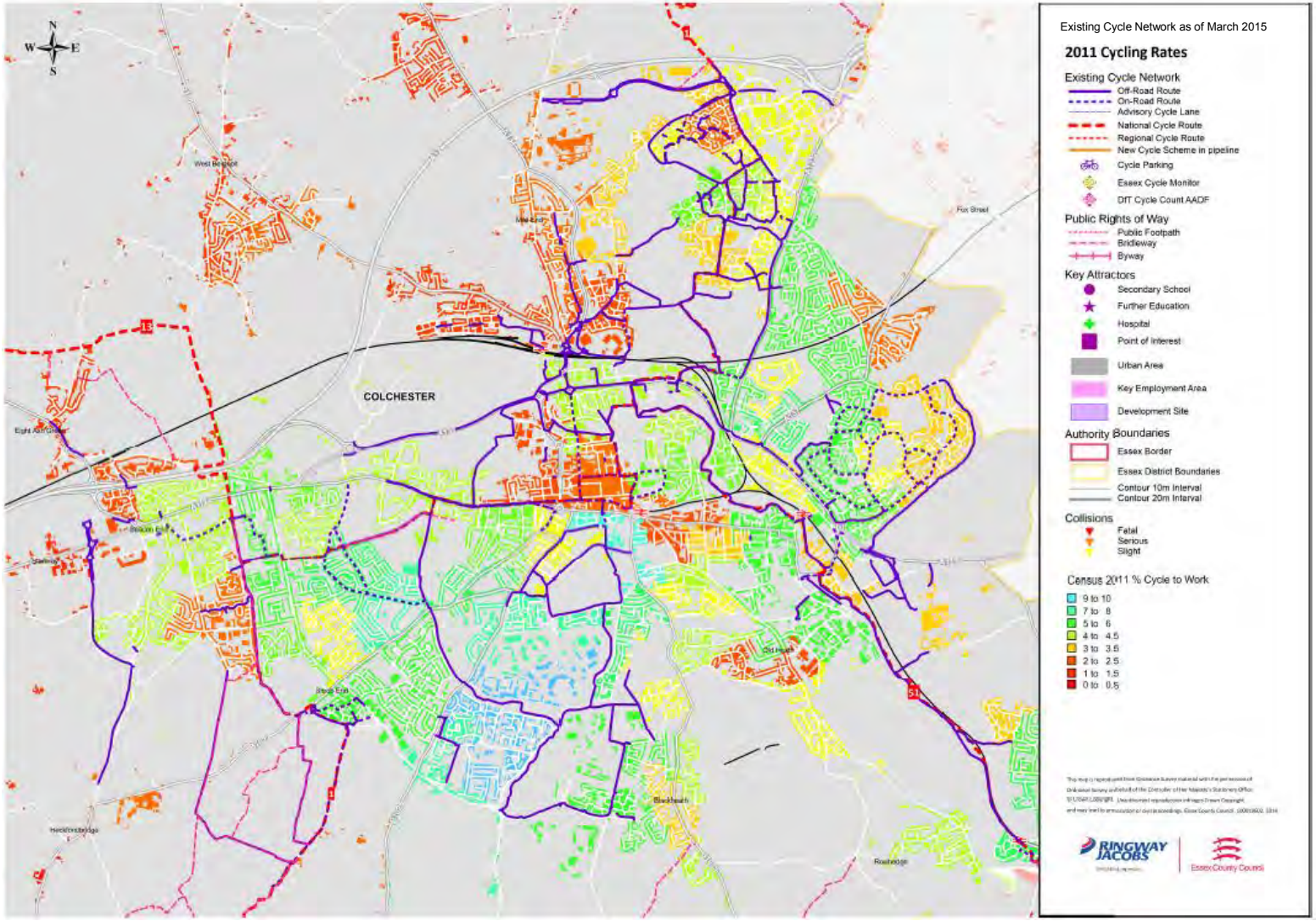
Figure 3.2 shows the percentage of cycle to work trips in Colchester.

Table 3.1: Colchester Cycle Mode Share 2011

Urban Area	Cycle % Internal Mode Share	Total Internal Cycle Trips
Basildon	4%	858
Braintree	5%	296
Canvey Island	8%	304
Chelmsford	7%	1491
Clacton	7%	538
Colchester	7%	2138
Harlow	5%	817
Harwich	10%	205
Maldon	7%	209

As with other data sources, Colchester and Chelmsford have the highest total internal cycle trips.

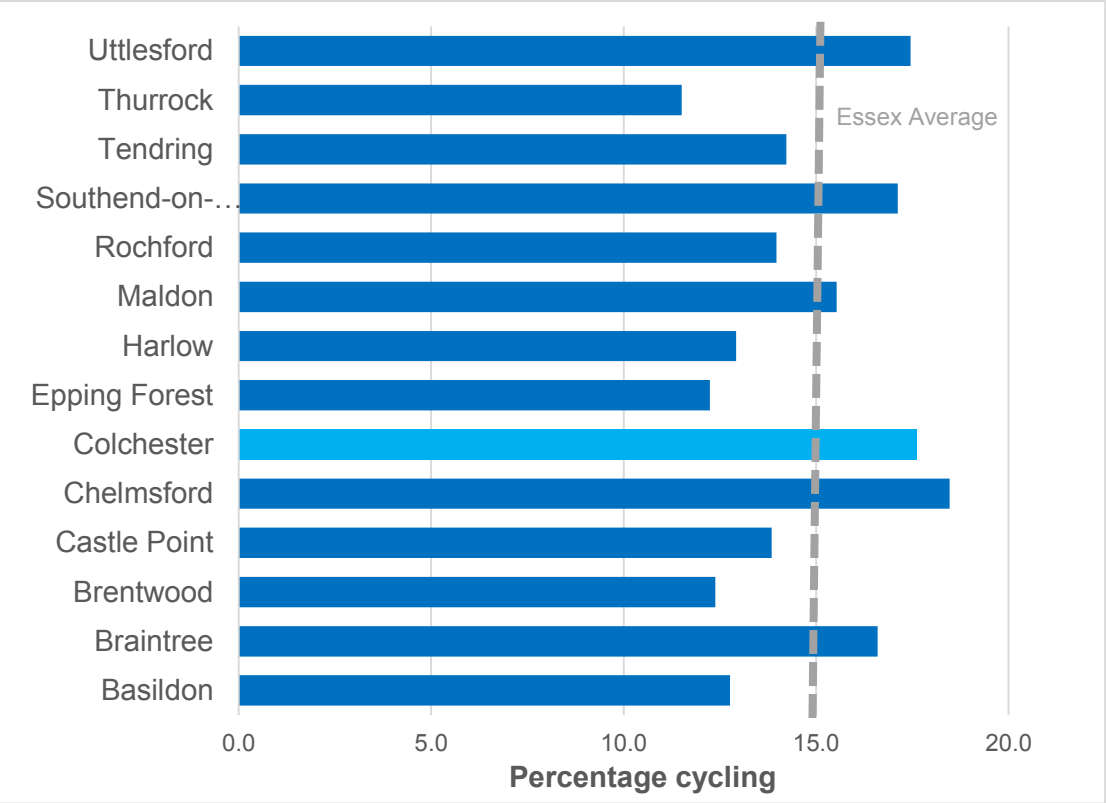
Figure 3.2: Percentage of cycle to work trips in Colchester



3.3 Sport England Active People Survey

Sport England carry out an Active People Survey annually, which involves interviewing 500 people from every District in England about their propensity to do physical activity. Figure 3.3 below shows the average propensity to cycle at least once per month for any purpose of data from 2010 to 2013.

Figure 3.3: Sport England Propensity to cycle at least once per month 2010-2013

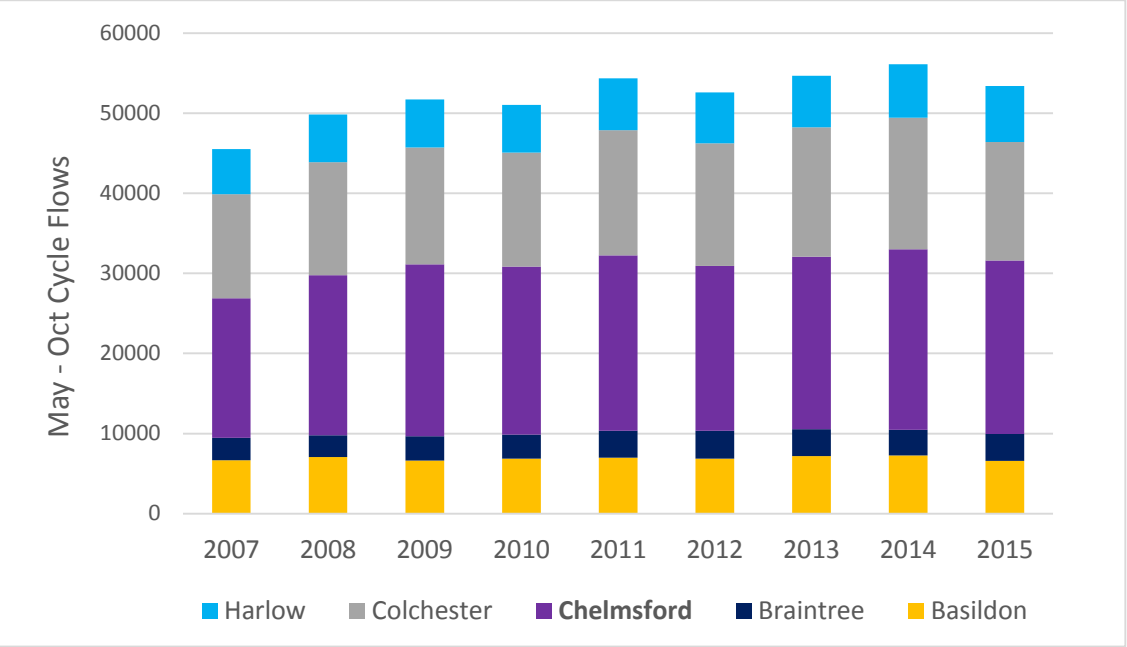


The results show that Chelmsford, Colchester and Southend have high levels of propensity to cycle. Districts such as Braintree and Uttlesford also show high levels of cycling. The contrast between this and the cycle-to-work data could perhaps be explained by the popularity of recreational cycling in the Districts.

3.4 Essex Cycle Monitor

Essex County Council has an established network of 53 fixed cycle monitor counters located across the five urban areas of Basildon, Braintree, Chelmsford, Colchester and Harlow. The count sites continuously record hourly total cycle flow data and have a baseline of 2007. Figure 3.4 shows May to October total 7 day flows by urban area.

Figure 3.4: Essex Cycle Monitor 2007-2015



The cycle monitor sites have observed a 17% increase between 2007 and 2015, most of this growth has occurred in Chelmsford and Colchester which have increased by 24% and 14% respectively.

There are 14 sites in Colchester, of which 10 recorded an average daily cycle flow of more than 100 in 2016:

- Sheepen Place Underpass (03000019) 105 cycles/ day
- St Andrews Avenue (03000017) 108 cycles/ day
- North Bridge, North Station Road (SB) (03000018) 113 cycles/ day
- NorthBridge, North Station Road (NB) (03000006) 123 cycles/ day
- Middle Road Bridge (03000020) 142 cycles/ day
- Toucan, Cowdray Avenue (03000012) 146 cycles/ day
- Petrolea Close (3000003) 147 cycles/ day
- Cowdray Avenue (03000004) 180 cycles/ day
- Crossing of East Street (03000015) 181 cycles/ day
- Crossing River Colne (03000011) 235 cycles/ day

Of these, the *Crossing River Colne (03000011)* site recorded the highest average flow of 235 cycles per day, with the *Cowdray Avenue (03000004)* site recording an average flow of 180 cycles per day.

3.5 Local Surveys

3.5.1 Colchester Travel diaries

In July 2007, a borough wide survey was undertaken to establish travel patterns in Colchester Borough. A total of 16,000 diaries were returned, recording 58,000 individual trips. The following headline figures were revealed:

- Cyclists accounted for 4% of peak hour trips;
- More cycle trips were made by those under 16 and 25-35 but did not vary by gender;
- Cycle rates did not vary with income or education but was used more by those in education or employment; and
- Most cycle journeys were under 5 miles.

3.5.2 Colchester personal travel planning

Within the Highwoods area of Colchester, 4,200 households were given access to cycle personal travel planning with a 20% participation rate. A total of 36% did not participate as they were elderly and 10% due to health reasons.

Most of the information provided was to raise awareness such as cycle maps and other signposting literature. The following headline figures were revealed:

- 24% of residents increased the amount they cycle, 38% had improved their perceptions of cycling. Reduced perception of danger from traffic and created a high awareness of new facilities that were provided as part of Cycle Town;
- Greenstead/Garrison – 5,400 contacted, 37% participation rate;
- A 10% mode shift to cycling was recorded across both areas, with awareness of infrastructure also substantially increasing. Use of other sustainable modes was also increased;
- Access to a bicycle and health were main reasons given for not taking up cycling; and
- Cycle to work rates varied widely from estate to estate (from 4-13% - internal journeys), with low (approx. 40%) cycle ownership.

3.6 Department for Transport (DfT) Count Data

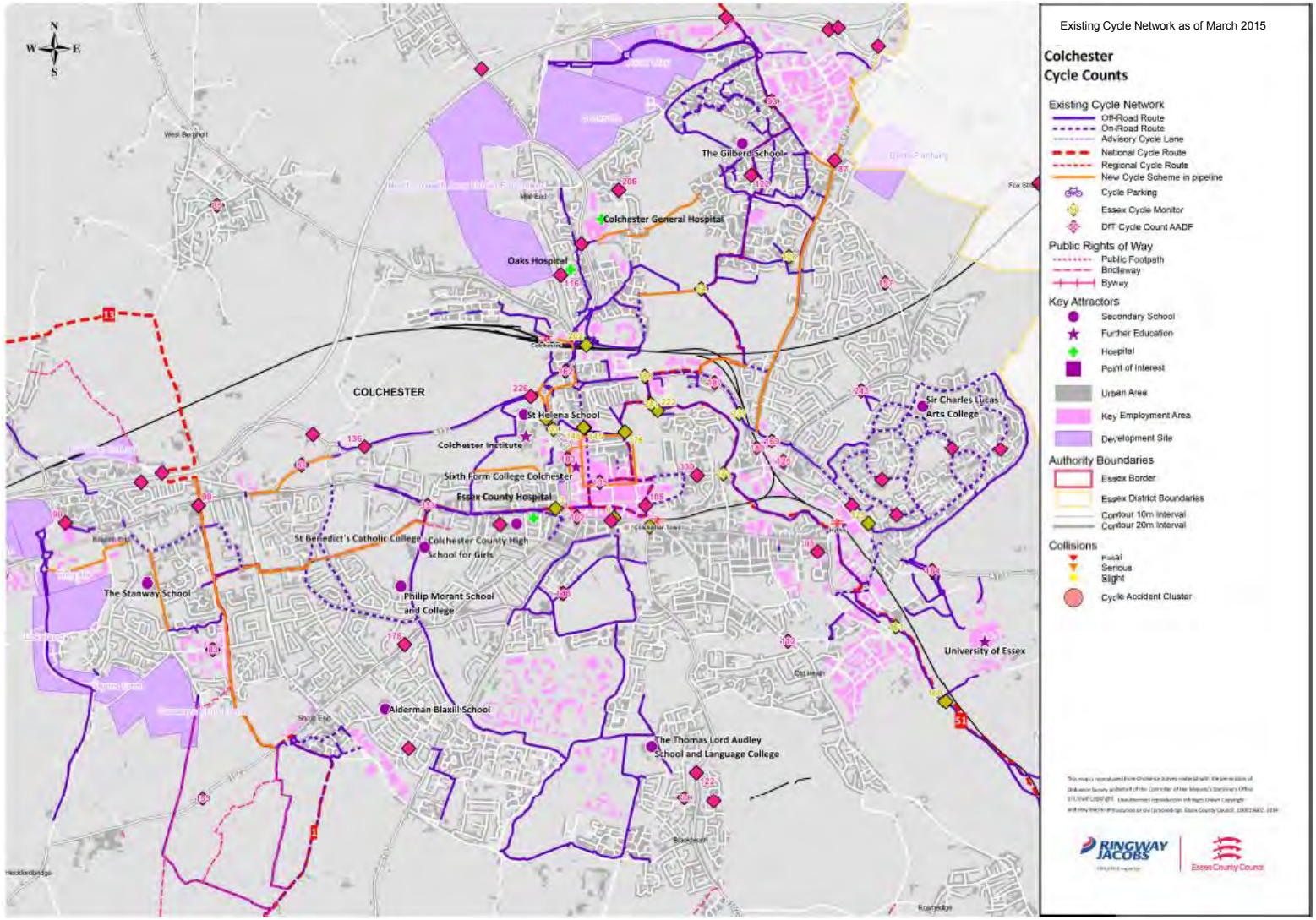
The Department for Transport collects vehicular flow data at various locations on the road network around the country. These counts record all vehicles using the carriageway, including pedal cycles. This DfT Annual Average Daily Flow (AADF) data provides a brief overview of the cycle usage along particular routes within the borough.

