Swanley Local Cycling and Walking Infrastructure Plan

Sevenoaks District Council

February 2024







About Sustrans

Sustrans is the charity making it easier for people to walk and cycle.

We are engineers and educators, experts and advocates. We connect people and places, create liveable neighbourhoods, transform the school run and deliver a happier, healthier commute.

Sustrans works in partnership, bringing people together to find the right solutions. We make the case for walking and cycling by using robust evidence and showing what can be done.

We are grounded in communities and believe that grassroots support combined with political leadership drives real change, fast.

Join us on our journey. www.sustrans.org.uk

Head Office
Sustrans
2 Cathedral Square
College Green
Bristol
BS1 5DD

© Sustrans 09/02/24

Registered Charity No. 326550 (England and Wales) SC039263 (Scotland)

VAT Registration No. 416740656

Revision	Description	Author	Check	Date
v0.1	For internal review	CT/CF		
v0.2	QA review	CT/CF	LD	14/12/23
v0.3	For internal review	CT/CF		18/12/23
v1.0	Draft for issue	CT/CF		20/12/23
v0.4	First draft amendments	CF	SM	11/01/24
v2.0	Second version for issue	CF		19/01/24
v0.5	Second version amendments	CF	CF	06/02/24
v3.0	Third version for issue	CF		06/02/24
v0.6	Third version amendments	CF	CF	09/02/24
v4.0	Final version for issue	CF		09/02/24

Contents

1	Introduction	4
2	Background Study and Methodology	8
3	Proposed Cycle Network, Core Walking Zone and Walking Routes	26
4	Design Principles	30
5	Primary Cycle Route Recommendations	36
6	Walking Routes and Core Walking Zone Recommendations	56
7	Prioritising Improvements	76
8	Next Steps	79
9	Appendices	81

1 Introduction

Introduction

What is an LCWIP?

Local Cycling and Walking Infrastructure Plans (LCWIPs), as set out in the Government's Cycling and Walking Investment Strategy, are a strategic approach to identifying cycling and walking improvements required at the local level. They enable a long-term approach to developing local cycling and walking networks, ideally over a 10-year period, and form a vital part of the Government's strategy to increase the number of trips made on foot or by cycle.[1]

This report focusses on a local cycling and walking network in Swanley Town and surrounding area. Map 1 shows Swanley and its location within the Sevenoaks District of Kent.

Understanding the Swanley Town area

Study area

Swanley is the second largest town in Sevenoaks. Built around the railway line, it lies approximately 16 miles (26km) southeast of central London, alongside the A20.[2] Transport services in Swanley, such as the Southeastern trains, allow for travel to central London and to other towns and villages in Sevenoaks District and beyond.

Demographic data from the Office for National Statistics (ONS) spans across Swanley and Swanley Village, and shows a total population of 17,800. The ONS (2021) reported that of people aged 16 and over in Swanley and Swanley Village, 58.1% were economically active and in employment (in comparison to 57.4% in the UK), 3.3% were economically active and unemployed (3.5% UK average), and 38.5% were economically inactive and did not have a job nor were looking for a job (39.1% UK average).[3] Large employers in Swanley include Swantex (Swan Mill Paper Company) and Asda. [2] Of those that are employed, the ONS reports that 29.3% of people work from home (compared to 31.5% UK wide), 26.9% travel less than 10km to work (35.4% UK average) , and 22.0% travel 10km to less than 30km (14.4% UK average). The remaining 2.9% travel 30km and over for work (4.3% UK average) and others were not described (19%).[3]

The majority of those that are employed in Swanley (including Swanley Village) travel by car or van to reach their workplace (46.7%), and only 0.6% and 5.9% travel by bicycle and on foot, respectively. Other modes of transport to work include buses (2.8%), trains (8.0%), and being an additional passenger in a car or van (3.8%).[3]

Although Sevenoaks District is the second least deprived local authority in Kent, areas in Swanley such as St Marys and White Oak are within the 30% most deprived in the country.[4] Dimensions of deprivations include education, employment, health, and housing. Data from Swanley (including Swanley Village) show that overall, 42.6% of households are not deprived in any dimensions, 35.0% of households are deprived in one dimension, and 17% and 5.1% are deprived in two or three dimensions, respectively. Around 0.3% are deprived in all four dimensions.[3]

Local Policies and Plans

Kent County Council's (KCC) Active Travel Strategy (2017)

The aim of KCC's 'Active Travel Strategy'[5] is *to make active travel an attractive and realistic choice for short journeys in Kent.* Actions listed in the Strategy include providing and maintaining appropriate routes for active travel, incorporating active travel into future planning processes, and supporting active travel in local communities through road safety campaigns, cycle training etc. By doing so, this will contribute to improved physical health and reduce road congestion on highway networks.

Net Zero 2030

Sevenoaks District Council (SDC) is committed to working towards net zero carbon emissions by 2030 for the Council and its assets. Additionally, SDC plans on using its position to lead the community to reduce emissions within the District through advising and partnering with Towns and Parish Councils, requiring sustainability standards in new developments, and working with local communities to encourage individuals to reduce their personal emissions. The Net Zero 2030 Action Plan includes the following steps:



Figure 1.1 Hilda May Avenue and London Road junction, Swanley

- Promote low carbon travel and sustainable movement
- Work with schools, local communities and groups to encourage low carbon travel such as car clubs, and walking and cycling routes

This LCWIP helps in delivering these actions, and will help with promoting and developing active travel in Swanley, contributing to lowered emissions within the area.

Plan 2040 - A New Local Plan for Sevenoaks District (2022)

Considering that over 90% of land in Sevenoaks is subject to Green Belt designation, and over 60% is designated as Areas of Outstanding Natural Beauty, this plan addresses the need for new housing and other development within the District. This vision focuses on the following principles: creating healthier communities,

1 Department for Transport (2017) 'Local Cycling and Walking Infrastructure Plans' https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908535/cycling-walking-infrastructure-technical-guidance-document.pdf
2 Tibbalds Planning and Urban Design (2016). 'A Vision for Swanley and Hextable' https://www.sevenoaks.gov.uk/downloads/file/3629/a_vision_for_swanley_and_hextable_-_final_report_august_2016
3 Office for National Statistics (2021) https://www.ons.gov.uk/visualisations/customprofiles/build/
4 Sevenoaks District Council (2022) 'Plan 2040: A New Local Plan for Sevenoaks District. https://engagement.sevenoaks.gov.uk/strategic-planning/plan2040/user_uploads/plan-2040_web.pdf.
5 Kent County Council (2017) Active Travel Strategy. https://www.kent.gov.uk/__data/assets/pdf_file/0007/71773/Active-Travel-Strategy-information.pdf

tackling the challenge of climate change, and seeking design excellence for all new development.[4] Swanley Town Centre has been identified as an area in need of regeneration, and is included in 'Policy TLC1 - Towns and Local Centre' which focuses on town centre development and sets criteria such as using quality and inclusive designs, promoting walking/cycling and public transportation use, and promoting health and well-being.[4]

Movement Strategy (2022)

The purpose of the 'Movement Strategy' is *to enable movement across the District to be easy, healthy, safe, low carbon and sustainable.* [6] Priorities for this Strategy include a focus on health and well-being, public transport, and sustainable movement by the use of electric vehicles and low emission alternatives. Additionally, the Strategy proritises cycling and walking, with its aims to increase the number of cycling routes, and to make walking and cycling easier through improved infrastructure.

Sevenoaks District Cycling Strategy (2012)

The 'Sevenoaks District Cycling Strategy'[7] seeks to enable more people to cycle safely in the district and to encourage a shift towards more sustainable modes of transportation, while promoting health and well-being. A list of actions to achieve this is outlined in the Strategy, such as the development of new routes and linkages. Routes in Swanley that have been identified include a link from London Road to the town centre, a link from Swanley to Hextable, and a link from Swanley Railway Station to the High Street, amongst others. These routes have been addressed in this LCWIP.

Sevenoaks District Town Centres Strategy (2022)

This strategy sets a vision for five centres in Sevenoaks District, and describes potential projects and development opportunities. Swanley is included in this report and the following potential projects have been identified:

- Improving the arrival experience into the town centre
- Transforming the town square and Asda Walk
- Rebalancing space for pedestrians
- New and enhanced station connections
- Town centre re-development
- Adjacent civil and community uses opportunity

Within these projects, possible interventions include increasing footway spaces, creating safe pedestrian crossings, and using artwork/greening to improve the centre. Additionally, the strategy notes, "Swanley town centre would benefit from the creation of clear and designated routes which give pedestrians priority."

Furthermore, the strategy details creating and/or enhacing routes for cycling and walking to improve access to the station, such as the use of Station Road/Goldsel Road.[8]

A Vision for Swanley and Hextable (2016)

In 2016, the report titled 'A Vision for Swanley and Hextable'[9] was published by a team of consultants appointed by Sevenoaks District Council. The aim of the vision was to support the regeneration of

both areas, particularly Swanley town centre, retail, housing, and transport infrastructure. Approximately 1,500 people took part in consultation events and it was found that in order to alleviate congestion, there was a general support for the improvement of public transport networks including buses, and cycling and walking routes.

Existing barriers to walking and cycling

Barriers to walking and cycling in Swanley include the following:

- High volume of traffic, particularly on Swanley Lane (B258) and London Road (B2173)
- Pavement parking, particularly on Swanley Lane (B259)
- Lack of dedicated cycle infrastructure throughout the town, with only short segments of existing cycle routes on London Road and near Goldsel Road
- Poor or insufficient pedestrian crossing facilities, particularly on Swanley Lane, Goldsel Road and Bartholomew Way
- Narrow or missing footways, such as on New Barn Road
- Physical barriers like gates, which hinder access to footpaths, particularly at the 'Avenue of Limes' Public Right of Way (PROW) path near Hextable Heritage Centre



Figure 1.2 Goldsel Road and High Street roundabout, Swanley

High-level recommendations

- Where there is extra verge space and/or extra carriageway space, consider installing segregated cycling facilities. Due to the availability of space, this is recommended on some sections of London Road and Goldsel Road
- Uncontrolled crossings were observed in many areas, for example, on London Road (B2173). These should be upgraded to provide pedestrian and cyclist priority. Additionally, crossing facilities should be provided at major junctions and roundabouts, with minimal pedestrian waiting times
- Side roads should be improved by narrowing turning radii, the installation of dropped kerbs and tactile pavement, and providing crossings where necessary, subject to traffic surveys in the area
- Consider implementing additional 20mph speed limits in residential areas, such as White Oak and Birchwood Corner

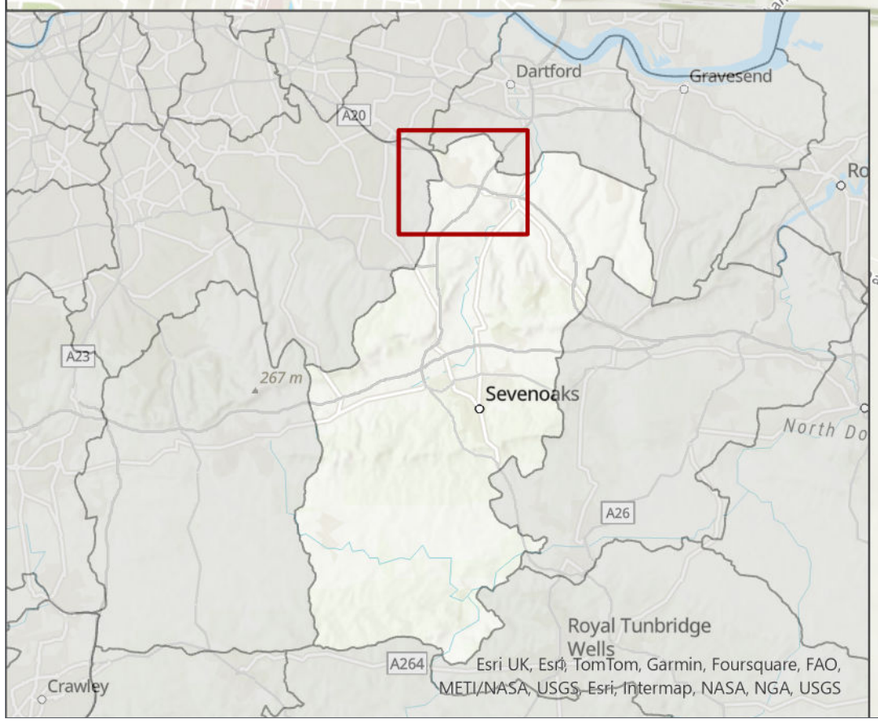
6 Sevenoaks District Council (2022) Movement Strategy. https://www.sevenoaks.gov.uk/downloads/file/3358/movement_strategy_2022
7 Sevenoaks District Council (2012) Sevenoaks District Cycling Strategy. https://www.sevenoaks.gov.uk/downloads/file/14/cycling_strategy
8 Sevenoaks District Town Centres Strategy (2022) https://www.sevenoaks.gov.uk/downloads/file/3636/town_centres_strategy_2022
9 Tibbalds Planning and Urban Design (2016) A Vision for Swanley and Hextable. https://www.sevenoaks.gov.uk/downloads/file/3629/a_vision_for_swanley_and_hextable_-_final_report_august_2016

Map 1 LCWIP Location

LCWIP Study Location

This map shows the settlement boundaries for Hextable, Crockenhill and Swanley Town which are dictated by the Metropolitan Green Belt within Sevenoaks District (note that there is no settlement boundary for Swanley Village).

Initially, this LCWIP focused on Swanley Town alone, but feedback gathered at the engagement sessions showed a strong desire for walking and cycling routes to nearby communities. Therefore, the scope of this LCWIP extends to rural settlements such as Crockenhill and Hextable. An approximate study boundary can be seen on the map as the dashed blue line.



2 Background Study and Methodology

Background Study and Methodology

Sustrans was comissioned by Sevenoaks District Council in spring 2023 to support the development of a Local Cycling and Walking Infrastructure Plan (LCWIP) for the Swanley Town area. The LCWIP was funded by Active Travel England (ATE), in partnership with Kent County Council.

In line with the government's LCWIP guidance, the scope of the work was limited to utility trips to work, education and shopping of up to 5km.

The approach was to look at opportunities to create walking and cycling networks. Existing facilities and routes were considered, along with known improvement proposals. Local stakeholders helped to identify where new routes and improvements were needed. The potential routes were then surveyed on foot and on bicycle.

The adopted methodology was informed by the LCWIP Technical Guidance (2017) and Local Transport Note (LTN 1/20)[1]. LTN 1/20 provided the principle design guidance when developing potential options for the primary cycle routes following consultation.

LCWIP Technical Guidance

Under the guidance, the key outputs of LCWIPs are:

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

The LCWIP process has six stages:

1. Determining Scope

Establish the geographical extent of the LCWIP, and arrangements for governing and preparing the plan.

2. Gathering Information

Identify existing patterns of walking and cycling and potential new journeys. Review existing conditions and identify barriers to cycling and walking. Review related transport and land use policies and programmes.

3. Network Planning for Cycling

Identify origin and destination points and cycle flows. Convert flows into a network of routes and determine the type of improvements required.

4. Network Planning for Walking

Identify key trip generators, core walking zones and routes, audit existing provision and determine the type of improvements required.

5. Prioritising Improvements

Prioritise improvements to develop a phased programme for future investment.

6. Integration and Application

Integrate outputs into local planning and transport policies, strategies, and delivery plans.

Determining Scope

Sevenoaks District Council determined Stage 1, setting the study area boundary, as shown in map 1. Initally, the scope was only Swanley Town, but stakeholder engagement sessions revealed a strong desire for routes between the town and surrounding rural areas (for example, Hextable and Crockenhill). Therefore, these rural areas were also included in the study boundary.

Gathering Information

The following maps and supporting commentary outline the data gathering process. The maps presented build the evidence base for the identification of desire lines, which inputs directly into Stage 3, Network Planning for Cycling.

- Existing Transport Network
- Trip Attractors and Generators, Census 2011 Workplace and Population Data, Neighbourhood and Local Plan Allocated Sites
- Collisions involving pedestrians and cyclists
- Propensity to Cycle Tool Analysis

Stakeholder workshops

An online stakeholder workshop was held in the initial stages of developing the network plan in June 2023. This was done utilising ArcGIS online. Attendees included members from the District Council, Town Council and other stakeholders. An in-person external workshop was also held in June 2023 at the White Oak Leisure Centre which involved members of the public. In both cases, participants were asked to identify barriers to walking and cycling, desired routes for cycling, and walking zones. Outputs from these workshops were imported into our Geographic Information System (GIS) to inform and refine the desire line analysis. GIS is a system that creates, manages, analyses and maps all types of data. GIS also connects data to a map, linking location data with descriptive information.

Based on comments received from the first engagement, a draft cycling and walking network was developed. A follow-up online and in-person workshop was undertaken in September 2023 to help further refine the network. For both the initial and secondary engagement workshops, people were able to share further feedback via an Online Community Mapping Tool which was hosted by Sevenoaks District Council. This mapping tool was available for 2-3 weeks; the first time in June and again in September.

Mesh Density

Following the creation of the draft cycle network, a buffer analysis was conducted to determine the potential 'mesh density' of the network. Mesh density is a term that describes how a grid of cycle networks is composed. High mesh density means that the grid of cycle routes is tighter, with more route choice, whereas low mesh density means there is less extensive route choice.

A buffer analysis involves creating a 200 metre zone around each proposed route, and assessing if there are any gaps in the coverage of the network. According to the LCWIP Technical Guidance (2017)[2], in a joined-up urban cycle network, cyclists should typically not have to travel more than 400m to get between cycle routes of similar quality.

Desktop Review

Previous cycling strategies and local transport plans were reviewed in the preparation of the LCWIP. These are referenced in the introduction.

1 See LTN 1/20 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/951074/cycle-infrastructure-design-ltn-1-20.pdf

2 See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908535/cycling-walking-infrastructure-technical-guidance-document.pdf

Network Planning for Cycling

There is a wealth of information to consider when planning a cycle network. Our approach was to work though all the data, switching datasets on and off within our GIS to test the emerging network.

Origins and Destinations

The identification of demand for a planned network started by mapping the main origin and destination points across the study area.

These include the following:

- Resident Population (2021 Census)
- Workplace Population (2011 Census)
- Schools
- Shops and amenities
- Transport Hubs
- Major development sites/allocations within the adopted Local Plan

Mapping of Desire Lines

Further to the initial mapping exercise, the origin and destination points within close proximity to each other have been clustered to simplify the analysis.

Once the key clusters were identified, direct desire lines were drawn connecting the clusters to identify the principal links to be provided by the cycle network. The outputs of this exercise are illustrated on Map 5.

Propensity to Cycle Tool (PCT)

In addition to the clustering exercise, the PCT has been used to identify which routes within the study area have the greatest potential for an increase in the number of commuters cycling to work and the number of children cycling to school.

Route Identification

The desire lines identified by the above analysis were mapped to the existing highway network, and in some places the existing public rights of way (PRoW) network. In this way, the network seeks to connect the key origins and destinations within the study area, including centres of population, employment locations, schools, leisure destinations and various amenities such as shops and health services.

Converting these desire lines into routes was an iterative process. In some cases, particularly in rural locations, there is a clear preferred cycle route which is usually the most direct. However, in some cases there may be more than one potential route between origin and destination points or a reason why the most direct route would be less suitable for cycling.

At this stage, the network was mapped out based on the data analysis undertaken above and with reference to the Propensity to Cycle Tool (PCT) which shows which routes have the highest potential for an increase in cycling under various scenarios for change, and with reference to the outputs from the stakeholder workshops and collision data involving cyclists.

Primary and Secondary Routes

Once the network plan was complete, the network was split into primary and secondary routes.

The primary routes are judged to be the most popular and strategic routes, linking residential areas with the key trip generators. They form the main spine of the network to which the other routes will connect. Primary routes were selected based on routes that were expected to have high flows of cyclists along desire lines linking large residential areas or new development sites to the town centre of Swanley, as well as key links to adjoining areas like Crockenhill and Hextable. Primary routes were also selected based on their popularity at the workshops. These routes were then agreed with Sevenoaks District Council.

Secondary routes can be locally important but are less strategic as they fill the gaps in the primary network. Some sections of the secondary routes may have higher flows than parts of the primary routes, so the distinction between primary and secondary should not necessarily form the basis of investment priorities. Secondary routes also play a key role in directly connecting residential developments and schools to primary routes.

The proposed network was visually tested against the Propensity to Cycle Tool data and the outputs of the stakeholder workshops. There is a high degree of correlation between the networks. Major employment areas and schools were served by the proposed network. The proposed network also serves the main shopping areas, Swanley Railway Station, Swanley Park and White Oak Lesiure Centre.

Once preferred primary routes were identified, they were assessed against the five core design outcomes for cycling: coherent, direct, safe, comfortable and attractive. An audit was then undertaken of the six primary routes to identify what measures were required to improve them to meet the core design outcomes.

Auditing and Cycle Routes

The cycle routes were audited in person and the potential options have been devised with reference to the guidance set out within LTN 1/20 wherever possible. Notwithstanding, there are some locations where an LTN 1/20 solution may not be achievable due to a number of factors such as width constraints.

Network Planning for Walking

There is not an equivalent dataset to the Propensity to Cycle Tool for walking, so there is no detailed mapping exercise as part of the background study. Walking Zones were selected based on walking trip attractors, to reflect the shorter distances that people are likely to walk.

The DfT's LCWIP guidance suggests that Core Walking Zones (CWZ) normally consist of a number of walking trip generators that are located close together. Swanley town centre, including Asda Walk, St Mary's Road and Swanley Railway Station were included in the core walking zone, as these were highlighted as key areas in the stakeholder engagement sessions. An approximate five minute walking distance of 400m can be used as a guide to the minimum extents of CWZs. Within CWZs, all of the pedestrian infrastructure should be deemed as important.

Feedback from the enagement sessions highlighted the desire for walking improvements in Swanley. As a result, a walking network was also identified and 4 primary walking routes (along with the core walking zone) were audited. Some of these walking routes overlapped with the primary cycle routes, but interventions are presented separately.

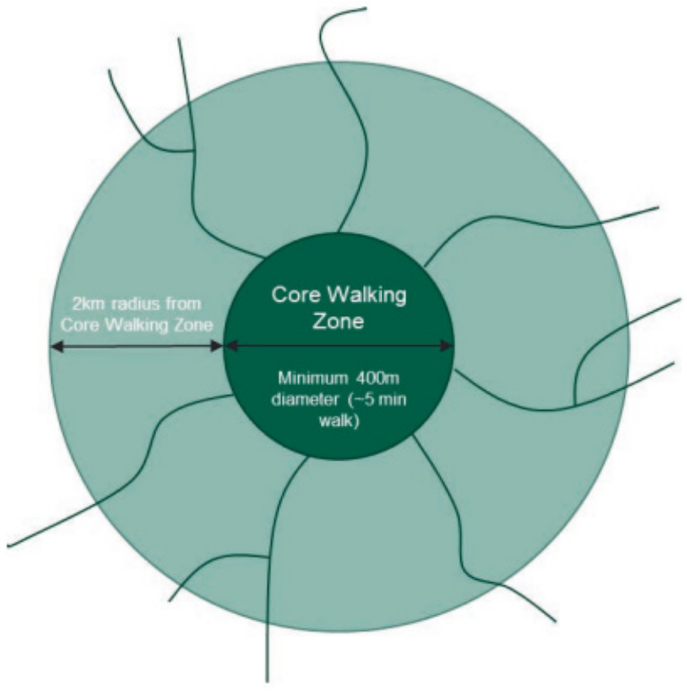


Figure 2.1 Minimum Extents of Core Walking Zones (LCWIP Technical Guidance (2017)

Auditing the CWZ and Walking routes

The Core Walking Zones were considered using the categories from the Walking Route Audit Tool (WRAT) and the Healthy Streets Design Check (HSDC) tool. [1]

The WRAT and HSDC are government supported tools for assessing walking and public realm environments.

The WRAT has not been used to calculate the existing condition of the Core Walking Zone as the calculations relate to auditing a route rather than a zone. As such, the categories from that and the Healthy Streets Check have been used instead, to provide an assessment. Additional information on the Healthy Streets Design Check can be found in the Design Principles section.

The core principles for consideration in the WRAT are:

- attractiveness
- comfort
- directness
- safety
- coherence

The core principles for consideration in the Healthy Streets Design Check are:

- Everyone feels welcome
- Easy to cross
- Shade and shelter
- Places to stop and rest
- Not too noisy
- People choose to walk and cycle
- People feel safe
- Things to see and do
- People feel relaxed
- Clean Air

1 See https://www.healthystreets.com/



Figure 2.2 Healthy Streets Design Indicators

Door to door journeys

In addition to planning for local trips on foot and by bike, it is important to ensure that longer distance journeys are made as easy as possible by integrating walking and cycling networks with public transport interchanges.

The concept of the "door-to-door" journey was introduced by the Campaign for Better Transport in 2011, leading to the publication of a Government door to door strategy in 2013. The emphasis is on access to public transport interchanges at both ends of the journey – perhaps walking or cycling from home to the train station, then picking up a hire bike to the final destination.

The government strategy focuses on four areas:

- accurate, accessible and reliable information about the different transport options for their journeys;
- convenient and affordable tickets, for an entire journey;
- regular and straightforward connections at all stages of the journey and between different modes of transport; and
- safe, comfortable transport facilities.

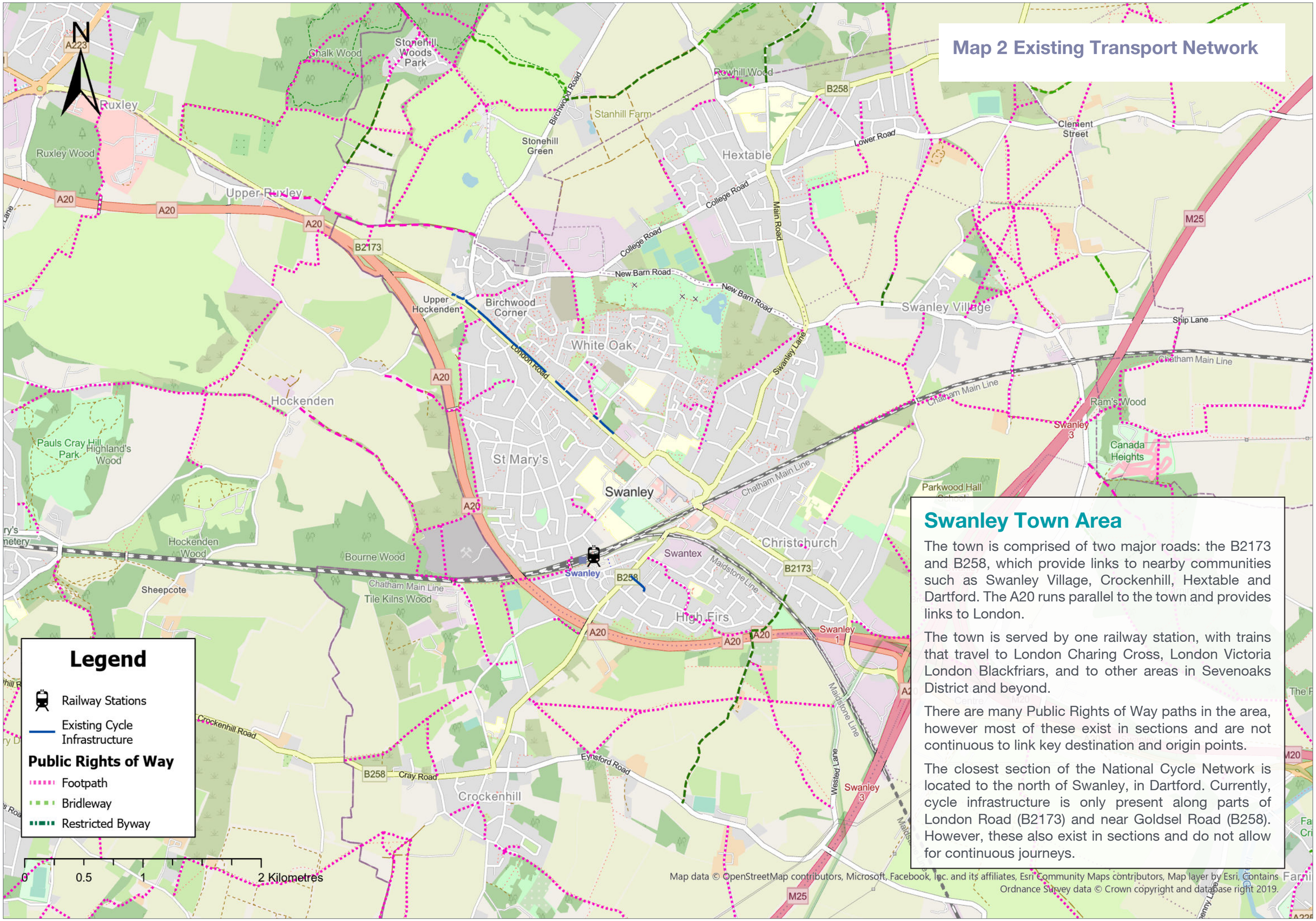
As most public transport journeys involve a mode change, interchange between these is very important. Users do not want to have to go out of their way to access the next mode. Signing also needs to be clear, passengers often have short connection times so need reassurance they will be able to locate their next connection within their time frame. Larger interchanges, such as train station to bus station, should also have facilities appropriate to usage. If there is shelter from the elements, a safe place to wait and possibly additional facilities, such as a coffee shop, then wait times can seem shorter than they actually are. It is also very useful to provide real-time information at interchanges.

Where users are not taking a motorised form of transport to access or exit their next mode of transport then interchange is still as important. Cycling facilities need to be safe and secure and in an accessible place for changing modes quickly. This is the same for bike hire facilities. Walking and cycling routes need to be well signed giving distances and potentially times for key destinations.

Provision for taxis, good pedestrian access and,where appropriate car parking, also need to be made.

The following pages step through various layers of data that were used to build the cycle and walking network and walking zone.

Map 2 Existing Transport Network



Legend

- Railway Stations
- Existing Cycle Infrastructure

Public Rights of Way

- Footpath
- Bridleway
- Restricted Byway

Swanley Town Area

The town is comprised of two major roads: the B2173 and B258, which provide links to nearby communities such as Swanley Village, Crockenhill, Hextable and Dartford. The A20 runs parallel to the town and provides links to London.

The town is served by one railway station, with trains that travel to London Charing Cross, London Victoria London Blackfriars, and to other areas in Sevenoaks District and beyond.

There are many Public Rights of Way paths in the area, however most of these exist in sections and are not continuous to link key destination and origin points.

The closest section of the National Cycle Network is located to the north of Swanley, in Dartford. Currently, cycle infrastructure is only present along parts of London Road (B2173) and near Goldsel Road (B258). However, these also exist in sections and do not allow for continuous journeys.

Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri, Contains Ordnance Survey data © Crown copyright and database right 2019.

Map 3 Population Density

N

Birchwood Corner

St Mary’s

Swanley

Hextable

Maidstone Road

A20

B2173

B258

M25

Cookham Road

Valley Golf Course

Leydenhatch Lane

Swanley Park

New Barn Road

Main Road

Highlands Hill

Swanley Village Road

Ship Lane

Swanley Lane

Beechenlea Lane

Button Street

Northview

Broomhill Bank School (North)

Top Dartford Road

Lower Road

Club-K Fitness Studio

Hextable School

St Paul's Church of England (Voluntary Controlled) Primary School

St Mary's Church of England (Voluntary Aided) Primary School

Park Road Industrial Estate

Downsview Primary School

Parkwood Hall School

The Olympic

Goldsel Road Industrial Estate

High Firs County Primary School

Moreton Industrial Estate

Sheepcote Lane

Goldsel Road

Crockenhill Primary School

Crockenhill

Cray Road

Eynsford Road

Pedham Place

Teardrop Industrial Park

Legend

- Railway Stations

Population Density (Usual residents per square kilometre)

- < 1000
- 1000 - 4000
- 4000 - 7000
- 7000 - 11500
- SHELAA 2022

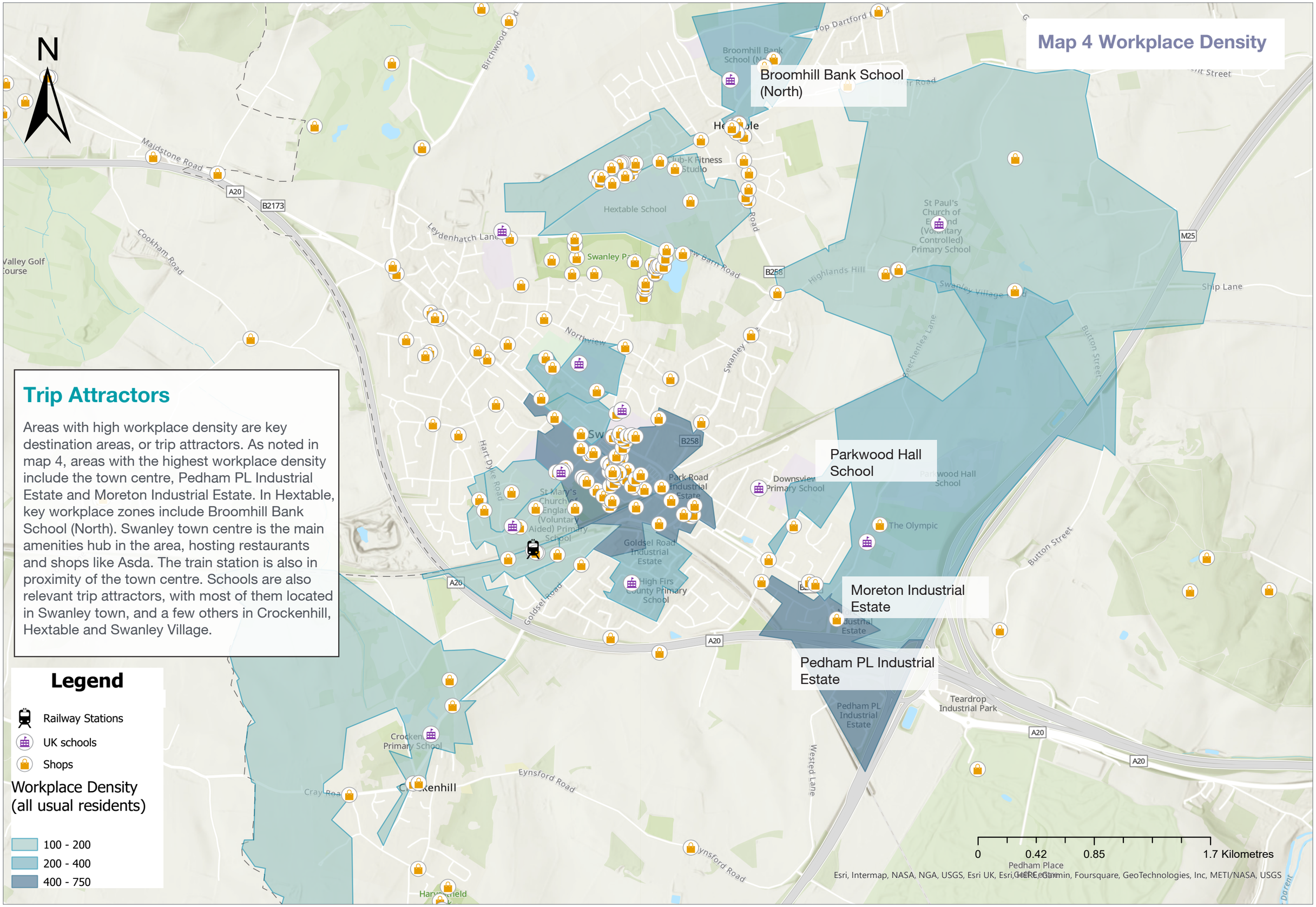
Trip generators

Residential areas represent the main trip generators, being the origin points of most trips in Swanley. As shown in map 3, St Mary’s and Birchwood Corner are some of the areas with the highest resident population, making these key trip generators. New developments are also relevant as these indicate future trip origin areas. The map shows the Strategic Housing and Economic Land Availability Assessment (SHELAA 2022) areas, which are located mostly along London Road.

