Castle Point Local Plan **19/07/2024**

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TRANSPORT ASSESSMENT SCOPING DOCUMENT

SYSTRA

CASTLE POINT LOCAL PLAN

TRANSPORT ASSESSMENT

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. EXECUTIVE SUMMARY

2. BACKGROUND/ INTRODUCTION

2.1 Description of Castle Point

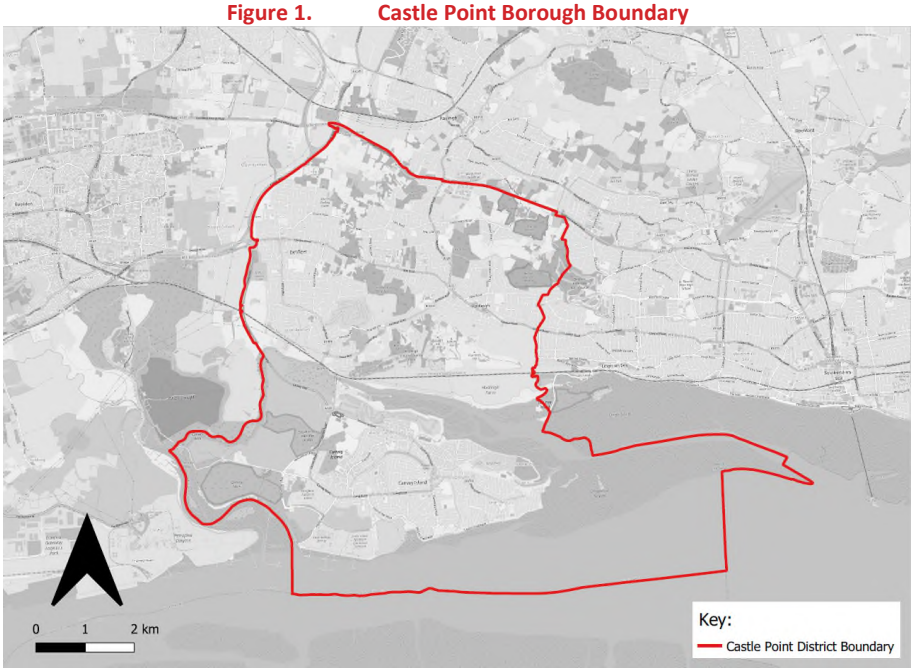
2.1.0 The borough of Castle Point is located in the east of England within the region of South Essex. The Local Planning Authority is Castle Point Borough Council (CPBC), and Essex County Council (ECC) is the Highways Authority. The borough is comprised of Canvey Island to the south and the mainland areas of Benfleet, Thundersley, Daws Heath and Hadleigh. The east-west A13 and north-south A129 run through the borough, and the A127 and A130 run along the northern and western parts of the borough. The Castle Point region is served by a series of existing bus routes, providing connection to Basildon, Southend and Chelmsford. The area is also served by the Benfleet rail station, which provides services to London and Shoeburyness via Southend. Services to London depart approximately every 10 minutes during peak hours, and the journey time is approximately 43 minutes.

2.1.1 The population of the Castle Point is approximately 89,600 people as of the 2021 Census. Approximately 31.6% of the residents of the borough are aged 60 or above. 85% of households in the area own at least one car or van. The primary mode of travel to work is driving a car or van, with 52.8% of residents using this method of travel. The 2021 Census showed that 28.5% of residents mainly work from home. It is noted that the 2021 Census took place during COVID-19 restrictions and therefore does not necessarily present an accurate depiction of travel-to-work data. However, as it presents the most recent Census surveys, it is deemed that it is a good starting point for analysis.

2.1.2 Given the significant reliance on car usage, measures will be considered to include modal shift to active/public transport throughout the borough and mitigations across key pinch points throughout this report, and as part of the options appraisal within.

2.1.3 The Castle Point boundary is indicated in Figure 1 below.

Figure 1. Castle Point Borough Boundary



2.2 Background to the Local Plan

2.2.0 The Local Plan sets out how Castle Point will grow and change into the future, allocating sites for development and setting out policies which protect the environment from harm. The Department for Transport indicate the importance to the Local Plan of establishing a robust transport evidence base to support the preparation of that Plan. A robust transport evidence base ensures that new development is supported by the transport infrastructure needed to mitigate its effects on traffic conditions, and ensure that residents have access to the jobs and services they require to meet their everyday needs.

2.2.1 It is important for local planning authorities to undertake an assessment of the transport implications in developing or reviewing their Local Plan so that a sustainable transport network can be put in place, encouraging a modal shift from private car usage, toward travel through public transport and active modes as well as identifying any necessary junction improvements, which may still arise to facilitate this.

2.3 What is a Transport Assessment

2.3.0 Define what a TA is here

2.3.1 This Report aims to inform the identification and undertake an initial assessment of development options which could be brought forward in the new Local Plan.

2.3.2 Throughout the following chapters, SYSTRA have undertaken a series of assessments to inform the development of local plan options. This has included assessment of existing transport infrastructure throughout the Castle Point region, analysis of previous Local Plan highway capacity testing, and analysis of potential urban development clusters to determine their potential to deliver improvements to the existing transport network and to understand their impact on the highway.

2.3.3 This TA will assess the potential impact of the development options, with the conclusion providing recommendations for improvement or enhancement of the options for development from a transport perspective.

3. POLICY CONTEXT

3.1 National Policy

National Planning Policy Framework

3.1.0 The National Planning Policy Framework (NPPF) is Planning Practice Guidance which was first published in March 2012 and the latest update was issued in December 2023. It sets out the government's planning framework for England and how strategic policies within Local Plans should be prepared.

3.1.1 Paragraphs 108 to 117 consider the promotion of sustainable transport and notes that "transport issues should be considered from the earliest stages of plan making".

3.1.2 It continues by stating that:

> "The planning system should actively manage patterns of growth …. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making."

3.1.3 Paragraph 106 considers that planning policies should "support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed". It also notes the importance of "attractive and well-designed walking and cycling networks and supporting facilities".

3.1.4 Paragraph 111 reflects upon the highway impact of development, noting that:

> prevention or refusal "on highways grounds" should only be where "there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."

Transport Evidence Bases in Plan Making and Decision Taking

3.1.5 Transport Evidence Bases in Plan Making and Decision Taking is Planning Practice Guidance which was published in March 2015. First it asks why should a planning authority establish a transport evidence base for Local Plans?

> "It is important for local planning authorities to undertake an assessment of the transport implications in developing or reviewing their Local Plan so that a robust transport evidence base may be developed to support the preparation and/or review

> of that Plan. A robust transport evidence base can facilitate approval of the Local Plan and reduce costs and delays to the delivery of new development, thus reducing the burden on the public purse and private sector." (Paragraph 001)

3.1.6 It explains what a robust transport impact assessment of the Local Plan will aid, namely, improving sustainability of transport provision, enhancing accessibility, providing a choice of modes, improving health and wellbeing, supporting economic vitality, improving public understanding of the transport implications of development, enabling authorities to deliver appropriate transport infrastructure and supporting shops and the high street.

3.1.7 A transport evidence base should assess the existing situation and trips over time, assess the opportunities to facilitate sustainable transport and reduce the need to travel, consider cumulative impacts of development on transport networks and the ability of existing infrastructure to meet demand, as well as identifying proposals for transport to meet the needs of the area in the short, medium and long term.

Travel Plans, Transport Assessments and Statements

3.1.8 Planning Practice Guidance states that Transport Assessments may be useful in plan making if local planning authorities are of the view that Transport Assessments can beneficially inform their Local Plans" (Paragraph 001).

3.1.9 Paragraph 006 continues by noting that:

> "Travel Plans, Transport Assessments and Statements can positively contribute to encouraging sustainable travel; lessening traffic generation and its detrimental impacts; reducing carbon emissions and climate impacts; creating accessible, connected, inclusive communities; improving health outcomes and quality of life; improving road safety; and reducing the need for new development to increase existing road capacity or provide new roads. They support national planning policy which sets out that planning should actively manage patterns of growth in order to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable."

The Strategic Road Network and the Delivery of Sustainable Development

3.1.10 While there is no part of the Strategic Road Network (SRN) which falls within Castle Point, National Highways (NH) will likely review any growth which impacts on the SRN. Given that the A13 to the West of Castle Point is part of the SRN the delivery of the plan will likely impact on wider elements of the SRN such as the M25 to the west, significant transport elements such as the Lower Thames Crossing and London Southend Airport. Therefore, guidance pertaining to the SRN remains relevant.

3.1.11 Circular 01/2022 was issued in December 2022 and replaced the previous Circular 02/2013, bringing in a number of changes to the way in which National Highways engages with the Local Plan process. Paragraph 35 states that:

> "Local plans and spatial development strategies should seek to better integrate the SRN with the wider road network and other transport modes to enhance connectivity,

> maximise opportunities to facilitate economic growth and support transport decarbonisation across the country."

3.1.12 Paragraph 19 considers the requirement for sustainable travel to be promoted through all forms of development, stating:

> "[National Highways] will need to be satisfied that all reasonable options to deliver modal shift, promote walking, wheeling and cycling, public transport and shared travel to assist in reducing car dependency, and locate development in areas of high accessibility by sustainable transport modes (or areas that can be made more accessible) have been exhausted before considering options for new connections to the SRN. "

Decarbonising Transport – A Better, Greener Britain

3.1.13 This report was published in July 2021 and sets out the government's commitments and the actions needed to decarbonise the transport system in the UK. It explains the:

- pathway to net zero transport in the UK
- the wider benefits net zero transport can deliver
- the principles that underpin the approach to delivering
- net zero transport

3.1.14 The plan has three strategic principles; accelerating modal shift to public and active transport, decarbonising road transport and decarbonising how we get our goods.

> "Local authorities will have the power and ambition to make bold decisions to influence how people travel and take local action to make the best use of space to enable active travel and transform local public transport operations."

Cycling Infrastructure Design Local Transport Note (LTN 1/20)

3.1.15 Any design of new cycle routes will be required to be consistent with the Government's Department for Transport Cycling infrastructure design (LTN 1/20) and to be coherent (allow people to reach day to day destinations easily); direct, safe, comfortable and attractive. ECC will seek compliance to be demonstrated throughout any scheme; in particular at junctions and proposed pedestrian and cyclist crossing structures. If full compliance is not achievable the reasoning should be provided, and these departures should be agreed on a case-by-case basis.

Bus user priority (LTN1/24)

3.1.16 LTN 1/24 was published by the Government in March 2024 and focuses on how to deliver priority for bus services in England, building on the National Bus Strategy (NBS) which set out the vision for bus services in England outside London. The main aim of the strategy is to increase bus journeys, firstly by returning the overall number of journeys made by bus to pre-

Covid levels, and then to further grow bus journey numbers. Through Bus Service Improvement Plans (BSIPs) and the establishment of statutory Enhanced Partnerships (EPs) or franchising local communities will benefit from the delivery of more services, simpler and cheaper fares, greener and more accessible buses, and appropriate bus priority measures. This approach was developed to increase passenger numbers and help reduce congestion.

Bus Back Better

3.1.17 Bus Back Better was published by the Government in 2021, and sets out the vision to deliver a better bus service for all in Britain after the COVID-19 pandemic. The strategy seeks to make buses more frequent, reliable, easier to understand and use, and to reduce congestion and pollution levels with increased usership.

3.1.18 The Strategy notes the importance of the role of Local Transport Authorities in establishing partnerships with bus operators, and in producing Bus Service Improvement Plans to deliver a reliable bus service which caters to the entirety of the region.

3.2 Local Policies

Previous Castle Point Local Plan

3.2.1 The existing Castle Point Local Plan was adopted in November 1998. Having been saved in its totality until September 2007, only certain policies have remained in place since. Those of relevance to the developing Local Plan are described below.

3.2.2 Chapter 7 of the Saved Local Plan considers Transport Policy throughout the Borough.

3.2.3 Policy T2 considers the intensification of access that comes through development, stating:

> "Proposals which would result in the intensification of the use of existing accesses or the creation of new accesses onto any trunk, principal or other classified road will, in appropriate cases, require the submission of a Traffic Impact Study demonstrating the ability of the highway network to accommodate the proposed development."

3.2.4 Policy T11 considers the construction of cycleways throughout the borough, stating:

> "The council will seek the provision of cycleways within the construction of new roads, where appropriate, with the long term intention of securing a borough-wide network of cycleways."

3.2.5 Policy T12 considers the improvements toward bus networks throughout the borough. It is noted:

> "Where appropriate, the council will seek to secure improvements to bus services in the borough through the use of appropriate traffic management measures, subject to the availability of resources. The council will also encourage the highway authority to take into account opportunities for improved public transport infrastructure when considering highway schemes."

Essex Local Transport Plan

3.2.6 The third Essex Local Transport Plan (LTP3) was published in June 2011. The Plan sets out a vision to plan for longer term provision of adequate services to support the Essex region through public and active modes of transport.

3.2.7 It is acknowledged that the fourth Essex Local Transport Plan (LTP4) is in development. With the progression of the emerging LTP4, it is acknowledged there will be updates surrounding the Local Plan policy section and next iteration of the Transport Assessment and will be amended with further communication from Essex County Council.

3.2.8 Walking and cycling through the main towns of Essex is commented on in the LTP 3, with the continued development of local footpaths and cycle routes. In particular, it is noted that a priority is the addressing of current gaps in routes and improving signage, in order to improve connectivity between residential and employment areas, schools and public transport interchanges (p.45).

3.2.9 As part of Policy 4 – Public Transport, the LTP provides a framework for improving the local bus network throughout Essex, the Enhanced Partnership agreement focuses on the cooperation between the Council and local bus operators to improve the punctuality of buses on routes, including the use of cost-effective bus priority measures, and to ensure accurate and up-to-date bus information is provided (p.53-54). This policy is expanded upon with the Essex Bus Service Improvement Plan and related Castle Point Area Review.

3.2.10 As a noted priority, providing bus services across the region is in part to provide an integrated public transport network across the Thames Gateway South Essex area, connecting homes with jobs, retail, healthcare, leisure and education facilities through sustainable modes of transport (p.58).

3.2.11 Policy 14 of the LTP is based around cycling, and the County Council is to promote the benefits of cycling, improve the cycling facilities throughout the region, develop existing networks, work with schools to promote cycling, and integrated Public Rights of Way to form continuous routes.

3.2.12 Policy 15 is based around walking and the public rights of way. This policy is built around promoting the benefits of walking, facilitating a safe walking space for all who use it, and creating a signage system which furthers the ease of navigation and routing.

3.2.13 Given the timescales since the adoption of LTP3, the ECC transport policy is comprised of the following:

- the Local Transport Plan (2011) is the Essex Transport Strategy (LTP3).
- Given policy evolution since the adoption of LTP3, due consideration should be given to more recent documents such as Net Zero: Making Essex Carbon Neutral (ECAC) and the Transport East: Transport Strategy (endorsed by ECC in July 2022). These place a greater emphasis upon the provision and use of sustainable transport and the decarbonisation of the transport network.

3.2.14 LTP4 will reflect and formally incorporate the revised policy framework contained within Net Zero: Making Essex Carbon Neutral (ECAC) and the Transport East: Transport Strategy LTP4 will cover the following three strategic themes:

- Supporting People, Health, Wellbeing, and Independence
- Creating Sustainable Places and Communities
- Connecting People, Places and Businesses

3.2.15 The FRH is being revised to better reflect the new ECC Safer, Greener, Healthier campaign through a new Place and Movement Framework (PMF). This will focus on the function of a place and priority given in the first instance to pedestrian and cycle movements, and then access to high quality public transport. The PMF is to be based on different street and road types recognising the variation in function across Essex. Each street and road type will perform a different function and modal priority, each with different priorities.

3.2.16 LTP4 will comprise supporting Implementation Plans (area based) covering both the longer-term pipeline of projects and a shorter-term transport programme. It will also comprise a number of activity-based documents including the Bus Service Improvement Plan (BSIP); Sustainable Travel Planning; EV Charging Strategy; Essex Cycling Strategy, Local Cycling and Walking Infrastructure Plans (LCWIPs); Transport Technology Strategy; Network Management Plans and Maintenance Strategies. The ECC Development Management Policies will also be reviewed. These will inform Local Plan preparation and other ECC plans and strategies.

3.2.17 The ECAC recommendations further endorse the decarbonisation of transport and seeks to achieve net zero carbon transport emissions in Essex by 2050. Transport strategy will now comprise an Avoid, Shift, and Improve approach:

- **Avoid:** to encourage residents to avoid or reduce unnecessary private car journeys through changing travel behaviour with regards how and why we are travelling.
- **Shift**: to embrace a shift in the use of active and sustainable modes of transport such as walking, cycling, and taking the bus or train to encourage their use and reduce pollution and congestion.
- **Improve**: where road journeys are essential vehicle efficiency needs to be improved by making alternatively fuelled options, such as electric vehicles. It must be made easier for people to take alternative methods of transport and to improve their reliability and quality.

Transport East Strategy

3.2.18 Transport East is the sub-national Transport Body for Norfolk, Suffolk, Essex, Southend and Thurrock, formed in 2018. Transport East's role is to set a regional transport strategy, provide a single regional voice for transport investment, and support the acceleration of regional transport priorities.

3.2.19 Transport East adopted its Transport Strategy to 2050 on 11th July 2022, which has been formally endorsed by ECC, as the relevant Transportation and Highway Authority. This Strategy sets a single regional voice for transport investment and supports the acceleration of regional transport priorities. It identifies the following four priorities.

- **Goal 1** – Reduce demand through local living by making it easier for people to access services locally or by digital means
- **Goal 2** – Shift modes by supporting people to switch from private car to active and passenger transport, and goods to more sustainable modes like rail

- **Goal 3** – Switch fuel with all private, passenger transport, fleet and freight vehicles switching to net zero carbon fuels at the earliest opportunity
- **Goal 4** – Zero carbon growth by supporting authorities and developers to plan, locate and design new development that reduces the need for people to make carbon intensive transport trips in the future

Essex Bus Strategy

3.2.20 The Essex Bus Strategy was published in February 2015. This Strategy sets out the planned growth to the local bus network surrounding the region, with the aims of delivering a high quality service which can carry more passengers.

3.2.21 Proposal 3 of the Strategy centres around better, well used services, with proposals such as:

- Linking transport operators into the local transport highways panels to establish infrastructure measures, as well as improving direct liaison with ECC;
- Maximising the inclusion of bus infrastructure and funding for new and improved services into development frameworks; and
- Seeking to identify and nurture new services with the aim of these eventually reaching a point of commercial viability.

3.2.22 Proposal 5 is related to the provision of good customer information, with proposals to:

- Develop consistent, real time, customer planning capacity and information on bus routes, timetables and live bus information; and
- Enabling communities and individuals to identify potential new bus routes and needs.

3.2.23 Proposal 8 centres around focused Local Planning, with the aim of developing services which meet the needs of local communities. Proposals include:

- Joint reviews with local authorities, community groups and operators to look at each area, identifying opportunities for a better network, including routes and frequency;
- Using digital information from communities to identify demand for new bus routes; and
- Supporting the growth of key commuter and inter urban routes in the commercial sector to provide a strong base for the broader network.

Essex Bus Service Improvement Plan

3.2.24 The Essex Bus Service Improvement Plan (BSIP) was published in 2021, and sets out the local issue across Essex County relating to the bus network and how local authorities will be able to tackle them until 2026.

3.2.25 The plan sets out the vision to encourage Essex residents to rethink their modal choice of travel, with a guidance to create a high-quality environment with the improvement of air quality and reduction of emissions, contributing to independence for residents of all ages, and to provide an accessible connection to key local areas.

3.2.26 The BSIP sets out the process for the subsequent, more localised Area Reviews throughout Essex County.

Castle Point Bus Network Review

3.2.27 As part of the response to the Bus Back Better strategy, a series of local area studies were undertaken by Essex County Council to review the local bus network, from which to inform future developments and guide future partnerships.

3.2.28 The Review establishes a number of issues and opportunities surrounding Castle Point's bus network; most notably seen through issues of congestion and reliability of service – particularly on the main entries to Canvey Island and on the A13.

3.2.29 A series of aspirational corridors are identified by the Review; noting that the core layout of the network is not to be altered given the way in which it is well-suited to support core networks. As such, proposed core networks are most notably centred east-west along Long Road, north-south along Canvey Road to the north of Canvey Island, and east-west along London Road.

Essex Cycling Strategy

3.2.30 The Essex Cycling Strategy was published in November 2016. The purpose of the strategy is to set out the key elements which will lead to a significant and sustained increase in cycling in Essex, establishing it to be a 'normal' mode of travel for the public.

3.2.31 The main objectives of the strategy are cited to:

- Double the number of cycling trips in Essex from 2014 levels by 2025 at monitored sites and key routes;
- Cultivate a mind-set that sees cycling as normal, enjoyable and everyday activity for the majority of short trips; and
- Establish cycling as an enjoyable participation activity for health gain and a popular competitive sport.

3.2.32 The Strategy is to be enacted upon through the establishment of cycling facilities to segregate cycle routes from motor-vehicles and pedestrians; the implementation of "Quietways" through urban areas to inter-connect cycle routes on quiet residential streets; encouraging cycle awareness through Bikeability training for both adults and youth; and encouraging employers to offer a salary sacrifice cycle to work scheme for their workers.

3.2.33 A revised Draft Essex Cycling Strategy has been subject to public consultation in June 2024 and seeks to support more people to cycle more often. The strategy is part of wider set of plans to make Essex safer, greener and healthier, and to provide more sustainable travel choices for everyone. This strategy will help ECC secure funding to improve and maintain cycling facilities and infrastructure across the county, which will transform cycling into a natural and attractive option for travel and leisure.

It incorporates the following vision:

To see more people, of all abilities, ages and backgrounds, cycling in Essex more safely and more frequently.

3.2.34 The draft Strategy proposes six outcomes to guide future actions and investment for cycling in Essex, namely:

- Changing Perceptions – Cycling is a natural and attractive option for people and businesses in Essex
- The Cycle Network – The current and future cycle network in Essex is safe, convenient, and accessible for all types of trips
- Communities, Health and Equality – Cycling helps to create more inclusive and connected communities, as well as improving health and reducing inequalities
- The Economy – Cycling contributes to the economy and brings jobs and employment to local communities
- The Environment – Cycling improves the environment in Essex by reducing emissions, noise, congestion and enhancing quality of life
- Leisure Cycling – Essex is a popular destination for leisure, cycling and tourism.

3.2.35 To achieve these outcomes, a range of activities and actions that ECC will deliver with our partners are identified in the strategy consultation.

Castle Point Borough Cycle Action Plan

3.2.36 The Castle Point Borough Cycling Action Plan was published in January 2018, in order to identify how cycling levels can be increased in the Borough, prioritising funding for new cycle schemes throughout Castle Point to connect residential areas with employment hubs, and creating opportunities to increase recreational cycling in the Borough.

3.2.37 The Action Plan assesses the potential barriers to further cycle networks through the Borough, and determines a series of potential on-road and off-road cycle routes in order to enhance the cycle accessibility throughout the Borough. These schemes still need to progress through the design and feasibility stages.

Castle Point Local Cycling and Walking Infrastructure Plan (LCWIP)

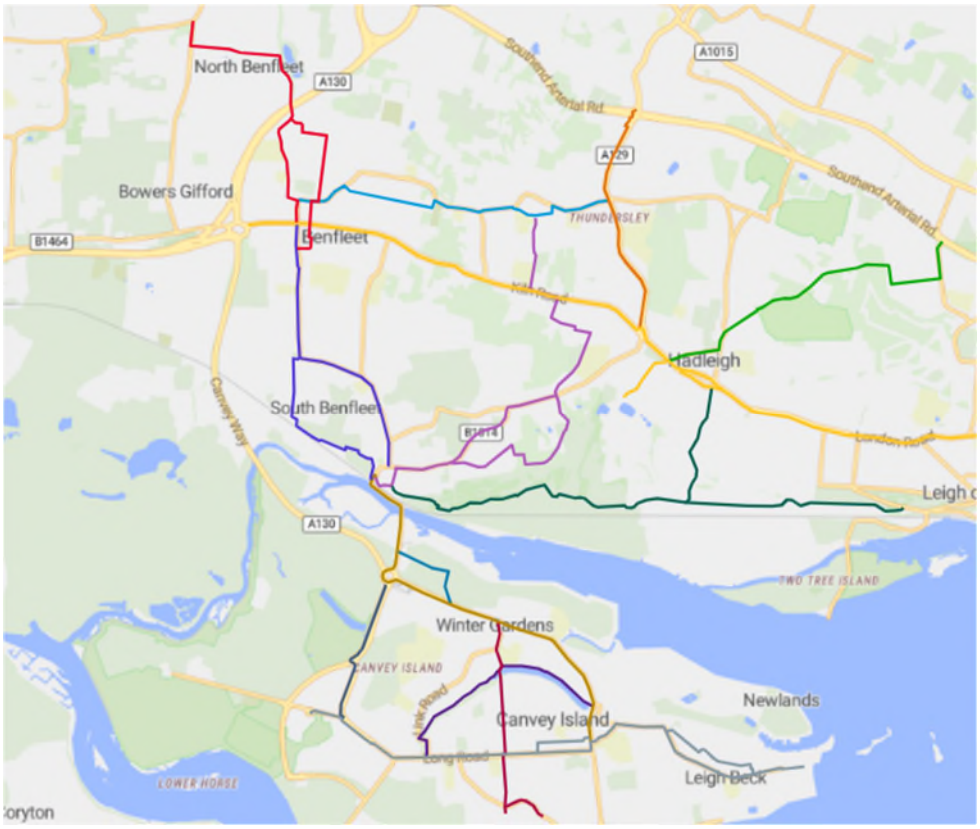
3.2.38 ECC are currently in the process of developing a new Local Cycling and Walking Infrastructure Plan (LCWIP) which is an infrastructure plan intended to help guide active travel policies and priorities as well as provide a framework and context to secure investment for new and upgraded walking and cycling routes within the borough on roads and streets managed by ECC or CPBC as local highway authority.

3.2.39 The figures below show the walking and cycling corridors which are currently being considered for inclusion in the LCWIP. Whilst these are not yet finalised and are subject to future design, feasibility and funding, it is considered that the coverage of the routes

and the destinations served are reasonably well matched to existing demand and/or locations with potential for increased levels of trip-making by active modes.

Figure 2. LCWIP (in development) – Potential Walking Corridors

Figure 3. LCWIP (In development) – Potential Cycle Route Corridors



3.2.40 Tables which set out the start and end points of each route, and provide a description of the intermediate destinations served, have been provided by ECC and these are appended to this TA report for reference.

3.2.41 The walking route proposals are focused on Canvey Island and the northern areas of the borough; it is considered that this is due to the pedestrian network being relatively well developed in the central area. The cycling coverage which encompasses the whole borough is more comprehensive and reflects the need to fill gaps in existing provision to enable a wide range of local journeys to potentially be made on these routes.

3.2.42 It is highly likely that, as options for the Local Plan spatial strategy develop, there will be opportunities to build upon the current LCWIP corridor proposals and strengthen connections to the potential allocation sites. Where appropriate, these sites will be required to provide and fund links into these corridors and/or provide new/enhanced routes therein. This has been considered as part of the TA work which is described in subsequent sections of the report.

3.3 Summary

3.3.0 The purpose of this Report is to establish the current transport infrastructure and usage, and explore what are the most sustainable options for future development in the borough and how transport infrastructure could be enhanced to better serve the proposals in the emerging Local Plan. Within the policies reviewed there are a number of common themes which the assessment must be cognisant of:

- Locating development in way which optimises the use and value of existing and planned active and sustainable transport infrastructure,
- Reducing the need to travel through designated land use and development policy areas as a through-route,
- Enhancing active travel and public transport networks,
- Decarbonising the impact of transport through new technology for journeys which must be undertaken by road,
- A proportionate use of traffic data and models, with a move away from predict and provide to decide and provide (sometimes known as vision and validate), and
- Developing a robust evidence base to explain the current and future challenges and transport's role in meeting these.

3.3.1 In line with decide and provide principles, the Transport Assessment will test options in transport and land use terms which can facilitate active and sustainable travel patterns, and sustainable development. It does not seek to merely alleviate the highways impacts of development through piecemeal highway junction or link upgrades. Instead, it indicates where specific active transport infrastructure could be located, and public transport routing can be altered through a suite of interventions to promote sustainable mobility and the reduced need to travel through the location of development.

4. TRANSPORT CONDITIONS REVIEW

4.1.0 Beyond the wider policy review described in the previous chapter, a series of documents have been produced by both Essex County Council and Castle Point Borough Council which assist in establishing the existing transport conditions surrounding the area, and how these might be improved to form the future baseline. This is expanded upon through an assessment of the vehicle hierarchy through the Castle Point region, using the Canvey Town Centre Masterplan to indicate future modal shift.

4.2 Document Review

4.2.0 As a means to establish the existing transport provision through the Castle Point borough and wider Essex region, the documents considered through this evidence base are:

- Essex County Bus Service Improvement Plan including Castle Point Area Review;
- Essex Local Transport Plan 3 (LTP3);
- Transport East Strategy;
- A127: A Corridor for Growth;
- Castle Point Borough Cycle Action Plan;
- Draft Essex cycling Strategy
- Draft Essex Walking Strategy 2019-2025.

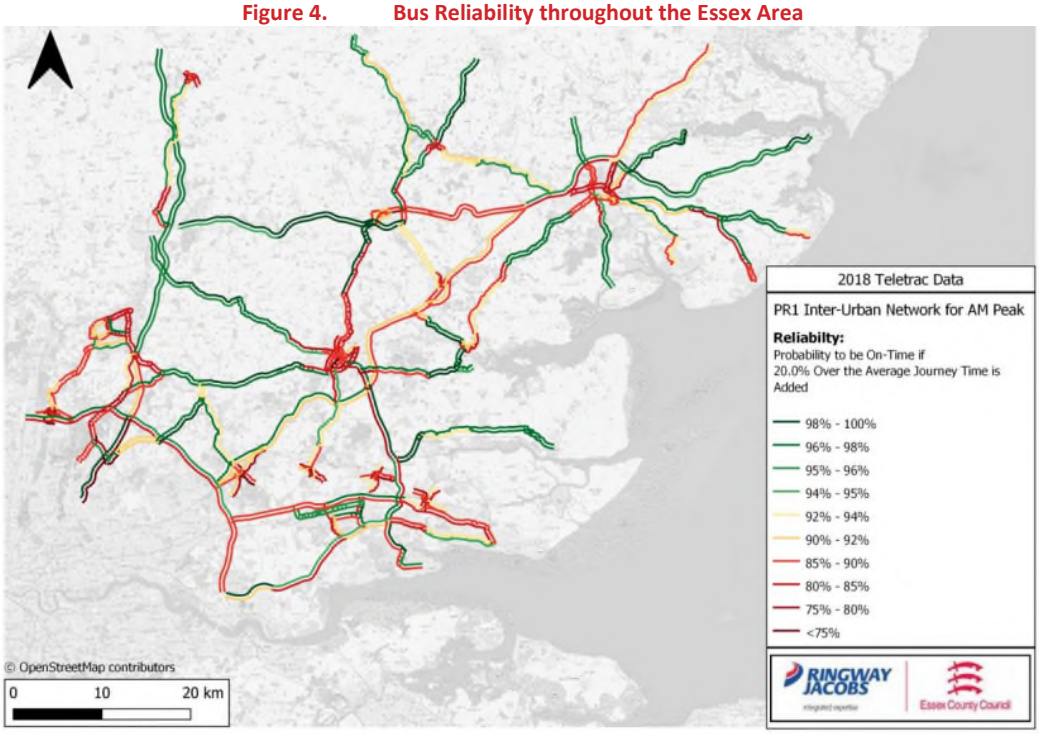
Existing Bus Networks

It is suggested that throughout Essex, 5.53% of all trips are taken by Bus, as opposed to 5% nationally (Essex County Bus Service Improvement Plan (BSIP), para 148).