In Colchester, the most prominent counts are generally situated away from the town centre, primarily in residential areas located throughout the town. By contrast, the town centre itself recorded relatively low AADF figures. The 5 highest flows are as follows:

- A1124 Lexden Road, to the west of the town centre, at the junction with Norman Way: AADF of 333. This is located on an existing cycle route;
- East Hill, to the east of the town centre, between the junctions with Rosebury Avenue and Priory Street: AADF of 330. This lies on an existing cycle route;
- A137 Harwich Road, in Parsons Heath, to the east of the town centre, between the junctions with Tara Close and Goring Road: AADF of 243;
- A133 Colne Bank Avenue to the west of the junction with A134 Westway: AADF of 226; and
- Turner Road, in Mile End to the north of the town centre, between the junctions with Beaumont Close and Kingswood Road: AADF of 206. This lies on an existing cycle route.

Figure 3.5 shows the AADF cycle count totals in Colchester town.

Figure 3.5: Colchester Cycle Monitor



3.7 Collision Data

Fear of personal injury is often cited as the biggest barrier to cycling but while this is an important issue, it is useful to use statistics rather than just perception to direct improvements to highway infrastructure to improve the cycling environment. The location of cycling personal injury collisions also serves to identify where cyclists are travelling in higher numbers, which can be useful when deciding where to prioritise new infrastructure.

Table 3.2 shows the number of recorded personal injury collisions (PICs) involving cyclists by District for the 5 year period between August 2012 and July 2017.

Table 3.2: Personal Injury Collisions Involving Cyclists (Aug 2012 – July 2017)

	Fatal	Serious	Slight	Grand Total	% of total cycle accidents in Greater Essex	Number cycling to work[1]	% of total cycling to work in Greater Essex
BASILDON	0	37	135	172	8%	1412	8%
BRAINTREE	2	37	90	129	6%	1070	6%
BRENTWOOD	0	16	41	57	3%	320	2%
CASTLE POINT	0	24	69	93	5%	631	4%
CHELMSFORD	2	56	194	252	12%	2486	14%
COLCHESTER	**0**	**72**	**227**	**299**	**15%**	**3310**	**19%**
EPPING FOREST	1	36	105	142	7%	482	3%
HARLOW	2	13	60	75	4%	1018	6%
MALDON	1	15	42	58	3%	548	3%
ROCHFORD	1	25	63	89	4%	498	3%
SOUTHEND	1	63	266	330	16%	2260	13%
TENDRING	3	28	117	148	7%	1683	10%
THURROCK	0	35	101	136	7%	1078	6%
UTTLESFORD	0	18	41	59	3%	433	3%
ESSEX	**12**	**412**	**1285**	**1709**		**13891**	
GREATER ESSEX	**13**	**475**	**1551**	**2039**	**100%**	**17229**	**100%**

Across Greater Essex, there were 2039 accidents in total over this five year time-frame, of which 13 were fatal (3 occurring in 2012 and 4 in 2013). Of the remaining 151 accidents, 251 were classified as serious and 972 as slight.

[1] Source: ONS Cycling to Work Summary Table, taken from Census Table CT0015EW

The highest number of collisions involving cyclists occur in Southend with Colchester ranked second in the County, accounting for 15% of all cyclist personal injury collisions in Greater Essex. Of these 299 accidents across five years, the majority (227, 76%) are slight, with the remainder being classified as Serious. The higher number of accidents in Colchester reflects the higher levels of cycling in the Borough: Table 3.2 shows that Colchester has 19% of the total cycle to work trips in Essex (the highest of any Borough/ District/ City in the county).

3.7.1 Collision Clusters

Collision clusters can be identified where 2 or more accidents have occurred in a particular location. Clusters identified within Colchester Borough and the town itself are shown below in Table 3.3.

Table 3.3: Summary of Collision Clusters in Colchester

Junction Name	Recor-ded Inciden ts	Severity	Incident Correlat-ion?	Description of correlated incidents
Colchester Borough				
Barfield Rd/ Melrose Rd	2	1 Slight, 1 Serious	N	
Colchester Town				
A1124 Essex Yeomanry Way/ Tollgate Rbt	2	2 Slight	Y	Cars entering roundabout from the north fail to observe cyclists already on the junction, resulting in collisions.
London Rd/ A133 Cymbeline Way	2	1 Slight, 1 Serious	N	
A12/ A133 Cymbeline Way/ Spring Ln Rbt	2	2 Slight	N	
Maldon Rd/ Athelston Rd	2	2 Slight	N	
A133 Colne Bank Ave	2	2 Serious	N	
A134/ Junction with Rail Stn	3	1 Slight, 2 Serious	N	
A134 Westway/ Clarendon Rd	2	2 Slight	N	
The Albert	8	7 Slight, 1 Serious	Y	4 of 8: Cars westerly from Colne Bank Avenue. Cyclists from North Station Road to the south. Cyclists enter the roundabout and are dismounted by vehicles exiting from Colne Bank Avenue which have pulled onto the junction. 2 of 8 occurred when cyclists on the roundabout were dismounted by vehicles entering roundabout from the east, failing to recognise the presence of the cyclists on the roundabout.

Middleborough/ North Hill/ St Peter's St	5	4 Slight, 1 Serious	Y	Cars travelling downhill on North Hill strike parked vehicles. This applies to 2 of the 5 recorded incidents.
Mersea Rd/ Normandy Ave	2	2 Slight	Y	Vehicles turning onto Mersea Road from Normandy Avenue, pulling out and colliding with cyclist.
Wimpole Rd/ Harsnett Rd	2	2 Slight	N	
A134 Magdalen St/ Brook St	4	4 Slight, 1 Serious	N	
Brook St/ Brooklands	3	2 Slight, 1 Serious	N	
East Hill/ Rosebury Ave	2	1 Slight, 1 Serious	N	
East St/ Old Coach Rd	2	2 Slight	N	
St Andrews Ave/ Cowdray Ave	2	2 Slight	N	
A1232 Ipswich Rd/ Valentines Dr	2	2 Slight	N	
St Andrews Ave/ Harwich Rd	2	1 Slight, 1 Serious	N	

As shown above, in Colchester Borough (excluding Colchester Town), one cycle collision cluster was identified, comprising of 2 recorded incidents, which appeared to occur in an unrelated manner.

In Colchester town, 18 clusters of cycle collisions were identified, resulting in 49 accidents. A total of 37 of these collisions were classified as slight, with the remainder being serious. Of the 18 clusters, 4 appear to have recurring reasons. The location of these are listed as follows, with the descriptions of accident type displayed in the preceding table:

- A1124 Essex Yeomanry Way/ Tollgate Roundabout;
- The Albert roundabout on Cowdray Avenue. This is located on the potential Flagship Route, discussed in Section 8;
- Middleborough/ North Hill/ St Peter's Street. This is located on potential scheme 43, which is recommending a footway conversion on Middleborough and a Quietway along St Peter's Street; and
- Mersea Road/ Normandy Avenue. This is located on potential scheme 30, which is recommending an advisory cycle lane on Mersea Road, between Bourne Road and Napier Road.

Of particular concern are The Albert, and the junction of Middleborough/ North Hill/ St Peter's Street which saw 8 and 5 incidents respectively. For The Albert, 2 separate incident correlations are present on different arms of the junction, overall

accounting for 6 of the 8 collisions. They all relate to vehicles entering the junction having failed to observe cyclists already utilising it, resulting in a collision.

Another junction of concern is that of Middleborough/ North Hill/ St Peter's Street which saw 5 incidents occur. A total of 3 of these incidents are related to parked or stationary vehicles and cyclists travelling down North Hill, perhaps indicating an issue with restricted carriageways or the speed of traffic / or cyclists.

As well as the 4 clusters listed above, there are also a further 3 locations, which are formed of 3 or more incidents. These are presented below:

- A134/ Junction with Rail Station;
- A134 Magdalen Street/ Brook Street. This is located on potential scheme 36; and
- Brook Street/ Brooklands.

The 3 clusters identified do not present any correlation with regards to the nature of the collisions.

3.7.3 Cycle Collisions along Routes

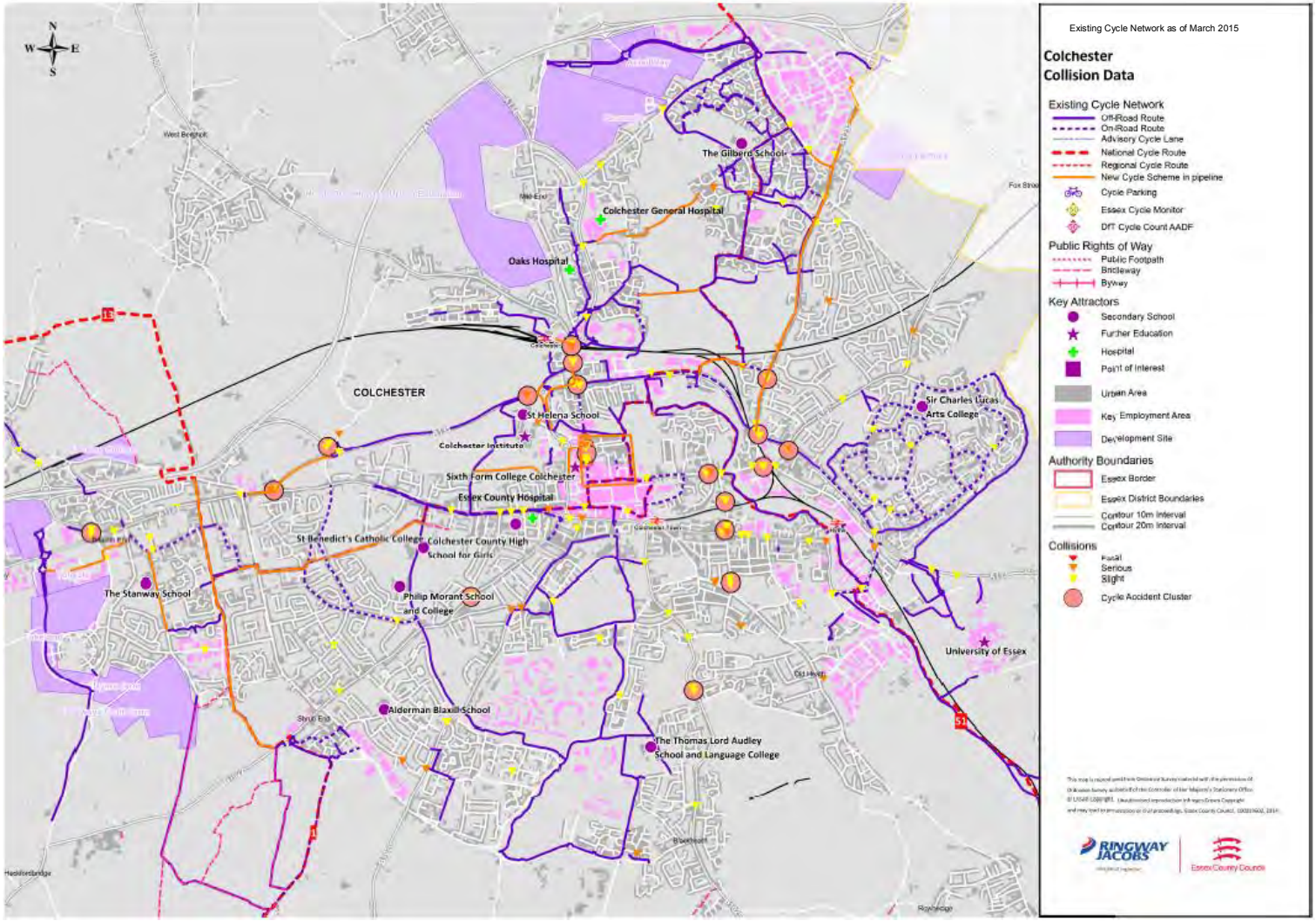
Table 3.4 displays the list of cycle accidents along routes in Colchester Town, within the last 36 months (Jan 2012 – Jan 2015).

Table 3.4: Cycle Accidents along Routes (2012-2015)

Section	Approx length of section	No. of Accidents	Severity	Existing cycle route?
A1124: J/W Park Rd - J/W Crouch St	0.8km	5	4 Slight, 1 Serious	Yes – partly on-road, partly off road existing cycle route
North Hill: J/W Middlebrough - J/W High St	0.32km	6	4 Slight, 2 Serious	Yes – marked as an on-road route for cyclists
East Hill/ High St: J/W Queen St - J/W Brook St	0.64km	4	3 Slight, 1 Serious	No, but the road section connects two existing cycle routes.
Brook St: J/W East Hill - J/W Barrack St	0.48km	5	4 Slight, 1 Serious	No, but the road section connects two existing cycle routes.
A134 Barrack St / Hythe Hill / Maudlyn Rd - Colne Causeway: J/W Brook St - J/W Haven Rd	1.3km	7	6 Slight, 1 Serious	No, but the road section connects two existing cycle routes.
Mersea Rd: J/W Roberts Rd to J/W Stansted Rd	2.1km	6	6 Slight	No, although there is potential to provide cycle improvements along this stretch.
A134 Westway: J/W Station North entrance - J/W Clarendon Way	0.16km	5	3 Slight, 2 Serious	Yes – mainly clusters of accidents at roundabouts
A133: J/W Old Coach Rd - J/W St Andrew's Ave	0.32km	4	3 Slight, 1 Serious	Yes – mainly clusters of accidents at roundabouts

Table 3.4 shows that there are eight specific road stretches where there have been four or more recorded cycle accidents over the latest 3 year period. Half of these locations are marked as existing cycle routes. In particular, the stretch of A134 (Hythe Hill / Barrack Street) has seen 7 recorded cycle accidents over 3 years. In addition, Brook Street connecting with Hythe Street has seen 5 recorded cycle accidents. Figure 3.6 displays the distribution of recorded cycle accidents in Colchester town.