0 0.42 0.85 1.7 Kilometres

Esri, Intermap, NASA, NGA, USGS, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS

Map 4 Workplace Density



Trip Attractors

Areas with high workplace density are key destination areas, or trip attractors. As noted in map 4, areas with the highest workplace density include the town centre, Pedham PL Industrial Estate and Moreton Industrial Estate. In Hextable, key workplace zones include Broomhill Bank School (North). Swanley town centre is the main amenities hub in the area, hosting restaurants and shops like Asda. The train station is also in proximity of the town centre. Schools are also relevant trip attractors, with most of them located in Swanley town, and a few others in Crockenhill, Hextable and Swanley Village.

Legend

Railway Stations
UK schools
Shops

Workplace Density (all usual residents)

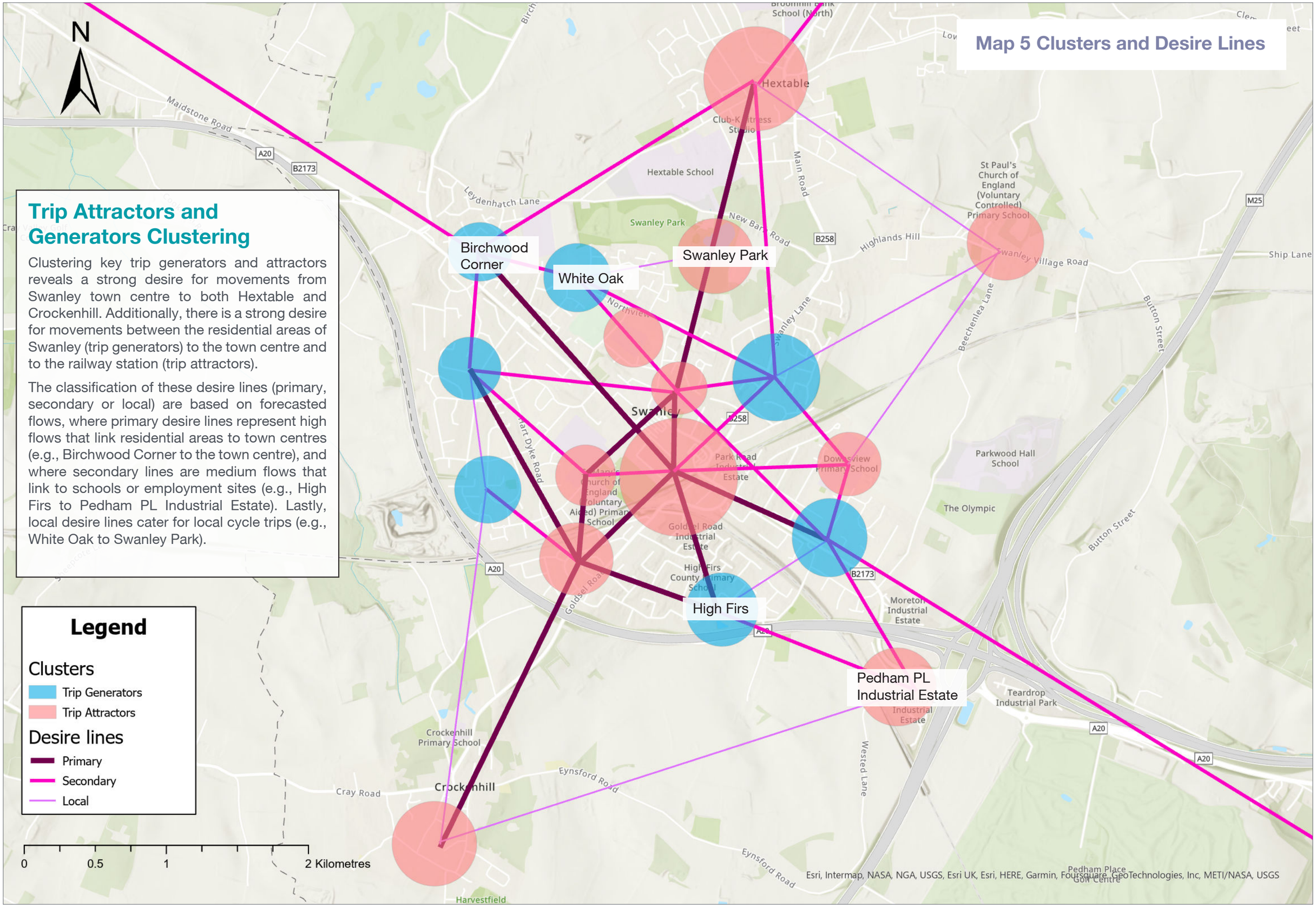
100 - 200
200 - 400
400 - 750

Map 5 Clusters and Desire Lines

Trip Attractors and Generators Clustering

Clustering key trip generators and attractors reveals a strong desire for movements from Swanley town centre to both Hextable and Crockenhill. Additionally, there is a strong desire for movements between the residential areas of Swanley (trip generators) to the town centre and to the railway station (trip attractors).

The classification of these desire lines (primary, secondary or local) are based on forecasted flows, where primary desire lines represent high flows that link residential areas to town centres (e.g., Birchwood Corner to the town centre), and where secondary lines are medium flows that link to schools or employment sites (e.g., High Firs to Pedham PL Industrial Estate). Lastly, local desire lines cater for local cycle trips (e.g., White Oak to Swanley Park).



Map 6 Air Quality Management Areas

Air Quality Management Areas

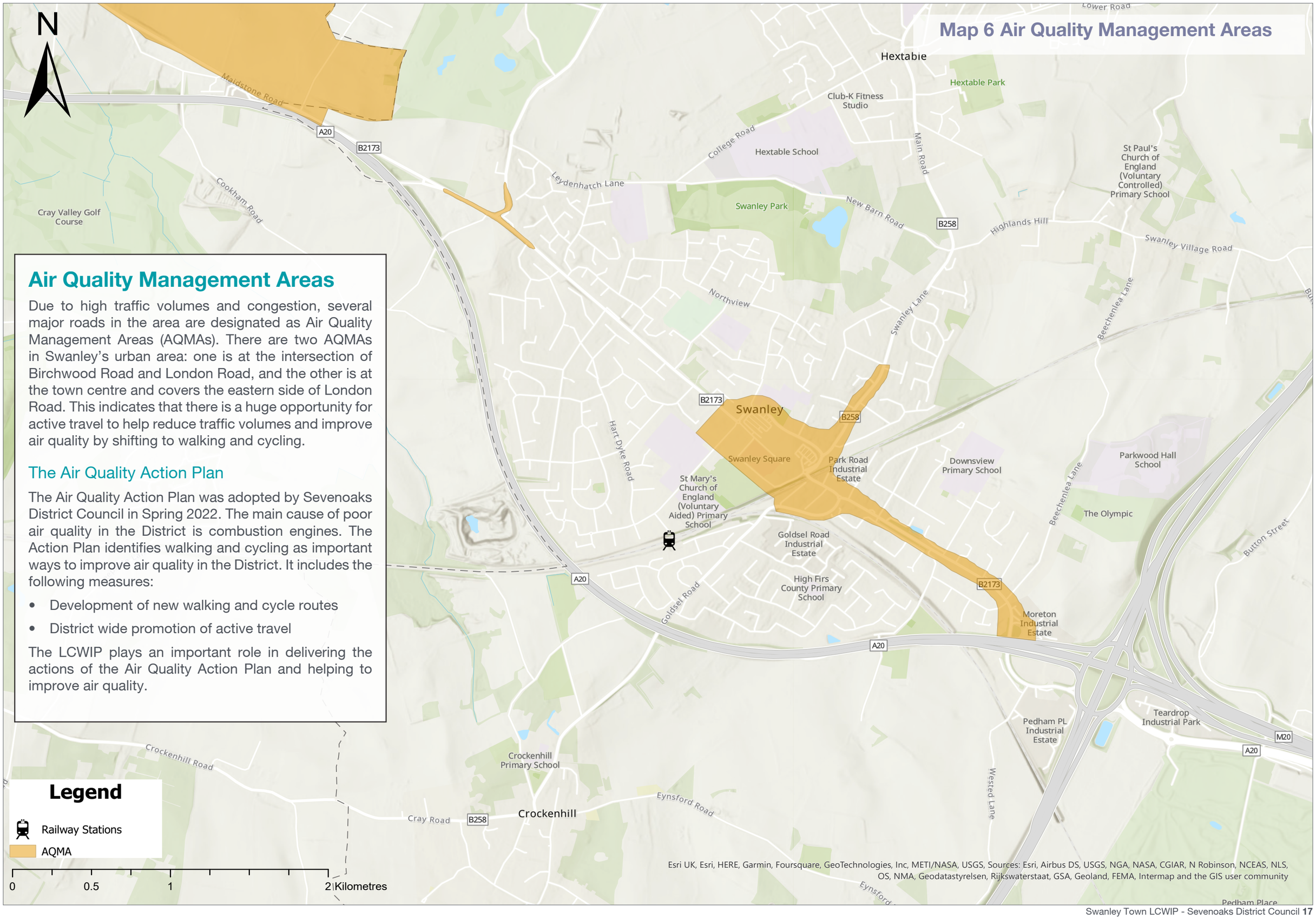
Due to high traffic volumes and congestion, several major roads in the area are designated as Air Quality Management Areas (AQMAs). There are two AQMAs in Swanley's urban area: one is at the intersection of Birchwood Road and London Road, and the other is at the town centre and covers the eastern side of London Road. This indicates that there is a huge opportunity for active travel to help reduce traffic volumes and improve air quality by shifting to walking and cycling.

The Air Quality Action Plan

The Air Quality Action Plan was adopted by Sevenoaks District Council in Spring 2022. The main cause of poor air quality in the District is combustion engines. The Action Plan identifies walking and cycling as important ways to improve air quality in the District. It includes the following measures:

- Development of new walking and cycle routes
- District wide promotion of active travel

The LCWIP plays an important role in delivering the actions of the Air Quality Action Plan and helping to improve air quality.



Propensity to Cycle Tool Analysis

The Propensity to Cycle (PCT) is an open-source transport planning system, part funded by the Department for Transport. It was designed to assist transport planners and policy makers to prioritise investments and interventions to promote cycling. More information is available from the PCT website: https://www.pct.bike/m/?r=kent. The aim of the PCT is to inform planning and investment decisions for cycling infrastructure by showing the existing and potential distribution of commuter and school cycle trips and therefore inform which investment locations could represent best value for money. PCT uses two key inputs:

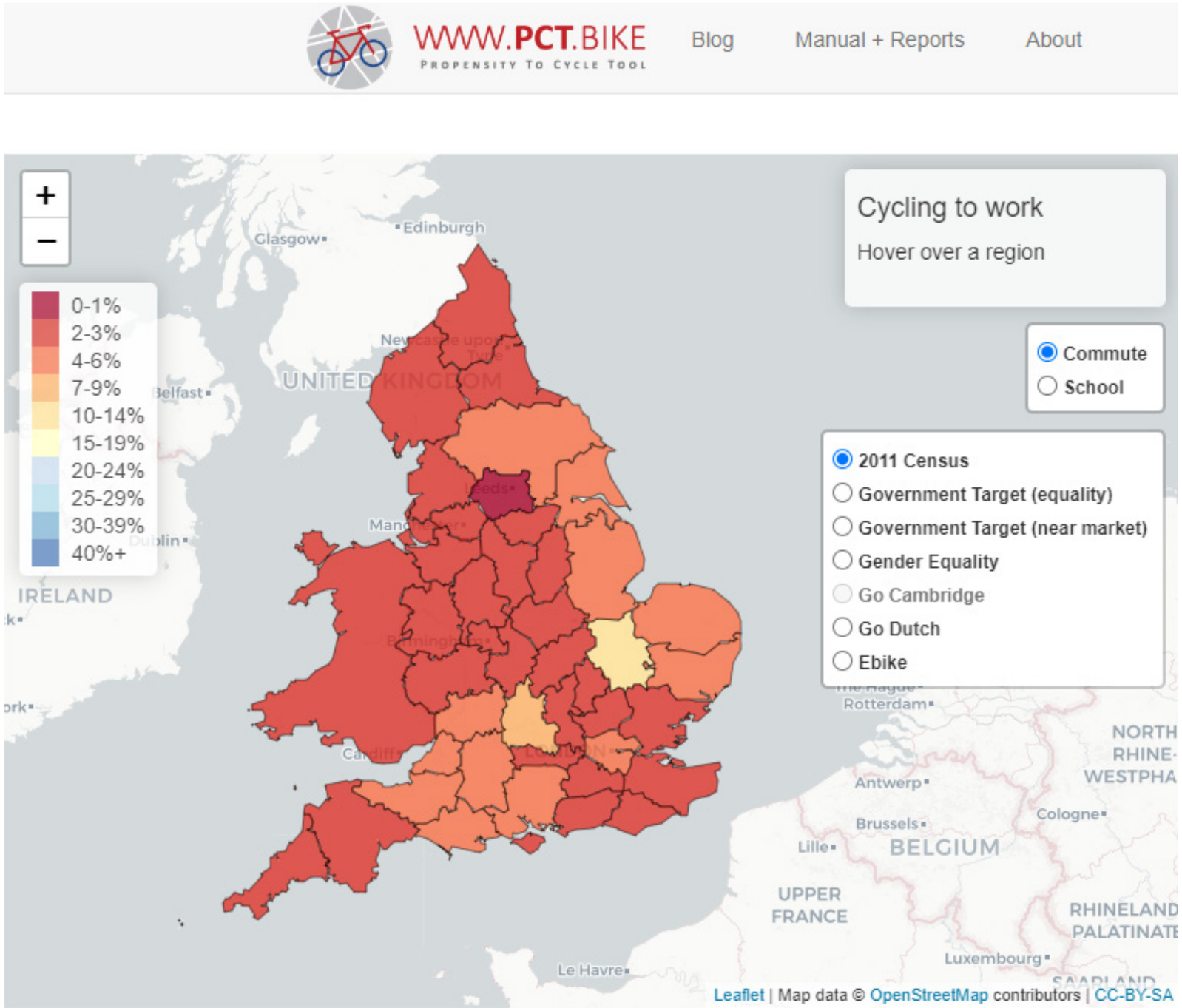
- Census 2011 Origin and Destination commuting data and school data (O-D data)
- Cycle Streets routing

The model estimates cycling potential adjusted for journey distance and hilliness as well as predicting the likely distribution of those trips using the Cycle Streets routing application (https://www.cyclestreets.net/). The model can be applied to consider different scenarios such as: Gender Equality, where women cycle as frequently as men; Go Dutch, if cycling levels were the same as in the Netherlands; Government Target, where cycling levels meet the target for current government's aim for cycling; and E-bike. The E-bike scenario is an extension of the GoDutch modelling scenario. It models the additional increase in cycling that would be achieved through the widespread uptake of electric cycles ('e-bikes') if commuters were as likely to cycle a given trip as Dutch commuters.

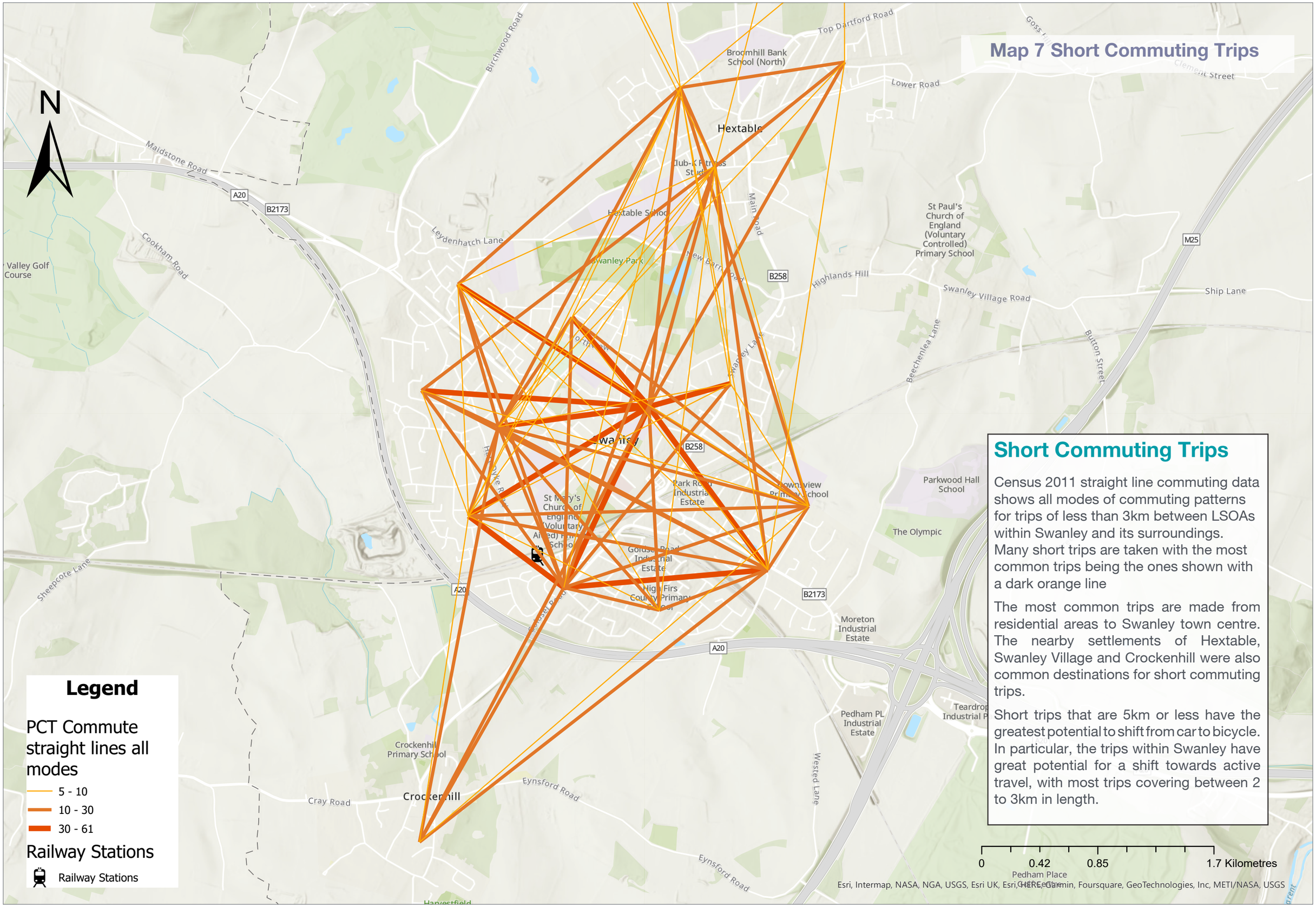
The following scenarios are presented:

- Commute short trips (under 3km) based on Census 2011 data
- Commute and School route data based on the Go Dutch scenario and Census 2011.

Note: All data is modelled based on Census 2011 data, which is now 12 years out of date. However, comparable Census 2021 is not yet available.



Map 7 Short Commuting Trips



Short Commuting Trips

Census 2011 straight line commuting data shows all modes of commuting patterns for trips of less than 3km between LSOAs within Swanley and its surroundings. Many short trips are taken with the most common trips being the ones shown with a dark orange line

The most common trips are made from residential areas to Swanley town centre. The nearby settlements of Hextable, Swanley Village and Crockenhill were also common destinations for short commuting trips.

Short trips that are 5km or less have the greatest potential to shift from car to bicycle. In particular, the trips within Swanley have great potential for a shift towards active travel, with most trips covering between 2 to 3km in length.

Legend

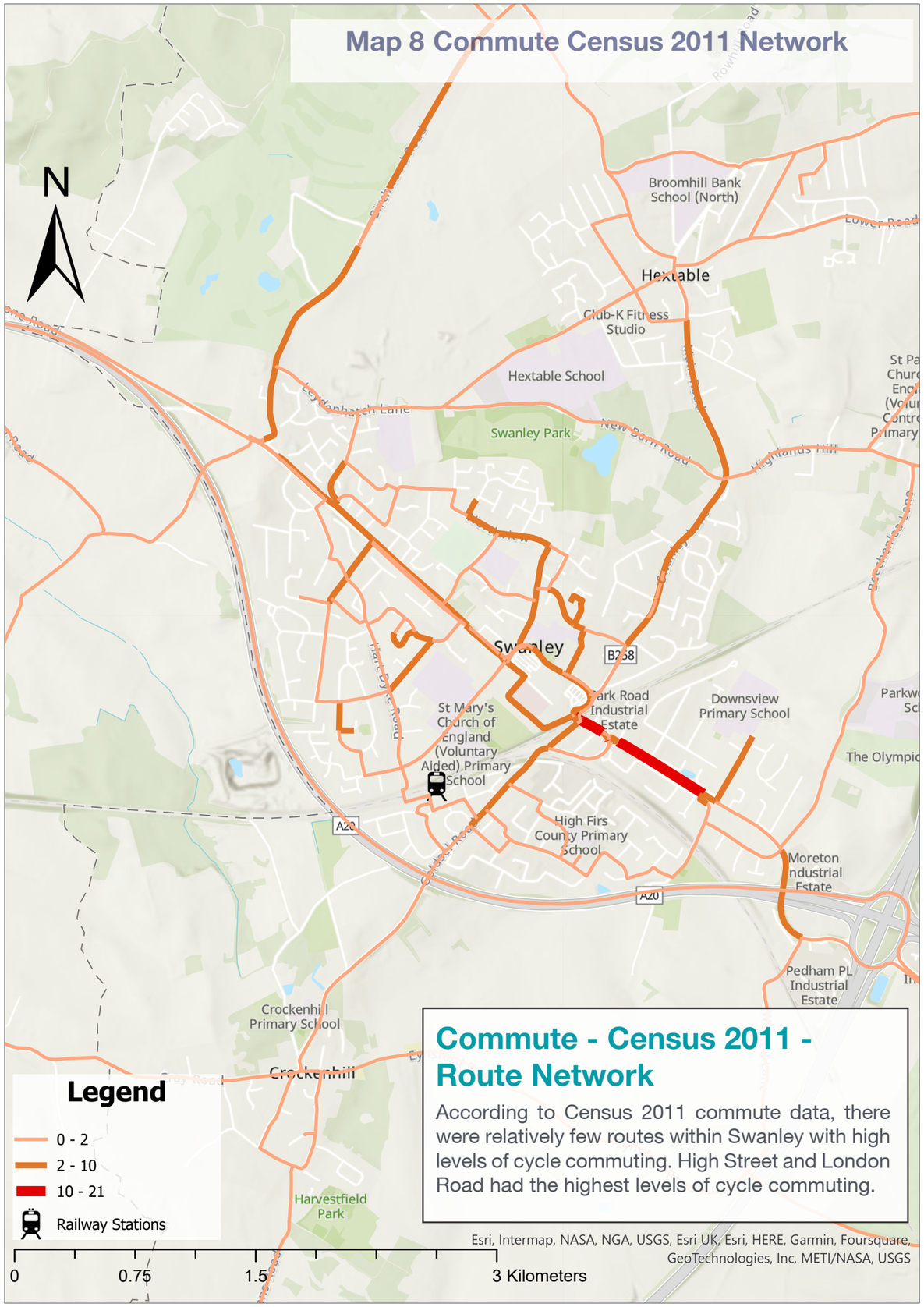
PCT Commute straight lines all modes

- 5 - 10
- 10 - 30
- 30 - 61

Railway Stations

- Railway Stations

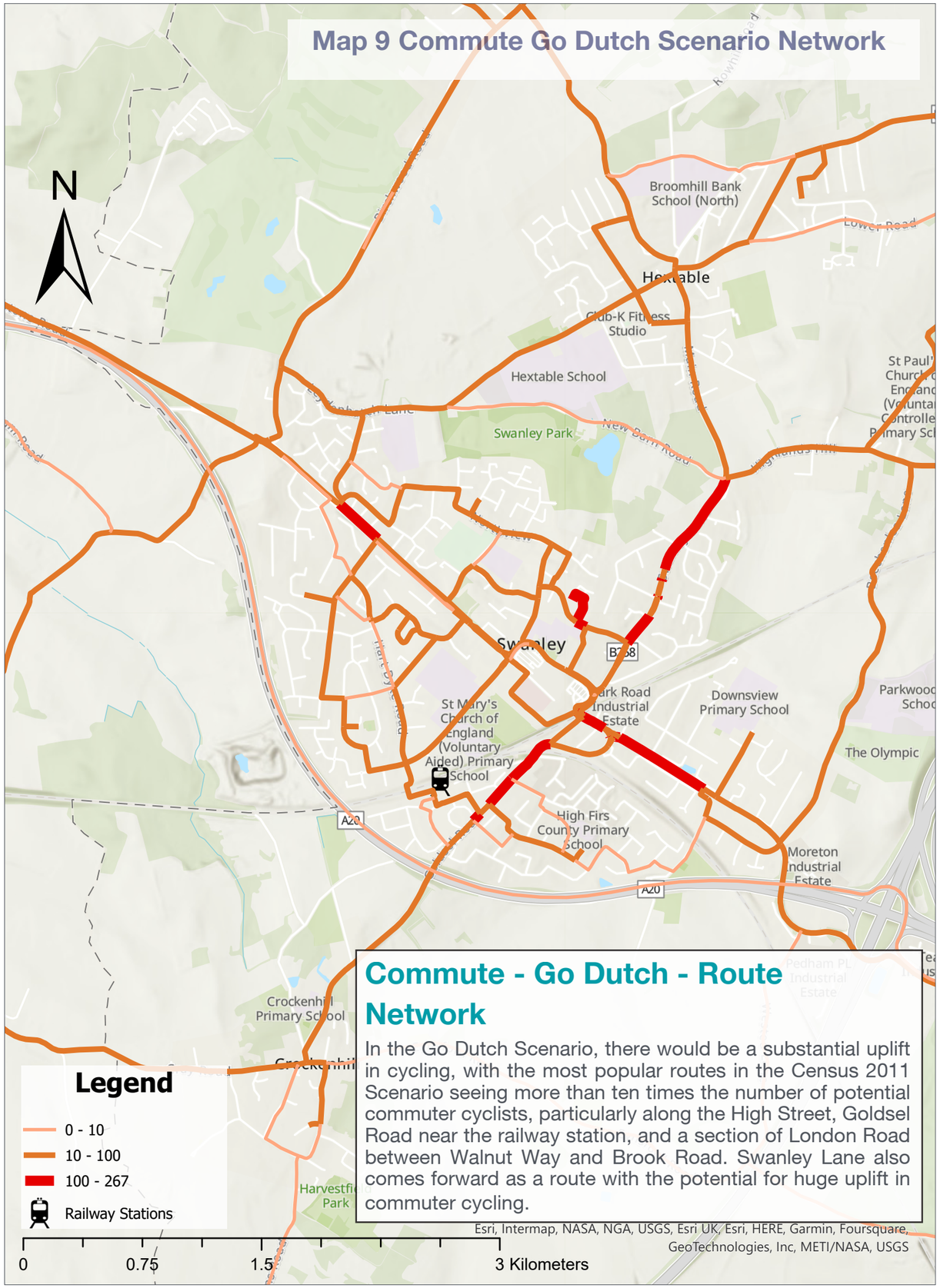
Map 8 Commute Census 2011 Network



Commute - Census 2011 - Route Network

According to Census 2011 commute data, there were relatively few routes within Swanley with high levels of cycle commuting. High Street and London Road had the highest levels of cycle commuting.

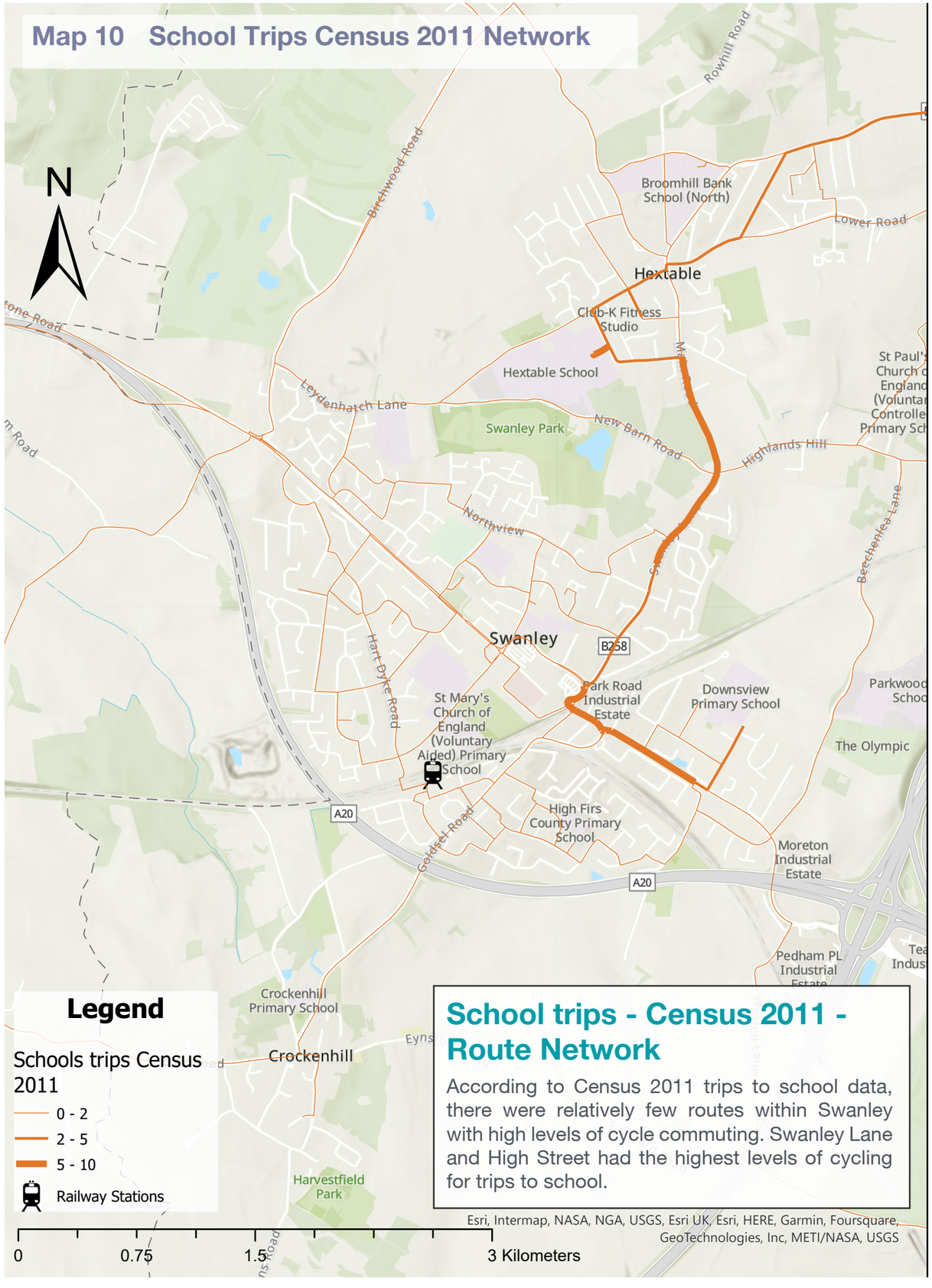
Map 9 Commute Go Dutch Scenario Network



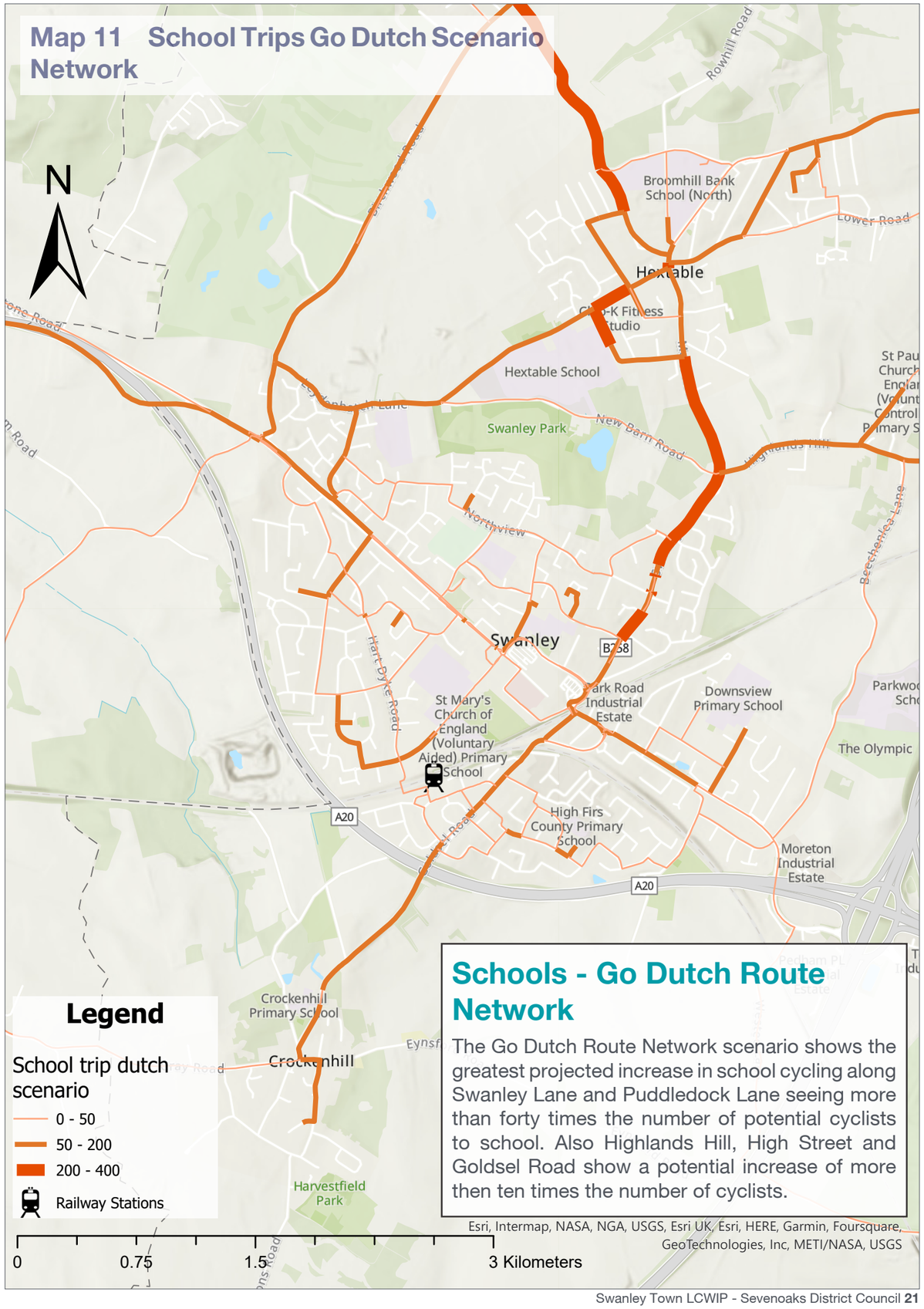
Commute - Go Dutch - Route Network

In the Go Dutch Scenario, there would be a substantial uplift in cycling, with the most popular routes in the Census 2011 Scenario seeing more than ten times the number of potential commuter cyclists, particularly along the High Street, Goldsel Road near the railway station, and a section of London Road between Walnut Way and Brook Road. Swanley Lane also comes forward as a route with the potential for huge uplift in commuter cycling.