4.2.1 The BSIP suggests there are significant delays within large market towns such as Braintree, in which a mix of limited road space and increased congestion results in delayed service (para.460). However, the BSIP presents the overall reliability of the bus network throughout

Essex, with the figure below suggesting that the southbound bus services through the Castle Point area are more reliable than the northbound, with a reliability of up to 100% through the Canvey Island area southbound, as opposed to 80-85% reliability northbound through the area.

Figure 4. Bus Reliability throughout the Essex Area



4.2.2 In an assessment of bus accessibility of small local areas known as 'output areas' were considered. Within Essex, it was determined that Castle Point has the second highest percentage of output areas with a "Low" accessibility score, with 33.4%. Only Rochford has a higher number of areas with a low score, with 35.5% (BSIP, Table 13).

4.2.3 In regard to bus lanes, it is noted that Castle Point has a dedicated bus lane on the A13 stretching from the London Road/Manor Road junction to London Road/Kents Hill Road junction, additionally eastbound along the A13 between London Road/Morrisons Supermarket and 251 London Road, both at a length of 321 metres (BSIP, Table 17).

4.2.4 Section 7 of the BSIP contains a series of barriers to improving the bus network throughout the Essex region. Key barriers include:

- The hesitance of bus operators to expand their routes beyond what they deem as their "core markets" (para. 386).
- The age of the Essex bus fleet, being at an average of 12.4 years old (Table 14).

4.2.5 In addition to the above, a minimum of 148,000 new homes are forecast to be built by 2040 across Essex (including Southend and Thurrock), including new garden communities and large scale urban extensions, this is anticipated to create the opportunity to improve public transport services in number and quality to the level of growth and usage anticipated through policy such as Bus Service Improvement Plan (para. 390).

4.2.6 Also of note to the Castle Point local transport study is the Southend Bus Service Improvement Plan. It is commented on page 18 that many of the bus services operating in Southend operate cross-boundary with Castle Point and Rochford, and therefore some improvements in the Southend Council Area have a knock-on effect into these surrounding regions, and vice-versa.

Future Bus Networks

4.2.7 For the County of Essex, there are three County-wide targets set out in the BSIP (paras. 518 – 524):

- Target One: To increase the reliability of 95% of services operating within the statutory window (current reliability is at 94%).
- Target Two: Passenger journeys to return to pre-Covid levels of 40.7 million yearly journeys. It is commented that in many rural areas, patronage is as low as 80% of pre-Covid levels.
- Target Three: To maintain a satisfaction level of 86% that was seen pre-Covid.

4.2.8 Castle Point Borough Council falls within Priority 2 of the three priorities of the Levelling Up Fund, as noted in the Transport East Strategy (Table 1.3.1). As part of this, £20 million has been allocated to the borough, with the proportion to be delegated to transport to be determined by the Canvey Island community.

4.2.9 The importance of improving the bus network throughout the East region (Norfolk, Suffolk, Essex, Southend-on-Sea and Thurrock) is noted as a key priority in the Transport East Strategy. It is recommended that the Local Bus Service Improvement Strategies are followed for more visions more specific to local areas, however the general recommendations are noted as being the provision of stable and increased government funding for bus services, coordination of different public transport options to make journeys easier to plan and make, and prioritising bus services at congestion hotspots (TE Strategy, Figure 4.3.4).

4.2.10 Priorities for future development within Essex's LTP3 include providing an integrated public transport network across the Thames Gateway area, connecting homes, jobs and education through sustainable modes of transport (p.58). A further scheme referenced is the expanded package of £6 million to make improvements along the A13 Basildon to Hadleigh (2012). This is to make businesses more accessible through a more interconnected bus network, and make bus usage more attractive through the improvement of the service through improvements to bus stops and safety improvements through mitigations such as the signalisation of Tarpots junction (p.59). This project has now been completed.

Walking/Cycling

4.2.11 The improvement of walking and cycling facilities through the main towns of Essex is a priority of the LTP, with the continued development of local footpaths and cycle routes a key aim. In particular, a priority is the identification of current gaps and opportunities in routes and improving signage, in order to improve connectivity between residential and key destinations such as employment areas, schools and public transport interchanges (p.45).

4.2.12 The Draft Essex Walking Strategy 2019-2025 (2019) sets out the key barriers, challenges and opportunities to increase levels of walking throughout Essex (p.4). Within the strategy, key objectives are referenced such as increasing walking for everyday trips; improving road safety

for pedestrians; and encouraging walking by changing attitudes and behaviour (p.20). It is proposed walking networks could be improved through the development of coherent walking networks to encourage directness of travel, improving safety through continuing footway maintenance, and promoting walking through workplaces and schools to encourage changing behaviour towards walking.

4.2.13 Draft Essex Cycling Strategy (2024) sets out the vision to support cycling throughout Essex. It emphasises the importance of creating a cycle network which is accessible for all through promoting coherent, direct, safe, comfortable and attractive routes. The strategy also states the importance of ensuring cycling is seen as a natural everyday mode of transport through the improvement of safety, supporting local organisations and initiatives, and through the improvement of information availability surrounding routing, training and community activity.

4.2.14 At the local level, the emerging LCWIP is an infrastructure plan to guide active travel policies and priorities; as well as provide a framework and context to secure investment. The draft corridors in the LCWIP are aligned with the principles set out in the draft Walking Strategy and are also understood to be compatible with the emerging LTP4 priorities. It is expected that Local Plan sites, once appraised and selected, will be required to consider implementing and funding new schemes and/or improving connectivity to existing routes within these corridors.

A127

4.2.15 The A127 is a key strategic inter-urban route, and it is a noted priority of the South Essex Thames Gateway to improve journey times and reliability of road networks (LTP, page ix). Traffic flows on the A127 are the highest of any Essex County Council-operated road (p. 48).

4.2.16 The Local Transport Plan indicates the importance of the A127 as providing an important role in maintaining the competitiveness of the Essex economy by providing access to the main urban areas, the strategic highway, and international gateways (p.159).

4.2.17 The 'A127: A Corridor for Growth An Economic Plan"' (2014) document notes the importance of the A127 to Castle Point borough, particularly in regard to the planned transformation of Hadleigh Town Centre and Canvey Town Centre.

4.2.18 Public perception of the A127 is that it is an old and sub-standard road, which needs repair and refurbishment. The route is seen as unreliable, and this is considered to be a major deterrent to any potential investors. It is felt that the A127 is in urgent need of funding, as otherwise the economic potential of the surrounding Essex area will be significantly reduced (A127: A Corridor for Growth: An Economic Plan (2014), p.13). Parts of the A127 are also subject to Air Quality Management Areas. The A127 corridor is of strategic importance for south Essex and an essential access point for Castle Point residents and businesses to the wider highway network. An A127 Task Force has been established to co-ordinate transport requirements within the A127 corridor, formed by ECC and partners (including ECC, SEC (South Essex Councils), London Borough of Havering and Highways England/National Highways.

4.2.19 It is commented in the South Essex Strategic Infrastructure Position Statement (2019) that there are planned major highways projects along the A127 growth corridor. It is commented

that a Statement of Common Ground has been prepared between Havering, ASLEA and National Highways focusing on the A127, featuring large-scale developments such as the A127 Fairglen Interchange (p.26).

Rail

4.2.20 The LTP3 comments that the rail network provides links between Southend, Thurrock and London, with over 20,000 people commuting to London from the Thames Gateway each day. It is noted that a major issue with the continued usage of this service is the lack of connectivity between the Southend Victoria to Liverpool Street and Thameside to Fenchurch Street rail routes, highlighting the requirement to have a strong connecting bus service (p.39).

4.2.21 It is commented that a significant issue with the existing rail network is the lack of support for those less able. Such is seen through the statistic that one in three rail stations have either only partial step-free access or no ramp for train access (LTP, p.104).

4.2.22 The close proximity of Castle Point to the Thames Gateway encourages consideration towards its related infrastructure. In relation to the rail network, it is commented that the speed and reliability of the network is to be improved by working with the Train Operating Companies and Network Rail to identify opportunities to increase capacity, introduce faster trains and reduce journey times. Also, through taking a coordinated approach to improving sustainable access to rail stations across the gateway (p.130).

Taxis

4.2.23 Taxis play an important role in sustainable transportation. Fast and reliable taxi services can provide an attractive alternative to private vehicle ownership. Depending on personal situation and extent of use, using a taxi service is more economical than owning and maintaining a private vehicle.

4.2.24 Castle Point is served by taxis as a mode of transport. Better facilities for taxi users and drivers with an understanding of all passenger needs are to be provided through Quality Taxi Partnerships accessible to all Essex residents. Particular focus is to be provided in areas which have poor transport coverage (LTP, p.109).

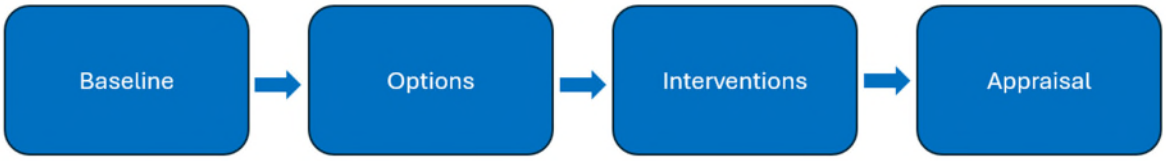
4.2.25 Comment is made on the support to be offered to the region in improving the fleet of taxis in order to make them the most sustainable modes of travel possible, offering support for local authorities in their transition towards zero-emission technology (Transport East Strategy, p.50).

5. METHODOLOGY

5.1 Assessment Timeline

5.1.0 An indication of the assessment process is displayed in the figure below.

Figure 5. Castle Point Local Plan Assessment



5.1.1 The process shown above is defined as:

- **Baseline:** The establishment of the existing transport conditions and context throughout the Castle Point region.
- **Options:** Consideration of the Development Options as defined by Castle Point Borough Council, and the impacts of developing their identified clusters.
- **Intervention**: The identification of "gaps" or "missing links" in specific areas within the Castle Point borough, and what might be required to rectify them.
- **Appraisal:** A conclusion will be reached on the most effective option to pursue, considering the previously discussed Baseline, and Schedule of Interventions relating to the localised areas.

5.2 Local Plan Options

5.2.0 With the progression of the Local Plan, a series of options have been developed through which to prioritise development in the Castle Point borough. Each option considers a series of clusters of development sites in different locations within the borough.

5.2.1 The options are as follows:

- Option 1a: Draft Urban Capacity only;
- Option 1b: Draft Urban Capacity + restructure some employment land for housing
- Option 1c: Increase density on Draft Urban Capacity sites
- Option 2a: Draft Urban Capacity, with the addition of c50Ha Green Belt release;
- Option 2b: Draft Urban Capacity, with the addition of development at Northwest Thundersley; and
- Option 3: Urban Capacity, with the addition of c120Ha Green Belt release.

5.2.2 Through the undertaking of a series of transport-related assessments, SYSTRA will establish the cumulative transport impacts of the various local plan options, and identify the potential to mitigate that impact.

5.3 Site assessment criteria

5.3.0 The Draft Urban Capacity sites are constant across all options, in line with the NPPF and the Council's aspiration to produce an urban-first Local Plan. Sites contained within the Draft Urban Capacity have been split into clusters for assessment in this report. The clusters represent potential developments within similar geographical locations and have transportation characteristics which implies they may be suitable for co-ordinated policy approaches within the Plan. A series of criteria was used to establish the most effective for

development, and those which are likely to bear a significant impact on the surrounding road network.

5.3.1 The criteria which have been considered to determine overall development impact on transport network are:

- Proximity to bus stops/bus routes;
- Residential density;
- Proximity to cycle routes;
- Road Safety
- Proximity of development to local services
- Overall capacity of the clusters; and
- Proximity to previously RAG tested junctions.

5.3.2 The previous Red, Amber, Green (RAG) assessment was undertaken by transport consultants Mott MacDonald in 2019 using standalone junction models they assessed key junctions on the network to determine the impact of the now withdrawn plan. Following a review of this process SYSTRA have determined that the assessment of TEMPRO growth to 2033 remains suitable to provide an initial high-level assessment of the highway network and give an indication the potential future base of transport conditions surrounding the Castle Point region in the 2033 Reference Case scenario.

5.3.3 It should be stressed that the previous RAG assessment is only an initial assessment. Once a preferred development strategy has been identified the South Essex Model will be used to fully assess the proposals.

5.3.4 Through the assessment of these various criteria, SYSTRA have identified those development clusters which are predicted to have the greatest impact on the surrounding transport network due to their uplift in congestion. Potential mitigation schemes have been considered which may be required in order to mitigate a clusters impact on the network.

5.4 Assessment Scenarios

5.4.0 With the development of the Castle Point Local Plan, there is the requirement to consider future years for assessment. Throughout the RAG testing, future year scenarios of 2033 TEMPRO growth are presented through the Reference Case (future year without Local Plan in place) Option.

5.4.1 In order to align with this and the Local Plan year of 2043; TEMPRO growth factors have been derived and applied to previously surveyed junction data, in order to gauge the likely growth throughout the Castle Point region.

5.5 Plan Period

5.5.0 The plan period for the Castle Point Plan will be 2023 to 2043.

5.6 Assumptions /Limitations of the assessment

5.6.0 Across the Transport Assessment process, a number of limitations and assumptions are noted in regard to the usage of previous survey data:

- Junction data has been derived from previous Essex survey data, across various years between 2016 and 2021. In order to gain the most complete indication of the data in current and Local Plan future year scenarios, TEMPRO 8.0 growth factors have been applied to the various assessment years. Whilst this is an industry-standard practice, it is noted that there are certain limitations to this, with it not necessarily providing an accurate depiction of the level of development anticipated across local authorities and districts.
- It is assumed that the junction RAG assessments provide a strong degree of accuracy, with the data provided in 2023, and providing an up-to-date and relevant indication of the level of strain on junctions, and concerns for future development taking place in their vicinity.
- It is understood that access to Canvey Island is a contentious issue in the borough. A number of studies have been undertaken looking into the possibility of improving general access and egress from the Island. The most recent report published (2017) assessed several options at a high level to improve access between Benfleet and Canvey Island. It is assumed that providing an entirely new access is unlikely to be feasible solely through local plan development funding at any of the growth options. It is identified in the Transport East strategy in the `Ideas pool' as a project that could deliver strategic priorities but is not yet sufficiently advanced in terms of identified concepts, feasibility studies or pre-Strategic Outline Business Cases. The scheme may be brought forward through work being undertaken at a South Essex level. Meanwhile, other options to improve transportation to and from the island will be explored within this assessment. Such a concept solution will need to be considered from not just transport but also from an industrial and resilience point of view in a wider context being in mind the industrial activity on the Island. It is understood that the priority of development assessment will be focused on the urban capacity clusters. The assessment of Green Belt and North West Thundersley clusters will be used to inform decision making if it is determined that it is necessary to bring sites forward in these locations to meet development needs within the plan period and beyond.

6. REFERENCE CASE / BASELINE

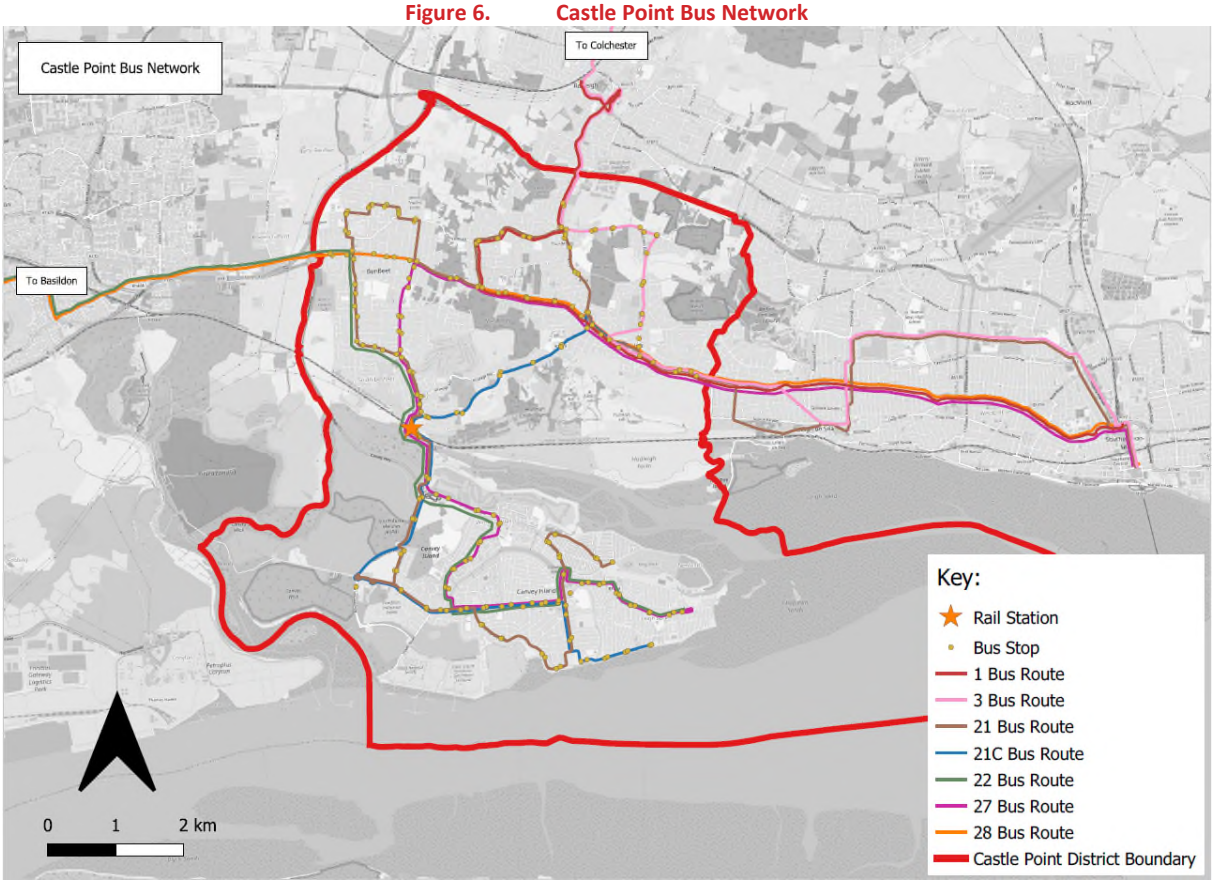
6.1.0 As a means of establishing the baseline accessibility of Castle Point borough, SYSTRA have undertaken desk-based research to understand the surrounding transport links. This has considered the various modes of Public Transport; Walking; and Cycling.

6.2 Public transport

Bus

6.2.0 It is noted that there are seven available bus routes through the Castle Point region. A map of the routes and bus stops are indicated in the figure below.

Figure 6. Castle Point Bus Network



6.2.1 The frequency of the services is indicated in the Table below.

Table 1. Castle Point Bus Frequency

BUS ROUTE	ROUTING	FREQUENCY (WEEKDAY)	FREQUENCY (WEEKEND)
1	Rayleigh – South Benfleet - Hadleigh - Southend	10 mins	15 mins (Sat) 30 mins (Sun)
3	Southend – Rayleigh – Sandon - Chelmsford	120 mins	120 mins (Sat) No Service (Sun)
21	Canvey – Castle Point - South Benfleet – Thundersley – Hadleigh – Prittlewell – Southend-on-Sea	30 mins	60 mins (Sat) 90 mins (Sun)
21C	Canvey – South Benfleet – Hadleigh	60 mins	No Service (Sat and Sun)
22	Canvey – South Benfleet – Pitsea - Basildon	20 mins	20 mins (Sat) 30 mins (Sun)
27	Canvey – Southend	20-30 mins	20 mins (Sat) 30 mins (Sun)

BUS ROUTE	ROUTING	FREQUENCY (WEEKDAY)	FREQUENCY (WEEKEND)
28	Basildon – Pitsea – South Benfleet – Hadleigh – Southend	10 mins	30 mins (Sat and Sun)
827	Canvey – South Benfleet – Hadleigh – Prittlewell – Southend	Single Departure (15:30)	No Service (Sat and Sun)

Source: FirstBus Schedules

6.2.2 The most frequent bus services are routes 1 and 28, with a service departing every 10 minutes throughout the week to Rayleigh, Southend and Basildon from their available access points. The services which serve Canvey Island itself include the 21,21c, 22, and 27.

6.2.3 Whilst there is reduced service on the weekends, route 1 provides service at relatively frequent intervals; every 15 minutes on Saturdays, and every 30 minutes on Sundays.

6.2.4 Bus stops are located throughout Castle Point, with particular clusters located along key routes of the A13 London Road, Long Road, and Canvey Road. It is notable that a vast majority of the bus stops in the local area do not feature bus shelters or RTPI screens, mostly comprising a bus pole and flag.

Rail

6.2.5 Castle Point contains Benfleet Station on the line operated by C2C, which provides a service to London Fenchurch Street, Southend and Shoeburyness and linkages with other main line services operated by Greater Anglia.

Table 2. Rail Service Regularity

TRAIN SERVICE	WEEKDAY SERVICE REGULARITY	WEEKEND SERVICE REGULARITY
London Fenchurch Street	5-24 min	5-24 min (Sat) 30 min (Sun)
Southend Central	4-26 min	4-13 min (Sat) 8-22 min (Sun)
Shoeburyness	30 min	4-13 min (Sat) 8-22 min (Sun)

Source: National Rail

6.2.6 Benfleet Station has step-free access, ramps for train access for the disabled, accessible toilets and waiting rooms.

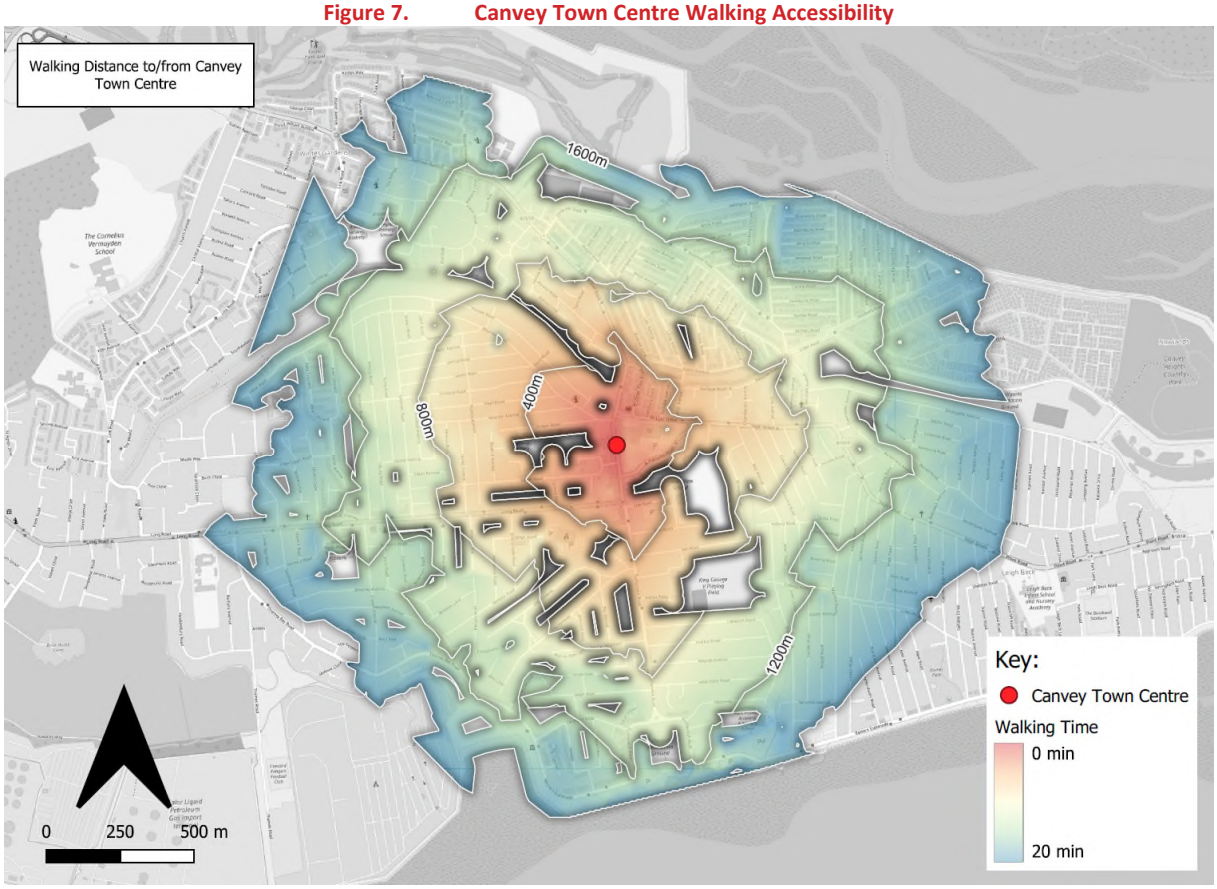
6.2.7 As indicated in Figure 6, Benfleet Station is accessible through four bus routes; the 21, 21C, 22 and 27. These routes provide connectivity to the station from Canvey Island, Benfleet, Thundersley, Hadleigh. .

6.3 Walking

6.3.0 Castle Point is generally well-catered for with walking infrastructure. Footpaths are generally constructed to standard, wide and smooth to facilitate walking as a mode of transport. However, there are areas which may benefit from widening to enhance their use and safety, for example sections of Long Road on Canvey Island are less than 1m wide. Further detail of specific locations is provided in Section 7.3.

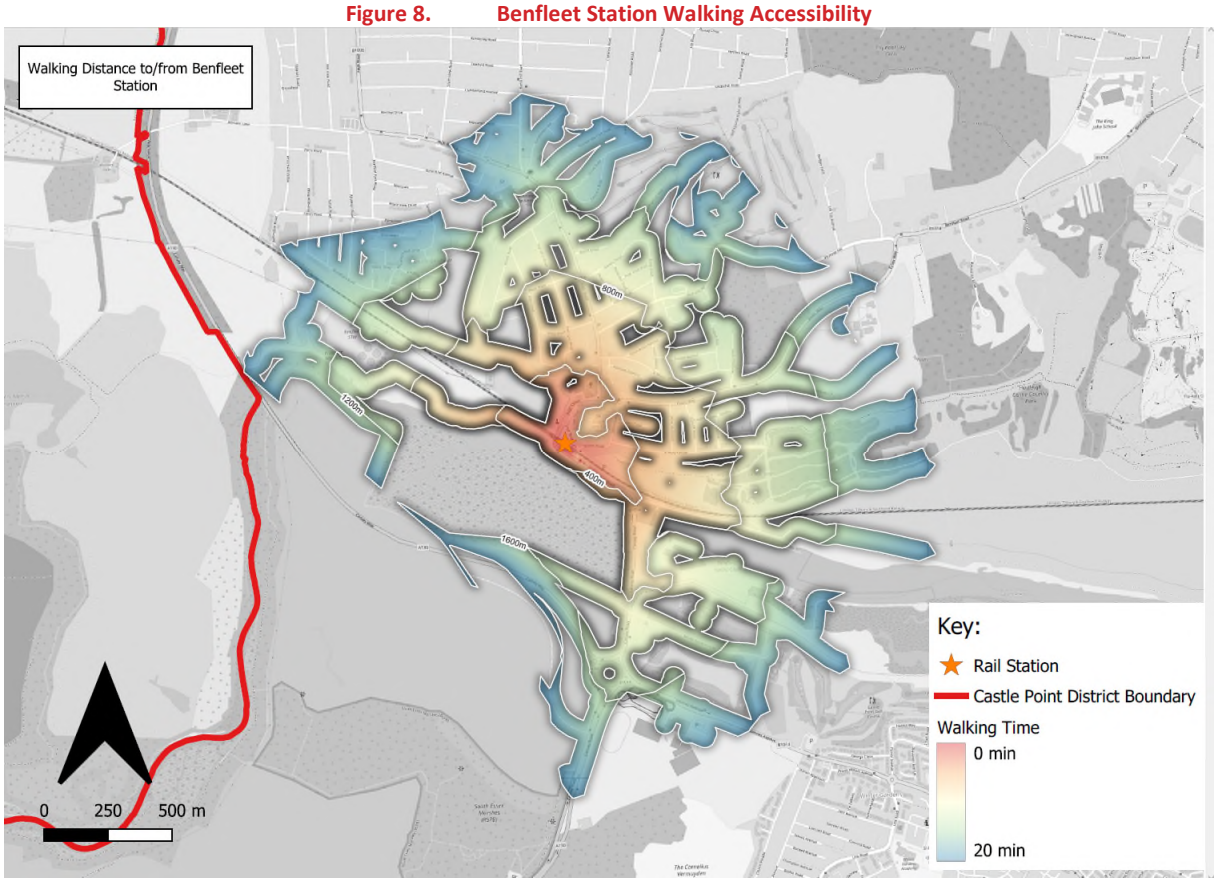
6.3.1 The figures below indicate the walking distances from Canvey Town Centre, and from Benfleet Station.

Figure 7. Canvey Town Centre Walking Accessibility



6.3.2 Canvey High Street, most of Long Road and the beachfront are accessible within a 20 minute walk providing access to shops, leisure and key services. The eastern and western ends of the Island are inaccessible within a 20-minute walk of the town centre, including Charfleets Industrial Estate to the west and Canvey Island Football Club to the east.

Figure 8. Benfleet Station Walking Accessibility



6.3.3 Figure 6 indicates the accessibility by walking surrounding Benfleet Station. It is indicated that the station is beyond reasonable 20-minute walking distance for most of Canvey Island. However, the station is accessible within a 20-minute walk from a series of residential areas in South Benfleet to the east and west.

6.4 Cycling

6.4.0 An indication of the cycle accessibility surrounding both the Canvey Town Centre and Benfleet Station are indicated in Figure 9 and 10 below.