Figure 3.6: Recorded Cycle Collisions in Colchester



3.8 Cycle Crime

Cycle crime (mainly theft) is reported both to Essex Police and British Transport Police, although it should be noted that cycle thefts are generally considered to be under reported. Figures for both these constabularies are combined by District in Table 3.5 below. Note that figures for 'Essex' exclude the Unitary Authorities of Southend and Thurrock, figures for 'Greater Essex' include these areas.

The data shows that cycle crime levels are largely static across the County, though they do change on a District by District basis. Colchester, Chelmsford and Southend have the highest levels of reported cycle theft in Essex, with Colchester experiencing 15% of all cycle thefts in the county (ranked 3rd). However, when thefts in Colchester are considered against the amount of cycling that takes place in the Borough, it can be seen that the annual number of cycle thefts per cycle commuter (0.12) is lower than the average for the county (0.16 and that Colchester is ranked 9th, indicating that the rate of cycle crime is relatively low in Colchester Borough.

Table 3.5 Total Reported Cycle Crime by District

All Essex Reported Cycle Thefts	2013	2014*	Year ending June 2016	Year ending June 2017	% of all cycle thefts in Greater Essex (2017)	Annual number of cycle thefts per cycle commuter[2]
Basildon	221	208	173	203	8%	0.15
Braintree	116	98	160	154	6%	0.15
Brentwood	63	59	34	71	3%	0.23
Castle Point	45	73	63	81	3%	0.13
Chelmsford	292	274	334	450	17%	0.19
Colchester	**355**	**373**	**247**	**390**	**15%**	**0.12**
Epping Forest	37	53	69	53	2%	0.12
Harlow	127	108	166	244	9%	0.25
Maldon	26	28	14	21	1%	0.04
Rochford	43	50	51	23	1%	0.05
Southend-on-Sea	450	326	403	467	18%	0.22
Tendring	180	167	124	160	6%	0.10
Thurrock	217	205	251	235	9%	0.23
Uttlesford	41	30	23	27	1%	0.07
Essex	1546	1521	1458	1877		0.14
Greater Essex	2213	2052	2112	2579	100%	0.16

** to Nov 20th only*

2. Based on 2017 thefts and ONS Census 2011 Journey to work by cycle total for District/ Borough/ City (ONS Cycling to Work Summary Table, taken from Census Table CT0015EW)

The number of thefts per thousand cycle trips would be much lower if it were to be compared with all cycle trips, as this figure is based on 2011 Journey to Work data and does not include leisure trips, children cycling to school and people cycling part of their journey to work but not being recorded. Of all cycle crime reported to Essex Police, 90% of investigations lead to no suspect being identified.

Data from British Transport Police can be broken down by rail station, with the worst 10 stations for cycle crime in 2013 shown in Table 3.6.

Table 3.6: Cycle Crime at Rail Stations 2010-2014 (British Transport Police)

Station	2010	2011	2012	2013	2014
Basildon	12	25	17	18	13
Chelmsford	69	77	73	58	16
Colchester	**26**	**25**	**21**	**31**	**31**
Leigh on Sea	3	3	19	29	13
Harlow Town	8	36	18	26	16
Billericay	29	27	26	21	8
Grays	11	17	14	16	10
Southend Victoria	12	9	13	12	13
Stanford le Hope	5	10	11	12	5
Audley End	5	6	7	11	8

This data shows that between 2010 and 2013, Chelmsford rail station had the highest level of cycle theft of all the stations. However, in 2014, cycle crime had reduced at Chelmsford station, meaning that Colchester station had the highest level of cycle crime. The construction of a new high quality and more secure cycle hub at Chelmsford Station reduced cycle crime there significantly between 2013 and 2014.

3.9 Topography

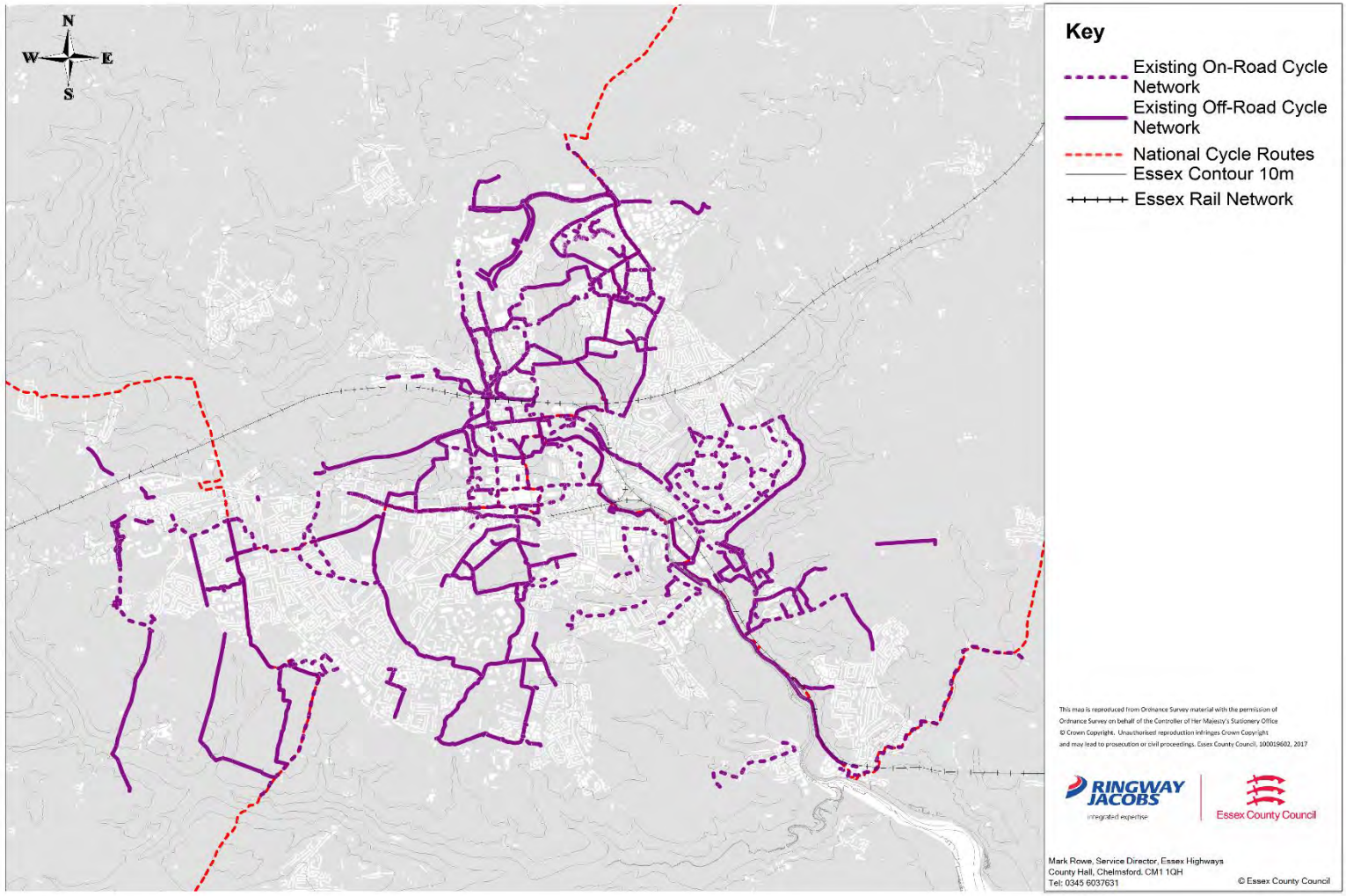
There are a number of factors which determine the popularity of cycling in any given area. Of the geographical factors, by far the most significant is topography, as identified in many research studies and policy statements. These include research carried out by Dr John Parkin who concluded; 'hilliness was found to be, by far, the most significant determiner of the proportion that cycled to work in a District'[2]. A DfT fact-sheet observed 'although it is obvious that it is easier to cycle

[2] Parkin, J. Wardman, M and Matthew, P. (2008) *Estimation of the determinents of bicycle mode share for the journey to work using census data*. Transportation, 35 (1). pp. 93-109.

in flat areas, the extent of the differences is surprising, and has policy implications.'

The topography of the town periphery is flat with the town centre raised. The most prominent inclines occur on the northern and eastern sides of the town where roads and parks gradually slope upwards to the town centre, some 40m. Figure 3.7 displays the existing routes and topography within Colchester Town.

Figure 3.7: Existing Cycle Routes and Topography in Colchester



4 Existing Network Provision and Barriers

4.1 Introduction

The Borough of Colchester lies within the Haven Gateway region of Essex, and is one of the main towns of Essex. It has 'Cycling Town' status, in which funding was secured for improving cycling infrastructure and promoting cycling within Colchester in 2008.

4.2 Existing infrastructure

4.2.1 Colchester Borough

There is some existing cycling infrastructure provision in parts of the borough with the area well served by a number of National Routes of the National Cycle Network (NCN). Route 1 (Dover – Shetland Islands) passes through the borough originating from the south-west and departing in the north-east, passing through settlements such as Tiptree, Langham and Colchester itself.

National Cycle Network route 13 (London – Fakenham) forms the western boundary of the town and passes south-west to north-west in the borough. Finally, NCN route 51 (Colchester – Harwich - Oxford) follows the River Colne south-east from Colchester town centre as far as Wivenhoe before diverting towards Harwich. All routes within the borough are a mixture of on and off-road routes.

Northern, southern and western areas in particular, see little to no cycle infrastructure at all. However, there is bike hire in the borough through The Outdoor Hire Centre which has a collection point on Mersea Island.

Figure 3.7 displays the existing cycle routes within the borough.

4.2.2 Colchester Town

Within the borough, much of the cycling infrastructure is focused upon Colchester Town itself with a network of good quality on and off-road routes present along with the aforementioned National Routes. Examples of good cycle infrastructure are the existing off road cycle routes, particularly around Colchester Football Club and Brinkley Park in the north of the town, the pedestrian and cycle bridge which passes over the A134 at the railway station (Figure 4.1), sections of off-road cycle routes along Balkerne Hill and off road routes through Castle Park.

Figure 4.1: The A134 cycle bridge at Colchester station and cycle routes along A roads.

Many of the dedicated off-road cycle paths alongside A roads are unconnected and not joined with toucan crossings at key roundabouts. Although extensive and integrated in central and northern areas, the network itself is disparate in the areas adjacent to the railway in the north-east, Old Heath and Blackheath to the south, Shrub End to the south west, and Beacon End to the west. Many of these areas have isolated sections of cycle route which are separate from the network at large. This is despite the addition of Colchester to the Cycle Town initiative which saw the provision of funding for cycle infrastructure improvements and the promotion of cycling.

There are a number of cycle parking facilities across Colchester, and these are listed in Table 4.1.

Table 4.1: Existing Cycle Parking Provision (2015)

Area	Location	Cycle Parking Provision
Colchester Town	Colchester Rail Stn	10 Bike and Go (see section below)
	Colchester Rail Stn	414 wheel lock stands (sheltered)
	Colchester Town Rail Stn	5 Sheffield stands outside station entrance (10 spaces)
	Crouch St / Rawston Rd (west of TC)	10 Sheffield stands (20 spaces)
	Head Gate / Head St	4 Sheffield Stands (8 spaces)
	High St	8 + 6 + 5 + 9 Sheffield Stands (56 spaces)
	Culver St	6 Sheffield Stands (12 spaces)
	Trinity St	13 Sheffield Stands (26 spaces)
	St Boltophs' Circus rbt	4 Sheffield Stands (8 spaces)
	Bus Stn	9 Sheffield Stands (18 spaces)
Uni of Essex	University Campus	Approx. 1800

Colchester also has a Bike and Go facility which operates directly from Colchester Rail Station. Users pay an annual subscription charge of £10 and pay an additional £3.80 per day to use a bike. A capacity of 10 bicycles are available to use at Colchester Station. A brief survey was conducted on Tuesday 13th January 2015 to assess the utilisation of the Bike and Go bicycles. Table 4.2 shows that shows there was a maximum day utilisation of 4 out of 10 bikes.

Table 4.2: Bike and Go Utilisation, Tuesday 13th Jan 2015

Time Period	Number of bicycles utilised	% Utilisation
AM peak (0800-0900)	4	40%
IP peak (1200-1300)	1	10%
PM peak (1700-1800)	3	30%

4.3 Access to public transport

4.3.1 Colchester Rail Station

Colchester Rail Station is located 1.3km to the north of the town centre and lies to the west of the A134. Access to the station from the town centre is possible via a near continuous cycle route comprising of a mixture of on and off-road routes.

Dedicated on-road cycle lanes, albeit segregated through white lines only, are present within the vicinity of the station. In terms of parking facilities, there are 414 storage spaces made up of compound shelters, Sheffield stands, and wheel racks. These spaces were around 70% full at the time of site visit.

A Station Travel Plan (STP), implemented in 2009 is in place at the station with the aim, among other things, to increase the proportion of passengers accessing the station by sustainable modes, as well as improving accessibility to the station for such users. So far, this has seen the improvement of cycle facilities to the south of the station, as well as the introduction of secure parking and an overall doubling in the number of available spaces, to the number seen in the preceding paragraph.

There has also been a concentrated marketing campaign, focusing on the local communities, promoting further use of sustainable travel modes, and providing information on how to do so through the use of “How to…” guides, awareness campaigns, and events. By 2012, cycle users at the station had increased by 50% and the STP won multiple awards, due to its integration with the local community, wider transport needs and the Cycle Town initiative. There are future plans to continue improving the accessibility to the station, especially the south side as well as the further provision of cycle parking facilities.

4.3.2 Colchester Town Rail Station

Colchester Town station in the centre of the town. A total of 20 cycle storages spaces are present on site formed of Sheffield Stands. The station is not directly connected to the town’s cycle network although it is in close proximity to an on-road section of National Route 1.

4.3.3 Hythe Rail Station

Hythe station lies 2km to the south-east of Colchester town centre is well connected to the region’s cycle network, and is accessible from off-road routes, mainly utilising National Route 51. A total of 20 Sheffield Stand spaces are present at the station.

4.4 Access to employment

There are numerous centres of employment located throughout the town. The main centres are located in the town centre, in the north-east, the south, the south-east, with smaller agglomerations on the western periphery. All have access to on and off-road cycle infrastructure, including NCN National Routes 1, 13 and 51, and connections are possible to alternative areas of the town, however

the distance added to such journeys by only utilising these routes is extensive, undermining their effectiveness.

4.5 Access to educational institutions

The Gilberd School, The University of Essex, The Thomas Lord Audley School and Language College, Colchester County High School for Girls, Philip Morant School and College, Colchester Royal Grammar School, Colchester Institute, and St Helena School are all located on, or in close proximity to off-road cycle routes. Although located on the cycle network, Sir Charles Lucas Arts College and Sixth Form College Colchester are only accessible for cyclists via on-road routes.

Alderman Blaxill School in Shrub End and The Stanway School in Beacon End are poorly connected to cycle routes. Shrub End and Beacon End are both areas with poor network coverage.

4.5.1 The University of Essex

The main campus for the University of Essex is approximately 4.5 miles from Colchester Rail Station, located to the south-east of the town itself. It actively encourages cycle use with provision for approximately 1800 cycle spaces shared between nine separate cycle parks, with further information available on its website. Information displayed includes advice on maintenance, security and recommended cycle routes, all aimed to promote and increase cycle use among staff and students alike.

A mixture of off and on-road cycle routes have been identified which provide access to the site and are listed below:

- Boundary Road – Shared Cycle/Pedestrian route;
- Capon Road – Shared Cycle/ Pedestrian route;
- A133 – Shared Cycle/ Pedestrian route;
- Wivenhoe Trail – Off-road section of NCN Route 51; and
- B1028 Colchester Road – On-road.