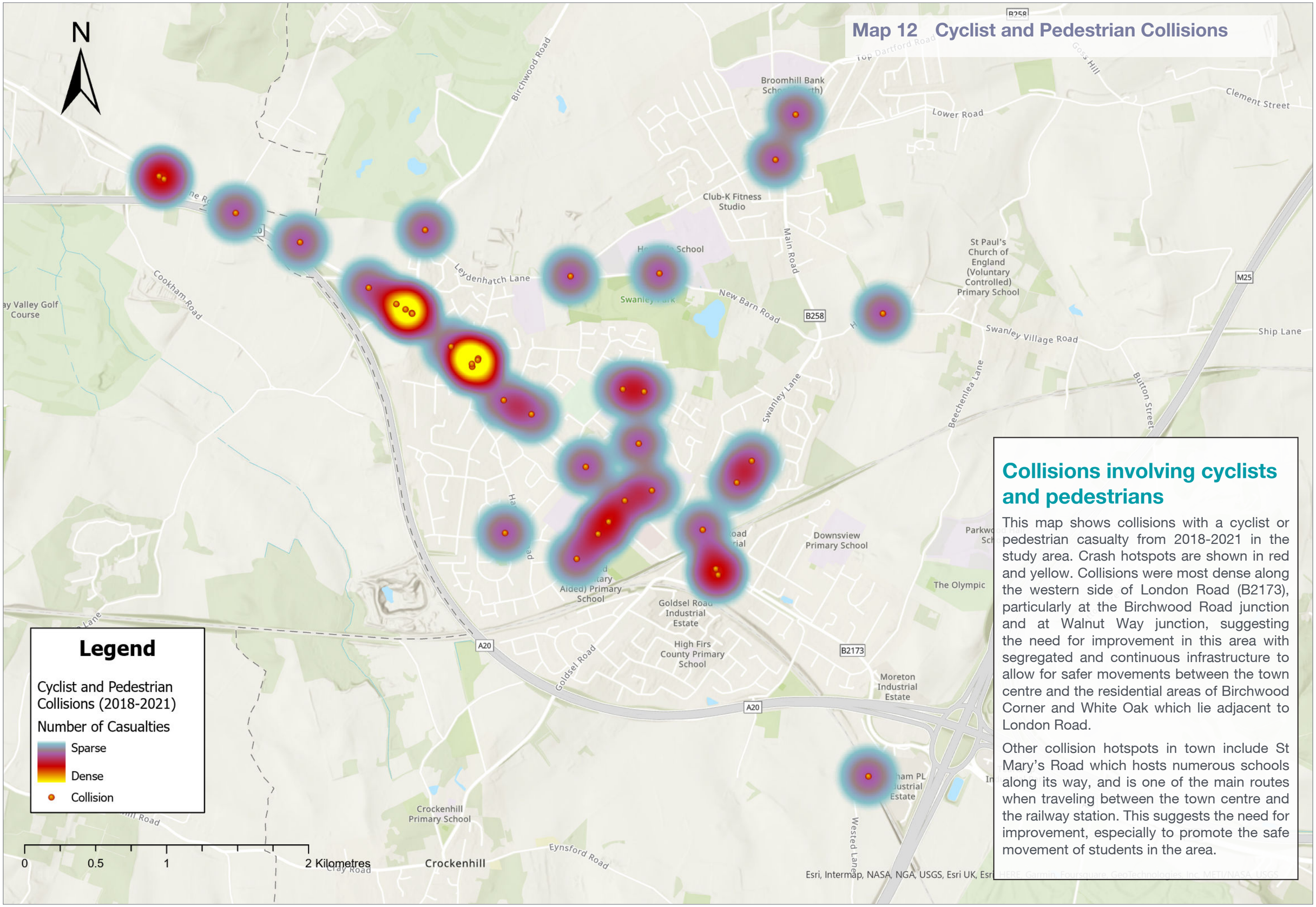
Map 10 School Trips Census 2011 Network



Map 11 School Trips Go Dutch Scenario Network



Map 12 Cyclist and Pedestrian Collisions



Collisions involving cyclists and pedestrians

This map shows collisions with a cyclist or pedestrian casualty from 2018-2021 in the study area. Crash hotspots are shown in red and yellow. Collisions were most dense along the western side of London Road (B2173), particularly at the Birchwood Road junction and at Walnut Way junction, suggesting the need for improvement in this area with segregated and continuous infrastructure to allow for safer movements between the town centre and the residential areas of Birchwood Corner and White Oak which lie adjacent to London Road.

Other collision hotspots in town include St Mary's Road which hosts numerous schools along its way, and is one of the main routes when traveling between the town centre and the railway station. This suggests the need for improvement, especially to promote the safe movement of students in the area.

Stakeholder and Community Engagement

Summary of Workshops

Preliminary workshop sessions were held in June 2023 which gathered feedback from District and Town councillors and the public on walking and cycling in Swanley. One session was done online, and the other was held at the White Oak Leisure Centre.

Participants shared ideas for potential cycle routes and walking zones in the town. Barriers to walking and cycling throughout the area were also identified. Residents also submitted feedback via an online mapping tool which was hosted by Sevenoaks District Council. The desire for walking routes within Swanley, and to connect to neighboring communities was the key feedback received. A second round of workshops was held in September 2023 to review the draft cycle network, walking routes and the core walking zone. Participants were able to review potential alignments, and give feedback on the routes' importance. The desire for walking routes was also repeated at this second stage. Participants were again able to submit further feedback via the online mapping tool hosted by Sevenoaks District Council. Using this tool, participants could rank the proposed routes, and this data was fed into the prioritsation excercise as part of the final stage of the LCWIP. At this second stage of workshops, one was held online again and the other was held in-person at the Swanley town market.

Sevenoaks Online Mapping Tool

Following the engagement sessions, participants were given the opportunity to submit further feedback. In July, as part of the first round of workshops, users were able to identify additional barriers to walking and cycling, as well as potential routes using the tool's interactive features.

Similarly, in the second round of workshops, users were able to draw additional routes, comment on the draft networks, and rank the routes in terms of priority. This information was used in refining the networks.

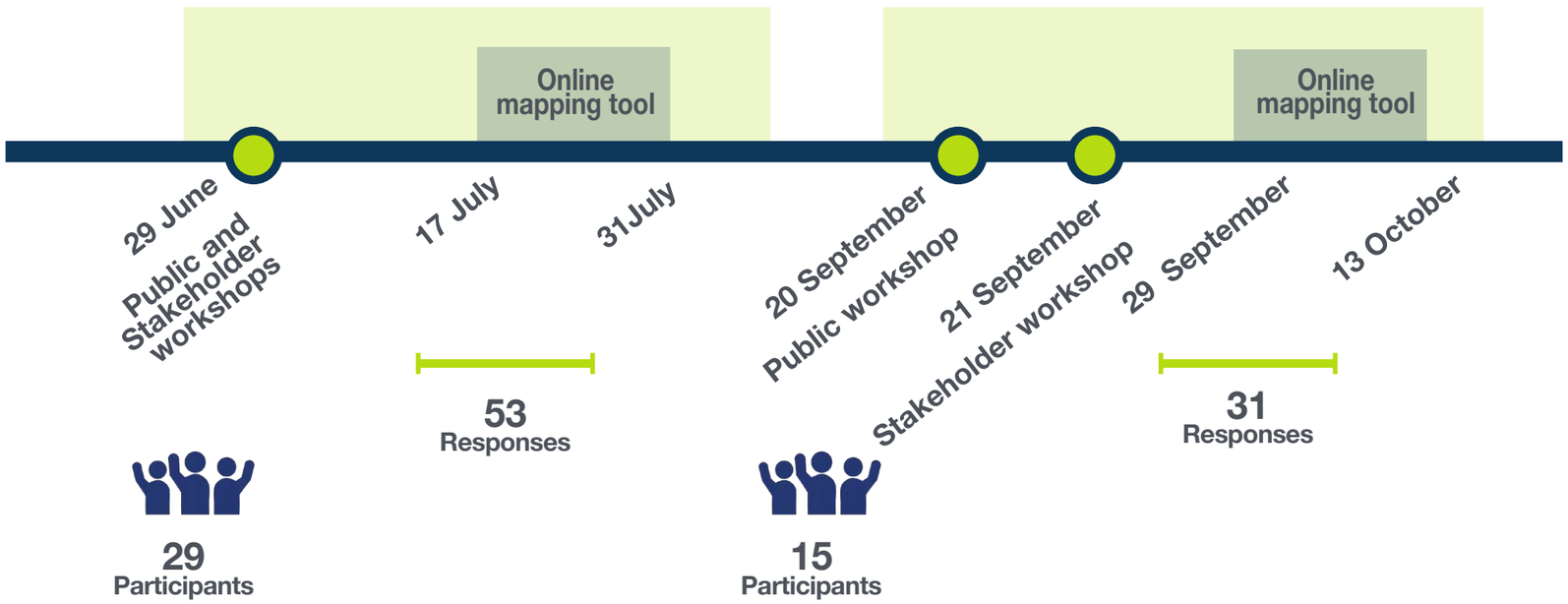


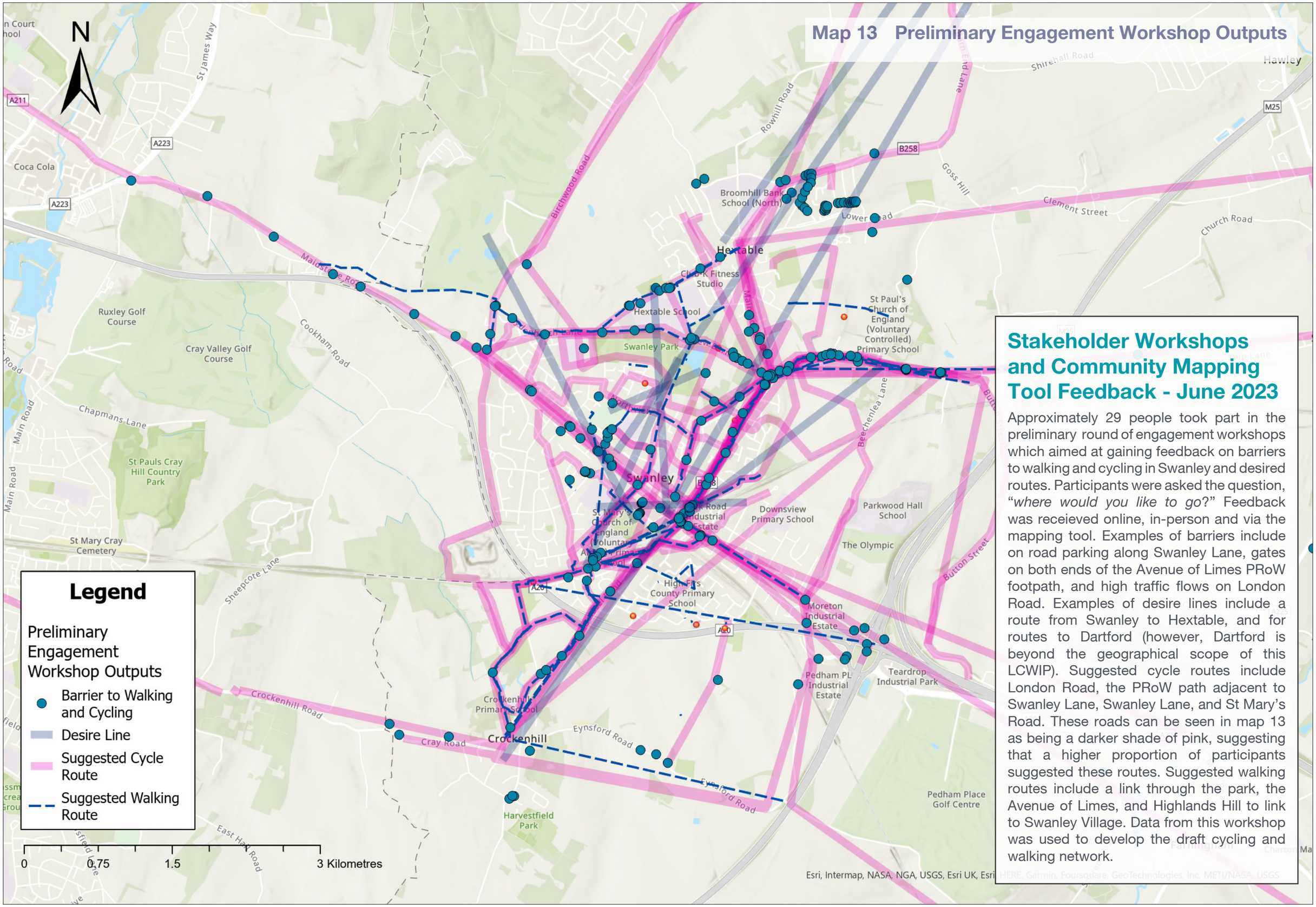


Figure 2.3 June in-person engagement at White Oak Leisure Centre



Figure 2.4 September in-person engagement at Swanley Town Market

Map 13 Preliminary Engagement Workshop Outputs



Stakeholder Workshops and Community Mapping Tool Feedback - June 2023

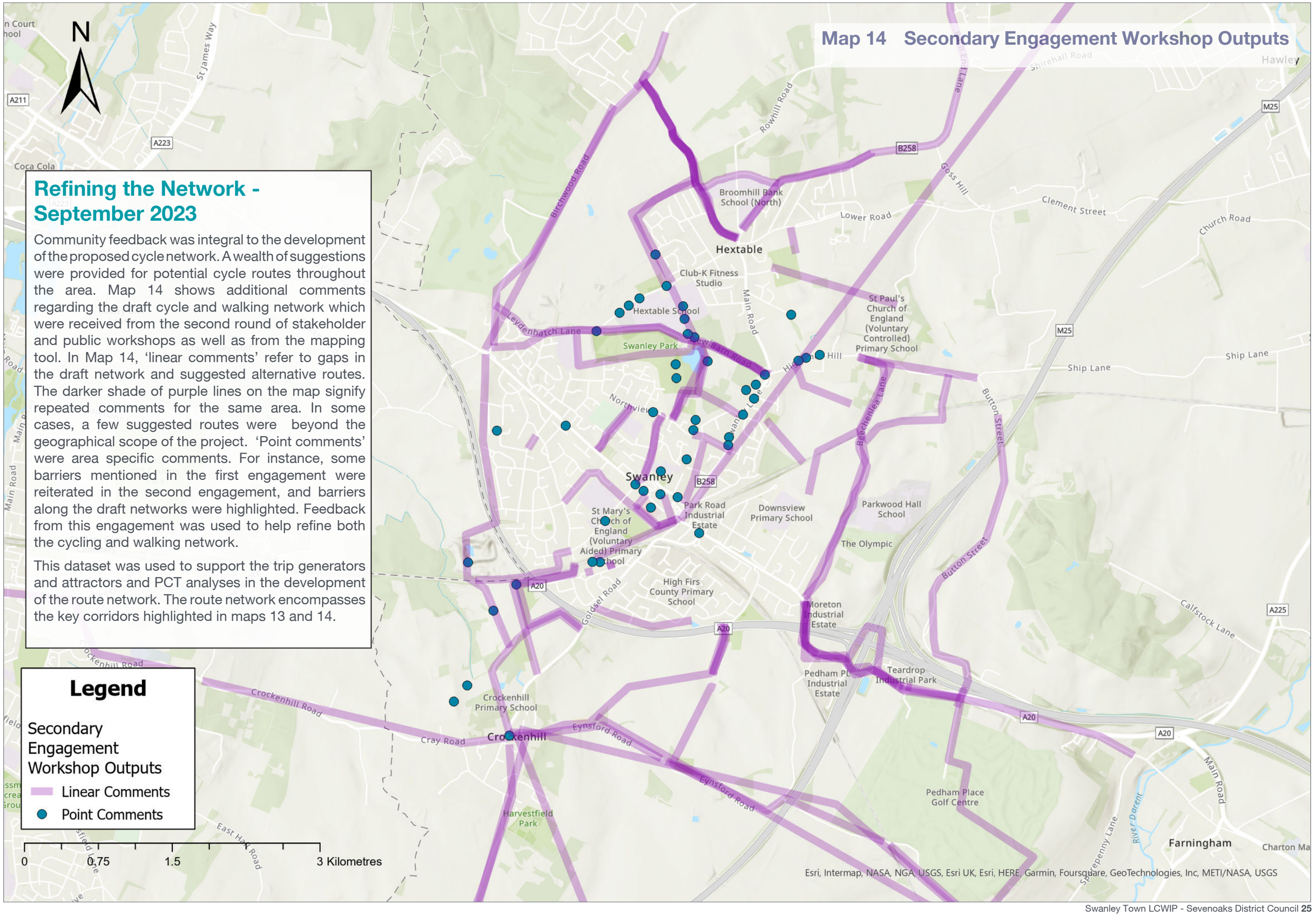
Approximately 29 people took part in the preliminary round of engagement workshops which aimed at gaining feedback on barriers to walking and cycling in Swanley and desired routes. Participants were asked the question, "*where would you like to go*?" Feedback was receieved online, in-person and via the mapping tool. Examples of barriers include on road parking along Swanley Lane, gates on both ends of the Avenue of Limes PRoW footpath, and high traffic flows on London Road. Examples of desire lines include a route from Swanley to Hextable, and for routes to Dartford (however, Dartford is beyond the geographical scope of this LCWIP). Suggested cycle routes include London Road, the PRoW path adjacent to Swanley Lane, Swanley Lane, and St Mary's Road. These roads can be seen in map 13 as being a darker shade of pink, suggesting that a higher proportion of participants suggested these routes. Suggested walking routes include a link through the park, the Avenue of Limes, and Highlands Hill to link to Swanley Village. Data from this workshop was used to develop the draft cycling and walking network.

Map 14 Secondary Engagement Workshop Outputs

Refining the Network - September 2023

Community feedback was integral to the development of the proposed cycle network. A wealth of suggestions were provided for potential cycle routes throughout the area. Map 14 shows additional comments regarding the draft cycle and walking network which were received from the second round of stakeholder and public workshops as well as from the mapping tool. In Map 14, 'linear comments' refer to gaps in the draft network and suggested alternative routes. The darker shade of purple lines on the map signify repeated comments for the same area. In some cases, a few suggested routes were beyond the geographical scope of the project. 'Point comments' were area specific comments. For instance, some barriers mentioned in the first engagement were reiterated in the second engagement, and barriers along the draft networks were highlighted. Feedback from this engagement was used to help refine both the cycling and walking network.

This dataset was used to support the trip generators and attractors and PCT analyses in the development of the route network. The route network encompasses the key corridors highlighted in maps 13 and 14.



3 Proposed Cycle Network, Core Walking Zone and Walking Routes

Proposed Cycle Network, Core Walking Zone and Walking Routes

Map 15 shows the proposed cycle network for Swanley town based on the engagement outputs and desktop analysis. The proposed cycle network is comprised of 11 cycle routes which span across the town, and includes links to Swanley Village, Hextable and Crockenhill. Of these, six primary cycle routes have been audited. This network addresses the key corridors and desire lines which were highlighted at the workshops.

Map 16 shows the core walking zone made up of Swanley town centre and included St Mary's Road and Swanley Railway Station. Feedback from the engagement workshops showed a strong interest and desire for walking routes to link areas within the town, and to link to nearby communities such as Hextable and Crockenhill. Therefore, this LCWIP presents a walking network for the town as well. Feedback relating to the walking routes suggested making use of Swanley Park and the PRoW paths. The proposed walking network is comprised of six routes. Of these, four were audited as these were deemed to provide the most important connections by allowing safer movements between residential areas and the town centre, and between Swanley, Crockenhill and Hextable.

Subject to funding opportunities, the delivery of the primary routes will be progressed and then the secondary routes will be reviewed, prioritised and delivered in tranches.

Implementation

The inclusion of a route in the network plan is no guarantee that it will be implemented. Sevenoaks District Council do not have the direct powers or funding to implement the proposed cycle network and core walking zones. Discussions will need to be held with Kent County Council as the local transport authority and as indicated in the Next Steps chapter, funding opportunities will need to be identified. While we have made every effort to ensure that our proposals are practical, it should be recognised that there are competing demands for highway space, including cars, buses, taxis and parking. It should also be noted that all major changes to the highway network will be publicly consulted on before being implemented. Proposed road space reallocations for walking and cycling will need to carefully consider implications across all modes, although the ultimate aim must be to reduce the dominance of motor vehicles, thereby easing congestion. This report is not a feasibility study, but a high level assessment. All proposals will be subject to further feasibility work and detailed design work will be necessary. In some cases, this may mean that a route is moved to an alternative parallel alignment.

If schemes are to be progressed, they will need to be prioritised for inclusion in delivery programmes alongside other proposals, with schemes subject to the appropriate level of business case development. It is also intended that this LCWIP would be used to inform developers of the level of ambition for the walking and cycling network so that they may contribute towards it.The progress of this LCWIP should be coordinated with the adjoining authorities to ensure that routes extending beyond the study area are connected, cohesive and continuous.

The following tables present the names and descriptions of routes in the cycle and walking networks.

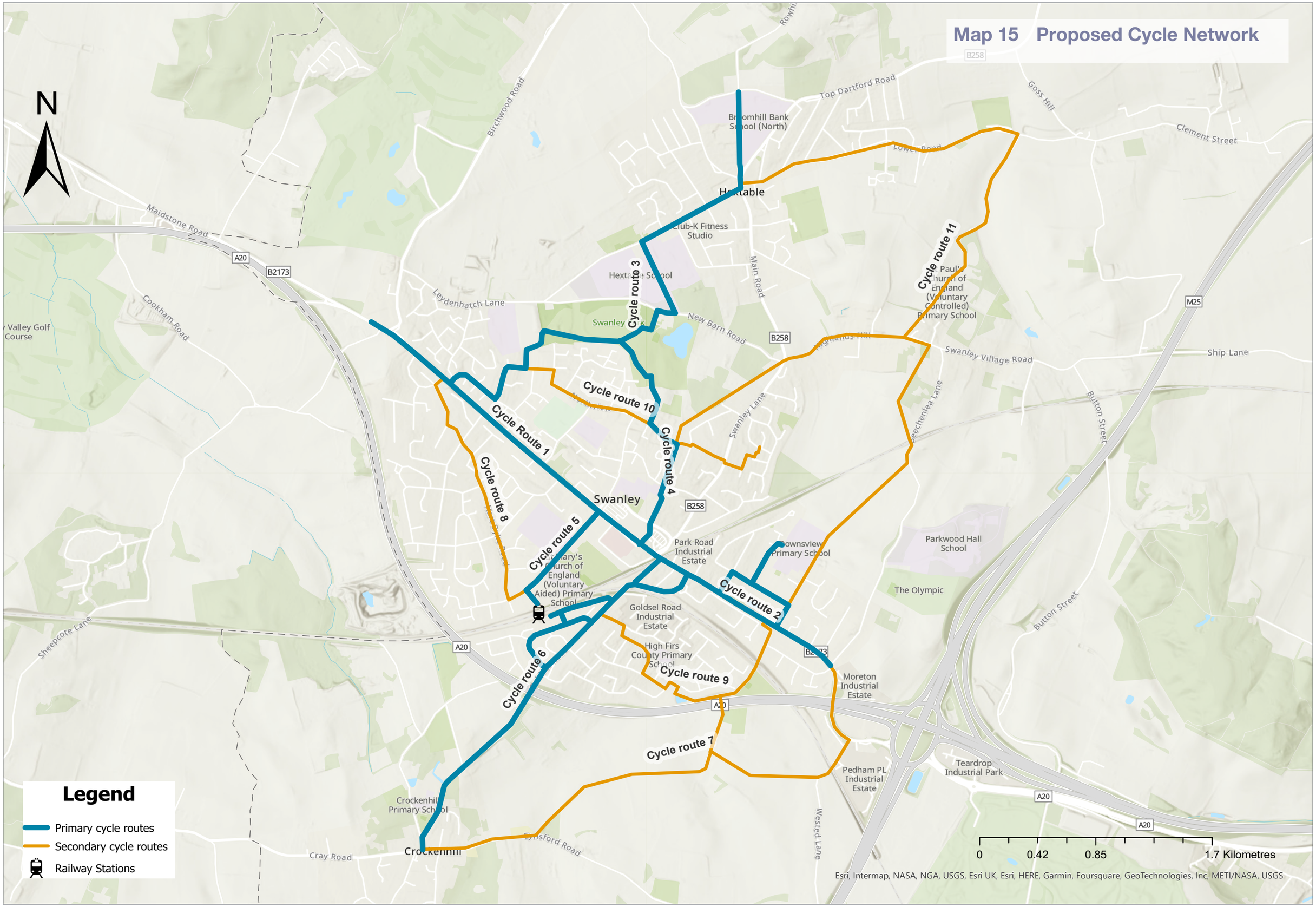
Proposed Walking Network

Route No.	Route Status	Route Description
Swanley Core Walking Zone		Covers Asda Walk, Bartholomew Way, St Mary's Road, and Swanley Railway Station
1	Primary	on London Road from Birchwood Corner bus stop to Swanley Police Station (overlaps with cycle route 1)
2	Primary	on London Road from the Swanley Lane roundabout to Beechenlea Lane, with a spur to Downsview Primary School (overlaps with cycle route 2)
3	Primary	from Swanley Lane roundabout to Crockenhill with a spur to Swanley Railway Station (overlaps with cycle route 6)
4	Primary	from Birchwood Park Avenue to Hextable (overlaps with cycle routes 3 and 4)
5	Secondary (identified as a leisure route)	from London Road to Crockenhill (using the current PRoW footpath)
6	Secondary (identified as a leisure route)	from St George's Road in High Firs to Crockenhill (using the current PRoW path)

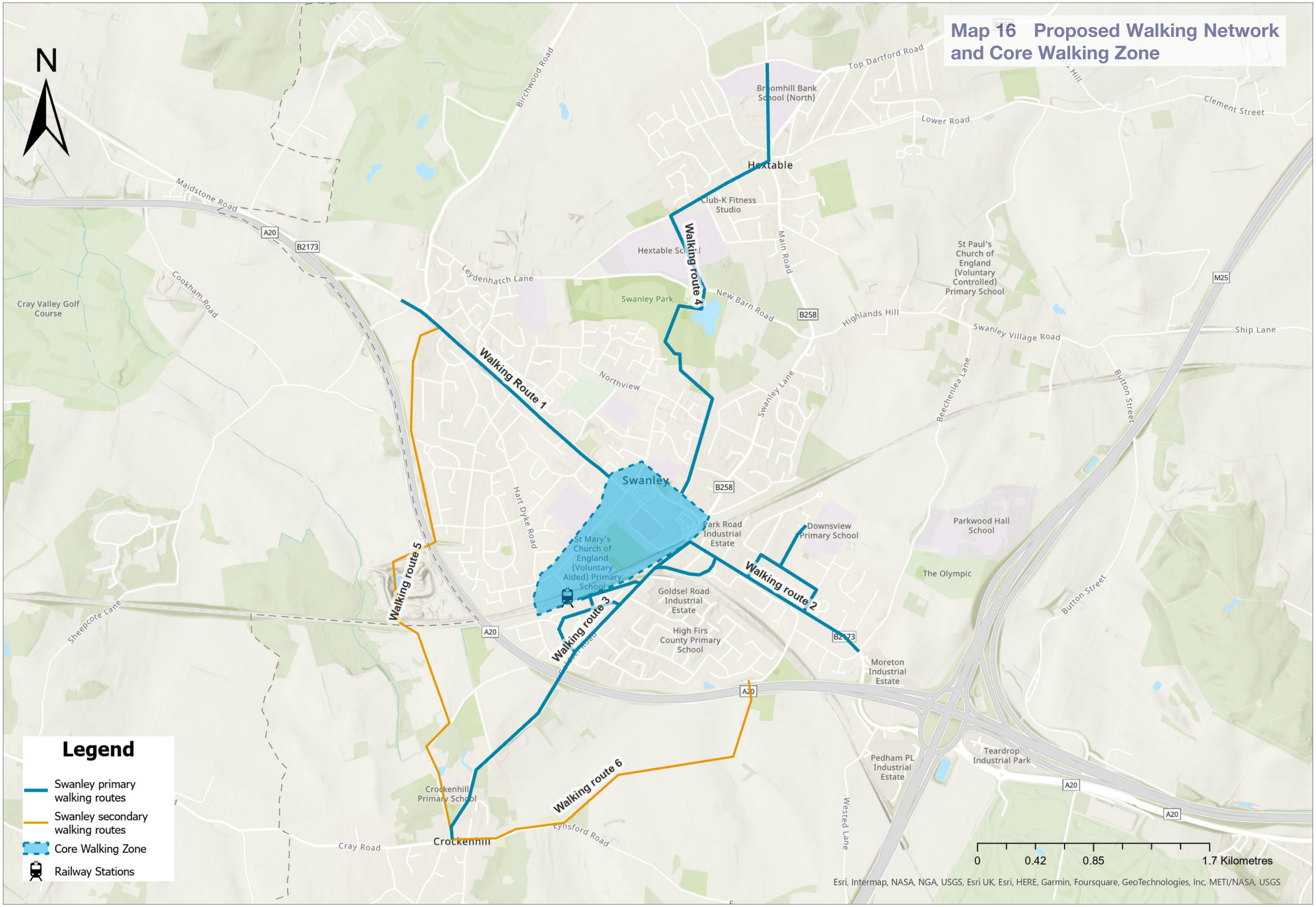
Proposed Cycle Network

Route No.	Route Status	Route Description
1	Primary	on London Road from Birchwood Corner bus stop to Nightingale Way roundabout
2	Primary	on London Road from Nightingale Way roundabout to Beechenlea Lane junction, with a spur to Downsview Primary School
3	Primary	from Walnut Way, through Swanley Park, to Rowhill Road in Hextable
4	Primary	from Asda Walk to Swanley Park
5	Primary	from Bartholomew Way roundabout to Swanley Railway Station
6	Primary	from London Road to Crockenhill, with a spur to Swanley Railway Station
7	Secondary	from Crockenhill to Beechenlea Lane (using the current PRoW footpath)
8	Secondary	from London Road to St Mary's Road (using Hart Dyke Road)
9	Secondary	from Goldsel Road to London Road (through High Firs)
10	Secondary	from White Oak to Swanley Village, with a spur to Downsview Close
11	Secondary	from Westview Road to Swanley Village and to Hextable

Map 15 Proposed Cycle Network



Map 16 Proposed Walking Network and Core Walking Zone



4 Design Principles

Design principles

The options outlined in this study have been based on the standards presented in the Department for Transport (DfT) Cycle Infrastructure Design guidance document Local Transport Note (LTN) 1/20.

All new scheme designs should meet the current highway infrastructure design guidance as identified by the Department for Transport and its new executive agency, Active Travel England.

Another resource for design guidance is the Kent Design Guide. It communicates key guidance on placemaking for the county.

Some of the most relevant criteria considered for cycle corridor design guidance are presented as follows:

Local Transport Note 1/20

This national guidance provides a basis for design based on five core principles and 22 summary principles, as follows:

Core design principles

The five core design principles represent the essential requirements to achieve more people travelling by cycle, based on best practice both internationally and across the UK.

There are five core design outcomes for cycle routes:

- Coherent
- Direct
- Safe
- Comfortable
- Attractive

Summary Principles

1. Cycle infrastructure should be accessible to everyone from 8 to 80 and beyond: it should be planned and designed for everyone. The opportunity to cycle in our towns and cities should be universal.
2. Cycles must be treated as vehicles and not as pedestrians. On urban streets, cyclists must be physically separated from pedestrians and should not share space with pedestrians. Where cycle routes cross pavements, a physically segregated track should always be provided. At crossings and junctions, cyclists should not share the space used by pedestrians but should be provided with a separate parallel route.
3. Cyclists must be physically separated and protected from high volume motor traffic, both at junctions and on the stretches of road between them.
4. Side street routes, if closed to through traffic to avoid rat-running, can be an alternative to segregated facilities or closures on main roads – but only if they are truly direct.
5. Cycle infrastructure should be designed for significant numbers of cyclists, and for non-standard cycles. Our aim is that thousands of cyclists a day will use many of these schemes.
6. Consideration of the opportunities to improve provision for cycling will be an expectation of any future local highway schemes funded by Government.
7. Largely cosmetic interventions which bring few or no benefits for cycling or walking will not be funded from any cycling or walking budget.
8. Cycle infrastructure must join together, or join other facilities together by taking a holistic, connected network approach which recognises the importance of nodes, links and areas that are good for cycling.
9. Cycle parking must be included in substantial schemes, particularly in city centres, trip generators and (securely) in areas with flats where people cannot store their bikes at home. Parking should be provided in sufficient amounts at the places where people actually want to go.
10. Schemes must be legible and understandable.
11. Schemes must be clearly and comprehensively signposted and labelled.
12. Major ‘iconic’ items, such as overbridges must form part of wider, properly thought-through schemes.
13. As important as building a route itself is maintaining it properly afterwards.
14. Surfaces must be hard, smooth, level, durable, permeable and safe in all weathers.
15. Trials can help achieve change and ensure a permanent scheme is right first time. This will avoid spending time, money and effort modifying a scheme that does not perform as anticipated.
16. Access control measures, such as chicane barriers and dismount signs, should not be used.
17. The simplest, cheapest interventions can be the most effective.
18. Cycle routes must flow, feeling direct and logical
19. Schemes must be easy and comfortable to ride.
20. All designers of cycle schemes must experience the roads as a cyclist.
21. Schemes must be consistent.
22. When to break these principles.

Cycle parking

Cycle parking is integral to any cycle network, and to wider transport systems incorporating public transport.

The availability of secure cycle parking at home, the end of a trip or at an interchange point has a significant influence on cycle use.

LTN 1/20 states that:

Cycle parking is an essential component of cycle infrastructure. Sufficient and convenient residential cycle parking enables people to choose cycling. At the trip end, proximity to destinations is important for short stay parking, while for longer-stay parking security concerns can be a factor. As with other infrastructure, designers should consider access for all cycles and their passengers.

Cycle parking would be considered as part of relevant schemes.

Accessibility for all				
Coherent	**Direct**	**Safe**	**Comfortable**	**Attractive**



DO Cycle networks should be planned and designed to allow people to reach their day to day destinations easily, along routes that connect, are simple to navigate and are of a consistently high quality.



DO Cycle routes should be at least as direct – and preferably more direct – than those available for private motor vehicles.



DO Not only must cycle infrastructure be safe, it should also be perceived to be safe so that more people feel able to cycle.



DO Comfortable conditions for cycling require routes with good quality, well-maintained smooth surfaces, adequate width for the volume of users, minimal stopping and starting and avoiding steep gradients.



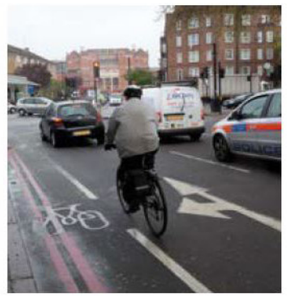
DO Cycle infrastructure should help to deliver public spaces that are well designed and finished in attractive materials and be places that people want to spend time using.



DON'T Neither cyclists or pedestrians benefit from unintuitive arrangements that put cyclists in unexpected places away from the carriageway.



DON'T This track requires cyclists to give way at each side road. Routes involving extra distance or lots of stopping and starting will result in some cyclists choosing to ride on the main carriageway instead because it is faster and more direct, even if less safe.



DON'T Space for cycling is important but a narrow advisory cycle lane next to a narrow general traffic lane and guard rail at a busy junction is not an acceptable offer for cyclists.



DON'T Uncomfortable transitions between on-and off carriageway facilities are best avoided, particularly at locations where conflict with other road users is more likely.