Figure 9. Benfleet Station Cycling Accessibility

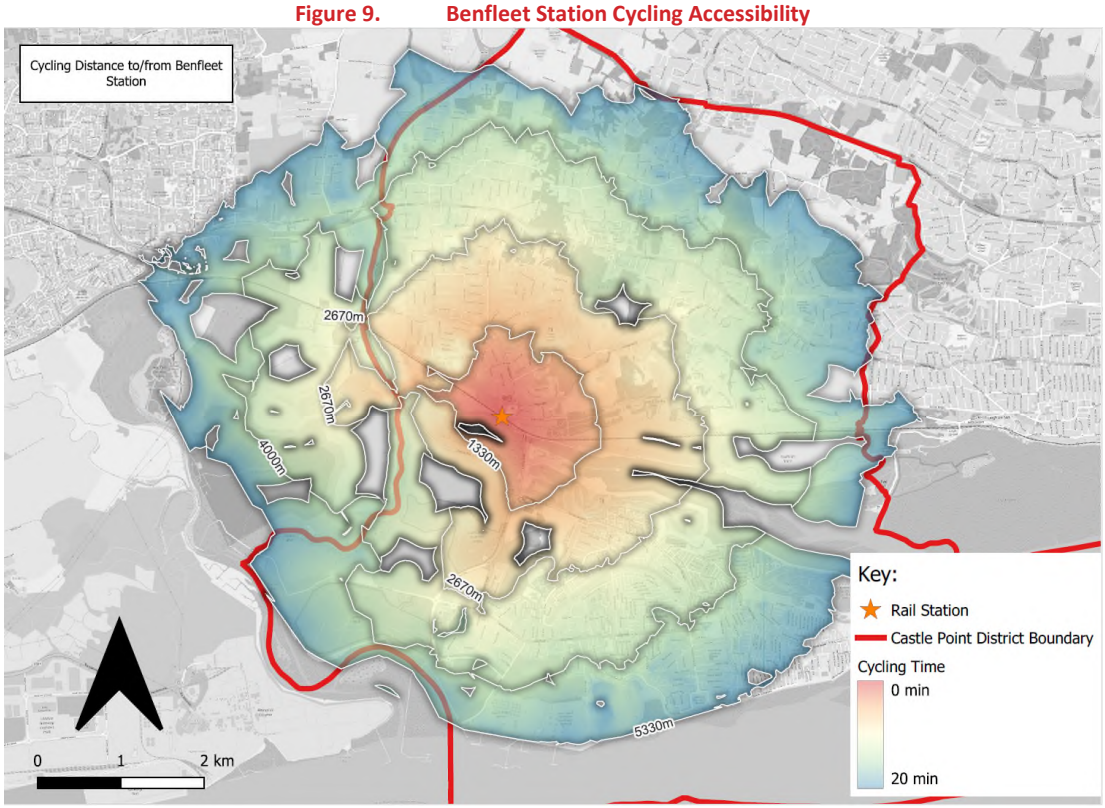
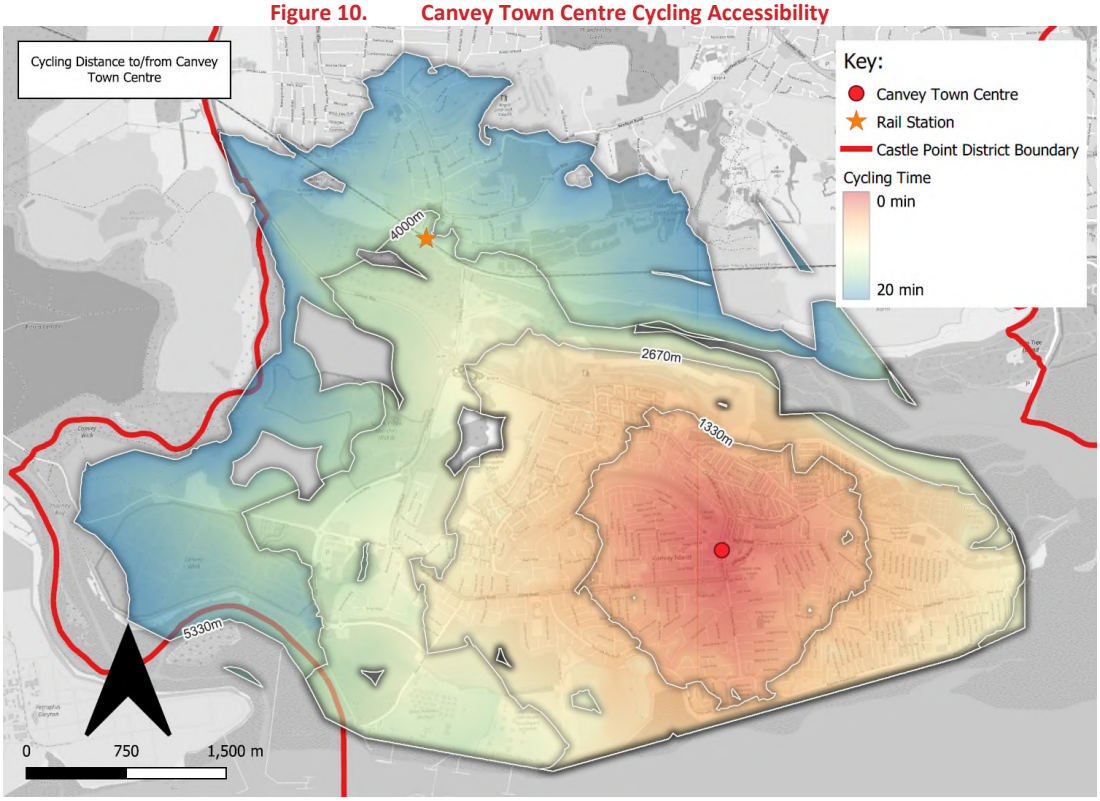


Figure 10. Canvey Town Centre Cycling Accessibility

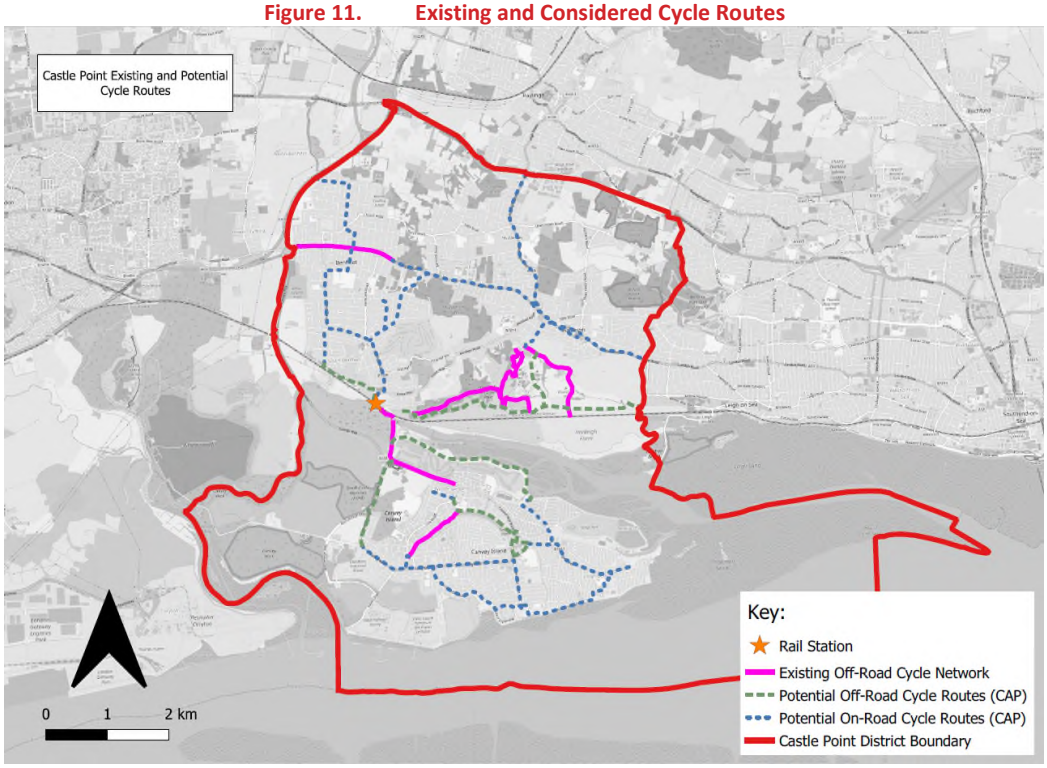


6.4.1 As indicated in Figure 9, Benfleet Station is accessible within a 20-minute cycle of almost the entirety of Castle Point borough including all major residential areas, key services and

employment areas, with the southeastern corner of Canvey Island shown as the only inaccessible residential area. Figure 10 indicates that Canvey Town Centre is accessible within a 20-minute cycle to all of Canvey Island, with the northern side of Canvey Bridge and Benfleet Station accessible within 15 minutes to the northwest.

6.4.2 There is currently a lack of cycle infrastructure throughout Castle Point. Existing cycle routes are limited to off-road routes surrounding Hadleigh Country Park, Canvey Road, London Road and Canvey Dyke.

Figure 11. Existing and Considered Cycle Routes



6.4.3 Through analysis of the Castle Point Cycling Action Plan (CAP), Figure 6.2, it is evident that there are a series of potential cycle routes which could enhance the connectivity of the borough through the cycling mode of transport. The potential new cycle routes identified in the 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. This work is being built upon by the LCWIP corridors, which is an infrastructure plan to guide active travel policies and priorities; as well as provide a framework and context to secure investment which are commensurate with the aims and objectives of the CAP. With the potential additional cycle routes, greater connectivity would be provided throughout Castle Point. This would be provided particularly through potential on-road routes, extending throughout London Road towards Thundersley, and in the southern Canvey Island region, throughout Long Road and High Street.

6.5 Highway capacity

6.5.0 A series of key traffic flows have been identified on the Castle Point local road network. From initial hotspot research on Google Maps, congestion is noted to be significantly greater in the PM peak than in the AM peak. Areas which are noted to be of the highest congestion include the A130 Canvey Way in the vicinity of the Waterside Farm roundabout, east-west London Road, the A129 north of Thundersley around the Woodmans Arms and Rayleigh Weir junctions, the Fairglen Interchange roundabout, and Canvey Road/Long Road on Canvey Island.

Previous Flow Data

6.5.1 **A130 Canvey Way** – To gauge the level of congestion expected on the road network, 2019 junction surveys from the A130/A1245 have been assessed to understand the congestion towards the north of the borough boundary. The majority of traffic in the AM peak is directed northeast-bound along Canvey Way (2584 PCU), whereas in the PM peak, the majority is directed southwest-bound along Canvey Way (2723 PCU).

6.5.2 **A13 London Road** – A junction survey from 2016 has been interpreted, with the movements across A13 Tarpots Corner observed. Here, it is apparent that in the initially observed highly congested west-east movement in the PM peak, 810 Passenger Car Units (PCU)are recorded. Whilst the Google Maps study did not suggest a similarly high level of congestion in the AM peak, the survey data suggests a similarly high level east-westbound, with a total of 822 PCU.

6.5.3 **A129 Rayleigh Weir** – 2019 Junction survey data has been gathered from the Rayleigh Weir A127/A129 junction to give an understanding of the congestion to be anticipated on the A129 towards the north of the Castle Point borough boundary. In the 2019 AM peak, it is apparent that the most common direction of northbound traffic along the A129 is subsequently westbound along the A127 (467 PCU), and in the PM peak the most common direction of northbound traffic along the A129 is subsequently eastbound along the A127 (393 PCU). Total southbound traffic is significantly higher in the PM peak (1298 PCU) than in the AM peak (1097 PCU).

6.5.4 **A127/A130 Fairglen Interchange** – Junction survey data from the Fariglen Interchange is available from 2019, in which it is indicated that the highest level of traffic northbound along the A1245 is seen in the AM peak, with 2570 PCU compared to 1995 PCU in the PM peak. Total traffic southbound into the A1245 arm is 2032 PCU in the AM peak, and 2095 PCU in the PM peak.

6.5.5 **Long Road** – It is noted that whilst there is significant congestion indicated along Long Road, previous survey data is not known to be available.

Previous RAG

6.5.6 Junction testing was undertaken by Mott McDonald in 2019 as part of the transport evidence supporting the withdrawn local plan. This testing analysed the level of congestion at key junctions throughout the borough with both a TEMPRO-based Reference Case and Local Plan scenarios for the future year of 2033. The results were presented as a Red, Amber, Green (RAG) assessment. Only the TEMPRO-based Reference Case is used in this report.

6.5.7 The RAG assessment provides a simplified way of expressing how well a junction operates in a given scenario i.e. with or without the Local Plan in place in the AM or PM peak. The following is a description of the possible classifications:

- **Red** - Junction has been shown to operate over capacity with significant queueing during the peak period.
- **Amber** – junction is considered to be approaching capacity with some queuing likely during the peak period.
- **Green** – Junction has been shown to operate within capacity during peak periods with little to no queuing reported.

6.5.8 As mentioned in Section 6.5, this assessment is being used as a proxi whilst decisions are made in respect of the current plan. Whilst the Local Plan option is not to be considered given the changing quantum of planned development with the newly emerging Local Plan, it is deemed that the Reference Case presented is usable for the assessment of general future-year junction performance prior to development. Once a preferred development strategy has been identified the South Essex Model will be used to fully assess the proposals.

6.5.9 The results are indicated in the figures below.

Figure 12. 2033 Reference Case AM RAG

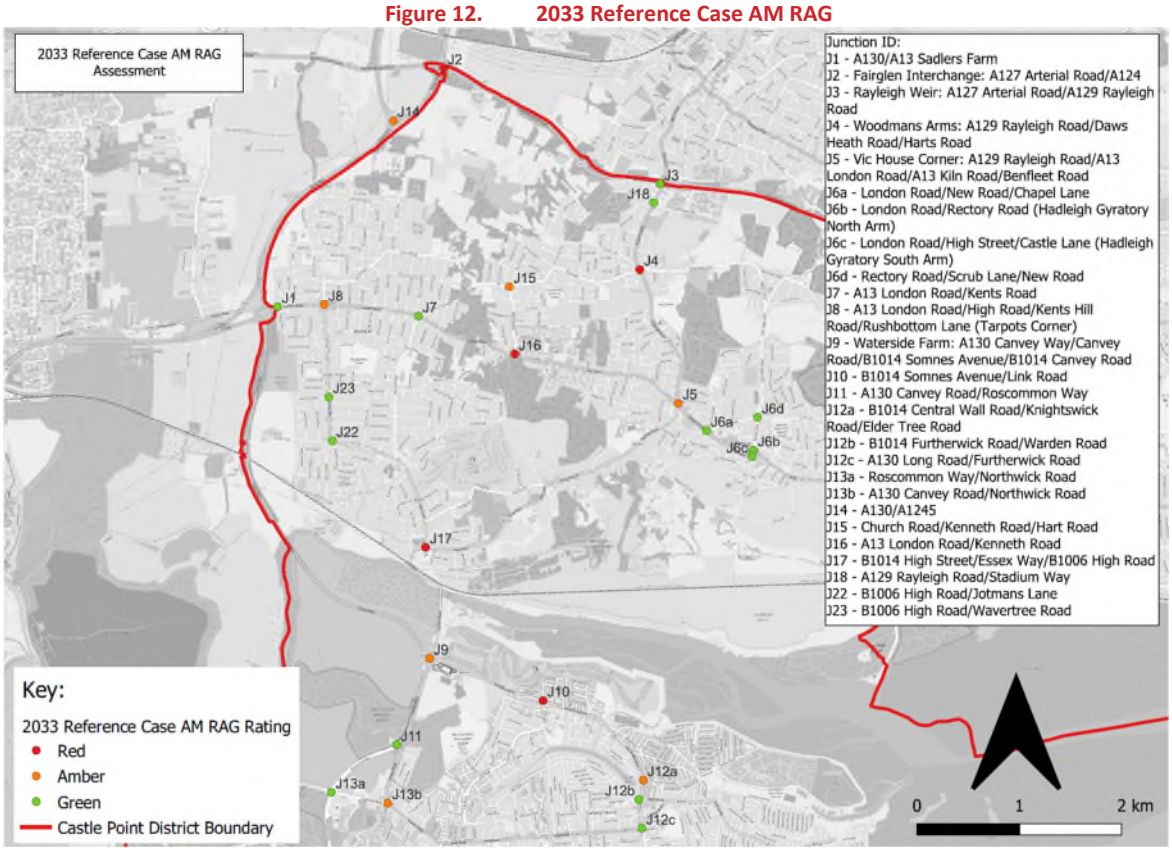
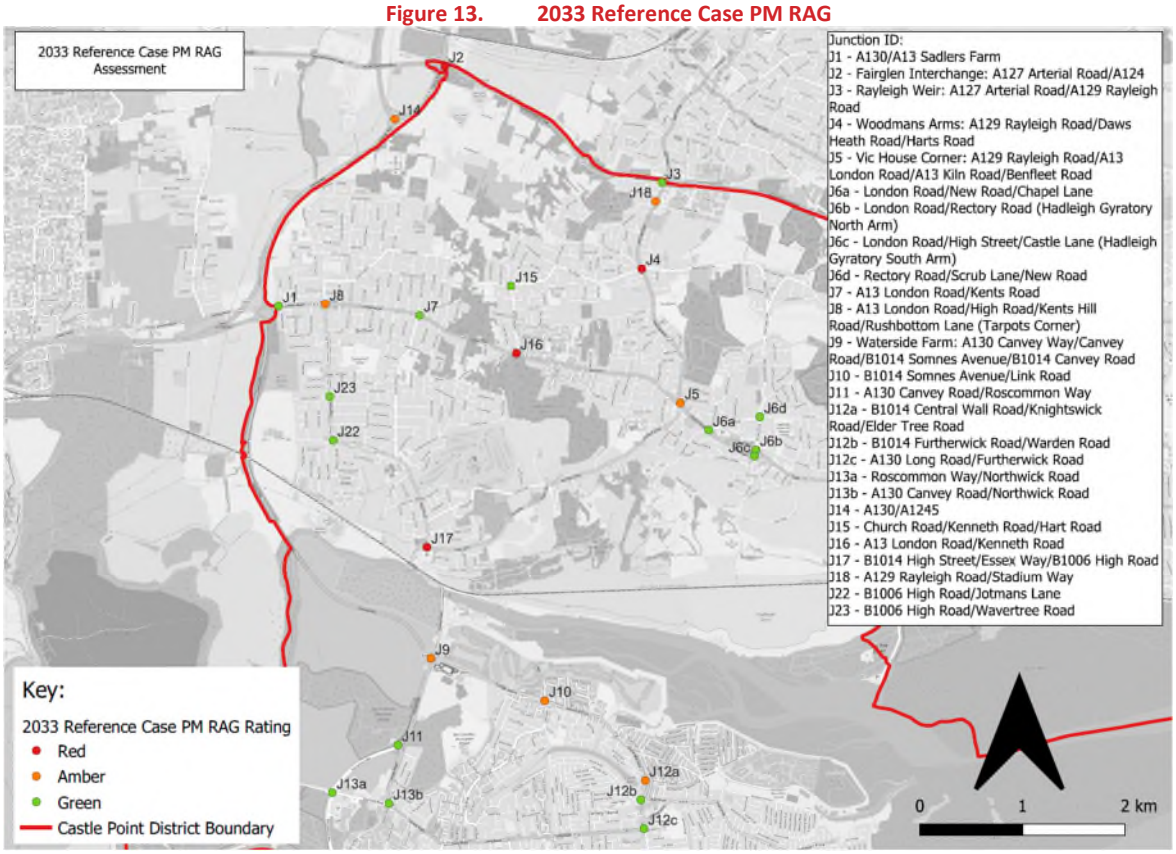


Figure 13. 2033 Reference Case PM RAG



6.5.10 Through this analysis, SYSTRA draw attention to a series of junctions, based on either their "Red" score throughout scenarios, or the fluctuating scores "Amber" and "Red" between AM and PM. Particular junctions of interest following this analysis were noted to be:

- Junction 2 – Fairglen Interchange: A127 Arterial Road/A124;
- Junction 4 – Woodmans Arms: A129 Rayleigh Road/Daws Heath Road/Hart Road;
- Junction 10 – B1014 Somnes Avenue/Link Road;
- Junction 16 – A13 London Road/Kenneth Road; and
- Junction 17 – B1014 High Street/B1014 Essex Road/B1006 High Road.

6.6 Highway Safety

6.6.0 All types of transport should be covered by safety considerations and accident analysis, taking into account the objective of facilitating, where reasonable to do so, the use of all modes of transport including sustainable and non-motorised users.

6.6.1 As a means of understanding the safety conditions surrounding the borough, the Essex Highways Interactive Map has been obtained. Figure 14 and Figure 15 below indicate the general clusters surrounding the borough.

Figure 14. Canvey Island Collision Map

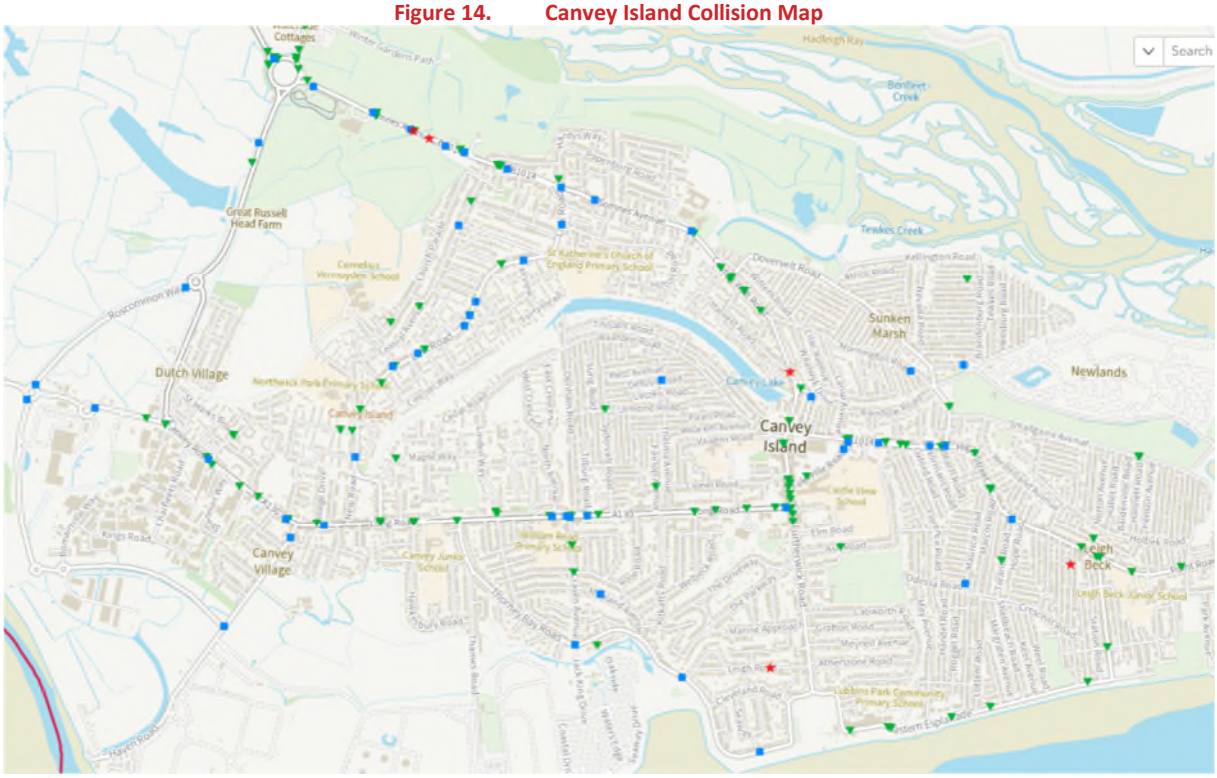
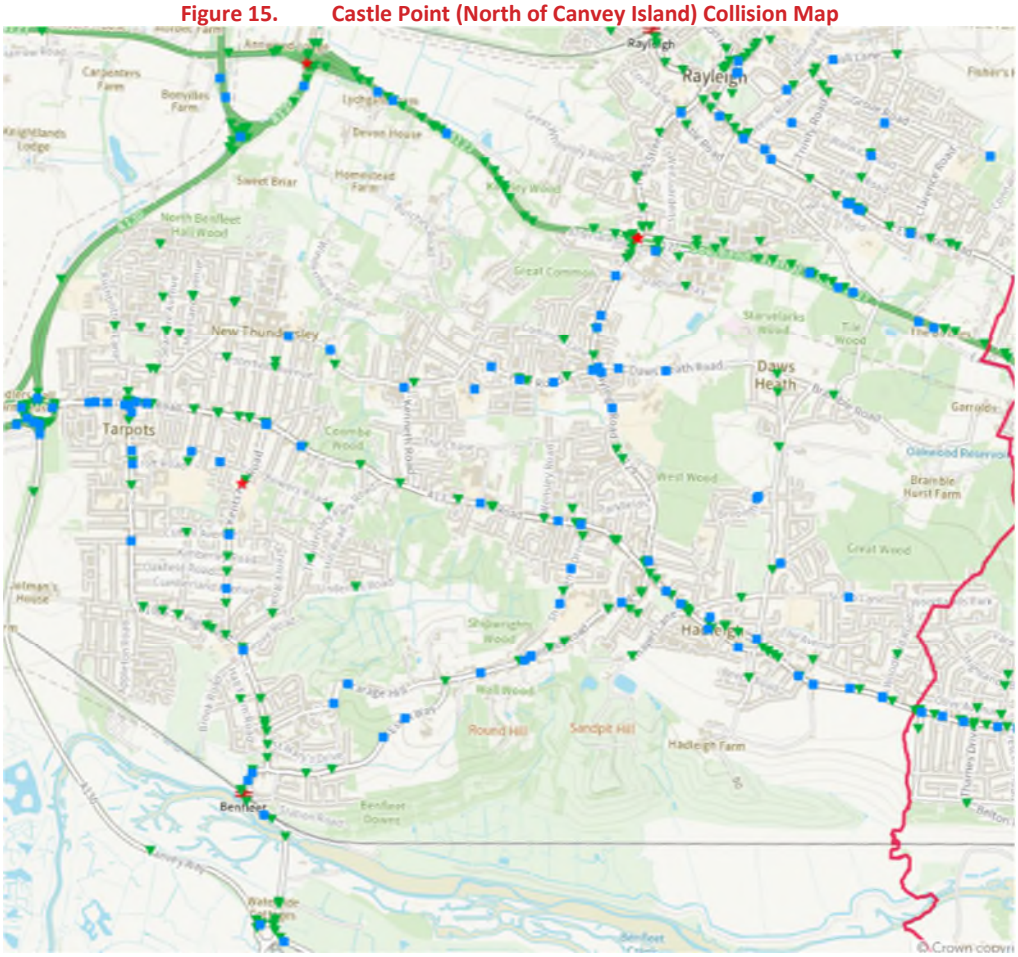


Figure 15. Castle Point (North of Canvey Island) Collision Map



6.6.2 Whilst it is acknowledged that further data is to be forthcoming, initial evidence suggests clusters of accidents surrounding the Furtherwick Road/Foksville Road junction on Canvey Island, Sadlers Farm Roundabout and Tarpots Corner, and A127/A129.

6.6.3 **Furtherwick Road/Long Road**: 13 slight and one serious accident were recorded surrounding the junction. The serious accident is noted to occur as a result of a vehicle failing to see a pedestrian using the zebra crossing at the junction of Long Road and colliding. Collisions involving pedestrians using crossings is seen as a recurring theme throughout the cluster, accounting for a series of slight collisions both on Long Road and on Furtherwick Road.

6.6.4 **Sadlers Farm Roundabout**: 22 slight 9 serious are noted to have occurred within the last 5 years surrounding the junction. Five of the serious collisions are recorded as having taken place within the circulatory of the roundabout. These collisions are largely the result of vehicles failing to see each other changing lanes at the traffic signals surrounding each entry arm.

6.6.5 **Tarpots Corner**: 6 slight and 4 serious accidents are noted to have occurred surrounding the junction. The four serious accidents are all noted to be the result of drivers failing to look properly at surrounding vehicles at the entry arms of the junction. All six slight accidents are noted to have taken place at the centre of the junction. There is no consistent theme between the causation of the slight accidents.

6.6.6 **A127/A129:** The junction is noted to have featured 12 slight and 2 fatal collisions. The two fatal collisions are noted to have occurred within the underside of the junction, and with no discernible theme between them. A majority of the slight accidents are noted to be the result of vehicles failing to see others when switching lanes.

6.7 Freight Movements

6.7.0 The figure below indicates the industrial sites within the Castle Point district.

Figure 16. Castle Point District Industrial Sites

6.7.1 It is likely that the freight movements throughout the Castle Point borough are to be directed largely towards areas in which industrial estates are located. The most significant estates are located to the southwest of Canvey Island to the east of Haven Road, and storage facilities located to the south of Roscommon Way. Prout Industrial Estate is located to the east of Canvey Island, to the east of B1014/Point Road roundabout.

6.7.2 Additionally, further industrial areas of Manor Trading Estate to the northwest of Thundersley are surrounded by a high density of residential areas located via Church Road. Stadium Way Industrial Estate at Rayleigh is located to the northeast of the region, to the east of Rayleigh Road, containing large supermarkets, homeware stores and car dealerships.

6.7.3 As a result, it is likely that there will be an increased level of HGV movements north-south along the A130 Canvey Road, and east-west along the B1014 due to the industrial estates on Canvey Island. Throughout the northern areas of the region, an increased level of HGV movements are likely to be generated north-south along the A129 and east-west along the A13.

6.8 SRN commentary

6.8.0 The Strategic Road Network (SRN) is `National Highways' key routes of concern throughout the main road network. The A13 running west from Sadlers Farm roundabout to the west of the Castle Point district boundary is one of the key routes falling within the SRN.

6.8.1 Additionally, the A13 links to the wider area of Southend, and as such the resultant congestion from development within this region will bear impact on the A13. National Highways are party to the A127 task force, and it is noted there is a committed and funded short term scheme for the A127/A130 Fairglen Interchange to increase the capacity through mitigations such as longer slip lanes on both A127 on-slips, and improvements at Rayleigh Spur Roundabout.

6.8.2 When considering the impact on the SRN, it is recommended that as few cars are directed onto the A13 as possible, in order to minimise impact. When it comes to Castle Point, it is noted that due to the high proportion of travel which takes place through car, and the road network largely leading into the A13, it is deemed that it would be unlikely for an impact to be avoided entirely.

6.8.3 As such, development is to prioritise active and public transport modes where possible, practicable and attractive in order to lower the impact on the SRN, with the acknowledgement that there will be an inevitable impact from the high usage of cars.

7. DEVELOPMENT CLUSTERS

7.1.0 Castle Point Borough have undertaken an appraisal of the potential urban capacity within Castle Point, and have split a significant number of the potential development sites from this appraisal into a series of “clusters” (the remaining sites are categorised as “unclustered” and are discussed further below). There are 10 urban “clusters”, which together form the borough’s draft urban capacity; the “Northwest Thundersley cluster”; and 15 “Green Belt Site Options”.