It should be noted that as part of the planning application submitted for a new multi-decked car park on campus, the University was required to contribute £250,000 to part fund a cycle route along the B1028 Colchester Road from Wivenhoe to campus, which included widening and realignment of the existing carriageway to accommodate the new route. The 800 metre shared cycle and footway scheme was opened in April 2016. It includes a Toucan crossing which

was installed near The Flag pub to enable pedestrians and cyclists to cross the road in safety.

4.6 Access to Wivenhoe

Wivenhoe lies approximately 3 miles to the south-east of Colchester on the eastern bank of the River Colne. The town is bisected by the route of NCN National Route 51, with the off-road section to Colchester from Wivenhoe station more commonly known as the Wivenhoe Trail. The on-road continuation of National Route 51 from the station passes through the town's southern and eastern areas before continuing north-east towards Harwich. Routes to the west are fairly limited owing to the absence of a bridge over the river further south than the University of Essex, considerably extending the length of journeys.

4.7 Key Barriers

Colchester Borough and Colchester itself has a number of major transport arteries which make many local journeys by bike indirect and lengthy. Although all modes are affected by such barriers, cycling is particularly distance-sensitive so barriers preventing short trips can considerably suppress demand.

4.7.1 Colchester Borough

Obstacles to cycling are listed below and include barriers associated with road, rail, and geography of the area:

- The A12 forms the largest physical barrier bisecting the area in two, however, it runs to the north of Colchester so offers few problems to cyclists in the urban area. Although NCN National Route 1 and 13 traverse the A12, other off-road crossing points are limited, adding distance and time to journeys and deterring the less confident cyclists;
- Away from Colchester, the borough itself is largely rural in nature comprising of numerous villages and hamlets. This is largely reflected in the roads which comprise of quiet, albeit National Speed Limit roads. The higher speed limits seen here may discourage cyclists, despite the lack of traffic relative to Colchester;
- The Great Eastern Mainline runs parallel to the A12 within the borough, and therefore bisects the local area and provides another considerable barrier to cyclists, especially those travelling north to south as off road crossing points are limited;
- From the south-east of Colchester to its estuary, there are no crossing points available over the River Colne. Although this area of the borough is

largely rural, access between the town of Wivenhoe and Colchester itself is restricted. Considerable distance and time to journeys is added as result of the borough's morphology; and

- The Colne, along with the River Blackwater separate West and East Mersea from the mainland at high tide, preventing access by ground transport.

4.7.2 Colchester Town

More specifically in Colchester Town, the following barriers include:

- Certain junctions within the town act as interruptions to both on and off-road cycle routes. For example, at the roundabout adjacent to Colchester Town station, subways have been constructed to remove pedestrian traffic from the roads, however where this is not the case, most prominently south of Colchester station, only the most confident cyclists would be comfortable cycling;
- The River Colne also forms a considerable barrier to northern and eastern areas of the town. Although there are routes running parallel to the river, there are few points at which it is possible to cross.

5 Colchester's Cycling Potential

5.1 Introduction

This section provides a summary of existing travel behaviour within Colchester Borough as well as identifying the potential for cycling.

5.2 Commuter Flow Analysis

The 2011 Census records how residents choose to travel to work, as well as the location of their workplace. The aim of analysing this information is to establish where the predominant local commuter movements exist that could feasibly be undertaken by bicycle. This data can then be used to assess the commuter cycle potential for an area.

The predominant commuter flows for Colchester Borough have been calculated based on travel between Medium Super Output Areas (MSOAs). As journeys to work take place to and from all MSOAs within the borough, only the top 10 most popular commuter journeys per mode have been identified.

Below are a list of assumptions and exclusions when undertaking the analysis:

- Where commuters have stated their main mode of travel to work to be by rail, it has been assumed that rail commuters would predominantly choose the closest station to them, unless a main line station is located within a similar proximity. In such a case, it is assumed the preference would be the main line station. An additional assessment has been made which excludes a percentage of rail commuters living within 1km of the rail station, as it is expected the majority of those people would walk to the rail station;
- Cross district boundary analysis for car drivers has been excluded, as all the top 10 most popular origin / destination journeys to work by car occurred within the borough; and
- It has been assumed that commuters would choose the same route and mode of travel to work (in the AM) as they do to return from work (in the PM).

5.2.1 Cycle Trips

A total of 8 of the 10 most popular borough wide commuter journeys made by bicycle are made within Colchester town. The others were Wivenhoe, where 107 commuter trips are made by bicycle to the main employment areas in Wivenhoe

and University of Essex. Mersea attracts 66 commuter cycle trips which take place internally within Mersea.

Figure 5.1 shows the predominant commuter flows for journey to work by bicycle in Colchester Town. They are far fewer in number than by car. The highest commuter flows originate from Colchester 015 (Shrub End) in the south west to Garrison (157 commuter trips) and from Colchester 011 (Old Heath) to Garrison (105 commuter trips).

The main cycle commuter demand for the town centre occurs from the north east (Parsons Heath and parts of Highwoods), with 91 cycle commuter trips. Approximately 51 commuter trips occur from south pf the town centre to the town centre and 44 occur immediately to the east of the town centre.

Interestingly, the high density residential areas to the north, north east and south east have very low levels of commuting into Colchester town centre by bicycle, despite these routes producing the highest levels of car commuting in the borough.

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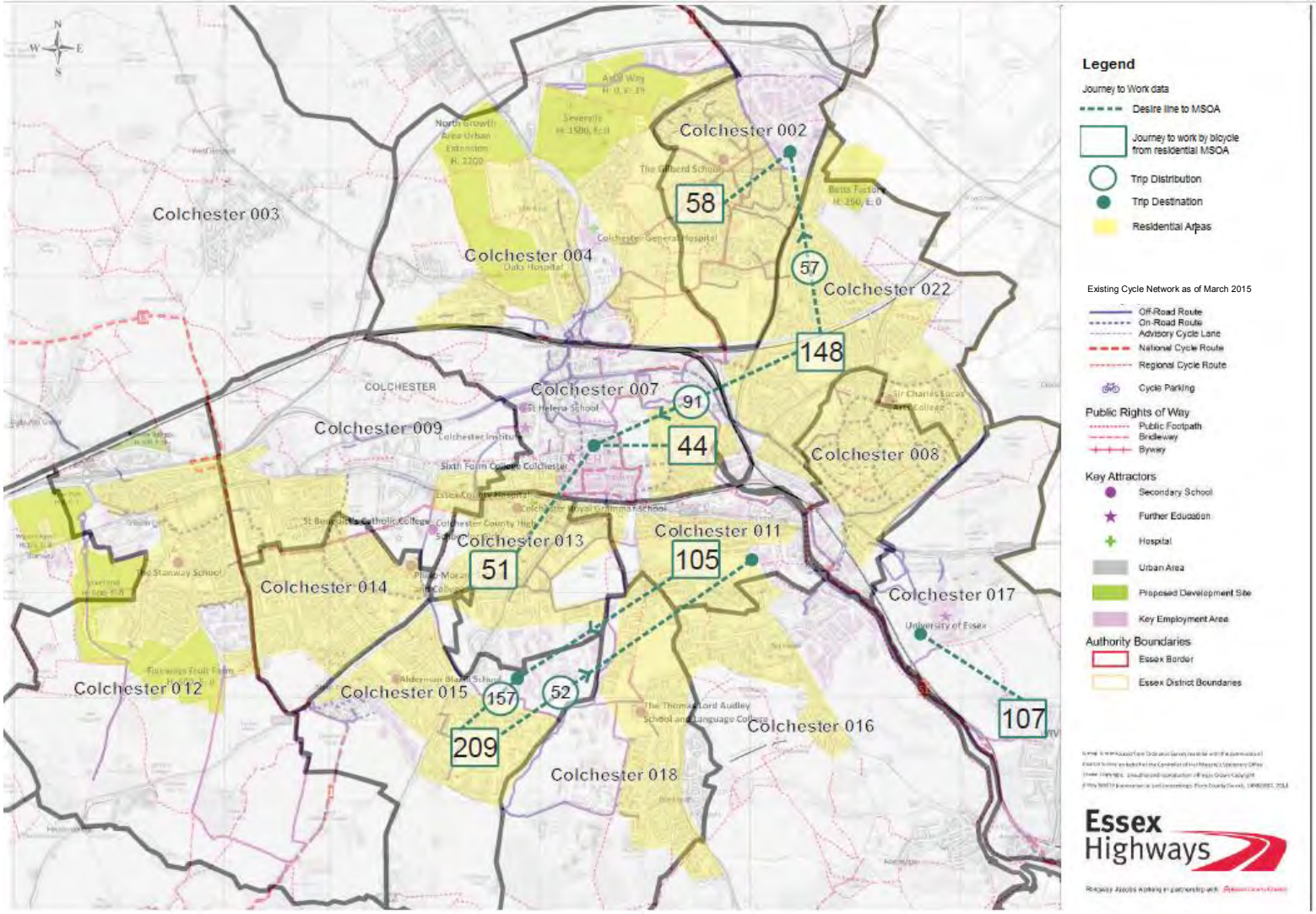
Figure 5.1: Predominant commuter flows for journeys to work by bicycle within Colchester town.



5.2.2 Car trips

A total of 9 of the 10 most popular borough wide commuter journeys by car were made within Colchester town. The other was Mersea, where 311 commuter trips were made by car internally within Mersea.

Figure 5.2 displays the predominant commuter flows for journeys to work by car within Colchester town.

Journeys to work by car are the most common mode of travel within Colchester. The highest commuter flows originate from MSOAs in the north and north east and mainly terminate within Colchester 007 (Colchester town centre). This accounts for approximately 1100 car journeys into the town centre. In addition, high commuter flows from MSOAs in the south west into the town centre account for approximately 580 car journeys.

Approximately 700 car commuter trips are made from MSOAs in the north and north east (Highwoods and Parsons Heath) going to Colchester Business Park (also in the north east). In addition, approximately 580 car commuter trips are made from MSOAs in the north going to Colchester General Hospital (also located in the north).

Interestingly, all the predominant commuter car flows are short distance trips of 5km or less.

5.2.3 Rail

All of the 10 most popular borough wide commuter journeys by rail were made within Colchester town. Figure 5.3 displays the predominant commuter flows for journeys to work by rail within Colchester. The highest rail demands in the town are heavily concentrated on northern, north eastern and central areas of the town. Colchester 004 in the north experiences the highest demand, with 818 commuter journeys recorded, followed by Colchester 007 (central Colchester) with 582 commuter journeys.

Although there are 3 stations in the town, the majority of rail commuters choose to access Colchester station, as this provides the highest rail frequency to employment destinations. As with car and cycle journeys, western areas of Colchester did not generate journey to work flows large enough to be included as part of the top 10 for the borough.

Figure 5.2: Predominant commuter flows for journey to work by car in Colchester

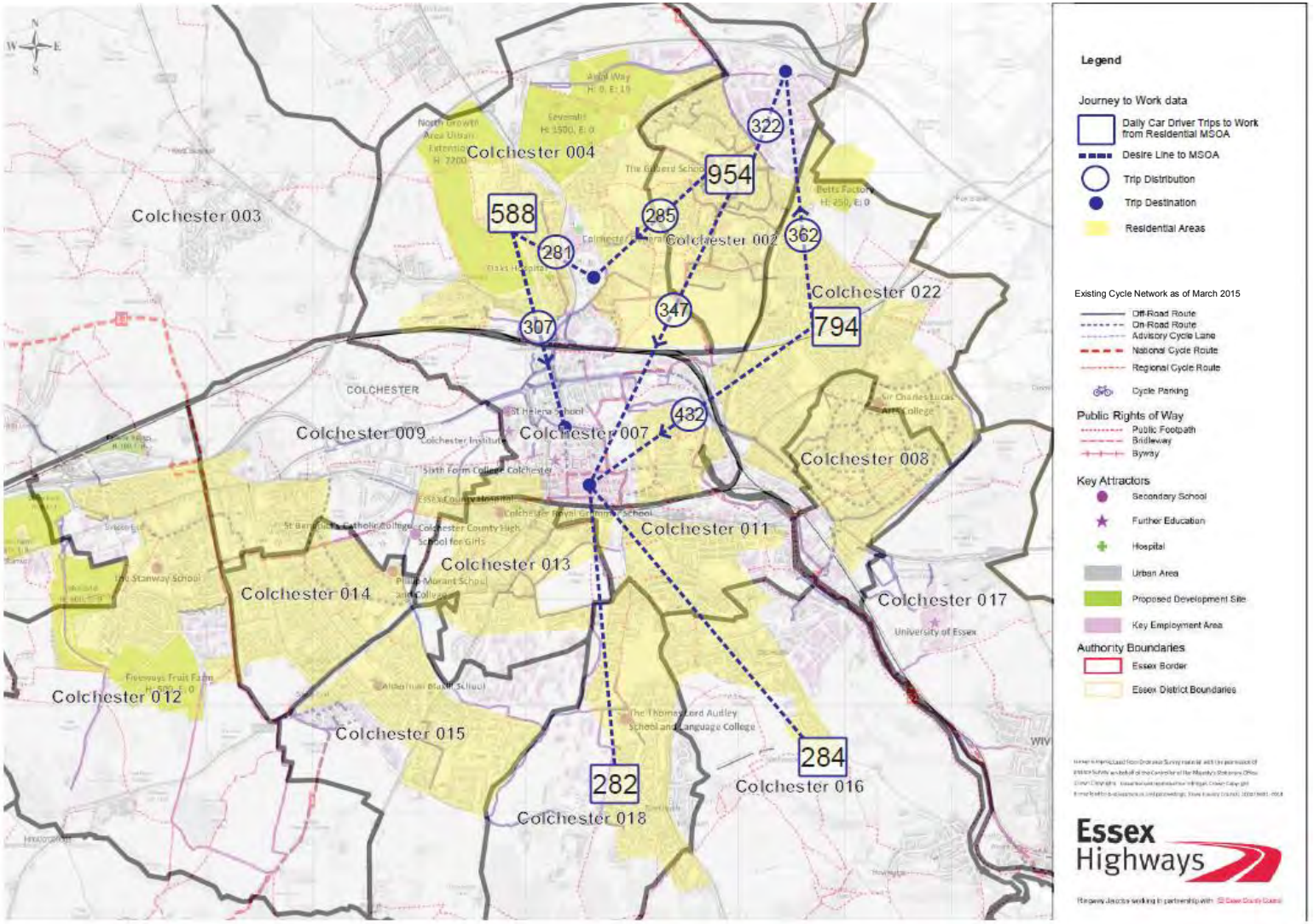
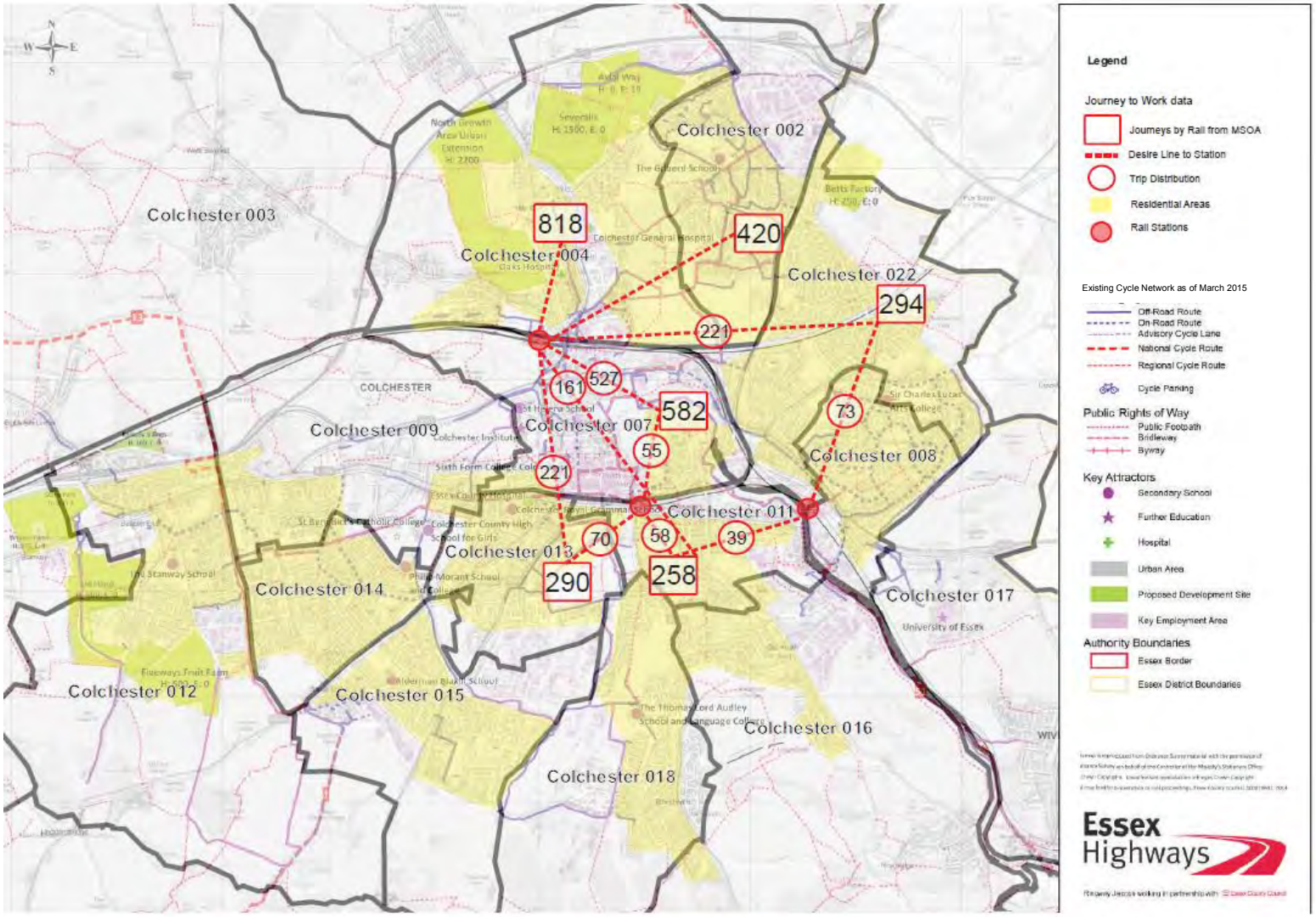