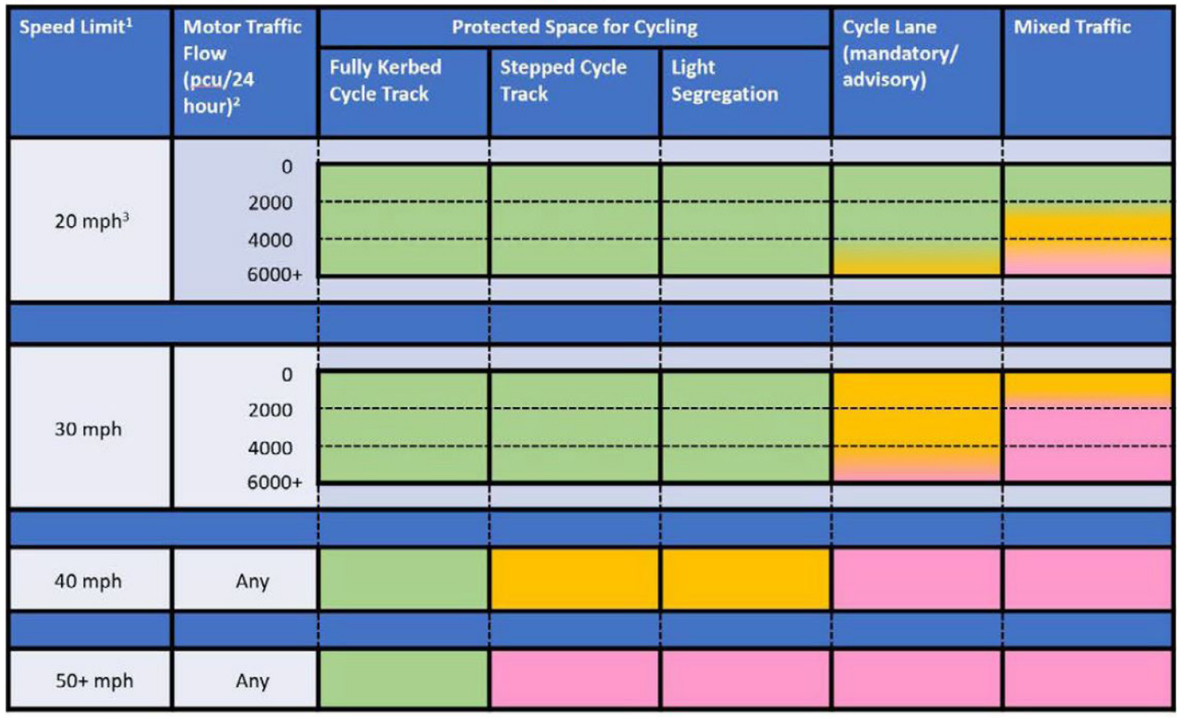


DON'T Sometimes well-intentioned signs and markings for cycling are not only difficult and uncomfortable to use, but are also unattractive additions to the street scape.

Design Standards

Relevant extracts from LTN 1/20 used as a basis for potential options in this report:

Figure 4.1: Appropriate protection from motor traffic on highways



Notes:

1. If the 85th percentile speed is more than 10% above the speed limit the next highest speed limit should be applied
2. The recommended provision assumes that the peak hour motor traffic flow is no more than 10% of the 24 hour flow
3. In rural areas achieving speeds of 20mph may be difficult, and so shared routes with speeds of up to 30mph will be generally acceptable with motor vehicle flows of up to 1,000 pcu per day

Table 6-1: Minimum recommended horizontal separation between carriageway and cycle tracks*

Speed limit (mph)	Desirable minimum horizontal separation (m)	Absolute minimum horizontal separation (m)
30	0.5	0
40	1.0	0.5
50	2.0	1.5
60	2.5	2.0
70	3.5	3.0

*Separation strip should be at least 0.5m alongside kerbside parking and 1.5m where wheelchair access is required.

Table 5-2: Cycle lane and track widths

Cycle Route Type	Direction	Peak hour cycle flow (either one way or two-way depending on cycle route type)	Desirable minimum width* (m)	Absolute minimum at constraints (m)
Protected space for cycling (including light segregation, stepped cycle track, kerbed cycle track)	1 way	<200	2.0	1.5
		200-800	2.2	2.0
		>800	2.5	2.0
	2 way	<300	3.0	2.0
		>300-1000	3.0	2.5
		>1000	4.0	3.0
Cycle lane	1 way	All – cyclists able to use carriageway to overtake	2.0	1.5

*based on a saturation flow of 1 cyclist per second per metre of space. For user comfort a lower density is generally desirable.

Table 6-3: Recommended minimum widths for shared use routes carrying up to 300 pedestrians per hour

Cycle flows	Minimum width
Up to 300 cyclists per hour	3.0m
Over 300 cyclists per hour	4.5m

Table 7-2: Minimum acceptable lane widths*

Feature	Desirable minimum	Absolute minimum	Notes
Traffic lane (cars only, speed limit 20/30mph)	3.0m	2.75m	2.5m only at offside queuing lanes where there is an adjacent flared lane
Traffic lane (bus route or >8% HGVs, or speed limit 40mph)	3.2m	3.0m	Lane widths of between 3.2m and 3.9m are not acceptable for cycling in mixed traffic.
2-way traffic lane (no centre line) between advisory cycle lanes	5.5m	4.0m	4.0m width only where AADT flow <4000 vehicles** and/or peak hour <500 vehicles with minimal HGV/Bus traffic.

* these lane widths assume traffic is free to cross the centre line, see 7.2.9 for details on critical widths at pinch points

** While centre line removal is still feasible with higher flows, the frequency at which oncoming vehicles must enter the cycle lane to pass one another can make the facility uncomfortable for cycling.

Table 10-2: Crossing design suitability

Speed Limit	Total traffic flow to be crossed (pcu)	Maximum number of lanes to be crossed in one movement	Uncontrolled	Cycle Priority	Parallel	Signal	Grade separated
≥ 60mph	Any	Any					
40 mph and 50 mph	> 10000	Any					
	6000 to 10000	2 or more					
	0-6000	2					
	0-10000	1					
≤ 30mph	> 8000	> 2					
	> 8000	2					
	4000-8000	2					
	0-4000	2					
	0-4000	1					

Provision suitable for most people

Provision not suitable for all people and will exclude some potential users and/or have safety concerns

Provision suitable for few people and will exclude most potential users and/or have safety concerns

Notes:

1. If the actual 85th percentile speed is more than 10% above the speed limit the next highest speed limit should be applied
2. The recommended provision assumes that the peak hour motor traffic flow is no more than 10% of the 24 hour flow

Figure 10.39: Carriageway-level cycle track used with 'hold the left' traffic staging

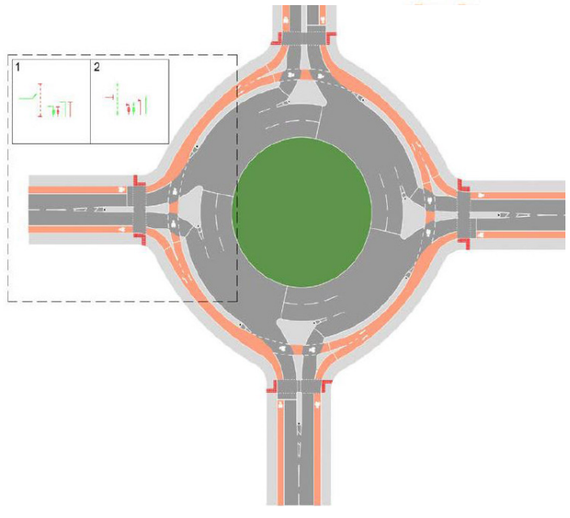


Table 11-1: Suggested minimum cycle parking capacity for different types of land use

Land use type	Sub-category	Short stay requirement (obvious, easily accessed and close to destination)	Long stay requirement (secure and ideally covered)
All	Parking for adapted cycles for disabled people	5% of total capacity co-located with disabled car parking.	5% of total capacity co-located with disabled car parking.
Retail	Small (<200m²)	1 per 100m²	1 per 100m²
	Medium (200-1,000m²)	1 per 200m²	1 per 200m²
	>1,000m²	1 per 250m²	1 per 500m²
Employment	Office/Finance (A2/B1)	1 per 1000m²	1 per 200m²
	Industrial/Warehousing (B2/B8)	1 per 1,000m²	1 per 500m²
Leisure and Institutions	Leisure centres, assembly halls, hospitals and healthcare	Greatest of: 1 per 50m² or 1 per 30 seats/ capacity	1 per 5 employees
	Educational Institutions	–	Separate provision for staff and students. Based on Travel Plan mode share targets, minimum: Staff: 1 per 20 staff Students; 1 per 10 students
Residential	All except sheltered/elderly housing or nursing homes	–	1 per bedroom
	Sheltered/elderly housing/ nursing homes	0.05 per residential unit	0.05 per bedroom
Public Transport Interchange	Standard stop	Upon own merit	–
	Major interchange	1 per 200 daily users	–

Cycle Dimensions and Cycle Design Vehicle: Figure 5.2 shows the range of dimensions for cycles typically in use. It is important that infrastructure can accommodate the full range of cycles to ensure routes are accessible to all cyclists. The cycle design vehicle referred to in this document represents a composite of the maximum dimensions shown in Figure 5.2 is assumed as 2.8m long and 1.2m wide. Table 5-1 shows the minimum turning radii suitable only for low speed manoeuvres such as access to cycle parking.

Figure 5.2: Typical dimensions of cycles



Table 5-1: Size and minimum turning circles of cycles

Type of Cycle	Typical length (m)	Typical width (m)	Minimum turning circle (m)	
			Outer radius	Inner radius
Cycle design vehicle	2.8 (max)	1.2 (max)	3.4 (max)	0.1 (min)* 2.5m (3 and 4 wheel cycles)
Solo upright cycle	1.8	0.65	1.65	0.85
Cycle plus 850mm wide trailer	2.7	0.85	2.65	1.5
Tandem	2.4	0.65	3.15	2.25

*applies only to some cycles that can pivot at very low speeds

Gradients: Table 5-8 shows the desirable maximum length for gradients. People can cycle steep gradients that are fairly short but typically cannot maintain high levels of effort for long distances. Cycle routes along existing roads and paths will usually have to follow the existing gradient, but there may be opportunities to divert onto alternative routes for short sections or reducing gradients through earthworks where space is available.

Speed of travel is also important to consider. Steep gradients can lead to high speeds for descending cyclists and low speeds for climbing cyclists, which can create hazards for all users on the route. Stopping sight distances increase on down gradients greater than 3%.

Table 5-8: Maximum length for gradients

Gradient %	Desirable maximum length of gradient (m)
2.0	150
2.5	100
3.0	80
3.5	60
4.0	50
4.5	40
5.0	30

5 Primary Cycle Route Recommendations

Map 17 Primary Cycle Network

Primary Cycle Network

Six primary cycle routes were audited as part of the LCWIP. Route number does not indicate priority.

Recommended interventions for each route, in accordance with LTN 1/20, are outlined in this section. Each route incorporates a variety of infrastructure improvements described in the 'Cycling Interventions Toolkit' on the following page.

A significant transformation of existing carriageway space and priorities will be required in order bring about a step-change in cycling within Swanley.

Legend

- Railway Stations
- Cycle route 1
- Cycle route 2
- Cycle route 3
- Cycle route 4
- Cycle route 5
- Cycle route 6
- Secondary cycle routes

N

0 0.42 0.85 1.7 Kilometres

Esri, Intermap, NASA, NGA, USGS, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS

Cycling Interventions Toolkit



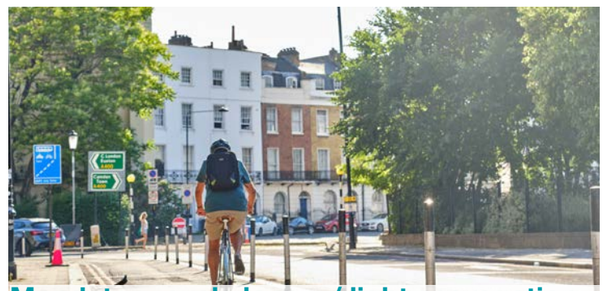
Fully kerbed segregated cycle track

Cycle facility protected from motor traffic by a full-height kerb, with some buffer space between the cycle track and carriageway.



Stepped segregated cycle track

Cycle track is set below footway level, typically protected from the carriageway by a lower height kerb and usually directly next to it.



Mandatory cycle lane w/ light segregation

Cycle lane with the use of intermittent physical features placed along the inside edge of a mandatory cycle lane to provide additional protection from motor traffic.



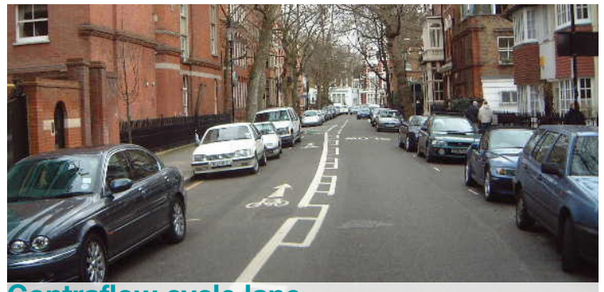
Modal filter

A bollard or planter in the carriageway which people can travel past be walking or cycling. Helps create a low traffic environment by restricting access to motorised through-traffic.



Mandatory cycle lane

Area of the carriageway reserved for the use of cycles, marked with a solid white line.



Contraflow cycle lane

Mandatory cycle lane that allows cyclists to travel opposite the flow of vehicle traffic, allowing for greater permeability of the cycle network.



Off-carriageway cycle track

Cycle facility separated from motor traffic typically through green space.



20mph zones

Lower speed zones create safer environments for all, may need to be combined with infrastructure and enforcement changes to ensure compliance.



Pedestrian/cyclist priority street

Street design that prioritises pedestrian and cyclist travel. Characterised by lower traffic speeds, restricted motor vehicle access, and coloured paving materials.



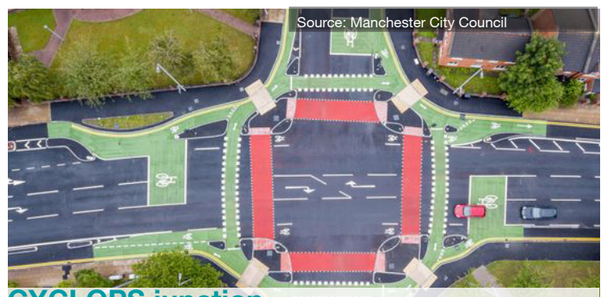
Dutch style street/Quietway

Street without a centre line encourages slower vehicle speeds and helps create a shared street environment.



Dutch style roundabout

A roundabout that provides a segregated facility for cyclists and pedestrians through all arms of the roundabout.



CYCLOPS junction

CYCLOPS stands for 'Cycle Optimised Protected Signals'. The unique design of the junction completely separates pedestrians and cyclists from motor traffic, reducing the possibility of collisions or conflict.

Pedestrians are also able to get where they want to be in fewer stages with more space to wait than on other junction designs.

Route 1

Route Description

Route 1 starts at Birchwood Corner bus stop, near Premier Inn Swanley. It travels south along London Road (B2173) as this is the most direct and coherent alignment to get from the Birchwood Corner residential area, to the centre of Swanley. It continues south through the Market Square area, next to the Asda, which is currently pedestrianised, and is used weekly for the town market day. Route 1 ends at Nightingale Way and High Street roundabout. In total this route covers approximately 1.68km.

This LCWIP considered continuing route 1 on Bartholomew Way (B2173) but width constraints and heavy traffic were observed along this road.[1] Taking route 1 through the pedestrianised area was deemed to be a better option as it is both traffic free and it is a more direct route than using Bartholomew Way. However, if cyclist numbers increase in the future, then a feasibility study may be needed to determine the suitability of using Bartholomew Way to accommodate more cyclists.

Cycle route 1 overlaps with the core walking zone and walking route 1. Recommendations for cycling and walking are presented separately (see walking interventions in chapter 6, starting on page 56).

Existing Conditions

Besides a short segment of cycle infrastructure near the B258, the northern section of London Road is the only other place in Swanley that currently has cycle facilities. This is a lightly segregated path from the Birchwood Corner Bus stop to Oliver Road junction. However, the path exists in segments along London Road and does not allow for continuous journeys to the town centre.There are also numerous uncontrolled crossings present along the route which do not prioritise cyclists or pedestrians.

Route Constraints

- On road car parking was observed on Heathfield Terrace and near St Luke's Cottages entrance

Route Opportunities

- There is extra space along the carriageway, and verge space adjacent to the carriageway which can be used for cycle infrastructure

1 Traffic counts going into Bartholomew Way at the B258 roundabout over a 12 hour period reached over 8,500. Data obtained from Sevenoaks District Council

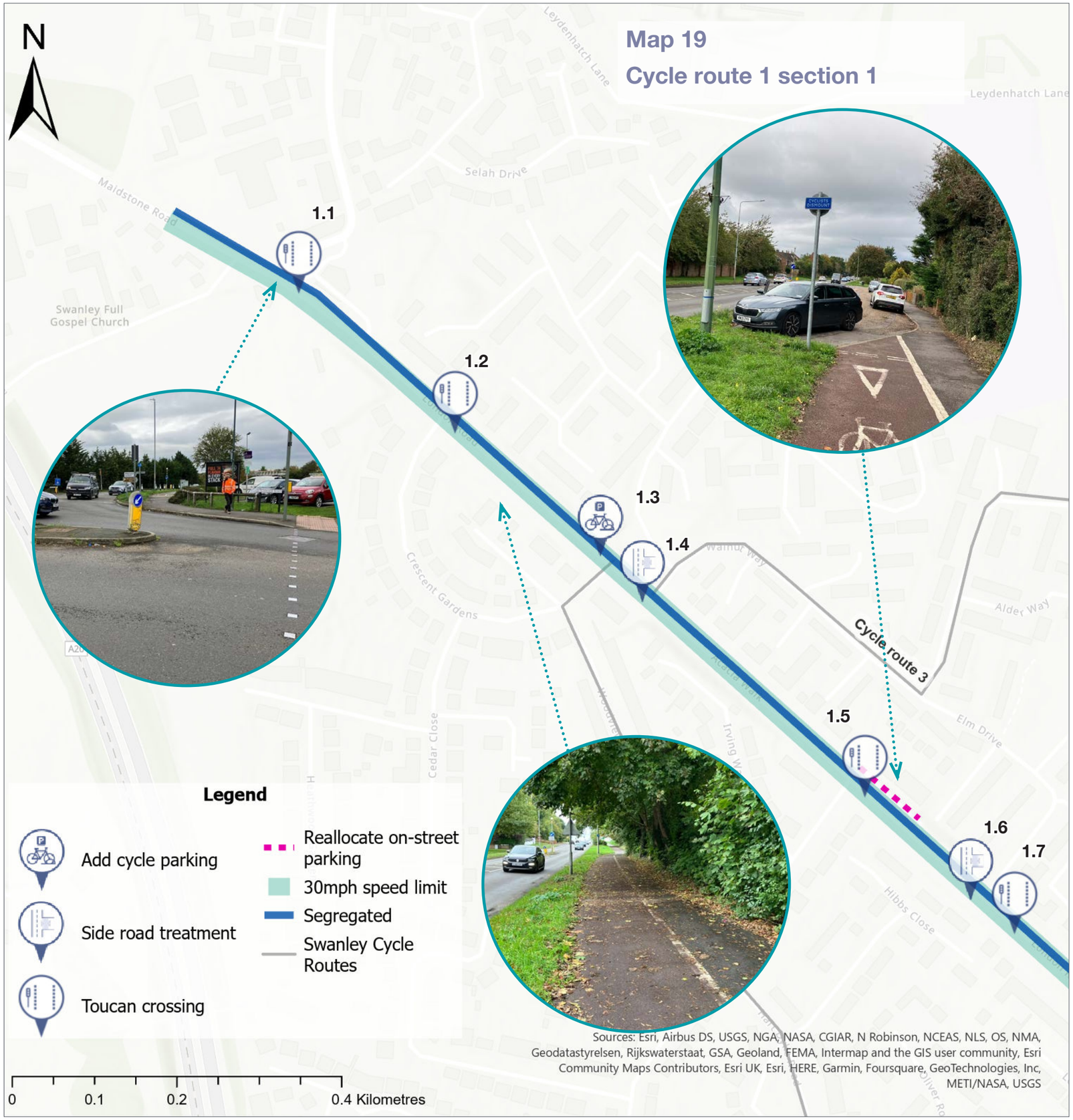


Proposed Interventions

- **London Road:** Combination of segregated cycle tracks and shared use paths along the entirety of London Road

  - *Between Birchwood Corner bus stop and St Marys Road roundabout:* consider reducing the speed limit from 40mph to 30mph from the start of the route to Hilda May Avenue. Reduce the speed limit from 30mph to 20mph from Hilda May to St Mary's Road junction. Investigate the feasibility of removing the centre white line on the path on the northen side of London Road, to make it a footway just for pedestrians, ensuring it is at least 2m wide throughout the route. Install a two way segregated cycle track adjacent to the road by using the verge and/or excess carriageway space. Rationalise on street parking at Heathfield Terrace and near St Luke's Cottages Road.

No.	Location	Recommendation
1.1	Birchwood Road and London Road junction	Upgrade uncontrolled crossing on the eastern arm to a toucan crossing, or similar, depending on traffic counts
1.2	Crescent Gardens junction	Upgrade current uncontrolled crossing to a toucan crossing, or similar depending on traffic counts
1.3	London Road, near Crescent Gardens	Consider installing cycle parking facilities outside of Rainbow Inn and the Londis. Consider replacing the guardrails with planters, to make the area more pleasant and attractive for users
1.4	Walnut Way	Consider installing a crossing over Walnut Way, with cyclist priority and remove the guardrails at the road entrance, subject to further traffic counts
1.5	Brook Road junction	Upgrade current uncontrolled crossing to a toucan crossing, prioritising pedestrians and cyclists
1.6	Shurlock Avenue	Consider tightening the turning radii to reduce crossing distance. Consider installing a crossing at this side road with cyclist and pedestrian priority, subject to further traffic surveys



Proposed Interventions

- **London Road:** Combination of segregated cycle tracks and shared use paths along the entirety of London Road

  - *Between St Marys Road roundabout and High Street roundabout via the pedestrianised market square path:* consider upgrading this area to a shared use space and install cycle symbols and 'share with care' signs. Note that this area becomes busy with weekly markets

No.	Location	Recommendation
1.7	South of Shurlock Avenue	Consider upgrading the current uncontrolled crossing to a toucan crossing, subject to further traffic counts in this area
1.8	St Luke's Cottages Road	Consider upgrading the current uncontrolled crossing to a toucan crossing, and move it closer to the Hilda May Avenue junction. A traffic study for this area may be necessary
1.9	Hilda May Avenue	Consider installing a crossing over Hilda May Avenue, with cyclist priority
1.10	Oliver Road and London Road junction	Remove guardrails on all sides of the junction
1.11	Pioneer Way	Consider installing a continuous footway over Pioneer Way. Also, reduce the turning radii to decrease crossing distance
1.12	St Mary's Road junction	Consider upgrading the current uncontrolled crossing to a controlled crossing, and moving it closer to the roundabout to meet desire lines. Investigate the feasibility of redesigning the roundabout by installing more crossings that prioritise pedestrians and cyclists. Also, remove the guardrails at the roundabout



Route 2

Route Description

Route 2 is aligned with London Road, which is the main east-west axis for Swanley. It starts at the roundabout to the east of town centre and travels east along London Road (B2173) until Beechenlea Lane. This is most direct and coherent alignment to get from the centre of Swanley to Christchurch residential area and Moreton Industrial Estate. The route has a spur to the north to link to Downsview Primary School, along Kingswood Avenue, Willow Avenue and Beech Avenue.

Cycle route 2 covers approximately 1km and links with cycle route 1, and cycle route 11. It overlaps with walking route 2.

Recommendations for walking can be found in chapter 7 Core Walking Zone and Route Recommendations.

Existing Conditions

Currently London Road does not have cycling infrastructure.

This road provides the main link from the centre of Swanley to the east side of the city and the bypass. It is surrounded by shops near the town centre and it becomes more residential near the east side of the town.

Route Constraints

- Heavily trafficked road with vehicles queueing observed.
- Narrow sections along the route, particularly near the centre and between West View Road and Beechenlea Lane.
- Car parking was observed on the pavement, particularly in front of houses between St Georges Road and Salisbury Avenue.

Route Opportunities

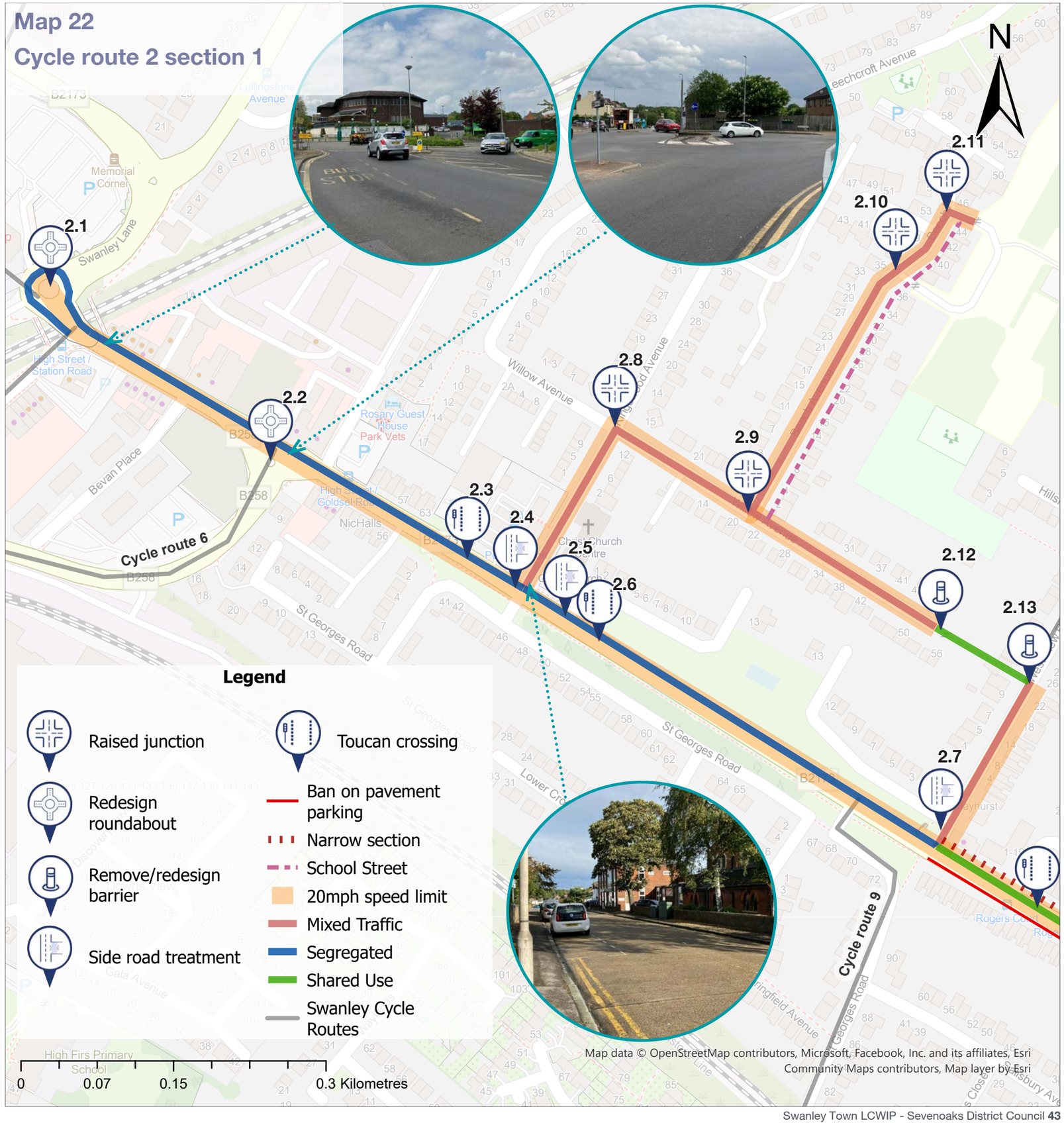
- It is the most direct and coherent link from the centre to Christchurch residential area.
- Sections with extra space along the carriageway, and verge space adjacent to the carriageway which can be used for cycle infrastructure.



Proposed Interventions

- **London Road:** Combination of segregated cycle tracks and shared use paths along the entirety of London Road. Consider reducing the speed limit from 30mph to 20mph along the road.
  - *Between High Street roundabout and West View Road:* Provide a two way segregated cycle track at the north side of London Road. Redesign carriageway layout if needed and use verge to gain space for cycle track (subject to traffic surveys).
- **Spur to Downsview Primary School:** Combination of mixed traffic and shared path. Consider reducing speed limit to 20mph and provide traffic calming measures if needed.
  - *Kinsgswood Avenue:* Provide mixed traffic infrastructure
  - *Willow Avenue:* Provide mixed traffic infrastructure and shared path in the traffic free section
  - *Beech Avenue:* Provide mixed traffic infrastructure. Evaluate implementing a School Street scheme to allow children to safely walk, cycle and wheel into school at drop-off and pick-up times.

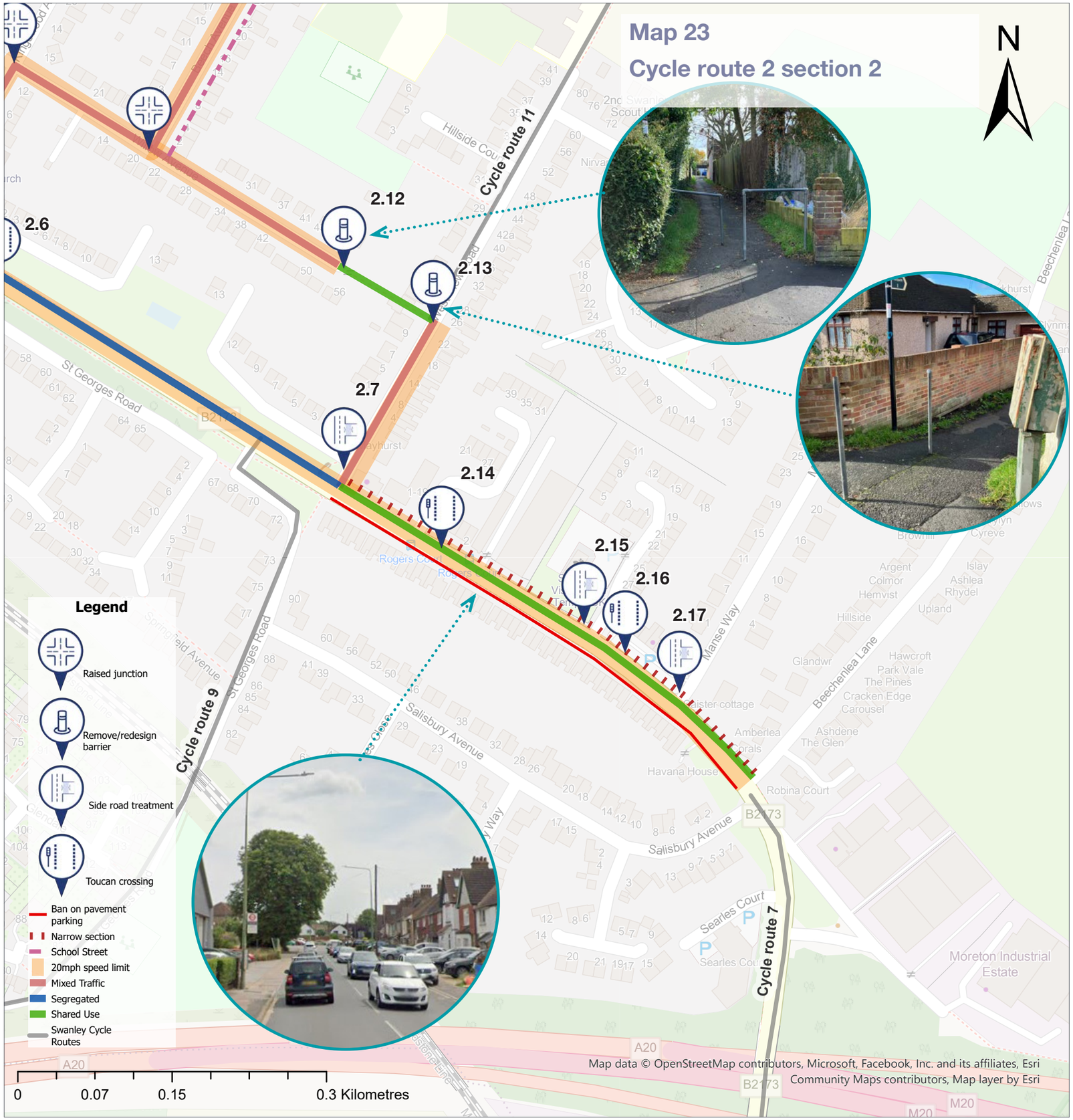
No.	Location	Recommendation
2.1	High Street Roundabout	Redesign roundabout to provide segregated cycle track and controlled crossing facilities on all arms. In particular, consider providing controlled crossing facilities on London Road following the desire line.
2.2	Goldsel Rd Roundabout	Redesign roundabout to provide segregated cycle track and controlled crossing facilities on all arms. Evaluate replacing it for controlled crossing (subject to traffic surveys)
2.3	London Road in front of Coop	Replace existing uncontrolled crossing for a toucan or similar depending on traffic counts. Remove the central isle.
2.4	London Rd/ Kingswood Ave.	Provide a continuous footway or similar, giving priority to pedestrians and cyclists to cross Kingswood Avenue.
2.5	London Rd/ Pine Close	Provide a continuous footway or similar, giving priority to pedestrians and cyclists to cross Pine Close.
2.6	London Rd near Pine Close	Replace existing uncontrolled crossing for a toucan or similar depending on traffic counts. Remove the central isle.
2.7	London Rd/ West View Rd	Provide a continuous footway or similar, giving priority to pedestrians and cyclists to cross West View Road
2.8	Kingswood Ave./Willow Ave.	Provide raised junction or similar to give pedestrian priority to cross and help reducing traffic speed.
2.9	Willow Ave./ Beech Ave	Provide raised junction or similar to give pedestrian priority to cross and help reducing traffic speed.
2.10, 2.11	Beech Ave in front of school	Provide raised junction or similar to give pedestrian priority to cross and help reducing traffic speed.



Proposed Interventions

- **London Road:** Combination of segregated cycle tracks and shared use paths along the entirety of London Road. Consider reducing the speed limit from 30mph to 20mph along the road
  - *West View Road and Beechenlea Lane*: Narrow section. Segregated cycling provision is favourable as per LTN 1/20 but it may not be achievable due to width constraints. If there is not enough space for a segregated cycle track, provide a shared path at the north side of London Road. Parking on the pavement observed on the south side of London Road between Beechenlea Lane and St George Road. Ban on pavement parking and reinforce if needed.

No.	Location	Recommendation
2.12 2.13	Willow Ave	Remove or redesign barrier. Flush kerb to allow easy access for cyclists and pedestrians
2.14	London Road near Rogers Court	Provide a toucan crossing (or similar depending on traffic surveys) to allow people to access bus stops on both sides of the road.
2.15	London Road/ Bremmer Close	Provide a continuous footway or similar depending on traffic surveys, giving priority to pedestrians and cyclists to cross Bremmer Close
2.16	London Road near Bremmer Close	Provide a toucan crossing (or similar depending on traffic surveys) to allow people to access shops and businesses in Manse Parade
2.17	London Rd/ Manse Way	Provide a continuous footway or similar depending on traffic surveys, giving priority to pedestrians and cyclists to cross Manse Way



Route 3

Route Description

This route starts at Walnut Way and continues into Alder Way. It then travels through Swanley Park until it reaches New Barn Road where it crosses to the 'Avenue of Limes' (which is a Public Rights of Way Path). It continues on College Road and Rowhill Road. The route ends at the Puddledock Lane junction. In total, route 3 covers approximately 2.76km.