7.1.1 As a means of determining the most effective clusters to prioritise development, SYSTRA have undertaken an initial Schedule of Interventions – a list of potential schemes/projects which could improve the various modes of transport in and around Castle Point. 203

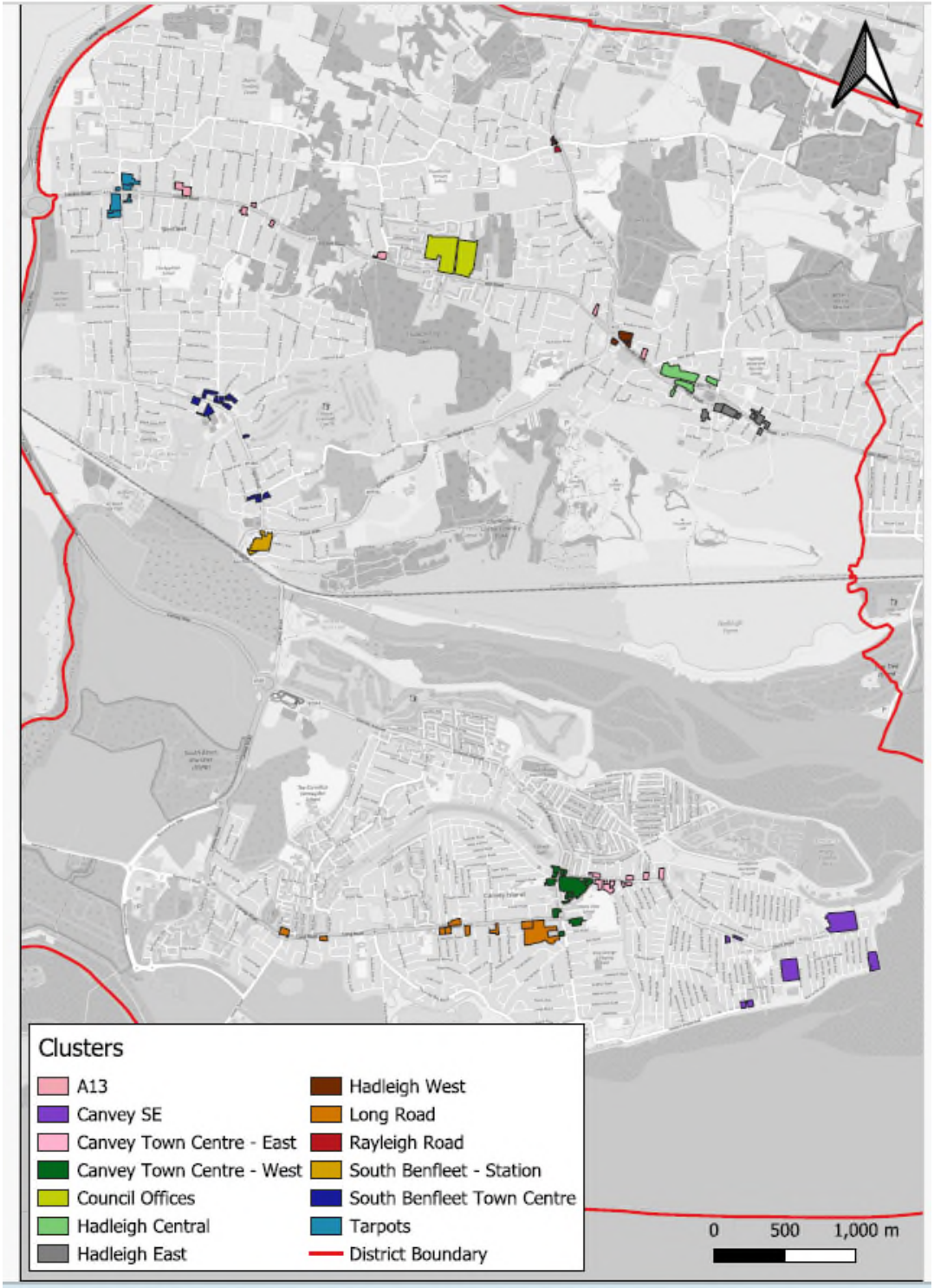
7.2 Cluster Analysis

7.2.0 A series of clusters have been identified by the Council for future development to be considered. The clusters identified are:

- 1. Canvey Town Centre east
- 2. Canvey Town Centre west
- 3. Long Road
- 4. South East Canvey
- 5. South Benfleet Town Centre
- 6. South Benfleet Station
- 7. Tarpots
- 8. A13
- 9. Hadleigh West
- 10. Hadleigh Central
- 11. Hadleigh East
- 12. Kiln Road
- 13. Rayleigh Road

7.2.1 Figure 18 below indicates the location of these clusters within Castle Point.

Figure 17. Castle Point Identified Clusters



7.2.2 The clusters represent a significant proportion of the total development, depending on which Local Plan option is preferred. The rest of the development is comprised of 26 additional un-clustered sites and windfall sites. As these are relatively small sites, they are unlikely to causes significant transport impacts in isolation. They have therefore been grouped together for the purposes of this assessment.

7.2.3 SYSTRA has analysed the identified clusters throughout the borough, considered the accessibility and transport characteristics of each cluster, determined by proximity to public transport, availability of public transport services, collision data and previous RAG testing, while bearing in mind the scale and likely impact of proposed development on the highway network.

7.2.4 In terms of cluster capacity, a series of assumptions have been made in regard to individual site capacities, which accumulate to whole cluster capacities. Modelled densities have been applied to all sites, following this a 20% deduction has been applied to allow for mixed uses on sites. Availability of some of the sites is unknown at this stage and therefore an uncertainty reduction has been applied for different existing uses, for example a supermarket is less likely to come forward than a garage site. The site cluster capacities shown within this section are highlighted as a range, this includes the reduced adjusted capacity (which factors in uncertainty) up to the net capacity (which includes to 20% deduction for mixed uses).

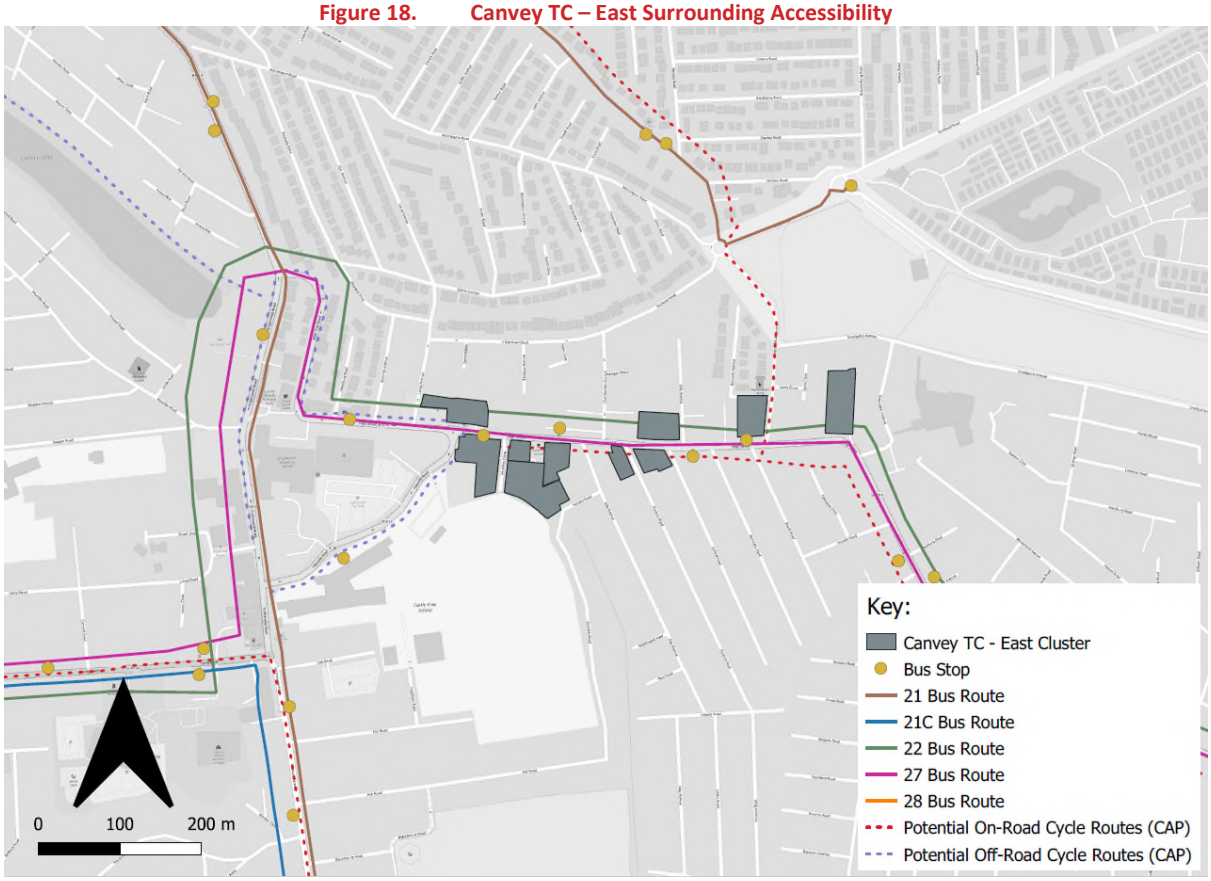
7.2.5 Where reference is made to the Initial Schedule of Interventions (ISI) table, this can be viewed in the following section of the report, with associated mapping at Figures 36 to 38. It is noted that any interventions suggested within the following chapter are subject to further appraisal, and are not to come to the detriment of existing services or public transport networks.

Canvey Town Centre – East

7.2.6 The Canvey TC East cluster is formed of 10 sites surrounding the High Street area to the east of Canvey Island. The cluster is comprised of around 92 -143 dwellings, with the largest being the West Venables Close site. All sites meet the public transport criteria of falling within 400 metres actual walking distance of a bus stop.

7.2.7 The figure below indicates the development cluster and surrounding bus and cycle network.

Figure 18. Canvey TC – East Surrounding Accessibility



7.2.8 The cluster is well-served by public transport, with both the 22 and 27 bus routes operating along High Street. Additionally, the 21 and 21C bus route is accessible through Knightswick Road to the west, and Dovervelt Road to the north. There are four bus stops which serve the Canvey TC East cluster. Three of these bus stops have shelters, and one, Normans Road eastbound, is unsheltered and comprised of a bus pole and flag. None of the bus stops have real-time bus information.

7.2.9 Whilst there are no existing cycle routes within the cluster, it is noted that the Cycle Action Plan suggests there is potential for off-road and on-road cycle routes, subject to further design and feasibility. Potential on-road cycle routes are identified east/southeast through High Street, and off-road cycle routing through Foksville Road and southbound along Knightswick Road/Furtherwick Road. These potential routes would significantly improve the accessibility of the cluster through active means.

7.2.10 All of the sites within the cluster are located along High Street, with the three previously tested junctions located on the north south Knightswick/Furtherwick Road to the west of the road. Most notable to the cluster are:

- **Junction 12a, B1014 Central Wall Road/Knightswick Road/Elder Tree Road,** located approximately 350 metres to the northwest of the 56-65 High Street site (amber across all scenarios);
- **Junction 12b, B1014 Furtherwick Road/Waarden Road** located approximately 210 metres to the west of the 56-65 High Street site (green across all scenarios); and

- **Junction 12c, Long Road/Furtherwick Road** located approximately 350 metres to the southwest of the 56-65 High Street site (green across all scenarios)

7.2.11 Given the strong performance of the surrounding previously tested junctions through the 2033 Reference Case scenario, this could be considered as an area with strong potential for future development at this scale with the planned 150 dwellings, additionally with the series of bus routes running through the adjacent network the potential for sustainable travel is high, although the sites would be expected to contribute to the further enhancement of the local bus network.

7.2.12 Falling to the west of the identified regions 1 and 2 of SYSTRA's schedule of intervention, it is suggested that whilst RAG testing indicated that junction performance is green (performing within capacity with no queuing) within the 2033 Reference Case, further investigation is recommended into the Furtherwick Road/Long Road junction in order to establish the need for potential mitigations to improve road safety surrounding the junction, as identified in Section 6.6.

Canvey Town Centre – West

7.2.13 The Canvey TC West cluster is formed of 12 sites surrounding Furtherwick Road. The cluster is comprised of around 193 - 275 dwellings.

7.2.14 All 12 sites are within 400 metres actual walking distance of a bus stop.

7.2.15 The surrounding accessibility for the cluster is indicated in the figure below.

Figure 19. Canvey TC – West Accessibility

7.2.16 The public transport accessibility within the Canvey TC West cluster is strong, with the 21, 21C, 22 and 27 bus routes all routing through the cluster. The cluster is served by six bus stops, of which five have a shelter, and one is comprised of a bus pole and flag. These developments would be expected to contribute towards further enhancement of the local bus network. There is also likely to be a requirement for a Mobility Hub to be created in this area – funded through pooled developer contributions.

7.2.17 A series of potential cycle routes surrounding the cluster were identified in the Cycle Action Plan, including on-road routes along Long Road/Furtherwick Road to the east and south of the cluster, and along High Street to the northeast. Additionally, potential off-road routes are along Foksville Road surrounding the Knightswick Shopping Centre site, and along Canvey Lake to the northwest.

7.2.18 The Canvey TC West cluster is located entirely along the Furtherwick Road. The previously assessed junctions of 12a, 12b, and 12c lie within the cluster itself, with 12a being the one junction which remains on amber throughout all scenarios.

7.2.19 The performance of the junction within the 2033 Reference Case, in addition to the four bus routes operating through the cluster, demonstrate that this is an area with a strong development potential at the scale proposed from a transport and accessibility perspective. These developments would be expected to make proportionate contribution towards the further development of the local bus network.

7.2.20 Falling within the identified sub-regions 1, 4 and 3 of SYSTRA's schedule of intervention it is suggested that improved cycle links along Canvey Lake are needed to further improve accessibility through active and sustainable modes of travel surrounding the cluster.

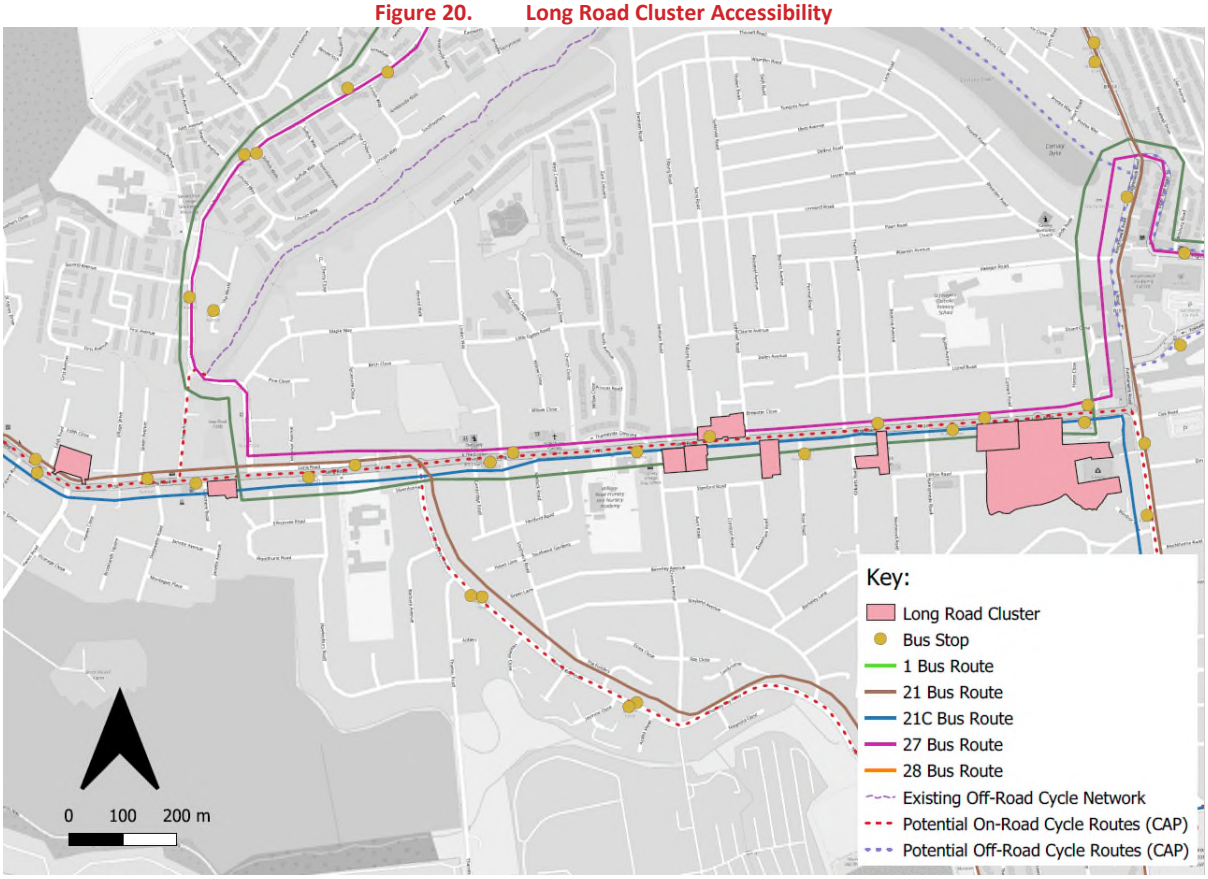
Long Road

7.2.21 The Long Road cluster is formed of nine sites, all located on the east-west Long Road running through central Canvey Island. The capacity of the cluster as a whole is anticipated to be around 192 – 351 new homes, and the highest individual site capacity is noted as being The Paddocks site, with a capacity of 150 dwellings.

7.2.22 All sites within the cluster are located within 400 metres of a bus stop.

7.2.23 The wider accessibility of the Long Road cluster is indicated in the figure below.

Figure 20. Long Road Cluster Accessibility



7.2.24 There are four bus routes operating through the development cluster, the 21, 21C, 22, and 27. The cluster contains 15 bus stops, of which 8 contain shelters and 7 are marked by bus stop poles and flags. None of the bus stops feature live service updates (RTPI Screens).

7.2.25 The Cycle Action Plan identified the potential for on-road cycle routes east-west through Long Road and to the southeast along Thorney Bay Road. This has the potential to link into the existing and potential off-road cycle route through Canvey Lake to the north of the cluster.

7.2.26 Two previously tested junctions located in close proximity to the Long Road cluster are:

- **Junction 12c A130 Long Road/Furtherwick Road**, located approximately 65 metres to the east of The Paddocks site (Green across all scenarios); and
- **Junction 13b A130 Canvey Road/Northwick Road**, located approximately 600 metres to the northwest of the former King Canute Public House site (Amber in 2033 Reference Case and 2033 Local Plan AM; Green in 2033 Reference Case and 2033 Local Plan PM).

7.2.27 The previously tested junction in closest proximity to the development cluster is junction 12c, which lies adjacent to the east of The Paddocks. Across all Reference Case and Local Plan scenarios, the junction has an RAG score of "Green (within capacity)".

7.2.28 With the junction operating within capacity with no queuing in addition to the range of bus routes available to the area, the cluster is seen as one which has strong development potential at the identified scale from a transport perspective. Developer contributions towards bus services would be expected from these sites to further improve the attraction of sustainable modes of transport to new residents.

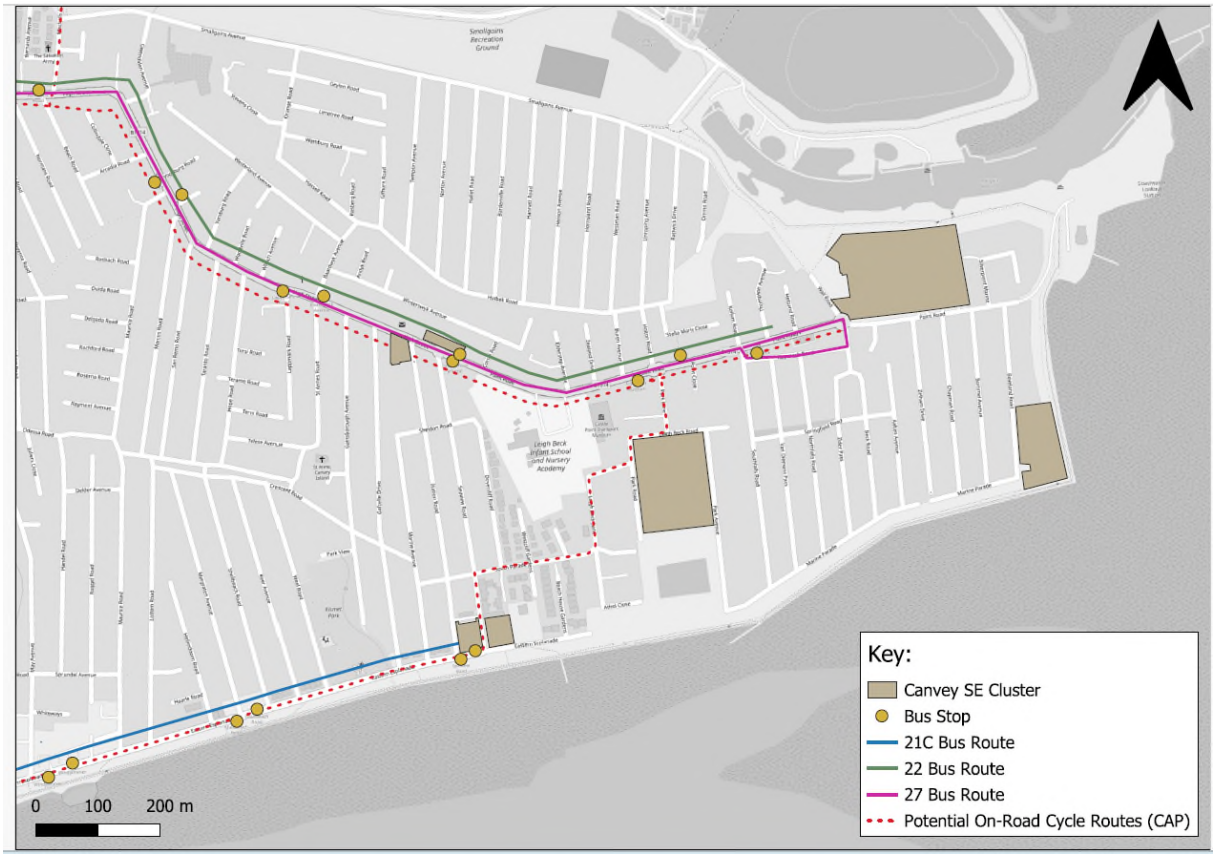
7.2.29 Falling within regions 3 and 4 of SYSTRA's schedule of intervention, it is suggested that accessibility through active and sustainable modes could be enhanced surrounding the cluster through pedestrian crossings to the north across Canvey Lake, and to the south along roads subject to surface wear such as Runnymede Road, Beverley Road and Mayland Avenue.

South East Canvey

7.2.30 The South East Canvey cluster is formed of seven sites in the southeastern corner of Canvey Island. The capacity of the cluster as a whole is around 238 – 357 new homes, with the highest individual site capacity being the Land at the Point site, comprised of 141 dwellings.

7.2.31 The accessibility of the SE Canvey Cluster is indicated in the figure below.

Figure 21. Canvey South East Cluster Accessibility



7.2.32 The cluster is served by three bus routes; the 21C, 22 and 27. The cluster area contains five bus stops, of which three contain a bus shelter and two are comprised of a bus pole. None of the bus stops feature live service updates (RTPI Screens). The development sites would be expected to contribute towards improved bus services and infrastructure, including an expansion of the existing Leigh Beck bus terminus.

7.2.33 A potential cycle route is identified in the CAP routes along Point Road/High Street near to the northern sites of the cluster, and additionally westbound along the Eastern Esplanade to the west of the most southern sites of the cluster. If implemented, these cycle routes will provide an improved active transport link along the coastline and westbound toward the town centre.

7.2.34 The nearest previously assessed junctions are **junctions 12a, b, and c**, in proximity to Furtherwick Road. These junctions are distant from the Canvey SE cluster, with the nearest site being the Land on the corner of Station Road and High Street. These junctions are noted to perform well under the previous RAG testing, with 12a being amber (approaching capacity with some queueing) in both AM and PM Reference Case scenarios, and 12b and 12c green (operates within capacity) in both scenarios.

7.2.35 Considering the aforementioned factors such as high bus accessibility, and effective performance of the nearby junctions within the 2033 Reference Case, and high capacity in comparison to other clusters, it is deemed that the SE Canvey cluster is an effective cluster to develop at this scale.

7.2.36 Falling within sub-regions 1 and 2 of SYSTRA's schedule of intervention, it is suggested that alteration to the 21C bus route to loop northbound along Maurice Road and Crescent Road would benefit the sites to the west of the cluster. The addition of cycle routes along Marcos Road/Lottem Road and Odessa Road/Crescent Road would further improve accessibility via active modes. Whilst this intervention is a potential mitigation to improve servicing to the wider area, the alteration is not to come at the detriment of the existing service, and is required to be considered in-line with wider policy and feasibility.

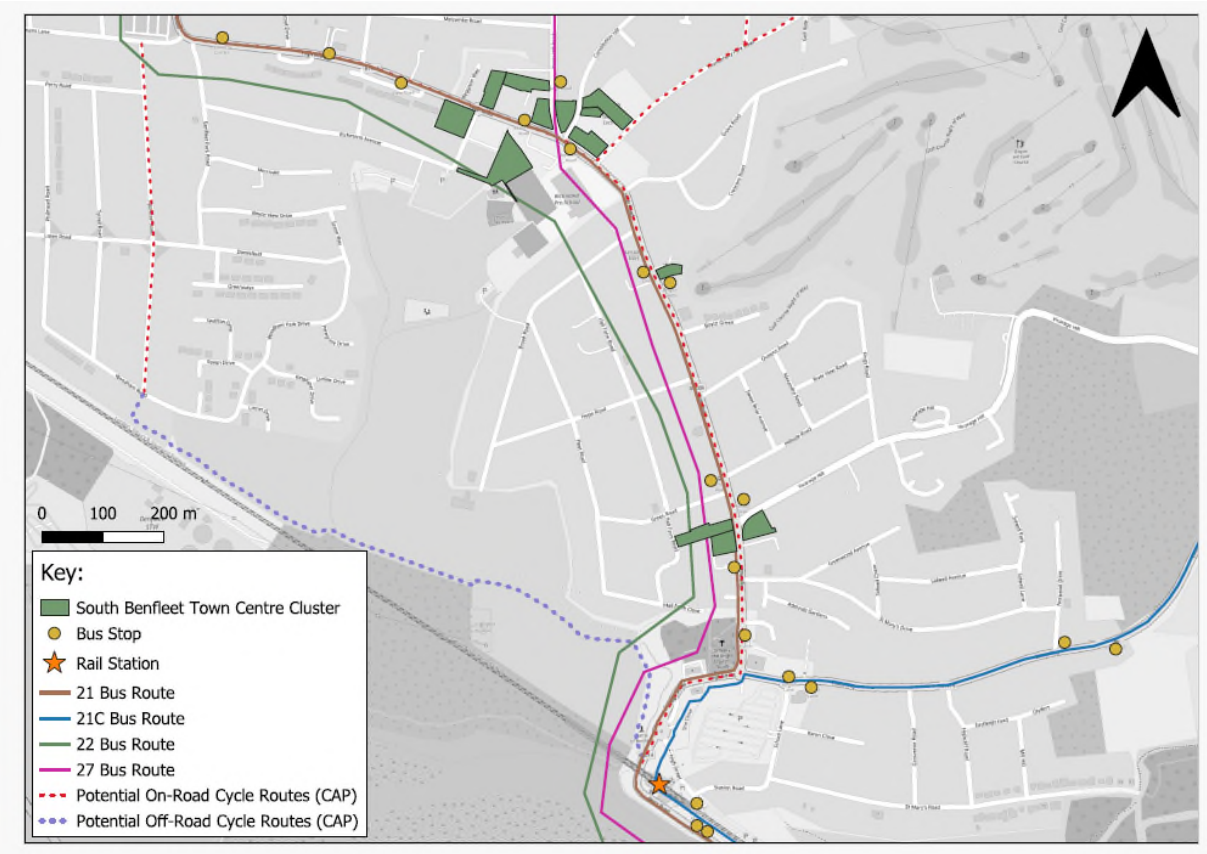
South Benfleet TC

7.2.37 The cluster is comprised of 13 sites, surrounding High Road, in the southern region of Benfleet. The density ranges between Low-Medium and Medium. The total capacity of the cluster is around 128 - 215, with the highest capacity of 19 in the Richmond Avenue Car Park 2.

7.2.38 All sites within the cluster are within 400 metres of the nearest bus stop, and the South Benfleet Social Club, 61 High Road, and Benfleet Methodist Church sites are within 800m of actual walking distance from Benfleet rail station.

7.2.39 The wider accessibility surrounding the South Benfleet TC cluster is indicated in the figure below.

Figure 22. South Benfleet TC Cluster Accessibility



7.2.40 The 21, 22, and 27 bus routes all operate through the South Benfleet TC cluster. Three of the Sites, 61 High Road, Benfleet Methodist Church, and South Benfleet Social Club, are located

approximately 550m to the north of Benfleet Station. The cluster contains eight bus stops, of which three have a bus shelter, and five have a bus flag and pole. None of the bus stops feature live-service updates (RTPI Screens). These developments would be expected to contribute to further enhancements to the local bus network, to improve accessibility and the attraction of public transport locally.

7.2.41 As part of the Cycle Action Plan, potential on-road cycle routes are identified north-south along High Road, along with an off-road cycle route northwest-bound between South Benfleet Station and Woodham Road, South Benfleet.

7.2.42 To the south of the cluster is Junction **17 – Essex Way/High Road/High Street**, which through previous RAG surveys performed as `Red' (overcapacity with significant queuing) throughout both 2033 Reference Case scenarios. To the northwest of the cluster is Junction **22 – High Road/Jotmans Lane,** which throughout previous testing performed as `Green' (within capacity with no queuing) throughout all 2033 Reference Case scenarios.

7.2.43 Considering the total capacity of the cluster being 132, in addition to the performance reported at Junction 17 to the south of the cluster operating over capacity, it is determined that further assessment and possible mitigation is required.

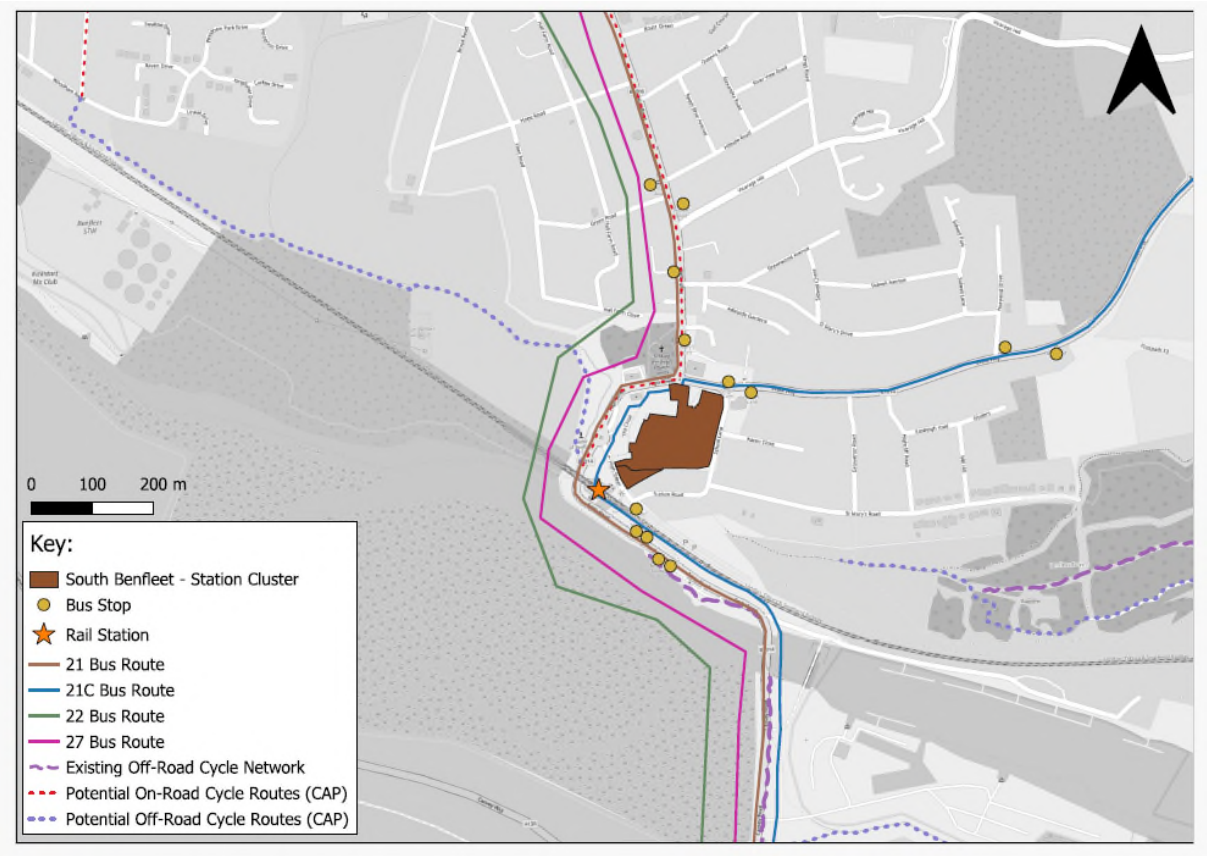
7.2.44 Falling within regions 5 and 6 of SYSTRA's schedule of intervention, it is suggested that accessibility to the region through active and sustainable means could be improved through the implementation of cycle routes northbound along High Street and High Road to the North Benfleet area, and east/northeast-bound along Vicarage Hill towards Hadleigh and the enhancement of local bus services.