Figure 5.3: Predominant commuter flows for journey to work by rail in Colchester



5.3 Mosaic Propensity to Cycle

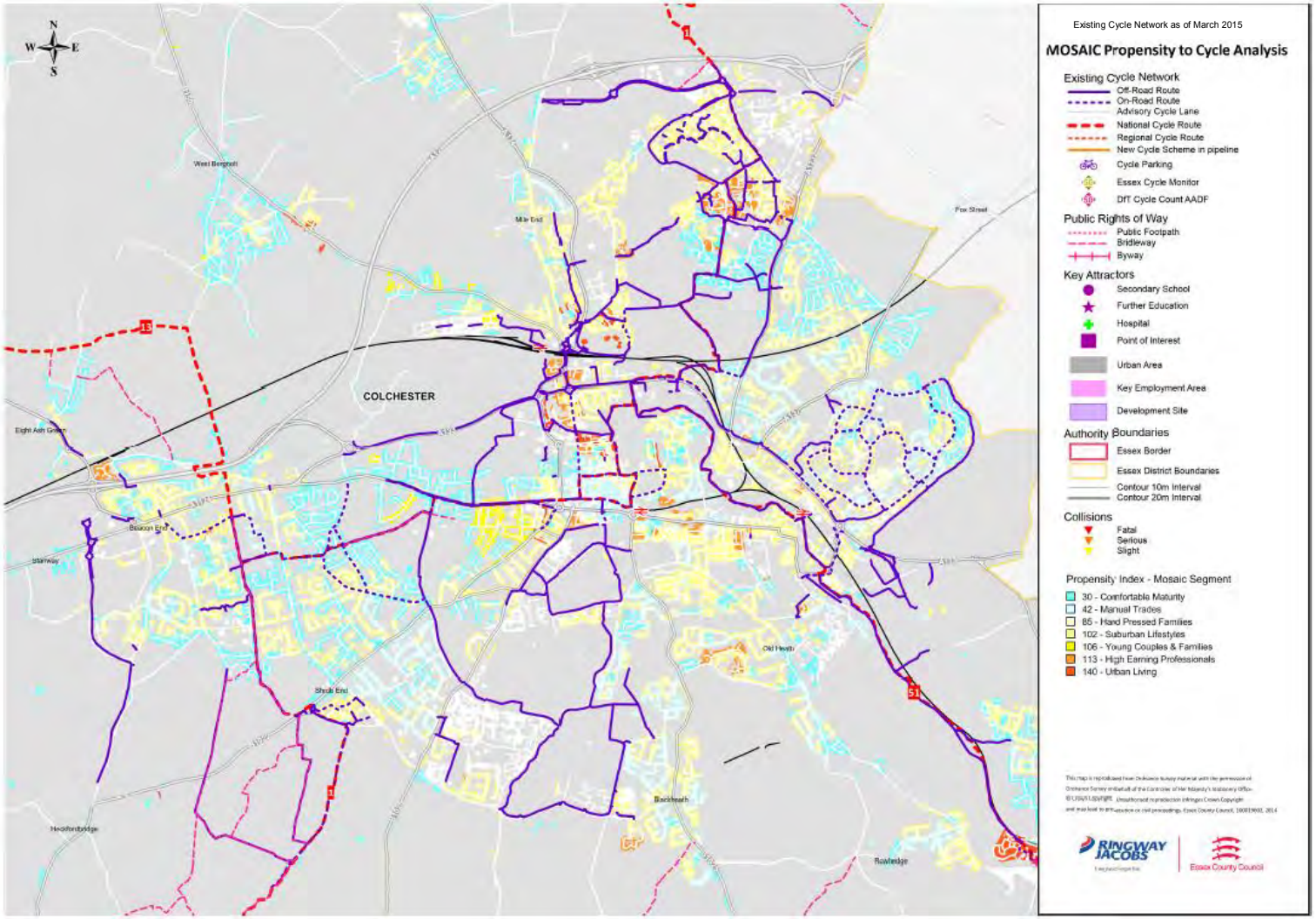
Market segmentation is concerned with grouping together the diverse range of people to understand their current behaviour and the likelihood and triggers for maintaining or changing how they act in the future.

The MOSAIC Cycling Segmentation was developed for TfL by Steer Davis Gleave as an aid to cycling policy development, planning, implementation and evaluation. This was required to help target opportunity areas to best increase mode share and assist in increasing trips.

The MOSAIC Cycling Segmentation classifies the population into seven segments, each with a different propensity to cycle e.g. those in the 'Urban Living' segment are 4.6 times more likely to be a cyclist than those in the 'Comfortable Maturity' segment. This can then be applied to postcodes and displayed on mapping as shown in Figure 5.4.

The segmentation analysis shows that propensity to cycle is relatively high in Colchester, most notably in the Highwoods area to the north-east of the town centre (where extensive levels of infrastructure are already in place). Areas in the town centre and Old Heath to the south-east also show high cycling propensity. Areas of low propensity are most prominent in the south-west, despite the presence of some existing infrastructure. Future infrastructure improvements should take account of the demographic of these areas and be prioritised accordingly.

Figure 5.4: MOSAIC Propensity to Cycle Analysis for Colchester Town



5.4 Summary of Potential

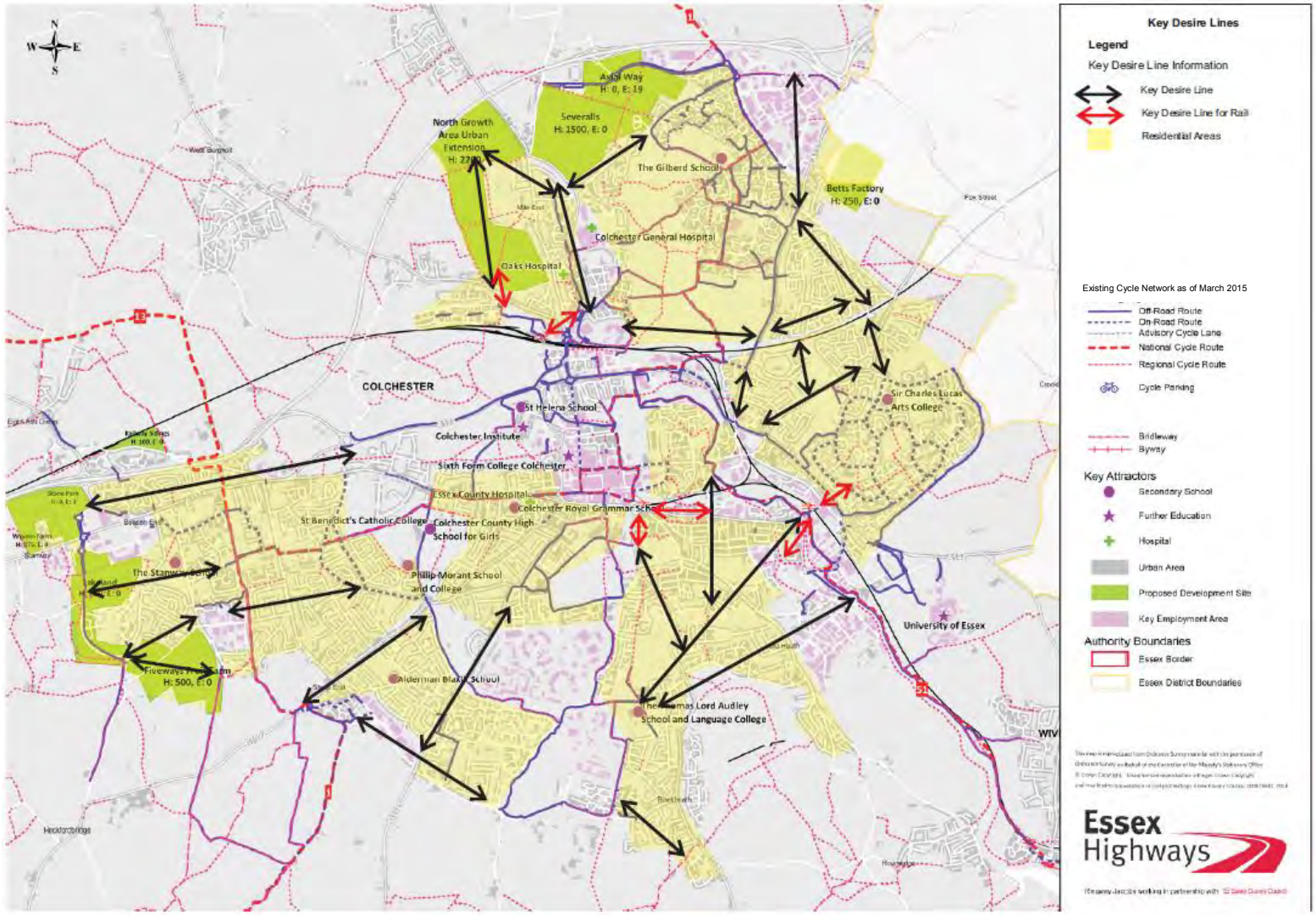
As identified above, there are a significant number of people driving short distances to access work or the rail station (5km or less). The majority of these trips occur from the north, north east, east and south east of the town towards the town centre and from the north east to Colchester Business Park. In contrast, very few cycle commuter trips are made along these key desire lines. Therefore, providing improved cycle routes and marketing targeted towards car drivers who commute along these routes could provide the biggest gains in terms of mode shift towards cycling.

The existing network of cycle routes, providing access to the town centre and in the vicinity of the Business Park provides better coverage of these desire lines in combination with the potential routes identified in section 7 of this report. Enhancement of the existing network may further encourage their use in the future.

Although it is not known what mode of travel commuters take to access rail stations, the predominant journeys to rail take place from the north, north east and central areas of the town. Therefore, an assessment should be made into the current level of cycle route provision to the rails stations from these locations in particular. A key link to the station will potentially be improved with potential scheme 52, There are other existing cycle routes which access the station but these may require improvement/ enhancement/ upgrading to encourage their use.

Figure 5.5 shows the key desire lines for cyclists within Colchester.

Figure 5.5: Key Desire Lines for Cycling in Colchester



6 Potential Infrastructure Improvements

6.1 Background

In order to remove barriers to cycling and provide suitable infrastructure, it is essential that all new developments in the Borough have good quality, cycle-friendly routes to key services, railway stations and areas of employment. To this end, all potential developments associated with the Colchester Local Plan should contribute towards creating a wider network of cycle-friendly routes with provision along key corridors and desire lines.

A coordinated approach should be taken, whereby development planning and highway scheme delivery in Colchester is linked with infrastructure provision, complemented by soft measures that promote cycling as part of a range of alternatives to single-occupancy car travel.

This CAP is proposing a network of strategic cycle routes, as well as identifying, within this, specific Flagship Routes. These Flagship Routes for the Borough of Colchester are described later in this report, in Section 8.

6.2 Potential cycle routes

Potential new cycle routes have been identified to help create a step-change in cycling conditions across the Borough. These might include signed routes (with journey times and surface markings), networks of interconnected cycle routes on quiet residential streets, filtered permeability (e.g. convenient cut-throughs and contraflows) and, where appropriate, 2nd generation cycling infrastructure, such as Dutch, Danish or light segregation. Infrastructure improvements have been considered for the urban area of Colchester.