This route addresses feedback which was obtained during the engagement workshops, where there was a desire for links between Hextable and Swanley, and for improved infrastructure within Swanley Park. This route offers a safer and partially traffic free option to reaching Hextable, without having to use Swanley Lane which has been recorded as having high traffic flows.

Part of cycle route 3 overlaps with a walking route. Walking recommendations can be found in chapter 6.

Existing Conditions

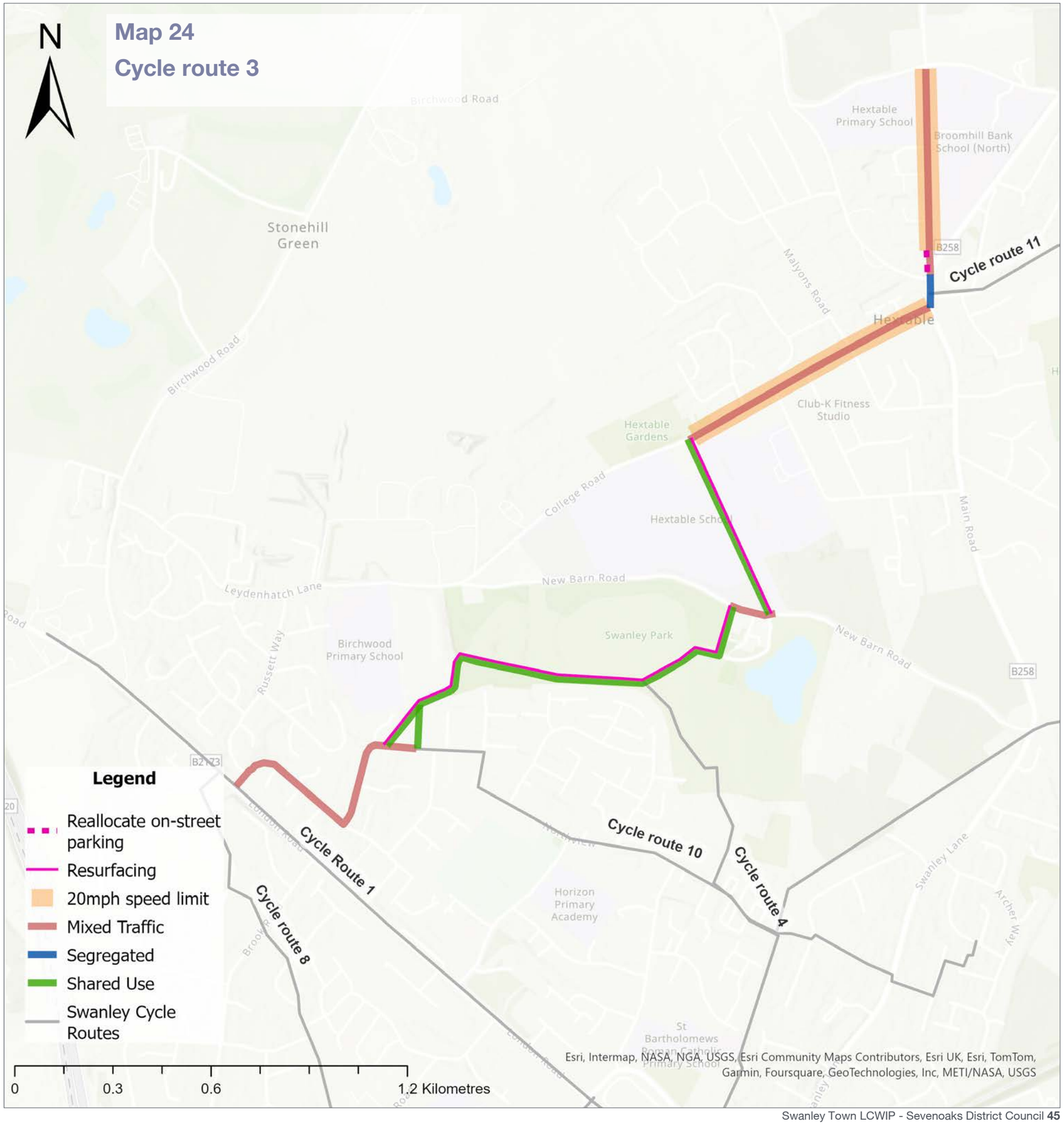
There is currently no cycle infrastructure on this route. However, there are some traffic calming measures in place in the residential areas, such as on Walnut Way where there is a 20mph speed limit. Although there is a network of surfaced paths in the park, some parts of the cycle route travels along unsurfaced sections.

Route Constraints

- On road car parking was observed on Walnut Way and Alder Way
- College Road and New Barn Road are both narrow with little verge space to install segregated cycle facilities

Route Opportunities

- There is enough space available in Swanley Park and along the Avenue of Limes to upgrade the current paths in order to accommodate both cyclists and pedestrians



Proposed Interventions

- **Walnut Way:** Considering the 20mph speed limit already in place, allow for mixed traffic conditions
- **Alder Way:** Mixed traffic conditions
- **Swanley Park:** Investigate the feasibility of installing a well surfaced and lit shared use path through the park that is at least 3m wide to accommodate both cyclists and pedestrians. Install wayfinding signage to show users the continuation of the route. Note that the Swanley New Barn Miniature Railway runs through the park therefore safety signage and other precautionary measures should be considered as the route crosses the railway line. Lastly, the park currently has unsurfaced links that lead to residential roads, such as to Northview. Include these important links in improvement works, and remove any barriers that prevent access to the park from residental areas

No.	Location	Recommendation
3.1	Swanley Park - south entrance	Remove the log from the path which currently hinders accessibility. If a barrier is necessary (to restrict illegitimate access), then consider installing a central bollard, ensuring there is at least a 1.5m minimum gap width
3.2	Path in Swanley Park which links to Northview	Remove all barriers currently in place along the paths which hinder access to the park from residential areas
3.3	Path in Swanley Park which links to Strawberry Fields	Remove all barriers currently in place along the paths which hinder access to the park from residential areas
3.4	Swanley Park	Install cycle parking facilities
3.5	Swanley Park	Install wayfinding signage in the park to show the continuation of the route to Hextable



Proposed Interventions

- **New Barn Road:** Opt for mixed traffic conditions and install cycle symbols on the road

- **Avenue of Limes:** Investigate the feasibility of upgrading this Public Rights of Way (PROW) footpath and installing a well surfaced shared use path, along with improvements to lighting and wayfinding

- **College Road:** Mixed traffic conditions. Reduce the speed limit to 20mph and provide further traffic calming if necessary (subject to traffic surveys)

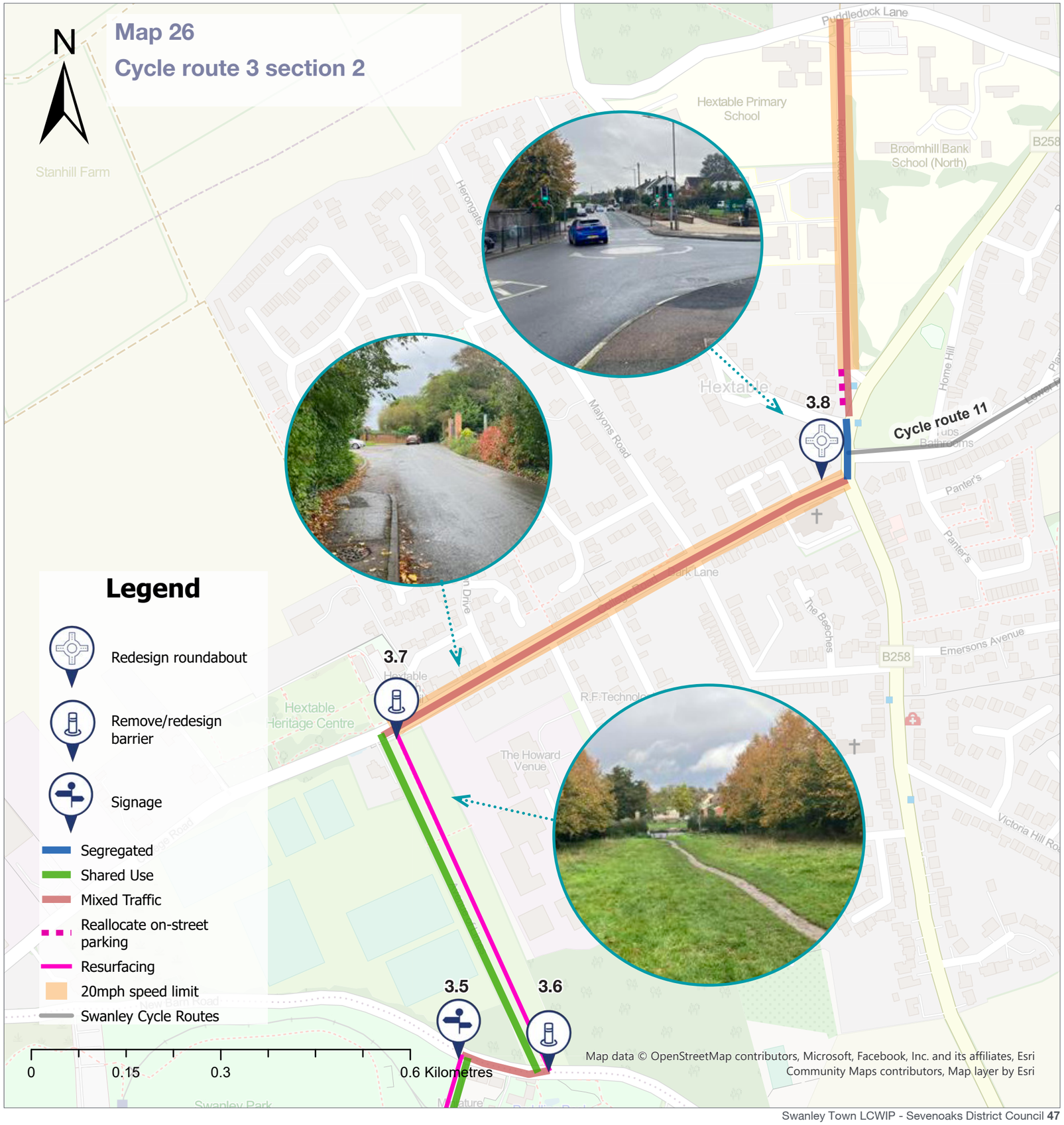
- **Main Road and Top Dartford Road (B258):** Investigate the feasibility of installing segregated cycle tracks by re-allocating extra carriageway space (AADF is greater than 7900 along the B258)[1]

- **Surfaced path behind Rowhill Road bus stop:** Rationalise on road parking and allow for mixed traffic conditions

- **Rowhill Road:** Mixed traffic conditions. Reduce the speed limit to 20 mph. Due to the shcools and retirement home present on this road, consider allowing for only north-bound motor traffic movements to help reduce traffic volumes

No.	Location	Recommendation
3.6	Avenue of Limes	Remove the chicane at the southern start of the path which currently acts as a barrier, making the route inaccessible for people in mobility scooters, with prams, etc.
3.7	Avenue of Limes	Remove the chicane at the northern start of the path which currently acts as a barrier, making the route inaccessible for people in mobility scooters, with prams, etc.
3.8	Main Road roundabout	Investigate the feasibility of re-designing the mini roundabouts, for example to a T-junction, to allow for pedestrian and cyclist priority

1 Department for Transport. Road Traffic Statistics (2008). https://roadtraffic.dft.gov.uk/manualcountpoints/945516



Route 4

Route Description

Route 4 starts on Asda Walk (from cycle route 1), and travels through the Asda car park. It then crosses Bartholomew Way (B2173) to Birchwood Park Avenue where it continues on a Public Rights of Way (PROW) path until it reaches Northview. The route continues north through Swanley Park, where it meets cycle route 3. This route covers approximately 1.13km. In combination with route 3, cycle route 4 addresses feedback obtained from the workshop sessions, where there was a desire for a route from Swanley town centre to Hextable. Similar to route 3, cycle route 4 allows for travel between Hextable and Swanley town centre without using Swanley Lane (B258) which was highlighted during the engagement workshops as a busy road with previous collision incidents.

Part of this route overlaps with a walking route which is further discussed in chapter 6.

Existing Conditions

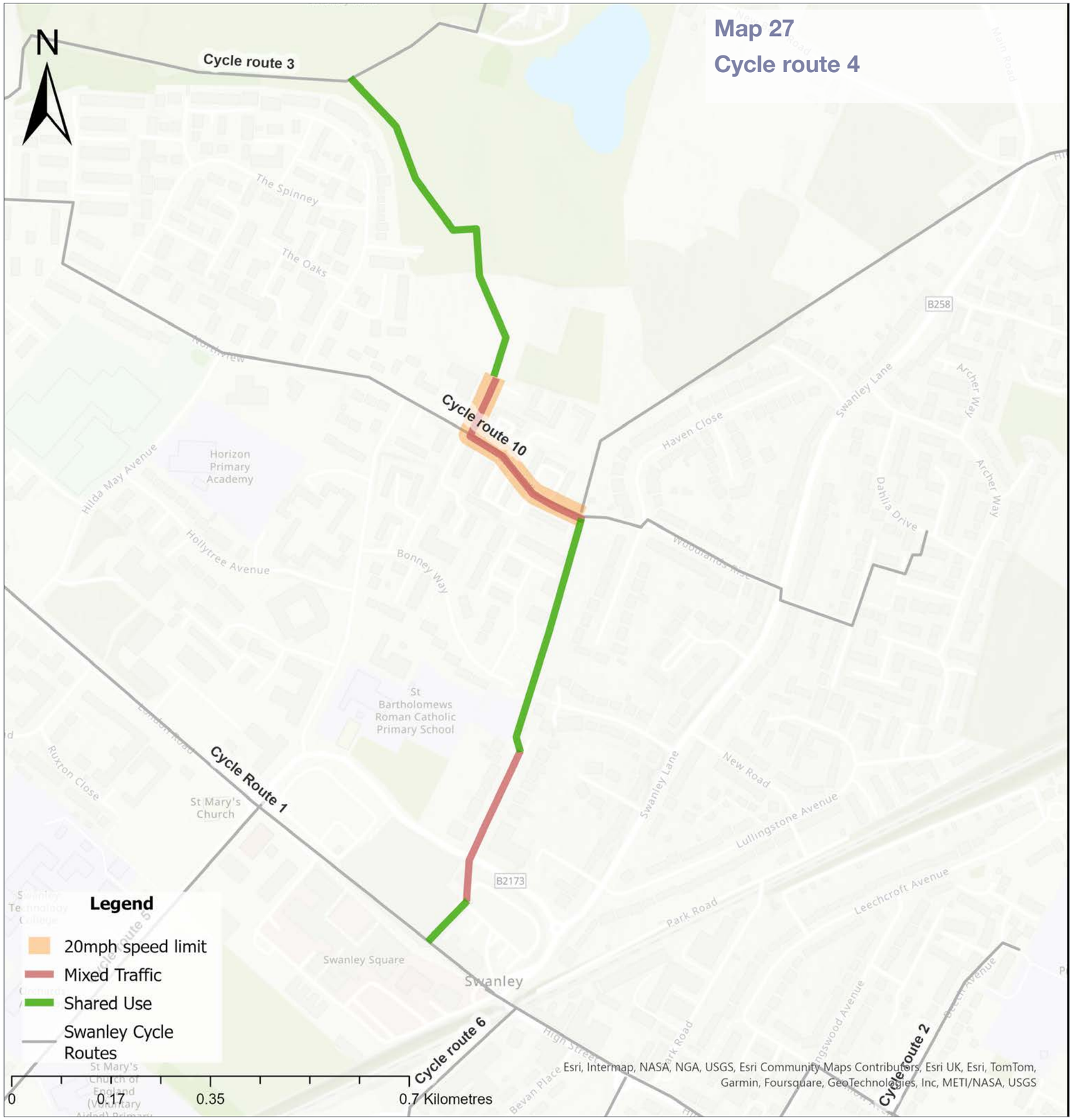
Although there is no cycle infrastructure on the route, most of the route is traffic free, with the 'on road' sections following residential roads such as Birchwood Park Avenue where there is already a 20mph speed limit. The sections on the PROW follow a well surfaced path while the sections of route through the park follow a mix of surfaced and unsurfaced paths.

Route Constraints

- Chicane barriers are present along the PROW
- In order to get to Birchwood Park Avenue, there is an uncontrolled crossing currently over Bartholomew Way which does not prioritise pedestrians or cyclists
- The route travels through the Asda car park (in order to avoid travelling on Bartholomew Way)

Route Opportunities

- There is extra space in Swanley Park to upgrade the current paths for shared use
- There is extra space along the PROW to allow for shared use



Proposed Interventions

- **Asda car park :** Combination of shared use and mixed traffic conditions
  - *Path leading to Asda Walk:* Allow for shared use and install "share with care" signs. Consider removing the existing bollards to allow for cycle access. If deemed necessary, consider re-positioning the bollards ensuring there is at least a 1.5m minimum gap width
  - *Car park:* Opt for mixed traffic conditions and install cycle symbols if necessary
- **Birchwood Park Avenue:** Considering the 20mph speed limit already in place, allow for mixed traffic conditions
- **Public Rights of Way path:** Investigate the feasibility of upgrading the current footpath to allow for shared use. Widen the path where necessary , ensuring it is at least 3m throughout the route. Remove the existing barriers and install wayfinding signage to show the continuation of the route to Hextable.

No.	Location	Recommendation
4.1	Asda Walk	Install wayfinding signage to the route direction to Swanley Park and Hextable. Install "share with care" signs
4.2	Bartholomew Way (B258)	Upgrade the current uncontrolled crossing to a toucan crossing to allow for pedestrian and cyclist priority. Further traffic data may be necessary
4.3	Footpath intersection near Bonney Way	Install 'slow' signage at footpaths intersection to avoid pedestrian and cyclist collision. Also, install wayfinding signage to show the contination of the route
4.4	PROW path	Remove chicanes to enhance accessibility on the route for those in mobility scooters, with prams, etc. If illegitimate entry is prominent, consider installing bollards with 1.5m minimum gap widths, only if necessary
4.5	PROW path	Remove chicanes to enhance accessibility on the route for those in mobility scooters, with prams, etc.



Proposed Interventions

Northview: Reduce the speed limit to 20mph and allow for mixed traffic conditions

Swanley Park: Investigate the feasibility of installing a shared use path through the park, ensuring it is at least 3m wide. Where there is already a surfaced path, make width adjustments if necessary. Install wayfinding signage, and make improvements to lighting. Ensure that any link to the Park from the residential areas are also included in improvement works

No.	Location	Recommendation
4.6	Northview	Reduce turning radii on Northview to decrease crossing distance for pedestrians and cyclists
4.7	Swanley Park	Install cycle facilities in the park
4.8	Swanley Park (path leading to White Croft)	Ensure that additional spurs which currently lead to the park from residential areas are included in improvement schemes



Route 5

Route Description

This route starts at the London Road and Bartholomew Way roundabout and travels down St Mary's Road. The route turns on Everest Place and ends as it reaches Swanley Railway Station. This route addresses key desire lines and destination points which were highlighted at the consultation workshops. Examples of these include desire lines that run from the Swanley town centre to the train station and to Orchards Academy. St Mary's Road also allows for access to St Mary's Chuch of England (VA) Primary and Nursery, and to Swanley Recreation Ground. In total this route covers 0.58 km.

Existing Conditions

There is currently no cycle infrastructure on the route, although there are traffic calming measures in place. Considering this area is a hotspot for schools, there is already a 20mph speed limit on St Mary's Road, along with other calming traffic measures.

Route Constraints

- On road car parking is present throughout the route, with designated parking spaces painted on St Mary's Road
- Besides a zebra crossing on St Mary's Road, there are no other crossing facilities on the route.

Route Opportunities

- Traffic calming measures which are already in place on St Mary's Road may help to facilitate safer environments for cyclists
- Everest Place is wide (approximately 7.5-8.0m in some places, and reaching over 9.0m as it approaches the station), and there is opportunity to widen the footways using excess road space



Proposed Interventions

- **St Mary's Road:** Opt for mixed cycling considering that traffic calming measures are already in place. Introduce additional pedestrian and cycle crossings throughout the road. Consider widening the footways, particularly at the bus stops on both sides of the road. Where there is no verge space, for example at the bus stop in front of the Aldi entrance, consider reviewing on street parking, and possibly re-allocating road space to accommodate footway widening.
- **Everest Place:** Rationalise on street parking. Consider re-allocating road space and widening the footway on both sides. Maintain the 20mph speed limit in this area.

No.	Location	Recommendation
5.1	St Mary's Road junction	Consider upgrading the current uncontrolled crossing to prioritise pedestrians and cyclists as part of the roundabout redesign. Re-allocate it closer to Bartholomew Way junction to adhere to desire lines. Further traffic counts in this area may be necessary
5.2	St Mary's Road School bus stop (south side)	Note that there is a pinch point here where the footway becomes narrow due to the bus stop shelter and there is not enough verge space. Explore options for widening the footway by reallocating road space
5.3	St Mary's Road (in front of Aldi)	Consider removing the existing guardrails and replacing them with shrubs or planters, to make the route more pleasant and attractive for users
5.4	SupaJam Education In Music and Media entrance	Consider installing a continuous footway at both school driveway entrances
5.5	Everest Place junction	Reduce corner radii to decrease motor vehicle speeds when turning in and out of Everest Place. Install missing tactile pavement
5.6	Swanley Railway Station	Provide step free access at the train station



Route 6

Route Description

Route 6 links Swanley centre to Crockenhill. It starts on London Road (B2173) along Goldsel Road (B258) and Station Road. It travels south along Goldsel Road with a few spurs to link to Swanley Train Station. The route continues along Goldsel Road crossing the A20 out of Swanley. It continues south on the side of Dibsdall Meadow, to then reach Crockenhill. The route travels along Green Court Road and Broadway until finishing in Main Road.

Cycle route 6 covers approximately 2km and links with cycle route 2, cycle route 9 and cycle route 9. Cycle route 6 overlaps with walking route 3.

Recommendations for walking can be found in chapter 7 Core Walking Zone and Route Recommendations.

Existing Conditions

Currently the route alignment does not have cycling infrastructure.

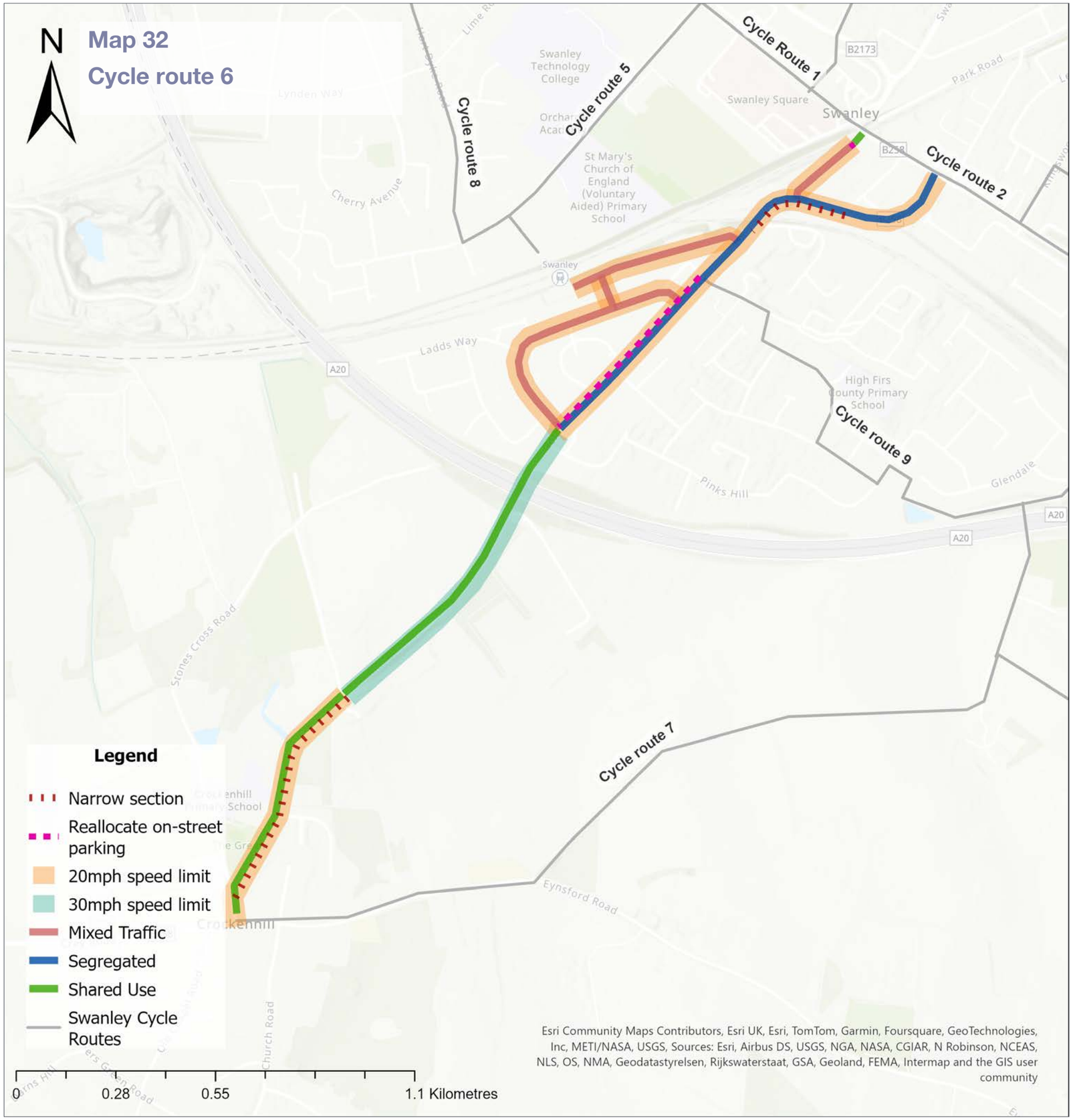
This route follows the alignment of the main link from Swanley to Crockenhill. At the north, Station Road is surrounded by shops. Travelling south, Goldsel Road is surrounded by housing until crossing the A20, where its character changes to a rural setting. When reaching Crockenhill, Green Court Road has a residential character.

Route Constraints

- Narrow sections along the route, particularly on the section above the railways and on Green Court Road (B258) between Green Court Road and Seven Acres.
- Car parking was observed on the route, particularly between Station Approach and Azalea Drive.

Route Opportunities

- Wide carriageway in most of Goldsel Road.
- Reallocating on-road car parking on Goldsel Road may allow to implement segregated cycle track with minimal costs
- Attractive views to green areas between Swanley and Crockenhill.



Proposed Interventions

- **Goldsel Road (B258):** Combination of segregated cycle tracks and shared use paths. Consider reducing the speed limit from 40mph to 30mph and from 30mph to 20mph on different sections of the road.
  - *Between High Street roundabout and Azalea Drive:* Provide a two-way segregated cycle track at the north/west side of the carriageway. Redesign carriageway layout if needed and use verge to gain space for cycle track (subject to traffic surveys). Narrow section between Bevan Place and Station Approach. Segregated cycling provision is favourable as per LTN 1/20 but it may not be achievable due to width constraints. Provide a shared path if there is not enough space for segregated cycle track. Consider reallocating on-street car parking between Azalea Drive to allocate segregated cycle track.
  - *Spur Station Road:* Provide mixed traffic infrastructure along Station Road and shared use in the connection to High Street. Reallocate on-street parking at the end of Station Road to allow cyclists to connect to High Street.
- **Spur to Swanley Train Station:** Reducing the speed limit to 20mph along the roads to provide low motor traffic environment.
  - *Station Approach:* Provide mixed traffic infrastructure.
  - *Azalea Drive:* Provide mixed traffic infrastructure.

No.	Location	Recommendation
6.1	Goldsel Rd/ Station Rd	Provide a continuous footway or similar and reduce corner radii to reduce crossing distance for pedestrians and reduce motor vehicles speed when turning.
6.2	Goldsel Rd/ Station Rdt	Evaluate removing guardrails and replace with planters to make a more people friendly environment and less car orientated.
6.3	Goldsel Rd/ Station Approach	Provide a continuous footway or similar depending on traffic surveys, giving priority to pedestrians and cyclists to cross Station Approach.
6.4	Goldsel Rd/ Azalea Drive	Provide a continuous footway or similar depending on traffic surveys, giving priority to pedestrians and cyclists to cross Azalea Drive
6.5	Station Approach	Provide a raised junction to facilitate crossing and give pedestrian priority. It is also a traffic calming measure.
6.6	Goldsel Rd/ Azalea Drive	Provide a continuous footway or similar and reduce corner radii to reduce crossing distance for pedestrians and reduce motor vehicles speed when turning.
6.7	London Rd/ Pinks Hill	Potential to reallocate on-street car park in this area

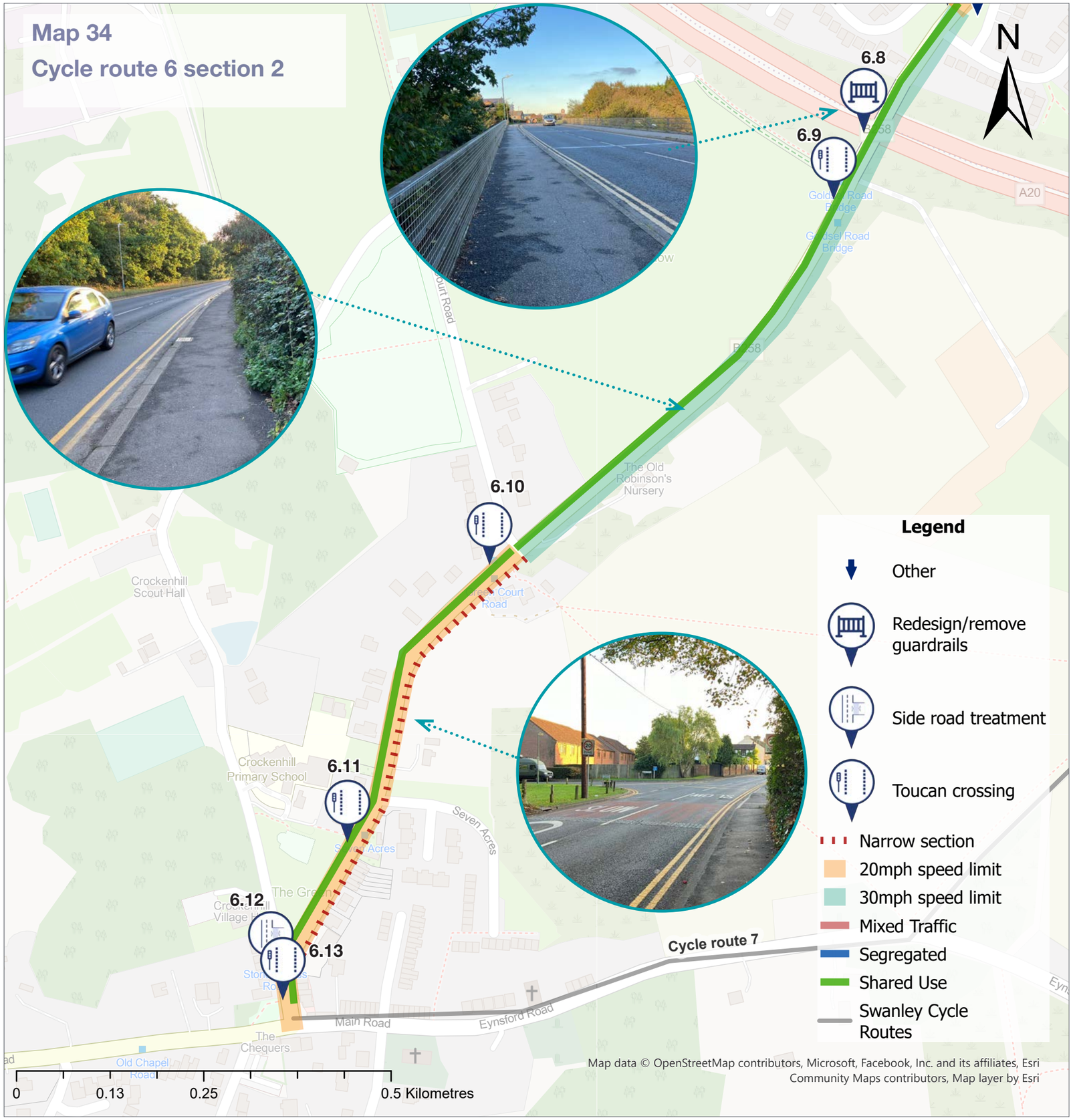


Proposed Interventions

- **Goldsel Road:** Combination of segregated cycle tracks and shared use paths. Consider reducing the speed limit from 40mph to 30mph and from 30mph to 20mph on different sections of the road.
  - *Between Azalea Drive to Green Court Road:* Provide a shared path of minimum 3m at the west side of the carriageway. Reduce car lanes if needed and use verge to gain space for shared path (subject to traffic surveys). Reduce traffic speed to 30mph.
- **Green Court Road:** Narrow section. Segregated cycling provision is favourable as per LTN 1/20 due to traffic flows[1] but it may not be achievable due to width constraints. For this reason, it is recommended to continue the shared path along Green Court Road, reducing the speed limit to 20mph to provide low motor traffic environment.

No.	Location	Recommendation
6.8	Goldsel Rd Bridge	Increase bridge railing height. This will provide a safer environment for pedestrians and cyclists.
6.9	Goldsel Rd at the south of the Bridge	Provide a toucan crossing, or similar depending on traffic surveys, to allow people easy access to bus stops.
6.10	Green Court Road	Provide a toucan crossing, or similar depending on traffic counts, to allow people easy access to bus stops.
6.11	Green Court Road in front of The Green	Upgrade uncontrolled crossing to a toucan crossing, or similar depending on traffic counts, to allow people easy access to school entrance and bus stops. Consider reallocating the existing crossing in front of path to access the school.
6.12	Green Court Road/ Stones Cross Road	Provide a continuous footway or similar, giving priority to pedestrians and cyclists to cross Stones Cross Road.
6.13	Green Court Road, near Main Road	Provide a toucan crossing, or similar depending on traffic counts, to allow people to cross Green Court Road.

1 Traffic counts indicate more than 6,000 vehicles AADT



6 Walking Routes and Core Walking Zone Recommendations

Map 35 Walking routes and Core Walking Zone

Walking Routes and Core Walking Zone

Four walking routes and one core walking zone were identified in Swanley, based on clusters of pedestrian trip generators and attractors, as well as areas with a high pedestrian activity. Swanley town centre, has high levels of pedestrian activity, but some improvements need to be made to improve pedestrian infrastructure provision.

Common themes across all three areas include: narrow footways with guardrailing, large junctions with limited or no pedestrian crossing provision and high levels of air pollution (all are located in AQMAs).

Recommended interventions are outlined on the following pages, incorporating infrastructure improvements described in the 'Walking Interventions Toolkit' on the following page.

Legend

- Walking route 1
- Walking route 2
- Walking route 3
- Walking route 4
- Swanley secondary walking routes
- Core Walking Zone
- Railway Stations

0 0.42 0.85 1.7 Kilometres

Esri, Intermap, NASA, NGA, USGS, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS

Walking Interventions Toolkit

All images provided by Sustrans unless otherwise noted.