South Benfleet Rail Station

7.2.45 The cluster is comprised of three sites, with a total capacity of around 82 - 157 new homes. School Lane Car Park is noted to be of the highest capacity, with a total of 70 dwellings. All sites are located within 400m of a bus stop, with the 1-5 High Street and 87-97 High Street sites located within 800m actual walking distance of Benfleet rail station.

7.2.46 The accessibility of the South Benfleet Station cluster is indicated in the figure below.

Figure 23. South Benfleet Station Cluster Accessibility



7.2.47 The cluster is served by four routes; the 21, 21C, 22 and 27, all of which operate directly through the cluster. The cluster is located adjacent to Benfleet rail station, on the eastern side of High Street. The cluster contains four bus stops; of which three comprise a bus shelter, and one a bus post and flag at School Lane eastbound. Developments in this area would be expected to contribute towards improvements at the rail station transport interchange as well as implementation of bus priority measures through the area and/or a contribution towards further enhancement of the local bus network.

7.2.48 The cluster is located adjacent to **Junction 17 - Essex Way/High Street/High Road**. Across all 2033 Reference Case and Local Plan scenarios, the junction performed as "Red" (overcapacity with significant queuing) rating through the RAG test.

7.2.49 The cluster is considered to be highly accessible by sustainable travel through both the surrounding bus routes and the adjacent rail station. However, this cluster is adjacent to Junction 17 – Essex Way/High Street/High Road which is operating overcapacity with significant queuing in future year scenarios. Mitigation of this junction may be possible, but a previously suggested improvement of introducing a flare on Essex Way was shown to have limited benefit in Mott Macdonald's Mitigation and Sensitivity Analysis (2019). Therefore, further testing is required to determine the clusters impact on this junction and test alternative mitigation if necessary.

7.2.50 Falling within region 5 of SYSTRA's identified schedule of intervention, the South Benfleet Station cluster is suggested to gain improved accessibility through the implementation of cycle routes northeast along Vicarage Hill, and southbound along Canvey Bridge. The addition

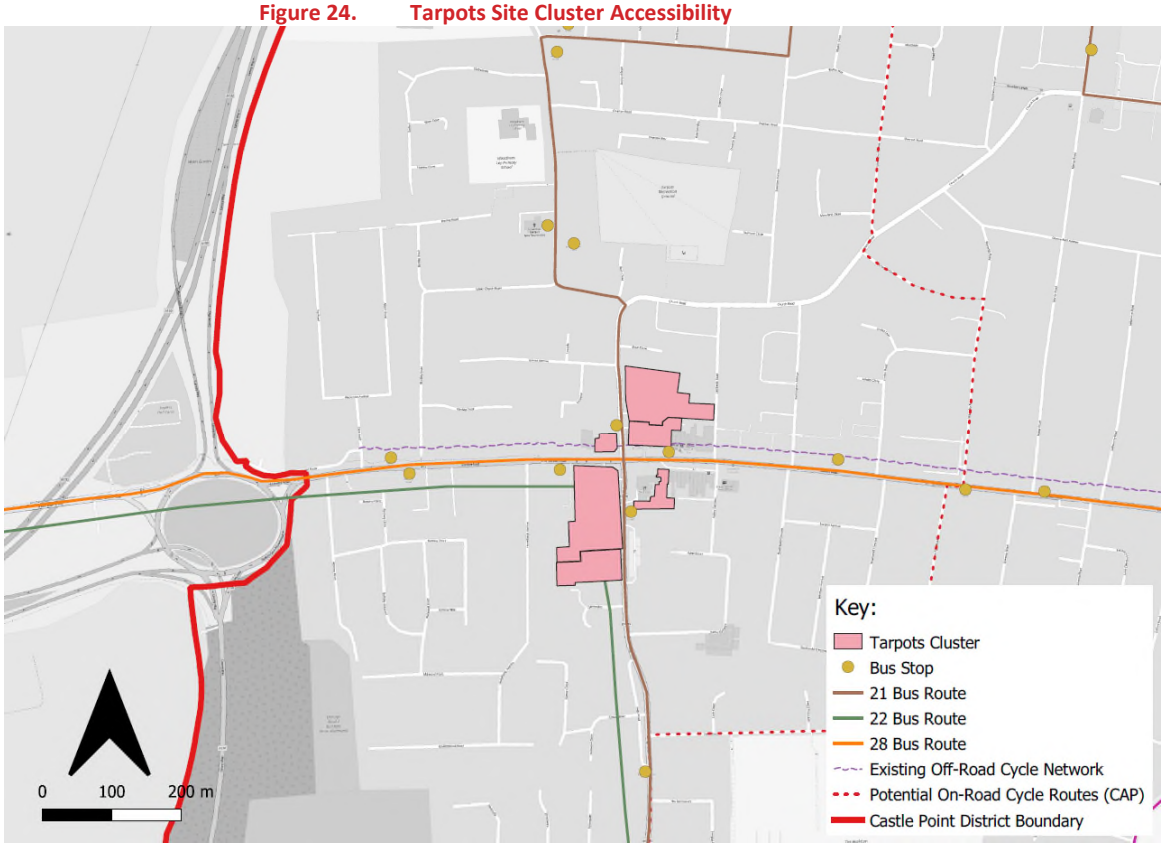
of pedestrian crossings along Essex Way would also improve pedestrian accessibility and safety surrounding the rail station.

Tarpots

7.2.51 The Tarpots cluster is comprised of six sites, surrounding the London Road/High Road/Rushbottom Lane junction to the north of Benfleet. The total capacity of the cluster is around 105 – 169 new homes, with the highest capacity being the Land in the southwest corner of London Road and High Road, at a capacity of 46 sites. All sites are located within 400m actual walking distance of the nearest bus stop.

7.2.52 The wider accessibility of the Tarpots site is indicated in the figure below.

Figure 24. Tarpots Site Cluster Accessibility



7.2.53 The 21, 22 and 28 bus routes are all operate directly through the cluster. The cluster contains four bus stops, of which three comprise a bus shelter and one a bus pole and flag. Tarpots Corner northbound on Rushbottom Lane comprises a bus flag and pole. These developments would all be expected to contribute towards bus befitting infrastructure and/or further enhancement of the local bus network.

7.2.54 There is an existing off-road cycle route east-west along London Road. A potential on-road cycle route is suggested in the CAP, which intersects the existing off-road route, and provides access northbound along Waverley Road towards North Benfleet, and southbound along High Road toward Benfleet Station.

7.2.55 The previously tested Junction 8 – London Road/Rushbottom Lane/High Road junction is located centrally within the cluster. Through the Reference Case scenarios, the RAG score is

noted to be `Amber' (approaching capacity with some queuing), with the performance as `Red' (overcapacity with significant queuing) in the Local Plan scenarios. Given the enlarged protruding corner along the Rushbottom Lane/London Road footpath, physical capacity mitigation could be considered through the potential widening of the highway along London Road eastbound.

7.2.56 Given Junction 8 is operating overcapacity with significant queuing, development in this cluster may prove problematic to deliver from a highway capacity perspective, particularly given the scale of proposed growth, namely around 170 homes. Any mitigation would need to consider the cumulative impact of growth and its ability to fund any improvements. However, there are possibilities to deliver active and sustainable transport improvements which may assist in mitigating the overall impact of the cluster to nil detriment.

7.2.57 Falling within sub-regions 6 and 7 of SYSTRA's schedule of intervention (Figure 35), it is suggested that the Tarpots cluster could gain increased accessibility through the alteration of the 28 bus route northbound along Kenneth Road, improving accessibility to other residential areas to the north and east. Additionally, improvements of footpath widening and resurfacing along Eversley Road, Woodside Avenue, and Overton Road are to improve the general pedestrian accessibility surrounding the cluster. Whilst this intervention is a potential mitigation to improve servicing to the wider area, the alteration is not to come at the detriment of the existing service, and is required to be considered in-line with wider policy and feasibility.

A13

7.2.58 The A13 cluster is comprised of seven sites located along the A13 through Benfleet and Hadleigh. The cluster has a capacity of around 105 - 155 new homes. The largest in size is the 223 London Road and Linden Road site, comprised of 41 dwellings.

7.2.59 The wider accessibility of the A13 cluster is indicated in the figures below, between the west and eastern extent of the cluster.

Figure 25. A13 (west) Cluster Accessibility

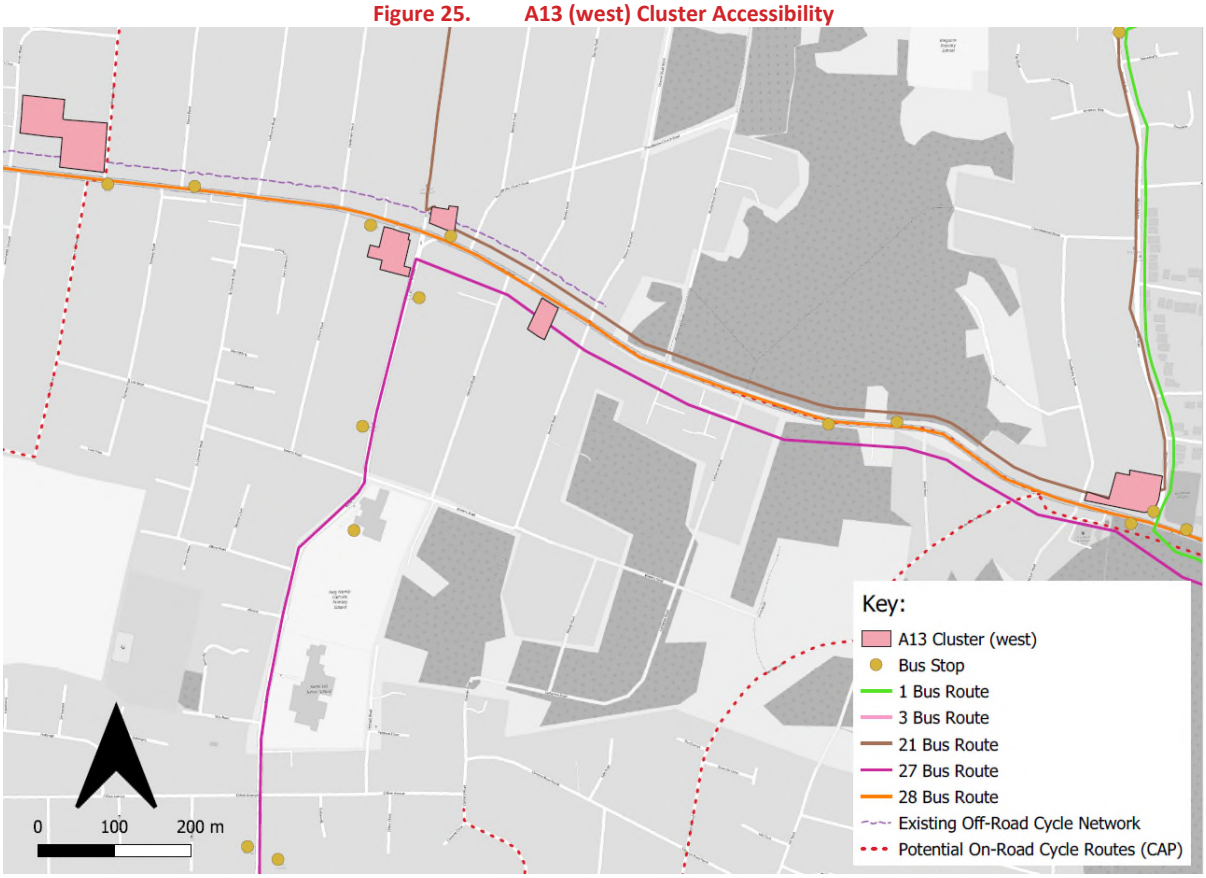
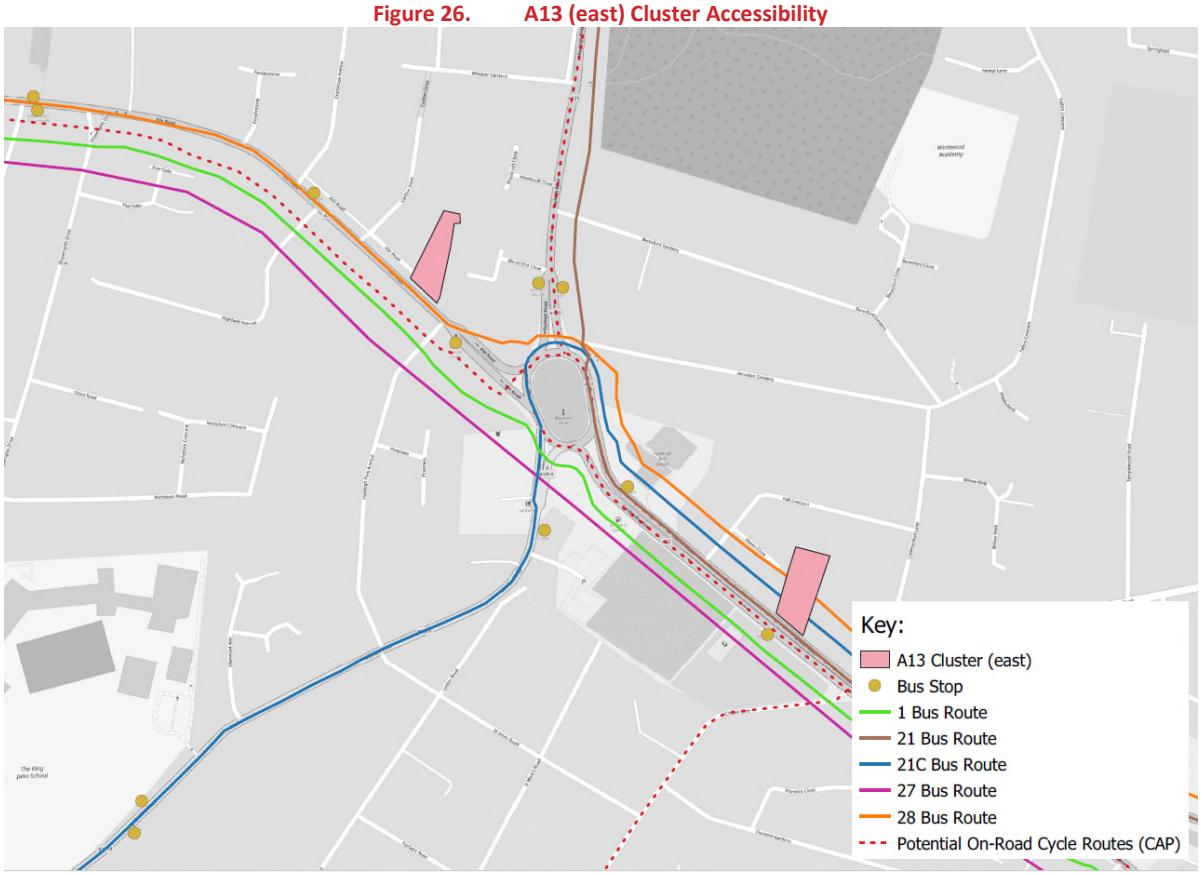


Figure 26. A13 (east) Cluster Accessibility



7.2.60 The cluster contains 17 bus stops, of which 14 have shelters, and three comprise only a bus stop pole and flag. None of the bus stops have live-service updates (RTPI Screens).

7.2.61 All sites within the development cluster have a bus stop in their immediate vicinity, aside from the Maharaja Restaurant site, which lies approximately 150 metres to the southeast of the Kents Hill Road North bus stop. Nevertheless developments in this area would be expected to contribute towards local bus service enhancements and the redesign of the A13/Kents Hill Rd/Kents Hill Rd North junction to improve bus movements.

7.2.62 Based on the previous RAG testing, the junctions in proximity to the A13 cluster are:

- **Junction 5 Vic House Corner**, located between the Sandcastles Nursey and Thames Loose Leaf site (Amber in both 2033 Reference Case Scenarios);
- **Junction 6a London Road/New Road/Chapel Lane**, located a short distance southeast of the Sandcastles Nursery site (Green across both 2033 Reference Case scenarios);
- **Junction 7 A13 London Road/Kents Road** located between the land north of Kents Hill Road/London Road and Queen Bee's Nursery sites (Green in both 2033 Reference Case Scenarios); and
- **Junction 16 A13 London Road/Kenneth Road** located to the southeast of the land on the corner of Kenneth Road site (Red across both 2033 Reference Case scenarios).

7.2.63 Land on the corner of Kenneth Road is located in close proximity to Junction 16 A13 London Road/Kenneth Road which has RAG rating of "Red" (overcapacity with significant queuing) across all Reference Case scenarios. The Sandcastles Nursery and Thames Loose Leaf sites are located in proximity to Junction 5 - Vic House Corner which has a RAG rating of "Amber" (approaching capacity with queuing likely) through both 2033 Reference Case AM/PM scenarios. Mitigation of Junctions 5 and 16 may be possible but require further investigation. Improvement schemes have previously been suggested at both junctions within Mott MacDonald's "Mitigation and Safety Analysis" report (2019); namely increasing of the lane entries of junction 5, and signalisation of junction 16. These mitigations are noted to result in a relatively minor improvement in performance. These have been included in the Schedule of Interventions (see section 7.3 of this report). The A13 junction with Kents Hill Road and Kents Hill Road North is in need of improvement to facilitate bus movements in all directions.

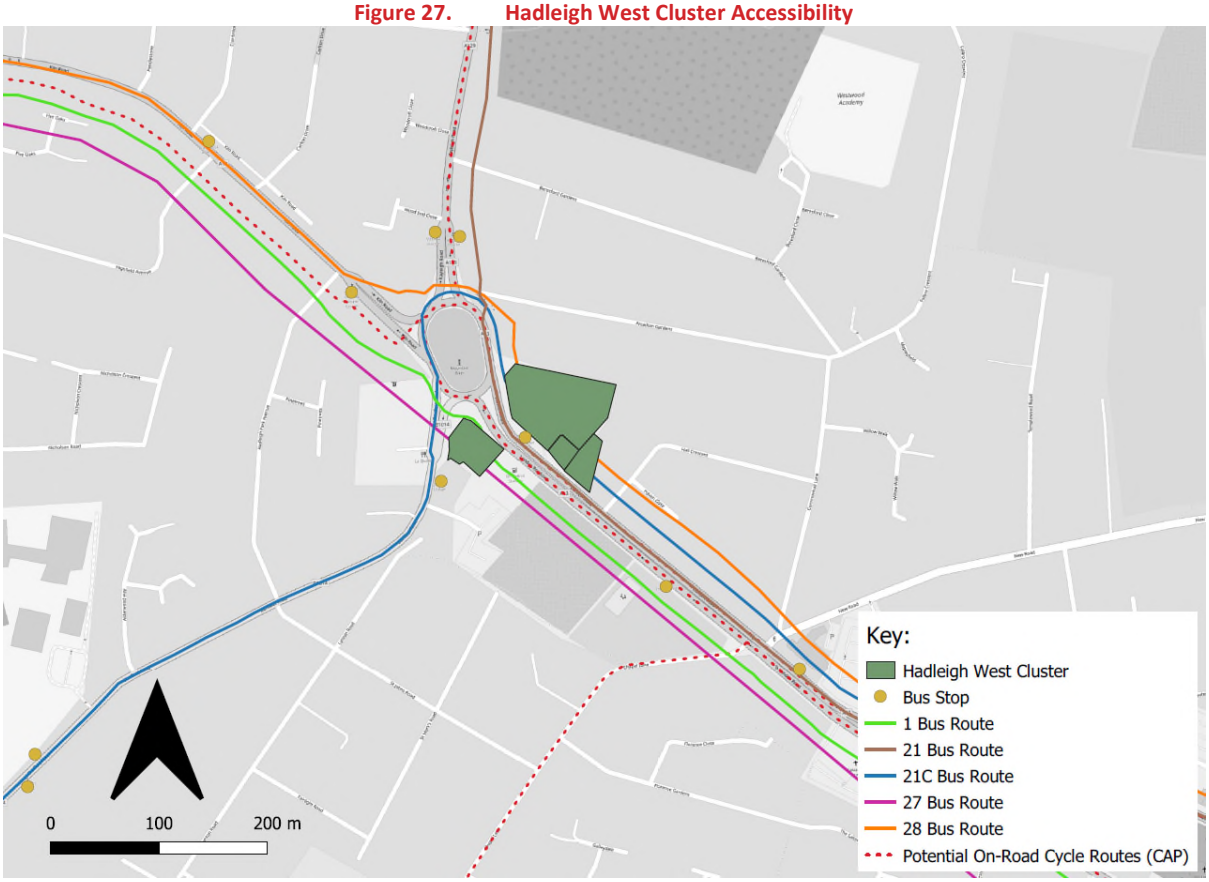
7.2.64 Falling across the identified Regions 6,7,10, and 11 of SYSTRA's schedule of intervention, it is suggested that further cycle routes southbound towards the Benfleet Station and Canvey Island could be an option to improve accessibility through active and sustainable modes, and potentially reduce the level of congestion across the A13. There may also be the potential for a bus priority scheme along the A13. However, this would be to the detriment of other vehicles on the network. Whilst this intervention is a potential mitigation to improve servicing to the wider area, the mitigation is not to come at the detriment of the existing road network, and is required to be considered in-line with wider active travel guidance and feasibility.

Hadleigh West

7.2.65 The cluster is formed of four sites, located to the southeast of the Rayleigh Road/London Road/Kiln Road/Benfleet Road roundabout. The capacity of the cluster is around 69 – 102 new homes, with the highest capacity in the Bus Depot, with a noted capacity of 49. All four sites are located within 400 metres actual walking distance of the nearest bus stop.

7.2.66 The transport accessibility surrounding the Hadleigh West cluster is indicated in the figure below.

Figure 27. Hadleigh West Cluster Accessibility



7.2.67 Five bus routes are operating through the cluster; namely the 1, 21, 21C, 27 and 28. The cluster contains two bus stops, at the Bus Depot on the southeast-bound side of London Road, and at Queens Lodge, on the southbound side of Benfleet Road. The Bus Depot stop has a shelter and seating, whereas the Queens Lodge stop has a bus pole and flag. Any developments in this area would be expected to contribute to the enhancement of the local bus network and potentially the A13 sustainable transport corridor.

7.2.68 A potential on-road cycle route is identified by the Cycle Action Plan, northbound towards Thundersley, westbound toward Benfleet and south toward Hadleigh Country Park. If implemented, the cluster would be connected to a series of other regions throughout the borough and green spaces, but would need to consider the range of local, national and international designations along the route.

7.2.69 The cluster is located to the southeast of **Junction 5 - Rayleigh Road/London Road/Benfleet Road/Kiln Road**. The junction results in previous RAG testing is `Amber' (approaching capacity with some queuing) in both AM/PM Reference Case scenarios; indicating the performance of the junction and surrounding road network could increase beyond capacity with further development.

7.2.70 Whilst the cluster is well-served by public transport routes, the previous RAG scoring indicates Junction 5 would be approaching capacity in 2033. However, the 100 homes in this cluster alone are unlikely to significantly impact on junction performance. Further investigation is recommended surrounding the junction to ensure that the additional homes do not increase congestion surrounding the junction to overcapacity.

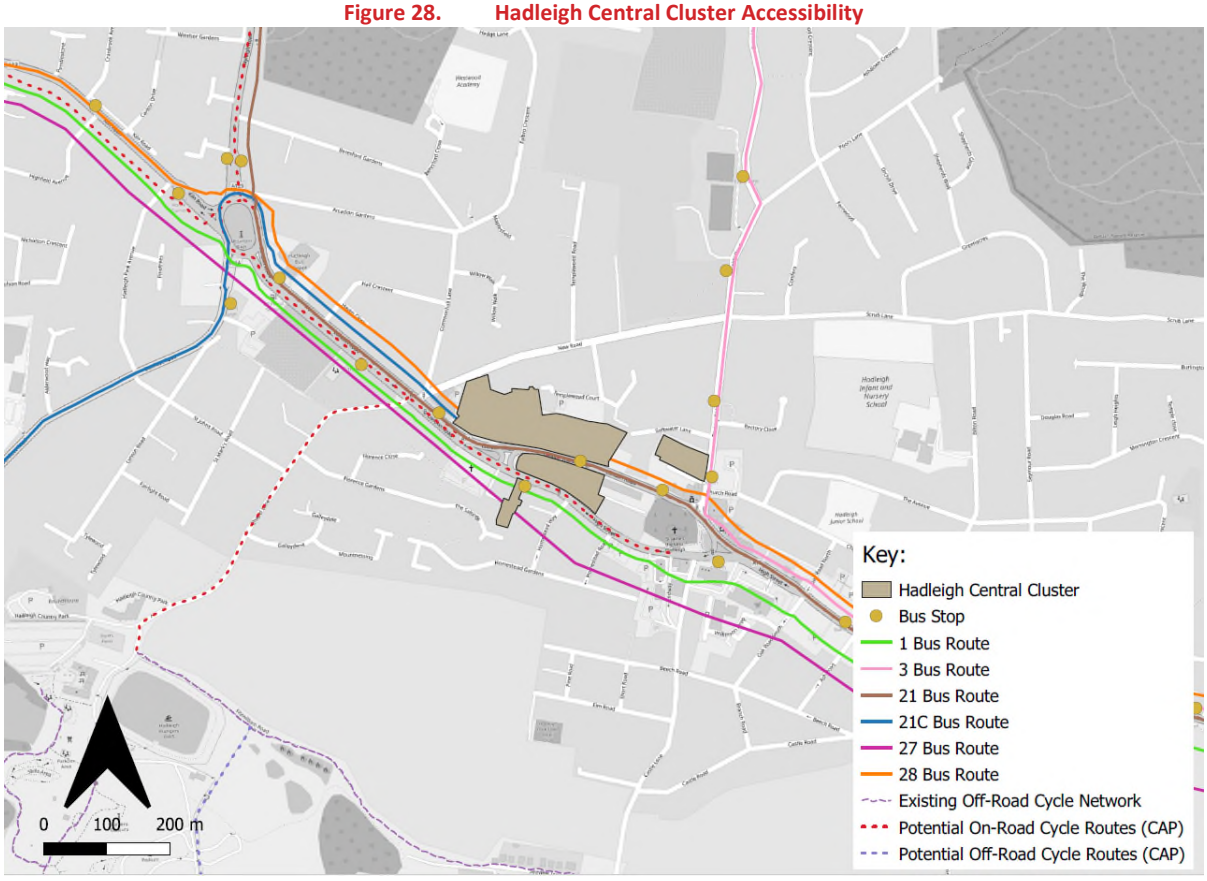
7.2.71 Falling within the western corner of region 11 and 12 of SYSTRA's schedule of intervention, it is suggested that accessibility of the cluster through active and sustainable modes could be enhanced through the implementation of cycle routes along Benfleet Road southwest bound toward Benfleet Station. As with the other clusters along the A13, there may also be the potential for a bus priority scheme along the A13. However, this could be to the detriment of other vehicles on the network. Lighter measures could include improved bus waiting facilities to encourage increased usership of public transport modes.

Hadleigh Central

7.2.72 The Hadleigh Central cluster is formed of four sites surrounding London Road/High Street in Hadleigh. The capacity of the area is around 148 – 296 new homes, with the greatest capacity in the Morrisons site, comprised of 94 dwellings. All four sites are located within 400 metres of a bus stop.

7.2.73 The accessibility to the Hadleigh Central cluster is indicated in the figure below.

Figure 28. Hadleigh Central Cluster Accessibility



7.2.74 The cluster is well served by the local bus network, with five services operating through the cluster – the 1, 3, 21, 21C, 27 and 28 – and dedicated bus lanes westbound along the A13 stretching from the London Road/Manor Road junction to London Road/Kents Hill Road junction, additionally eastbound along the A13 between London Road/Morrisons Supermarket and 251 London Road. The cluster is served by five bus stops, of which three have a bus shelter and two a bus post. The Morrison's bus stop has live timetable service updates. There would be an expectation that developments in this area would contribute

towards the provision of a mobility hub, theA13 sustainable transport corridor and the enhancement of the local bus network.

7.2.75 As part of the Cycle Action Plan, potential on-road cycle routes are identified along the High Street and connecting to potential off-road cycle routes through Hadleigh Country Park to the south.

7.2.76 The cluster is in close proximity to four previously tested junctions:

- **Junction 6a London Road/New Road/Chapel Lane**, located approximately 70 metres to the northwest of the Morrisons site (Green across all scenarios);
- **Junction 6b London Road/Rectory Road**, located approximately 45 metres to the south of the Rectory Road Car Park site (Green across all scenarios);
- **Junction 6c London Road/High Street/Castle Lane**, located approximately 65 metres to the south of the Rectory Road Car Park site (Green across all scenarios); and
- **Junction 6d Rectory Road/Scrub Lane/New Road**, located approximately 230 metres to the north of the Rectory Road Car Park site (Green across all scenarios)

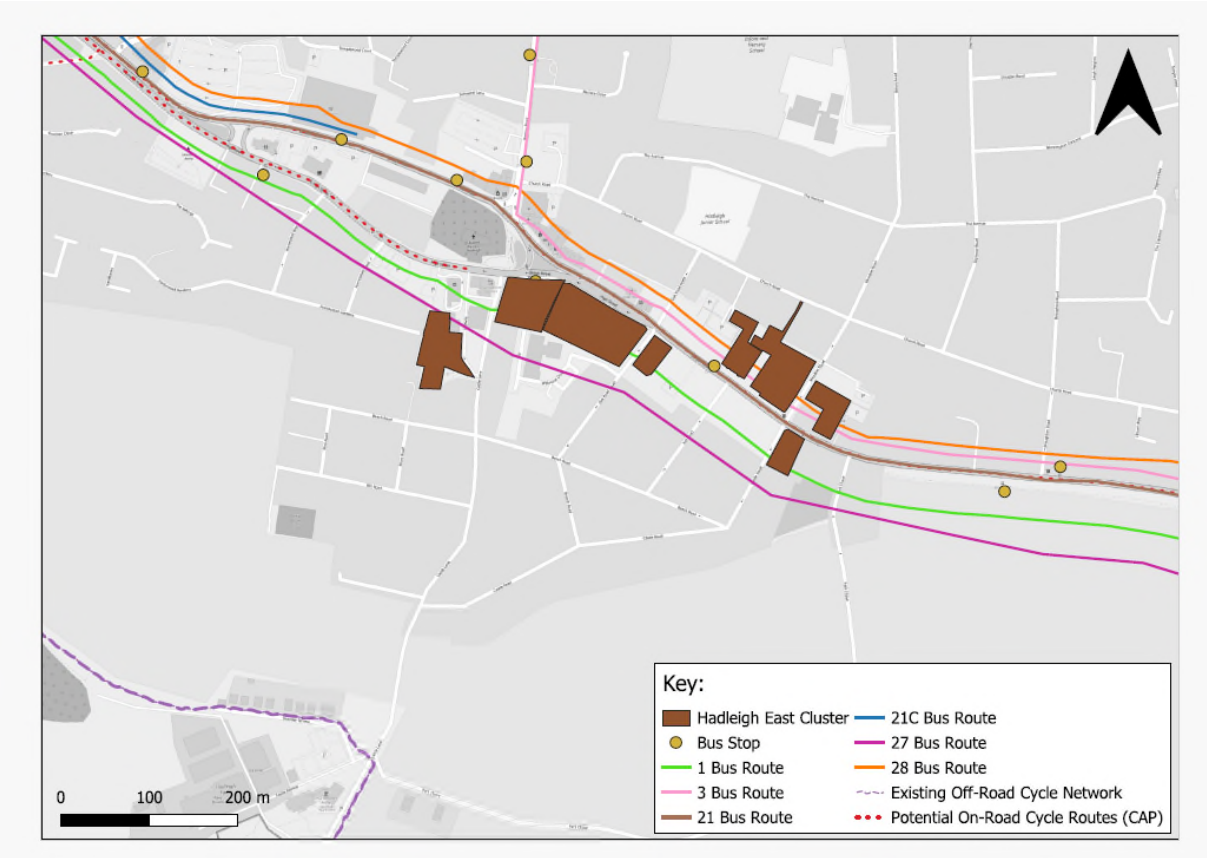
7.2.77 Falling within region 12 of SYSTRA's schedule of intervention, it is suggested that the accessibility of the cluster through active and sustainable modes could be enhanced through the implementation of cycle routes along New Road and northbound along Daws Heath Road. This would leave the potential to be expanded towards residential areas to the northeast of the cluster. As with the other A13 clusters, there may also be the potential for a bus priority scheme along the A13. However, this would likely be to the detriment of other vehicles on the network.