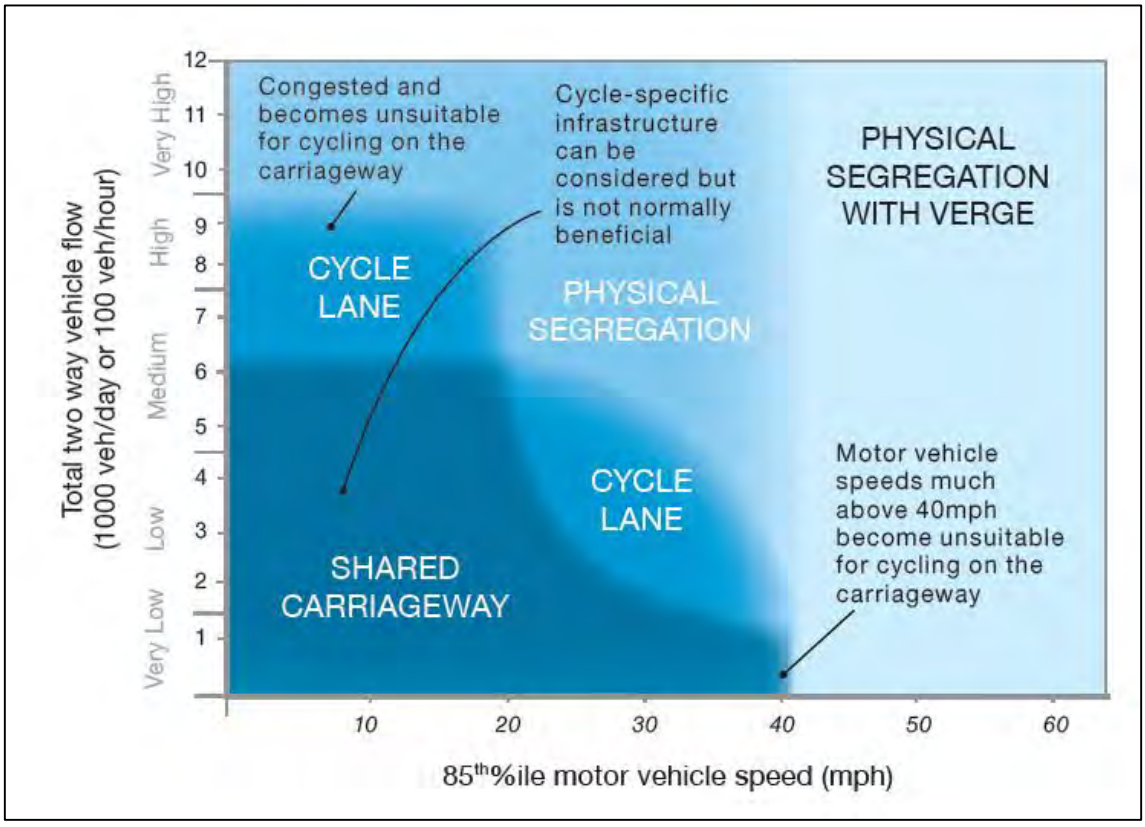
6.3 Methodology Statement

The potential routes have not, at this stage, been subject to detailed scheme design or feasibility, they are the result of an initial scoping study which is recommending a strategic network. Local knowledge, obtained through Stakeholder Consultation, has been used to inform this process. Where possible, the Sustrans Design Manual has been used to inform provision, particularly with regard to the acceptable provision related to traffic speed and volume conditions in specific locations.

Where traffic volume and speed data is available, the potential schemes have been subjected to Sustrans design principles, which recommend the type of scheme that should be considered under those conditions (Figure 6.1). Traffic

volume and speed may influence the decision on the need to segregate cyclists from other traffic. For example, where low speeds and traffic volumes are evident, there is no need to segregate cycle and other traffic and a shared carriageway is acceptable. As traffic speeds and volumes increase, cycle lanes are found to be more desirable, until the threshold is reached whereby physical segregation is required. Beyond this point, where 85 percentile traffic speeds exceed 40mph, and/ or volumes exceed 9500 vehicles/ day (or 950 vehicles/ hour), conditions become unsuitable for cycling on the carriageway and physical segregation with a verge is necessary. Where traffic volume and speed data are not currently available, it may be necessary to undertake a traffic survey to determine the provision that is required.

Figure 6.1 Sustrans Segregation and traffic flow[3]



In some locations, it has been noted that cycle-friendly crossings will be required. In most instances, further work and traffic surveys will be required to enable the exact type of crossing provision to be determined.

[3] Sustrans Design Manual. Handbook for cycle-friendly design, Sustrans, April 2014

*There are some examples where footway/ footpath conversions to shared use have been identified. The conversion of footpaths and footways to permit bicycle use is not regarded as a general or area-wide remedy, but has been confined to specific links and locations. It is recommended that where footpaths conversion and/ or footway conversion to shared use is considered then further studies are undertaken to demonstrate that alternative options have been discounted and that clear benefits can be derived. In such situations, it is vital that the benefits to the cyclist are balanced against the increased risk and inconvenience to pedestrians.

ECC aims to limit the use of footway conversion/ shared use paths and Engineers and Designers should first consider alternative options.

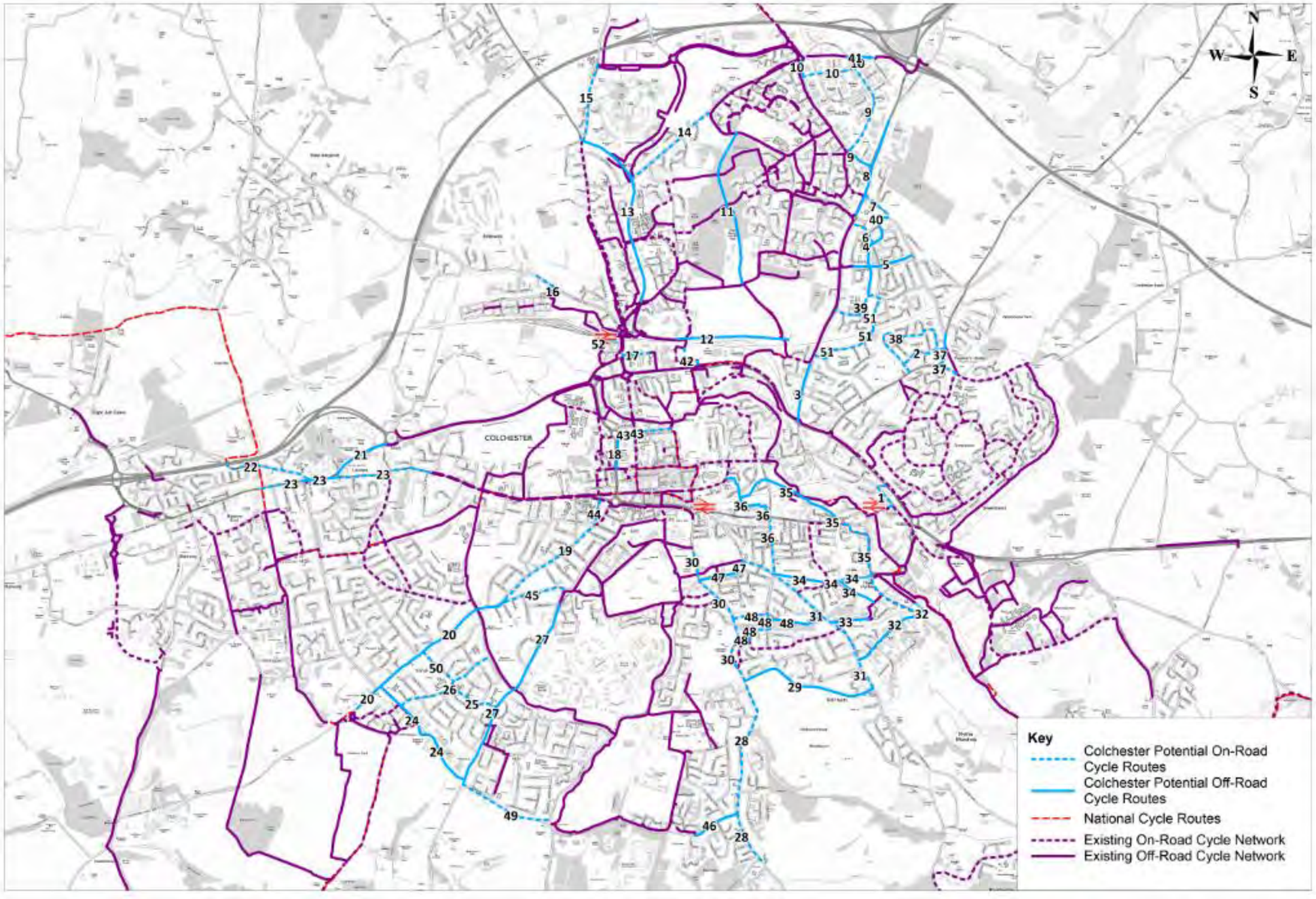
A full list of recommended schemes can be found in Table 7.1. The locations of these routes are shown in Figure 6.2 below.

Construction Design and Management (CDM)

The potential new cycle routes identified in this CAP all require further feasibility assessment before they can be finalised or confirmed. In some cases, the alignment of the routes may need to be amended to ensure that the safest scheme design, in terms of operation, construction design and management, is identified. In some cases, a route might need to be deleted entirely, if it is determined that CDM risks cannot be reasonably mitigated through early design stages.

Some of the potential routes are alongside or cross features such as high speed roads, water courses or railway lines and may either require a new structure or widening of an existing structure in order to be implemented. It is recognised that these features raise the potential for significant risk (and indeed cost) during construction and operational management and they will need to be given particular consideration during the feasibility assessment.

Figure 6.2 Existing and potential cycle routes in Colchester



7 Prioritisation and Costings of Potential Schemes

7.1 Prioritising Schemes

The potential schemes have been prioritised according to four criteria of their design:

- Deliverability;
- Directness;
- Extension of existing network; and
- Key attractors.

A score of high, medium or low has been given for each potential scheme against each of the prioritisation elements. It was then possible to determine the overall prioritisation score for each scheme (again, scoring each potential scheme as high, medium or low).

7.2 Deliverability

The deliverability of a scheme has been assessed according to land ownership issues, which will determine how easy the scheme will be to deliver:

- H: High being a scheme that lies wholly within the highway boundary, straightforward to deliver, with no land ownership issues.
- M: Medium being any route that requires conversion of Public Rights of Way (PROW); and
- L: Low being any scheme which is likely to encounter private land ownership issues, or requires a singular large expense, such as a bridge.

7.3 Directness

The directness of the route is considered in terms of where it is proposed to provide access to, for instance a town centre or a railway station:

- H: High being a scheme that provides direct access, using as short a distance as reasonably possible, or could provide a real improvement on the corresponding car journey time;
- M: Medium being a link route, providing access to the main radial cycle route(s);
- L: Low being indirect routes, which are routed along relatively longer distances.

7.4 Extension of existing network

The extent to which a potential route extends the existing network is considered against this criteria:

- H: High being a route which extends, or fills a gap in, the existing network;
- L: Low being a route which is isolated and/ or unlinked to the existing network.

7.5 Key attractors

Under this criteria, the number of key attractors that a route connects is considered. Key attractors include town centres, other urban areas, railway stations, secondary schools/ education facilities, employment (including hospitals), and leisure destinations (parks, sports centres, etc.). The scoring is undertaken as follows:

- H: High being a route which connects to three attractors;
- M: Medium being a route which connects to two of these attractors; and
- L: Low being a route which connects to none (or just a leisure destination) of these attractors.

Within this criteria, town centres and railway stations are considered to be the most important attractors, so if a route connects to both it is likely to score high rather than medium. On the converse, leisure destinations are considered less important, so may attract a lower score.

7.6 Overall prioritisation

Once a score has been obtained for each of the four criteria (Deliverability, Directness, Extension of Existing Network and Key Attractors), its overall prioritisation can be determined, giving an overall score of low (L), medium (M) or high (H). As a general rule, the most frequent score obtained across the four criteria will be the resulting overall score. Where there are an equal number of different scores, there may be some element of subjective judgement used to decide the overall result.

The resulting prioritisation for each of the potential schemes is shown in Table 7.1.

7.7 Estimated costs of potential schemes

As with the prioritisation, the costs of the potential schemes are rated on a low (L), medium (M), high (H) and exceptionally High (H+) scale. The cost estimates relate to the following broad ranges:

- L: Low being less than £100,000;
- M: Medium being within the range £100,000 to £500,000;
- H: High being within the range £500,000 to £1,000,000; and
- H+: Exceptionally High being more than £1,000,000.

The outline costs are indicative of a feasibility proposal stage costing, prior to detailed surveys being undertaken for design and construction. Costs exclude the following:

- VAT (costs are exclusive of VAT);
- Inflation beyond 2015 or significant changes to markets;
- Land costs, legal fees, Highways consultation;
- Construction on contaminated land;
- Diversion of services;
- Landscaping; and
- Access roads for construction.

Realistic unit costs have been derived for each of the elements that are identified in the potential schemes and they have been applied to a length of route where appropriate and as a series of elements to enable the overall cost of each scheme to be built up. The resulting estimated cost for each scheme is included in Table 7.1.

Table 7.1 Costs and Prioritisation of Potential Colchester Cycle Schemes

Route ID	Route Name	Opportunity	Potential Solution – subject to Feasibility Study	Overall Prioritisation	Est. cost
1	Link from Hythe station	Better connection to Hythe Station	On-road cycle provision to connect Hythe rail station to the existing cycle network on St. Andrew's Avenue via an advisory cycle lane on northbound carriageway of Greenstead Road and via The Chase. Toucan crossing should be considered at Greenstead Road/The Chase junction.	H	L
2	Templewood Rd/ Hazleton Rd / Churnwood Rd	Link residential area to existing cycle network	Signed quietway route along Templewood Road, Churnwood Road and Hazelton Road. 20mph speed limit recommended (no other cycle facility required)	M	L
3	Extend existing segregated route north from St Andrews Ave along A1232 to Valentines Drive.	Provide seamless link between St Andrews Road and existing cycle route along A1232	Footway conversion* to segregated use along the A1232 (Ipswich Road) to connect existing route on St Andrews Ave with A1232 at double roundabout and extend existing segregated cycle route north along wide southbound footway of A1232 to Valentines Drive and existing route on northbound footpath of A1232. Sustrans recommends physical segregation. Consider change of pelican crossing to toucan crossing, or an additional toucan crossing of Ipswich Road.	M	M
4	St Cyrus Road	Forms part of quieter alternative route to Ipswich Road and links residential areas (Highwoods East) to the existing cycle network	Signed quietway along Cyrus Road from Upland Drive to St John's Road. Consider traffic calming measure - 20mph speed limit recommended.	L	L
5	Existing footpath extending E/W between A1232 (S of Myland Hall Chase) and St John's Road	Links residential area to existing cycle network	Signed E-W footpath conversion* to shared use from Chalfont Road to St John's road (PROW footpath 127_107). Uncontrolled crossing of Cyrus Road (e.g. table) should be considered if traffic calming measure (20mph) is implemented.	L	M
6	Existing footpath extending SE from A1232 (south of RAB with St Johns Rd) to St Cyrus Rd	Forms part of quieter alternative route to Ipswich Road and links residential areas to the existing cycle network	Signed and widened footway conversion* to shared use extending southeast from A1232 (south of roundabout with St Johns Road) to St Cyrus Road.	L	M
7	St Johns Close	Forms part of quieter alternative route to Ipswich Road and links residential areas to the existing cycle network	Advisory cycle lane on St Johns Close. Convert zebra crossing at near St Johns Close/Ipswich Road junction to a tiger crossing.	L	L
8	Ipswich Road, north of A1232 /St Johns Rd roundabout	Extends current network northwards	Signed footway conversion* to shared use along A1232 Ipswich Road from St Johns Road roundabout northeast. Convert the 2 zebra crossings and 2 pelican crossings to tiger and toucan crossings at the roundabout. Uncontrolled cycle crossings at the other two arms- consider changing to tiger crossing.	H	H
9	Severalls Lane and Highwoods Industrial Estate- Wyncolls Rd	Connects Industrial Estate/Business Park to existing network	Signed and marked mandatory cycle lanes along Wyncolls Road from Flood Lane to Severalls Lane. Detailed study recommended on traffic flows throughout the day. Convert uncontrolled crossing of Sevaralls Lane near Princes Drive link to tiger crossing. Route to join existing footway conversion* to shared use on Severalls Lane to Ipswich Road. Improvements including widening is required. Sustrans recommends physical segregation on Severalls Lane.	H	M
10	Section on Flood Lane between Newcomen Way and Wyncolls Rd. Also verge removal. Severalls Lane	Connects Industrial Estate/Business Park to existing network	Signed quietway along Newcomen Way from Wyncolls Road to Severalls Lane. Potential widened footway conversion* on Severalls Lane on the southbound side northwards to the roundabout. Toucan crossing of Severalls Lane should be considered to link to existing network running parallel to Severalls Lane (western side). Sustrans recommends physical segregation.	L	M
11	High Woods Country Park	Provide a cycle connection through Highwoods to existing infrastructure, leading to town centre and employment	N-S signed footway conversion* to shared use through High Woods connecting Brinkley Grove Road in the north and Broadlands Way in the south. Toucan crossing across Brinkley Grove Road should be considered.	H	H
12	High Woods Country Park	Provide a cycle connection through Highwoods to existing	E-W signed footpath conversion* to shared use parallel to the railway line from existing cycle path in the east to the retail park in the west.	H	H