Dropped kerbs w/ tactile paving

Necessary to create inclusive, accessible crossing points for pedestrians.



Zebra crossing

Pedestrian priority crossing requiring motorists to give way to pedestrians.



Parallel crossing

Similar to a zebra crossing, but with a separate parallel cycle crossing alongside the zebra crossing.



Continuous footway

Continuous footways extend across side roads at the same level and use coloured paving materials, pedestrians have priority over motor vehicles.



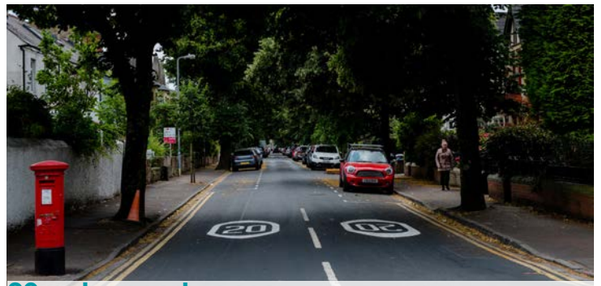
Signalised crossing

Signal-controlled crossings comprising either a Pelican/Puffin for pedestrians or a Toucan which can be shared between pedestrians and cyclists.



Raised table

Raised tables at junctions reduce speeds of turning vehicles at side roads or across the entire junction.



20mph speed zones

Lower speed limits and lower speed zones create safer environments for all, may need to be combined with infrastructure and enforcement changes to ensure compliance.



One-way systems

Reallocating space from the carriageway to support wider footways, cycle facilities and vehicle parking.

Can help increase cycle network permeability.



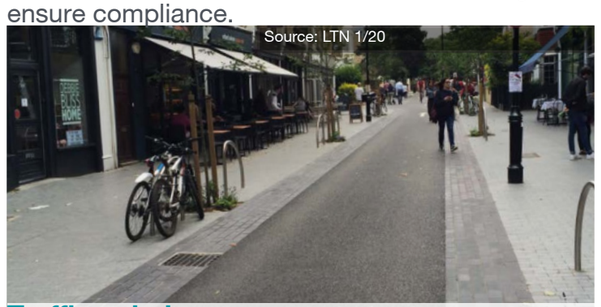
Wayfinding

Providing signage with key destinations helps improve the legibility of the pedestrian network.



Public realm improvements

Adding green infrastructure such as planters, rest areas, cycle parking and other placemaking interventions creates a more welcoming environment for pedestrians.



Traffic calming

Measures to create slower speed environments can include build-outs, road humps, chicanes and planters.



Modal filter

A bollard or planter in the carriageway which people can travel past be walking or cycling. Helps create a low traffic environment by restricting access to motorised through-traffic.

Core Walking Zone

Zone Description

The Walking Zone covers the area with greatest pedestrian activity in Swanley. The boundaries of the area are the roundabout at the west of the town centre, Bartholomew Way at the north and the Highway Street roundabout at the east of the town centre, covering the pedestrianised street next to Swanley Square Shopping Centre. It is delimited by St Mary's Street at the east and the railway at the west, reaching Swanley Railway Station at the south.

The core walking zone covers approximately 260 sq metres and links with walking routes 1, 2, 3 and 4. It overlaps with cycle route 5.

Existing Conditions

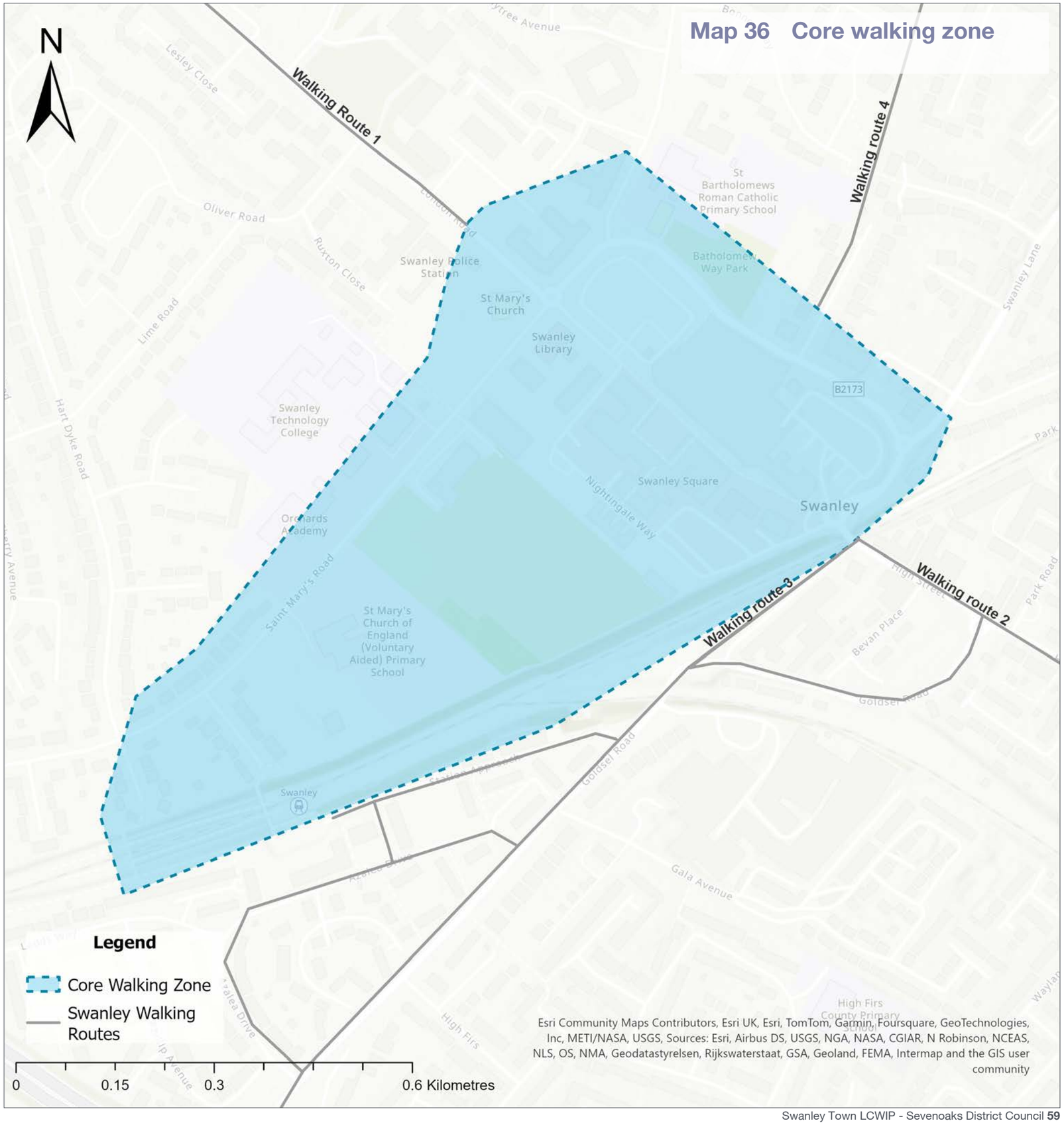
It covers the area with greatest pedestrian activity in Swanley, such as the town centre and the train station. The town centre has a wide pedestrianised section of 370m approx. in front of Swanley Square Shopping Centre, with seating areas and greenery. St Mary's Road links the town centre to the railway station. This road has a 20mph speed limit and a few traffic calming measures. It was observed that people use, as a short cut, a route going through Swanley Town Council offices, a car park next to Aldi supermarket and Nightingale Way.

Route Constraints

- Bartholomew Way is a heavily trafficked road with narrow footways.
- The most direct route option from the train station to the town centre goes though a car park.
- Area with high pedestrian activity dominated by car parking.

Route Opportunities .

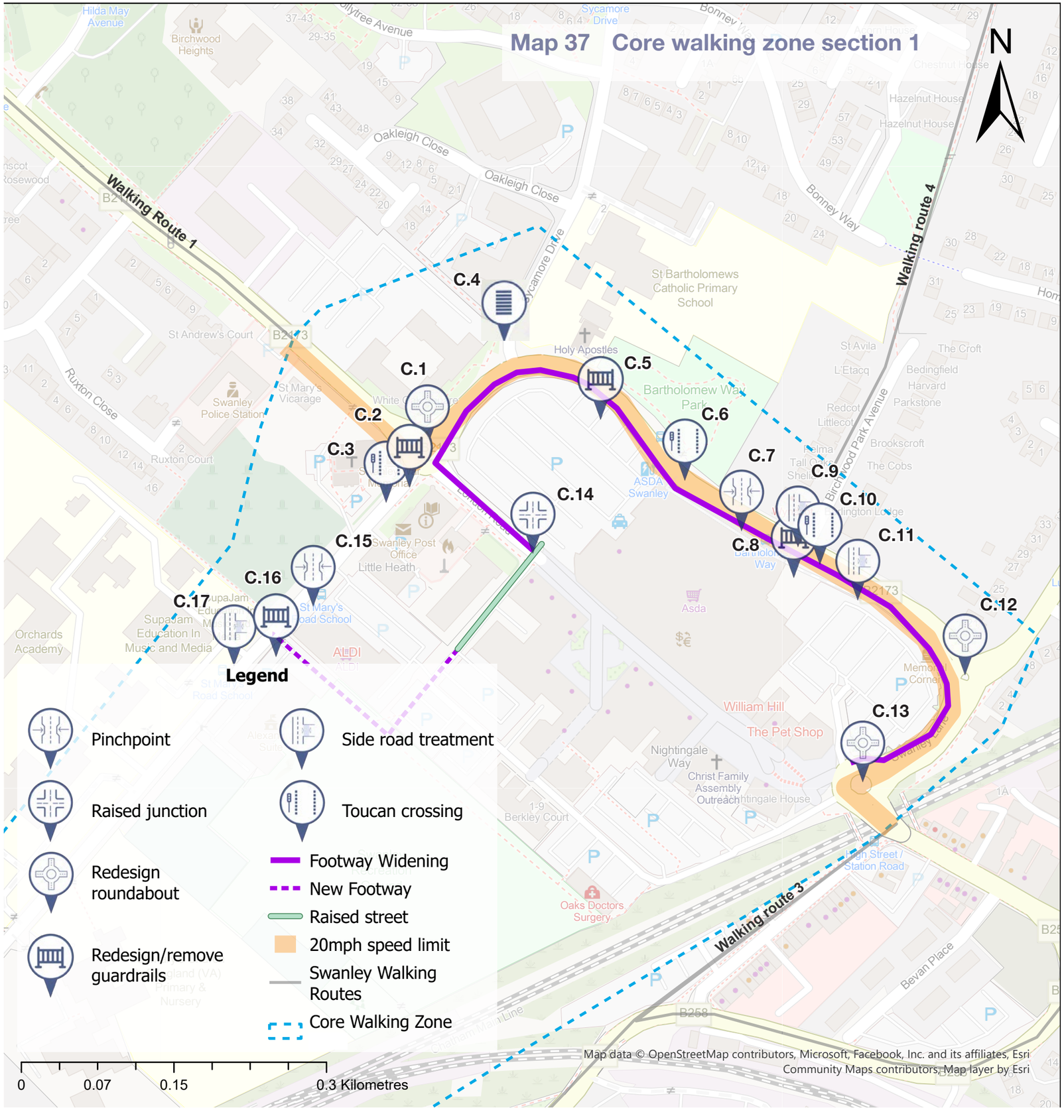
- High pedestrian activity.
- Good existing pedestrianised area.



Proposed Interventions

- **London Road and Bartholomew Way:** Consider reducing the speed limit from 30mph to 20mph along the road. Narrow footway sections were observed. Review the width of the footway and widen when needed.

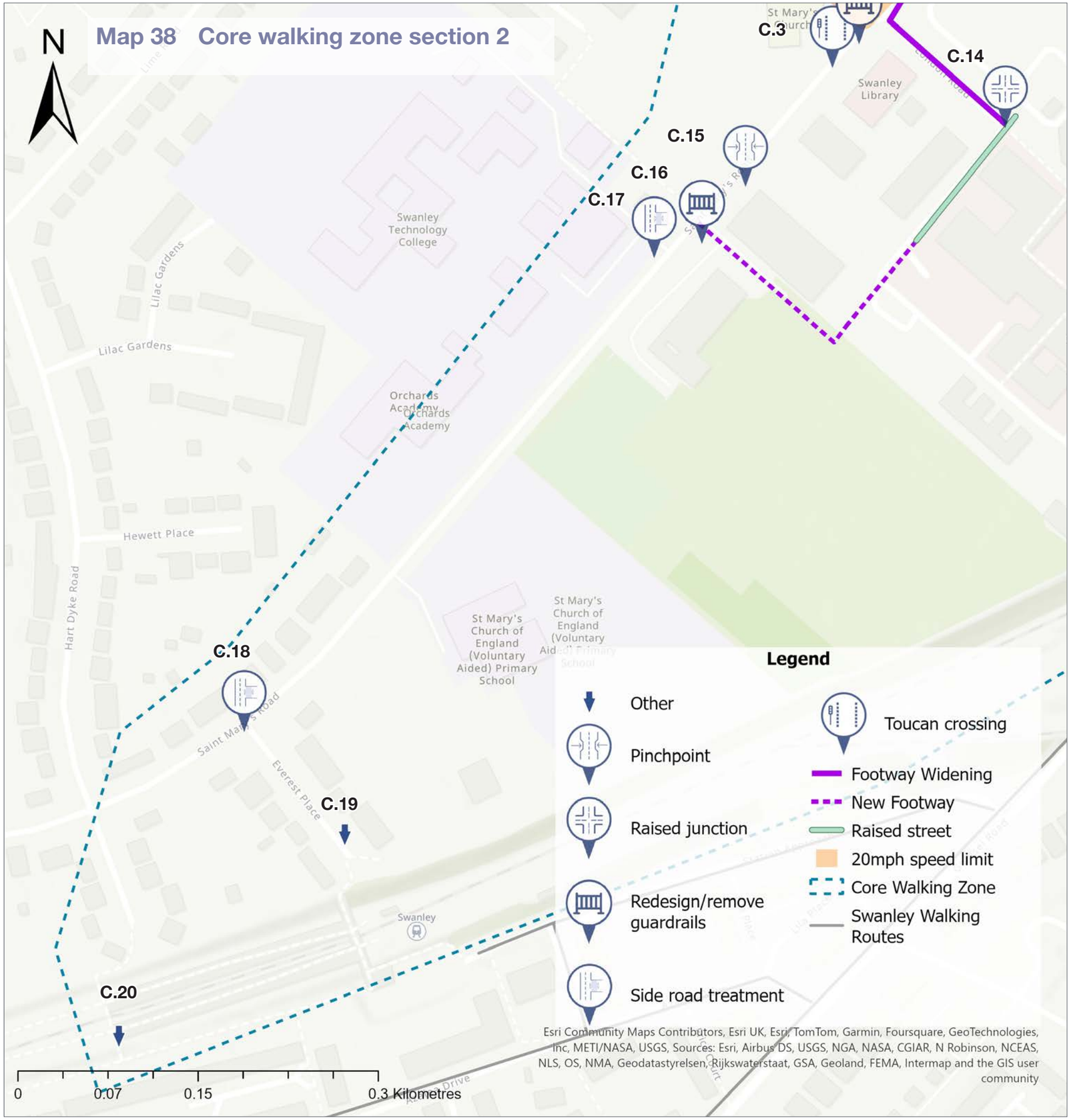
No.	Location	Recommendation
C.1	London Rd Roundabout	Redesign roundabout to provide controlled crossing facilities on all arms. In particular, consider providing controlled crossing facilities on London Road following the desire line.
C.2	London Rd Roundabout	Remove guardrails or replace with planters to create a more people friendly environment
C.3	St Mary Road.	Consider upgrading uncontrolled crossing to controlled crossing and reallocate closer to desire line by incorporating it to C.1 redesign of roundabout.
C.4	Sycamore Drive	Provide a zebra crossing or similar depending on traffic counts and reallocate closer to walking desire line near Bartholomew Way
C.5	Bartholomew Way	Remove guardrails or replace with planters to create a more people friendly environment
C.6	Bartholomew Way	Provide a toucan crossing (or similar depending on traffic surveys) to allow people to cross Bartholomew Way and easily access bus stops.
C.7	Bartholomew Way	Tree presence creates a pinchpoint and narrows footway. Provide wider footway of at least 2m minimum.
C.8	Bartholomew Way/ Birchwood Park Ave	Remove guardrails or replace with planters to create a more people friendly environment.
C.9	Bartholomew Way/ Birchwood Park Ave	Provide a continuous footway or similar, giving priority to pedestrians to cross Birchwood Park Ave.
C.10	Bartholomew Way/ Birchwood Park Ave	Replace existing uncontrolled crossing for a toucan or similar depending on traffic counts. Remove the central island and shorten the distance for crossing instead.
C.11	Bartholomew Way/ supermarket access	Provide a continuous footway or similar, giving priority to pedestrians to cross Birchwood Park Ave
C.12 C.13	Bartholomew Way	Redesign roundabouts to provide controlled crossing facilities on all arms. Remove guardrails.



Proposed Interventions

- **Nightingale Way:** It was observed that people use as a short cut, a route going through Swanley Town Council offices, a car park next to Aldi supermarket and Nightingale Way. Provide a footway following the pedestrian desire line, across Swanley Town Council and car park. Consider raising the street (or similar) to give priority to pedestrians when walking along Nightingale Way.

No.	Location	Recommendation
C.14	London Road in front of pedestrian street	Provide raised junction or similar to give pedestrian priority to cross and help reducing traffic speed.
C.15	St Mary's Road school bus stop	Note that there is a pinch point here where the footway becomes narrow due to the bus stop shelter and there is not enough verge space. Explore options for widening the footway by reallocating road space or reallocating wall behind bus stop.
C.16	St Mary's Road (in front of Aldi)	Consider removing the existing guardrails and replacing them with shrubs or planters, to make the route more pleasant and attractive for users.
C.17	SupaJam Education in Music and Media entrance	Consider installing a continuous footway at both school driveway entrances.
C.18	Everest Place junction	Reduce corner radii to decrease motor vehicles speeds when turning in and out of Everest Place. Install missing tactile pavement.
C.19	Swanley Railway Station	Provide step free access at the train station
C.20	Swanley Railway Station	Clear vegetation and consider upgrading the bridge by widening it and making it step free.



Walking Route 1

Route Description

This walking route overlaps with cycle route 1. It travels along Maidstone Road and London Road (B2173) from the Birchwood Corner bus stop to Swanley Police Station where it meets the core walking zone. The route covers approximately 1.26km. Data shows that there have been instances of pedestrian collisions along London Road, particularly near Birchwood Corner and at the Brook Road junction. Considering that the interest for walking routes was the key feedback received at the engagement sessions, this route will encourage pedestrian movements from the Birchwood Corner and White Oak residential areas (which have been highlighted as important origin points) to Swanley town centre

Existing Conditions

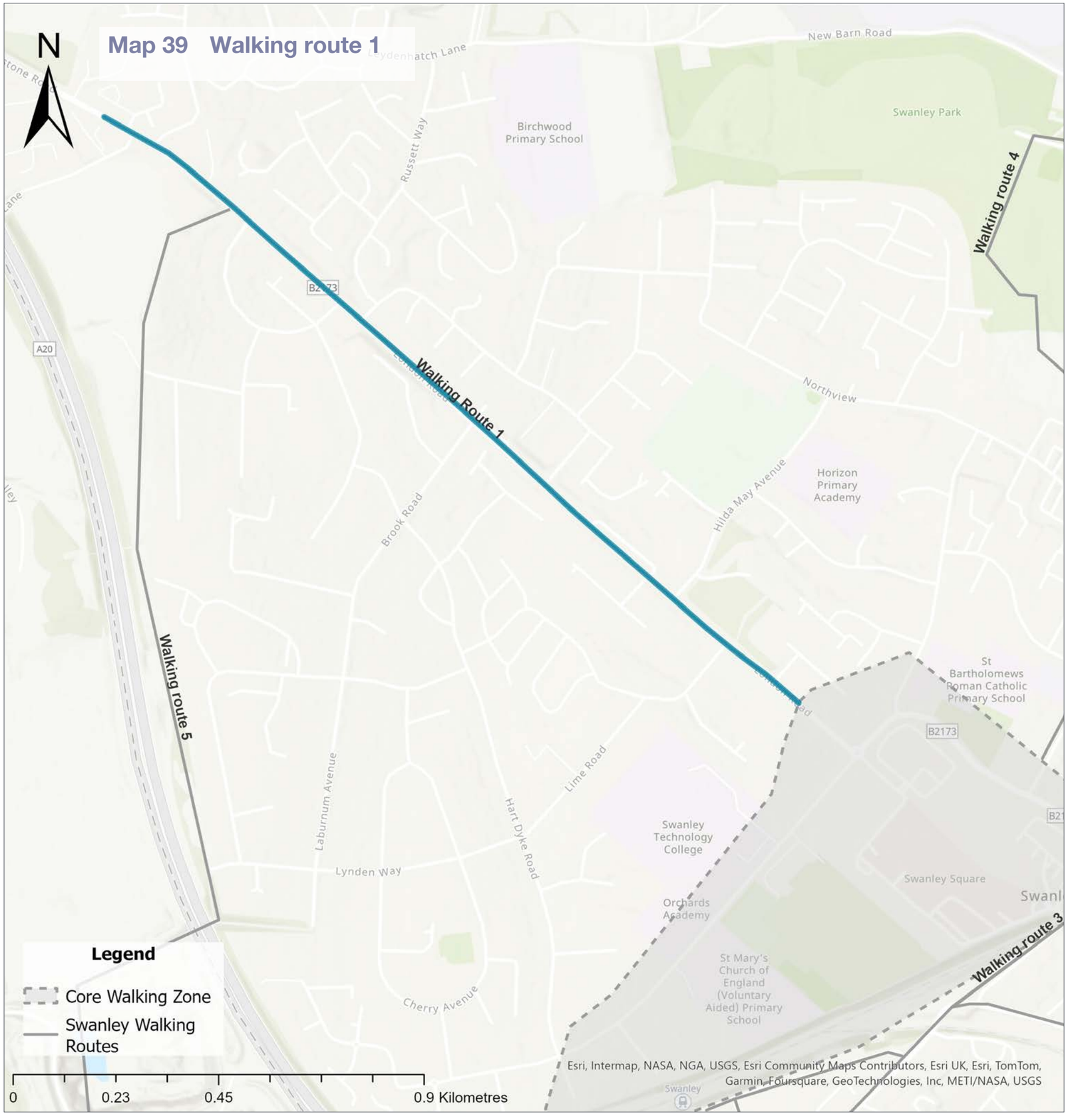
There is currently a segregated path (with a centre white line separating pedestrian and cyclist space) which runs along the northern side of London Road from Birchwood Corner to Oliver Road junction. There is also a footway which runs along the southern side of London Road but there are multiple narrow sections which are less than 2m wide

Route Constraints

- Multiple uncontrolled crossings exist along the route
- On road parking was seen on Heathfield Terrace and near St Luke's Cottages

Route Opportunities

- There is extra verge space and carriageway space along London Road which can be used to widen the existing footways

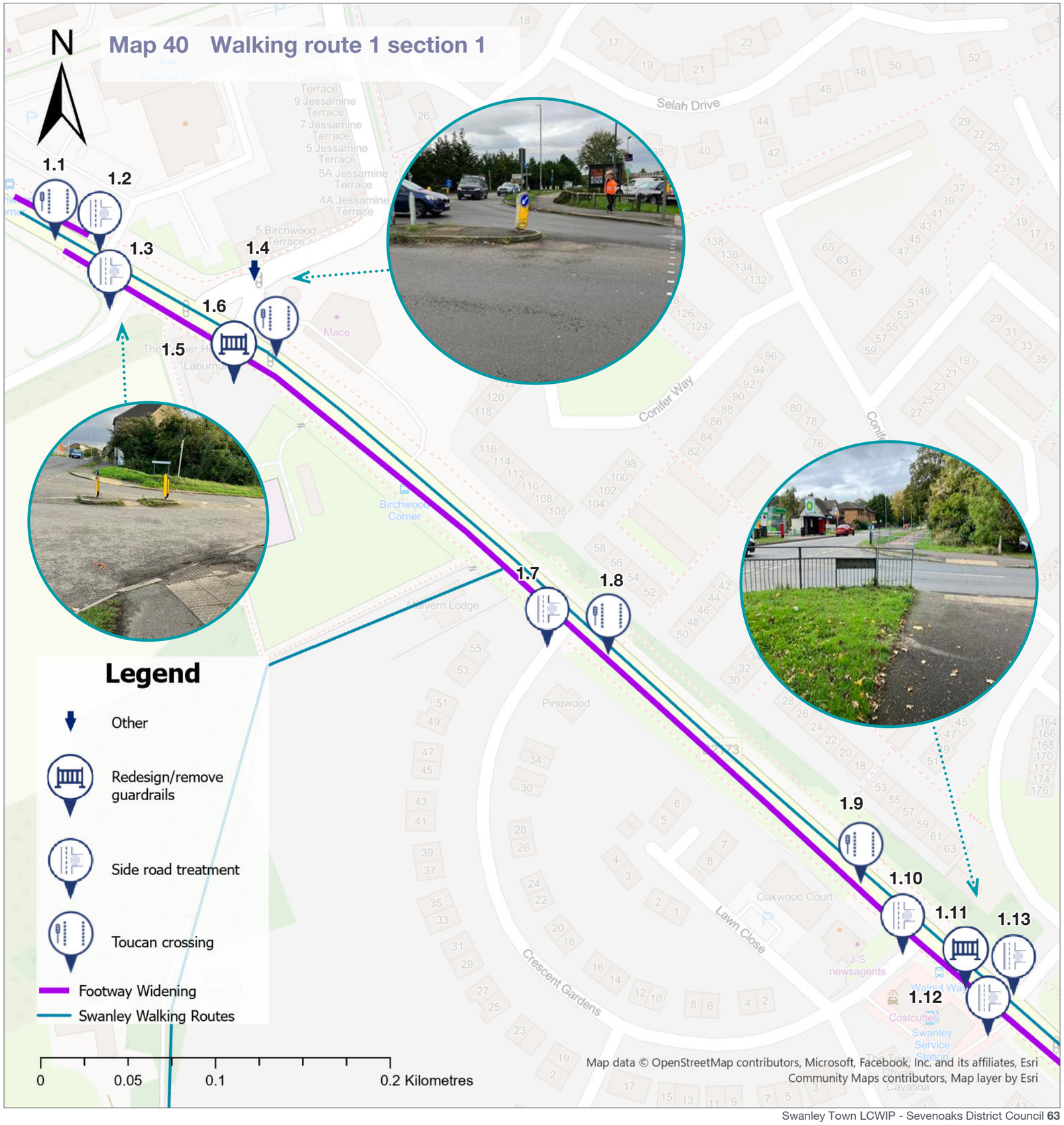


Proposed Interventions

- **London Road (B2173)**

- From Birchwood Corner bus stop to Walnut Way: Consider widening the footway on the southern side by cutting into the verge and/or by re-allocating extra carriageway space from the middle of the road. Investigate the feasibility of installing a segregated cycle track on the northern side of London Road (as per cycle route 1 recommendations), and upgrade the current path for pedestrian use only. Ensure crossings are upgraded for pedestrian and cyclist priority, and improve side road provisions

No.	Location	Recommendation
1.1	Maidstone Road (B2173)	Upgrade the current uncontrolled crossing to provide priority for pedestrians and cyclists. Further traffic counts at this area may be necessary
1.2	Premier Inn entrance	Install a continuous footway over car park entrance
1.3	Hockenden Lane	Consider reducing the turning radii and installing a controlled crossing over the side road
1.4	Birchwood Road junction	Consider amending traffic light cycle at the junction to lessen pedestrian waiting time
1.5	Birchwood Road junction	Remove the guardrails on the footway on the southern side. Replace with planters to help provide separation between pedestrians and the road, and to help the route be more attractive
1.6	London Road	Upgrade the uncontrolled crossing to a toucan crossing, or to a similar crossing depending on further traffic counts, and move it closer to the junction
1.7 1.10	Crescent Gardens	Consider reducing the turning radii at both road entrances, and install missing tactile pavement, and dropped kerbs
1.8 1.9	Near Crescent Gardens junction	Upgrade the current uncontrolled crossings to provide priority for both pedestrians and cyclists, subject to further traffic surveys
1.11	Near Londis	Remove the guardrails on the northern side and replace with planters to boost route attractiveness and to provide separation from the road
1.12	Swanley Service Station	Install a continuous footway over petrol station entrance
1.13	Walnut Way	Consider installing a crossing with pedestrian and cyclist priority at side road



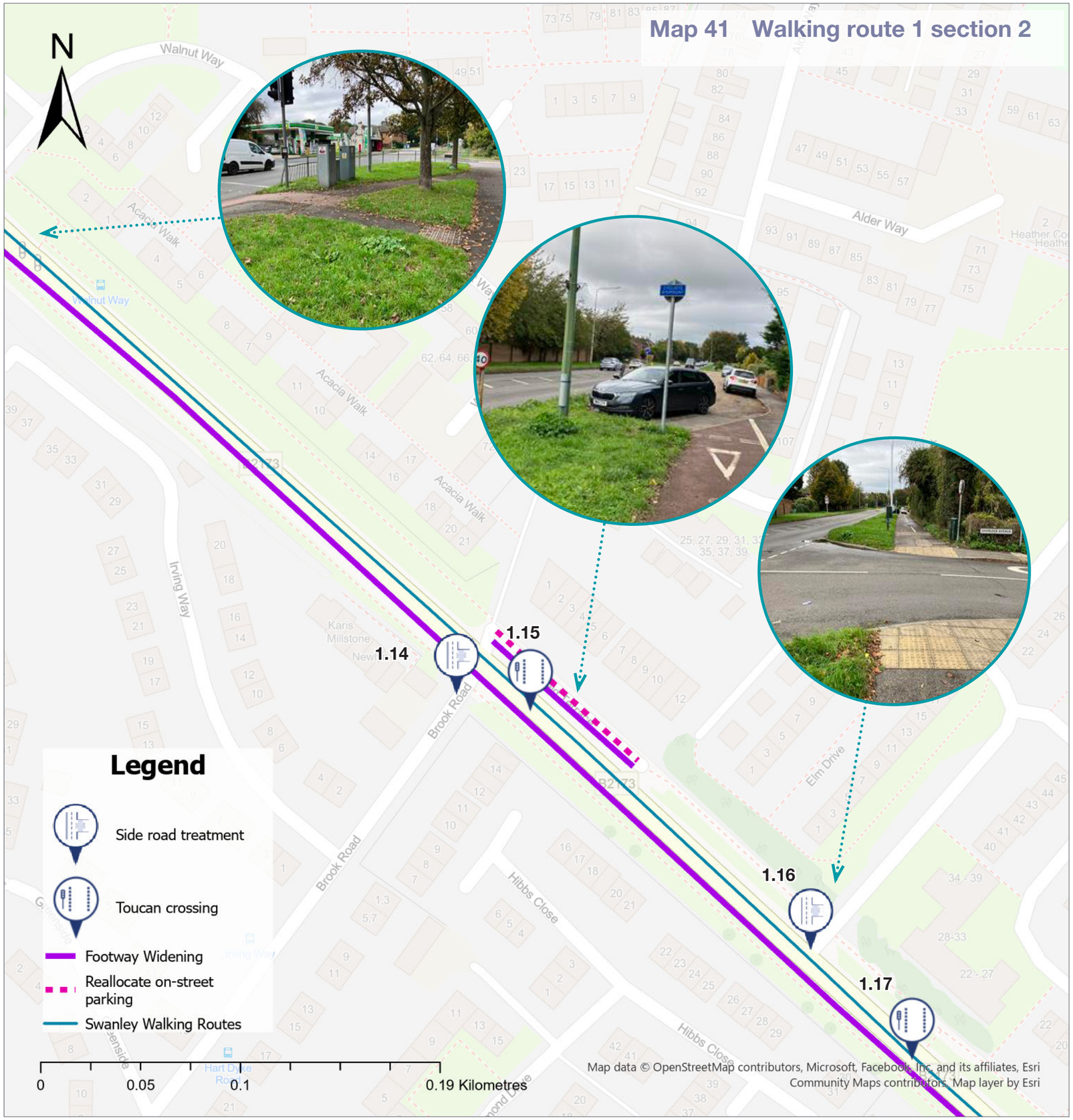
Proposed Interventions

- **London Road (B2173)**

- From Walnut Way to Shurlock Avenue: Consider widening the footway on the southern side by cutting into the verge and/or by re-allocating extra carriageway space from the middle of the road. Upgrade the current path on the northern side for pedestrian use only. Re-allocate car parking on Heathfield Terrace to allow for parking on only the southern side, to make space for a segregated cycle track (cycle route 1 recommendation) and for a widened footway

No.	Location	Recommendation
1.14	Brook Road	Reduce the turning radii and consider installing crossing provisions over the side road with pedestrian priority
1.15	Near Brook Road junction	Consider upgrading the current uncontrolled crossing to a toucan crossing to prioritise pedestrians and cyclists. Further traffic surveys in this area may be needed
1.16	Shurlock Avenue	Reduce the turning radii over this side road and consider installing crossing provisions with pedestrian and cyclist priority
1.17	Near Shurlock Avenue junction	Upgrade the uncontrolled crossing to a toucan crossing, or similar, depending on further traffic counts

Map 41 Walking route 1 section 2

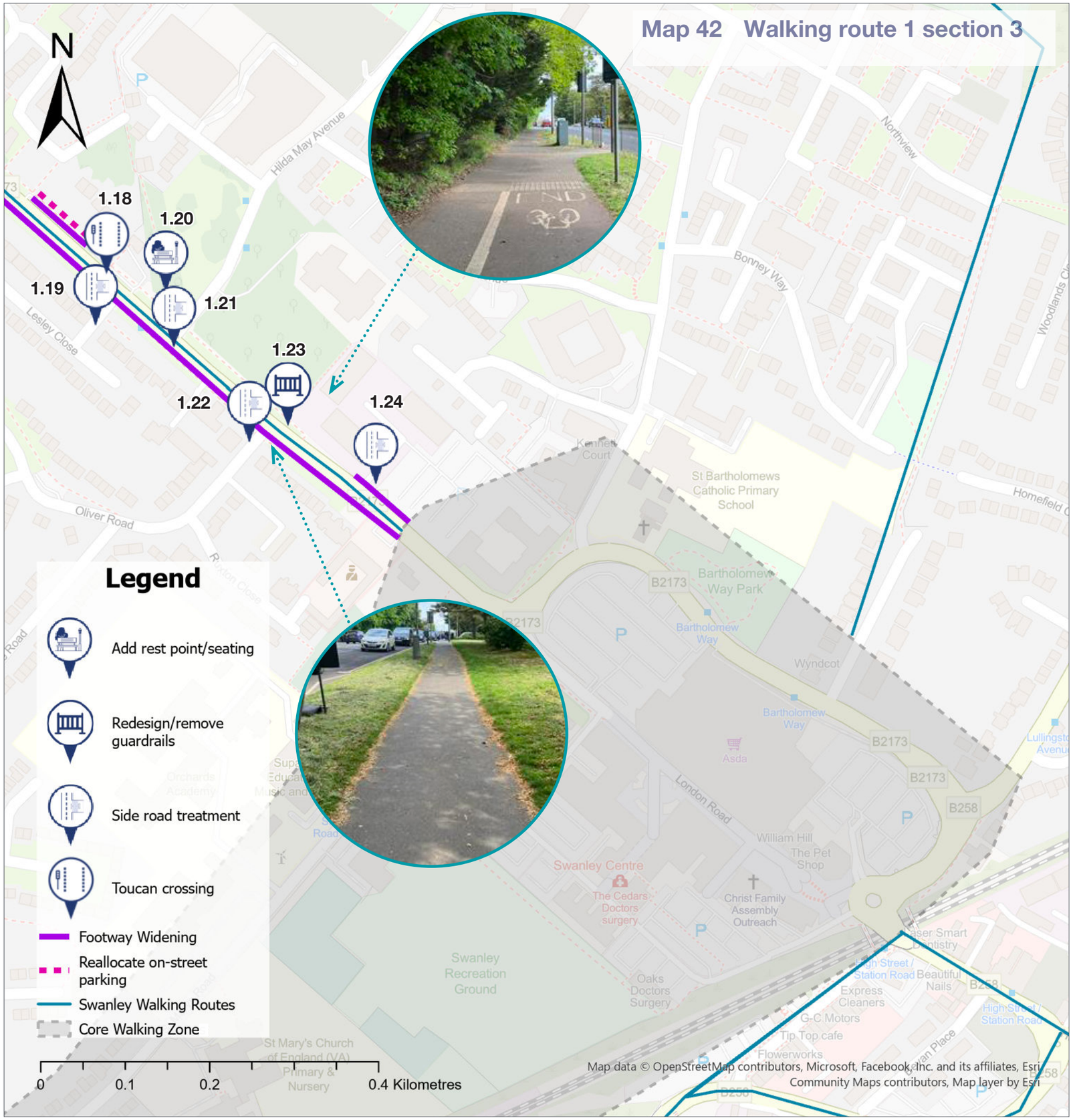


Proposed Interventions

- **London Road (B2173)**

- From Shurlock Avenue to Swanley Police Station: Consider widening the footway on the southern side by cutting into the verge and/or by re-allocating extra carriageway space from the middle of the road. Upgrade the current path on the northern side for pedestrian use only, and consider widening the footway on the northern side when approaching Bartholomew Way junction. Re-allocate car parking at St Luke's Cottages entrance to allow for parking on only the southern side, to make space for a segregated cycle track (cycle route 1 recommendation) and for a widened footway

No.	Location	Recommendation
1.18	Near St Luke's Cottages	Consider upgrading the uncontrolled crossing to a toucan crossing, or to a similar crossing depending on further traffic surveys
1.19	Lesley Close	Install missing tactile pavement at side road
1.20	Hilda May Avenue junction	Add additional benches at the green space adjacent to Hilda May Avenue. Additionally, consider adding additional seating facilities at Lesley Close bus stop
1.21	Hilda May Avenue	Consider installing crossing provisions at the side road to prioritise pedestrians and cyclists, subject to further traffic surveys
1.22	Oliver Road	Consider reducing the turning radii at side road. Note that traffic calming measures are already in place, therefore investigate the feasibility of installing a crossing to prioritise pedestrians, depending on further traffic studies
1.23	Oliver Road junction	Replace the guardrails at the junction with shrubs and/or planters to help provide a separation between pedestrians and the road. This will also help to improve the attractiveness of the route
1.24	Pioneer Way	Reduce the turning radii to decrease pedestrian crossing distance. Replace the uncontrolled crossing with a continuous footway over the side road



Walking route 2

Route Description

Walking route 2 is aligned with London Road, which is the main East-west axis for Swanley. It starts in the roundabout at the east of town centre and travels east along London Road (B2173) until Beechenlea Lane. This is most direct and coherent alignment to get from the centre of Swanley to Christchurch residential area and Moreton Industrial Estate. The route has a spur to the north to link to Downsview Primary School, along Kingswood Avenue, Willow Avenue and Beech Avenue.