Hadleigh East

7.2.78 The cluster is formed of eight sites surrounding High Street, Hadleigh. The capacity of the cluster is around 140 - 216, and the Johnsons Factory and Lidl have the highest capacity, both with a capacity of 29 dwellings.

7.2.79 The accessibility to the Hadleigh East cluster is indicated in the figure below.

Figure 29. Hadleigh East Cluster Accessibility



7.2.80 The Hadleigh East cluster is served by five bus routes - the 1, 3, 21, 21C, 27 and 28. The cluster is served by two bus stops, of which both have shelters and seating. However neither have live service timetable updates (RTPI screens). As with the previous cluster these sites would be expected to contribute towards the provision of a mobility hub, the proposed A13 Sustainable Transport corridor and local bus service improvements.

7.2.81 A potential on-road cycle route is identified by the Cycling Action Plan westbound from the cluster towards Hadleigh Central.

7.2.82 Due to its close proximity to the Hadleigh Central cluster, the previously tested junctions in closest proximity to the Hadleigh East cluster are Junctions 6b, 6c, and 6d. As previously described, all three junctions have a RAG rating of `Green' (operating within capacity with no queuing) across all four 2033 scenarios.

7.2.83 As such, this cluster is suited to future development at this scale, with the wide range of bus services available and the junctions operating within capacity with no queuing.

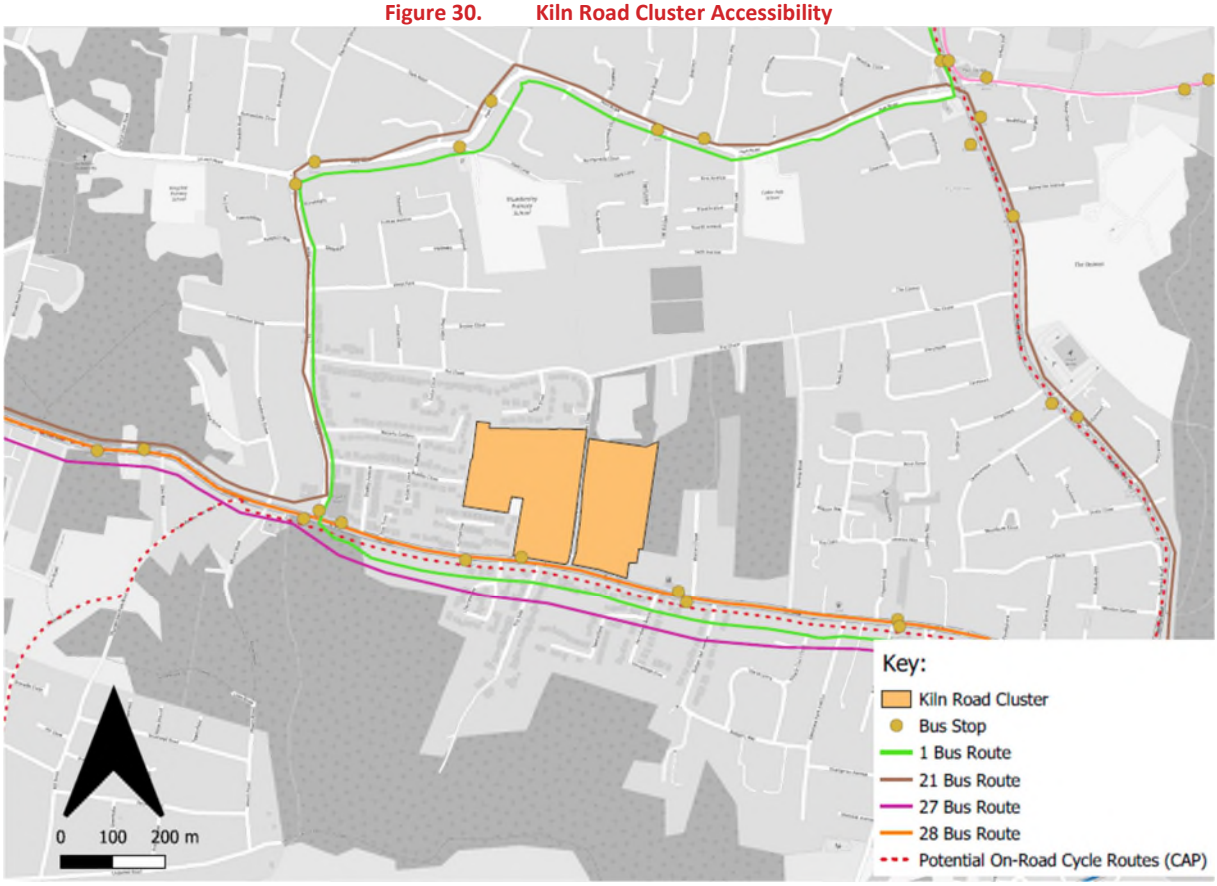
7.2.84 Falling within region 12 of SYSTRA's schedule of intervention, it is suggested that the accessibility of the cluster through active and sustainable modes could be enhanced through the implementation of cycle routes along New Road and northbound along Daws Heath Road. There may also be the potential for a bus priority scheme along the A13. However, this could bring some detriment to other vehicles on the network.

Kiln Road

7.2.85 The Kiln Road cluster is formed of two sites surrounding the Kiln Road/Runnymede Chase junction. The cluster is comprised of a capacity of around 323 - 645, with the greater capacity in the USP College, comprised of 187 dwellings. Both sites are located within 400 metres actual walking distance of a bus stop.

7.2.86 The accessibility to the Kiln Road site is indicated in the figure below.

Figure 30. Kiln Road Cluster Accessibility



7.2.87 The Kiln Road Cluster is well-served by the local bus network, with the 1, 27 and 28 all operating along the southern side of the two sites the South Essex College and Council Offices. Additionally, the 21 bus route is accessible a short distance to the west on Kenneth Road. The cluster is served by four bus stops adjacent to the two sites; all of which have shelters, with no live service timetable update screens (RTPI).

7.2.88 As part of the Cycle Action Plan, potential on-road cycle routes are identified east-west along Kiln Road along the southern perimeter of the cluster. If implemented, this would provide cycle connections towards South Benfleet to the southwest, and Thundersley to the northeast. This would be required to comply with local and national active transport requirements, however.

7.2.89 The previous RAG assessment demonstrated that **Junction 16 London Road/Kenneth Road**, located approximately 400 metres to the west of the USP College site had a RAG rating of "Red" (operating overcapacity with significant queuing) across all scenarios. Considering the relatively high capacity of the two sites within the Kiln Road cluster development from a transport perspective may prove challenging. Junction mitigation may be possible, and a

signalisation scheme has been previously suggested within Mott MacDonald's Mitigation and Sensitivity Analysis (2019) which was shown to provide limited operational benefit to the network in the PM peak of the 2033 Reference Case, with no improvement in the AM peak.

7.2.90 Falling within sub-region 10 of SYSTRA's schedule of interventions, the Kiln Road cluster could be provided with enhanced cycle accessibility through a southwest-bound cycle route along Benfleet Road, providing a direct link to Benfleet Station and consider the use of the side roads where traffic densities are lower and whilst the same corridor it might be more attractive to cycle on. Further junction analysis will be required to understand the feasibility of these implementations, and any interventions should not come at the expense of the operation of the wider road network.

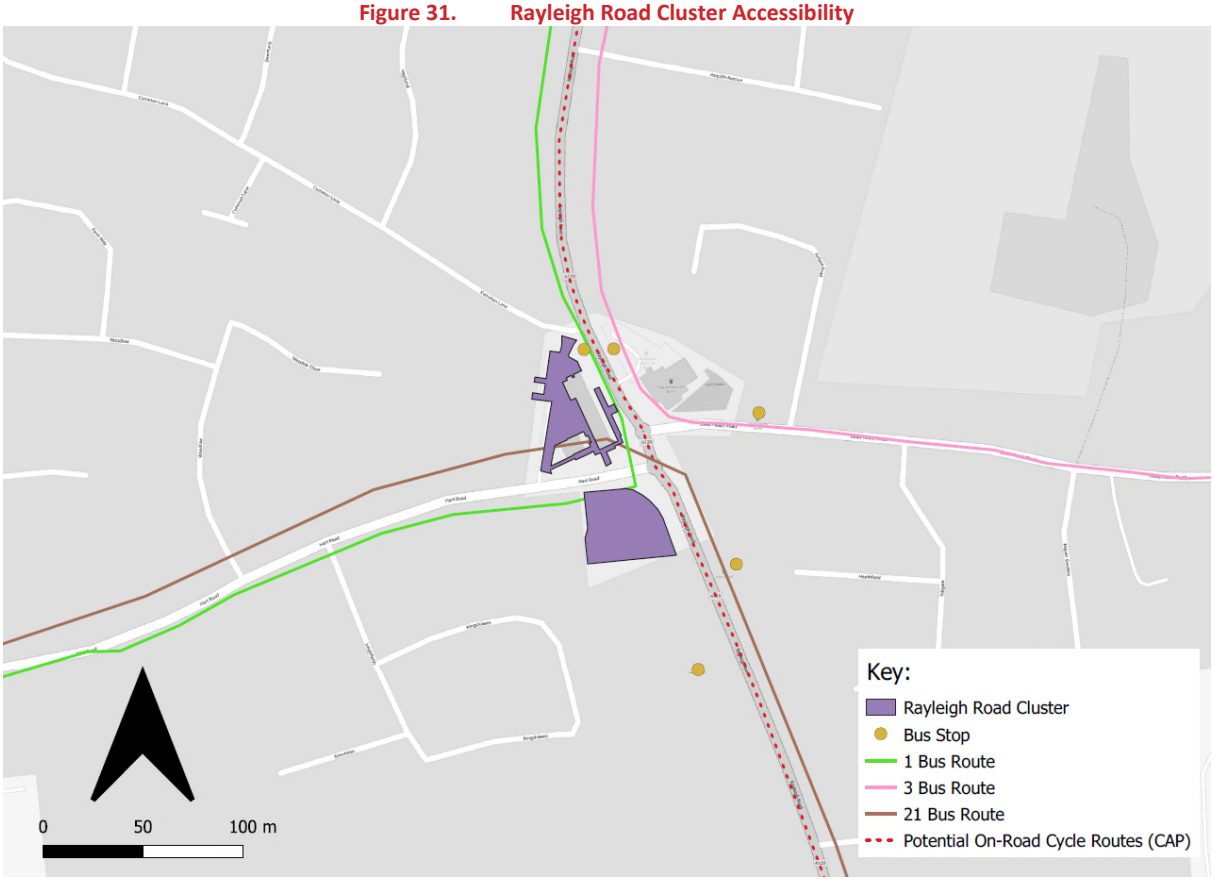
7.2.91 As they are all located along the A13, there are similarities between the Kiln Rd, Hadleigh and Tarpots clusters. Opportunities to cumulatively mitigate these clusters will be considered as part of the option assessment.

Rayleigh Road

7.2.92 The Rayleigh Road cluster is formed of two sites, to the north and south of Hart Road at the junction with Rayleigh Road. The capacity of the site as a whole is between 16 and 21 new homes, with the higher capacity anticipated at the 343 Rayleigh Road site, compared to the Rayleigh Road Parade site. The density of both sites is deemed to be "Low", and both sites are within 400 metres actual walking distance of the nearest bus stop.

7.2.93 The accessibility of the Rayleigh Road cluster is indicated in the figure below.

Figure 31. Rayleigh Road Cluster Accessibility



7.2.94 There are two bus routes serving the cluster; the 1 and 3. There are three bus stops within the cluster; two containing a shelter and one comprising a bus stop pole and flag. None of the bus stops contain live service updates / real time passenger information. Developments within this cluster would be expected to contribute towards the further development of the local bus network.

7.2.95 The potential on-road cycle routes identified in the Cycling Action Plan along London Road provide a possible connection to the wider Hadleigh area to the south and Rayleigh to the north.

7.2.96 Both sites of the cluster are located in proximity to **Junction 4 – Rayleigh Road/Daws Heath Road/Hart Road roundabout**. Across all four scenarios, the junction had a RAG rating of "Red" (operating overcapacity with significant queuing) in the Reference and Local Plan scenarios. This junction presents a reliability issue for bus services currently – so any additional capacity issues would certainly need to be mitigated for in support of sustainable modes.

7.2.97 Given Junction 4 is operating overcapacity with significant queuing, the Rayleigh Road cluster maybe a challenging cluster to develop from a highway capacity perspective at this scale. However, mitigation of Junction 4 would warrant further investigation. The Mott MacDonald Mitigation and Sensitivity Analysis (2019) has suggested that improvement of this junction maybe possible with the implementation of a Link Road along Stadium Way, but improvement is anticipated to be only slight. Further analysis will be required to confirm if a suitable scheme can be developed at this location.

7.2.98 Falling within regions 9 and 10 of SYSTRA's schedule of intervention, it is suggested that cycle routes westbound along Hart Road and Common Lane and associated accesses into residential roads to the north, in addition to pedestrian crossings along Hart Road, should be considered to improve the active and sustainable connectivity of the cluster. Whilst this intervention is a potential mitigation to improve the active transport provision in the local area, the alteration is not to come at the detriment of the existing road network, and is required to be considered in-line with wider policy and feasibility.

Unclustered Sites

7.2.99 A number of development sites fall outside of wider development clusters. These are described in Table 2 below.

Table 3. Unclustered Sites

SITE	TOWN	SITE SIZE
20 Haresland Close, Hadleigh	Daws Heath	0.28
Briar Cottage, Leige Avenue, Canvey Island	Canvey Island	0.08
Rear of 179-181 Church Road, Thundersley	Benfleet	0.31

SITE	TOWN	SITE SIZE
Halfords, 543-557 Rayleigh Road, Thundersley	Thundersley	0.43
61-69 Hart Road, Thundersley	Thundersley	0.13
Land between Starling Close and Hacks Drive, Thundersley	Thundersley	0.10
Land between Highfield Avenue and Nicholson Road, Thundersley	Thundersley	0.32
Garages off St Johns Crescent, Canvey Island	Canvey Island	0.11
Garages site off St Agnes Drive, Canvey Island	Canvey Island	0.17
258 Furtherwick Road, Canvey Island	Canvey Island	0.13
Land on the corner of Little Gypps & Willow, Canvey Island	Canvey Island	0.11
Dark Lane Car Park, Thundersley	Thundersley	0.13
Land adjacent to Villa Park, Tarmarisk, Benfleet	Benfleet	0.14
Solbys House, Rectory Road, Hadleigh	Hadleigh	0.18

SITE	TOWN	SITE SIZE
Lubbins Car Park, Eastern Esplanade, Canvey Island	Canvey Island	0.26
Richmond Car Park 1 off Richmond Avenue, Benfleet	Benfleet	0.38
Land to the rear of North Avenue, Canvey Island	Canvey Island	0.40
Church Road parade and garages behind	Benfleet	0.36
Benfleet Clinic, High Road, Benfleet	Benfleet	0.08
Thundersley clinic, Kenneth Road, Thundersley	Thundersley	0.19
Morrisons, Link Road, Canvey Island	Canvey Island	0.18
Health Centre, Third Avenue, Canvey Island	Canvey Island	0.21
Essex Coachworks, 218 High Street, Canvey Island	Canvey Island	0.12
27-37 Eastern Esplanade, Canvey Island (Parks Pallidum - Brunos)	Canvey Island	0.38
Land South of Scrub Lane, Hadleigh	Hadleigh	1.19

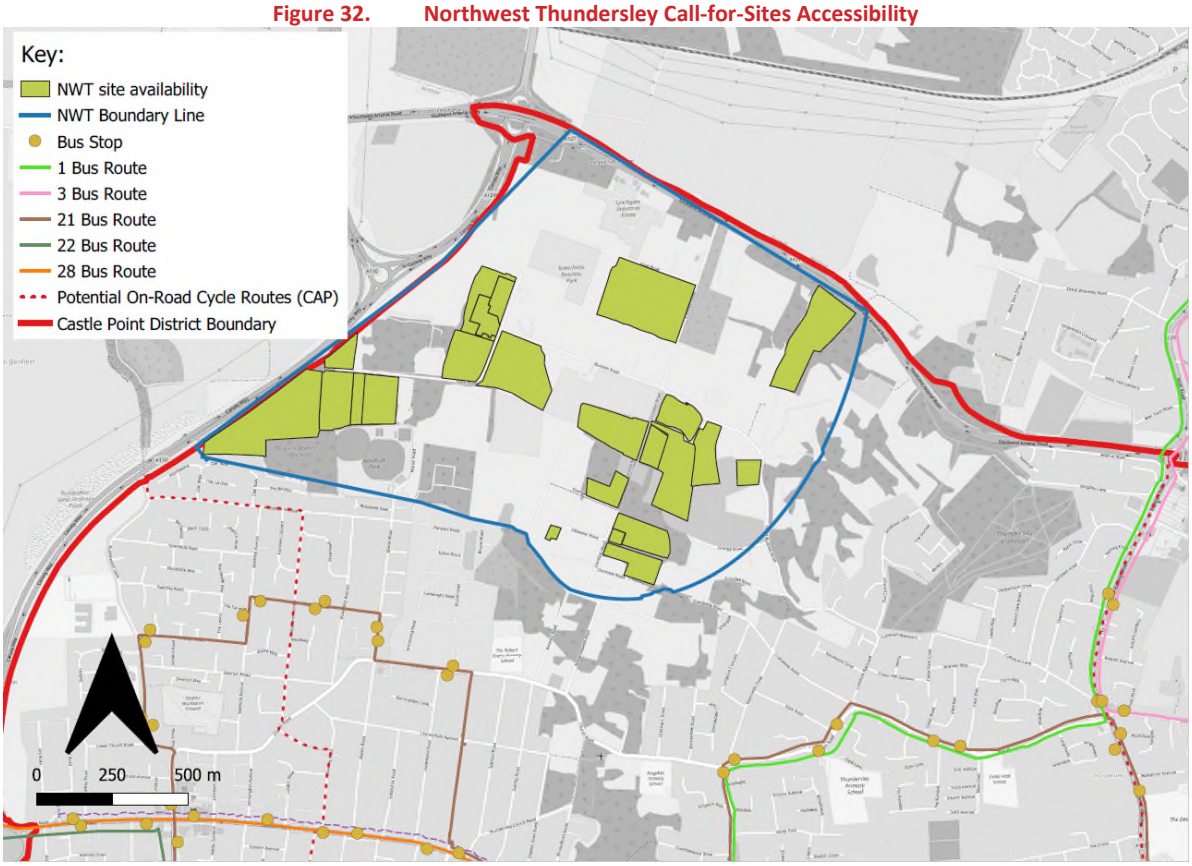
7.2.100 Due to the low capacity of a majority of these sites, it is unlikely they will have a significant impact on the transport network in isolation. Further analysis will be undertaken at subsequent stages of plan preparation to identify any potential impacts. Further investigation

is specifically recommended into Land South of Scrub Lane proposed for around 80 new homes. All would however be required to contribute towards the enhancement of the local bus network.

Northwest Thundersley (Option 2b)

7.2.101 In addition to the clusters provided for investigation, the North West Thundersley (NWT) area has been highlighted for potential development, with 24 sites identified via the call for sites. The development area, with its associated accessibility to different modes of travel, is indicated in the figure below. The NWT sites are given the designation "option 2b" in the wider list of options which has been developed by CPBC.

Figure 32. Northwest Thundersley Call-for-Sites Accessibility



7.2.102 Due to the early nature of the call for sites information, the areas put forward do not currently have any assumptions made in relation to their potential capacities for development. It is understood that this has been considered at a high level by the Council's appointed employment specialists and that this information will be fed through into subsequent stages of work as required.

7.2.103 The initial appraisal of the North West Thundersley development area indicates that there are currently no bus routes directed through the area, and the closest bus stops lie approximately 600 metres walking distance to the south of the western development sites. These sites would all be required to contribute towards localisd improvements to the bus network in the area, to redress the current shortfall in provision, and to create accessibility to the wider development site.

7.2.104 The bus stop closest to the development site is the Eversley Road bus stop, which is served by the 21 Bus Route, and is marked by a bus pole and flag with no shelter or seating.

7.2.105 The Cycle Action Plan indicates that there is potential for an off-road cycle route southbound towards Benfleet, the closest connection to which woud be a short distance south from the western boundary of the development area.

7.2.106 The potential North West Thundersley development area lies adjacent to the south of two junctions where it is expected that there will be an increase in delays and congestion in the previously tested future year scenarios:

- Junction 2: A127/A130 Fairglen Interchange (Red across all future year scenarios – operating overcapacity with significant queueing); and
- Junction 14: A130/A1245 Rayleigh Spur (Amber (approaching capacity with some queuing) across AM/PM Reference Case, and 2033 Local Plan PM scenario, and Red (overcapacity with significant queuing) in 2033 Local Plan AM scenario).

7.2.107 Considering the capacity issues which previous work has identified at both junctions, with the A1245 being a major arterial road, it is expected that extensive and specific additional mitigation would be required prior to the commencement of further development in the area. This would be expected to include revised site access arrangements, potentially other physical highway mitigation works, and works to significantly enhance access by non-car modes to and from the site linking into the existing residential development to the south.

7.2.108 Early discussions have been held with ECC, as the highway and transportation authority, regarding potential access to the site and how this would affect the surrounding highway networks. The Highway Authoirty has highlighted concerns over any access for development at North West Thundersley onto the Strategic Road Network. This was also previously explored by CPBC in their 2015 AECOM Castle point Transport Evidence Phase 2 Report. Of the initial options discussed, the points raised are summarised as follows:

- **Enlarged / enhanced left in, left out access on to the west bound A127 on the northern boundary of the site (similar to, or replacing, the existing development access point):** Likely to create significant additional congestion at the A127/A130 Fairglen Interchange and also the A127/A129 Rayleigh Weir with eastbound traffic required to perform a full circulation around the junction to double-back to the A127 Westbound. Relatively small in terms of footprint and unlikely to be attractive to potential occupiers, who will require or expect a full-movements junction for access purposes.
- **Upgrading of A1245 / A130 Rayleigh Spur roundabout junction to a four-arm configuration:** This would in theory allow the most direct access to the site and remove "doubling back" movements. Any re-design would result in "hamburger design" roundabout which, from an initial qualitative consideration, could still potentially accommodate the current north-south bypass lane on the existing junction (this would, however, require bespoke traffic modelling with its scope and method to be agreed with ECC). The costs of a scheme of this nature would be so significant it is very unlikely that the value of the redevelopment of the North West Thundersley site would be sufficient to fund the works in isolation. There would also be significant disruption associated with the construction of this scheme which would need to factor into any economic assessment.
- **Southbound New left-in, left out junction on the A1245 (between A127/A130 Fairglen Interchange and Rayleigh Spur)**: It is considered that there is insufficient physical space to

achieve an additional new junction on the A1245 where it borders the site and there would be expected to be concerns raised by occupiers over the restricted method of access which could affect land/rental values which could be achieved.

- **Vehicular access from the south of the site (via existing employment area Manor Trading Estate)**: This would require the creation of one or more new vehicular routes crossing established areas of green space. Direct access from the south should prioritise active and sustainable movements thereby minimising vehicle movements through the existing urban area. Whilst this is physically possible to achieve (any land ownership matters being resolved in a satisfactory manner) the introduction of additional private car traffic to the existing employment area and the main routes to and from it would be expected to exacerbate existing traffic congestion and could lead to a worsening of conditions for sustainable modes in the area. This was also previously explored by CPBC in their 2015 AECOM Castle point Transport Evidence Phase 2 Report.

7.2.109 The emerging Local Plan sites work includes potential for intensification of the existing employment areas to the south. Whilst there would be major concerns with accessing large-scale development at the North West Thundersley site as described above, a smaller development within this area could potentially be considered as a variant of the options for the existing employment area. This would need to be carefully planned so as to address the issues around wider traffic impacts and lay the foundations for a high standard of access to the NWT area by active and sustainable modes. However, there is potential for the existing employment and smaller NWT schemes to support one another, both in terms of the number of businesses which would benefit from the associated transport improvements and the expansion of the "customer base" for existing public transport routes – for which the developments would be expected to contriute towards the development of.

7.2.110 This potential approach would not rule out or conflict with the further investigation or development of proposals for a larger development of the North West Thundersley site in the future. Based on the currently available evidence it is considered that the most likely way forward with such a scheme would involve discussions with adjacent local councils, namely Basildon and Rochford with regards there future plans for growth. It is extremely unlikely that all of the necessary analysis and scheme development could be undertaken within the timeframes of the current Castle Point Local Development Scheme, but the emerging Local Plan could act as a catalyst to move these discussions forward as well as emerging strategies from Transport East and SEC (formerly ASELA).

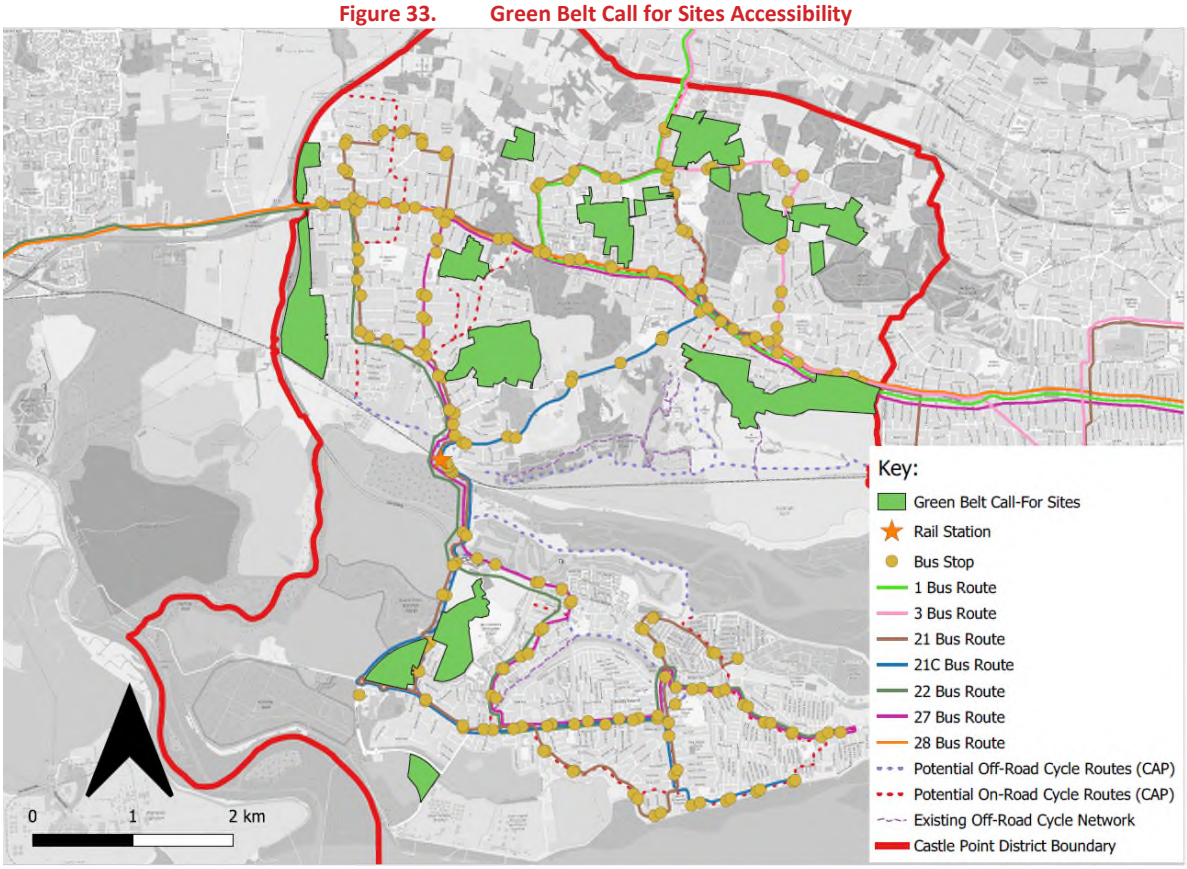
Green Belt Land (Options 2a and 3)

7.2.111 The Option 1 sites represent the locations and expected quantity of housing which could be developed on existing brownfield sites within the Castle Point administrative area. Delivery of any additional housing would require additional land to be identified for development within existing areas of the Green Belt. No formal Green Belt review has at present been undertaken; however, CPBC has requested that an initial consideration be given to a range of site options within the Green Belt that have been identified via the Call for Sites (CfS) exercise.

7.2.112 The Green Belt Site Options are to be considered for the purposes consultation at this stage. CPLP has defined two scenarios which would potentially involve some Green Belt land, referred to Options 2a and 3.