Route ID	Route Name	Opportunity	Potential Solution – subject to Feasibility Study	Overall Priorit-isation	Est. cost
		infrastructure, leading to town centre and employment			
13	A134	Seamless route from Mile End to the rail station	Potential signed conversion of widened footway* to shared use along the A134 (Northern Approach Road). Convert pelican crossings to toucan crossing (Bruff Close, Mill Road and Turner Road). Sustrans recommends physical segregation with verge. Further study into pedestrian flows to be undertaken to allow different design.	H	H
14	Mill Road	Fills gap in network	Signed and marked mandatory cycle lane provision along Mill Road connecting to existing cycle network at Brinkley Grove Road (reallocate carriageway as necessary). Traffic calming measures will be required to reduce speed on Mill Road to align recommendation with Sustrans guidance (physical segregation). If not possible to traffic calm as necessary, consider alternative route – Via Urbis Romaine and Tower Lane link to Mill Road.	M	L
15	Boxted Road	Boxted Road from Nayland Road to United Way	Signed and marked on-road advisory cycle lane along Boxted Road. Sustrans recommends shared carriageway/ shared use, so traffic speed reductions measures may be beneficial.	H	L
16	Bergholt Road, between Warwick Bailey Close and Tuffnell Way	Bergholt Road, between Warwick Bailey Close and Tuffnell Way	Signed advisory cycle link between proposed development west of Mile End and the existing cycle route leading to Colchester rail station. Traffic calming measures will be required to reduce speed on Bergholt Road to help scheme align with Sustrans guidance. Parking issues will need to be addressed.	M	L
17	Clarendon Way	Clarendon Way	Signed Quietway via Clarendon Way connecting existing cycle network to the cycle path towards the rail station.	M	L
18	Balkerne Hill Footpath/Balkerne Passage	Balkerne Hill Footpat/Balkerne Passage	Signed and marked Balkerne Hill Footway conversion* to shared use from Middleborough roundabout to Balkern Hill Bridge. Provide a right turn lane option for cyclists heading southbound on North Hill to turn into Balkerne Passage.	H	M
19	Malden Road from Capel Rd to Wellesley Road	Malden Road between Creffield Road / B1022 junction	Signed and marked advisory lane along Malden Road from Capel Road to Wellesley Road. Further investigation required e.g. change parking layout. Traffic calming measures should be considered. Sustrans recommends cycle lane/ physical segregation.	H	L
20	B1022 between Malden Road and junction with B1026 B1022 between junction with Malden Road and Cunobelin Way	B1022 between Malden Road and junction with B1026 B1022 between junction with Malden Road and Cunobelin Way	Verge removal and signed footway conversion* to segregated use on both sides of B1022 Shrub End Road between junction with Cunobelin Way and junction with Drury Lane. Convert pelican crossings to toucan crossings (Norman Way, Boadicea Way). Sustrans recommends physical segregation	M	H
21	Cymbeline Way, between A1124 and A12 roundabout	Cymbeline Way, between A1124 and A12 RAB	Footway conversion* to shared use along Cymbeline Way, from A1124 to A12 roundabout. Toucan crossing of Lexden Road to connect to westbound route on Lexden Road.	M	M
22	Halstead Rd	Halstead Road	Signed on-road advisory route along Halstead Road from A1124 Lexden Road to existing NCN route. Traffic calming measures should be considered (20mph). Sustrans recommends shared carriageway. The route should link to Iron Latch Lane development.	M	L
23	London Road, east of Halstead Road	London Road, A1124 between St Clare Road and Stanway	Advisory cycle route on A1124 London Road, east of Halstead Road. Potential for footway conversion* to shared use on eastbound London Road to the roundabout. On-road provision on A1124 Lexden Road. Consideration of suitable toucan crossings required. Sustrans recommends physical segregation.	M	M
24	Gosbecks Road	Gosbecks Road, between B1022 and B1026	Signed eastbound footway conversion* to shared use on Gosbecks Road from B1022 to existing segregated eastbound cycle path towards junction with Cunobelin Way.	M	M

Route ID	Route Name	Opportunity	Potential Solution – subject to Feasibility Study	Overall Priorit-isation	Est. cost
25	Link between B1022 and B1026 via Walnut Tree Way	Link between B1022 and B1026 via Iceni Way / Walnut Tree Way	Signed on-road cycle provision from B1026 to Walnut Tree Way. Traffic calming measures should be considered (20mph speed limit)	L	L
26	Link between Gosbecks Road and Boadecia Way via Paxman Ave and Eldred Ave	Link between Gosbecks Road and Boadecia Road via Paxman Ave and Eldred Ave	Signed quietway along Paxman Avenue, Iceni Way and Eldred Avenue until Boadicea Way. Sustrans recommends shared carriageway. Speed limit of 20mph should be considered.	M	L
27	B1026 (Layer Road) between existing off rd section at Butt Rd to Berechurch Hall road	B1026 (Layer Road) between existing off road section at Butt Road to Berechurch Hall road	Carriageway reallocation and removal of central hatching to provide a signed and marked mandatory cycle route along Layer Road along B1026 Layer Road from Berechurch Hall Road to join the existing off-road cycle route on the southbound side of Layer Road from Gladwin Road to Drury Road. Suitable crossing and enhancements should be implemented to allow safe crossing for cyclists on-road to join the off-road cycle road on Layer Road from Gladwin Road to Drury Road (tiger crossing). Car parking along this road may present safety issues, therefore requires further study.	M	L
28	B1025 between Weir Lane and Roberts Road junction	B1025 between Weir Lane and Roberts Road junction	Wide road with potential to provide on-road hybrid cycle lanes along B1025 between Weir Lane and Roberts Road junction (reallocating carriageway, grass verges or central hatching for segregated cycle lanes-continental style). This would align with Sustrans guidance (physical segregation). Traffic calming measures could be considered additionally. Where there are short sections of on road parking (e.g. north of Buckley Place), mandatory cycle lane should be provided instead. Crossings of Mersea Road should be considered where necessary.	M	H+
29	Abbotts Road	Abbotts Road	Consider creation of cycle track on grass verge of Abbott's Road.	L	H
30	Mersea Road between Bourne Road and Napier Road	Mersea Road between Bourne Road and Roberts Road. Mersea Road between Roberts Road and Napier Road	Signed and marked advisory cycle lane on Mersea Road between Bourne Road and Napier Road. The Mersea Road/ Normandy Road junction has been identified as a cycle accident cluster location, so consideration must be given to the design of this junction to improve safety and conditions for cyclists when the design of the scheme is being undertaken.	M	L
31	Old Heath Road, between Abbotts Road and Lisle Road	Old Heath Road, between Abbotts Road and Lisle Road	Signed and marked advisory cycle lane on Old Heath Road, between Abbotts Road and Lisle Road. Sustrans recommends physical segregation, owing to the relatively high traffic flows. Reducing speeds to 20mph would make a cycle lane more acceptable.	M	L
32	Whitehall Road	Whitehall Road	Signed footway conversion* to segregated use on Whitehall Road from Old Heath Road to Haven Road. Sustrans recommends physical segregation. Tiger crossing of Whitehall Road at the Haven Road roundabout. Potential footway conversion* on westbound side of Haven Road to King Edward Quay. Zebra crossing of Haven Road. Signed quietway along King Edward Quay to join to existing network on Colne Causeway.	M	M
33	Distillery Lane	Distillery Lane	Footpath conversion* to shared use on Distillery Lane connecting Old Heath Road and existing cycle route. This is a private road and therefore potential land ownership issues.	M	M
34	Old Heath Recreational Ground/ Parsons Lane	Old Heath Recreational Ground/ Parsons Lane	Signed and marked E-W cycle route through Old Heath Recreational Ground via existing footpath and on-road provision on Recreation Road to connect Parsons Lane. Cycle friendly uncontrolled crossing of Recreation Road. Signed (and widened if necessary) convert footpath* to shared use cycle track along PROW 127_142 from Recreation Road to Distillery Lane. Potential land ownership issues. Alternative option would be footpath conversion to shared use from Recreation Road eastwards to the Colne Causeway roundabout. Potential land ownership and access issues. The two options would need further investigation.	M	H

Route ID	Route Name	Opportunity	Potential Solution – subject to Feasibility Study	Overall Priorit-isation	Est. cost
35	Hythe Quay/Haven Road/ A134	Haven Road/ A134, Hythe Quay	Signed on road mandatory cycle lane (carriageway reallocation) on Haven road from Whitehall Road, A134 Hythe Quay and Maudlyn Road. Signed and marked advisory route along Hythe Hill and signed quietway along Timber Hill. Convert footpath* to signed shared use cycle track (PROW 127_137, 127_133). Potential width issues, will require further study. Suitable crossing (zebra) of the A134 should be provided to enable access to river bridge to Hawkings Road. Sustrans recommends physical segregation along Haven Road and Hythe Hill- reducing traffic speeds to 20mph in these locations would make a cycle lane more acceptable. Hythe Hill can be considered as an alternative.	M	H
36	Wimpole Road from Old Heath Road to A134	Off road bridleway north of Hythe Hill via Brooke St and Nicholson Grove to Priory St. Wimpole Road	Signed advisory cycle lane (in accordance with Sustrans guidance) along Wimpole Road from Old Heath Road to A134. Convert pelican crossing to toucan crossing (Magdalen St). Convert footpath* to shared use cycle track (sign and mark) from Brooe St to Priory St along Simons Lane and Emulph Walk (PROW 127_136, 127_132). Potential width issues at George Williams Way Development. The junction of A134 Magdalen Street/ Brook Street has been identified as a cycle accident cluster site. Consideration must therefore be given to the safety of cyclists using this junction when designing the scheme.	H	M
37	Bromley Rd/Parsons Heath Rd	Bromley Road/Parsons Heath Road	Signed advisory cycle lane along Bromley Road from Hawthorne Avenue to Parsons Heath Road (extension of current on-road cycle provision). Signed footway conversion* to shared use on the northbound side of Parsons Heath road (remove grass verge). Provide suitable transition from on-road on Bromley Road to off-road on Parsons Heath Road. Introduce a tiger crossing west of Hawthorne Avenue/Bromley Road junction (remove zebra east of junction).	M	M
38	Residential area (Hazelton, Templewood Rd)	Residential area (Hazelton, Templewood Road)	Signed quietway along Hazelton Road, Brinckley Crescent and Templewood Road. 20mph speed limit recommended. Sustrans recommends shared carriageway.	L	L
39	A1232 / Upland Drive/St Dominic Rd	A1232 / Upland Drive/St Dominic Road	Signed quietway along St Christopher Road and Upland Drive from St Dominic Road to the A1232 Ipswich Road.	M	L
40	St Johns Rd	St Johns Road	Signed and marked mandatory cycle lane on St Johns Road from Arden Close to St Johns Close. Sustrans recommends cycle lane/physical segregation. Traffic calming measures should be considered.	M	L
41	Flood Lane	Flood Lane	Convert footpath to shared use cycle track* (signed) along Flood Lane footpath (PROW 127_72). Potential width issues, therefore require further study.	M	M
42	Mason Road	Mason Road	Signed quietway on Mason Road from A133 Cowdray Avenue onto an off-road route from Mason Road directly northwards to join existing route north of the rail line. Toucan crossings should be considered at the Cowdray Avenue/Mason Road junction, and at Mason Road to link existing cycle network. Sustrans recommends shared carriageway along Mason Road.	M	M
43	Middleborough/St Peters St	Middleborough/St Peters St	Signed footway conversion* (include grass verge removal) to shared use along the westbound side of Middleborough Road, to a potential signed quietway along St Peter's Road with 20mph speed limit. Toucan crossing required to join off-road provision to carriageway at the junction. Middleborough has been identified as a cycle accident cluster site, so consideration must be given to providing safe passage for people who cycle around this roundabout in the design of the scheme. Consideration of removal of the 'no cycling' order in subway.	H	M
44	Weselley Rd from B1022 Maldon Road	Weselley Road	Signed quietway along Weselley Road from B1022 Maldon Road to Southway to avoid the roundabout.	M	L

Route ID	Route Name	Opportunity	Potential Solution – subject to Feasibility Study	Overall Priorit-isation	Est. cost
			Ensure the route has suitable access to new Lexden Road crossing via ramp.		
45	Drury Road	Drury Road	Convert pelican crossing to toucan crossing at B1022 Maldon Road and at Drury Road. Signed quietway along Drury Road to B1026 Layer Road. Car parking along this road may present safety issues, therefore requires further study	M	L
46	Berechurch Hall Rd, between junction with Thomas Benold Walk and B1025 junction	Berechurch Hall Road, between junction with Thomas Benold Walk and B1025 junction	Signed and marked mandatory cycle lanes along eastbound Berechurch Hall Road between junction with Thomas Benold Walk and the B1025 Mersea Road (footway space could be reallocated if required)., although advisory cycle lanes could be accommodated with little adjustment from existing layout.	M	L
47	Camp Folley South	Camp Folley S	Convert footpath* to shared use cycle track (signed) along Camp Folley South (PROW 127_152), and signed quietway link from Camp Folley South to Old Heath Road via Lisle Road. Potential width issue on PROW 126_152- require further study. Replace steps at Camp Folley South with ramp at junction with Mersea Road, and enhance the junction between the converted footpath and Mersea Road to make it safe for pedestrians and cyclists. Consider a toucan crossing of Mersea Road to enable linking to cycle route on Mersea Road.	M	M
48	Bourne Mill	Bourne Mill	Mixed off-road/on-road cycle routes through Bourne Mill. Signed quietway along Bourne Road from B1025 Mersea Road, convert footpath* to shared use cycle track (PROW 127_156) and an E-W footpath conversion to shared use cycle track to Old Heath Road. Potential width issue on PROW 127_156- further study required. Additionally, convert footpath to shared use cycle track (PROW 127_157), quietway route on Stalin Road to join converted footpath to shared use cycle track (PROW 125_156). Enhancements to the connection between Bourne Road and the E-W route will be required to enable access.	M	M
49	Berechurch Hall Road/Berechurch Road	Berechurch Hall Road/Berechurch Road	Signed advisory cycle lane from B1026 to Berechurch Road via Berechurch Hall Road. Junction improvements required for cyclists e.g. safe transfer from potential to existing cycle route.	M	L
50	Walnut Tree Road from Shrub End Rd to Eldred Avenue	Walnut Tree Road from Shrub End Road to Eldred Avenue	Signed quietway on Walnut Tree Road from Shrub End Road to Eldred Avenue.	M	L
51	A1232 / Goring Road / Wilson Marriage Road	A1232 / Goring Road / Wilson Marriage Road. Existing footbridge over railway at east end of Wilson Marriage Road	Signed quietway route along Goring Road and Wilson Marriage Road, and enhancement of the existing footbridge over the railway line (PROW footpath 127_103) required to join quietway along St Dominic Road to St Christophers Place. Potential width issues on PROW 127_103 therefore further study required.	M	H+
52	Colchester Rail Access	Colchester Rail Access	Improve the access to Colchester rail station for cyclists from the south and provide alternative to the route along the A134 and Essex Hall roundabout. Enhance the farm access for cyclists and provide a new cycle track to join to the existing cycle network that crosses Essex Hall Road. Land ownership negotiations required.	H	L

8 Flagship Routes

8.1 Introduction

A Flagship Cycle Route is a key corridor providing safer, faster and more direct access to one or more key attractors (town centres, employment sites, education establishments, transport hubs, visitor attractions and existing/proposed developments). The routes will be on high demand corridors, be able to meet demand (both existing and potential), encourage a focus on innovation/design best practice and will include continental standard facilities, where appropriate.