Walking route 2 covers approximately 1km and links with walking route 3, and the core walking zone. It overlaps with cycle route 2.

Recommendations for cycling can be found in chapter 5 Cycle Route Recommendations.

Existing Conditions

This road provides the main link from the centre of Swanley to the east side of the town, and access to the M25 and beyond. There is a parade of shops along this road which serve the surrounding residential area. There are narrow footway sections along the route, particularly near the centre and between West View Road and Beechenlea Lane. Car parking was observed on the pavement, particularly in front of houses between St Georges Road and Salisbury Avenue reducing even more the footway space.

Route Constraints

- Heavily trafficked road with vehicles queueing observed.

Route Opportunities

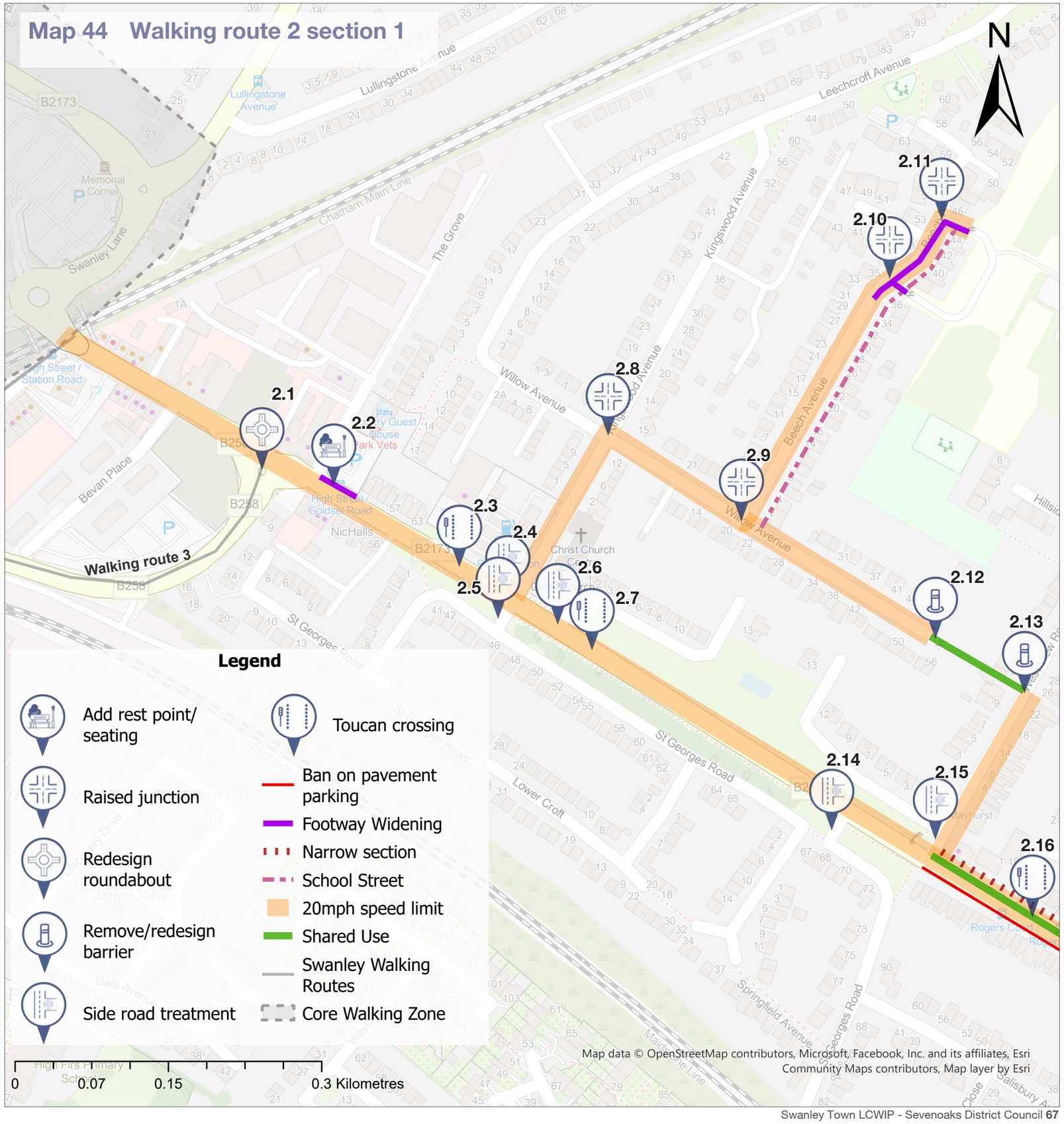
- It is the most direct and coherent link from the centre to Christchurch residential area.
- High pedestrian activity as it is adjacent to residential area.



Proposed Interventions

- **London Road:** Consider reducing the speed limit from 30mph to 20mph along the road.
  - *Between High Street roundabout and West View Road:* Widen footway in section near Park Road where the bus stop is. Evaluate using space from the car park.
- **Spur to Downsview Primary School:** Consider reducing speed limit to 20mph and provide traffic calming measures if needed.
  - *Beech Avenue:* Consider widening the footway near the school area. Evaluate implementing a School Street scheme to allow children to safely walk, cycle and wheel into school at drop-off and pick-up times.

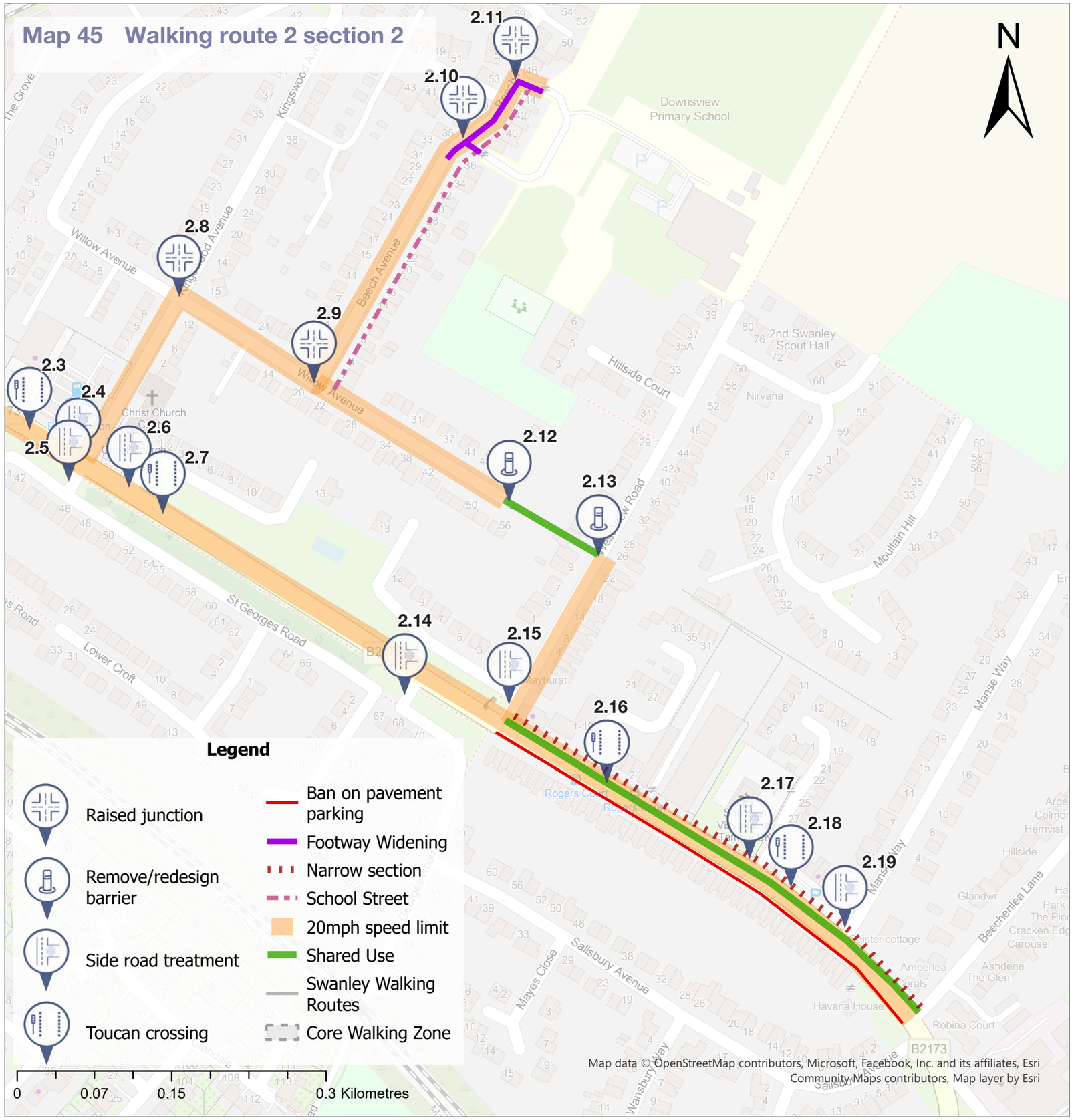
No.	Location	Recommendation
2.1	Goldsel Rd Roundabout	Redesign roundabout to provide segregated cycle track and controlled crossing facilities on all arms. Evaluate replacing it for controlled crossing (subject to traffic surveys)
2.2	London Rd/ Park Road	Provide seating at bus stop
2.3	London Road in front of Coop	Replace existing uncontrolled crossing for a toucan or similar depending on traffic counts. Remove the central island.
2.4 2.5	London Rd/ Kingswood Ave.	Provide a continuous footway or similar, giving priority to pedestrians and cyclists to cross Kingswood Avenue.
2.6	London Rd/ Pine Close	Provide a continuous footway or similar, giving priority to pedestrians and cyclists to cross Pine Close.
2.7	London Rd near Pine Close	Replace existing uncontrolled crossing for a toucan or similar depending on traffic counts. Remove the central island.
2.8	Kingswood Ave./Willow Ave.	Provide raised junction or similar to give pedestrian priority to cross and help reduce traffic speed.
2.9	Willow Ave./ Beech Ave	Provide raised junction or similar to give pedestrian priority to cross and help reduce traffic speed.
2.10 2.11	Beech Ave in front of school	Provide raised junction or similar to give pedestrian priority to cross and help reduce traffic speed.
2.12 2.13	Willow Ave	Remove or redesign barrier. Flush kerb to allow easy access for cyclists and pedestrians



Proposed Interventions

- **London Road:** Consider reducing the speed limit from 30mph to 20mph along the road
  - **West View Road and Beechenlea Lane:** Narrow section. Provide a shared path at the north side of London Road (see recommendations for cycle route 2). Parking on the pavement observed on the south side of London Road between Beechenlea Lane and St George Road. Consider a ban on pavement parking and reinforce if needed.

No.	Location	Recommendation
2.14	London Road/St Georges Road	Provide a continuous footway or similar depending on traffic surveys, giving priority to pedestrians and cyclists to cross St Georges Road.
2.15	London Rd/ West View Rd	Provide a continuous footway or similar, giving priority to pedestrians and cyclists to cross West View Rd.
2.16	London Road near Rogers Court	Provide a toucan crossing (or similar depending on traffic surveys) to allow people to access bus stops on both sides of the road.
2.17	London Road/ Bremmer Close	Provide a continuous footway or similar depending on traffic surveys, giving priority to pedestrians and cyclists to cross Bremmer Close
2.18	London Road near Bremmer Close	Provide a toucan crossing (or similar depending on traffic surveys) to allow people to access shops and businesses in Manse Parade
2.19	London Rd/ Manse Way	Provide a continuous footway or similar depending on traffic surveys, giving priority to pedestrians and cyclists to cross Manse Way



Walking route 3

Route Description

Walking route 3 links Swanley centre to Crockenhill. It starts on London Road (B2173) along Goldsel Road (B258) and Station Road. It travels south along Goldsel Road with a few spurs to link to Swanley Train Station. The route continues along Goldsel Road crossing the A20 out of Swanley. It continues south on the side of Dibsdall Meadow, to then reach Crockenhill. The route travels along Green Court Road and Broadway until finishing in Main Road.

Walking route 3 covers approximately 2kms and links with core walking zone and route 2. It overlaps with cycle route 6.

Recommendations for cycling can be found in chapter 6 Cycle Route Recommendations.

Existing Conditions

This route follows the alignment of the main link from Swanley to Crockenhill. At the north, Station Road is surrounded by shops and high pedestrian activity. Travelling south, Goldsel Road is surrounded by housing until crossing the A20, where its character changes to a rural setting. When reaching Crockenhill, Green Court Road has a residential character. The section between Green Court Road and Seven Acres lacks a footway on the east side of the carriageway. Providing a footway may involve land negotiation.

Route Constraints

- Narrow sections along the route between Green Court Road and Seven Acres.

Route Opportunities

- High pedestrian activity near train station and London Road
- Attractive views to green areas between Swanley and Crockenhill.



Proposed Interventions

- **Goldsel Road (B258):** Consider reducing the speed limit from 40mph to 30mph and from 30mph to 20mph on different sections of the road. A combination of shared path, widened footways and reallocated on-street car parking is recommended
  - *Between High Street roundabout and Azalea Drive:* Consider reallocating on-street car parking between Azalea Drive to allocate segregated cycle track (see recommendations for cycle route 6) and to widen the footpath if needed. Existing vegetation is reducing the footway width, consider trimming it when needed.
  - *Spur Station Road:* Widen the footway to ensure that it is 2m minimum width. Shared path in the section between Station Road and High Street.
- **Spur to Swanley Train Station:** Reduce the speed limit to 20mph along the roads to provide people friendly environment.
  - *Station Approach:* Provide a new footway on the west side of the carriageway
  - *Azalea Drive:* Provide a new footway on the west curve.

No.	Location	Recommendation
3.1 3.2	Station Rd	Provide a continuous footway or similar to provide pedestrian priority when crossing car park and pub entrance
3.3	Goldsel Rd/ Station Rd	Provide a continuous footway or similar and reduce corner radii to reduce crossing distance for pedestrians and reduce motor vehicles speed when turning.
3.4	Goldsel Rd/ Station Rd	Evaluate removing guardrails and replace with planters to make a more people friendly environment and less car orientated.
3.5	Goldsel Rd near Station Approach	Provide a toucan crossing or similar depending on traffic surveys to allow for pedestrians and cyclists crossing Goldsel Rd.
3.6 3.7	Goldsel Rd	Provide a continuous footway or similar depending on traffic surveys, giving priority to pedestrians to cross Station Approach and Azalea Drive
3.10 3.11 3.13 3.14	Azalea Drive	Provide a continuous footway or similar depending on traffic surveys, giving priority to pedestrians when crossing side road streets on Azalea Drive
3.8	Station Approach	Provide a raised junction to facilitate crossing and give pedestrians priority. It is also a traffic calming measure.
3.9	Station Approach	Provide a zebra crossing or similar to give pedestrians priority in front of the steps
3.12	Azalea Drive	Provide a zebra crossing or similar depending on traffic surveys, to allow people easy access to bus stops.
3.15	Goldsel Rd/ Azalea Drive	Provide a continuous footway or similar and reduce corner radii to reduce crossing distance for pedestrians and reduce motor vehicles speed when turning.



Proposed Interventions

- **Goldsel Road:** Shared path. Consider reducing the speed limit from 40mph to 30mph and from 30mph to 20mph on different sections of the road.
  - *Between Azalea Drive to Green Court Road:* Provide a shared path of minimum 3m width at the west side of the carriageway. Reduce car lanes if needed and use verge to gain space for shared path (subject to traffic surveys). Reduce traffic speed to 30mph.
- **Green Court Road:** Narrow section. Due to width constraints affecting cycle route 6 (see cycle route 6 section) a shared path is recommended. Consider reducing the speed limit to 20mph to provide a people friendly environment. In the section between Seven Acres and Main Road, ban on-pavement parking, and consider providing a dedicated space for those vehicles to park.

No.	Location	Recommendation
3.16	London Rd/ Pinks Hill Rd	Potential to reallocate on-street car park in this area
3.17	Goldsel Rd Bridge	Increase bridge railing height. This will provide a safer environment for pedestrians and cyclists.
3.18	Goldsel Rd at the south of the Bridge	Provide a toucan crossing, or similar depending on traffic surveys, to allow people easy access to bus stops.
3.19	Goldsel Rd at the south of the Bridge	Provide seating and shelter at both bus stops
3.20	Green Court Road	Provide a toucan crossing, or similar depending on traffic surveys, to allow people easy access to bus stops. Provide seating and shelter in both bus stops
3.21	Green Court Road in front of The Green	Upgrade uncontrolled crossing to a toucan crossing, or similar depending on traffic counts, to allow people easy access to school entrance and bus stops. Consider reallocating the existing crossing in front of path to access the school.
3.22	Green Court Road/ Stones Cross Road	Provide a continuous footway or similar, giving priority to pedestrians and cyclists to cross Stones Cross Road.
3.23	Green Court Road, near Main Road	Provide a toucan crossing, or similar depending on traffic counts, to allow people to cross Green Court Road.



Walking Route 4

Route Description

This walking route spurs off the Swanley town centre core walking zone and starts at the Public Rights of Way (PROW) path near Birchwood Park Avenue. It follows the PROW until it reaches Swanley Park. The walking route briefly overlaps with cycle route 3 through the park and along the PROW. It continues on the pedestrianised area near Swanley Park pond, and crosses New Barn Road, where it overlaps with the alignment for cycle route 4 until Puddledock junction in Hextable. This walking route covers approximately 2.40km

Existing Conditions

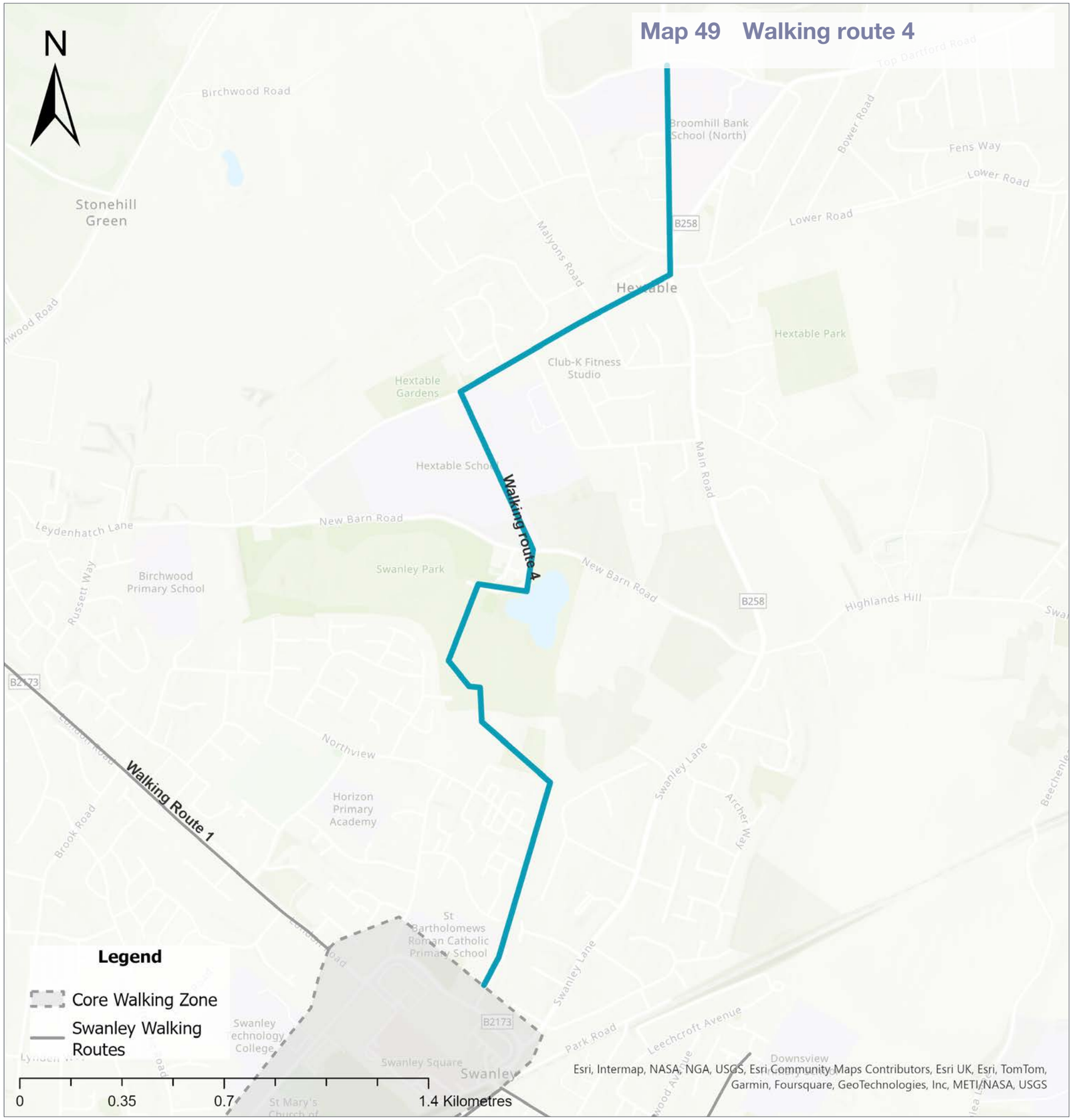
Some of the PROW paths along the route are already surfaced, but will need width improvements, while other sections of paths are unsurfaced. There are sections of narrow or missing footway along the route, and there is a lack of crossing facilities which prioritise pedestrians and cyclists. However, the route makes use of the park and of the PROW paths, which may give users a more pleasant experience than using the B258

Route Constraints

- Sections of footway are missing on the northern side of College Road. Sections of footway on the southern side are narrow
- Barriers are present along the PROW paths which impact the accessibility of the route for various users
- Lack of side road provisions
- On-pavement parking observed on Rowhill Road and on College Road
- Insufficient controlled crossings on New Barn Road and at the Main Road (B258) roundabout

Route Opportunities

- There is some verge space available along College Road and the B258 to widen the existing footways
- There is space along the PROW to widen the paths
- There are existing paths, which spur off the route, which can be included in future improvement works to help create a larger walking network in the area



Proposed Interventions

- **Public Rights of Way paths:**

- From Birchwood Park Avenue to Swanley Park: Investigate the feasibility of cutting into the verge to widen the paths. Where the walking route overlaps with cycle route 4, ensure the paths are at least 3m wide to allow for shared use. Complete regular vegetation maintenance and remove the chicane barriers along the route which impact accessibility

- **Swanley Park:** Investigate the feasibility of installing all weather surfaced paths throughout the park. Where the walking route overlaps with cycle route 4, ensure that the width is at least 3m wide to allow for shared use. Additionally, consider widening the sections of the walking route which are already surfaced, and do not overlap with cycle routes (for example, near the pond) ensuring the width is at least 2m

No.	Location	Recommendation
4.1	PROW near Bonney Way	Install safety signage at paths intersection to avoid collision between cyclists and pedestrians
4.2	PROW path	Remove chicane barriers to promote accessibility along the route
4.3	PROW path	Remove chicane barriers to promote accessibility along the route
4.4	Swanley Park	Install seating facilities throughout the park
4.5	Swanley Park	Install wayfinding signage near New Barn Road, to signify the continuation of the route to Hextable



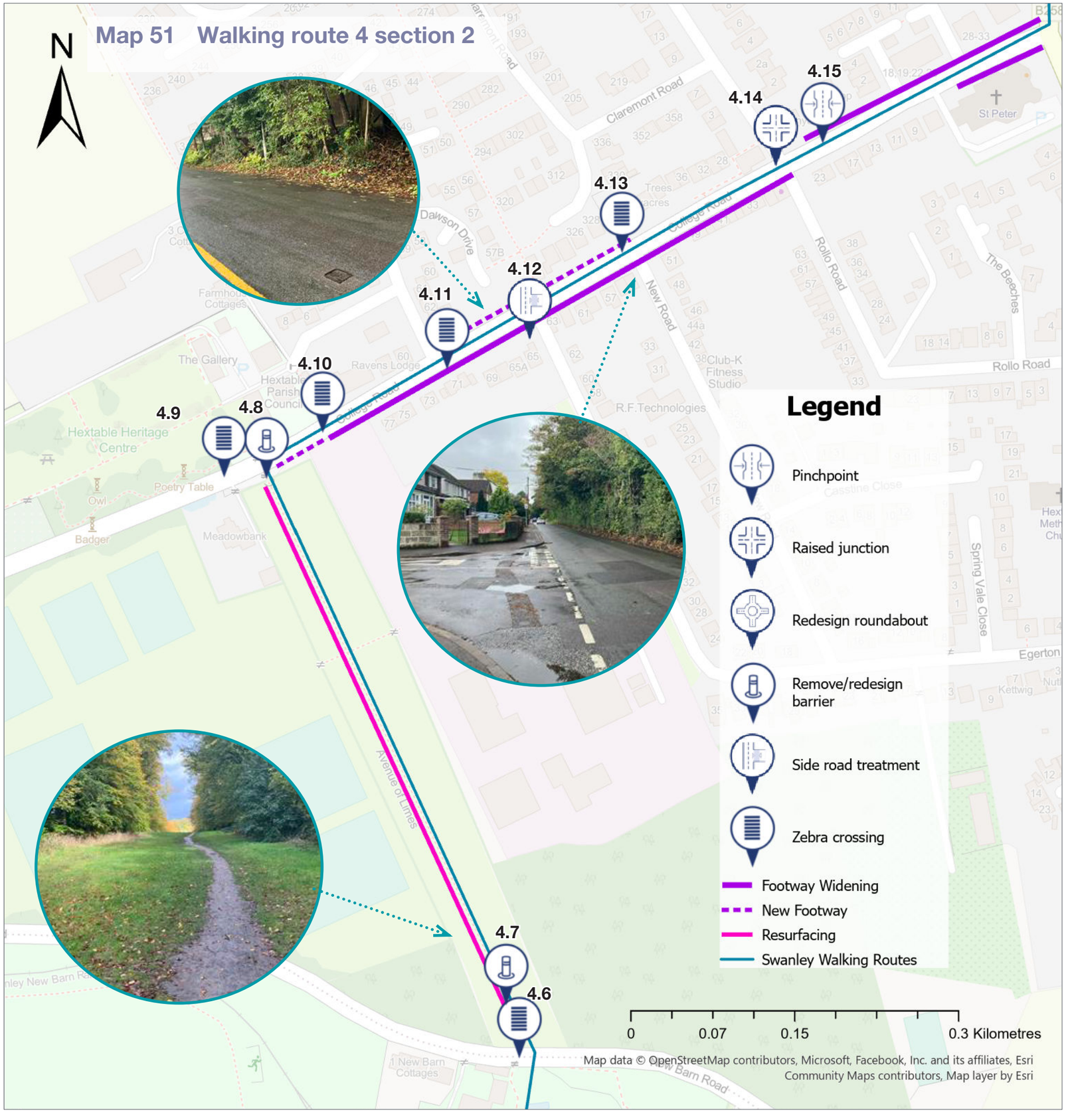
Proposed Interventions

- **Public Rights of Way paths:**

- *Avenue of Limes:* Complete resurfacing works. Considering that the walking route overlaps with cycle route 3 here, ensure that the path is at least 3m wide to allow for shared use

- **College Road:** Install missing footway provisions on the southern side of the road, to link pedestrian journeys from the Avenue of Limes to the existing footway. Although there are some areas of width constraints on the road, install missing footways on the northern side where there is available verge space, for example from Dawson Drive to New Road junction. Additionally, investigate the feasibility of widening the footways on the southern side, by cutting into the verge and re-allocating road space where possible. Ensure footways are at least 2m wide. Install crossing facilities which prioritise pedestrians, and improve side road conditions by reducing turning radii and ensuring tactile pavement and dropped kerb provisions are provided

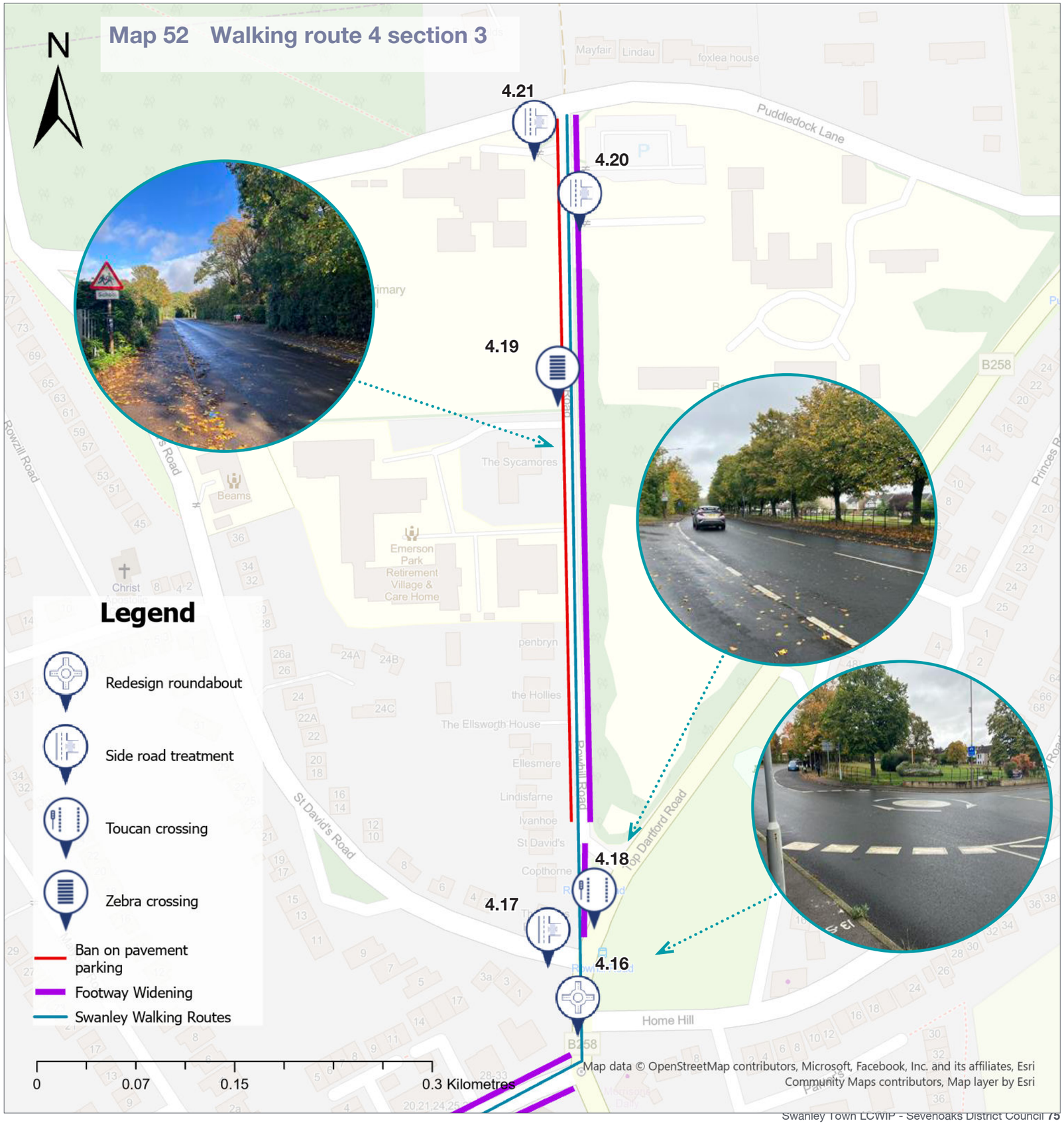
No.	Location	Recommendation
4.6	New Barn Road	Install a zebra crossing or parallel to connect Swanley Park to the Avenue to Limes to link pedestrian journeys
4.7 4.8	Avenue of Limes	Remove barrier at the southern and northern end of the PROW path to improve accessibility. If a barrier is needed to prevent illegitimate access, consider installing a central bollard at each entrance, ensuring there is at least 1.5m minimum gap
4.9	College Road	Install a zebra crossing or parallel crossing from the Avenue of Limes to Hextable Heritage Centre, subject to traffic counts
4.10 4.11	College Road	Install zebra crossing or parallel crossing to connect to the footpaths adjacent to Hextable Parish Council, and to Dawson Drive
4.12	Egerton Avenue	Consider installing a continuous footway, subject to further traffic counts in this area
4.13	College Road	Subject to the installation of footway on the northern side, consider installing a zebra crossing to connect to New Road
4.14	Rollo Road junction	Consider improvements for a raised junction, with pedestrian priority
4.15	College Road	Note that there are width constraints on the route with no verge space and/or little extra road space. Consider options to re-allocate a lane of traffic to widen footways if necessary



Proposed Interventions

- **Road adjacent to the Rowhill Road bus stop:** Widen the footway along this path, ensuring it is at least 2m wide, by re-allocating road space
- **Rowhill Road:** Where the footway is less than 2m wide, consider widening it by cutting into the verge, particularly on the eastern side. Additionally, consider installing continuous footway provisions over side roads

No.	Location	Recommendation
4.16	Main Road roundabouts	Consider re-designing the mini roundabouts, for example to a T-junction, with controlled crossing facilities which prioritise pedestrians and cyclists
4.17	St David's Road	Consider tightening the turning radii and installing crossing facilities over the side road which prioritise pedestrians
4.18	Top Dartford Road (B258)	Consider installing a toucan crossing, or a similar crossing subject to further traffc counts in the area, to allow for pedestrian movements from Top Dartford Road to Rowhill Road where schools are located
4.19	Rowhill Road	Install a zebra or parallel crossing over Rowhill Road near Hextable Primary School to help facilitate the safe movement of school children
4.20 4.21	Rowhill Road	Install continuous footways over Hextable Primary School and Broomhill Bank School entrances



7 Prioritising Improvements

Prioritising improvements

Route prioritisation is the final step of the LCWIP process and aims to identify the routes that are more likely than others to present higher benefits and achieve modal shift.