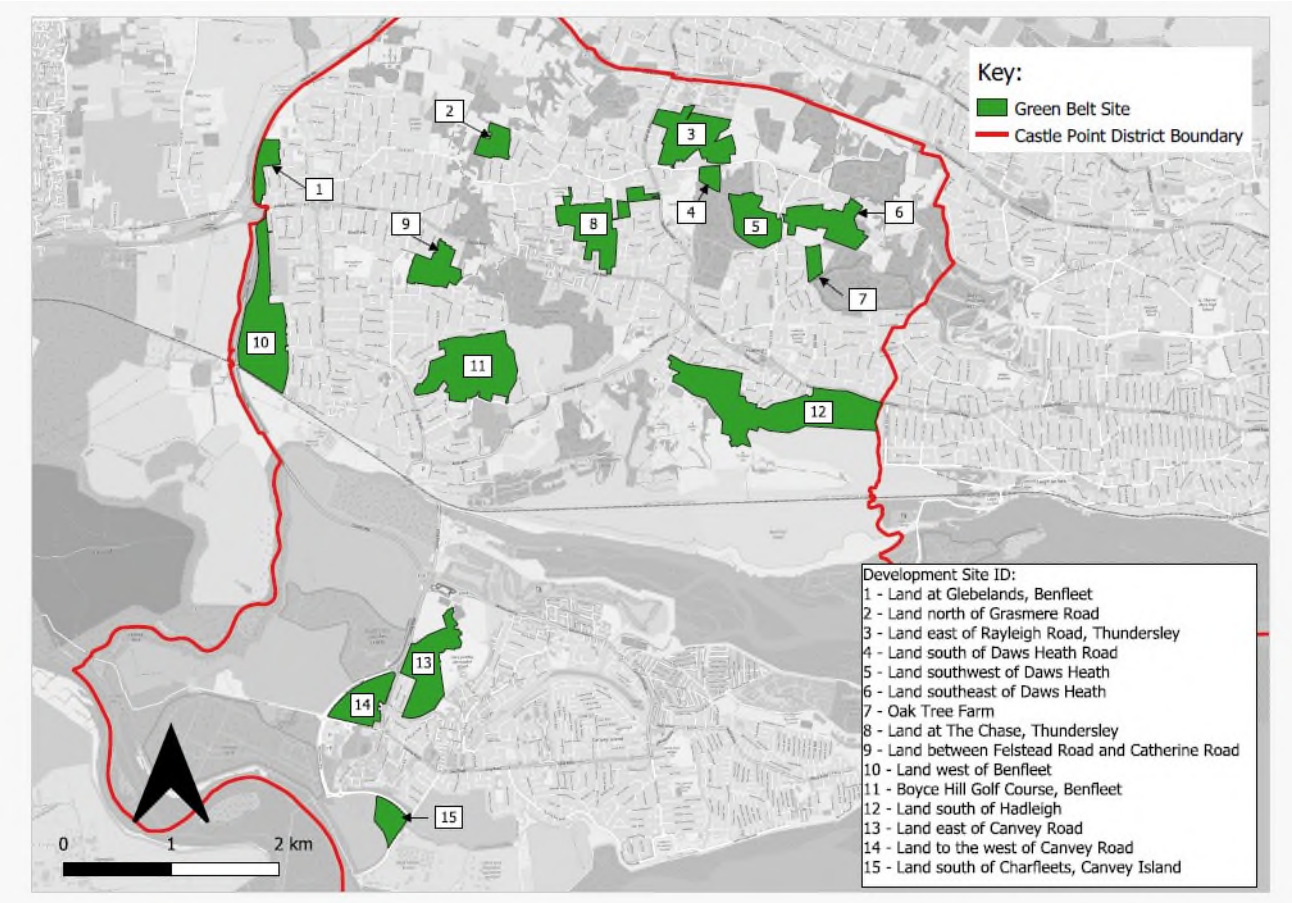
7.2.113 The general accessibility of all the considered sites is indicated in Figure 34 below.

Figure 33. Green Belt Call for Sites Accessibility



7.2.114 As is apparent from the figure above, the CfS sites are distributed across the Castle Point borough, and these are presently served by varying levels of public, active and sustainable transport. Figure 35 below provides a numbered reference for each of the CfS sites (these are also referred to as “GB Option” sites in other CPBC reports).

Figure 34. Green Belt Sites Location Map



7.2.115 It is considered that all of the CfS sites have the potential to be brought forward in a manner which would support active and sustainable transport measures and where the local impacts of associated transport demand could be accommodated and/or mitigated. A brief summary of corresponding information relating to access to bus and rail, access to cycle routes and nearby junction capacity is provided in the table below. The Council's references (GB numbers) are also provided for cross-referencing to other council documents.

Table 4. CfS sites – summary of existing transport context

SITE	ACCESS TO BUS	ACCESS TO RAIL	ACCESS TO CYCLE ROUTES / INFRASTRUCTURE	NEARBY JUNCTIONS
1 (GB4) – Land at Glebelands	Routes 21 and 22	Nearest station – Benfleet (bus connection)	LCWIP Corridors 1, 1a	Junctions 8 and 14 "Amber" in 2033 reference case
2 (GB15) – Land north of Grassmere Road	Routes 1 and 21 (but not within 400m)	Nearest station – Benfleet	LCWIP Corridors 2 and 3	No nearby junctions identified

SITE	ACCESS TO BUS	ACCESS TO RAIL	ACCESS TO CYCLE ROUTES / INFRASTRUCTURE	NEARBY JUNCTIONS
				as hotspots in 2033 reference case
3 (GB13) – Land East of Rayleigh Road, Thundersley	Routes 1 and 3	Nearest Station – Rayleigh (bus connection)	LCWIP Corridor 3	Junctions 4 and 16 "Red" and Junction 15 "Amber" in 2033 reference case
4 (GB14) – Land South of Daws Heath Road	Route 3	Nearest Station – Rayleigh (bus connection)	LCWIP Corridors 3	Junctions 4 and 16 "Red" and Junction 15 "Amber" in 2033 reference case
5 (GB11) – Land Southwest of Daws Heath	Route 3	Nearest Station – Rayleigh (bus connection)	LCWIP Corridor 3	Junctions 4 and 16 "Red" and Junction 15 "Amber" in 2033 reference case
6 (GB10) – Land Southeast of Daws Heath	Route 3	Nearest Station – Rayleigh (bus connection)	LCWIP Corridor 3	Junction 4 "Red" and Junction 5 "Amber" in 2033 Reference Case
7 (GB9) – Oak Tree Farm	Route 3	Nearest Station – Rayleigh (bus connection)	LCWIP Corridor 3	Junction 4 "Red" and Junction 5 "Amber" in 2033 Reference Case
8 (GB12) – Land at The Chase	Routes 1 and 3	Nearest Station – Rayleigh (bus connection)	LCWIP Corridors 2 and 3	Junctions 4 and 16 "Red" and Junction 15 "Amber" in 2033 reference case
9 (GB6) – Land between Felstead Road and Catherine Road	Routes 1, 27, 28	Nearest station – Benfleet (bus connection)	LCWIP Corridor 2	Junction 8 "Amber" in 2033 Reference Case

SITE	ACCESS TO BUS	ACCESS TO RAIL	ACCESS TO CYCLE ROUTES / INFRASTRUCTURE	NEARBY JUNCTIONS
10 (GB5) – Land West of Benfleet	Routes 1 and 22	Nearest station – Benfleet (bus connection)	LCWIP Corridor 1, 1a	Junctions 8 and 14 "Amber" in 2033 reference case
11 (GB7) – Boyce Hill Golf Course	Routes 21, 21C, 22, 27	Nearest station – Benfleet (walking / cycling distance)	LCWIP Corridors 7, 7a, 10	Junction 17 "Red" in 2033 reference case
12 (GB8) – Land South of Hadleigh	Routes 1, 3, 27, 28	Nearest station – Benfleet (bus connection, possibly cycling distance)	LCWIP Corridors 2a, 5, 12	Junction 5 "Amber" in 2033 reference case
13 (GB2) Land East of Canvey Road	Routes 21, 21C, 22	Nearest station – Benfleet (bus connection, possibly walking / cycling distance)	LCWIP Corridors 8, 8a, 9	Junctions 10 and 17 "Red" and Junction 9 "Amber" in 2033 reference case
14 (GB1) Land West of Canvey Road	Routes 21, 21C, 22	Nearest station – Benfleet (bus connection, possibly walking / cycling distance)	LCWIP Corridors 8, 8a, 9	Junctions 10 and 17 "Red" and Junction 9 "Amber" in 2033 reference case

SITE	ACCESS TO BUS	ACCESS TO RAIL	ACCESS TO CYCLE ROUTES / INFRASTRUCTURE	NEARBY JUNCTIONS
15 (GB3) – Land South of Charfleets	Routes 21, 21C, 22	Nearest station – Benfleet (bus connection)	LCWIP Corridors 8, 8a 9, 14	Junctions 10 and 17 "Red" and Junctions 9 and 13b "Amber" in 2033 reference case

7.2.116 The Initial Schedule of Interventions (discussed below) expands upon a number of these matters to identify potential improvements which would be of benefit both to the wider borough and to one or more of the sites within the different options being considered.

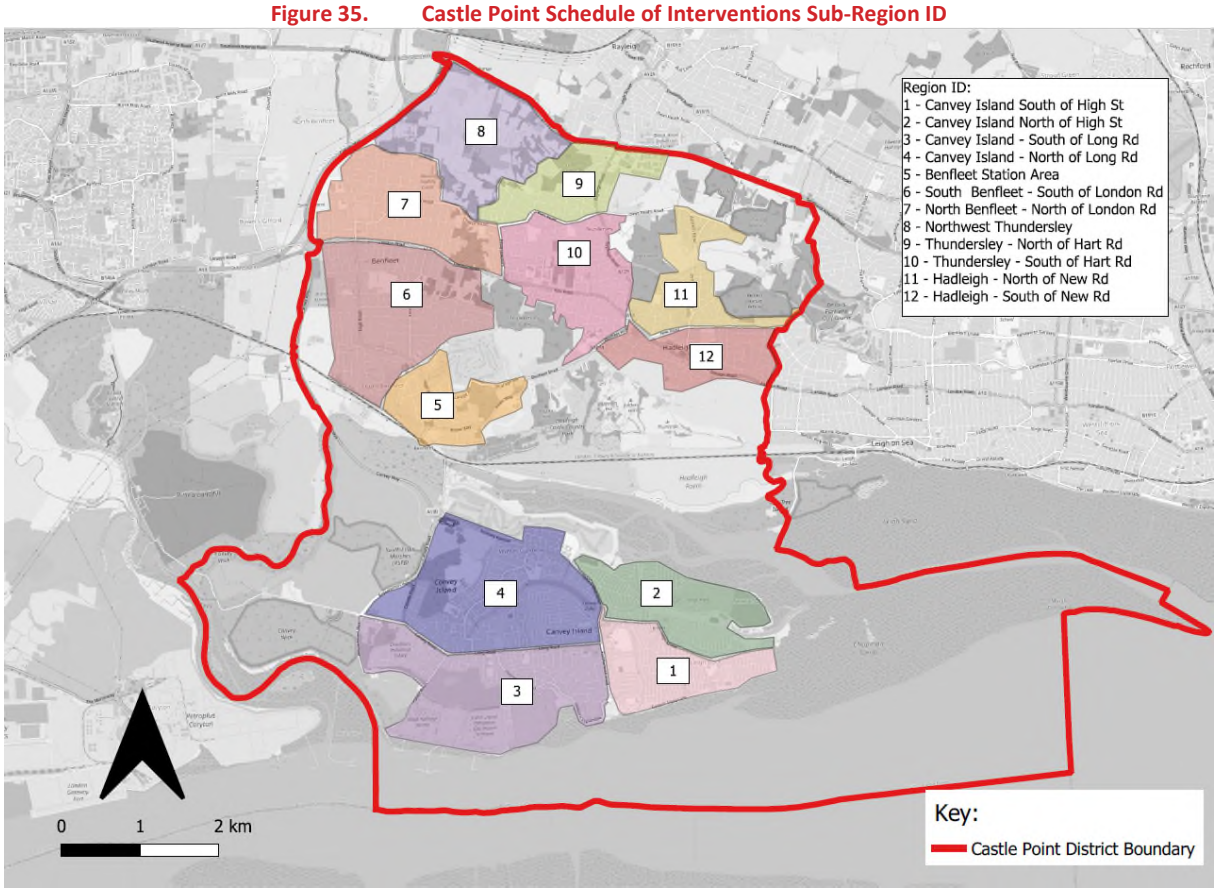
7.3 Schedule of Interventions

7.3.0 The Initial schedule of Interventions (ISI) has been developed as a long list of potential mitigations which could be brought forward to enhance the transport network and enable allocation sites to be brought forward.

7.3.1 At this point the ISI is not definitive, and it is expected that it will develop as the Plan moves from Issues and Options stage to Publication.

7.3.2 In order to demonstrate which interventions impact which clusters, the borough has been divided in to 12 sub-regions so that clusters can be grouped and assessed together. The figure below indicates the regions throughout Castle Point to be assessed as part of the Schedule of Interventions, and the following table indicates their surrounding transport provision.

Figure 35. Castle Point Schedule of Interventions Sub-Region ID



7.3.3 The following Tables 4 to Table 16 identify a series of interventions suggested as a means of improvement to walking, cycling, bus, rail and highway accessibility. Figure 36 and Figure 37 below indicate the suggested improvements in the Canvey Island and Mainland areas of Castle Point.

7.3.4 All interventions are at this stage initial and subject to amendment with further junction analysis and appraisal of local policy and transport guidance within the Regulation 18 stage of the Castle Point Local Plan.

Figure 36. SYSTRA Schedule of Interventions (southern region)

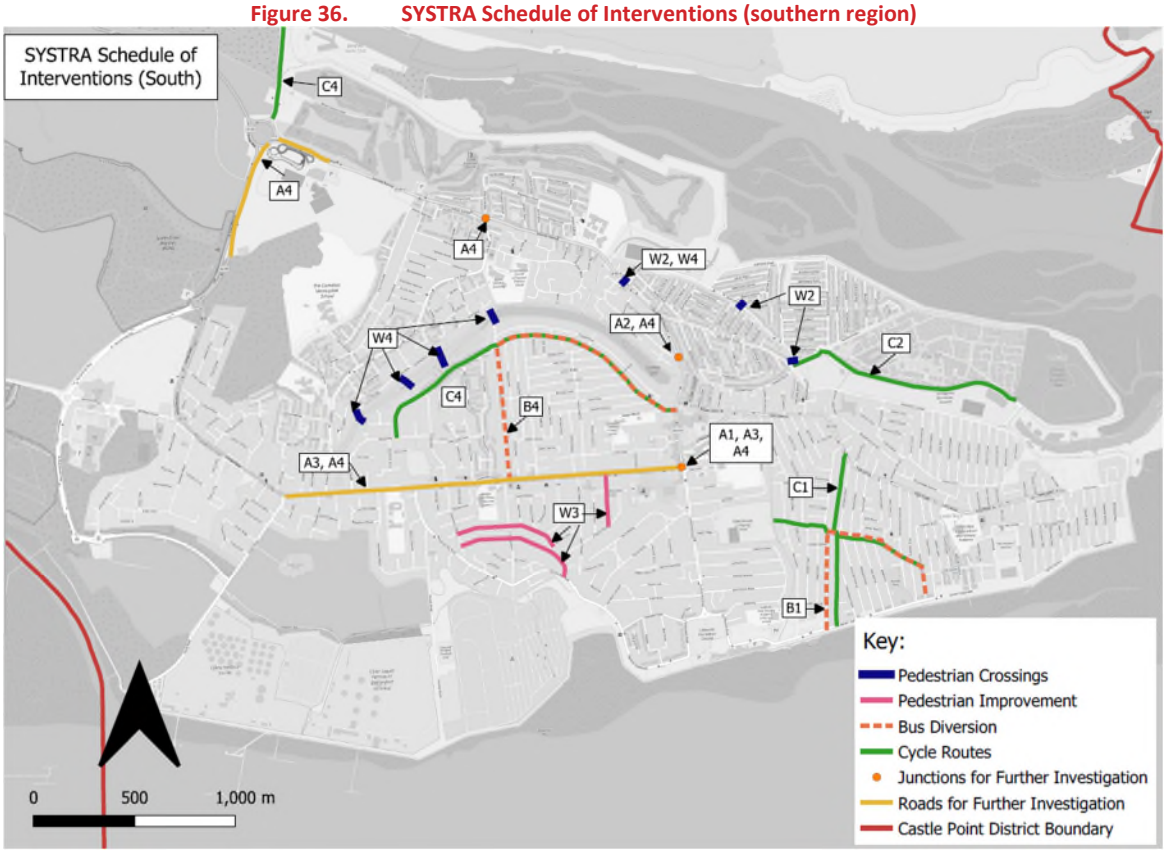


Figure 37. SYSTRA Schedule of Interventions (northern region)

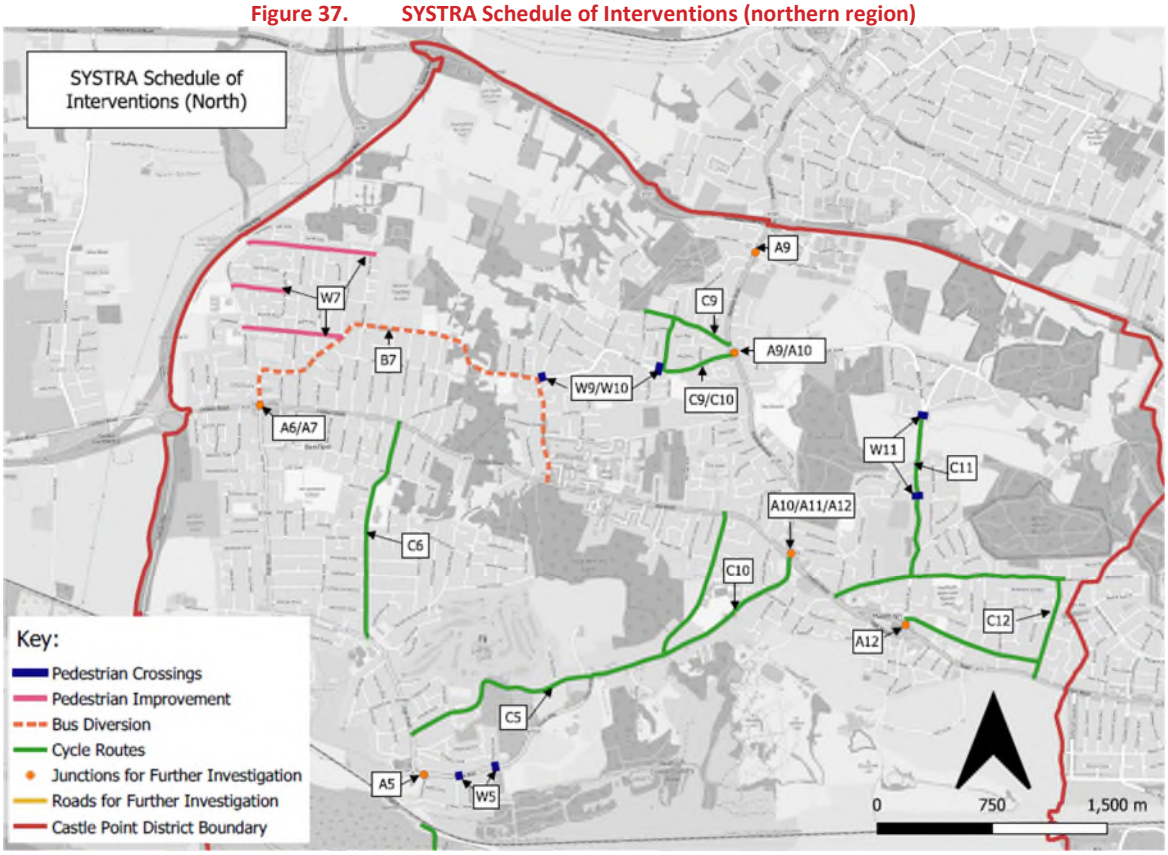


Table 5. (Region 1) Canvey Island – South of High Street Schedule of Interventions

REF NO.	MODE	EXISTING INFORMATION	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W1	Walk	It is noted that a series of amenities are accessible within the region. These are largely playing fields, schools, and the Brockwell Stadium. The Eastern Esplanade also provides access to the beachfront. A majority of the roads within the region are residential, and the footpaths are generally widened, with smooth surface quality. A series of zebra crossings are present on Furtherwick Road and High Street.	The region is generally well-served by pedestrian infrastructure. It is deemed that no further intervention is required.	N/A
C1	Cycle	Whilst no existing cycle routes are directed through the region, potential on-road routes as indicated through the CAP are directed along High Street, Furtherwick Road to the east, and Eastern Esplanade to the south, with a connecting route southbound through South Parade. The emerging LCWIP includes corridors which would also serve this area.	In order to improve the cycle accessibility throughout the region, it is recommended that further routes are developed through the central area of the region, with strategic routes on the main through routes such as Furtherwick Road, Eastern Esplanade and High Street/Point Street, as identified in the CAP. Backstreet routes are recommended to serve north-south axes such as Marcos Road/Lottem Road as well as east-west axes such as Odessa Road/Crescent Road. As a result, this could ensure that the residential areas of the region are adequately served by cycle links.	N/A
B1	Bus	Four bus routes operate along the boundary of the region and are all accessible from Furtherwick Road on the western boundary. Two bus routes (22 and 27) are accessible from High Road to the north, and one route (21C) is accessible from Eastern Esplanade to the south. The most frequent bus route serving the area is the 22, which departs approx. every 20 minutes, and serves Canvey – Basildon.	To improve accessibility to bus services for the residential area between Eastern Esplanade and Point Street, the 21C bus route could be diverted to loop northbound along Maurice Road, eastbound along Crescent Road then southbound to Eastern Esplanade. It is noted that some of these roads allow unrestricted parking on both sides, changes to parking arrangements may be required to allow for bus route diversions.	N/A
R1	Rail	All of the bus routes through the sub-region serve Benfleet Station. Rail services depart approximately at 5–30-minute intervals.	Rail accessibility from the region is deemed to be adequate, with the 22 bus service departing every 20 minutes. Other services could be increased in frequency to improve access to the rail station – such as increasing the frequency of the 27 to 20 minutes.	Increasing the frequency of the 27 bus route is also of benefit to proposals for the Thundersley – South of Hart Road region. (Region 10)

REF NO.	MODE	EXISTING INFORMATION	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
A1	Congestion/Accident Data	The level of congestion throughout the region is noted to be relatively low through both AM and PM peaks. It is notable that the Furtherwick Road/Long Road junction (J12c) has experienced a series of accidents, largely of a slight severity, with one serious. Whilst no recent traffic surveys in the location, 2018 ATC data surrounding Furtherwick Road north of Foksville Road records an AM peak average of 709 PCU, and a PM peak average of 841 PCU.	Further investigation is recommended into the Furtherwick Road/Long Road junction in order to establish the need for potential mitigations to improve road safety surrounding the junction.	Furtherwick Road/Long Road junction also falls to the east of Canvey Island South and North of Long Road regions (Regions 3 & 4).

Table 6. (Region 2) Canvey Island – North of High Street Schedule of Interventions

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W2	Walk	A series of open spaces are accessible within short walking distance of the centre of the region, such as Smallgains Recreation Ground, and Canvey Heights Country Park accessible within 15 minutes. Additionally, retail opportunities are available on Foksville Road within a 15-minute walk of the centre of the region. Castle View School is also within a 15-minute walk of the central point of the region. Footways throughout the region are generally wide and smooth.	There is generally good walking accessibility to a series of amenities throughout the region. Suggested improvements include the provision of further pedestrian crossings along the Central Wall Road and Dovervelt Road – Mitchells Avenue axes.	Improvements to Central Wall Road fall along the boundary with Canvey Island North of Long Road (Region 4).
C2	Cycle	No existing cycle routes are directed through the region. However, the CAP suggests a potential cycle route northwest-south along Dovervelt Road/Mitchells Avenue. The northern end of this suggested route ties into a potential off-road route linking to Canvey Bridge. The emerging LCWIP includes corridors which would also serve this area.	To improve cycle accessibility throughout the region, it is suggested that on-road segregated cycle routes are continued east through Smallgains Recreation Park and to Canvey Heights Country Park to the east. This will encourage further use of active and sustainable travel modes, with green areas fully accessible through cycle routes.	N/A
B2	Bus	The 21 bus route serves the region, routing along Dovervelt Road, and terminating at Creek Road. Additionally, the 22 and 27 routes operate along the southern boundary of the region along High Street. The 21 departs at an approximate frequency of 30 minutes and provides a connection between Canvey and Southend.	Potential options to improve the bus servicing throughout the region would hinge on frequency – currently the only route serving the central area of the region is the 21, departing approximately at a frequency of 30 minutes. Increasing the frequency to 15 minutes would significantly improve bus accessibility, with access also available to the south of the region to two further bus routes – the 22 and 27.	Increasing the frequency of the 21 bus route also is of benefit to proposals for the Canvey Island – South of Long Road and Hadleigh North of New Road regions (Regions 3 & 11).

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
R2	Rail	The 21 bus route through the sub-region serves Benfleet Station. Rail services depart approximately at 5 – 30-minute intervals.	To improve accessibility to Benfleet Station, as previously noted, increasing the service frequency of the 21 bus route to 15 minutes would significantly improve connectivity throughout the region.	N/A
A2	Congestion/Accident Data	The level of congestion throughout the region is noted to be relatively low throughout both AM and PM peaks. The northwest-south Central Wall Road sees a small cluster of slight accidents adjacent to the junction with Dovervelt Road, and one fatal collision at the junction with Harvest Road.	Further investigation is suggested surrounding the Central Wall Road/Harvest Road junction to assess the cause of the collisions and requirement for mitigation.	Data concerning Central Wall Road also falls along the boundary with Canvey Island North of Long Road (Region 4).

Table 7. (Region 3) Canvey Island – South of Long Road Schedule of Interventions

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W3	Walk	A series of amenities are accessible within walking distance within the Canvey South of Long Road region. From the central area of the region, Long Road and William Read Primary School are accessible within a seven-minute walk, and Thorney Bay is accessible within a 20-minute walk. Whilst many of the residential roads such as Thorney Bay Road have smooth surfacing quality and widened footpaths, a series of roads such as Runnymede Road, Beverley Avenue and Mayland Avenue are subject to significant wear and inconsistent paving quality.	It is recommended that pedestrian-focused interventions could be made surrounding many of the residential roads through improvement of surfacing quality and footpath width, as seen through examples such as Runnymede Road, Beverley Avenue and Maryland Avenue. Further investigation is necessary regarding the availability of highway land to enable widening.	N/A
C3	Cycle	No existing cycle lanes are directed through the region. The CAP identifies potential on-road cycle routes along Long Road to the north of the region, and southeast through the region, along Thorney Bay Road. The emerging LCWIP includes corridor which would also serve this area.	Potential on-road cycle lanes would significantly improve the cycle accessibility of the region, providing enhanced access to the Labworth Recreation Ground to the southeast and connecting to potential off-road routes to the northeast along Foksville Road.	N/A
B3	Bus	Whilst three bus routes operate east-west along Long Road, only the 21 service operates through the region, southeast along Thorney Bay Road, departing approx. every 30 minutes, serving Canvey and Southend.	It is recommended that to improve bus accessibility through the region, the frequency of 21 bus route is increased from the existing 30 minutes to every 15 minutes.	Increasing the frequency of the 21 bus route also is of benefit to proposals for the Canvey Island – North of High Street and Hadleigh North of New Road regions (Regions 2 & 11).

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
R3	Rail	The 21 bus route through the region serves Benfleet Station. Rail services depart approximately at 5–30-minute intervals. The potential on-road cycle routes along Long Road connect to further potential routes to the north of Canvey Bridge to Benfleet Station.	Rail accessibility could be improved through the increased frequency of the 21 bus service. Additionally, it is recommended that the potential cycle routes through the region are implemented to facilitate access through active modes.	Increasing the frequency of the 21 bus route also is of benefit to proposals for the Canvey Island – North of High Street and Hadleigh North of New Road regions (Regions 2 & 11).
A3	Congestion/Accident Data	Long Road westbound is noted to experience some congestion particularly in the AM peak. The previous assessment determined that the impact from the withdrawn plan would not significantly impact the junctions along this road. A cluster of accidents is noted to have taken place historically surrounding the Long Road/Craven Avenue and Long Road/Furtherwick Road (J12c) junctions.	Further investigation is recommended surrounding Long Road to the north of the region. Previous survey data should be provided if available. Impact is heavily dependent on the amount of development proposed on Canvey Island. Additionally, due to the noted high level of collisions surrounding the Long Road/Craven Avenue and Long Road/Furtherwick Road junctions, additional mitigations should be investigated surrounding these junctions.	Data surrounding Long Road is also prevalent to the Canvey Island – North of Long Road region (Region 4).

Table 8. (Region 4) Canvey Island – North of Long Road Schedule of Interventions

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W4	Walk	Existing walking accessibility is noted to be limited to/from the north and south of Canvey Dyke due to footpaths being narrow in width. From the north side of the Dyke, the Cornelius Vermuyden School is accessible within 10 minutes, and the south side of Canvey Bridge is accessible within a 20-minute walk. From the southern side of Canvey Dyke, St Joseph's Catholic School is accessible 15 minutes' walk to the east, and Castle View School is accessible 20 minutes to the east.	Whilst a series of crossings are available across Canvey Dyke, these are impeded by narrow gateways, limiting access. It is recommended that crossings are widened to improve accessibility. Crossings recommended across Central Wall Road in Region 2 are also of benefit to Region 4 accessibility.	Crossing over Central Wall Road is also of benefit to Region 2.
C4	Cycle	Existing off-road cycle lanes are in place through the region southwest bound along Canvey Dyke. This connects to the potential off-road cycle links to the northeast, and to potential on-road lanes at the southwestern end along Long Road. Access to Benfleet along Canvey Bridge to the north is currently narrow. The LCWIP includes a corridor which could enhance cycle provision in this location.	It is notable that with the potential cycle routes, there are many residential roads throughout the south and centre of the region with no access to cycle routes. This could be improved through the implementation of cycle routes along Waarden Road/Cedar Road east-west and Denham Road north-south. A	Implementing of the cycle route along Canvey Bridge is also of benefit to Region 5 to the north.

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
			widened cycle path/extension along Canvey Bridge would improve access to Benfleet to the north.	
B4	Bus	Two bus routes operate through the region along Link Road, the 22 and 27. Additionally, the 21 and 21C route along the west/south boundary of the region. The 22 departs 81 approx. every 20- minutes and serves Basildon and Canvey.	In order to improve bus accessibility from the residential areas in the south and centre of the region, it is recommended that the 22 bus route is redirected along Denham Road to the north of Long Road, and eastbound along Waarden Road. The 27 will continue to operate eastbound along Long Road.	N/A
R4	Rail	Benfleet Station lies approximately 1.1 km to the north of the region and is served by all of the bus routes serving the region. Potential and existing cycle routes through the region provide direct access to the station through active modes of travel.	It is recommended that the potential cycle routes in the CAP are implemented in order to increase access to Benfleet Station.	N/A
A4	Congestion/Accident Data	Significant congestion is experienced on the southbound stretch of Canvey Road particularly in the PM peak. Somnes Avenue experiences delay in the PM peak. Significant delay is experienced at Sommes Avenue / Link Road (J10). A series of collisions are noted throughout Somnes Avenue to the north of the region, including two fatal collisions. As previously noted in the Canvey Island – North of Long Road region, Long Road itself is of note, and discussed in this previous section.	Depending on the amount of development proposed on Canvey Island Sommes Avenue / Link Road junction may require mitigation. However, limited available land surrounding the junction may make mitigation challenging. Previous study suggested localised widening but considered it would have limited impact on the operation of the junction in capacity terms. The potential signalisation of the junction would be costly as an option. Further investigation is recommended surrounding Canvey Road to the west of the region. 2018 Junction Count Data indicates that 1136 PCU are directed southbound through this area. Additionally, due to the noted fatal collisions surrounding Somnes Avenue to the north of the region, additional mitigation may be required.	Data surrounding Long Road is also prevalent to the Canvey Island – North of South Road region (Region 3).