It is hoped that a county-wide suite of Flagship Routes will be a focus for future funding, high quality infrastructure, design best practice and innovation.

8.2 Potential East/West Flagship Route in Colchester

It is proposed that a Flagship route for Colchester is created by upgrading the existing cycling network that runs alongside the A133 from Spring Lane in the West to Clingoe Hill (University of Essex Colchester Campus) in the East (Figure 8.1). Particular focus will be required where the route crosses junctions (e.g Mason Road, North Station Road and Belle Vue Road), where existing tunnels beneath Westway might be used and where the route links to the town centre.

This key spine route could benefit from upgraded provision and can be supplemented by improved connections to Berrimans Close and Tippett Close and re-allocation of road space on service roads.

Cowdray Avenue, in the vicinity of The Albert roundabout, has been identified as a cycle accident cluster. This is located on the potential Flagship Route and, as such, consideration should be given to improving safety and conditions for people who cycle across this roundabout, when the design of the Flagship Route is being undertaken.

8.3 Prioritisation of Flagship Route

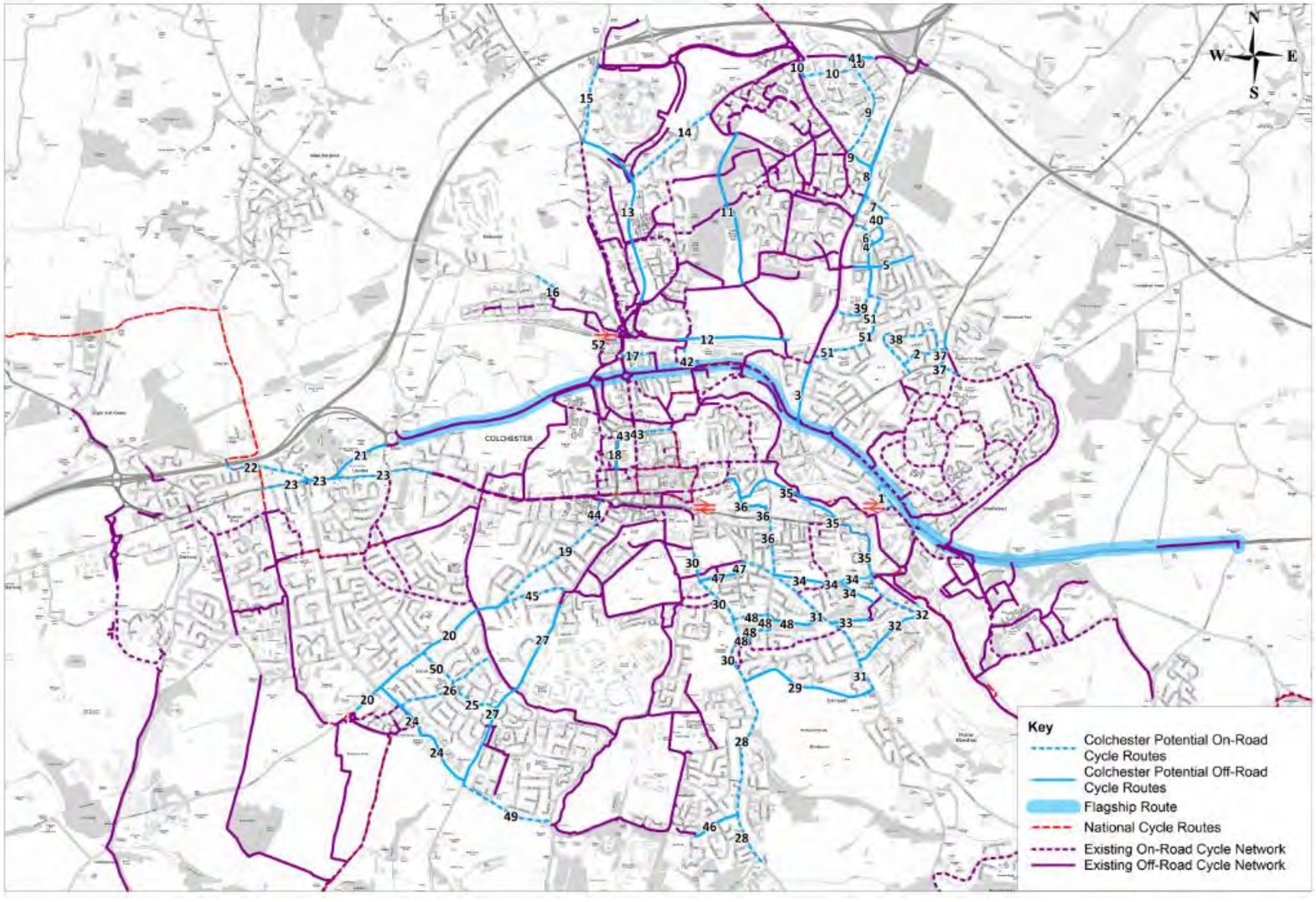
The potential Flagship Route has been considered against the four prioritisation criteria, as per the other potential schemes:

- Deliverability;
- Directness;
- Extension of existing network; and
- Key attractors.

For this East/ West Flagship Route (FR1), this assessment found that the route would be relatively easy to achieve, is direct, connects to the existing network in a number of locations and links to a variety of key attractors, such as The Cowdray Centre Retail Park, University of Essex, schools, a recreation ground, a superstore and Hythe Rail Station. There are many onward connections to other key attractors of the town centre and other rail stations. As such, this route (FR1) would achieve a high prioritisation overall.

The inference from the prioritisation exercise is that it supports the basis for identifying the Flagship Route in the first instance, in that it is a key corridor, providing important benefits for cycling in Colchester and should therefore be considered a high priority going forward.

Figure 8.1 Potential Flagship Routes for Colchester



9 Smarter Travel Measures

9.1 Introduction

To ensure the potential for cycling is fully realised, new infrastructure must be accompanied by targeted promotion and events.

If funding becomes available, local promotion of cycling should be increased to convince residents that cycling is a normal and accessible activity for all as well as highlighting the health benefits of cycling.

In addition, cycling has the potential to alleviate congestion by persuading people to replace a local car journey by cycling. This could include workplace travel planning in the town centres within the Borough.

9.2 Marketing and promotion

The Essex Cycling Strategy sets out a number of overarching themes for marketing and promoting cycling which are as follows:

9.2.1 Cycle Essex

ECC are committed to running high profile campaigns under the “Cycle Essex” umbrella which aim to change the image of cycling in Essex, break down perceptual barriers, communicate a safety message and tie in with existing organisations such as Active Essex.

9.2.2 High profile events

Essex has been successful in attracting high profile cycling events to the County that have been well attended by the public, such as hosting Stage 3 of the 2014 Tour de France. ECC would like people to continue to support these events but also give cycling a try through further mass event, car free days in town centres and bike festivals.

The status of Colchester as a pre-eminent cycle town has been recognised by its inclusion on the routes of many prestigious cycling events including the 2010 Tour of Britain and numerous Tour Series events.

Between April 2008 and March 2011, the Department for Transport, the Department of Health and Cycling England invested over £140 million to promote cycling and to address a historic decline in cycling activity. Part of this investment (around £50 million) was used to create one Cycling City and eleven Cycling Towns of which Colchester was one, receiving £4.2m of funding. Whilst much of

this was invested in infrastructure improvements, it was supported by complementary revenue funding. Specific interventions included:

- Delivery of Personal Travel Planning, specifically focused on encouraging cycling;
- Delivery of Bikeability training to residents; and
- High profile promotion of cycling in the local community, including a programme of events called "The Summer of Cycling," as well as encouraging schools to develop travel plans.

9.2.3 Support for local initiatives

ECC recognise that Local initiatives are particularly effective at engaging with people on a personal level. Therefore they aim to empower Boroughs / Districts to promote cycling locally, support community providers / charities, support cycling clubs and ensuring that secondary schools, large employers, large council offices and major hospitals have up to date travel plans.

As part of their respective travel plans, both the main rail station and the University of Essex recognised the importance and status of cycling with Colchester and took steps to encourage and promote further use.

Information on cycling within Colchester is available from http://www.cyclecolchester.co.uk which provides, among other details, recommended local routes, details on how to join local clubs and information on cycling safety and security.

Colchester is also home to a campaign group; Cycle Colchester, which actively lobbies for improvements to cycling infrastructure and conditions within the town. Although it does not organise rides, the group is influential and has been involved in a number of successes, including the introduction of the Wivenhoe Trail, improved cycle parking at Colchester rail station and the aforementioned £4.2 million investment in the town.

The CTC, the UK's largest cycling charity also has a strong presence in the town, with the aim to improve awareness of cycling and to encourage further use of it. The group offers weekly rides for people of all ability as well as information on maintenance.

9.2.4 Cycling Maps

Cycling maps (digital and on paper) aid in navigation and are an effective marketing tool for raising the profile of cycling. If the maps are legible, well

designed and effectively disseminated, they can be the nudge that is needed to motivate the 'near market' to start making some trips by bike.

In addition, in order to maximise the benefits of cycling maps, future cycling maps for Colchester should be designed with the following principles in mind:

- The maps should be prepared under the same design guidelines as the promotion of 'Cycle Essex'. This will help to raise their profile and visibility;
- Information included in the maps should correspond with the signage by the roadside;
- Include more information about local points of interest. This might encourage leisure cycling, local tourism and increase patronage to local attractions; and
- Widely distribute the maps (if more than one) in a bundle and on as many online and physical outlets as possible.

Furthermore, official and unofficial routes are also available through mobile phone apps, social media and specialised websites such as *mapmyride.com* and *strava.com*, which allows people to track their routes whilst cycling and share them on various platforms.

For example, there is some interest in cycling at a community level in Colchester, as demonstrated by the website *mapmyride.com* displaying over 3,900 routes recommended in the local area by its users.

9.3 Potential Local Considerations

Local considerations, improvements and factors that may have an effect on encouraging cycling in Colchester Borough include:

- Updating the existing cycle map of Colchester town to include isochrones and mode-switch motivational information;
- Cycle access – promoting increased access to bicycles through the cycle to work scheme, cycle hire, provision of subsidised bikes; and
- National Bike Week events to include a commuter challenge where people using different modes make the same journey in the morning peak – would normally show the advantageousness of cycle travel in the peak time) and a cycle commuter's breakfast where free refreshments are laid on at a central location for all those who arrive by bike.

10 Delivery and Funding

10.1 Delivery

The recent Infrastructure Act (February 2015) places a commitment on the Government to produce a Cycling and Walking Investment Strategy. The strategy would specify the objectives to be achieved and the financial resources available. This new bill shows a change in the government's thinking and a clear commitment to providing for cycling as well as accepting responsibility for targets and funding.

The Department for Transport's Cycling Delivery Plan (October 2014) refers to a new national cycling target, to double the number of cycling stages (trips) nationally over a 10 year period. This new target will be adopted by Essex as part of this strategy.

The Government has also set a target of achieving an annual cycling spend of £10 to £20 per head of the population. In Essex this would equate to approximately £1.7 million to £3.4 million per year spent on cycling.

A step change in the provision of cycling infrastructure and promotion will require an increase in funding over and above the current level of funding for cycling in Essex. Essex County has committed to:

- Ensuring a consistent level of revenue and capital funding to support the delivery of this strategy;
- Increasing the level of funding in Essex from its current level of £2 - £3 per head of population to £10 per head of population by 2025;
- Increasing the utilisation and prioritisation of other funding sources such as developer contributions and central Government grants/allocations; and
- Developing a clear and cohesive methodology for the allocation of cycle funding across Essex Districts.

This will ensure that potential new schemes are not frustrated by a lack of funding and designers and promoters are set free to develop measures that will lead to a consistent growth in cycling numbers, frequency and safety.

10.2 Funding Options

There are a range of funding sources available for the potential schemes identified in the Cycling Action Plans which are as follows:

- Local Highways Panels (LHPs);
- South East Local Enterprise Partnership (SELEP) funding;
- DfT Access Fund;
- Local Growth Funds (LGFs);
- Section 106 (S106) monies.

10.3 Funding for Colchester

The delivery of the potential schemes, soft measures and smarter travel measures will require additional funding and so for this cycling strategy to be successful, it is imperative that funding is provided and sustained over a number of years.

ECC Local Highway Panels are a source of capital funding for local highway schemes and are an appropriate way for new cycle infrastructure to be funded.

Planning contributions from new developments are an important source of finance and can either provide funding towards new or improved cycle infrastructure in Colchester Borough or, if in the vicinity, actually construct schemes as part of the development.

Current UK Government spending is £2.50 per person per year; the aim is to increase this to at least £10 per person per year by 2020/2021. Essex will also aim to spend £10 per person per year, with an initial increase to £5 by 2017.

The Government has a £6 billion Local Growth Fund for cycling and walking and wishes to reduce the administrative budget Local Authorities have to use in bidding for funding.

Other sources of funding also become available from time to time such as from the DfT. Therefore it is important that there are schemes readily available to be put forward for funding, should such opportunities arise.

In addition to the above, other possible funding options include:

- As part of road safety schemes;
- As part of health and safety schemes;
- Sustrans;
- Local growth funds;
- Network Rail and/or rail operating companies;
- Active Essex / Essex Health;
- SELEP Local Growth Funds for local sustainable transport programme;
- European Union funding (e.g. European Regional Development Fund and Rural Development Programme); and
- Acquire and investigate corporate sponsorship opportunities for any high profile public schemes/events.

11 Key Recommendations

In order to create an environment where cycling is normal for the residents of Colchester, existing barriers to cycling should be removed and a series of cycle routes provided with the aim of creating a connected cycle network over time. Cycling infrastructure should provide for both key utility journeys and encourage leisure cycling.

Analysis was undertaken to assess existing travel patterns, not only for cyclists but rail and car commuters as well. Alongside this, the propensity to cycle was also analysed to assess whether there were similarities between those that commute by other methods of travel and the areas where there is a high propensity to cycle.

The existing cycle networks in Colchester Borough should be developed and the following key recommendations can be made for cycle enhancements:

- A review of existing route signage and lighting;
- Maintenance of existing routes;
- Enhancement of East - West routes through Colchester urban area (and railway station), as per the potential Flagship routes, to a high level of design standards;
- Further cycle parking at the railway stations should focus on satiating the considerable demand for commuter trips;
- Fill any obvious gaps in the existing cycle-route network (on alignments with cycle-friendly topography);
- Provide new infrastructure on key roads with cycle-friendly topography but no existing facilities;
- Update the existing cycle map every two years taking on board new innovation in cycle-map design, and promote it and disseminate it widely through a range of channels and outlets;
- Develop Flagship Routes through Feasibility Studies to Detailed Design;
- Promote and market Flagship Routes with ‘Cycle Superhighway’ style branding and disseminating techniques;
- Improve cycle infrastructure links between the north of the town, the railway station and the town centre;
- Improve existing limited cycle provision in parts of Highwoods and Parsons Heath which currently have very limited cycle infrastructure provision within their residential area, to address the high levels of commuter traffic to the town centre and rail stations;

- Cycle route enhancements in the north east of the town, linking it to surrounding areas; and
- Improve linkages between south eastern areas of Colchester, particularly in Old Heath and Blackheath and the town centre, to address the high number of car commuter trips to the town centre.