A robust prioritisation methodology is required to identify which of the primary cycle and walking routes are likely to be of the greatest importance and have the highest impact. Combining the information derived from all previous LCWIP steps, routes were appraised, considering each route's alignment with policy, planned strategic growth, deliverability and financial status.

- **Policy alignment** is a critical factor in the prioritisation process, as the implementation of a route needs to fit with the wider transport objectives at a national, regional and local level. Stakeholder consensus and political support also need to score high for the implementation of a route.
- **Strategic priorities** concern a number of factors that ensure the route ties in with existing activity, trip generators and attractors in the area and would enable future activities to be undertaken in a seamless way. Connectivity with the existing public transport network was evaluated through a route's distance from rail stations and existing bus stops. Centres of population and employment were assessed on existing population and employment density data plus allocated development sites that a route would link to in the future. The contribution of a route to improving air quality and road safety, reducing deprivation, increasing access to educational institutions and the forecast increase in cycle trips for the routes were criteria that were also included.
- **Deliverability** was evaluated by considering practical feasibilities, such as the need for land acquisition and construction risks that would affect the construction and completion of a route. In some cases, a number of alternative alignments are proposed to connect a pair of trip generators and further feasibility study is required to determine the most appropriate course of the route. This was included in the assessment, as it will have an impact on route deliverability. Public acceptability was also taken into account, by considering the feedback received through public engagement.
- **Financial** priorities concern the affordability for the implementation of a route. The cost for the proposed interventions is included in the table and scored against lower to higher costs.

A scoring system of 1 to 5, with 1 being the worst and 5 being the best score that a route could receive, was put in place. Given that the number of criteria assessed under each of the four priority categories differ (two criteria for 'Policy Alignment', nine criteria for 'Strategic Priorities', two criteria for 'Deliverability', and one criterion for 'Financial'), it was important to account for the weight each of the criterion carried in the entire assessment.

Using relative weighting factors (equal proportion per criterion), the importance of the 'Strategic Priority' category (60%) would outweigh the combined importance of the other three categories (40%). Although the 'Strategic Priorities' category is the most important, as it reflects the extent to which local communities and visitors will benefit from the proposed cycling routes, a more balanced approach was necessary. Therefore, to achieve a realistic and practical path to implementation, it was decided to apply balanced weighting factors, which maintain the importance of the 'Strategic Priorities' category higher than the other three categories, but reduce its weight. The applied balanced weighting factors are shown in the table below.

Priority Category	Criteria Assessed	Relative Weighting Factors	Balanced Weighting Factors
Policy Alignment	2	20%	20%
Strategic Priorities	9	60%	40%
Deliverability	2	13%	20%
Financial	1	7%	20%

Figure 7.1 Weighting Factors

Please note that this prioritisation serves as a guide for initiating routes and CWZ development when no other constraints are present. However, it's essential to understand that the implementation may not always align precisely with the stated priority order. This can occur due to various factors, including funding availability in different areas, shifts in funders' priorities related to specific issues, updated information that may alter the priority order, and other considerations.

In addition, the scores relate to the whole route or CWZ, and some routes/zones may have sections which would score very high, and others which would score very low if analysed by sections. Further analysis could be undertaken when delivery of part of a route or zone.

Prioritisation of Cycling Routes

The table below presents the results of the cycle route prioritisation process, with scores across the four priority categories and their final ranking based on the overall score.

Route	Cost estimates	Priority Scores				Overall Score	Ranking
		Policy	Strategic	Deliverability	Financial		
		20%	40%	20%	20%		
Cycle route 5	£ 130,738.26	2.0	3.1	1.8	2.0	8.9	1
Cycle route 4	£ 609,431.34	2.0	2.5	2.0	2.0	8.5	2
Cycle route 3	£ 1,670,982.6	2.0	1.7	2.0	1.6	7.3	3
Cycle route 1	£ 2,293,581.48	2.0	2.7	1.2	1.2	7.1	4
Cycle route 2	£ 6,217,108.446	2.0	2.6	1.2	0.4	6.2	5
Cycle route 6	£ 2,359,808.82	2.0	1.9	1.4	0.8	6.1	6

Figure 7.2 Prioritisation of cycling routes

The prioritisation process suggests that cycle route 5 should be prioritised over other routes, as it scored higher overall. This may be as it is a short route with light touch interventions needed.

Cycle route 3 and 4 are the next routes in the priority table, both indicate low cost (comparing with the other cycle routes) and high score in deliverability.

Prioritisation of Walking Routes

The table below presents the results of the cycle route prioritisation process, with scores across the four priority categories and their final ranking based on the overall score.

As there is only one core walking zone it was not considered as part of this prioritisation exercise.

Route	Cost estimates	Priority Scores				Overall Score	Ranking
		Policy	Strategic	Deliverability	Financial		
		20%	40%	20%	20%		
Walking route 4	£ 1,066,215.48	2.0	1.8	2.0	2.0	7.8	1
Walking route 1	£ 3,701,663.66	2.0	2.8	1.6	0.8	7.2	2
Walking route 3	£ 2,752,050.24	2.0	1.9	1.6	1.6	7.1	3
Walking route 2	£ 3,581,869.98	2.0	2.5	1.0	1.2	6.7	4

Figure 7.3 Prioritisation of walking routes

The prioritisation process suggests that walking route 4 should be prioritised over other routes, as it scored higher overall. It indicates the lowest cost estimates and the highest score for deliverability (in comparison with the other walking routes). Walking route 1 was ranked second, followed by Walking route 3 ranked third.

.

8 Next Steps

Next Steps

Further stakeholder and community engagement

This should fit into all stages of the design process. An example could include a mini-engagement package over two or three days involving members of the public in the street with targeted discussion of the results of route audits and the LCWIP. Testing the conclusions of the report will help ensure the solutions being advanced are appropriate as well as ensuring there is appetite and support for such change.

Identify sources of funding

Potential sources include:

- Active Travel England LCWIP funding stream
- DfT Capability Fund
- ATE Active Travel Fund
- Community Infrastructure Levy (CIL) & s106 contributions from developers

Integration into local policy and planning documents

Promote the LCWIP outputs for inclusion into local planning and transport policies, strategies and delivery plans and continually review and update the LCWIP as a working document.

Further studies and surveys

Consider commissioning further studies and surveys required as part of scheme development process and help de-risk schemes, for example:

- Business Case (making the case for investment for prospective funders, especially relevant if bringing the whole network forward together).
- Feasibility design:
  - Engineering design review
  - Traffic count surveys
  - Traffic modelling
  - Topographic surveys
  - Land registry searches
  - Ecological surveys

Making the Case

Schemes that involve significant change to the existing highway network to improve cycling and walking provision can be a challenge in a car-centric context. The political, economic and policy element is often pivotal; therefore, ensuring any schemes are underpinned by strong and robust arguments that join up with the local political and community context is key.

It is noted that in some cases the proposed interventions in this LCWIP include a recommendation to rationalise or relocate on street car parking. We recognize that the availability of car parking for residential use is limited in the local area of Swanley, and so would recommend that the impact of this issue is given full consideration at the feasibility and design stage. The recommendations in this LCWIP provide a high level starting point to improving walking, wheeling and cycling, and need to be further explored through feasibility studies, surveys, and consultations before any are approved and implemented.

9 Appendices

Appendix 1: Primary Cycle Route Prioritisation Table

1	Very poor
2	Poor
3	Fair
4	Good
5	Very Good

Route	Policy Alignment				Strategic Priorities																		Deliverability Priorities				Financial Priorities		Priority Scores				Overall Score	Rank
	1. Fits with wider transport and government objectives		2. Consensus-Political Support		1. Improving Housing Connectivity		2. Linking to the Existing Public Transport Network (train stations and bus stops)		3.Potential to increase demand (PCT Dutch Scenario)		4. Total Workplace Population		5. Potential to Improve Air Quality		6. Impact on Multiple Deprivation		7. Supporing Strategic Growth		8. Access to Education/ Training		9. Improving Road Safety		1. Public Acceptability		2. Practical Feasibility		1. Cost		Policy	Strategic	Deliverability	Financial		
	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	0.2	0.4	0.2	0.2		
Cycle route 1	5	Aligns with Gear Change Policy, Net Zero 2030, A Vision for Swanley and Hextable (2016)	5	Aligns with the cycling and walking initiative	3	3736.766	4	17.625	3	6440.987	3	1468.049	4	54.704	1	5564.944	4	34	3	1.855	5	83	2	Low support in engagement sessions	4	Verge space and carriageway space is available to create a segregated route	3	£2,293,581.48	2.0	2.7	1.2	1.2	7.07	4
Cycle route 2	5	Aligns with Gear Change Policy, Net Zero 2030	5	Aligns with the cycling and walking initiative	3	3656.263	2	12.639	3	5714.867	3	1777.464	5	70.075	3	13148.184	3	31	2	1.404	5	52	4	Medium level of support in engagement sessions	2	Width restrictions along London Road	1	£6,217,108.45	2.0	2.6	1.2	0.4	6.18	5
Cycle route 3	5	Aligns with Gear Change Policy, Net Zero 2030, Sevenoaks District Cycling Strategy, A Vision for Swanley and Hextable (2016)	5	Aligns with the cycling and walking initiative	2	2596.514	1	7.954	1	3451.486	1	850.590	1	16.231	2	7741.392	5	45	2	1.085	4	43	5	High level of support for routes between Hextable and Swanley	5	A long section of the route travels through Swanley Park and along the Public Rights of Way	4	£1,670,982.60	2.0	1.7	2	1.6	7.29	3
Cycle route 4	5	Aligns with Gear Change Policy, Net Zero 2030 Sevenoaks District Cycling Strategy, A Vision for Hextable and Swanley (2016)	5	Aligns with the cycling and walking initiative	4	4770.204	3	17.000	4	10331.264	4	1972.628	2	5.733	3	16230.301	2	21	3	2.000	3	40	5	High level of support for routes through Swanley Park	5	Majority of the route travels along an already surfaced Public Rights of Way path, and in Swanley Park	5	£609,431.34	2.0	2.5	2	2	8.49	2
Cycle route 5	5	Aligns with Gear Change Policy, Net Zero 2030, Sevenoaks District Cycling Strategy	5	Aligns with the cycling and walking initiative	4	6846.186	5	36.206	4	11580.456	5	3117.815	3	19.012	3	15080.773	3	29	5	6.705	3	36	4	Medium level of support in engagement sessions	5	Short route which travels along St Mary's Road, where there are already traffic calming measures	5	£130,738.26	2.0	3.1	1.8	2	8.91	1
Cycle route 6	5	Aligns with Gear Change Policy, Net Zero 2030	5	Aligns with the cycling and walking initiative	1	1928.140	2	10.730	1	3264.969	1	873.763	3	16.231	1	5556.375	5	61	3	2.077	4	47	4	Medium level of support in engagement sessions	3	Width restrictions along Goldsel Road, especially over the bridge	2	£2,359,808.82	2.0	1.9	1.4	0.8	6.07	6

Appendix 2: Primary Walking Route Prioritisation Table

1	Very poor
2	Poor
3	Fair
4	Good
5	Very Good

Route	Policy Alignment																																	
	1. Fits with wider transport and government objectives		2. Consensus - Political Support		1. Linking to the Existing Public Transport Network (train stations and bus stops)		2.Improving Housing Connectivity		3. Providing Access to Employment		4. Potential to Improve Air Quality		5. Impact on Multiple Deprivation		6. Supporing Strategic Growth		7. Access to Education/ Training		8. Improving Road Safety		Deliverability Priorities			Financial Priorities		Priority Scores				Overall Score	Rank
	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	Score	Comment	1. Public Acceptability		2. Practical Feasibility		1. Cost		Policy	Strategic	Deliverability	Financial		
																					Score	Comment	Score	Comment	Score	Comment	0.2	0.4	0.2	0.2		
Walking route 1	5	Aligns with cycling and walking initiative	5	Aligns with the cycling and walking initiative	4	25.753	4	5245.179	4	1895.949	3	17.192	2	8611.517	2	24	4	3.4337	5	63	3	Low support in engagement sessions	5	Carriageway space and verge space available	2	£3,701,663.66	2.0	2.8	1.6	0.8	7.2	2
Walking route 2	5	Aligns with cycling and walking initiative	5	Aligns with the cycling and walking initiative	2	12.093	4	3080.676	3	1494.774	5	69.676	3	14142.331	3	28	1	0.7518	4	43	2	Medium level support in engagement sessions	3	Width restrictions along London Road	3	£3.581.869.99	2.0	2.5	1.0	1.2	6.7	4
Walking route 3	5	Aligns with cycling and walking initiative	5	Aligns with the cycling and walking initiative	2	11.954	2	2134.940	1	915.233	1	69.676	2	9582.534	5	44	4	2.9885	2	17	4	High level of support for walking routes between Crockenhill and Swanley	4	Width contraints along Goldsel Road, especially on the bridge where widening the footways may be difficult	4	£ 2,752,050.24	2.0	1.9	1.6	1.6	7.1	3
Walking route 4	5	Aligns with cycling and walking initiative	5	Aligns with the cycling and walking initiative	1	8.460	1	2568.396	2	1032.320	1	69.676	2	9257.228	5	51	2	1.2540	4	43	5	High level of support for routes through Swanley Park, and between Hextable and Swanley	5	Majority of the route travels along the Public Rights of Way and in Swanley Park	5	£1,066,215.48	2.0	1.8	2.0	2.0	7.8	1

Prioritisation - Strategic Criteria

Criteria	Data Source	Analysis
TotalWorkplacePopulationWithin400MPerKM	Census 2011 - https://www.nomisweb.co.uk/census/2011/wp101ew	Census data was attached to English LSOAs only. For each route, the number of workplace population were summed for each LSOA which lay within 400 m of the route, in proportion to the area of LSOA which they intersected . For example, if 50% of an LSOA lay within 400 m of a route, then 50% of the workplace population would be summed to the routes total. Finally, the total was divided by the length (km) of the route.
TotalResidentPopulationWithin400MPerKM	Census 2011 - https://www.nomisweb.co.uk/census/2011/ks101uk	Census data was attached to English LSOAs only. For each route, the number of resident population were summed for each LSOA which lay within 400 m of the route, in proportion to the area of LSOA which they intersected . For example, if 50% of an LSOA lay within 400 m of a route, then 50% of the resident population would be summed to the routes total. Finally, the total was divided by the length (km) of the route.
NumberOfSchoolsWithin400MPerKM	ArcGIS Online (https://sustrans-uk.maps.arcgis.com/home/item.html?id=a4fc41256fc74525a567c8cdad8ca1b6#overview)	The number of schools within 400 m of each route was calculated, and then divided by the length (km) of the route.
TotalNumberOfBusStopsAndTrainStationsWithin400MPerKM	Bus Stops: NaPTAN point features with a "BusStopType" recorded against them Train Stations: ArcGIS Online (https://sustrans-uk.maps.arcgis.com/home/item.html?id=4ed6fce83b2840158a75443a98028c44#overview)	The number of bus stops and train stations within 400 m of each route was calculated, and then divided by the length (km) of the route.
AverageIMDRankWithin400M	English IMD - https://data-communities.opendata.arcgis.com/datasets/indices-of-multiple-deprivation-imd-2019-1	The average rank of all the English IMDs which lay within 400 m of a route was calculated.
DevelopmentHectaresWithin400MPerKM	New developments provided by Sustrans	Area of new development which lies within 400 m of each route, divided by the length (km) of the route.
NumberOfCollisionsPerKM	STATS19 Data - https://data.gov.uk/dataset/cb7ae6f0-4be6-4935-9277-47e5ce24a11f/road-safety-data	Number of collisions within the last five years (2016 - 2020 inclusive) within 400 m of each route, divided by the length (km) of the route.
PercentageOfRouteInAQMA	Air Quality Management Areas 2020 - https://uk-air.defra.gov.uk/aqma/	The proportion of route which lies within an Air Quality Management Area.

Appendix 3: Primary Cycle Route Cost Estimates

Cycle route 1				
	Rate	Unit	Quantity	Cost
Speed Limit Change	£ 18,024	number	1	£ 18,024
Parking Restrictions	£ 5,901	number		£ -
Two-way Kerb Separated Cycle Track	£ 538	per linear metre	1250	£ 672,500
Shared Use Route (Conversion of Existing Footway)	£ 263	per linear metre		£ -
Footway (Asphalt Surface and Concrete Kerb)	£ 292	per linear metre		£ -
New 3m wide Shared Use Route	£ 298	per linear metre		£ -
Shared Use Route (Conversion of Existing Footway) (use of widen footway)	£ 263	per linear metre		£ -
Mixed traffic Environment	£ 295	per linear metre		£ -
Raised Table Junction (pedestrian only)(side road treatment)	£ 34,543	number		£ -
Raised Table Junction (with Set Back Cycle Track)(side road treatment)	£ 96,510	number	5	£ 482,550
Priority Junction Redesign	£ 288,095	number		£ -
Major Junction Redesign	£ 1,922,542	number		£ -
				£ -
Signal controlled crossing (Puffin / Toucan).	£ 118,029	number	7	£ 826,203
Zebra / Parallel Crossing	£ 36,662	number		£ -
New bridge (small, span < 5 m)				£ -
New bridge (large, span > 5 m)				£ -
Quiet-way treatment				£ -
Access Barrier Removal	£ 2,000	Number		£ -
Parallel crossing/Zebra				£ -
Seating	£ 2,000	Number		£ -
Countdown timers				£ -
Fencing (Timber)	£ 31	per linear metre		£ -
				£ -
Cycle Parking - 10 Sheffield Stands (£4206)(5 stands considered)	£ 2,103	number	1	£ 2,103
sum				£ 2,001,380.00
Total (plus inflation) Inflation from March 2022 to March 2023 - 14.6				£ 2,293,581.48

Cycle route 2				
	Rate	Unit	Quantity	Cost
Speed Limit Change	£ 18,024	number	1	£ 18,024
Parking Restrictions	£ 5,901	number	1	£ 5,901
Two-way Kerb Separated Cycle Track	£ 538	per linear metre	658	£ 354,004
Shared Use Route (Conversion of Existing Footway)	£ 263	per linear metre	315	£ 82,845
Footway (Asphalt Surface and Concrete Kerb)	£ 292	per linear metre		
New 3m wide Shared Use Route	£ 298	per linear metre		
Shared Use Route (Conversion of Existing Footway) (use of widen footway)	£ 263	per linear metre	85	£ 22,355
Mixed traffic Environment	£ 295	per linear metre		
Raised Table Junction (pedestrian only)(side road treatment)	£ 34,543	number	4	£ 138,172
Raised Table Junction (with Set Back Cycle Track)(side road treatment)	£ 96,510	number	5	£ 482,550
Priority Junction Redesign	£ 288,095	number		£ -
Major Junction Redesign	£ 1,922,542	number	2	£ 3,845,084
				£ -
Signal controlled crossing (Puffin / Toucan).	£ 118,029	number	4	£ 472,116
Zebra / Parallel Crossing	£ 36,662	number		£ -
New bridge (small, span < 5 m)				£ -
New bridge (large, span > 5 m)				£ -
Quiet-way treatment				£ -
Access Barrier Removal	£ 2,000	Number	2	£ 4,000
Parallel crossing/Zebra				£ -
Seating	£ 2,000	Number		£ -
Countdown timers				£ -
Fencing (Timber)	£ 31	per linear metre		£ -
				£ -
Cycle Parking - 10 Sheffield Stands (£4206)(5 stands considered)	£ 2,103	number		£ -
sum				£ 5,425,051.00
Total (plus inflation) Inflation from March 2022 to March 2023 - 14.6				£ 6,217,108.45

Cycle route 3					
	Rate		Unit	Quantity	Cost
Speed Limit Change	£	18,024	number		£ -
Parking Restrictions	£	5,901	number	1	£ 5,901
Two-way Kerb Separated Cycle Track	£	538	per linear metre	132	£ 71,016
Shared Use Route (Conversion of Existing Footway)	£	263	per linear metre		£ -
Footway (Asphalt Surface and Concrete Kerb)	£	292	per linear metre		£ -
New 3m wide Shared Use Route	£	298	per linear metre	1255	£ 373,990
Shared Use Route (Conversion of Existing Footway) (use of widen footway)	£	263	per linear metre		£ -
Mixed traffic Environment	£	295	per linear metre	1420	£ 418,900
Raised Table Junction (pedestrian only)(side road treatment)	£	34,543	number		£ -
Raised Table Junction (with Set Back Cycle Track)(side road treatment)	£	96,510	number		£ -
Priority Junction Redesign	£	288,095	number	2	£ 576,190
Major Junction Redesign	£	1,922,542	number		£ -
					£ -
Signal controlled crossing (Puffin / Toucan).	£	118,029	number		£ -
Zebra / Parallel Crossing	£	36,662	number		£ -
New bridge (small, span < 5 m)					£ -
New bridge (large, span > 5 m)					£ -
Quiet-way treatment					£ -
Access Barrier Removal	£	2,000	Number	5	£ 10,000
Parallel crossing/Zebra					£ -
Seating	£	2,000	Number		£ -
Countdown timers					£ -
Fencing (Timber)	£	31	per linear metre		£ -
					£ -
Cycle Parking - 10 Sheffield Stands (£4206)(5 stands considered)	£	2,103	number	1	£ 2,103
sum					£ 1,458,100.00
Total (plus inflation) Inflation from March 2022 to March 2023 - 14.6					£ 1,670,982.60

Cycle route 4					
	Rate		Unit	Quantity	Cost
Speed Limit Change	£	18,024	number	1	£ 18,024
Parking Restrictions	£	5,901	number		£ -
Two-way Kerb Separated Cycle Track	£	538	per linear metre		£ -
Shared Use Route (Conversion of Existing Footway)	£	263	per linear metre		£ -
Footway (Asphalt Surface and Concrete Kerb)	£	292	per linear metre		£ -
New 3m wide Shared Use Route	£	298	per linear metre	757	£ 225,586
Shared Use Route (Conversion of Existing Footway) (use of widen footway)	£	263	per linear metre		£ -
Mixed traffic Environment	£	295	per linear metre	439	£ 129,505
Raised Table Junction (pedestrian only)(side road treatment)	£	34,543	number	1	£ 34,543
Raised Table Junction (with Set Back Cycle Track)(side road treatment)	£	96,510	number		£ -
Priority Junction Redesign	£	288,095	number		£ -
Major Junction Redesign	£	1,922,542	number		£ -
					£ -
Signal controlled crossing (Puffin / Toucan).	£	118,029	number	1	£ 118,029
Zebra / Parallel Crossing	£	36,662	number		£ -
New bridge (small, span < 5 m)					£ -
New bridge (large, span > 5 m)					£ -
Quiet-way treatment					£ -
Access Barrier Removal	£	2,000	Number	2	£ 4,000
Parallel crossing/Zebra					£ -
Seating	£	2,000	Number		£ -
Countdown timers					£ -
Fencing (Timber)	£	31	per linear metre		£ -
					£ -
Cycle Parking - 10 Sheffield Stands (£4206)(5 stands considered)	£	2,103	number	1	£ 2,103
sum					£ 531,790.00
Total (plus inflation) Inflation from March 2022 to March 2023 - 14.6					£ 609,431.34

Cycle route 5						
	Rate		Unit	Quantity	Cost	
Speed Limit Change	£	18,024	number		£	-
Parking Restrictions	£	5,901	number		£	-
Two-way Kerb Separated Cycle Track	£	538	per linear metre		£	-
Shared Use Route (Conversion of Existing Footway)	£	263	per linear metre		£	-
Footway (Asphalt Surface and Concrete Kerb)	£	292	per linear metre		£	-
New 3m wide Shared Use Route	£	298	per linear metre		£	-
Shared Use Route (Conversion of Existing Footway) (use of widen footway)	£	263	per linear metre		£	-
Mixed traffic Environment	£	295	per linear metre	583	£	42,996
Raised Table Junction (pedestrian only)(side road treatment)	£	34,543	number	2	£	69,086
Raised Table Junction (with Set Back Cycle Track)(side road treatment)	£	96,510	number		£	-
Priority Junction Redesign	£	288,095	number		£	-
Major Junction Redesign	£	1,922,542	number		£	-
					£	-
Signal controlled crossing (Puffin / Toucan).	£	118,029	number		£	-
Zebra / Parallel Crossing	£	36,662	number		£	-
New bridge (small, span < 5 m)					£	-
New bridge (large, span > 5 m)					£	-
Quiet-way treatment					£	-
Access Barrier Removal	£	2,000	Number	1	£	2,000
Parallel crossing/Zebra					£	-
Seating	£	2,000	Number		£	-
Countdown timers					£	-
Fencing (Timber)	£	31	per linear metre		£	-
					£	-
Cycle Parking - 10 Sheffield Stands (£4206)(5 stands considered)	£	2,103	number		£	-
sum					£	114,082.25
Total (plus inflation) Inflation from March 2022 to March 2023 - 14.6					£	130,738.26

Cycle route 6					
	Rate	Unit	Quantity	Cost	
Speed Limit Change	£ 18,024	number	1	£	18,024
Parking Restrictions	£ 5,901	number	2	£	11,802
Two-way Kerb Separated Cycle Track	£ 538	per linear metre	864	£	464,832
Shared Use Route (Conversion of Existing Footway)	£ 263	per linear metre	1050	£	276,150
Footway (Asphalt Surface and Concrete Kerb)	£ 292	per linear metre			
New 3m wide Shared Use Route	£ 298	per linear metre			
Shared Use Route (Conversion of Existing Footway) (use of widen footway)	£ 263	per linear metre		£	-
Mixed traffic Environment	£ 295	per linear metre	997	£	294,115
Raised Table Junction (pedestrian only)(side road treatment)	£ 34,543	number	1	£	34,543
Raised Table Junction (with Set Back Cycle Track)(side road treatment)	£ 96,510	number	5	£	482,550
Priority Junction Redesign	£ 288,095	number		£	-
Major Junction Redesign	£ 1,922,542	number		£	-
				£	-
Signal controlled crossing (Puffin / Toucan).	£ 118,029	number	4	£	472,116
Zebra / Parallel Crossing	£ 36,662	number		£	-
New bridge (small, span < 5 m)				£	-
New bridge (large, span > 5 m)				£	-
Quiet-way treatment				£	-
Access Barrier Removal	£ 2,000	Number	1	£	2,000
Parallel crossing/Zebra				£	-
Seating	£ 2,000	Number		£	-
Countdown timers				£	-
Fencing (Timber)	£ 31	per linear metre	98	£	3,038
				£	-
Cycle Parking - 10 Sheffield Stands (£4206)(5 stands considered)	£ 2,103	number		£	-
sum				£	2,059,170.00
Total (plus inflation) Inflation from March 2022 to March 2023 - 14.6				£	2,359,808.82

Appendix 4: Primary Walking Route Cost Estimates

Walking route 1					
	Rate	Unit	Quantity	Cost	
Speed Limit Change	£ 18,024	number	1	£	18,024
Parking Restrictions	£ 5,901	number		£	-
Two-way Kerb Separated Cycle Track	£ 538	per linear metre		£	-
Shared Use Route (Conversion of Existing Footway)	£ 263	per linear metre	1370	£	360,310
Footway (Asphalt Surface and Concrete Kerb)	£ 292	per linear metre		£	-
New 3m wide Shared Use Route	£ 298	per linear metre			
Shared Use Route (Conversion of Existing Footway) (use of widen footway)	£ 263	per linear metre		£	-
Mixed traffic Environment	£ 295	per linear metre		£	-
Raised Table Junction (pedestrian only)(side road treatment)	£ 34,543	number		£	-
Raised Table Junction (with Set Back Cycle Track)(side road treatment)	£ 96,510	number	6	£	579,060
Priority Junction Redesign	£ 288,095	number	5	£	1,440,475
Major Junction Redesign	£ 1,922,542	number		£	-
				£	-
Signal controlled crossing (Puffin / Toucan).	£ 118,029	number	7	£	826,203
Zebra / Parallel Crossing	£ 36,662	number		£	-
New bridge (small, span < 5 m)				£	-
New bridge (large, span > 5 m)				£	-
Quiet-way treatment				£	-
Access Barrier Removal	£ 2,000	Number	3	£	6,000
Parallel crossing/Zebra				£	-
Seating	£ 2,000	Number		£	1
Countdown timers				£	-
Fencing (Timber)	£ 31	per linear metre		£	-
				£	-
Cycle Parking - 10 Sheffield Stands (£4206)(5 stands considered)	£ 2,103	number		£	-
sum				£	3,230,073.00
Total (plus inflation) Inflation from March 2022 to March 2023 - 14.6				£	3,701,663.66

Walking route 2					
	Rate		Unit	Quantity	Cost
Speed Limit Change	£	18,024	number	1	£ 18,024
Parking Restrictions	£	5,901	number	1	£ 5,901
Two-way Kerb Separated Cycle Track	£	538	per linear metre		£ -
Shared Use Route (Conversion of Existing Footway)	£	263	per linear metre		£ -
Footway (Asphalt Surface and Concrete Kerb)	£	292	per linear metre		£ -
New 3m wide Shared Use Route	£	298	per linear metre		
Shared Use Route (Conversion of Existing Footway) (use of widen footway)	£	263	per linear metre	50	£ 13,150
Mixed traffic Environment	£	295	per linear metre		£ -
Raised Table Junction (pedestrian only)(side road treatment)	£	34,543	number	6	£ 207,258
Raised Table Junction (with Set Back Cycle Track)(side road treatment)	£	96,510	number	5	£ 482,550
Priority Junction Redesign	£	288,095	number		£ -
Major Junction Redesign	£	1,922,542	number	1	£ 1,922,542
					£ -
Signal controlled crossing (Puffin / Toucan).	£	118,029	number	4	£ 472,116
Zebra / Parallel Crossing	£	36,662	number		£ -
New bridge (small, span < 5 m)					£ -
New bridge (large, span > 5 m)					£ -
Quiet-way treatment					£ -
Access Barrier Removal	£	2,000	Number	2	£ 4,000
Parallel crossing/Zebra					£ -
Seating	£	2,000	Number		£ -
Countdown timers					£ -
Fencing (Timber)	£	31	per linear metre		£ -
					£ -
Cycle Parking - 10 Sheffield Stands (£4206)(5 stands considered)	£	2,103	number		£ -
sum					£ 3,125,541.00
Total (plus inflation) Inflation from March 2022 to March 2023 - 14.6					£ 3,581,869.99

Walking route 3					
	Rate		Unit	Quantity	Cost
Speed Limit Change	£	18,024	number	1	£ 18,024
Parking Restrictions	£	5,901	number	2	£ 11,802
Two-way Kerb Separated Cycle Track	£	538	per linear metre	1050	£ 564,900
Shared Use Route (Conversion of Existing Footway)	£	263	per linear metre		£ -
Footway (Asphalt Surface and Concrete Kerb)	£	292	per linear metre	100	£ 29,200
New 3m wide Shared Use Route	£	298	per linear metre		
Shared Use Route (Conversion of Existing Footway) (use of widen footway)	£	263	per linear metre	468	£ 123,084
Mixed traffic Environment	£	295	per linear metre	997	£ 294,115
Raised Table Junction (pedestrian only)(side road treatment)	£	34,543	number	6	£ 207,258
Raised Table Junction (with Set Back Cycle Track)(side road treatment)	£	96,510	number	5	£ 482,550
Priority Junction Redesign	£	288,095	number		£ -
Major Junction Redesign	£	1,922,542	number		£ -
					£ -
Signal controlled crossing (Puffin / Toucan).	£	118,029	number	5	£ 590,145
Zebra / Parallel Crossing	£	36,662	number	2	£ 73,324
New bridge (small, span < 5 m)					£ -
New bridge (large, span > 5 m)					£ -
Quiet-way treatment					£ -
Access Barrier Removal	£	2,000	Number	1	£ 2,000
Parallel crossing/Zebra					£ -
Seating	£	2,000	Number	1	£ 2,000
Countdown timers					£ -
Fencing (Timber)	£ 31		per linear metre	98	£ 3,038
					£ -
Cycle Parking - 10 Sheffield Stands (£4206)(5 stands considered)	£	2,103	number		£ -
sum					£ 2,401,440.00
Total (plus inflation) Inflation from March 2022 to March 2023 - 14.6					£ 2,752,050.24

Walking route 4					
	Rate		Unit	Quantity	Cost
Speed Limit Change	£	18,024	number		£ -
Parking Restrictions	£	5,901	number		£ -
Two-way Kerb Separated Cycle Track	£	538	per linear metre		£ -
Shared Use Route (Conversion of Existing Footway)	£	263	per linear metre		£ -
Footway (Asphalt Surface and Concrete Kerb)	£	292	per linear metre		£ -
New 3m wide Shared Use Route	£	298	per linear metre	912	
Shared Use Route (Conversion of Existing Footway) (use of widen footway)	£	263	per linear metre	1689	£ 444,207
Mixed traffic Environment	£	295	per linear metre		£ -
Raised Table Junction (pedestrian only)(side road treatment)	£	34,543	number	4	£ 138,172
Raised Table Junction (with Set Back Cycle Track)(side road treatment)	£	96,510	number		£ -
Priority Junction Redesign	£	288,095	number		£ -
Major Junction Redesign	£	1,922,542	number		£ -
					£ -
Signal controlled crossing (Puffin / Toucan).	£	118,029	number	1	£ 118,029
Zebra / Parallel Crossing	£	36,662	number	6	£ 219,972
New bridge (small, span < 5 m)					£ -
New bridge (large, span > 5 m)					£ -
Quiet-way treatment					£ -
Access Barrier Removal	£	2,000	Number	4	£ 8,000
Parallel crossing/Zebra					£ -
Seating	£	2,000	Number	1	£ 2,000
Countdown timers					£ -
Fencing (Timber)	£	31	per linear metre		£ -
					£ -
Cycle Parking - 10 Sheffield Stands (£4206)(5 stands considered)	£	2,103	number		£ -
sum					£ 930,380.00
Total (plus inflation) Inflation from March 2022 to March 2023 - 14.6					£ 1,066,215.48