Table 9. (Region 5) Benfleet – Station Area Schedule of Interventions

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W5	Walk	Current walking access through the region facilitates access to a series of restaurants and retail opportunities within a 5-minute walk. The southern side of Canvey Bridge	Following relevant studies of the surrounding road safety, it is recommended to enhance accessibility to the east of the region,	N/A

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
		is accessible within 20 minutes, and amenities such as Boyce Hill Golf Course is accessible 20 minutes to the northeast. The surrounding road network generally has wide and smooth footpaths. Pedestrian crossings are available along the length of High Road, however there are limited crossings available along the east-west Essex Way.	further pedestrian crossings are implemented along the east-west Essex Way.	
C5	Cycle	There are currently no existing cycle routes available in the region. The CAP suggests potential on-road routes along High Road and off-road routes along the northern side of the London, Tilbury & Southend Railway line. Access to Canvey along Canvey Bridge to the south is currently narrow. The emerging LCWIP includes a number of corridors which would also serve this area.	Along with the CAP-potential off-road cycle routes, it is recommended that further cycle routes are implemented northeast bound along Vicarage Hill/Benfleet Road, to improve connectivity between the wider areas of Thundersley and Hadleigh with the Benfleet station. A widened cycle path/extension along Canvey Bridge would improve access to Canvey to the south.	Implementing of the cycle route along Canvey Bridge is also of benefit to Region 4 to the south.
B5	Bus	Four bus routes operate through the region. The 21, 22, 27 operate north-south along High Road, and the 21C operates northeast-bound along Essex Way. These routes provide connections to Southend, Hadleigh and Basildon, and the most frequent service is the 22, departing approximately every 20 minutes. A large bus layby is located outside Benfleet station with multiple shelters present.	Whilst this region is well-served by a series of bus routes, it is recommended to improve the accessibility, the frequency of bus arrivals is increased to a frequency of approximately 10-15 minutes where possible. The most feasible for this improvement would likely be the 22 bus route, which departs at a frequency of approximately 20 minutes.	Increasing the frequency of the 22 bus route is also of benefit to the South Benfleet – South of London Road and North of London Road regions (Regions 6 & 7).
R5	Rail	Benfleet Station is located to the south of the region. Services are available to London, Southend and Shoeburyness every 5-30 minutes. Whilst the station has a series of accessibility measures, namely step-free access, ramps for train access for the disabled, accessible toilets and waiting rooms, it is noted that there are very few cycle racks surrounding the station, with four unsheltered stands provided.	It is recommended that sheltered cycle racks are provided to encourage the use of cycle facilities at Benfleet station.	N/A
A5	Congestion/Accident Data	A high level of congestion is noted southbound along High Road, and westbound along Essex Way in the PM peak. The junction of Essex Way / High Rd / School Ln (J17 experiences significant delay. Previous 2019 junction count data indicates that in the PM peak, 523 PCU is recorded southbound along High Road, and 742 PCU is recorded westbound along Essex Way. Two serious collisions are noted to the north of the Station area, and a cluster of collisions are noted on High Road to the north of the region, all slight in severity.	Depending on the preferred LP option Sommes Essex Rd / High Rd / School Ln may require mitigation. However, limited available land surrounding junction may make mitigation challenging. Previous study considered localised widening to Essex Way East had limited impact on the operation of the junction. Possible signalisation would be costly to implement.	N/A

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
			Further investigation is recommended surrounding High Road to the south of the region. Additionally, due to the noted serious collisions to the north of the station area, additional mitigations are to be investigated surrounding the area.	

Table 10. (Region 6) South Benfleet – South of London Road Schedule of Interventions

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W6	Walk	Amenities such as South Benfleet Library and Richmond Pre-School are accessible within a 10-minute walk of the centre of the region. London Road is accessible within a 20-minute walk to the north of the central point of the region, and St Mary the Virgin Church is accessible 20 minutes to the south of the region. A majority of the main roads through the region have widened and smooth footpaths. Zebra crossings are present across the length of High Road.	Due to the high level of pedestrian infrastructure surrounding the region, and the adequate number of pedestrian crossings throughout the main roads of London Road to the north and High Road to the south, it is deemed that no further intervention is required.	N/A
C6	Cycle	There are currently no dedicated cycle routes located within the region, although the CAP identifies potential on-road routes along Thundersley Park Road, New Park Road and Appleton Road. The potential cycle route along New Park Road connects to further potential northbound cycle routes through the North Benfleet region; the LCWIP builds on these potential routes and provides additional corridors to enhance connectivity.	It is recommended that these potential cycle routes identified in the CAP are implemented. As a potential further on-road cycle route, it is suggested that the north-south running Kents Hill Road could be utilised as a backstreet quiet route to serve the adjoining residential areas, following relevant safety and feasibility study.	N/A
B6	Bus	The 21, 22 and 27 operate north-south through the region. Additionally, the 28 operates west-east along London Road on the northern boundary of the region. The most frequent bus route is the 22, departs approximately every 20 minutes.	The area is well-served by bus routes, with all areas being within close proximity of the four bus routes. In order to improve the accessibility, frequency could be improved of bus route 22 to approximately 10 – 15 minutes. A further intervention suggested to improve the frequency of bus services along the A13 would be to implement selective detection on the bus fleet.	Increasing the regularity of the 22 bus route is also of benefit to the Benfleet Station Area and North Benfleet - North of London Road regions (Regions 5 & 7).

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
R6	Rail	Benfleet Station is located approximately 1 km to the south of the region. Services are available to London, Southend and Shoeburyness departing every 5-30 minutes. Potential cycle routes are directed southbound along Underhill Road and Clarence Road/High Road providing direct connection to Benfleet Station.	Benfleet rail station is generally well-served by potential cycle routes and the bus network. It is recommended that the potential cycle routes in the CAP are implemented within the region so as to enhance the accessibility to the rail station.	N/A
A6	Congestion/Accident Data	Congestion level is generally low throughout the region. However, area borders A13 London Road which experiences significant delay in AM and PM peaks. In 2018 junction count surveys, a total of 1969 PCU are recorded eastbound from the Sadlers Farm Roundabout (J1) across a two-day average in the PM peak. A cluster of accidents is noted surrounding the London Road/Rushbottom Lane junction (J8), including three serious collisions.	The London Rd / High Rd / Rushbottom Rd junction shown to experience significant delay. However issue understood to be A13 corridor rather than specific junction therefore mitigation unlikely to be effective. It is recommended that further analysis surrounding the London Road/Rushbottom Lane junction takes place in order to establish the cause of the three serious collisions and if further mitigation would limit the risk of collision.	The London Road/Rushbottom Lane junction lies on the boundary with the North Benfleet – North of London Road region (Region 7).

Table 11. (Region 7) North Benfleet – North of London Road Schedule of Interventions

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W7	Walk	London Road is accessible within a 10-minute walk to the south of the centre of the region. North Benfleet Hall Wood and Woodside Park are both accessible 20-minutes to the north of the centre of the region. It is noted that a series of residential roads throughout the region are of poor quality. Examples of this include the east of Eversley Road, Woodside Avenue, and Overton Road.	Recommended interventions surrounding the walking accessibility of the region are focused surrounding the smoothing and widening of footpaths, particularly to the north of the region, such as Eversley Road, Woodside Avenue, and Overton Road.	N/A
C7	Cycle	Existing shared use cycle routes are located along the southern boundary of the region along London Road, although it is noted this infrastructure does not meet current LTN 1/20 standards and is subject to frequent obstructions. The CAP identifies a potential on-road cycle route southbound along Moreland Avenue, connecting to the A130 to the north and to the existing off-road London Road cycle route and the South Benfleet	Improvements to the shared use cycle route along London Road are recommended. A further cycle route running east-west along Church Road could be implemented to facilitate active transport further.	N/A

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
		region to the south. This route appears to be incorporated into the draft LCWIP corridors, subject to minor amendments.		
B7	Bus	The 21 bus route operates through the region. The 22, 27 and 28 bus routes all operate west-east along London Road. The 28 route has the most frequent service through the area, departing every 10-minutes.	In order to increase the number of services operating through North Benfleet, it is recommended that the 28 bus route is rerouted along Church Road and Kenneth Road to better serve the residential areas to the north. As noted through other regions, increasing the service frequency of the 22 bus route is likely to improve bus accessibility throughout the Castle Point borough. A further intervention to improve the frequency of buses along the A13 would be to implement selective detection on the bus fleet.	Increasing the frequency of the 22 bus route is also of benefit to the Benfleet Station Area and South Benfleet - South of London Road regions (Regions 5 and 6).
R7	Rail	Benfleet Station is located approximately 3 km to the south of the region. Services are available to London, Southend and Shoeburyness departing every 5-30 minutes.	With the previously recommended alteration to the 28 bus route, and further cycle route implementation, Benfleet Station would become more accessible by the wider North Benfleet region.	N/A
A7	Congestion/Accident Data	Congestion occurs in the AM peak on Rushbottom Lane, southbound due to the volume of traffic on the A13 corridor making it difficult to exit from Rushbottom lane. No collision hotspots are noted through the region, aside from to the south at the London Road/Rushbottom Lane junction (J8).	May be possible to increase highway capacity to Rushbottom Lane. However, this will likely detriment the operation of the A13 therefore this is not recommended. Further investigation is recommended surrounding Rushbottom Lane/London Road junction to the south of the region.	The Rushbottom Lane/London Road junction falls on the boundary with the South Benfleet – South of London Road region (Region 6) and should be considered of concern to both regions.

Table 12. (Region 8) Northwest Thundersley Schedule of Interventions

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W8	Walk	Currently, there is a lack of walking infrastructure throughout the Northwest Thundersley region. Current roads through the region, for example Burches Road and Farne Road, feature no footpaths, and rely on shared use between pedestrians and vehicles impacting upon safety.	Further investigation is required into the walking accessibility throughout the region, along with the process of development site identification throughout the sub-region.	N/A

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
C8	Cycle	No existing cycle routes are directed through the Northwest Thundersley region. Potential on-road cycle routes are located to the west along Woodside Avenue, and southbound along Moreland Avenue, through the North Benfleet region (Region 7); these are carried through into the draft LCWIP corridor proposals.	Further investigation is required, however cycle routes through the west of the region would potentially link to further cycle routes as noted by the CAP through Region 7 to the south.	N/A
B8	Bus	With future development, there is the requirement for bus accessibility to the region. Currently, the most accessible bus route is the 21, which is accessible approximately 300 metres to the south of the western boundary of the region, along Eversley Road.	Further investigation is required into the feasibility of expanding bus route provision and frequency through the region.	N/A
R8	Rail	Benfleet Station is located approximately 4.1 km to the south of the Northwest Thundersley region. Current accessibility to the region is gained through the 21 bus route accessible 300 metres to the south of the region's border, and through potential cycle routes southbound beginning to the north of Region 7.	Further investigation is required into the potential expansion of existing and potential new bus routes and cycle networks through the Northwest Thundersley region.	N/A
A8	Congestion/Accident Data	It is noted that congestion is indicated along the A130/AA1245 (J14) to the northwest/north of the region, particularly in the PM peak. Previous 2019 survey data indicates that in particular the southbound arm of the A130/A1245 is subject to congestion, with an inbound flow of 2723 PCU in the PM peak.	Further investigation is required into mitigation that would be required along the A130/A1245 with the development of the Northwest Benfleet site.	N/A

Table 13. (Region 9) Thundersley – North of Hart Road Schedule of Interventions

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W9	Walk	From the centre of the region, it is notable that Claydons Lane retail opportunities are available at an approximate 20-minute walk to the northeast, with signalised pedestrian crossings present across Rayleigh Road. Thundersley Primary School is accessible through walking approximately 10 minutes to the south, and SEEVIC College is accessible approximately 20 minutes to the south. Footpaths are generally of a smooth and wide condition throughout the region. It is notable that there is a lack of pedestrian crossings through the length of east-west Hart Road to the south of the region.	It is recommended that demarcated pedestrian crossings are implemented along Hart Road in order to improve pedestrian safety.	Hart Road falls on the northern boundary of the Thundersley – South of Hart Road region (Region 10).

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
C9	Cycle	Currently there are no existing cycle routes through the region. The CAP identifies a potential on-road cycle route along the A129, connecting to the potential on-road cycle route east-west along London Road; as referenced in the LCWIP.	It is proposed that to improve cycle accessibility throughout the region, cycle routes should be implemented east west along Common Lane/Triton Approach/Hart Road. This is to enhance the accessibility to the residential areas of the region, and Thundersley Common to the north.	N/A
B9	Bus	The 1 and 3 bus routes operate along London Road through the region, to Rayleigh and Chelmsford respectively. Bus route 1 departs approximately every 15 minutes, and bus route 3 every 120 minutes approximately. The 21 bus route also operates along the southern perimeter of the region.	Due to a series of dead-end streets throughout the region, it is determined that redirecting bus routes through the region is likely to be unfeasible. As a means of improving the frequency of the existing services through the region, it is recommended that the 3 bus route is improved in frequency to hourly, from the current regularity of every 120 minutes.	N/A
R9	Rail	Benfleet Station is located approximately 3.7km to the southwest of the southern border of the region. The 21 bus route to the south of the region serves the station directly. Additionally, potential cycle routes along London Road and southwest bound along Underhill Road provide access to the station.	It is recommended that the potential cycle routes along Common Lane/Triton Approach/Hart Road are implemented through the central area of the region in order to improve cycle accessibility to the station from the residential areas of the region.	N/A
A9	Congestion/Accident Data	High levels of congestion are experienced southbound along the A129 Rayleigh Road to the east of the region, in the PM peak, due to capacity issues at the A129 / Hart Road / Daws Heath Road junction. A127 /A129 (J3) interchange and mainline merge experiences delay in peak hours. Previous study determined A127 /A129 interchange would not be significantly impacted by the distribution of growth in the withdrawn LP. A cluster of three serious accidents are noted at the Hart Road/Daws Heath Road/A129 junction at the southeast corner of the region.	If previous surveys have taken place surrounding the Hart Road/A129 junction, it is requested. Limited land surrounding the junction limits opportunities for effective mitigation. Possible cost of signalisation may prove prohibitive. Additional assessment of the A127/A129 junction should be undertaken regarding the Merge/Diverge assessment required to understand operation of A127 eastbound on Slip in AM peak. Further investigation is recommended surrounding the A129 to the east of the region. 2018 Junction Count data surrounding the A129/Stadium Way junction indicated 1326 PCU southbound movements along the A129.	Hart Road/A129 falls on the northeastern boundary of the Thundersley – South of Hart Road region (Region 10).

Table 14. (Region 10) Thundersley – South of Hart Road Schedule of Interventions

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W10	Walk	A series of green spaces are accessible within a 5-minute walk of the centre of the region. Thundersley Primary School is accessible within a 10-minute walk of the centre of the region. Thundersley Glen is accessible within a 20-minute walk to the south of the region's centre, and Thundersley Common is accessible 20 minutes to the north. Footpaths throughout the region are generally wide and of smooth surfacing. There are very few pedestrian crossings along the east-west Hart Road to the north of the region, with only one located to the east of the road.	As noted in the Thundersley - North of Hart Road interventions, it is recommended to improve pedestrian infrastructure along the main east-west Hart Road with further pedestrian crossings, particularly to the centre and to the west of the road.	Hart Road falls on the northern boundary of the Thundersley – North of Hart Road region (Region 9).
C10	Cycle	There are no existing cycle routes located through the region, however the CAP identifies potential on-road routes southbound along Rayleigh Road, and east-west along Kiln Road, which are also reflected in the LCWIP proposals.	Due to the low number of streets within the region, it is determined that the potential CAP routes are sufficient to support the area. Further on-road routes are recommended along Vicarage Road/Benfleet Road to ensure the entire area is supported for cycle accessibility. Potential exists for backstreet routes enhancing cycle accessibility to residential areas on Shipwrights Drive and The Chase.	N/A
B10	Bus	The 1, 27 and 28 bus routes operate through the region along Kiln Road. All areas are within 550 metres of a bus service. The 1 and 28 bus service depart at a frequency of every 10 minutes, and the 27 bus service departs at a frequency of every 20-30 minutes.	The region is served effectively by bus services and routes. Improvement to the accessibility/service could be made through the increasing of frequency of the 27 bus route to every 10 minutes, to increase the frequency of services to Basildon. Implementing selective detection technology would also improve the reliability of the bus service along the A13.	Increasing the regularity of the 27 bus route is also of benefit to proposals for the Canvey Island – South of High Street region (Region 1).
R10	Rail	Benfleet Station is located approximately 2.8km to the southwest of the southern border of the region. The 21C and 27 bus routes operate through the region and serve Benfleet Station. Potential on-road cycle routes to the station are directed westbound along Kiln Road/Underhill Road/High Road; and additionally, southwest bound through existing off-road routes through Hadleigh Castle Park, a short distance southeast of the region.	It is determined that the bus and cycle accessibility to the rail station are adequate, and no further intervention is required.	N/A

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
A10	Congestion/Accident Data	Hart Road eastbound experiences congestion in the AM peak at the junction with the A129. If previous traffic surveys have taken place surrounding Hart Road/A129, it is requested. Kenneth Rd experiences some delays in PM peak due to congestion on A13 London Road. Previous study determined that A13/ A129 junction (J6b) would require mitigation arising from growth in the withdrawn Local Plan. ATC data from the A13 Kiln Road junction has been analysed, and it sees two-way trips of 1373 PCU in the AM peak, and 1425 PCU in the PM peak. A cluster of accidents is recorded at the Kiln Road/A129 (J5) junction on the northwestern side of the circulatory, comprised of three slight and one major.	Previous signalisation scheme was proposed at the A13 / Kenneth Road junction, which would improve the operation of the junction. However, its cost was significant. Previous mitigation scheme proposed at the A13 / A129 junction involved localised widening to London Rd, Benfleet Rd and Kiln Rd. The study concluded that the scheme provided benefit to the operation of the junction based on growth in the withdrawn local plan. Further investigation is recommended at the A13 Kiln Road/A129 junction to the southeast of the region in regard to the cluster of accidents which have taken place there.	Hart Road/A129 falls on the southeastern boundary of the Thundersley – North of Hart Road region (Region 9). A13/ A129 Scheme would impact Regions 11 and 12 as junction is located between all three regions.

Table 15. (Region 11) Hadleigh – North of New Road Schedule of Interventions

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W11	Walk	From the centre of the region, amenities such as Hadleigh Infant and Primary School is accessible within a ten-minute walk to the south, Belfairs Nature Reserve is accessible within a 15-minute walk to the east, Rayleigh Road is accessible within a 15 minute walk to the west, and Pound Woods is accessible within a 15 minute walk to the northeast. Footpaths are generally wide and in a smooth surfacing condition, however the north-south Rayleigh Road has a lack of east-west pedestrian crossings.	It is recommended that further pedestrian crossings are considered across Western Road and Daws Heath Road to the north of the region to facilitate pedestrian accessibility surrounding the residential areas of the region.	N/A
C11	Cycle	There are no existing cycle routes through the region, nor identified in the CAP. The LCWIP route proposals also do not penetrate this location significantly.	It is recommended that further cycle routes are considered throughout the region; with east/northbound along New Road/Daws Heath Road identified as areas through which to establish cycle routes. This would facilitate active and sustainable travel accessibility through the residential areas of the region and provide access towards the Belfairs Nature Reserve and West Wood.	N/A

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
B11	Bus	The 3 bus route is accessible through the region, operating north-south along Daws Heath Road. Bus routes 1, 21 and 28 are accessible from London Road at the southwestern boundary of the region	The 3 bus route departs at a frequency of approximately 120 minutes. It is recommended increase its frequency to approximately 60 minutes. This would significantly improve the frequency y of service to Southend and Chelmsford.	Increasing the frequency of the 21 bus route is also of benefit to proposals for the Canvey Island – North of High Street and Canvey Island – South of Long Road regions (Regions 2 & 3).
R11	Rail	Benfleet Station is located approximately 3.4km to the southwest of the southwestern border of the region. It is accessible through the region through bus routes 21, 21C and 27, all of which operate along the south of the region. Additionally, the potential cycle routes southbound through Chapel Lane and existing off-road cycle routes through Hadleigh Castle Country Park provide accessibility through active and sustainable modes.	It is recommended that increased frequencies of the bus routes surrounding the region would facilitate improved accessibility to Benfleet rail station. If the 21 bus route were to be increased in frequency to depart at a regularity of every 20 minutes; both that and the 27 bus route would depart between 20-30 minute intervals.	Increasing the frequency of the 21 bus route is also of benefit to proposals for the Canvey Island – North of High Street and Canvey Island – South of Long Road regions (Regions 2 & 3).
A11	Congestion/Accident Data	Low congestion is seen throughout the region across AM and PM peaks. Region Borders A13 to the south which experiences high volumes of traffic including junction of A129/ A13/ Benfleet Rd (J5). No clusters of accidents are identified.	No additional interventions are required.	See region 10

Table 16. (Region 12) Hadleigh – South of New Road Schedule of Interventions

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
W12	Walk	From the centre of the region, areas accessible through walking include the High Street and Hadleigh Infant and Nursery School, both of which are accessible 5 minutes to the south and north respectively; Plumtree Hill, accessible 20 minutes to the south; and Belfairs Nature Reserve, accessible 15 minutes to the north. Footpaths are generally of a good surfacing quality, and High Road to the south of the region is served by a series of signalised pedestrian crossings.	Due to the high-quality pedestrian infrastructure in place throughout the region, it is initially determined that interventions are not required.	N/A
C12	Cycle	There are no existing cycle routes through the region, however the CAP identifies potential on-road cycle routes along High Street and southwest along Chapel Lane, connecting to existing off-road cycle routes to the	To facilitate improved cycle access throughout the region, it is recommended that further on-road cycle routes are	N/A

REF NO.	MODE	EXISTING INFO	SUGGESTED INTERVENTION	OVERLAP WITH OTHER REGIONS
		south surrounding Adders Hill. The draft LCWIP corridor to Leigh on Sea would potentially connect to these locations.	implemented along New Road and Scrub Lane. Potential for backstreet routes is identified for Woodfield Road and Church Road.	
B12	Bus	Bus routes 1, 3, 21, 21C, 27 and 28 operate through the region, and all accessible along High Street. These routes provide connection to Southend, Rayleigh, Chelmsford and Basildon. Bus route 1 is the most frequent service, departing approximately every 15 minutes.	Due to the wide range of bus services accessible through the central area of the region, no further bus interventions are recommended.	N/A
R12	Rail	Benfleet Station is located approximately 2.7km to the southwest of the southwestern border of the region. The station is accessible through potential on-road and existing off-road cycle routes to the south of the region. Bus routes 21, 21C, 22 and 27 all provide access to the station.	To further facilitate accessibility to the station through cycle routes, it is recommended that the previously described cycle routes are considered.	N/A
A12	Congestion/Accident Data	Low congestion is seen throughout the region across AM and PM peaks. Region Borders A13 to the north which experiences high volumes of traffic including junction of A129/ A13/ Benfleet Rd (J5). A cluster of five minor accidents is identified at the Rectory Road/A13 junction.	Due to the noted cluster of collisions at the centre of the region, additional mitigations are to be investigated surrounding the Rectory Road/A13 area. If previous accident or traffic survey data is available from this junction, it is requested to be provided.	See region 10

7.4 Trip Generation (Option 1a)

7.4.1 As part of an initial assessment, an initial trip generation has been established based on the option 1a sites, using the TRICS software. This has initially been undertaken using a "one-size-fits-all" approach for the various sites identified in the Option 1 schedule and existing transport networks and provision, in order to give a high-level indication of the likely trip generation which would be associated with the estimated quantum of development provided for each site by CPBC. The trip rate has then been applied to the clusters within Option 1a based on each of their residential capacities.

7.4.2 The search criteria applied within TRICS is noted below:

- Residential Land Use.
- Mixed Private Housing (Houses and Flats).
- Dwelling sizes of 15 to 350 units.
- Edge of Town and Neighbourhood Centre areas selected.

7.4.3 The resultant trip rates for different modes are shown in the table below.

Table 17. Trip Rates (All Modes)

PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
AM Peak	0.562	0.498	0.022	0.232	0.021	0.007
PM Peak	0.543	0.474	0.017	0.152	0.02	0.004

7.4.4 This trip rate has been applied to the various clusters in Castle Point through their residential capacities as provided by the local authority. The resulting vehicle trips are shown in the table below.

Table 18. Initial Trip Generation Estimate (by mode)

CLUSTER	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
A13	105	AM Peak	59	52	2	24	2	1
		PM Peak	57	50	2	16	2	0

CLUSTER	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Canvey TC - East	92	AM Peak	52	46	2	21	2	1
		PM Peak	50	44	2	14	2	0
Canvey TC - West	193	AM Peak	108	96	4	45	4	1
		PM Peak	105	91	3	29	4	1
Kiln Road	323	AM Peak	182	161	7	75	7	2
		PM Peak	175	153	5	49	6	1
Hadleigh Central	148	AM Peak	83	74	3	34	3	1
		PM Peak	80	70	3	22	3	1
Hadleigh East	141	AM Peak	79	70	3	33	3	1
		PM Peak	77	67	2	21	3	1
Hadleigh West	69	AM Peak	39	34	2	16	1	0
		PM Peak	37	33	1	10	1	0
Long Road	192	AM Peak	108	96	4	45	4	1
		PM Peak	104	91	3	29	4	1

CLUSTER	CAPACITY	PEAK	TOTAL VEHICLES	CAR DRIVER	CYCLISTS	PEDESTRIAN	BUS/TRAM	RAIL
Rayleigh Road	16	AM Peak	9	8	0	4	0	0
		PM Peak	9	8	0	2	0	0
SE Canvey	241	AM Peak	135	120	5	56	5	2
		PM Peak	131	114	4	37	5	1
South Benfleet - Station	83	AM Peak	47	41	2	19	2	1
		PM Peak	45	39	1	13	2	0
South Benfleet TC	132	AM Peak	74	66	3	31	3	1
		PM Peak	72	63	2	20	3	1
Tarpots	105	AM Peak	59	52	2	24	2	1
		PM Peak	57	50	2	16	2	0
Windfalls	1,840*	AM Peak	1,034	916	40	427	39	13
		PM Peak	997	872	31	280	37	7
Unclustered Sites	381	AM Peak	214	190	8	88	8	3
		PM Peak	207	181	6	58	8	2

*Windfall number is presently estimated as approximate to total development potential within identified clusters.

7.4.5 As is evident from the resulting trip generation calculations, the current dominant mode of travel across the region is by car. Due to the Kiln Road cluster providing the largest residential capacity of the sites within Option 1a, this would be expected to generate the highest number of car trips, with an estimated 161 associated car trips in the AM peak, and 153 associated car trips in the PM peak.

7.4.6 Walking is seen to be the second most common mode of transport, although it is noted that the proportion of pedestrian trips is significantly lower in the PM peak than it is in the AM peak.

7.4.7 Whilst this trip generation provides an initial indication of the likely impact on the Castle Point from the Option 1a sites, it is noted that this work will be refined as part of the development and exploration of the Local Plan options.

8. NEXT STEPS

8.1.0 This chapter provides a concise list of the proposed next steps to support further development of the Local Plan options following the publication of this report. All future technical work will be discussed and agreed with Essex County Council and other key stakeholders as appropriate.

8.2 Regulation 18 Consultation

8.2.0 The purpose of this stage is to engage with residents and relevant organizations to identify how planning policy can be used to positively address key issues within the local authority area.

8.2.1 This Transportation Assessment outlines the development opportunities for the next Local Plan from a transportation perspective and invites feedback on these options.

8.3 Transport Modelling and Assessment, and Further Mitigation Development

8.3.0 While consultation is ongoing, the following tasks will be undertaken:

- Essex County Council's strategic model (the South Essex Model) will be used to determine baseline and future traffic flows, including predicted traffic growth within the district up to the end of the plan period 2043.
- Liaison has commenced and will continue with Southend City Council with regard to the application of available information from their own strategic model, and the co-ordination of assessments to reflect their own emerging Local Plan proposals.
- Junctions to be specifically tested via local highway modelling exercises will be confirmed; it is likely that these will be similar to those presented in this report, however as the plan emerges it may be necessary to include additional junctions not mentioned in this report.

- individual junction testing will take place to confirm existing congestion hotspots likely to be detrimentally impacted by future development in the district.

8.3.1 Following on from Regulation 18 consultation feedback, the number of policy options is refined and will become more focused. At this point more focused assessment of the transport network can be undertaken:

- A vehicle trip generation and distribution exercise will be undertaken to determine the likely vehicle movements to and from the preferred option/s. This will be discussed with ECC and may take the form of a stand-alone assessment, a distribution using the strategic model, or a combination of these approaches. The trip generation exercises will take into account both a "business as usual" scenario and an "ISI" scenario where the uptake and use of different modes of travel is adjusted to reflect relevant improvement measures identified in the ISI which is detailed in this TA report. The second of these exercises will be designed to guide consideration of mitigation measures for specific locations as described below.
- These development flows will be added to the background flows to calculate a future base plus local plan scenario. This will be undertaken for each of the options being considered (it is expected that these will be initially refined using feedback on multiple topics from the Regulation 18 consultation, not simply transport matters).
- A decision will then be taken by CPBC to identify the preferred spatial option which is to form the basis of the submission Local Plan and to be consulted on at Regulation 19.
- The identified junctions from the corresponding option test scenario (or its closest equivalent) will be assessed using the previously created individual junction models to determine the impact of the preferred local plan option up to the end of the plan period 2043.
- Where the local plan sites are shown to have an impact on the operation of the highway network which would be deemed "severe" in the context of the NPPF and other relevant policy, mitigation proposals will be considered.
- Mitigation measures set out in the ISI will be considered first. However, should additional measures be conceived during this process these will be considered as well.
- As set out in this report, Mitigation will be applied using sustainable travel principles first looking to reduce the impact of the Plan by encouraging sustainable travel first. Where this is not feasible or unlikely to mitigate the impact fully physical highway capacity improvements will be proposed.
- It is intended that the strategic model will then be re-run with the full preferred option plus mitigation measures in place, to provide a clear picture of the residual transport impacts and identify any final adjustments required to the mitigation measures.
- In conjunction with CPBC, a phasing exercise will be undertaken to determine how the requirements for delivery of specific mitigation measures will align with the expected build-out of the proposed Local Plan allocation sites.
- Mitigation schemes for the preferred spatial option will have indicative designs prepared and a high-level costing exercise will be undertaken. The design and costings work will be used to inform development of the Infrastructure Delivery Plan (IDP).

8.4 Regulation 19 Consultation

8.4.0 The Regulation 19 phase of the consultation process provides local communities, businesses, and other stakeholders the opportunity to comment on the policy content of a full draft Local Plan, within a specific remit relating to the 'Tests of Soundness' and legal compliance as set out in the National Planning Policy Framework.

8.4.1 To support the process this TA will be updated to include feedback form the Regulation 18 consultation and incorporate the findings of the traffic modelling and assessment exercise, as well as presenting the assessment of the preferred spatial option described in the Regulation 19 Local Plan. This updated TA will then be published for consultation as part of the formal Regulation 19 consultation exercises.

8.4.2 The expected processes relating to submission of the Local Plan for Examination will be set out in detail within the Regulation 19 Transport Assessment.

APPENDICES

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